2022 USDA EXPLANATORY NOTES – ANIMAL AND PLANT HEALTH INSPECTION SERVICE

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AGENCY-WIDE

PURPOSE STATEMENT

The Secretary of Agriculture established the Animal and Plant Health Inspection Service (APHIS) on April 2, 1972, under the authority of Reorganization Plan No. 2 of 1953 and other authorities. The mission of the Agency is to safeguard the health, welfare, and value of American agriculture and natural resources.

APHIS, together with its stakeholders, promotes the health of animal and plant resources to facilitate their movement in the global marketplace and to ensure abundant agricultural products and services for U.S. customers. APHIS also ensures that biotechnology-derived agricultural products are safe for release in the environment. APHIS strives to assure its stakeholders that it is on guard against the introduction or re-emergence of animal and plant pests and diseases that could limit agricultural production and damage export markets. At the same time, APHIS also monitors and responds to potential acts of agricultural bioterrorism, invasive species, diseases of wildlife and livestock, and conflicts between humans and wildlife. The Agency also helps to resolve sanitary (animal) and phytosanitary (plant) trade barriers and addresses certain issues relating to the humane treatment of animals.

APHIS' mission is carried out using three major areas of activity, as follows:

Safeguarding and Emergency Preparedness/Response

APHIS monitors animal and plant health domestically. In addition to the funding outlined in the tables below, APHIS will use funding provided by the American Rescue Plan to bolster animal health surveillance. APHIS also monitors disease situations throughout the world and uses this information to set effective agricultural import policies to prevent the introduction of foreign animal and plant pests and diseases. APHIS and the U.S. Department of Homeland Security cooperate to ensure that these policies are enforced at U.S. ports of entry. These policies prevent the entry of many invasive pests and diseases, including those that impact crops, pollinators, woodlands, and livestock. APHIS also develops and conducts pre-clearance programs to ensure that foreign agricultural products destined for the United States do not present a risk to U.S. agriculture. The Agency engages in cooperative programs to control pests of imminent concern to the United States. APHIS certifies animal and animal products, and plants and plant products, for export to other countries and regulates imports of designated endangered plant species.

Should a pest or disease enter the United States, APHIS works cooperatively with other Federal, State, and industry partners to conduct animal and plant health monitoring programs to rapidly determine if there is a need to establish new pest or disease management programs. APHIS, in conjunction with States, industry, and other stakeholders, protects American agriculture by eradicating harmful pests and diseases or, where eradication is not feasible, by minimizing their economic impact. The Agency monitors endemic pests and diseases through surveys to detect their location and through inspection to prevent their spread into non-infested parts of the country.

The Agency maintains a cadre of trained professionals prepared to respond immediately to potential animal and plant health emergencies. Program personnel investigate reports of suspected exotic pests and diseases and take emergency action if necessary. To facilitate these efforts, APHIS develops pathway studies and thoroughly investigates outbreaks to determine the origin of animal and plant pests and diseases and the most appropriate response actions to take including the development of tools and technologies to help manage these pests. APHIS also actively engages State, Tribal, and local governments, and industries to advance their emergency preparedness and response capabilities.

APHIS develops methods to control animals and pests that are detrimental to agriculture, wildlife, and public safety through its Wildlife Services program. The Agency's regulatory structure brings the benefits of genetic research to the marketplace, while ensuring they do not pose a plant pest risk. APHIS also conducts diagnostic laboratory activities that support the Agency's veterinary disease prevention, detection, control, eradication, and response programs.

Safe Trade and International Technical Assistance

Sanitary (animal) and phytosanitary (plant) (SPS) measures implemented by U.S. trading partners can have a significant impact on market access for the United States as an exporter of agricultural products. APHIS plays a central role in resolving technical trade issues to ensure the smooth and safe movement of agricultural commodities into and out of the United States. APHIS' role is to negotiate animal and plant health certification requirements, assist U.S. exporters in meeting foreign regulatory requirements, ensure requirements are proportional to risk without being excessively restrictive, and provide any necessary technical information to support the safety of U.S. agricultural products destined for foreign markets.

APHIS helps to protect the United States from emerging animal and plant pests and diseases while meeting obligations under the World Trade Organization's SPS agreement by assisting developing countries in improving their safeguarding systems. APHIS collaborates with other Federal agencies including the Foreign Agricultural Service, the U.S. Agency for International Development, the State Department, and the Office of the U.S. Trade Representative to implement technical and regulatory capacity building projects with shared resources. APHIS develops and implements programs designed to identify and reduce agricultural pest and disease threats while still outside of U.S. borders, to enhance safe agricultural trade, and to strengthen emergency response preparedness.

Animal Welfare

The Agency conducts regulatory activities to ensure the humane care and treatment of certain animals and horses as required by the Animal Welfare Act of 1966 as amended (7 U.S.C. 2131-2159), and the Horse Protection Act of 1970 as amended (15 U.S.C. 1821-1831). These activities include inspection of certain establishments that handle animals intended for research, exhibition, and sale as pets, and monitoring of certain horse shows.

Statutory Authorities

APHIS operates under the following authorities:

General:

7 U.S.C. 1633	Talmadge-Aiken Act (cooperation with States)
7 U.S.C. 7759	User Fees (for export certification of plants)
21 U.S.C. 136-136a	User Fees
31 U.S.C. 9701	User Fees (offsetting collections and miscellaneous receipts)
7 U.S.C. 3291(a)	Authority to provide technical assistance and training
7 U.S.C. 5680	Farm Security and Rural Investment Act of 2002 (reporting on SPS issues and trade barriers)
7 U.S.C. 5925	Food, Agriculture, Conservation, and Trade Act of 1990 (authorizes funding for national honeybee pest survey)
7 U.S.C. 2279g	Marketing Services; cooperative agreements

Animal Health:

7 U.S.C. 8301-8317	Animal Health Protection Act
49 U.S.C. 80502	28-Hour Law (feed, water, and rest for animals)
19 U.S.C. 1202, Part I, Item 100.01	Purebred animal duty-free entry
7 U.S.C. 1622	Section 203 of the Agricultural Marketing Act of 1946
7 U.S.C. 1624	Section 205 of the Agricultural Marketing Act of 1946
7 U.S.C. 398	Section 101(d) of the Organic Act of l944
7 U.S.C. 3801-3813	Swine Health Protection Act
7 U.S.C. 851-855	Anti-hog cholera serum and hog cholera virus
7 U.S.C. 2274	Firearms (tick inspectors)
7 U.S.C. 1901 note	Transportation of Equines to Slaughter
21 U.S.C. 151-159	Virus-Serum-Toxin Act
21 U.S.C. 113a	Authority to establish research facilities for Foot-and-Mouth and other diseases
21 U.S.C. 618	Section 18 of the Federal Meat Inspection Act, as amended, as it pertains to the issuance of certificates of condition of live animals for export
7 U.S.C. 8401 and 8411	Title II, Subtitles B and C of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002
7 U.S.C. 8318	Section 10504 of the Farm Security and Rural Investment Act of 2002 (training of accredited veterinarians)

Plant Health:

7 U.S.C. 7701-7772; and 7781-7786	Plant Protection Act
7 U.S.C. 1581-1610	Title III, Federal Seed Act
7 U.S.C. 2801 note; 2814	Federal Noxious Weed Act

7 U.S.C. 281-286	Honeybee Act
7 U.S.C. 7760	Terminal Inspection Act
7 U.S.C. 2279e and 2279f	Title V of the Agricultural Risk Protection Act of 2000 (penalties for interfering with inspection animals)
16 U.S.C. 1531-1544	Endangered Species Act (plants)
16 U.S.C. 3371-3378	Lacey Act (importation or shipment of injurious mammals, birds, fish)
7 U.S.C. 8401	Title II, Subtitle B of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002
39 U.S.C. 3015	Alien Species Prevention and Enforcement Act of 1992

Wildlife Services:

7 U.S.C. 8351-8354	Control of predatory and other wild animals

Animal Welfare:

7 U.S.C. 2131-2159	Animal Welfare Act
15 U.S.C. 1821-1831	Horse Protection Act

Staffing and Offices

There were 5,679 permanent full-time employees as of September 30, 2020. Of the total, 1,224 full-time employees were located at headquarters. APHIS manages programs on a national basis through two regional offices and 431 field offices, including area offices, workstations, technical centers, and animal import centers. APHIS conducts much of its work in cooperation with State and local agencies, private groups, and foreign governments. APHIS performs work in the 50 States, Washington, D.C., Guam, Puerto Rico, Virgin Islands, Mexico, Central America, South America, the Caribbean, Western Europe, Asia, and Africa.

Each year, the Office of Inspector General (OIG) and the Government Accountability Office (GAO) audits selected programs to examine the efficiency of the programs and operations including program results, compliance with applicable laws and regulations, and fair presentation of financial reports. Audits in which APHIS has been involved during FYs 2020 – 2021 include those listed below.

OIG AND GAO REPORTS

Closed OIG Reports (Audit report has been issued and recommendation(s) have been implemented.)

ID	Date	Title	Result
33099-01-23	05/2018	Texas Boll Weevil Eradication Foundation Grant	OIG report was issued with six recommendations. APHIS implemented all six recommendations. The audit is officially closed.
50099-03-21	09/2018	USDA's Management over the Misuse of Government Vehicles	Audit includes APHIS and other USDA agencies. OIG report was issued with no recommendations for APHIS. The audit is officially closed.

Completed OIG Reports

ID	Date	Title	Result
33601-01-41	12/2014	APHIS Oversight of Research Facilities	OIG report was issued with 15 recommendations. Of the 15 recommendations, #1-14 recommendations are closed. APHIS provided documentation for implementation of recommendation #15. The documentation has been forwarded to the Office of the Chief Financial Officer (OCFO) for final closure determination.
33701-01-21	08/2018	National Veterinary Stockpile Oversight	OIG report was issued with eight recommendations. APHIS is in the process of implementing the recommendations.

ID	Date	Title	Result
50601-01-32	11/2013	Controls Over APHIS' Introduction of Genetically Engineered Organisms	OIG report was issued with 13 recommendations. APHIS implemented and received official closure on 11 of the 13 recommendations. Recommendations #2 and 8 are pending implementation. Audit is expected to be closed by May 2021.
50601-08-TE	12/2005	Controls Over APHIS Issuance of Genetically Engineered Organisms	OIG report was issued with 28 recommendations. Of the recommendations, 25 are closed. Recommendations #1-3 remain open. APHIS received notification of the Final Rule titled "Movement of Certain Genetically Engineered Organisms." The documentation has been forwarded to the OCFO for final closure determination.
50701-01-21	09/2018	Release Permits USDA Activities for Agro-terrorism Prevention, Detection and Response	OIG report was issued with five recommendations for APHIS. APHIS is in process of implementing the recommendations. Audit included ARS and FSIS.

In-Progress/On-going OIG Reports

ID	Title
33601-01-21	Plant Pest and Disease Management and Disaster Prevention Program - Audit started November 2019. OIG informed APHIS of its revised audit schedule. A preliminary close-out meeting was set for April 9, 2021. OIG plans to issue a Discussion Draft report in June 2021, hold an exit conference in July 2021, request an official written response to be due in August 2021, and issue the audit report in September 2021. Audit work continues.
33601-02-31	Animal Care Program Oversight of Dog Breeders - Audit started September 2019. OIG requested additional information on the Agency's Standard Operating Procedures regarding referrals related to animal cruelty. APHIS provided information in September 2020. OIG held its audit close-out meeting in November 2020. APHIS and OIG will have a follow-up meeting to continue discussion on OIG's potential recommendations concerning OIG's viewpoint of the intention of the Animal Welfare Act.
33601-03-23	Follow-up on APHIS Controls Over Licensing of Animal Exhibitors - Audit began in December 2019. OIG held its audit close-out meeting in September 2020 to discuss its findings and potential recommendations. On March 15, 2021, OIG provided APHIS with the official Management Decision memo accepting plans to implement four recommendations. On March 31, 2021, APHIS submitted documentation to close recommendation #3. APHIS is preparing to enter information into the USDA Audit Finding Tracking and Reporting (AFTR) System to request USDA Office of the Chief Financial Officer's assistance in getting this recommendation officially closed. Audit work continues.
33601-03-41	Cattle Health Program Disease Incident Response – Audit started October 2020. OIG briefed APHIS on the status of their work on March 29, 2021. OIG interviewed employees at the Florida Area Office and received much information from the Florida Department of Agriculture in March 2021. OIG anticipates issuing the final report by September 30, 2021. Audit work continues.
33601-04-23	Follow-Up on Smuggling, Interdiction and Trade Compliance - Audit started November 2019. OIG held its audit close-out meeting in October 2020 to discuss its findings and potential recommendations. OIG is planning to provide a Discussion Draft report in April 2021. Audit work continues.
33701-02-21	Controls Over Select Agents - Audit started October 2019. OIG held its audit close-out meeting in October 2020. APHIS requested additional time to review OIG's findings, recommendations, and to coordinate with the CDC on the recommendations. APHIS is working with CDC to formulate comments to be communicated to OIG on April 2021. Audit work continues.
50501-17-12	Security Over Select USDA Agencies' Networks and Systems – Audit started January 2018. There were no recommendations for APHIS.

ID	Title
50501-21-12	Data Encryption Controls Over Personally Identifiable Information on USDA Information Technology Systems - Audit started May 2018. There were no recommendations for APHIS.
50503-03-12	Fiscal Year 2020 Federal Information Security Modernization Act Audit - OIG and RMA Associates (a consulting group) held the exit conference in October 2020. During the course of the audit, APHIS was not one of the four USDA agencies selected for review. Audit is officially closed for APHIS.

Closed GAO Reports (Audit report has been issued and recommendation(s) have been implemented.)

ID	Date	Title	Result
102432	11/2017	Federal Efforts in Environmental Justice	Audit began November 2017. There were no recommendations for APHIS. The audit is officially closed for APHIS.
102916	08/2018	Federal Cybersecurity Requirements and Assessments for State Programs	Audit began August 2018. There were no recommendations for APHIS. The audit is officially closed for APHIS.
102947	07/2018	National Bio- and Agro-Defense Facility Operations Transfer	Audit began July 2018. There were no recommendations for APHIS. The audit is officially closed for APHIS.
103085	5/2019	U.S. Postal Service's Delivery Network	Audit began May 2019. There were no recommendations for APHIS. The audit is officially closed for APHIS.
103113	11/2018	National Biodefense Strategy	Audit began November 2018. There were no recommendations for APHIS. The audit is officially closed for APHIS.
103335	02/2018	USDA Business Centers	Audit began February 2018. The audit is officially closed for APHIS.
460640	09/2016	Improved Oversight of Dangerous Pathogens Needed to Mitigate Risk	GAO report was issued with five recommendations for APHIS and several Federal agencies. APHIS has implemented all recommendations. The audit is officially closed.

Completed GAO Reports

ID	Date	Title	Result
100267	03/2017	Federal Actions to Monitor and Control Antibiotic Resistance in Food and Animals	Audit includes APHIS, other USDA and Federal agencies. GAO issued the report in March 2017 with one recommendation with 3 parts for APHIS. APHIS provided documentation for closure on two parts of the recommendation and GAO provided APHIS with final closure on the two parts. For the last part, APHIS is developing a framework for deciding when on-farm investigations are warranted during outbreaks. The last part of the recommendation is ongoing.
101016	10/2017	Comparative Oversight of High-Containment Laboratories	Audit includes APHIS and other USDA and Federal agencies. GAO issued the report in October 2017 with six recommendations for APHIS. GAO has provided final closure on recommendations #1, #3, and #9 and has updated its website to reflect these implementations. APHIS provided documentation for closure on recommendations # 5, #7, and #11, in March 2021. We are waiting for Departmental clearance on the remaining three. Audit included ARS, FSIS, CDC, and HHS.

ID	Date	Title	Result
101985	05/2018	Multilateral Organizations Animal Use in Federal Research: Agencies Share Information, but Reporting and Data Quality Could Be Strengthened	GAO issued the final report in May 2018, with four recommendations for APHIS. APHIS implemented one recommendation and is in the process of implementing recommendations #1, #2, and #3. This audit also included ARS and the Office of the Chief Scientist.
102051	05/2019	USDA's Preparedness for Foot-and-Mouth Disease	Audit included other USDA agencies. GAO issued the report in March 2019 with two recommendations for APHIS. GAO issued the final report in March 2019, with two recommendations. APHIS is in the process of implementing the recommendations. The Audit included ARS, ERS, NIFA, OCS, and the Office of the Economist. APHIS is the lead agency for this audit.
291264	03/2016	High-Containment Laboratories: Comprehensive and Up-to-Date Policies and Stronger Oversight Mechanisms Needed to Improve Safety	GAO issued the report with five recommendations for APHIS. APHIS has implemented all recommendations and is awaiting final closure from GAO. Audit included APHIS and other USDA and Federal agencies.
361589	04/2016	Genetically Engineered Crops	The audit includes APHIS and USDA's National Agricultural Statistics Service. GAO issued the report April 2016 with one recommendation for APHIS. APHIS has implemented the recommendation and is awaiting final closure from GAO.

In-Progress/On-going GAO Reports

ID	Title
103549	Federal Government's Use of Internet of Things Technologies - Audit started December 2019. GAO issued its survey, and Federal agencies provided their completed surveys in January 2020. APHIS has completed the survey and awaits any further GAO requests for information. Audit is on-going.
103992	Animals for Testing, Research and Trauma Training - GAO requested follow-up information concerning information facilities place on the APHIS Form 7023d. GAO and APHIS' Animal Care held a teleconference in April 2020. A follow-up meeting was held in October 2020, for APHIS to provide a demonstration of how information/data is collected electronically in the Agency's e-File system. This audit is being performed by GAO's Defense Capabilities and Management Team. Audit is ongoing.
104292	Biodefense Preparedness and Response - GAO provided follow-up responses and has asked for APHIS' written responses by December 2020. APHIS provided written responses in November 2020. Audit is ongoing.
104351	Monitoring and Oversight of Response to the Coronavirus 2019 Pandemic - GAO started the audit for its November 2020 report to Congress. GAO provided APHIS with written questions and has requested that APHIS provided written responses by October 2020. In April 2021, GAO sent a notification letter for the newest four job codes listed in column two. Two have assigned numbers, and two are to be determined. Audit is ongoing. Food and Nutrition Service is the lead agency.
104338	Inspection of Imported Agriculture - In keeping with the new Departmental guidance, GAO provided written questions in lieu of holding an entrance teleconference. APHIS provided GAO written responses in August 2020. APHIS held a meeting to discuss GAO's Statement of Facts on March 31, 2021. Audit is ongoing.
104489	Welfare of Federal Working Dog - APHIS provided written responses to GAO questions in October 2020 and continues to provide written responses, as the lead agency. GAO expects to send APHIS the Statement of Facts by the end of May 2021. Audit is ongoing. Forest Service is included in the audit.

AVAILABLE FUNDS AND FTES

Table APHIS-1. Available Funds and FTEs (thousands of dollars, FTEs)

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	2022 Budget	FTE
Salaries and Expenses:								
Discretionary Appropriations	1,011,136	4,869	1,042,711	4,969	1,064,179	4,855	1,102,222	4,915
Citrus Greening General Provision 739	8,500	-	8,500	-	8,500	-	-	-
Cogongrass General Provision 797					5,312	-		
Subtotal Discretionary Funding	1,019,636	4,869	1,051,211	4,969	1,077,991	4,855	1,102,222	4,915
Mandatory Appropriations								
Farm Bill - Section 7721	70,350	26	70,575	26	70,725	26	70,725	26
Farm Bill - Section 12101	120,000	30	-	-	-	-	-	-
Farm Bill - Section 2408	37,500	200	-	-	-	-	-	-
Agricultural Quarantine Inspection User Fees								
Total Collections	826,724	1,325	602,569	855	291,543	1,325	560,415	1,325
AQI User Fees General Provision 799D	-	-	-	-	635,000	200	-	-
Supplemental Appropriations								
CARES Act	-	-	55,000	470	-	-	-	-
USMCA Lacey Act	-	-	4,000	-	-	-	-	-
Buildings and Facilities:								
Discretionary Appropriations	3,175	-	3,175	-	3,175	-	3,175	-
Trust Funds:								
Mandatory Appropriations	8,471	50	8,021	50	9,003	50	9,000	50
Foreign Service National Separation Liability Trust	2,778	-	-	-	400	-	400	-
Rescission	-	-	-	-	-2,312	-	-	-
Transfers In	90	-	90	-	-	-	-	-
Transfers Out	-539,000	-	-369,883	-	-533,104	-	-533,104	-
Total Adjusted Appropriation	1,549,724	6,500	1,424,759	6,370	1,552,421	6,456	1,212,834	6,316
Balance Available, SOY	457,880	516	599,199	996	401,571	745	516,038	948
Recoveries, Other	-9,564	-	21,415	-	-	-	-	-
Total Available	1,998,040	7,016	2,045,373	7,366	1,953,993	7,201	1,728,872	7,264
Lapsing Balances	-333	-365	-715	- 1,016	-	-	-	-
Transferred Balances	6,492	-	-163,221	-	-	-	-	-
Balance Available, EOY	-599,199	-996	-401,571	-745	-516,038	-948	-283,529	-898
Subtotal Obligations, APHIS	1,405,000	5,655	1,479,866	5,605	1,437,955	6,253	1,445,343	6,366
Obligations Under Other USDA Appropriations:								
Agricultural Marketing Service	23,823	-	26,870	51	23,800	51	23,800	51
Agricultural Research Service	36,378	-	37,301	39	31,200	39	31,200	39
Departmental Administration	9	-	-	-	-	-	-	-
Economic Research Service	-	-	27	-	-	-	-	-
Food Safety and Inspection Service	-	-	22	-	-	-	-	-
Foreign Agricultural Service	5,774	-	5,146	10	5,000	10	5,000	10
Forest Service	333	-	773	5	300	5	300	5
National Appeals Division	-	-	8	-	-	-	-	-
National Institute of Food and Agriculture	-	-	4,255	1	4,000	1	4,000	1
Natural Resources Conservation Service	-	-	28	-	-	-	-	-
Office of the Chief Information Officer	-	-	47	-	-	-	-	-
Office of Civil Rights	-	-	46	-	-	-	-	-
Office of the Secretary	-	-	201	-	-	-	-	-
Total, Other USDA	66,317	-	74,725	106	64,300	106	64,300	106
Total, Agriculture Appropriations	1,471,317	5,655	1,554,591	5,711	1,502,255	6,359	1,509,643	6,472

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	2022 Budget	FTE
Other Federal Funds:								
DOD, U.S. Air Force	17,195	-	12,921	110	13,200	110	13,200	110
DOD, Air National Guard	70	-	5,456	48	5,100	48	5,100	48
DOD, U.S. Navy	4,407	-	6,383	56	6,400	56	6,400	56
DOD, U.S. Marine Corps	1,227	-	1,286	10	1,200	10	1,200	10
DOD, U.S. Army	2,150	-	2,171	17	2,100	17	2,100	17
DOD, U.S. Army Corp of Engineers	1,789	-	2,115	17	2,800	17	2,800	17
DOD, Defense Threat Reduction Agency	21	-	34	-	20	-	20	-
Department of Energy	239	-	353	3	200	3	200	3
Department of Health and Human Services	22	-	19	-	20	-	20	-
DHS: for Coast Guard and other services and support	1,126	-	564	3	1,100	3	1,100	3
Federal Emergency Management Agency	9,160	-	242	-	300	-	300	-
National Aeronautics and Space Administration	216	-	351	3	200	3	200	3
USDOI, Geological Survey, National Park Service, Office of Insular Affairs	1,808	-	2,264	18	1,800	18	1,800	18
USDOI, Bureau of Land Management & Reclamation: for administrative and technical support	639	-	923	5	600	5	600	5
USDOI, Fish and Wildlife Services: for natural resources and endangered species	2,402	-	2,672	20	2,400	20	2,400	20
USDOT: Federal Aviation Administration	1,022	-	1,602	13	1,000	13	1,000	13
Department of Veterans Affairs	81	-	42	-	100	-	100	-
for miscellaneous services	1,499	-	1,607	12	1,500	12	1,500	12
GSA: for miscellaneous services	2	-	4	-	2	-	2	-
Other Federal Funds	788	418	613	4	800	4	800	4
Total, Other Federal	45,863	418	41,623	338	40,842	338	40,842	338
Non-Federal Funds:								
Funds from organizations, states, and local entities for wildlife, plant, and animal services support	64,447	660	66,253	663	66,400	672	66,400	647
Import-Export User Fees	44,411	353	41,235	286	42,500	325	42,500	290
Phytosanitary Certificate User Fees	19,282	139	21,229	138	21,321	140	21,321	139
Reimbursable Overtime	9,074	88	8,448	58	9,092	90	9,092	59
Veterinary Diagnostics User Fees	6,689	54	5,109	46	6,702	56	6,702	48
Other User Fees	2	-	2	-	2	-	2	-
Total, Non-Federal	143,905	1,294	142,277	1,191	146,017	1,283	146,017	1,183
Total, APHIS	1,661,085	7,367	1,738,490	7,240	1,689,114	7,980	1,696,502	7,993

PERMANENT POSITIONS BY GRADE AND FTE'S

Table APHIS-2. Permanent Positions by Grade and FTEs

Item	Hdqts	Field	2019 Actual Total	Hdqts	Field	2020 Actual Total	Hdqts	Field	2021 Enacted Total	Hdqts	Field	2022 Budget Total
SES	28	9	37	30	8	38	31	13	44	31	13	44
GS-15	78	67	145	85	58	143	80	61	141	80	61	141
GS-14	338	299	637	349	325	674	334	317	650	333	317	650
GS-13	289	541	830	297	588	885	301	533	833	295	525	820
GS-12	208	981	1,189	182	924	1,106	280	971	1,251	280	971	1,251
GS-11	93	761	854	96	747	843	98	765	862	98	765	862
GS-10	1	8	9	1	8	9	1	12	13	1	12	13
GS-9	72	417	489	82	475	557	75	469	543	75	469	543
GS-8	10	256	266	5	245	250	10	274	284	10	274	284
GS-7	53	561	614	55	624	679	61	601	662	61	601	662
GS-6	5	185	190	9	174	183	8	161	169	8	161	169
GS-5	8	68	76	10	147	157	8	105	113	8	105	113
GS-4	7	21	28	4	22	26	15	18	32	15	18	32
GS-3	-	11	11	-	8	8	3	14	17	3	14	17
GS-2	-	-	-	-	-	-	-	-	-	-	-	-
GS-1	-	-	-	-	-	-	-	1	1	-	1	1
Other Graded	13	101	114	19	102	121	15	112	127	15	112	127
Ungraded	-	-	-	-	-	-	-	-	-	-	-	-
Total Permanent	1,203	4,286	5,489	1,224	4,455	5,679	1,318	4,425	5,742	1,312	4,417	5,729
Unfilled, EOY	-	-	-	-	-	-	-	-	-	-	-	-
Total Perm. FT EOY	1,203	4,286	5,489	1,224	4,455	5,679	1,318	4,425	5,742	1,318	4,425	5,729
FTE	1,434	5,933	7,367	1,409	5,831	7,240	1,553	6,427	7,980	1,555	6,438	7,993

VEHICLE FLEET

Motor Vehicle Fleet

APHIS uses vehicles to deliver mission critical services. The Agency's veterinarians, animal health technicians, inspectors, plant protection and quarantine officers, wildlife biologists, and other technical personnel use motor vehicles in their daily responsibilities, which entail travel between inspection sites, farms, ranches, ports, nurseries, and other commercial firms. In some cases, APHIS' cooperators use Agency vehicles as authorized in program cooperative agreements.

To maximize the life span of vehicles, operators are required to keep historical maintenance records and submit the vehicles' operational and cost data for review, and report on the vehicle's condition and usage statistics at least once a year. Periodic maintenance surveys and reviews of consolidated vehicle fleet data ensure optimal use of each vehicle in the fleet.

In FY 2020 the Marketing and Regulatory Programs (MRP) mission area tested the use of telematics for 50 vehicles to eliminate the need to manually collect vehicle's utilization data. MRP is looking to use telematics to schedule and track vehicle maintenance records, and to collect data on odometer readings, days used, and fuel consumption, among other data points.

Replacement Criteria

APHIS replaces vehicles in accordance with Title 41, CFR § 102–34.270. Agency programs replace and retire vehicles using data on utilization, age, condition, and funding availability. The average age of APHIS' vehicle fleet is six years. APHIS has implemented efforts to both increase the number of alternative fuel vehicles and extend the life cycle of each vehicle.

Reductions to Fleet

APHIS ended FY 2020 with 4,273 vehicles (leased and owned), which is a reduction of 190 vehicles. However, APHIS' fleet will increase by 74 vehicles in FY 2021, after all vehicles procured toward the end of FY 2020 have been delivered. With the increase, APHIS will still be under the annual vehicle inventory target approved by the USDA which is 4,394.

The projected number of vehicles for FY 2022 will decrease slightly. The Agency plans to only purchase replacement vehicles and will stay within the annual vehicle inventory cap. Fleet additions are determined and approved on a case-by-case basis by the Deputy Administrator for Marketing and Regulatory Programs Business Services.

Size, Composition, and Annual Costs of Motor Vehicle Fleet [a]

Fiscal Year	Sedans and Station Wagons	Lt. SUVs and Vans	Lt. Trucks (4x2)	Lt. Trucks (4x4)	Medium Duty Vehicles	Heavy Duty Vehicles	Total Vehicles	Annual Operating Costs [b]
2019	220	1,031	248	2,046	904	14	4,463	$19,313
Change	-27	-55	-24	-80	-3	-1	-190	-1,136
2020	193	976	224	1,966	901	13	4,273	18,177
Change	-6	+17	-6	+49	+19	+1	+74	+1,754
2021	187	993	218	2,015	920	14	4,347	19,931
Change	-1	-4	0	-26	-9	0	-40	-398
2022	186	989	218	1,989	911	14	4,307	19,533

[a] Vehicle count includes those owned by agency and leased from commercial sources or GSA.
[b] Excludes acquisition costs and gains from sale of vehicles as shown in FAST.

Statement of Proposed Purchase of Passenger Motor Vehicles

Fiscal Year	Net Active Fleet, SOY	Disposals	Replacements	Additions	Total Acquisitions	Net Active Fleet, EOY
2019	246	34	8	0	8	220
2020	220	27	0	0	0	193
2021	193	10	4	0	4	187
2022	187	6	5	0	5	186

Aircraft
APHIS uses aircraft to conduct mission critical activities such as aerial resource and surveillance surveys, aerial application tests, equipment demonstration and testing, implementation of methods for the control and/or eradication of destructive plant pests or wildlife to reduce damage to agricultural crops, among others.

The annual appropriations act provides APHIS with authority to purchase, replace, operate, and maintain aircraft. The Agency replaces aircraft when necessary to maintain fleet safety and efficient operating conditions.

The APHIS aircraft fleet consists of 73 aircraft of which there are 7 operable aircraft for domestic plant pest and disease management programs, and 66 aircraft used for the wildlife damage management programs. Of the 66 aircraft used for the wildlife damage management programs, 60 are owned, 4 are borrowed from State cooperators, and 2 are rented. Of the 60 owned aircraft, 4 of them are non-operational. APHIS uses the non-operational aircraft for parts.

SHARED FUNDING PROJECTS

Table APHIS-3. Shared Funding Projects (dollars in thousands)

Item	2019 Actual	2020 Actual	2021 Enacted	2022 Budget
Working Capital Fund:				
Administrative Services:				
Material Management Service	981	880	1,140	852
Mail and Reproduction Services	173	171	174	102
Integrated Procurement Systems	1,602	1,605	1,631	1,566
Procurement Operations Services	51	75	92	58
Human Resources Enterprise Management Systems	106	120	153	153
Subtotal	2,913	2,851	3,190	2,731
Communications:				
Creative Media & Broadcast Center	48	333	205	173
Finance and Management:				
National Finance Center	2,216	2,130	2,232	2,226
Internal Control Support Services	118	150	116	116
Financial Shared Services	9,803	12,085	10,438	10,183
Subtotal	12,137	14,365	12,785	12,524
Information Technology:				
Client Experience Center	5,328	20,089	42,321	42,391
Department Administration Information Technology Office	-	10	361	100
Digital Infrastructure Services Center	10,693	10,901	13,840	15,625
Enterprise Network Services	5,408	7,369	9,342	10,292
Subtotal	21,429	38,369	65,865	68,407
Correspondence Management Services				
Office of the Executive Secretariat	1,371	1,379	991	986
Total, Working Capital Fund	37,898	57,297	83,037	84,823
Department-Wide Shared Cost Programs:				
Advisory Committee Liaison Services	5	6	6	6
Agency Partnership Outreach	590	614	576	-
Honor Awards	1	1	1	-
Human Resources Self-Service Dashboard	46	47	-	-
Medical Services	7	4	-	-
Office of Customer Experience	199	234	726	729
Personnel and Document Security Program	189	194	226	-
Physical Security	-	460	348	-
Security Detail	331	363	369	349
Security Operations Program	806	456	520	-
TARGET Center	94	91	95	-
TARGET Center NCR Interpreting Services	-	-	202	-
USDA Enterprise Data Analytics Services	-	424	401	-
Total, Department-Wide Reimbursable Programs	2,268	2,894	3,469	1,084
E-Gov:				
Budget Formulation and Execution Line of Business	6	7	8	8
Enterprise Human Resources Integration	142	-	-	-
E-Rulemaking	57	29	44	54

Item	2019 Actual	2020 Actual	2021 Enacted	2022 Budget
Financial Management Line of Business	10	11	12	12
Geospatial Line of Business	13	13	13	13
Grants.gov	1	-	-	-
Human Resources Line of Business	22	23	24	24
Integrated Acquisition Environment	149	155	110	110
Total, E-Gov	400	237	210	220
Agency Total	40,566	60,428	86,716	86,127

ACCOUNT 1: SALARIES AND EXPENSES

APPROPRIATIONS LANGUAGE

The appropriations language follows (new language underscored; deleted matter enclosed in brackets):

For necessary expenses of the Animal and Plant Health Inspection Service, including up to $30,000 for representation allowances and for expenses pursuant to the Foreign Service Act of 1980 (22 U.S.C. 4085), [$1,064,179,000]$1,102,222,000, of which [$478,000]$491,000, to remain available until expended, shall be available for the control of outbreaks of insects, plant diseases, animal diseases and for control of pest animals and birds ("contingency fund") to the extent necessary to meet emergency conditions; of which [$13,597,000]$13,725,000, to remain available until expended, shall be used for the cotton pests program, including cost share purposes or for debt retirement for active eradication zones; of which [$38,093,000]$38,486,000, to remain available until expended, shall be for Animal Health Technical Services; of which [$2,009,000]$2,040,000, shall be for activities under the authority of the Horse Protection Act of 1970, as amended (15 U.S.C. 1831); of which [$63,213,000]$63,833,000, to remain available until expended, shall be used to support avian health; of which $4,251,000, to remain available until expended, shall be for information technology infrastructure; of which [$196,553,000]$209,342,000, to remain available until expended, shall be for specialty crop pests; of which, [$10,942,000]$14,137,000, to remain available until expended, shall be for field crop and rangeland ecosystem pests; of which [$19,620,000]$19,782,000, to remain available until expended, shall be for zoonotic disease management; of which [$41,268,000]$38,380,000, to remain available until expended, shall be for emergency preparedness and response; of which [$60,456,000]$61,217,000, to remain available until expended, shall be for tree and wood pests; of which [$5,736,000]$5,751,000, to remain available until expended, shall be for the National Veterinary Stockpile; of which $10,000,000, to remain available until expended, shall be for invasive species control in coordination with other Federal agencies and the Civilian Climate Corps; of which up to $1,500,000, to remain available until expended, shall be for the scrapie program for indemnities; of which $2,500,000, to remain available until expended, shall be for the wildlife damage management program for aviation safety: *Provided*, That of amounts available under this heading for wildlife services methods development, $1,000,000 shall remain available until expended: *Provided further*, That of amounts available under this heading for the screwworm program, $4,990,000 shall remain available until expended; of which [$20,252,000]$24,307,000, to remain available until expended, shall be used to carry out the science program and transition activities for the National Bio and Agro-Defense Facility located in Manhattan, Kansas: *Provided further*, That no funds shall be used to formulate or administer a brucellosis eradication program for the current fiscal year that does not require minimum matching by the States of at least 40 percent: *Provided further,* That this appropriation shall be available for the purchase, replacement, operation, and maintenance of aircraft: *Provided further*, That in addition, in emergencies which threaten any segment of the agricultural production industry of the United States, the Secretary may transfer from other appropriations or funds available to the agencies or corporations of the Department such sums as may be deemed necessary, to be available only in such emergencies for the arrest and eradication of contagious or infectious disease or pests of animals, poultry, or plants, and for expenses in accordance with sections 10411 and 10417 of the Animal Health Protection Act (7 U.S.C. 8310 and 8316) and sections 431 and 442 of the Plant Protection Act (7 U.S.C. 7751 and 7772), and any unexpended balances of funds transferred for such emergency purposes in the preceding fiscal year shall be merged with such transferred amounts: *Provided further*, That appropriations hereunder shall be available pursuant to law (7 U.S.C. 2250) for the repair and alteration of leased buildings and improvements, but unless otherwise provided the cost of altering any one building during the fiscal year shall not exceed 10 percent of the current replacement value of the building.

In fiscal year [2021]2022, the agency is authorized to collect fees to cover the total costs of providing technical assistance, goods, or services requested by States, other political subdivisions, domestic and international organizations, foreign governments, or individuals, provided that such fees are structured such that any entity's liability for such fees is reasonably based on the technical assistance, goods, or services provided to the entity by the agency, and such fees shall be reimbursed to this account, to remain available until expended, without further appropriation, for providing such assistance, goods, or services.

The first change (lines 3, 6, 8-10, 12 -13, 15-18 and 26) deletes 2021 appropriation amounts and replaces it with the 2022 requests.
The second change (line 19 and 20) language addresses Civilian Climate Corps funding, a new program with funding to remain available until expended.
The third change (line 43) in language deletes 2021 and replaces it with 2022.

LEAD-OFF TABULAR STATEMENT

Table APHIS-4. Lead-Off Tabular Statement (In dollars)

Item	Amount
2021 Enacted	$1,064,179,000
Change in Appropriation	+ 38,043,000
Budget Estimate, 2022	1,102,222,000

PROJECT STATEMENTS

Table APHIS-5. Project Statement- Appropriation (thousands of dollars, FTE)

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	Inc. or Dec.	FTE	Chg Key	2022 Budget	FTE
Discretionary Appropriations:											
Safeguarding and Emergency Preparedness/Response											
Animal Health Technical Services	37,857	156	37,857	156	38,093	151	393	-	1	38,486	151
Aquatic Animal Health	2,253	13	2,253	13	2,272	13	34	-	2	2,306	13
Avian Health	62,840	247	62,840	247	63,213	238	620	-	3	63,833	238
Cattle Health	96,500	473	104,500	508	105,216	493	1,284	-	4	106,500	493
Equine, Cervid & Small Ruminant Health	20,800	120	26,500	120	28,982	116	2,302	-	5	31,284	116
National Veterinary Stockpile	5,725	7	5,725	7	5,736	6	15	-	6	5,751	6
Swine Health	24,800	146	24,800	146	25,020	142	370	-	7	25,390	142
Veterinary Biologics	16,417	101	17,417	108	20,570	126	328	-	8	20,898	126
Veterinary Diagnostics	50,140	158	57,340	172	56,979	167	435	29	9	57,414	196
Zoonotic Disease Management	16,523	64	16,523	64	19,620	62	162	-	10	19,782	62
Subtotal, Animal Health	333,855	1,485	355,755	1,541	365,701	1,514	5,943	29		371,644	1,543
Agricultural Quarantine Inspection (Appropriated)	32,330	372	32,330	372	32,893	367	956	-	11	33,849	367
Cotton Pests	11,520	51	11,520	51	13,597	49	128	-	12	13,725	49
Field Crop & Rangeland Ecosystems Pests	11,826	77	13,826	77	10,942	75	3,195	1	13	14,137	76
Pest Detection	27,446	190	27,446	190	27,733	186	485	-	14	28,218	186
Plant Protection Methods Development	20,686	131	20,686	131	20,884	128	333	-	15	21,217	128
Specialty Crop Pests	186,013	753	192,013	793	196,553	768	12,789	33	16	209,342	801
Tree & Wood Pests	60,000	301	60,000	301	60,456	292	761	-	17	61,217	292
Subtotal, Plant Health	349,821	1,875	357,821	1,915	363,058	1,865	18,647	34		381,705	1,899
Wildlife Damage Management	108,376	589	109,756	589	111,647	574	1,495	-	18	113,142	574
Wildlife Services Methods Development	18,856	125	18,856	125	21,046	122	3,317	6	19	24,363	128
Subtotal, Wildlife Services	127,232	714	128,612	714	132,693	696	4,812	6		137,505	702
Animal & Plant Health Regulatory Enforcement	16,224	116	16,224	116	16,400	114	297	-	20	16,697	114
Biotechnology Regulatory Services	18,875	96	18,875	96	19,020	93	242	-	21	19,262	93
Subtotal, Regulatory Services	35,099	212	35,099	212	35,420	207	539	-		35,959	207
Civilian Climate Corps	-	-	-	-	-	-	10,000	5	22	10,000	5
Contingency Fund	470	5	470	5	478	5	13	-	23	491	5
Emergency Preparedness & Response	40,966	199	40,966	199	41,268	193	-2,888	-14	24	38,380	179
Subtotal, Emergency Management	41,436	204	41,436	204	41,746	198	7,125	-9		48,871	189
Subtotal Safeguarding and Emergency Preparedness/Response	887,443	4,490	918,723	4,586	938,618	4,480	37,066	60		975,684	4,540
Safe Trade and International Technical Assistance											
Agriculture Import/Export	15,599	81	15,599	81	15,722	79	206	-	25	15,928	79
Overseas Technical & Trade Operations	24,115	55	24,115	55	24,198	52	135	-	26	24,333	52
Subtotal Safe Trade and International Technical Assistance	39,714	136	39,714	136	39,920	131	341	-		40,261	131

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	Inc. or Dec.	FTE	Chg Key	2022 Budget	FTE
Animal Welfare											
Animal Welfare	31,310	232	31,310	232	31,661	228	595	-	27	32,256	228
Horse Protection	705	6	1,000	10	2,009	12	31	-	28	2,040	12
Subtotal, Animal Welfare	32,015	238	32,310	242	33,670	240	626	-		34,296	240
Agency Wide Programs											
APHIS Information Technology Infrastructure	4,251	-	4,251	-	4,251	-	-	-	29	4,251	-
Physical/Operational Security	5,146	5	5,146	5	5,153	4	10	-	30	5,163	4
Rental and DHS Security Payments	42,567	-	42,567	-	42,567	-	-	-	31	42,567	-
Subtotal, Agency Management	51,964	5	51,964	5	51,971	4	10	-		51,981	4
Subtotal, Appropriated	1,011,136	4,869	1,042,711	4,969	1,064,179	4,855	38,043	60		1,102,222	4,915
General Provisions:											
General Provision 757 - Citrus Greening	8,500	-	-	-	-	-	-	-		-	-
General Provision 744 - Citrus Greening	-	-	8,500	-	-	-	-	-		-	-
General Provision 739 - Citrus Greening	-	-	-	-	8,500	-	-8,500	-		-	-
General Provision 797 - Cogongrass	-	-	-	-	5,312	-	-5,312	-		-	-
Transfers In:											
DHS - National Bio and Agro-Defense Facility	6,492	-	-	-	-	-	-	-		-	-
Congressional Relations	90	-	90	-	-	-	-	-		-	-
Subtotal, Discretionary Funding	1,026,218	4,869	1,051,301	4,969	1,077,991	4,855	24,231	60		1,102,222	4,915
Mandatory Appropriations:											
Farm Bill, Section 7721	75,000	26	75,000	26	75,000	26	-	-		75,000	26
Farm Bill, Section 2408	37,500	200	-	-	-	-	-	-		-	-
Farm Bill, Section 12101	120,000	30	-	-	-	-	-	-		-	-
Sequester P.L. 113-6…Farm Bill	-4,650	-	-4,425	-	-4,275	-	-	-		-4,275	-
Subtotal, Farm Bill	227,850	256	70,575	26	70,725	26	-	-		70,725	26
General Provision 799D - AQI User Fees	-	-	-	-	635,000	200	635,000	-200		-	-
Less: Transfer to DHS	-	-	-	-	-533,104	-	533,104	-		-	-
Agricultural Quarantine Inspection User Fees:											
Total Collections	825,524	1,325	586,479	855	273,731	1,325	304,242	-		577,972	1,325
Less: Transfer to DHS	-539,000	-	-369,883	-	-	-	-533,104	-		-533,104	-
Sequester P.L. 113-6 ...AQI	-49,290	-	-33,200	-	-15,387	-	-17,557	-		-32,944	-
Sequester Restored…AQI User Fees	50,490	-	49,290	-	33,200	-	-17,813	-		15,387	-
Subtotal, AQI User Fees (APHIS)	287,724	1,325	232,687	855	291,543	1,325	-264,232	-		27,312	1,325
Trust Funds	8,466	50	8,017	50	9,000	50	-	-		9,000	50
Trust Funds Sequester Restored P.L. 113-6	87	-	82	-	78	-	-3	-		75	-
Foreign Service National Separation Liability Trust	2,778	-	-	-	400	-	-	-		400	-
Subtotal, Mandatory Funding	526,904	1,631	311,360	931	473,642	1,601	-366,131	-200		107,512	1,401

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	Inc. or Dec.	FTE	Chg Key	2022 Budget	FTE
Supplemental Appropriations:											
CARES Act	-	-	55,000	470	-	-	-	-		-	-
USMCA Lacey Act	-	-	4,000	-	-	-	-	-		-	-
Subtotal, Supplemental Funding	-	-	59,000	470	-	-	-	-		-	-
Total Adjusted Appropriations	1,553,122	6,500	1,421,661	6,370	1,551,633	6,456	-341,900	-140		1,209,734	6,316
Authority from Offsetting collections	273,962	1,785	221,643	1,785	225,200	1,785	2,000	-		227,200	1,785
Transfers Out	-350	-	-163,221	-	-	-	-	-		-	-
Rescission	-	-	-	-	-2,312	-	2,312	-		-	-
Sequestration P.L. 113-6….Trust Funds	-82	-	-78	-	-75	-	-	-		-75	-
Recoveries	9,243	-	25,567	-	-	-	-	-		-	-
Recoveries, Trust Funds	38	-	105	-	-	-	-	-		-	-
Bal. Available, SOY	561,576	625	731,925	1,105	496,867	924	92,210	261		589,077	1,185
Total Available	2,397,510	8,910	2,237,603	9,260	2,271,313	9,165	-245,378	121		2,025,936	9,286
Lapsing Balances	-6,416	-438	-6,434	1,096	-	-	-	-		-	-
Bal. Available, EOY	-731,925	1,105	-496,867	-924	-589,077	1,185	257,143	-108		-331,934	1,293
Total Obligations	1,659,169	7,367	1,734,302	7,240	1,682,236	7,980	11,765	13		1,694,001	7,993

Table APHIS-6. Project Statement- Obligations (thousands of dollars, FTE)

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	Inc. or Dec.	FTE	2022 Budget	FTE
Discretionary Obligations:										
Safeguarding and Emergency Preparedness/Response										
Animal Health Technical Services	35,126	120	46,372	120	40,007	151	-1,521	-	38,486	151
Aquatic Animal Health	2,250	13	2,253	13	2,272	13	34	-	2,306	13
Avian Health	58,315	232	75,934	235	63,274	238	-441	-	62,833	238
Cattle Health	96,715	434	105,849	436	105,142	493	158	-	105,300	493
Equine, Cervid & Small Ruminant Health	20,269	106	26,498	106	28,981	116	1,305	-	30,286	116
National Veterinary Stockpile	9,273	7	5,270	7	6,400	6	-396	-	6,004	6
Swine Health	24,770	131	24,794	131	25,020	142	370	-	25,390	142
Veterinary Biologics	16,404	92	17,415	97	20,570	126	328	-	20,898	126
Veterinary Diagnostics	41,389	131	53,603	135	56,816	167	4,598	29	61,414	196
Zoonotic Disease Management.	16,125	64	17,914	64	20,003	62	-221	-	19,782	62
Subtotal, Animal Health	320,635	1,330	375,901	1,344	368,485	1,514	4,213	29	372,699	1,543
Agricultural Quarantine Inspection (Appropriated)	32,298	344	32,321	344	32,893	367	956	-	33,849	367
Cotton Pests	11,965	28	12,469	28	12,032	49	1,693	-	13,725	49
Field Crop & Rangeland Ecosystems Pests	11,082	53	12,963	53	11,284	75	3,853	1	15,137	76
Pest Detection	27,418	129	27,436	129	27,733	186	485	-	28,218	186
Plant Protection Methods Development	20,664	110	20,679	110	20,884	128	333	-	21,217	128
Specialty Crop Pests	198,971	629	221,296	645	196,966	768	1,376	33	198,342	801
Tree & Wood Pests	57,186	235	63,183	235	61,377	292	-160	-	61,217	292
Subtotal, Plant Health	359,584	1,528	390,348	1,544	363,169	1,865	8,536	34	371,705	1,899
Wildlife Damage Management	107,527	541	111,054	546	111,807	574	1,335	-	113,142	574
Wildlife Services Methods Development	18,812	98	19,082	98	20,371	122	3,992	6	24,363	128
Subtotal, Wildlife Services	126,339	639	130,136	644	132,178	696	5,327	6	137,505	702
Animal & Plant Health Regulatory Enforcement	16,151	95	16,202	95	16,400	114	297	-	16,697	114
Biotechnology Regulatory Services	18,854	90	18,870	90	19,020	93	242	-	19,262	93
Subtotal, Regulatory Services	35,005	185	35,072	185	35,420	207	539	-	35,959	207
Civilian Climate Corps	-	-	-	-	-	-	5,000	3	5,000	3
Contingency Fund	-	-	442	-	-	-	-	-	-	-
Emergency Preparedness & Response	40,610	199	47,796	199	41,274	193	106	-14	41,380	179
Subtotal, Emergency Management	40,610	199	48,238	199	41,274	193	5,106	-11	46,380	182
Subtotal Safeguarding and Emergency Preparedness/Response	882,174	3,881	979,694	3,916	940,527	4,475	23,721	58	964,248	4,533
Safe Trade and International Technical Assistance										
Agriculture Import/Export	15,585	74	15,588	74	15,722	79	206	-	15,928	79
Overseas Technical & Trade Operations	24,090	51	24,108	51	24,198	52	135	-	24,333	52
Subtotal Safe Trade and International Technical Assistance	39,675	125	39,696	125	39,920	131	341	-	40,261	131

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	Inc. or Dec.	FTE	2022 Budget	FTE
Animal Welfare										
Animal Welfare	31,245	201	31,302	201	31,661	228	595	-	32,256	228
Horse Protection	701	6	998	6	2,009	12	31	-	2,040	12
Subtotal, Animal Welfare	31,947	207	32,300	207	33,670	240	626	-	34,296	240
Agency Wide Programs										
APHIS Information Technology Infrastructure	5,428	-	4,743	-	4,175	-	76	-	4,251	-
Physical/Operational Security	5,141	3	5,143	3	5,153	4	10	-	5,163	4
Rental and DHS Security Payments	42,512	-	42,559	-	42,567	-	-	-	42,567	-
Subtotal, Agency Management	53,080	3	52,445	3	51,895	4	86	-	51,981	4
Subtotal, Appropriated	1,006,876	4,216	1,104,135	4,251	1,066,012	4,850	24,774	58	1,090,786	4,908
General Provisions:										
General Provision 797 - Cogongrass	-	-	-	-	2,500	-	312	-	2,812	-
General Provision 739 - Citrus Greening	-	-	-	-	8,500	-	-8,500	-	-	-
General Provision 744 - Citrus Greening	-	-	8,500	-	-	-	-	-	-	-
General Provision 757 - Citrus Greening	7,815	-	685	-	-	-	-	-	-	-
General Provision 771 - Citrus Greening	7,500	-	-	-	-	-	-	-	-	-
Subtotal, Discretionary Obligations	1,022,191	4,216	1,113,320	4,251	1,077,012	4,850	16,586	58	1,093,597	4,908
Mandatory Appropriations:										
Farm Bill, Section 7721	70,508	21	70,037	21	70,741	26	-16	-	70,725	26
Farm Bill, Section 2408	3,552	-	6,627	33	6,200	76	-1,200	-24	5,000	52
Farm Bill, Section 12101	-	-	37,646	4	35,000	6	-	-1	35,000	5
Agricultural Quarantine Inspection User Fees	244,507	1,266	171,849	794	227,800	1,225	101,896	-100	125,904	1,125
General Provision 799D - AQI User Fees	-	-	-	-	-	-	101,896	200	101,896	200
Trust Funds	9,130	35	7,320	34	9,000	50	-	-	9,000	50
Foreign Service National Separation Liability Trust	2,778	-	0	-	400	-	-	-	400	-
Subtotal, Mandatory Obligations	330,474	1,322	293,481	886	349,141	1,383	-1,216	75	347,925	1,458
Supplemental Appropriations:										
CARES Act	-	-	55,000	429	-	-	-	-	-	-
USMCA Lacey Act	-	-	2,000	-	680	-	640	-	1,320	-
Subtotal, Supplemental Obligations	-	-	57,000	429	680	-	640	-	1,320	-
Other Obligations:										
CCC	37,664	117	7,896	39	3,000	20	-3,000	-20	-	-
Obligations from Offsetting Collections	256,085	1,712	258,624	1,635	251,159	1,727	-	-100	251,159	1,627
Homeland Security, HUB Relo & Department	90	-	90	-	-	-	-	-	-	-
Department of Homeland Security - NBAF	6,490	-	-	-	-	-	-	-	-	-
H1N1	408	-	1,114	-	1,245	-	-1,245	-	-	-
Refunds for equipment sold	5,767	-	2,778	-	-	-	-	-	-	-

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	Inc. or Dec.	FTE	2022 Budget	FTE
Total Obligations	1,659,169	7,367	1,734,302	7,240	1,682,236	7,980	11,765	13	1,694,001	7,993
Lapsing Balances	6,416	438	6,434	1,096	-	-	-	-	-	-
Balances Available, EOY:										
Discretionary										
Animal Health Technical Services	14,987	46	6,914	46	5,000	46	-	-	5,000	46
Avian Health	20,031	30	8,061	30	8,000	30	1,000	-	9,000	30
Cattle Health	2,962	-	1,726	-	1,800	-	1,200	-	3,000	-
Equine Cervid & Small Ruminant Health	501	-	501	-	502	-	998	-	1,500	-
National Veterinary Stockpile	4,195	3	4,917	3	4,253	3	-253	-	4,000	3
Veterinary Diagnostics	12,062	-	15,837	-	16,000	-	-4,000	-	12,000	-
Zoonotic Disease Management	5,540	-	4,383	-	4,000	-	-	-	4,000	-
Emergency Preparedness & Response	19,335	15	13,006	15	13,000	15	-3,000	-	10,000	15
Cotton Pests	1,309	31	435	11	2,000	11	-	-	2,000	11
Field Crop & Rangeland Ecosystems Pests	3,360	34	4,342	34	1,688	34	-1,000	-	688	34
Specialty Crop Pests	25,608	198	4,413	58	4,000	58	11,000	-	15,000	58
Tree & Wood Pests	9,521	102	6,921	82	6,000	82	-	-	6,000	82
Civilian Climate Corps	-	-	-	-	-	-	5,000	2	5,000	2
Wildlife Damage Management	4,161	-	3,160	-	3,000	-	-	-	3,000	-
Wildlife Services Methods Development	1,040	-	825	-	1,500	-	-	-	1,500	-
Contingency Funds	2,349	10	2,377	15	2,855	20	491	5	3,346	25
APHIS Information Technology Infrastructure	600	-	124	-	200	-	-	-	200	-
HUB Relocation	6	-	6	-	6	-	-	-	6	-
Commodity Credit Corporation (CCC)	92,586	207	86,426	168	83,426	148	-	-	83,426	148
General Provision 757 - Citrus Greening	685	-	-	-	-	-	-	-	-	-
General Provision 744 - Citrus Greening	-	-	1	-	-	-	-	-	-	-
General Provision 797 - Cogongrass	-	-	-	-	2,812	-	-2,812	-	-	-
CARES Act Supplemental	-	-	-	-	-	-	-	-	-	-
USMCA Lacey Act	-	-	2,000	-	1,320	-	-1,320	-	-	-
H1N1 Supplemental	2,358	-	1,245	-	-	-	-	-	-	-
Offsetting Collections	177,561	109	139,233	179	113,274	237	-23,959	158	89,315	395
Mandatory										
Agricultural Quarantine Inspection User Fees (AQI) Operating/Reserved	168,556	75	70,314	75	134,057	175	-98,592	200	35,465	375
General Provision 799D - AQI User Fees	-	-	-	-	101,896	200	101,896	-200	-	-
Farm Bill Section 10202	20	-	16	-	-	-	-	-	-	-
Farm Bill Section 12101	120,000	30	82,354	26	47,354	20	-35,000	-5	12,354	15
Farm Bill Section 2408	33,948	200	27,881	167	21,681	91	-5,000	-52	16,681	39
Trust Funds	8,644	15	9,449	15	9,452	15	1	-	9,453	15
Total Bal. Available, EOY	731,925	1,105	496,867	924	589,077	1,185	257,143	108	331,934	1,293

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	Inc. or Dec.	FTE	2022 Budget	FTE
Total Available	2,397,510	8,910	2,237,603	9,260	2,271,313	9,165	245,378	121	2,025,936	9,286
Rescission	-	-	-	-	2,312	-	-2,312	-	-	-
Total Transfers In	-6,582	-	-	-	-	-	-	-	-	-
Total Transfers Out	350	-	163,221	-	-	-	-	-	-	-
Sequestration P.L. 113-6….Trust Funds	82	-	78	-	75	-	-	-	75	-
Recoveries	-9,243	-	-25,567	-	-	-	-	-	-	-
Recoveries, Trust Funds	-38	-	-105	-	-	-	-	-	-	-
Bal. Available, SOY	-561,576	-625	-731,925	1,105	-496,867	-924	-92,210	-261	-589,077	1,185
Total Appropriation	1,820,502	8,285	1,643,304	8,155	1,776,833	8,241	339,900	-140	1,436,934	8,101

JUSTIFICATIONS

A large portion of APHIS' budget is in support of personnel compensation. The request includes a total of $12,645,000 to cover increases in pay for associated employees including $8,608,000 to cover the pay increase, and $4,037,000 for additional benefit compensation.

An increase of $8,608,000 for pay costs which will allow APHIS to continue to meet its mission to safeguard the health, welfare, and value of American agriculture and natural resources. This critical increase is needed to support and maintain current staffing levels to meet the demands and statutory requirements imposed on APHIS, including the Agency's emergency response capabilities for pest and disease outbreaks. Without the pay cost increase APHIS would need to reduce a number of program activities, including reductions in Federal contributions to support States and other cooperators in combatting animal and plant pests and diseases.

An increase of $4,037,000 for the Department's increased contribution to the Federal Employees Retirement System (FERS). This increase will cover the expenses for the mandated increase of USDA's contribution to FERS. These increases will impact approximately 4,800 employees' retirement packages.

A net increase of $37,066,000 and 60 staff years for Safeguarding and Emergency Preparedness/Response –

A net increase of $5,943,000 and 29 for Safeguarding and Emergency Preparedness/Response – Animal Health

(1) Animal Health Technical Services: An increase of $393,000 and 0 staff years ($38,093,000 and 151 staff years available in the FY 2021 Appropriation)

APHIS' Animal Health Technical Services (AHTS) program develops and enhances tools for acquiring and managing information vital for improving global market access for U.S. livestock and animal products. Incorporating national surveillance standards into data management applications allows the program to compile animal health information nationally, thus leveraging the work of animal health professionals nationwide to meet local, State, and national veterinary health objectives. The National Veterinary Accreditation Program (NVAP) trains private veterinarians to help producers meet export requirements and disease program standards, allowing U.S. animals and animal products to compete in the global economy.

The national animal disease traceability (ADT) framework allows Federal, State, local, Tribal, and private animal health professionals to work together to identify diseased animals, quickly trace their movements, and control disease spread to protect the livestock industry, whose production value, including milk production, was approximately $105 billion in FY 2020 (National Agricultural Statistics Service, USDA). The framework enables animal health officials to trace an animal from the location of official identification to their last location, which is often the termination point or slaughter plant. Knowledge of the location of diseased and at-risk animals helps preserve animal health; enables a rapid response in case of an animal disease event; reduces animal illnesses and deaths during outbreaks; and decreases costs for producers, consumers, and the government. This system also assures our trading partners that States and USDA can rapidly contain an animal disease event. Each year, APHIS provides cooperative agreement funds to States to help them establish and maintain support for State ADT activities. Currently all States receiving program funds have approved ADT strategic plans in place with APHIS. The ADT program continues to progress in maximizing flexibility while maintaining effectiveness and increasing the timeliness of retrieving traceability data.

In FY 2020, APHIS began providing free radio frequency identification (RFID) tags to States as an alternative to metal tags to help advance and make ADT more efficient. State veterinarians distribute these tags in a way that best serves their industry. APHIS continues to also provide the traditional free metal tags as an option. In FY 2020, approximately 8.2 million RFID tags were distributed, accounting for 58 percent of all USDA-approved identification tags distributed for cattle in that year.

The AHTS program evaluates data systems and applications to determine if they should enhance them or develop new systems and applications. APHIS makes these systems available to States and Tribal Nations to support their traceability plans and other animal health activities. APHIS continues working with slaughter plants toward the large-scale retirement of animal health tags and the electronic transmittal of tag retirement data into the USDA

reporting system. In FY 2020, approximately 6.8 million tags were retired. Removing tags from the ADT Information System will reduce query/transaction time for completing a trace investigation.

To further strengthen traceability capabilities, APHIS continues to improve the Animal Health Services (AHS) system, formally referred to as the Mobile Information Management system. The AHS system allows for State and Federal animal health officials and accredited veterinarians to gather data electronically instead of manually keying data or scanning paper records into electronic databases for animal tracing purposes. The improvements made in FY 2020, allow producers and accredited veterinarians to use a free, web-based interface and mobile applications to complete electronic Certificates of Veterinary Inspection and program disease testing, print forms on location without a live internet connection, and share the data with State and Federal systems once the system is back online.

More than 70,000 highly trained, accredited veterinarians act as the first-line-of-defense for reportable domestic and foreign animal diseases. The voluntary NVAP authorizes private veterinary practitioners to work cooperatively with Federal veterinarians and State animal health officials to report when they suspect these diseases to be present. This provides the first step in rapid diagnosis, quarantine, and other control measures to safeguard our nation's animal and human health. Accredited veterinarians also provide official animal, flock, and herd health certifications, disease testing, and traceability practices for billions of animals each year. Mandatory training and accreditation renewal provides increased knowledge of animal disease surveillance, prevention, zoonoses, judicious antimicrobial use, animal welfare, and disaster preparedness.

In FY 2022, the program will continue to focus on the highest priority technology investments that fully integrate animal health information for State and Tribal partners; collaborate with State animal health officials to identify diseased animals and trace their movements; and train veterinarians to help producers meet export requirements and disease program standards. In FY 2022, APHIS plans to shift the Information Management and Analytics Services Unit, currently within the Center for Epidemiology and Animal Health, to report directly to the Strategy and Policy Deputy Administrator in Veterinary Services. This shift will allow APHIS to better integrate animal health data across different IT systems and collaborate with external stakeholders to advance data reporting.

Overall, base funding for the AHTS program currently supports salaries and benefits of personnel, contracts and agreements, and other normal operating costs such as travel, supplies, rent, and utilities necessary to conduct program activities.

An increase of $393,000, which includes $268,000 for pay inflation and $125,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(2) Aquatic Animal Health: An increase of $34,000 and 0 staff years ($2,272,000 and 13 staff years available in the FY 2021 Appropriation)

The Aquatic Animal Health program protects the health and value of U.S. farm-raised aquatic animals and natural resources by carrying out activities consistent with the National Aquatic Animal Health Plan (NAAHP), which calls for surveillance and testing for high-consequence aquatic animal diseases. The NAAHP helps the Federal government develop policies and programs to address aquatic animal diseases for the benefit of aquaculture and aquatic animal resources. APHIS, the U.S. Department of Commerce's National Oceanic and Atmospheric Administration, and the U.S. Department of the Interior's Fish and Wildlife Service developed and implement the plan. Program efforts position commercial producers in domestic and international trade markets, valued at $1.5 billion in 2018 (National Agricultural Statistics Service, 2018 Census of Aquaculture), and helps the commercial aquaculture industry demonstrate adherence to sound aquatic animal health practices.

APHIS and the National Aquaculture Association are working to develop the Commercial Aquaculture Health Program Standards (CAHPS), a national and uniform approach to aquaculture health standards. The goal of CAHPS is to support improved health management, protection and expansion of aquaculture business opportunities, trade promotion and facilitation, and improved resource protection. The CAHPS establishes site-specific plans for biosecurity, surveillance, and response related to animal health events. Well-managed surveillance planning is the foundation for animal health activities that include disease control and eradication programs, support of emergency preparedness and response, and international trade.

Overall, base funding for the Aquatic Animal Health program currently supports salaries and benefits, and other program operating costs such as travel, supplies, rent, and utilities necessary to conduct program activities.

An increase of $34,000, which includes $23,000 for pay inflation and $11,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(3) Avian Health program: An increase of $620,000 and 0 staff years ($63,213,000 and 238 staff years available in the FY 2021 Appropriation)

The Avian Health program protects the U.S. poultry industry, whose production value was $40.4 billion in 2019 (USDA, National Agricultural Statistics Service), while facilitating trade in poultry and poultry products. This program consists of the surveillance, prevention, and control of avian diseases; disease threat planning and response; international avian health activities; and modeling activities.

To ensure the U.S. poultry industry maintains worldwide competitiveness, APHIS works to quickly detect and address endemic, emerging, and foreign disease threats. To detect these threats, the Agency conducts surveillance in domestic poultry, live bird marketing systems (LBMS), and wild birds. The LBMS is a voluntary network of U.S. live poultry markets and their production and distribution systems, which provides fresh poultry meat to consumers. Approximately 33 States and the U.S. Virgin Islands had live bird markets that participate in the APHIS' avian influenza (AI) prevention and control program. State cooperators help conduct surveillance and diagnostic activities for the LBMS. When these tests yield presumptive positive results, APHIS confirms the presence and strain of AI. LBMS testing prevents and controls the disease in markets and among producers and distributors that supply those markets. Since the H5/H7 low pathogenicity avian influenza (LPAI) LBMS prevention and control program began in 2004, the number of AI-positive premises has trended downward. The Agency's surveillance programs detect foreign, zoonotic, and domestic diseases that could substantially impact domestic production and the economy. Surveillance information facilitates trade and protects public health by demonstrating that certain diseases do not exist in poultry populations. Prevention and control programs minimize the disease threat and protect the value of poultry markets. APHIS also maintains regulations and national standards and guidelines that direct avian health activities at the Federal, State, and Tribal levels. Maintaining these standards supports interstate and international commerce by providing assurances about the health of avian species and products that are moved or traded. These prevention and control activities are designed to quickly diagnose disease, improve biosecurity conditions, and minimize the effects of AI and other diseases on the LBMS and commercial poultry industry. APHIS conducts AI surveillance in commercial poultry under the National H5 and H7 LPAI Prevention and Control program. Although most of the testing is performed locally, APHIS' National Veterinary Services Laboratories provides reagents for testing, and performs confirmation and identification testing of presumptive positive specimens.

The National Poultry Improvement Plan (NPIP) is a cooperative Federal-State-industry program that helps participants guard against disease incursion and enhance the marketability of poultry and poultry products. Currently, the NPIP AI prevention and control program involves the participation of all 50 States and Puerto Rico; more than 95 percent of commercial broiler, turkey, and egg industries; and the entire primary poultry breeding industry. Approximately 100 authorized and approved laboratories in 41 States provide diagnostic testing for the program. APHIS provides guidance to commercial poultry operations, who are eligible for indemnity and compensation payments if they have successfully audited biosecurity plans in place.

APHIS manages the NPIP U.S. Poultry Primary Breeder AI Compartmentalization program, which audits and certifies pedigree poultry stock breeding companies that practice high-level biosecurity measures to keep their flocks AI-free. Compartmentalization represents a major shift from the traditional disease control paradigm since it defines the health status of a subpopulation of animals by common biosecurity and management principles rather than a shared geographic boundary. The voluntary program supports the trade of poultry and poultry products if the United States encounters an AI outbreak. Participating breeders must meet the program's extensive biosecurity, training, disease monitoring, and laboratory infrastructure requirements, which are designed from evidence-based principles known to prevent AI virus introduction and spread. APHIS administers the program and serves as the regulatory authority that international trading partners can trust to verify that a participant meets the requirements.

Internationally, APHIS facilitates agricultural trade, works with agricultural officials, monitors agricultural health, and supports sanitary and phytosanitary standard-setting efforts. The Agency works with animal health counterparts to reduce the impact of AI in trade by promoting transparent communications; clarifying animal disease status; and

when markets close, providing relevant data to reopen markets for U.S. poultry and poultry products and minimizing trade disruption of these products. In addition, APHIS works with the USDA Foreign Agricultural Service and the office of the U.S. Trade Representative to maintain a coordinated, strategic approach to resolving avian health issues that affect U.S. exports. Further, APHIS coordinates with the World Organisation for Animal Health and other international organizations to assist with disease prevention, management, and eradication activities in highly pathogenic avian influenza -affected regions. In addition, APHIS sponsors and staffs the Emergency Management Center at the Food and Agriculture Organization of the United Nations in Rome, Italy. This Center provides assessments, guidance, and resources to enable rapid response to animal disease outbreaks in countries where the United States would have difficulties placing personnel or responding bilaterally. This approach reduces the threat of disease outbreaks becoming widespread and evolving into pandemics.

Overall, base funding currently for the Avian Health program supports salaries and benefits, cooperative agreements and programmatic contracts, and other normal operating costs such as travel, supplies, rent, and utilities to conduct program activities.

An increase of $620,000, which includes $422,000 for pay inflation and $198,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(4) Cattle Health program: An increase of $1,284,000 and 0 staff years ($105,216,000 and 493 staff years available in the FY 2021 Appropriation)

The Cattle Health program protects and improves the quality, productivity, and economic viability of the U.S. cattle and milk industry, valued at $87 billion in 2020 (National Agricultural Statistics Service, USDA). The Cattle Health program has two major goals: to rapidly detect and respond to diseases that could significantly affect the U.S. cattle and bison population, and prevent the spread of any newly detected disease in the United States as well as endemic domestic cattle and bison diseases of concern. To accomplish these goals, APHIS conducts activities related to surveillance and monitoring, disease prevention, disease investigation, and outbreak response actions. In addition, APHIS maintains regulations, national program standards, and guidelines that direct cattle health activities at Federal, State, Tribal, and local levels. Establishing and maintaining these standards is critical to supporting interstate and international commerce by providing assurances about the health of cattle or bison being moved or traded.

APHIS conducts surveillance for foreign, emerging, and endemic diseases - including bovine tuberculosis (TB), brucellosis, and bovine spongiform encephalopathy (BSE) – as well as disease vectors, such as cattle fever tick (CFT). The Agency conducts surveillance through cattle testing at slaughter facilities, livestock markets, shows, sales, buying stations (first-point testing), on-farm, and rendering facilities (operations that collect dead, dying, disabled, and diseased animals). APHIS also works with Canada and Mexico to exclude foot-and-mouth disease, new world screwworm, and other cattle diseases.

Bovine TB primarily affects cattle but can affect other animal species and humans as well. APHIS surveillance for this disease includes testing live cattle and using slaughter surveillance data from the USDA's Food Safety and Inspection Service. Since the bovine TB program began in 1917, it has significantly decreased the prevalence of the disease in U.S. livestock. Today, the prevalence rate in cattle herds is less than .001 percent. APHIS addresses affected herds with a mix of depopulation and test-and-removal strategies that consider herd size, potential indemnity costs, State and owner preferences, genetics, and the probability of removing infection.

Bovine brucellosis is an infectious disease that can negatively impact the livelihood of cattle producers and the supply of meat and dairy products. Federal and State eradication efforts have resulted in all 50 States, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands being Class-Free since July 2009. APHIS works with class-Free States with brucellosis in wildlife to implement State management plans. Although the United States is Class-Free of brucellosis, the disease remains in free-ranging bison and wild elk in the Greater Yellowstone Area. To help manage brucellosis in this area, APHIS provides expertise to land and wildlife management agencies in Idaho, Montana, and Wyoming. Under the market cattle identification national slaughter surveillance program, APHIS, in conjunction with States, tests cattle and domestic bison on farms and ranches before movement, sale, and herd certification issuance for show and exhibition purposes.

BSE is a progressive, fatal neurologic cattle disease which is primarily spread through contaminated feed. The World Organisation for Animal Health evaluates countries that submit disease freedom requests and assigns a points-based risk status. APHIS' BSE surveillance program uses this points system, which maintains that the best BSE surveillance programs obtain quality samples from targeted populations rather than the entire adult cattle population. The system also incorporates a country's BSE history, cattle feed regulations, and surveillance practices.

APHIS partners with the Texas Animal Health Commission (TAHC) to carry out the Federal-State CFT Eradication Program. The CFT and southern cattle tick spread babesiosis, also known as cattle fever. The Agency controls the spread of tick species that transmit the infectious agent by inspecting livestock before they leave quarantined areas, conducting surveillance at local markets, inspecting hunter-killed white-tailed deer and other exotic ungulates, and conducting horseback river trail patrols to capture stray and smuggled Mexican livestock who may carry ticks into the United States. The United States remains free of cattle fever. APHIS, with cooperation from the TAHC, maintains a permanent quarantine zone between Texas and Mexico to prevent CFT from spreading into the United States. Bordering Mexican states harbor tick species, which carry the disease, and tick-infested wildlife or livestock near the border can bring the ticks into the United States. Tick eradication activities consist of identifying and quarantining infested premises and treating livestock and wildlife. Approved treatment methods include dipping or spraying cattle with coumaphos, feeding ivermectin-treated corn to deer found in wildlife; and injecting cattle with Doramectin. To release a quarantine area, every infested premise must have all cattle treated for nine months, including inspections and treatments every two weeks.

In FY 2020, APHIS began efforts along the border to control Carrizo Cane, which is an invasive species grass that grows along the Rio Grande River in Texas. CFT live in this grass and attach themselves to animals. APHIS worked with contractors to cut back the grass in areas of greatest concern. Baseline data for a full year's worth of topping will be provided in FY 2021. This program's goal for FY 2022, is to continue to eliminate all CFT outbreaks that occur outside the quarantine area within 12 months.

APHIS and cooperators have eradicated screwworm from the United States, Mexico, Belize, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, and down to the southern-most portion of Panama. APHIS prevents the reestablishment of screwworm in the United States by collaborating with Panama and Colombia to maintain a biological barrier zone in the Darien Gap, along the Colombia/Panama border. The program relies on a sterile insect technique, a process where APHIS and cooperators produce and sterilize insects at a jointly managed facility in Panama and release them in the barrier zone to mate with wild insects, thereby preventing reproduction. This technique is a proven method to eradicate insect populations. The United States also has access to the sterile flies in the event of an outbreak in U.S. territory. APHIS produces approximately 20 million sterile flies per week at its Panama rearing facility.

Overall, base funding for the Cattle Health Program currently supports salaries and benefits, cooperative and programmatic contracts, and other normal operating costs such as travel, supplies, rent, and utilities to conduct program activities.

An increase of $1,284,000, which includes $874,000 for pay inflation and $410,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(5) Equine, Cervid and Small Ruminant Health program: An increase of $2,302,000 and 0 staff years ($28,982,000 and 116 staff years available in FY 2021 Appropriation)

The Equine, Cervid, and Small Ruminant Health (ECSRH) program protects the health and improves the quality, productivity, and economic viability of the equine, cervid, sheep, and goat industries. APHIS activities include monitoring, surveillance, investigation, response, and disease prevention and preparedness to address animal health issues. The Agency's monitoring and surveillance activities detect foreign, emerging, zoonotic, and domestic diseases that could substantially impact the economy. APHIS also works with domestic and international trading partners to facilitate safe trade in equine, cervids, and small ruminants and their products, and ensure that cases of diseases of trade concern are reported to the World Organisation for Animal Health. This program conducts disease surveillance and monitoring activities for the following diseases: bovine tuberculosis (TB), chronic wasting disease (CWD), vesicular stomatitis virus, contagious equine metritis, equine infectious anemia, equine piroplasmosis, Eastern equine encephalitis, West Nile virus, and scrapie.

The National Scrapie Eradication Program focuses on improving the health of domestic sheep and goats, reducing scrapie-associated economic losses and increasing international marketing opportunities. Scrapie is a fatal, degenerative disease that affects the central nervous system of sheep and goats. Regulatory scrapie slaughter surveillance efforts, which began in FY 2003, were designed to identify scrapie-infected flocks and herds by sampling animals at slaughter. Since the surveillance program began, the program has collected 666,954 samples at slaughter. The rate of culled sheep sampled at slaughter that tested positive for classical scrapie has decreased significantly from .2 percent (1 in 500) in FY 2002, to just .004 percent (less than 1 in 25,000) in FY 2020. In FY 2020, APHIS' updated National Scrapie Surveillance Plan took effect. This update aligns surveillance efforts with the current disease situation and the 2019 Scrapie Final Rule. This rule allows for a more flexible approach to disease investigations and affected flock management.

APHIS' voluntary national CWD Herd Certification Plan (HCP) helps States, Tribes, and the cervid industry control CWD in farmed cervids by allowing the interstate movement only from certified herds. Currently, 28 States participate in the national CWD HCP. APHIS determines the use of Federal indemnity payments within the CWD program on a case-by-case basis. APHIS also coordinates a voluntary cervid TB herd accreditation program.

In FY 2020, APHIS and Department of Interior held a summit with representatives from State agriculture and wildlife agencies, Tribal Nations, conservation and hunting groups, and the cervid industry to discuss stakeholder CWD management needs and information gaps that need to be addressed to control CWD. The information from the summit helped APHIS establish priorities for proposals for competitive cooperative agreements dedicated to CWD control. These priorities included improving management of affected farmed herds and free-ranging endemic populations; improving management of affected areas or premises; enhancing research on amplification assays and predictive genetics; and, delivering educational outreach materials. To execute projects based upon those priorities, APHIS funded awards to 25 entities: 19 to State Departments of Natural Resources, 5 to State Departments of Agriculture, and 1 to Tribal Nations.

APHIS collaborates with Federal, State, and industry partners to protect the equine industry from disease, improve the health of our domestic herd, and protect human health. These activities improve trade and facilitate equine movement, which are vital to maintaining the industry's economic value. APHIS also provides veterinary support and consultation to the U.S. Department of the Interior's Bureau of Land Management Wild Horse and Burro Program through an interagency cooperative agreement. In FY 2020, APHIS coordinated with States and industry to develop national disease control strategies, and provided oversight, coordination, and implementation of appropriate policies. Specifically, APHIS provided scientific, epidemiological, and regulatory expertise; diagnostic assistance; and national-level situation reporting in response to detections of equine diseases of high impact or concern. APHIS provides expertise and helps develop the equine industry's National Equine Health Plan. This plan functions as a roadmap for owners, veterinarians, and industry organizations to coordinate with State and Federal animal health officials to recognize, prevent, control, and respond to diseases. APHIS integrates the roles of the State and Federal health officials with industry stakeholders to improve both equine health and the industry by decreasing the impact of infectious disease on the horse economy.

Overall, base funding for the ECSRH program currently supports salaries and benefits, contracts and agreements, equipment, and other normal operating costs such as supplies, rent, and travel to conduct program activities.

An increase of $2,000,000 and 0 staff years for chronic wasting disease
In FY 2020, APHIS and the Department of Interior brought together representatives from State agriculture and wildlife agencies, Tribal Nations, conservation and hunting groups, and the cervid industry to identify and discuss stakeholder CWD management needs and information gaps that need to be addressed to effectively control CWD. APHIS subsequently offered cooperative agreement opportunities for proposals in support of the priorities established largely based on these discussions; the Agency would like to continue to build upon these efforts. APHIS is requesting a $2 million increase, for a total of $9 million in FY 2022, to allocate directly to State Departments of Wildlife and State Departments of Agriculture to further develop and implement chronic wasting disease surveillance, testing, management, and response activities. These activities are particularly important in the face of a changing climate which could enable the spread of diseases, such as CWD.

An increase of $302,000, which includes $206,000 for pay inflation and $96,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(6) National Veterinary Stockpile: An increase of $15,000 and 0 staff years ($5,736,000 and 6 staff years available in FY 2021 Appropriation)

The National Veterinary Stockpile (NVS), overseen by APHIS' Field Operations Logistics Center, serves as the primary source of materials, supplies, and equipment for the response to, control of, and containment of significant animal disease outbreaks. The NVS has two primary objectives: to deploy countermeasures, within 24 hours of approval, against the most damaging animal diseases including highly pathogenic avian influenza, foot-and-mouth disease (FMD), virulent Newcastle disease, African swine fever, and classical swine fever; and, to assist States, Tribes, and Territories with planning, training, and exercises for the rapid request, receipt, processing, and distribution of NVS countermeasures during an event.

NVS continuously evaluates its inventory of supplies and replaces expired inventory. To maximize cost-efficiency and response capabilities, NVS personnel work with industry modelers and academic institutions to develop a scientifically estimated quantity of supplies to stockpile for each disease on APHIS' high-consequence diseases list. These personnel gather input from Federal agencies on strategies such as commercially available countermeasures including vaccines, criteria for deploying countermeasures, and ways to leverage stockpiles. The program continues to maintain its capabilities to address high consequence animal diseases, manage inventories, and develop ways to best address the Agency's response capabilities by quickly deploying animal health response resources.

APHIS uses a portion of the NVS funding to maintain the North American FMD Vaccine Bank (NAFMDVB) as part of the agency's animal health readiness initiative. The NAFMDVB is a vaccine stockpile that APHIS and Canada support cooperatively. Each country contributes funding to acquire vaccine and maintain a vaccine concentrate stockpile, from which FMD vaccine is derived. Although Mexico no longer participates in the NAFMDVB, the United States and Canada will continue to ensure that the Bank maintains adequate stocks of vaccine concentrate and conducts necessary quality assurance testing. APHIS used a portion of FY 2020 NVS funding to acquire new antigen for FMD preparedness.

Without NVS' efforts, disease outbreak response efforts would quickly deplete State resources and overwhelm industry, leading to larger and more serious animal disease outbreaks. In FY 2022, the NVS will continue to deploy countermeasures against the most damaging animal diseases, and assist States, Tribes, and Territories with preparing countermeasures during an animal health event.

Overall, base funding for the NVS program currently supports salaries and benefits, supplies, and contracts and agreements, as well as other normal operating costs like rent, travel, and equipment to conduct program activities.

An increase of $15,000, which includes $10,000 for pay inflation and $5,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(7) Swine Health program: An increase of $370,000 and 0 staff years ($25,020,000 and 142 staff years available in the FY 2021 Appropriation)

APHIS' Swine Health program protects the health and improves the quality, productivity, and economic viability of the swine industry. The 2019 production value of the swine industry was approximately $20 billion (National Agricultural Statistics Service). In addition, the program facilitates trade in swine and pork products, and addresses swine health issues at the human-swine interface and between wildlife and domestic swine. APHIS activities include comprehensive and integrated swine surveillance, emergency preparedness and response planning, disease investigation and control activities, zoonotic disease prevention and response, swine health studies and special projects, collaborations on emerging issues, and stakeholder outreach and communication. In addition, the Agency maintains regulatory and programmatic guidelines to direct activities at the Federal, State, and Tribal levels. Establishing and maintaining national standards support interstate and international commerce by ensuring the health of animals and products being moved or traded.

APHIS collects swine samples from various surveillance streams as part of a comprehensive integrated surveillance approach to detect swine diseases that could substantially affect domestic producers and the national economy. Comprehensive integrated surveillance includes field work and epidemiological investigations, designated surveillance streams, a veterinary diagnostic laboratory infrastructure, data management systems, and methodologies for data analysis and reporting. APHIS collects samples and data from the following surveillance

streams: veterinary diagnostic laboratories, slaughter plants, high-risk producer premises, livestock markets, and feral swine during population elimination projects. Surveillance testing supports the swine industry by assuring trading partners and other stakeholders of the status of swine diseases in the United States. Comprehensive surveillance enables APHIS to maintain effective surveillance using a risk-based approach that targets high-risk samples and reduces costs.

The Agency tests for pseudorabies virus (PRV), swine brucellosis (SBR), influenza A viruses (IAV-S), classical swine fever (CSF), and African swine fever (ASF). CSF remains eradicated from the United States, and the United States also continues to be free of ASF. In all test-positive cases, APHIS and States investigate and quarantine infected herds, conduct outbreak testing to determine herd disease levels, and depopulate or remove infected animals through a test-and-removal strategy to eliminate disease risk from these herds. These efforts protect commercial herds that may be exposed to infected backyard herds. Because APHIS has eliminated PRV and SBR from all U.S. commercial swine herds, the Agency continues to modernize surveillance activities to reflect a comprehensive, risk-based, and science-based approach to swine surveillance to support trade efforts while reducing burdens on States and producers.

With the dramatic increase in ASF detections in Asia and Europe in FY 2019-2020, APHIS has increased its preparedness efforts with States and industry to guard against an incursion. While ASF has never been found in the United States and does not pose public health concerns, an introduction would be devastating for U.S. pork producers, their communities, and the economy. A 2020 Iowa State University study estimates that a U.S. outbreak could cost the U.S. swine industry $50 billion over 10 years. Early detection is the key to controlling, containing, and eliminating ASF. To enable early detection and bolster preparedness, APHIS continues to implement a nationwide surveillance plan. In FY 2020, the Agency took several steps to enhance safeguards to prevent an ASF introduction. These steps included increasing inspections of products coming from areas where ASF is present, increasing diagnostic capabilities, and coordinating preparedness and response exercises with the States, industry, Canada, and Mexico. APHIS announced additional control and eradication measures if ASF is ever detected in the U.S. These measures include issuing a 72-hour national standstill to prohibit all swine movement, thus increasing the Agency's ability to stop disease spread and quickly restore movement on a regionalized basis, as well as depopulation and disposal measures.

APHIS has the responsibility under the Swine Health Protection Act to license and inspect swine production facilities that feed cooked garbage to swine, and to conduct searches for unlicensed facilities that may illegally feed raw garbage to swine. This practice could transmit infectious diseases such as ASF, foot-and-mouth disease, or CSF to swine. APHIS protects the commerce, health, and welfare of U.S. citizens by ensuring that food waste fed to swine does not threaten domestic swine. In FY 2020, APHIS supported 1,806 inspections of licensed premises and 4,751 searches for non-licensed facilities. Through these searches, the Agency identified 18 non-licensed feeders. APHIS worked with States to either bring unlicensed facilities into compliance or force them to cease their illegal activities.

Swine can harbor several zoonotic disease agents, such as IAV-S, swine brucellosis, and trichinellosis. In such cases, APHIS works with the Centers for Disease Control and Prevention to support investigations conducted by State public health and animal health officials. Joint animal health and public health investigations support the One Health concept and strengthen APHIS' ability to respond when both animal and human health might be compromised.

The program has the expertise and infrastructure to work with the swine industry, universities, and Federal and State partners to collect, analyze, and disseminate vital swine health information to those who might take action. The program continues to develop and maintain swine surveillance protocols to assure the availability of safe and plentiful swine and swine products.

Overall, base funding for the Swine Health program currently supports salaries and benefits, contracts, and agreements, as well as other normal operating costs such as travel, supplies, and rent, and utilities.

An increase of $370,000, which includes $252,000 for pay inflation and $118,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(8) Veterinary Biologics program: An increase of $328,000 and 0 staff years ($20,570,000 and 126 staff years available in FY 2021 Appropriation)

APHIS' Center for Veterinary Biologics (CVB) regulates veterinary biological products under the Virus-Serum-Toxin Act to ensure that they are pure, safe, potent, and effective. Organizations develop these products, which include vaccines, bacterins, antisera, diagnostic test kits, and analogous products to prevent, diagnose, and treat animal diseases in a wide variety of animal species. The CVB develops regulations concerning the production and licensing of veterinary biologics, evaluates pre-licensing dossiers and issuance of licenses and permits, tests products submitted for licensure, inspects facilities and products, approves product certifications, investigates non-compliance, and conducts post-marketing surveillance to ensure that manufacturers comply with regulations and policies. This comprehensive regulatory approach is the most effective way to ensure that only quality, Federally licensed, veterinary biological products are available to U.S. consumers, available for U.S. export markets, and also plays an essential role in protecting animal health and agriculture. In FY 2020, CVB hired seven additional staff to support the growing needs of the U.S. veterinary biologics regulatory system.

APHIS licenses and inspects facilities to ensure that all veterinary biological products produced and distributed within, imported into, or exported from, the United States are of the highest quality, and are not worthless, contaminated, dangerous, or harmful. Before the Agency began regulating these products, farmers and animal health officials found products to be ineffective or contaminated with harmful diseases, including foreign animal diseases. While most of the time required in the licensing process is in the control of the potential licensee in developing manufacturing processes and conducting required studies, the CVB analyzes data and conducts confirmatory testing before issuing licenses. These products are vital for protecting American agriculture, facilitating trade, and enhancing agricultural economic opportunities. To reduce the burden on the regulated industry, CVB has expedited turnaround times, streamlined required information collection under specific circumstances, and implemented electronic submissions for most required regulatory submissions. These efficiencies have reduced the overall staffing needs for CVB, at least until the growing biologics industry requests outpace the Agency's resources.

The United States and foreign countries require import and export certificates to certify that products are prepared according to the Virus-Serum-Toxin Act. In FY 2020, processed all export certificates within 4 days, and all certificates of licensing and inspection within 28 days. Timely processing helps ensure that markets are accessible for manufacturers who export their product. APHIS also helped to ensure there were no foreign animal disease events related to the importation of more than 342 million doses of biologic products.

Each year, APHIS inspects an average of 50 biologics sites to assure compliance. The Agency found innovative ways to conduct inspections virtually for the oversight and approval of new and remodeled facilities of licensed veterinary biologics manufacturers to allow for timely approval of new facilities. For example, CVB required licensed manufacturers to provide blueprints and legends of new or remodeled areas for review and approval. After CVB review, the manufacturers submitted videos detailing the construction, process, and personnel flow through these facilities to provide a virtual look at the areas. More than 99 percent of the unlicensed entities investigated either move towards licensure of the product in question or cease the objectionable activity. This program has the expertise and infrastructure to work with animal health industries, universities, and State and Federal partners to collect, analyze, and disseminate vital animal health information to those who might take action. APHIS also inspects manufacturing facilities to ensure that they produce biologics according to regulations.

APHIS promotes U.S. policy as a regulatory model for established and developing markets, and it improves worldwide marketability of USDA-licensed biologics. It participated in harmonization efforts with major trading partners including Japan and the European Union through the International Cooperation on Harmonization of Technical Requirements for Registration of Veterinary Medicinal Products. Additionally, CVB participates in the Veterinary International Conference on Harmonization's (VICH) Outreach Forum. This forum promotes the use of VICH harmonized guidelines in countries with developing regulatory systems for veterinary medicinal products

Overall, base funding for the Veterinary Biologics program currently supports salaries and benefits of personnel, and contracts and agreements, as well as normal operating costs such as supplies, travel, rent, and utilities to conduct program activities.

<u>An increase of $328,000, which includes $223,000 for pay inflation and $105,000 for FERS:</u>
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(9) Veterinary Diagnostics: A net increase of $435,000 and an increase of 29 staff years ($56,979,000 and 167 staff years available FY 2021 Appropriation)

Laboratory and diagnostic services are essential components of the U.S. animal health infrastructure. The Veterinary Diagnostics line item provides partial funding for the National Veterinary Services Laboratories (NVSL), which consists of laboratories in Ames, Iowa, and Plum Island, New York. The NVSL is recognized by the World Organisation for Animal Health and the Food and Agriculture Organization as an international reference laboratory for significant animal diseases such as highly pathogenic avian influenza, foot-and-mouth disease (FMD), and rinderpest. It provides diagnostic test services ranging from a single laboratory test to comprehensive laboratory services covering many pathogens for suspected domestic and foreign animal disease (FAD) outbreaks. The line item also supports the National Animal Health Laboratory Network (NAHLN), an animal disease surveillance and monitoring system that interconnects Federal and State laboratory resources to improve the security of the nation's livestock by providing disease diagnostics daily and at increased levels during outbreaks. This line item also supports efforts to stand up the National Bio and Agro-Defense Facility (NBAF) in Manhattan, Kansas which will help protect the nation's agriculture, farmers, and citizens against the threat and potential impact of serious FADs.

Diagnostic testing and confirmation of surveillance samples improves the security of the nation's livestock. The NVSL is at the forefront of emerging and re-emerging diseases including virulent Newcastle disease virus, tilapia lake virus, infectious hypodermal and hematopoietic necrosis virus, Senecavirus A (SVA), bluetongue, and vesicular stomatitis virus. In FY 2020, NVSL implemented a web-based portal for entering sample information to minimize the manual re-entry of this information. The laboratories produced and filled more than 96,652 reagent order items in FY 2020, representing approximately 535 different types of products used in veterinary diagnostic testing. Many of these products are only available to stakeholders through APHIS.

The NAHLN serves as a vital early warning system for foreign and emerging animal diseases. As of October 1, 2020, the NAHLN consisted of 60 Federal, State, and university veterinary diagnostic laboratories in 42 States. These laboratories work with the NVSL reference laboratories to test for 14 economically devastating and/or FADs and potentially zoonotic diseases such as FMD, influenza in avian and swine species, and classical swine fever. The NVSL trains NAHLN laboratory personnel to ensure proficiency and standardization for performing diagnostic tests. The Veterinary Diagnostics program also provides support for limited infrastructure in NAHLN laboratories; the NAHLN program staff; the APHIS Laboratory Portal; information management personnel to support for electronic messaging; and online quality management training the NAHLN laboratories use to maintain qualifications for participating in the network. The NAHLN program staff conduct exercises to prepare participating laboratories for animal disease outbreak scenarios and enable them to remain proficient in animal disease testing. It also enables them to generate a rapid, local preliminary diagnostic result while NVSL performs confirmatory testing.

APHIS conducts proficiency testing of Federal, State, and university-sponsored laboratories when these laboratories perform authorized diagnostic testing as part of APHIS-approved surveillance and/or response programs. This is done to ensure that they use standardized, rapid diagnostic techniques and to maintain the credibility of U.S. diagnostic test results in the international marketplace. In FY 2020, APHIS provided 22 types of proficiency panels to international, Federal, State, and private laboratories within and outside the NAHLN network. APHIS made the necessary controls and reference strains available for approximately 200 diseases to help other laboratories develop and validate diagnostic tests. User fees cover the cost of some reagents and proficiency panels.

APHIS continues to work with the U.S. Department of Homeland Security (DHS) and USDA's Agricultural Research Service (ARS) to plan for the move from the Plum Island Animal Disease Center (PIADC) in New York to the state-of-the-art National Bio and Agro-Defense Facility (NBAF) in Manhattan, Kansas. The PIADC, home to APHIS' Foreign Animal Disease Diagnostic Laboratory (FADDL), is the only U.S. laboratory permitted to work with virulent FMD virus and hold rinderpest virus. In addition, FADDL is the custodian of the North American FMD Vaccine Bank and now manages the U.S. National Animal Vaccine and Veterinary Countermeasures Bank, as outlined in the 2018 Farm Bill. NBAF will be a key national asset to protect the U.S. animal agriculture industry and will be the first and only facility in the United States with large animal Biosafety Level-4 (BSL-4) containment capability.

USDA and DHS are planning for the transfer of management and oversight of NBAF from DHS to USDA. The NBAF schedule originally projected USDA would begin operating the facility in December 2020, once construction was to be substantially complete. USDA would have then began an endurance testing period which would require

staff to test the animal handling and animal disposal capability, operate laboratories, and use many other NBAF components while the construction contractor was still on site to handle any needed adjustments. However, the impact of the COVID-19 situation on vendors and materials caused a construction delay that will extend the substantial completion date to the fall of 2021. Officials are assessing the impact of this delay regarding the complete transition from PIADC originally planned for August 2023. The NBAF steady-state operations are assumed to begin in FY 2025, once the BSL-4 laboratories are fully operational. After the transfer, ARS will own the buildings and ARS and APHIS will have leadership responsibilities on operational aspects of the facility and for their own science programs. In FY 2019, the two agencies began recruiting for key operational positions. APHIS filled 43 of these operational positions in FY 2019, and 34 positions in FY 2020.

APHIS and ARS are continuing to develop a workforce of subject matter experts in foreign, emerging, and zoonotic diseases to conduct diagnostics in preparation for the NBAF transition. Workforce development is critical, given the significant loss of expertise expected during the transition and the need to transfer the U.S. FAD diagnostic institutional knowledge to NBAF. While USDA can train diagnosticians to perform specific tests, interpreting unclear results and troubleshooting diagnostic assays when they do not perform properly requires a high level of experience. Additionally, APHIS anticipated a potentially significant expertise gap, particularly during the first 5 to 10 years of operations at NBAF, based on the time required to develop expertise in this area. To address this possible workforce gap, APHIS is continuing the NBAF Scientist Training Program to meet the needs for subject matter experts in foreign animal and zoonotic diseases. Through this program, USDA is developing personnel to fill NBAF positions. This program is critical because subject matter expertise and international recognition in FAD diagnostics take years to develop, yet not all of the FADDL workforce is expected to relocate to NBAF. This program will help preserve and transfer the FAD diagnostic institutional knowledge to NBAF. As of the end of FY 2020, the program is comprised of 21 fellows from 12 different universities nationwide. The Agency also developed a Laboratorian Training Program to train future NBAF laboratory technicians. APHIS prioritized certain positions for hiring before FY 2021. Most of these positions will train on FADDL-specific assay protocols and instrumentation systems at PIADC, before transitioning to NBAF between 2021 and 2023. APHIS is placing the remainder of these positions at NBAF since they are critical to developing standard operating procedures, ordering equipment and supplies, developing the International Organization for Standardization (ISO) accreditation paperwork, and assisting with the select agent registration process. The overarching responsibilities of all priority hires include the validation of the space for workflows and laboratory practices for both select agent registration and ISO 17025 accreditation, as well as proficiency in the required equipment care, use, and calibration to meet ISO accreditation and biosafety standards.

The diagnostics testing conducted under this line item can rapidly confirm the presence or absence of a particular animal disease and can promptly provide decision makers with vital information that could have significant trade impacts and prevent or mitigate the spread of significant animal diseases.

An increase of $4,000,000 and 29 staff years for NBAF

APHIS is requesting an additional $4 million, for a total of $24.303 million in FY 2022, to continue the transition from the PIADC to the NBAF. NBAF will be the nation's only large animal BSL-4 facility and the only U.S. laboratory allowed to work with live FMD virus. APHIS will be able to conduct diagnostics and develop countermeasures for high-consequence, potentially lethal zoonotic livestock diseases. These additional funds will ensure a smooth transition of diagnostic program operations over the coming years. They will support workforce development and hiring efforts to ramp up our diagnostic workforce that will transfer to NBAF once it has reached operational capacity, as well as our partnerships and collaborations beyond the walls of NBAF to stimulate the entire bio and agro-defense sector. APHIS must begin increasing its staff at PIADC before transferring to NBAF, and these funds will enable USDA to keep pace with timelines for hiring, construction, commissioning, and the transition from PIADC.

Current timelines project that by fall of 2021, NBAF construction should be substantially complete with commissioning complete in the winter. USDA would then have access to begin an endurance testing period. During this period, staff will test the animal handling and animal disposal capability, operate multiple laboratories at the same time, and utilize many other NBAF components. The facility is planned to receive registrations and approvals to reach full operational capability by fall 2023, and stand-up operations will continue through FY 2024. Funds that were originally provided for workforce development will be used to pay for permanent full-time salaries for new hires at PIADC to be trained and transfer to NBAF. PIADC work will be moved to NBAF in stages, and all operations are planned to be completely transferred from New York to Kansas in 2024, when PIADC will close. The NBAF transition will continue through this closure. Partnership and innovation funds will support initiatives such as

the Agrosecurity Partnerships for Innovative Research program, which will build on the partnering success that DHS began, and will allow NBAF to leverage its proximity to the Kansas City Animal Health Corridor and Kansas State University, and work to attract collaborators from across the United States and internationally. Steady-state operations are assumed to begin in FY 2025, once the BSL-4 laboratories are fully operational. APHIS and ARS are committed to ensuring the transition from PIADC goes as smoothly as possible and that NBAF will become a world class facility.

This request assumes that the NBAF timeline is not impacted beyond the initial DHS estimates and that all necessary floor-mounted and benchtop equipment will be installed in FY 2021. Any further delays in opening NBAF will increase costs for the facility, and will also delay the closing of PIADC, which would increase the amount of time USDA must pay to operate in both facilities. The request also assumes that the ARS budget for NBAF is also funded since these two proposals were developed together to fully fund the facility's needs in FY 2022.

A decrease of $4,000,000 and 0 staff years for the NAHLN
At the proposed funding level, APHIS would continue working with the NAHLN-participating laboratories on the highest-priority animal health issues but would reduce the funding the Agency provides to support their infrastructure needs through this line item, primarily related to quality management systems and their ability to electronically message test results. Congress provided additional funds to support the NAHLN in recent years such as through the 2018 Farm Bill. The Agency will leverage remaining funding from all sources in the most effective manner.

An increase of $435,000, which includes $296,000 for pay inflation and $139,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(10) Zoonotic Disease Management program: An increase of $162,000 and 0 staff years ($19,620,000 and 62 staff years available in FY 2021 Appropriation)

"One Health" is a collaborative, multisectoral, and trans-disciplinary approach —working at the local, regional, national, and global levels—with the goal to achieve optimal health outcomes while recognizing the interconnection between people, animals, plants, and their shared environment. The Zoonotic Disease Management (ZDM) Program enhances State, national, and international collaborative efforts to promote healthy animals, people, and ecosystems by addressing zoonotic diseases and other relevant One Health issues. According to the U.S. Centers for Disease Control and Prevention (CDC) and the World Organisation for Animal Health, 60 percent of human pathogens are zoonotic, and 75 percent of emerging diseases are zoonotic (including Ebola, Zika, MERS, and SARS). Most zoonotic diseases originate from animal reservoirs. APHIS leads the national effort to address the animal health component of the One Health approach. The Agency contributes animal health expertise, infrastructure, and networks in combination with those of human and environmental health to provide holistic solutions to complex One Health problems. The Agency collaborates with industry and State partners to develop strategies, policies, and trainings to help stakeholders effectively engage with public health counterparts, provide guidance, facilitate information exchange, and enhance responses to One Health issues. By enhancing APHIS' efforts to address the animal health component of One Health, this program protects public health and improves animal health and marketability..

Antimicrobial resistance (AMR) is the ability of a microbe to resist the effects of medication previously used to treat them. APHIS combats AMR using a One Health approach involving multidisciplinary coordination from public health and animal health sectors, and private sector organizations and stakeholders. The Agency works with State, Federal, and industry partners, to promote the judicious use of antimicrobials, which supports a strong, healthy, and thriving U.S. animal agriculture system, as well as public health. In addition, APHIS works with other USDA agencies to develop practical mitigation strategies to reduce AMR prevalence in human and animal health. These strategies cover various efforts including AMR monitoring at the farm level, collection of antimicrobial drug use data, and efforts to promote stewardship of antimicrobial drugs by animal owners and veterinarians. Additionally, APHIS works with State Departments of Agriculture, diagnostic laboratories, and public health officials to address AMR infections in humans found to have an animal component.

The Global Health Security Agenda (GHSA) is a partnership of over 50 nations, international organizations, and non-governmental stakeholders to minimize the global threat of infectious diseases. APHIS coordinates and reports

USDA's international efforts related to implementation of GHSA processes, including AMR, zoonotic disease, biosafety and biosecurity, national laboratory systems, and real time disease surveillance, ensuring interagency collaboration and communication in addition to interfacing with other relevant agencies and stakeholders.

In FY 2022, APHIS will continue to provide leadership in addressing the animal health component of zoonotic diseases, and collaborate with State and Federal partners, veterinarians, and producers to promote the judicious use of antimicrobials, which will support a strong, healthy, and thriving U.S. animal-agriculture system as well as public health.

Overall, base funding for the ZDM program currently supports salaries and benefits, as well as other normal operating expenses such as travel, supplies, equipment, and rent, and utilities to conduct program activities.

An increase of $162,000, which includes $110,000 for pay inflation and $52,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

An increase of $18,647,000 and 34 staff years for Safeguarding and Emergency Preparedness/Response – Plant Health.

(11) Agricultural Quarantine Inspection: An increase of 956,000 and 0 staff years ($32,893,000 and 367 staff years available in FY 2021 Appropriation)

APHIS conducts predeparture agricultural quarantine inspections of passengers and cargo traveling from Hawaii and Puerto Rico to the continental United States to prevent the introduction of non-native agricultural pests and diseases into the mainland. Hawaii and Puerto Rico have pests and diseases harmful to agriculture that are not established in the continental United States. For example, a variety of economically devastating fruit flies – particularly the Mediterranean fruit fly (Medfly) and Oriental fruit fly – and scale pests are present in Hawaii. In FY 2015, Puerto Rico experienced its first Medfly outbreak, along with an outbreak of the old-world bollworm. Plant and plant products, such as fruits and other commodities, easily carry pests that would cause significant economic damage to the mainland United States. In addition to the citrus industry that may be at risk (with a production value of more than $3 billion, according to USDA's National Agricultural Statistics Service, Quick Stats), cut flower and nursery stock production is also at risk from the pests and diseases present in Hawaii and Puerto Rico. Additionally, two significant cotton pests, pink bollworm and the cottonseed bug, are present in Puerto Rico and could be brought into the United States on cargo shipments without an effective inspection program. The pre-departure inspection program facilitates tourism and agricultural trade between Hawaii and Puerto Rico and the mainland United States, while protecting farmers and producers in the continental United States from the entry of various plant pests and diseases.

Because of the significant risks associated with numerous fruits, vegetables, and other plant products from Hawaii and Puerto Rico, APHIS inspects all baggage of passengers leaving these islands. The COVID-19 pandemic brought most travel to a halt in FY 2020, starting in late March. In FY 2020, APHIS inspected the baggage of 5.7 million passengers, down from more than 13 million in FY 2019. APHIS conducts these activities as the national plant health regulatory authority in the United States charged with protecting the health and value of agricultural resources. For commercial cargo, the program oversees treatments and conducts inspections in Puerto Rico for mangoes, cotton, tomatoes, cut flowers, and a variety of other commodities to allow them to be transported and sold in the continental United States. In Hawaii, the program oversees treatments for and inspects a variety of commodities destined for the continental United States, including papayas, bananas, sweet potatoes, herbs such as basil, cut flowers, and ginger root. APHIS inspectors continued critical work facilitating the movement of cargo, conducting treatments, and inspecting containment facilities and first-class mail. While passenger travel declined significantly in FY 2020, cargo treatments for cargo from Hawaii to the continental United States increased by 43 percent, which allowed realignment of staffing resources from the travel arena to treatment monitoring. The number of treatments conducted has been increasing since FY 2019, as it allows Hawaiian farmers to expand the types of high-value, perishable products that they can ship to the continental United States, including sweet potatoes and tropical fruits such as litchi and longan.

The Agricultural Quarantine Inspection (AQI) program keeps interstate trade flowing smoothly and safely and allows for efficient processing of tourists, protecting both the economies of Hawaii and Puerto Rico and the agricultural health of the continental United States. The Hawaii Department of Transportation is modernizing its airport infrastructure and adding a new concourse, which will affect two locations, the Ellison Onizuka Kona International Airport located on the island of Hawaii and the Daniel K. Inouye International Airport located in

Honolulu on the island of Oahu. APHIS will adjust operations to cover additional terminals in FY 2021 and FY 2022, including the purchase of additional x-ray machines to inspect passenger baggage and adjustments to staffing levels and locations. The program's inspections reduce the impact of agricultural pests and diseases on farmers in the continental United States, minimizing production losses and pest control costs and preserving export markets for U.S. agricultural products. Without this program, the risk of pest or disease introduction from Hawaii and Puerto Rico to the mainland United States would greatly increase. Additionally, many commodities would not be allowed entry to the continental United States without the inspections and treatments provided by the program, impacting Hawaiian and Puerto Rican producers. Maintaining the safeguards this program provides is essential, especially considering the increasing U.S. consumer demand for year-round fruits and vegetables.

Overall, base funding for the AQI program currently supports salaries and benefits of inspectors and other staff, as well as normal operating expenses such as rent, utilities, travel, and supplies to conduct program activities.

An increase of $956,000, which includes $651,000 for pay inflation and $305,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(12) Cotton Pests program: An increase of $128,000 and 0 staff years ($13,597,000 and 49 staff years available in FY 2021 Appropriation)

The Cotton Pests program, in cooperation with States, the cotton industry, and Mexico, works to eradicate the boll weevil (BW) and pink bollworm (PBW) from all cotton-producing areas of the United States and northern Mexico. For decades, these pests have cost cotton growers' tens of millions of dollars each year in control costs and crop losses, according to the National Cotton Council. APHIS provides national coordination, operational oversight, technology development (such as sterile PBW moths), and a portion of funding through cost-share programs with States. APHIS' partners have provided more than two-thirds of the funding for the boll weevil eradication effort and most of the operational funds for PBW eradication. The program also maintains capabilities to address other cotton pests that could enter the United States.

APHIS provides technical advice on trapping and treatment protocols to our partners in Mexico to aid in their efforts to eradicate boll weevil and PBW. Without continued Federal funding, support and technical expertise for the final phase of the program, eradication would not be possible, and previously eradicated cotton acreage would be vulnerable to reinfestation. Additionally, U.S. cotton production may be at risk of new pests approaching the country through the Caribbean Basin and Mexico.

APHIS and our State and cotton industry partners have eradicated boll weevil from 99 percent of the 12.2 million acres of U.S. cotton (National Agricultural Statistics Service, 2020). The Lower Rio Grande Valley (LRGV) in Texas is the last zone within the United States where active boll weevil eradication efforts continue due to the neighboring Mexican cotton producing state of Tamaulipas. In FY 2022, APHIS will continue to reduce the boll weevil population in the LRGV and partner with the U.S. cotton industry on boll weevil surveillance efforts for all U.S. cotton production. In addition, APHIS will continue to partner with the Mexican boll weevil eradication program to provide technical assistance and funding through the North American Plant Protection Organization agreement for their parallel program to the LRGV program.

APHIS' Cotton Pests program also partners with States and industry to address PBW. On October 19, 2018, USDA and industry partners officially announced the successful eradication of PBW from all commercial cotton-producing areas in the continental United States. In FY 2018, Florida added a PBW quarantine for an area in the Everglades where a wild PBW population has persisted for the last 80 years and appears to only be active in wild cotton. As a result, APHIS, along with the Florida Department of Agriculture and Consumer Services and the Florida cotton industry, began surveying the perimeter of the commercial cotton area in the northern part of the State and the adjacent okra fields in the city of Homestead, to ensure that PBW has not spread. In FY 2022, APHIS will continue to survey these areas in Florida to ensure that isolated PBW populations in southern Florida do not move into the commercial cotton production areas north of the Everglades.

According to the National Cotton Council of America, where boll weevil has been eradicated, the combined annual direct economic benefits from increased yields, reduced insect damage and lower insect control costs are more than $80 million.

Overall, base funding for the Cotton Pest program currently supports salaries and benefits, cooperative agreements, and programmatic contracts, as well as other normal operating expenses such as travel, rent, and utilities to conduct program activities.

An increase of $128,000, which includes $87,000 for pay inflation and $41,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(13) Field Crop and Rangeland Ecosystem Pests program: An increase of $3,195,000 and 1 staff years ($10,942,000 and 75 staff years available in the FY 2021 Appropriation)

The Field Crop and Rangeland Ecosystem Pests (FCREP) program protects U.S. agricultural crops and rangelands from the establishment or spread of invasive or economically significant pests. In doing so, it facilitates safe international trade and domestic commerce, preserves economic opportunities for U.S. farmers and ranchers, and fosters healthy ecosystems in rangelands and other areas. APHIS conducts survey and suppression activities in western States to reduce grasshopper and Mormon cricket (GMC) infestations that could cause significant economic losses for livestock producers by requiring them to buy supplemental feed or sell their livestock at reduced prices.

APHIS conducts behavioral studies and develops advanced survey and control methods. In addition, the Agency develops treatments for land managers to remove imported fire ant (IFA) from their products and prevent re-infestation; conducts regulatory activities to prevent Karnal bunt (KB) and IFA from "hitchhiking" on regulated articles (i.e., nursery stock and farm equipment) to uninfested areas of the United States and foreign countries through trade; and, conducts survey, treatment, and regulatory activities for witchweed infestations in North and South Carolina to protect U.S. corn production. This program directly protects more than 230,000 acres of wheat and corn (based on APHIS analysis). It indirectly protects all U.S. wheat and corn production, which was worth more than $62 billion in 2019 (National Agricultural Statistics Service, Crop Values 2019 Summary), from the spread of KB and witchweed.

When grasshopper populations reach outbreak levels, they can decimate grasslands. APHIS' GMC program monitors and protects 661 million acres of rangeland each year worth a total of nearly $8.7 billion according to a 2012 economic analysis University of Wyoming researchers prepared through a cooperative agreement with APHIS. Each year, APHIS conducts surveys in western States for GMC, collecting data at more than 27,000 survey points in FY 2020, to determine where potential outbreaks could occur and where treatments might be necessary. The program also addresses witchweed, a parasitic plant that can significantly damage corn, sorghum, and sugarcane. If witchweed were to spread throughout the Corn Belt, crop yields for corn and sorghum could decrease by 10 percent and trade in commodities from these areas could be negatively impacted.

APHIS' IFA program works to prevent human-assisted spread of this pest by requiring treatment of materials capable of harboring IFA, such as nursery stock and hay, are treated before leaving infested areas. Based on studies of areas with climate suitable for IFA (Korzukhin et. al, Environmental Ecology, 2001), APHIS estimates that preventing human-assisted spread is protecting up to 10 States from potential infestations. APHIS will continue conducting annual surveys and other activities to manage these pests in FY 2022.

APHIS coordinates an annual voluntary survey of the grain delivered to elevators to check for KB across the country and conducts regulatory activities to prevent the spread of the disease from the remaining infested area in Arizona. Based on the program's quarantine and survey data, APHIS issues export certificates that are required by countries importing U.S. wheat. These certificates demonstrate to trading partners the safety of U.S. wheat exports, retaining export markets and facilitating wheat movement into international markets. If KB funding was eliminated, the disease could enter the grain market system and directly impact almost every State. Many trading partners will not accept U.S. wheat exports unless the commodity is certified to be from areas where KB is not known to occur. Working with cooperators, APHIS has reduced the wheat production areas regulated for KB from all or portions of 4 States to approximately 170,000 acres in Arizona since 1996. APHIS will continue survey and regulatory activities aimed at keeping KB from causing damage and/or trade disruptions in FY 2022.

Overall, base funding for the FCREP program currently supports salaries and benefits, cooperative agreements, and programmatic contracts. Other funding supports normal operating expenses such as rent, utilities, travel, supplies, and equipment to conduct program activities.

An increase of $3,000,000 and 1 staff year for cogongrass
The 2022 Budget provides funding for cogongrass in the Field Crop and Rangeland Ecosystem Pests line item. In the FY 2021 Appropriations Act, these funds were provided as a General Provision for a pilot program for APHIS to provide grants to State Departments of Agriculture and forestry commissions in States identified in the Agency's final environmental assessment (EA) related to cogongrass control. Cogongrass control efforts are more appropriately funded under this line item since it is an ongoing program that is expected to continue for the foreseeable future.

Cogongrass is an invasive perennial weed that is a prolific seed producer and forms an extensive rhizome network underground. The wind-dispersed seeds are easily spread along rights of way encouraging population expansion. Cogongrass invades pine plantations and is believed to create chemical interference that decreases pine production. Controlling this weed is difficult because its rhizomes are drought, fire, and herbicide tolerant. APHIS estimates that cogongrass has the potential to spread across 82 percent of the United States. In FY 2020, APHIS completed the EA in preparation for conducting control treatment activities targeting cogongrass in Alabama, Georgia, Mississippi, and South Carolina to ensure that the program is compliant with the National Environmental Policy Act and consulted with the U.S. Fish and Wildlife Service (FWS) on potential impacts to threatened and endangered species. APHIS provided funds to Alabama and South Carolina to support survey, outreach, and control activities in FY 2020, and anticipates providing funding to the four States identified in the EA in FY 2021. APHIS will also work with the States to reinitiate consultation with the FWS and National Marine Fisheries Service (NMFS) to revise the biological assessments in FY 2021. APHIS will revise the EA after consultation with FWS and NMFS is complete. In FY 2022, APHIS will continue providing funds to Alabama, Georgia, Mississippi, and South Carolina to combat cogongrass.

An increase of $195,000, which includes $133,000 for pay inflation and $62,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(14) Pest Detection program: An increase of $485,000 and 0 staff years ($27,733,000 and 186 staff years available in the FY 2021 Appropriation)

The Pest Detection program serves as the early warning system for the detection of plant pests of economic and environmental significance in the United States. The program helps farmers and producers by documenting the status (or absence) of plant pests and diseases that could impact trade opportunities, both interstate and international. It also helps APHIS' State-level partners by providing funding and infrastructure to conduct surveys for high-risk pests that may affect their State. The information the program collects provides the basis for APHIS' emergency response and regulatory efforts that preserve economic opportunities for farmers and safeguard U.S. agricultural and natural resources. Specifically, the program identifies and prioritizes plant pest and disease threats; develops scientifically sound pest survey protocols; procures essential survey materials (traps, lures, etc.); cooperates with State partners to conduct the pest surveys; and, shares data with States about significant pest detections.

APHIS provides national coordination for the program and develops policies and procedures for commodity-based and resource-based pest surveys. These surveys enable APHIS and cooperators to target high-risk hosts and commodities, gather data about pests specific to a commodity, and provide accurate assessments of pest distribution, including pest-free areas. Negative data from program surveys supports U.S. market access for several important commodities by demonstrating that the pests are not present. Examples include, data showing that major pests such as the Khapra beetle; a serious pest of wheat and grain; and the European grapevine moth, a pest of grapes, are not present in the United States. Additionally, while many entities are involved in protecting crops and resources, APHIS' role is to verify that U.S. exported products do not pose risks to other countries. For example, when a survey first detected the pale cyst nematode in Idaho, the program had data demonstrating negative survey results in other potato-producing States that kept export markets open for U.S. potatoes. The value of the markets that remain open was $255 million in 2019 (International Trade Centre database). As a result of this program, highly skilled, national cadres of surveyors are in the field on a daily basis looking for high-risk pests. In FY 2020, the program and its cooperators conducted surveys in 50 States and 3 territories for 204 individual pests, pathogens, and noxious weeds. The program also conducted 252 commodity- and taxon-based surveys, with an average of more than 5 pests per survey. APHIS and State cooperators conduct surveys for multiple pests at each location for efficiency and economy of survey.

Early pest detection is important to avert economic and environmental damage; once a pest becomes established or spreads significantly, the mitigation costs can reach millions of dollars, in addition to lost farm revenues and damage to ecosystems. The Pest Detection program communicates and develops partnerships through cooperative agreements with state departments of agriculture and natural resources, universities, industry partners, tribal and local governments and communities, non-profit organizations, and individuals in all 50 States.

Overall, base funding for the Pest Detection program currently supports salaries and benefits, and cooperative agreements, as well as other normal operating expenses such as travel, rent, utilities, and supplies to conduct program activities.

An increase of $485,000, which includes $330,000 for pay inflation and $155,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(15) Plant Protection Methods Development program: An increase of $333,000 and 0 staff years ($20,884,000 and 128 staff years available in the FY 2021 Appropriation)

The goal of the Plant Protection Methods Development (PPMD) program is to develop scientifically viable and practical tools for exotic plant pest exclusion, detection, and management. The program plays an essential role in APHIS' mission by developing tools for the detection of exotic plant pests in survey programs; molecular diagnostic tests and identification tools for pest identification; integrated pest management methods, including biological control, to help eradicate or manage invasive pests; and treatments to support interstate and international trade.

APHIS' nationwide pest detection surveys and pest management programs depend on accurate and effective tools. The PPMD program supports development of pest trapping, identification, and survey technologies. Digital pest identification tools and molecular diagnostics developed through PPMD funding supports both domestic programs and import pest identification responsibilities. APHIS uses these tools to conclusively identify exotic species introductions in order to take appropriate regulatory actions. The program also develops pest management techniques that APHIS national programs use to manage or eradicate invasive pest threats.

The PPMD program aims to develop new, or improve existing, tools each year to enhance APHIS' safeguarding capabilities. For pest identification, the program continues to design, develop, and deliver digital, media-rich, identification tools for APHIS to support trade and domestic, port, and offshore pest identification responsibilities.

The PPMD program also maintains its own quarantine and rearing facilities for biological control agents in Arizona, California, Colorado, Massachusetts, Michigan, Texas, and Guatemala. APHIS partners with USDA's Agricultural Research Service (ARS), the U.S. Fish and Wildlife Service, State Departments of Agriculture, universities in 30 States and territories, and 2 Native American Tribes to evaluate and establish biological control agents for invasive plants, pests, and diseases. Some key program targets included Asian citrus psyllid (ACP), brown marmorated stink bug, emerald ash borer, spotted lanternfly, and Asian longhorned beetle. For example, since 2011, a biocontrol rearing facility in Mission, Texas, produced a cumulative total of 12.7 million biological control agents for ACP, the vector for citrus greening. Assessments of area-wide management in south Texas showed an 89 percent reduction in the ACP population since the program started. The program also began field tests of an entomopathogenic biocontrol fungi, that can act as a parasite and kill or seriously disable ACP, as a control method.

The PPMD program also supports research related to invasive honey bee pests, specifically Varroa mites. A Varroa mite feeds on the honey bee's fat body tissue (an organ similar to the human liver), in turn weakening and shortening the bee's life. The Varroa mite is considered the greatest single driver of the global honey bee colony losses (Proceedings of the National Academy of Sciences, Jan 2019: "Varroa destructor feeds primarily on honey bee fat body tissue and not hemolymph."). In FY 2020, the program funded priority projects with other Federal and State agencies, as well as the public, to support managing, suppressing, and eradicating Varroa mites, as well as small hive beetles and other pests and diseases contributing to a decline in honey bee health. These projects include methods development for the integrated control of Varroa mites, breeding Varroa-resistant bees, and researching viruses that have a significant impact on honey bees.

In FY 2021, the program will continue working to develop new management tools and pest detection methods for the highest priority pests and diseases.

Overall, base funding for the PPMD program currently supports salaries and benefits, contracts, and agreements, as well as other normal operating expenses such as travel, rent, and supplies to conduct program activities.

An increase of $333,000, which includes $227,000 for pay inflation and $106,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(16) Specialty Crop Pests: An increase of $12,789,000 and 33 staff years ($196,553,000 and 768 staff years available in FY 2021 Appropriation)

The Specialty Crop Pests (SCP) program protects U.S. farmers and producers of fruits and vegetables, tree nuts, horticulture, and nursery crops from adverse impacts associated with invasive pests, such as crop damage or threats to international trade and interstate commerce. APHIS works in coordination with State, Tribal, university, and industry partners to prevent or mitigate impacts from invasive pests of Federal regulatory significance. These efforts promote the ability of U.S. farmers and producers to export their products, prevent damage to specialty crop production, and protect natural resources, including forests and residential landscapes. Specialty crops are of high value and are grown in all 50 States. APHIS' SCP program directly protects production (including citrus, grapes, potatoes, nursery stock, and tree fruit) worth more than $9.5 billion in FY 2017, based on internal analysis using data from the USDA National Agricultural Statistics Service's (NASS) Census of Agriculture and the Economic Research Service (ERS). APHIS is currently using SCP resources to address the following pests and diseases: exotic fruit flies, a variety of citrus pests and diseases, pale cyst nematode (PCN), navel orangeworm (NOW), light brown apple moth (LBAM), plum pox virus (PPV), European grapevine moth (EGVM), glassy-winged sharpshooter (GWSS), Phytophtora ramorum, and spotted lanternfly (SLF), among others.

The SCP program partners with affected industries, States, Tribes, academic institutions, and other Federal agencies to deliver domestic programs. Additionally, the program works with its counterparts in foreign countries to address pest risks offshore. For example, the SCP program works with Mexico and Guatemala to mitigate the risk of exotic fruit flies entering the United States. The program has kept the United States free of Mediterranean fruit fly (Medfly) and Mexican fruit fly (Mexfly) for many years by conducting preventive releases of sterile insects to disrupt normal population growth in at-risk areas; detecting and responding to outbreaks when they occur; and maintaining a barrier against the natural spread of the Medfly in Mexico and Central America, and developing advanced methods for survey and control. Medfly has a host list that includes 300 cultivated and wild fruits. The Mexfly also has a wide-ranging host list and presents a particular threat to the Texas citrus industry due to its proximity to infested areas in Mexico. Increasingly, tephritid fruit flies of the genus Bactrocera pose a threat with several outbreaks in California and Florida in the past decade. APHIS and cooperators maintain 160,000 fruit fly traps in vulnerable areas to ensure that any introductions of exotic fruit flies are quickly detected. In FY 2020, the program is responding to five new exotic fruit fly outbreaks – one Medfly outbreak in California and four Mexfly outbreaks in Texas. To reduce ongoing risks related to Mexfly infestations, the program is replacing its outdated sterile Mexfly facility in Texas, and expanding capacity to more than double the number of sterile insects produced to improve the program's preventive efforts. Without the program's efforts to detect and eradicate these outbreaks when they occur, many important crops would become impossible to grow due to fruit fly infestations. APHIS will continue activities to prevent, detect and respond to any outbreaks that occur in FY 2022.

APHIS also works with citrus producing States and industry groups to support industry's ability to grow and market U.S. citrus despite the presence of devastating diseases such as citrus greening, also known as Huanglongbing (HLB). Through the Citrus Health Response Program, APHIS supports cooperators' in citrus producing States with on-the-ground operations, such as surveys, regulatory inspections, and outreach, to affected growers and the public, as well as methods development activities at other USDA agencies. APHIS conducts inspections of Florida citrus shipments destined for export to the European Union and other countries, allowing citrus producers to take advantage of export opportunities. Because of the ongoing threat HLB poses, APHIS, other Federal agencies, State partners, and the citrus industry work together on the HLB Multi-Agency Coordination (MAC) group to identify and implement tools to combat the disease. The MAC Group has funded research to quickly identify practical tools that can aid the citrus industry to combat HLB. Growers and commercial firms are using one in three of the tools funded through HLB-MAC projects. The solutions found through this effort will continue to help citrus growers manage the disease while research into long-term solutions for HLB continues. APHIS will continue to address HLB and other citrus diseases in FY 2022.

Federal response activities take place in concentrated areas where the infestations occur (e.g., PCN in Idaho or SLF in Pennsylvania and surrounding States), but also work to protect all at-risk States producing specialty crops. For example, while the SCP program works to address the PCN in Idaho, it also conducts nationwide surveys for the pest to demonstrate to trading partners that potato-producing areas outside of the quarantined area are not affected by PCN, protecting fresh potato export markets worth $255 million in FY 2019 (International Trade Centre Database). The program also addressed PPV, a devastating viral disease of stone fruit, in New York, Michigan, and Pennsylvania. USDA declared the United States free of PPV in October 2019, which protects more than 1 million acres of stone fruit across the United States. APHIS will continue post-quarantine release monitoring surveys in New York, the site of the most recent infestation in the United States. Without the SCP program, various export markets for U.S. specialty crops would be at risk—the program protected trade worth more than $8.9 billion in 2017 (based on APHIS analysis using NASS and ERS data).

Through the SCP program, APHIS also addresses SLF, a serious pest of grapes, apples, hops, walnut trees, and other hardwood trees. APHIS and cooperators are using an area-wide strategy that includes expanded surveillance, control, and outreach activities for this pest. Agricultural producers across the country are concerned about the pest's spread, and therefore, APHIS, in cooperation with State cooperators is developing a "Slow the Spread" program plan for this damaging pest. APHIS is using treatments to suppress populations on the leading edge of the infestation, and to eradicate outlying populations. APHIS and cooperators are continuing to develop new methods to control SLF, including improved traps and biological control methods. APHIS will build these new tools into the program as they continue to show success in research trials. SLF is particularly damaging in vineyards, and preventing it from spreading to new areas and continuing to develop new treatment methods will protect grape production across the country. Grape production in New York, Pennsylvania, and Virginia (all affected by SLF) covered 50,000 acres and had a value of $113 million in 2017 (NASS Non-Citrus Fruits and Nuts Summary, May 2020).

To protect the U.S. grape and wine industries, APHIS has partnered with California grape growers to eradicate EGVM, and prevent the spread of GWSS into grape-producing areas. In the collaborative effort against EGVM, APHIS provided funding, expertise, and operational support for surveys and regulatory efforts to find and prevent the spread of the target pest, while industry funded and conducted necessary control treatments (with technical guidance from APHIS and State officials). APHIS and its State, county, and industry partners declared EGVM eradicated in FY 2016, after an intensive, 7-year cooperative effort. Eradicating this pest dramatically lowers growers' production costs and protects or expands export opportunities. APHIS conducted post-eradication surveys to ensure that this pest is not present, and to protect the Federal and industry investment in the eradication effort. FY 2019 was the third and final year in the post-eradication survey plan.

APHIS partnered with tree nut industries, as well as Arizona and California State cooperators, to develop sterile insect technology to address NOW, a serious pest of pistachios, almonds, and walnuts. In FY 2020, APHIS is continuing to produce sterile NOW and conducting a pilot area-wide control program with industry and State partners covering 4,000 acres. APHIS and its partners' goal is to implement the technology across all infested areas. These efforts will help protect nut production worth more than $8.9 billion for the 2018/2019 season (ERS Fruit and Tree Nut Yearbook Tables).

Overall, base program funding supports salaries and benefits, cooperative agreements, as well as other normal operating expenses such as supplies, equipment, and rent, to support program activities.

An increase of $8,500,000 and 3 staff years for citrus greening

The 2022 Budget provides funding for citrus greening in the Specialty Crops line item. In the FY 2021 Appropriations Act, these funds were provided as a General Provision to support priorities and strategies identified by the Huanglongbing Multi-Agency Coordinating (HLB MAC) group. HLB control efforts are more appropriately funded under this line item since it is an ongoing program that is expected to continue for the foreseeable future, and would consolidate citrus greening funding under one funding source.

HLB is the most devastating disease of citrus around the world. APHIS established the HLB MAC response framework in December 2013, to help address the citrus industry's immediate and long-term needs in dealing with this disease. In addition to APHIS, the MAC is comprised of representatives from USDA's Agricultural Research Service, National Institute of Food and Agriculture, and Office of Pest Management Policy; the Environmental Protection Agency; State departments of agriculture in Arizona, California, Florida, and Texas; citrus research organizations in California and Florida; and citrus industry organizations in California, Florida, and Texas. Since FY

2014, the HLB MAC group has funded nearly 100 projects carried out by State cooperators, universities, private companies, and Federal agencies. The projects have focused on strategies for vector control, therapies for infected trees, sustainability of new plantings, early detection technologies, best management practices for citrus groves, and support for the development of HLB-resistant citrus varieties. In recent years, APHIS provided funding for a large-scale project in Florida designed to improve management of citrus in HLB-affected groves, testing combinations of management and therapeutic strategies on a 5,000-acre test site. The goal is to provide citrus growers with simple and proven strategies for keeping their groves productive under high pressure from HLB. In FY 2021, APHIS continues to support this project in Florida and is expanding the approach to California and Texas in FY 2021. In FY 2022, APHIS will continue supporting projects that will identify and implement tools (including alternatives to antimicrobial use) to manage HLB and keep citrus groves productive, supporting and protecting the $3.4 billion U.S. citrus industry (National Agricultural Statistics Service Citrus Fruits 2020 Summary).

An increase of $2,289,000 and 30 staff years for fruit fly

The FY 2022 Budget requests funding to continue addressing the European cherry fruit fly (ECFF) in New York. This temperate fruit fly species differs from the tropical species that APHIS more typically detects and eradicates in Florida, Texas and California by having only one life cycle per year, whereas other species have many lifecycles per year and can usually be eradicated within several months. APHIS declares an outbreak eradicated if there are no detections within three lifecycles. Additionally, one of ECFF's primary hosts is the honeysuckle plant, which is widespread throughout New York and surrounding States and Canada. The ECFF quarantine includes 1,612 square miles in northwestern New York. Cherry producers are able to mitigate damage ECFF might cause to crops through current management practices, and APHIS and cooperators are using a systems approach to permit the movement of cherries out of the quarantine zone. APHIS has funded ECFF since FY 2018 with funding available under Plant Protection Act 7721 and prior year funding available in the Specialty Crop Pests line item. However, due to the number of emerging and growing pest programs in Specialty Crop Pests (including those targeting NOW and SLF as well as ECFF), APHIS needs additional funding to maintain this quarantine and protect cherry producers outside the currently affected areas. APHIS will use the requested funding to continue survey and regulatory activities necessary for the protecting U.S. cherry production and export opportunities. In FY 2019, the U.S. cherry industry (sweet and tart cherries) had a production value of nearly $700 million (National Agricultural Statistics Service Noncitrus Fruits and Nuts Summary 2020), and exports of cherries were worth nearly $500 million (International Trade Centre database).

An increase of $2,000,000, which includes $1,361,000 for pay inflation and $639,000 for FERS:

This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(17) Tree and Wood Pests program: An increase of $761,000 and 0 staff years ($60,456,000 and 292 staff years available in FY 2021 Appropriation)

America's forests are valuable resources that provide jobs and recreation opportunities and create habitat for wildlife. Through the Tree and Wood Pests (TWP) program, APHIS addresses devastating pests such as the Asian longhorned beetle (ALB), emerald ash borer (EAB), and European gypsy moth (EGM). Numerous native hardwood tree species that are common throughout U.S. forests and urban landscapes are hosts to these pests. When forest pests like EAB kill large numbers of trees in urban and suburban areas, they can cause tremendous, wide-ranging impacts to communities, landscapes, and commerce. In addition, exports of forest products such as logs and timber could be at risk due to trade restrictions put in place by other countries.

Nationwide, APHIS programs protect 596 million acres of forested land by preventing the spread of damaging pests. Without Federal funding, forest pests would spread more rapidly throughout the United States, and responding to newly introduced pests would become increasingly difficult. According to industry estimates, the value of forest products that APHIS protects is over $200 billion .

APHIS cooperates with State and local agencies and organizations in 48 States to conduct various activities to manage and, when feasible, eradicate forest pests. These activities include conducting surveys, implementing control measures, developing methods and processes to combat pests, and conducting outreach efforts to prevent pest spread. APHIS' role in the TWP program is to oversee the regulatory framework to prevent the human-assisted movement of these pests and to provide national oversight and coordination for program activities to detect and eradicate or manage the pests.

In FY 2022, APHIS will continue addressing ALB outbreaks in Massachusetts, New York, Ohio and South Carolina, and continue pursuing biological control options as a long-term EAB management strategy. In addition, APHIS, alongside the Forest Service and the EGM Slow-the-Spread Foundation, continues its work to slow the spread of EGM and eradicate isolated populations, keeping this pest from becoming a larger issue.

Overall, base funding for the TWP program currently support salary and benefits, contracts, and cooperative agreements, as well as other normal operating expenses such as rent, supplies, travel, and equipment to conduct program activities.

An increase of $761,000, which includes $518,000 for pay inflation and $243,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

An increase of $4,812,000 and 6 staff years for Safeguarding and Emergency Preparedness/Response – Wildlife Services

(18) Wildlife Damage Management program: An increase of $1,495,000 and 0 staff years ($111,647,000 and 574 staff years available in FY 2021 Appropriation)

The Wildlife Damage Management (WDM) program resolves human/wildlife conflicts and protects agriculture, human health and safety, personal property, and natural resources from wildlife damage and wildlife-borne diseases in the United States. This program protects livestock from predators, manages damage from invasive species, such as feral swine and brown tree snakes; conducts a national rabies management program; and manages damage, conflicts, and diseases caused by various wildlife species, such as beavers, double-crested cormorants, and other migratory birds. APHIS conducts these activities under the authority of the Animal Damage Control Act, which allows the Agency to control mammals and birds that are a nuisance or serve as reservoirs for zoonotic diseases. These activities benefit farmers, ranchers, other private landowners, businesses, and Federal, State, county, and city government offices. APHIS carries these activities out with appropriated funding the Agency receives as well as funding from Federal, State and local cooperators.

APHIS protects resources and safeguards human health and safety from wildlife damage by providing both technical and direct control assistance upon request. For example, the Agency will provide assistance if a rancher is experiencing predators killing their cattle and sheep, or if a farmer is having trouble with fish-eating birds damaging their catfish and other aquaculture crops. This could include providing advice, information, recommendations, and materials (and in some cases the necessary equipment) to the producer, farmer, or rancher to resolve the wildlife-caused damage themselves. APHIS maintains specially trained staff around the nation to provide direct control assistance, which can be necessary when the problem cannot be resolved through technical assistance alone. APHIS implements integrated approaches, consisting of multiple and varied methods, to protect resources from wildlife damage.

APHIS' wildlife disease biologists provide technical assistance, conduct surveillance, and actively assist in managing more than 30 wildlife diseases, pathogens, and syndromes, as well as collaborate with domestic and international academic and research institutions regarding wildlife disease surveillance. Ongoing surveillance of avian influenza in wild bird populations and diseases in feral swine is critical to manage and determine threats to the U.S. poultry and swine industries. Wildlife disease biologists also serve as multi-hazard first responders, providing support on foreign animal disease introductions (e.g., virulent Newcastle disease, avian influenza) and natural disasters (e.g., floods, hurricanes, wildfires).

Overall, base funding for the WDM program currently supports salary and benefits, supplies, and equipment, as well as other normal operating expenses such as cooperative agreements, rent, and travel, to conduct program activities.

An increase of $1,495,000, which includes $1,018,000 for pay inflation and $477,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(19) Wildlife Services Methods Development program: An increase of $3,317,000 and 6 staff years ($21,046,000 and 122 staff years available from the FY 2021 Appropriation)

The Wildlife Services Methods Development (WSMD) program works with cooperators to conduct research to develop methods to assess, prevent, and mitigate damage caused by wildlife, including invasive species, on agricultural production and to detect and prevent wildlife diseases that may impact animal health and agricultural biosecurity. APHIS provides the only dedicated Federal leadership in developing methods to manage wildlife-related damage programs and to resolve human-wildlife-agricultural conflicts. These methods enable APHIS, cooperators, and individuals to protect crops, livestock, natural resources, property, and public health and safety.

Many methods that Federal, State, and private sector wildlife professionals use today stem from APHIS' research on integrated wildlife damage control approaches. Examples of methods developed include a potential new toxicant and delivery system for managing feral swine populations; a repellent application for blackbirds that cause extensive crop damage and lower yields at harvest for sunflower growers; and adaptation of effective methods for managing wolf and coyote predation. Each of these methods has enabled APHIS to reduce damage to property, livestock, agriculture, human health and safety, and/or native wildlife and ecosystems.

Additionally, the WSMD program registers products that enable the private sector to further manage human-wildlife conflicts. For example, the program recently patented a new vehicle-based lighting system to reduce deer-vehicle collisions during low light conditions. In partnership with the private section, this technology will reduce wildlife deaths and increase driver safety on roads. The program also explores ways to reduce the spread and transmission of zoonotic diseases, and develops disease surveillance and diagnostic methods.

These methods are essential to cooperators and preserve businesses and regional employment opportunities. In FY 2022, the WSMD program will continue to serve as an international leader in research to reduce wildlife damage.

Overall, base funding for the WSMD program currently supports salary and benefits, contracts, and cooperative agreements, as well as other normal operating expenses such as, supplies, equipment, travel, and rent to conduct program activities.

<u>An increase of $3,000,000 and 6 staff years for chronic wasting disease research</u>
APHIS proposes an increase of $3 million and 6 staff years to research the implications of climate change on the prevalence and distribution of chronic wasting disease (CWD). Climate change is already thought to be increasing the distribution and density of deer populations in the United States. These changes could significantly increase the prevalence of CWD in areas where the disease already occurs, as well providing an opportunity for disease spread into new areas. With additional funding, APHIS' National Wildlife Research Center would develop research to improve our understanding of changes in risk of the disease spreading to new areas, the role climate change will have on environmental persistence of prions, and on developing rapid diagnostic technologies for detecting the disease in animals and the environment.

<u>An increase of $317,000, which includes $216,000 for pay inflation and $101,000 for FERS:</u>
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

An increase of $539,000 for Safeguarding and Emergency Preparedness/Response – Regulatory Services

(20) Animal and Plant Health Regulatory Enforcement program: An increase of $297,000 and 0 staff years ($16,400,000 and 114 staff years available in the FY 2021 Appropriation)

The Animal and Plant Health Regulatory Enforcement (APHRE) program provides investigative, enforcement, and regulatory support services to the Agency's four regulatory programs and Agricultural Quarantine Inspection activities carried out through the Department of Homeland Security's Customs and Border Protection. APHRE investigates alleged violations of Federal laws under its jurisdiction and pursues appropriate enforcement actions through administrative, civil, or criminal procedures.

The APHRE program ensures compliance through comprehensive investigations, sound enforcement actions, and strong educational efforts. The program uses monetary penalties and alternative enforcement actions, including non-monetary settlement agreements, and works with USDA's Office of Inspector General and Office of the General

Counsel, and/or the U.S. Department of Justice to pursue administrative, civil, or criminal action, as appropriate, in response to alleged violations of APHIS-administered laws. Program activities serve to deter individuals and companies from engaging in acts to cause extensive economic damage and/or excessive expenses related to eradication or mitigation efforts designed to protect the American agriculture system.

Overall, base funding for the APHRE program supports salaries and benefits, equipment, contracts, as well as other normal operating expenses including travel, supplies, printing, rent, and utilities to conduct program activities.

An increase of $297,000, which includes $202,000 for pay inflation and $95,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(21) Biotechnology Regulatory Services: An increase of $242,000 and 0 staff years ($19,020,000 and 93 staff years available in FY 2021 Appropriation)

The biotechnology industry develops innovative products that can greatly benefit the public. Every day, American farmers and consumers benefit from USDA's role in bringing biotechnology products to the marketplace. Farmers benefit from crops developed using genetic engineering that provide improved yields and, in some instances, reduced use of herbicides and insecticides, while consumers benefit from products that provide healthier oils, among other things. According to the USDA Economic Research Service, farmers use biotechnology to grow more than 90 percent of the soybeans, corn, and cotton in the United States. However, before any of these products can be brought to market, it is essential to demonstrate, through rigorous, scientific review, that they do not pose a risk to America's agricultural and natural resources.

APHIS ensures certain organisms developed using genetic engineering will not pose a pest risk to plants when released into the environment. APHIS reviews and regulatory determinations support producers of new and innovative products in their efforts to enter commerce and the worldwide marketplace. These controls instill confidence in the public and in our trading partners that certain organisms developed using genetic engineering and produced in the United States are safe and of the highest quality. APHIS ensures that developers, growers, and others take important steps to prevent unauthorized release and movement of certain organisms developed using genetic engineering. APHIS inspects fields, equipment, and other facilities to ensure developers meet the standards outlined in the permit or notification.

APHIS takes a coordinated and collaborative approach to ensure the safe development of products derived through genetic engineering. This includes working with the Environmental Protection Agency and the Food and Drug Administration consistent with the principles of the Coordinated Framework for the Regulation of Biotechnology; partnering with the National Plant Board to allow State inspectors to assist with inspections of field release sites, which ensures cost-effective use of resources; working with international partners to enhance the coordination of regulatory approaches for the safe use of organisms developed using genetic engineering; and providing capacity building assistance to developing countries for the regulation of organisms developed using genetic engineering.

Overall, base funding for the Biotechnology Regulatory Services program currently supports salaries and benefits, contracts, and agreements, as well as other normal operating costs, such as travel, equipment, and supplies to conduct program activities.

An increase of $242,000, which includes $165,000 for pay inflation and $77,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

A net increase of $7,125,000 and a net decrease of 9 staff years for Safeguarding and Emergency Preparedness/Response – Emergency Management

(22) Civilian Climate Corps: An increase of $10,000,000 and 5 staff years ($0 and 0 staff years available in the FY 2021 Appropriation)

Climate change has allowed invasive plants, pests, and diseases to move around the world and become established in new areas more easily. The speed at which pests and disease spread to new areas that previously may not have been hospitable to them is unprecedented in human history. Effects have included increased wildfires caused by establishment of invasive plants that are more fire-prone, as well as crop losses caused by insects arriving in the United States and becoming established further north than believed possible because of higher than average temperatures. Additionally, some methods to fight invasive species compound the impacts because they themselves—such as pesticides—may have their own impacts on climate.

Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad,* signed on January 27, 2021, calls for the establishment of a Civilian Climate Corps Initiative to put a new generation of Americans to work conserving and restoring public lands and waters, increasing reforestation, increasing carbon sequestration in the agricultural sector, protecting biodiversity, improving access to recreation, and addressing the changing climate.

APHIS will lead coordination between Federal agencies and the Civilian Climate Corps on issues related to invasive species control and climate change. APHIS proposes to establish a new program that will work with the Corps and engage in identifying emerging invasive species threats, such as pests and diseases that climate change has made more likely to arrive and become established in the United States or regional areas, and which could have deleterious effects. Under the new program, APHIS will expand efforts to develop and implement new surveillance methods to more quickly detect incursions of invasive pests as well as develop new mitigation methods to address those already present and causing economic and environmental damages.

(23) Contingency Fund: An increase of $13,000 and 0 staff years ($478,000 and 5 staff years available in the FY 2021 Appropriation)

The APHIS Contingency Fund is the Agency's resource to immediately implement short-term, coordinated, emergency activities that are relatively small in scale and not otherwise supported by the Agency's other appropriated commodity line items. APHIS uses this fund to respond to small, isolated pest and disease outbreaks before they can spread and cause significant economic and financial damage to producers across the United States. Specific examples include addressing outbreaks of the European grapevine moth in California, rabies in the Eastern United States and Texas, contagious equine metritis in Kentucky and other States, giant African land snail in Florida, feral swine in New Mexico, cattle fever ticks in Texas, and grasshopper and Mormon crickets in the Western United States.

By allowing APHIS programs to promptly address small scale outbreaks, the Agency decreases the likelihood of pest and disease spread that could cripple otherwise healthy agricultural production systems and export markets.

Overall, base funding for the program currently supports salaries and benefits, equipment, contracts, and agreements, as well as other normal operating costs, such as travel and supplies to conduct program activities.

An increase of $13,000, which includes $9,000 for pay inflation and $4,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(24) Emergency Preparedness and Response program: A net decrease of $2,888,000 and a decrease of 14 staff years ($41,268,000 and 193 staff years available in FY 2021 Appropriation)

The Emergency Preparedness and Response (EPR) program improves APHIS' capability to prevent, prepare for, respond to, and recover from animal health emergencies. This program's goal is to respond to animal health events within 24 hours from the time APHIS determines that a Federal emergency response is needed to manage an agricultural outbreak. It develops strategies, policies, and procedures for incident management and response coordination that meet national and international standards. The program participates in joint Federal, State, and local animal health and all-hazards exercises to improve response capabilities. and works with major commodity groups to ensure the continuous movement of livestock products during animal health emergencies. The EPR program funds activities that enable APHIS to achieve a high state of readiness and the capability to respond rapidly and effectively to emergencies, thus lessening the impact of those events on producers, consumers,

taxpayers, and the economy. Also through this program, APHIS and the Centers for Disease Control and Prevention (CDC) jointly manage the Federal Select Agent Program (FSAP), which oversees the possession, use, and transfer of biological select agents and toxins that have the potential to pose a severe threat to public, animal, or plant health, or to animal or plant products.

The EPR program also maintains emergency qualifications system dispatchers, who coordinate the delivery of emergency resources, as well as the APHIS security coordinator program and the Voluntary Emergency Ready Response Corps program, continuity planning, and Geographic Information System (GIS) capability during incidents. APHIS also provides subject matter experts on pet owners and their pets, as well as for breeders, dealers, and exhibitors regulated by the Animal Welfare Act to enhance emergency response coordination. In FY 2020, the Agency extended its reach through collaborative projects with the Zoo and All-Hazards Preparedness Center, to more than 350 individual zoos, aquariums, sanctuaries, nature centers, and rehabilitation organizations. APHIS is increasingly using GIS to pinpoint areas in which regulated facilities should be monitored during hurricanes, floods, and wildfires.

APHIS' National Preparedness and Incident Coordination Center (NPIC) develops animal health emergency management guidelines to protect U.S. animal agriculture through collaborative, science- and risk-based strategies. The guidelines are based on the National Incident Management System and National Response Framework. The NPIC National Training and Exercise Program is dedicated to improving preparedness, mitigation, and response to animal disease emergencies among all stakeholder groups. It creates dynamic, real-world learning scenarios to build the response capabilities of emergency responders and maintain the Agency's personnel response readiness. APHIS continues to expand its animal health readiness capacity by increasing the number of first responders to enable the Agency to respond more rapidly and effectively to animal health emergency events.

APHIS, State cooperators, and industry stakeholders develop exercises and deliver webinars for the Secure Milk Supply, Secure Pork Supply, Secure Beef Supply, and Secure Poultry Supply Plans. These Plans provide continuity-of-business and biosecurity to producers with no evidence of foreign animal disease infection on their premises in a regulatory control area. Under the plans, these producers could move products to processing if approved by local, State, tribal, and Federal regulatory officials. The secure food supply plans are the result of a multi-year collaboration by industry, State, Federal, and academic representatives.

The Federal Select Agent Program administers the select agents and toxins regulations in coordination with the Federal Bureau of Investigation. Any individuals or entities possessing, using, or transferring select agents or toxins must register them with APHIS if the agent affects plant or animal health or the CDC if the agent affects human health. Facilities must meet biosafety requirements, including having measures in place to ensure the safety and security of the select agents. APHIS and CDC inspect facilities that possess, use, or transfer these agents to ensure compliance with select agent regulations. To eliminate potential conflicts of interest, CDC inspects USDA facilities, and APHIS inspects CDC facilities that possess select agents. APHIS' Agriculture Select Agent Services (AgSAS) ensures that registered facilities promptly address all non-compliances, and initiate any necessary enforcement actions. AgSAS also works with the Federal Bureau of Investigation, which conducts Security Risk Assessments to determine the suitability of individuals requesting access to the select agents and toxins. FSAP coordinates regularly with USDA representatives overseeing the construction and stand-up of the National Bio and Agro-Defense Facility in Manhattan, Kansas to provide guidance on the select agent registration process.

The EPR program uses epidemiologic and economic models to better understand historical events, estimate future consequences, and inform strategic, logistical, and budgetary decisions by evaluating varying animal health interventions. APHIS continues to develop and/or update disease-spread and control models for African swine fever, bluetongue, classical swine fever, foot-and-mouth disease, virulent Newcastle Disease, and highly pathogenic avian influenza. The Agency also develops disease-spread and control models to better understand animal disease epidemiology to support emergency preparedness.

Overall, base funding for the EPR program currently supports salaries and benefits of personnel and contracts, as well as other normal operating costs such as travel, supplies, rent, and utilities to conduct program activities.

A decrease of $3,391,000 and 14 staff years for ESF-11

The EPR Program previously supported coordinators in the 10 Federal Emergency Management Agency (FEMA) regions for Emergency Support Function #11: Agriculture and Natural Resources (ESF #11). The ESF #11 responsibilities include support of State, Tribal, territorial and local authorities, and other Federal agency efforts to provide nutrition assistance; control highly contagious or economically devastating animal/plant diseases to ensure the safety and security of the commercial food supply; and other protection of natural resources. These functions, along with the associated staff and funding, were transferred to the USDA Office of Homeland Security (OHS) Emergency Programs Division (EPD). This move added a centralized, "Whole-of-USDA" capability to engage subject matter experts, and support from across the Department to address diverse emergency events and the threats they pose to the Nation's agriculture and natural resource sectors. In FY 2022, this change is reflected in the APHIS budget as a reduction of $3,391,000 and 14 staff years from the Emergency Preparedness and Response line item, and a corresponding increase is shown in the OHS budget.

An increase of $503,000, which includes $342,000 for pay inflation and $161,000 for FERS:

This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

An increase of $341,000 for Safe Trade and International Technical Assistance

(25) Agriculture Import/Export: An increase of $206,000 and 0 staff years ($15,722,000 and 79 staff years available in the FY 2021 Appropriation)

APHIS works with other Federal agencies, States, foreign governments, industry, and academia to protect U.S. agriculture while facilitating the safe trade of animals and animal products. APHIS' animal health experts ensure that U.S. import requirements safeguard U.S. livestock health, and they negotiate requirements for the worldwide export of U.S. animals and animal products. These requirements are based on international standards, sound scientific principles, and fair-trading practices for animals and animal products. In addition, APHIS sets quarantine, testing, and other requirements under which animals and animal products can be imported or exported. The requirements help ensure that global markets can be accessed, expanded, or maintained with little or no risk to U.S. animal production and human health. APHIS also outlines activities to support aquatic livestock imports and exports through the development of the Aquaculture Business Plan and the National Aquaculture Health Protection and Inspection Act.

In addition, APHIS conducts activities related to the 2008 Farm amendments to the Lacey Act, which prohibits the importation of any plants, with limited exceptions, that are taken or traded in violation of domestic or international laws. The Act requires a declaration for imported shipments of most plants or plant products. A 2012 study by the United Nations Environmental Programme estimated the value of illegal logging, including processing, to be between $30 to $100 billion dollars, or 10 to 30 percent of the global wood trade. The Lacey Act, as amended, is designed to help combat illegal logging by encouraging importers to research their supply chains and be aware of the laws governing products they purchase in other countries. APHIS' role is to evaluate and implement regulations, provide guidance to importers regarding the declaration, perform compliance checks, provide enforcement agencies with declaration information to assist their investigations, and maintain declaration records.

Imports

To facilitate imports, APHIS evaluates the animal health status of regions that wish to export animals and/or animal products to the United States. This evaluation process minimizes the risk of introducing animal diseases through importation and aligns with international trade requirements. In FY 2020, APHIS published the final rule for the evaluation and recognition of compartments for animal disease status, consistent with World Organization for Animal Health international standards. Compartments are established through biosecurity and management practices as opposed to regions which are established by geographical boundaries.

APHIS also conducts site visits to confirm that a regions' surveillance, prevention, and control measures are sufficient to minimize the likelihood of an introduction of foreign animal diseases into the United States. The Agency continues to ensure that import regulations are effective and science-based, and works with U.S. businesses and importers to facilitate safe trade.

Exports

To open, re-open, and maintain U.S. access to worldwide export markets, APHIS negotiates science-based conditions with trading partners for various commodities that protect their country while facilitating trade. In FY 2020, APHIS negotiated or re-negotiated 84 export protocols for animal products (10 new markets, 28 re-opened markets, 28 expanded markets, and 18 retained markets). This included retaining market access for poultry exports in numerous countries that imposed restrictions due to outbreaks of avian influenza and Newcastle disease. APHIS also negotiated 209 export protocols for live animals (156 new or reopened markets, 40 expanded markets, and 13 retained markets).

APHIS endorses export certificates for live animals and inedible animal-origin products, documenting the animal health status and facilitating export to all markets. In FY 2020, the Agency endorsed more than 85,048 export health certificates for animal products, livestock, poultry, germplasm, and pets. APHIS continued to increase the number of animal health export certificates issued electronically in FY 2020, by expanding the system capabilities for the Agency's online Veterinary Export Health Certification System (VEHCS). VEHCS capabilities include digital signature capabilities, multiple user roles, a certificate upload feature, certificate re-issuance, and inclusion of supporting documents and payment information. APHIS is working to expand the number of countries and commodities for which electronic certification is available.

Lacey Act

In FY 2020, APHIS received approximately 900,000 Lacey Act declarations electronically or on paper (the vast majority were received electronically). With the electronic declaration collection process fully operational, APHIS continues to perform enhanced compliance monitoring and enforcement of the Lacey Act requirements. In FY 2020, APHIS worked with the Department of Homeland Security's Customs and Border Protection's (CBP) Regulatory Audit and Office of Trade to implement compliance surveys for Lacey Act declarations and requirements. APHIS and its Federal partners (including other USDA agencies, CBP, U.S. Department of Justice, and the U.S. Fish and Wildlife Service) continued to expand and improve Lacey Act compliance programs by developing plans for and conducting documentation reviews of importers, continuing development of wood identification technologies and considering alternatives to seizing and forfeiting shipments due to the time and cost involved. In FY 2020, APHIS received additional funding under the US-Canada-Mexico trade agreement to carry out enforcement of the Lacey Act Amendments related to trade in plant and plant products between the United States and Mexico. With this additional funding APHIS' plans to: (1) develop data analysis projects to guide enforcement efforts; (2) continue development of the global wood identification library; and (3) work cooperatively with other Federal agencies such as CBP as well as non-governmental organizations.

In FY 2022, the program will continue to enforce the Lacey Act to ensure imported plants and plant products are in compliance with domestic and international laws. This program will also continue to conduct import risk analyses activities and set quarantine and testing requirements to protect U.S. agriculture while facilitating safe trade of animals and animal products.

Overall, base funding for the Agriculture Import/Export program currently supports salaries and benefits of personnel, contracts, and agreements, as well as other normal operating costs such as travel, supplies, rent, and utilities to support program activities.

An increase of $206,000, which includes $140,000 for pay inflation and $66,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(26) Overseas Technical and Trade Operations program: An increase of $135,000 and 0 staff years ($24,198,000 and 52 staff years available in the FY 2021 Appropriation)

Through the Overseas Technical and Trade Operations (OTTO) program, APHIS helps U.S. farmers, ranchers, and producers export their products to other countries by resolving concerns over animal and plant health issues that affect trade in agricultural products. Exports are crucial to economic viability of U.S. farmers, ranchers, and producers. According to USDA's Economic Research Service, the United States exports 20 percent of its agricultural production. However, agricultural trade is subject to costly disruptions related to animal and plant health issues. APHIS works to continually support economic opportunities by keeping markets open for U.S. agricultural

products. Working with other Federal partners, such as the U.S. Trade Representative's Office and USDA's Foreign Agricultural Service, APHIS provides the technical expertise to successfully address animal and plant health regulatory issues associated with trade negotiations for new markets and to reopen markets when they are closed or threatened due to pest or disease issues.

In addressing animal and plant health trade issues, APHIS uses its strong scientific base and team of technical experts located in the United States and abroad to advocate on behalf of U.S. agriculture. APHIS officials negotiate animal and plant health requirements for exports to other countries, ensuring requirements are proportional to risk without being excessively restrictive; assist U.S. exporters in meeting foreign regulatory requirements; provide technical information to support the safety of U.S. agricultural products destined for foreign markets; and safeguard the United States from foreign agricultural pests and diseases. Highlights of FY 2020, successes include opening new markets for U.S. live cattle to Uzbekistan worth an estimated $25 million per year; live cattle to Morocco worth an estimated $10 million per year; California pomegranates to Colombia worth an estimated $150,000 per year; fresh blueberries to the Philippines worth an estimated $500,000 per year; and bovine genetic material to Turkmenistan worth an estimated $5 million per year (values based on industry and APHIS analysis).

Even for markets that are open to U.S. agricultural products, APHIS must continually address issues to keep trade flowing smoothly. APHIS works with foreign counterparts to clarify or streamline certification requirements, making it easier and less costly for U.S. exporters to move their products overseas. When shipments are held up at foreign ports, APHIS works with its counterparts to resolve the issues and secure the release of the shipments. In FY 2020, APHIS successfully secured the release of 300 shipments worth more than $56 million.

APHIS fosters a successful trading environment for U.S. exports by working to ensure that the same rules apply to countries around the world through international standard setting. APHIS emphasizes the use of scientific principles as a basis for international trade decisions and works with international standard setting bodies such as the World Organisation for Animal Health and the International Plant Protection Convention. By supporting scientific decision making internationally and following international standards when considering what can be imported into the United States, APHIS encourages trading partners to do so as well, helping provide a level playing field for U.S. agricultural exports.

Agricultural trade is essential for U.S. farmers, ranchers, and producers, and APHIS' technical and regulatory trade activities support their export opportunities. In FY 2022, APHIS will continue to support international trade opportunities for America's animal and plant products while ensuring that U.S. agriculture is safe from pests and diseases.

Overall, base funding for the OTTO program currently supports salaries and benefits of personnel, contracts, and agreements, and travel, as well as other normal operating costs such as supplies, rent, and utilities to support program activities.

An increase of $135,000, which includes $92,000 for pay inflation and $43,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

An increase of $626,000 for Animal Welfare

(27) Animal Welfare program: An increase of 595,000 and 0 staff years ($31,661,000 and 228 staff years available in the FY 2021 Appropriation)

The Animal Welfare Act (AWA) requires animals bred for commercial sale, used in research, transported commercially, or exhibited to the public receive Federal standards of care and treatment. APHIS' Animal Welfare Program ensures the humane care and treatment of animals covered by the AWA through inspection, learning opportunities, and enforcement actions. Since the AWA became law in 1966, APHIS has protected millions of regulated animals used in research, exhibition, and the pet trade as well as those transported in commerce.

Before issuing a license, APHIS works closely with potential licensees to ensure they understand the requirements of the AWA regulations and standards, and will be able to maintain compliance after obtaining a license from the Agency. After obtaining a license or registration, the Agency determines on-going compliance by conducting unannounced inspections. During these inspections, APHIS officials examine and inspect all areas

of animal care and treatment covered under the AWA. The Agency reviews the animals, premises, facilities, husbandry practices, program of veterinary care, records, and animal handling procedures. APHIS confirms that the animals receive adequate housing, transport, veterinary care, and meet husbandry standards as described in the AWA.

Whenever possible, APHIS takes a coordinated and collaborative approach to improve the welfare of animals. Using non-regulatory methods such as education, training, and outreach to stakeholders to convey critical and current animal welfare information, APHIS has been able to reduce inspection frequencies (while staying within legal requirements) for facilities that have implemented strong animal welfare programs and routinely demonstrate substantial compliance during unannounced inspections. This allows the Agency to remain focused on addressing the egregious alleged violators of the AWA, representing approximately four percent of all licensees/registrants.

When APHIS inspectors discover conditions or records that are noncompliant with AWA regulations, the Agency may establish a deadline for corrective action and increase frequency of unannounced inspections to determine whether the facility made the necessary modifications. Continued, serious noncompliance may warrant an investigation that can result in sanctions ranging from monetary penalties to suspension or revocation of the facility's license, after notice and an opportunity for a hearing. The welfare of animals nationwide is subject to significant media attention and passionate public engagement. The American public holds APHIS accountable for ensuring all regulated animals are healthy and treated humanely. Without this program, the Agency would be unable to enforce the AWA, and the health and welfare of millions of animals would be severely compromised.

Overall, base funding for the Animal Welfare program currently supports salaries and benefits of personnel and travel, as well as other normal operating costs such as contracts, supplies, and equipment to support program activities.

An increase of $595,000, which includes $405,000 for pay inflation and $190,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(28) Horse Protection program: An increase of $31,000 and 0 staff years ($2,009,000 and 12 staff years available in the FY 2021 Appropriation)

APHIS' Horse Protection program strives to eliminate the cruel and inhumane practice of soring, which involves applying caustic chemicals and/or mechanical devices to a horse's pasterns, causing the horse to experience pain or distress while walking or moving. Soring changes the gait of a horse so that the animal steps higher, allowing its rider to gain a competitive edge at horse events. APHIS has the Federal responsibility to uphold the Horse Protection Act (HPA), which prohibits sore horses from being shown, sold, or transported.

There are an estimated 200,000 Tennessee Walking and Racking Horses in the United States, with potential show winnings reaching as high as $2.5 million. The management of horse shows, exhibitions, sales and auctions have statutory responsibility under the HPA to prevent unfair competition and must identify and disqualify sored horses prior to participating in HPA-covered events. USDA-certified horse industry organizations train and license third party inspectors, known as Designated Qualified Persons (DQPs). DQPs conduct horse inspections at horse shows, exhibitions, sales, and auctions affiliated with these organizations. APHIS attends a select number of HPA-covered events each year to observe DQP performance and inspect horses for HPA compliance. APHIS' presence at horse show events serves as a deterrent; without this program, the Agency would expect to see an increase in the abusive practice of soring.

Overall, base funding for the Horse Protection program currently supports salaries and benefits of personnel, and travel, as well as other normal operating expenses such as necessary contracts, agreements, and equipment for completing programmatic functions.

An increase of $31,000, which includes $21,000 for pay inflation and $10,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

An increase of $10,000 for Agency Wide Programs

(29) APHIS Information Technology Infrastructure ($4,251,000 and 0 staff years available in the FY 2021 Appropriation)

The APHIS Information Technology Infrastructure (AITI) program provides funding for the hardware, software (including licensing and support costs) and telecommunications infrastructure that gives Agency employees office automation tools, Internet access, and access to mission-critical programs and administrative applications. Funding for this program supports the stable and secure information infrastructure for those mission-critical applications and the day-to-day business of APHIS. The AITI priorities are to continually improve sharing of information across the Agency; improve coordination and accessibility of information, processes, and resources available to enable APHIS employees to provide day-to-day services, and support programs in emergencies; and improve APHIS' cyber-security.

APHIS works with USDA's Office of the Chief Information Officer to support the program goals and manage information technology in a manner consistent with both USDA and Federal requirements. APHIS also works with other Federal partners, including the Department of Homeland Security's Customs and Border Protection and the Department of Health and Human Services' Centers for Disease Control and Prevention to ensure that AITI provides interoperability and required availability for partner agencies, as needed for program delivery.

In support of the Federal Information Technology Acquisition Reform Act and the USDA Data Center Optimization Initiative, APHIS completed migration of all business applications from on-site data centers to the remote cloud servers as of April 2019. This migration decreased the Agency's carbon footprint by using a more energy efficient infrastructure, such as cloud services, and improved data management, application development, and cost control measures.

APHIS continues to review system security patching rates for the APHIS Enterprise Infrastructure workstations and servers ensure all systems are kept current with the latest security patches. In FY 2020, APHIS IT maintained the current version of National Institute of Standards and Technology and Federal Information Security Management Act testing standards to continue protecting our cyber security infrastructure and reducing vulnerabilities of our systems. In addition, the APHIS IT security monitoring system continues to track and mitigate improper use of personally identifiable information data stored in the APHIS infrastructure, helping to protect confidential information that could potentially identify a specific individual.

In addition to security, accessibility to IT tools is vital to the operations of the Agency.

In FY 2022, AITI will continue to maintain its 99.97 percent availability for its key computing systems. In addition, AITI re-emphasized the avoidance of misuse and/or abuse of IT systems to Agency employees in support of continued cyber security strengthening efforts.

Overall, AITI expenditures fund day-to-day operations for the Agency's IT infrastructure, including software license renewals and support, as well as other normal operating costs, such as supplies and equipment.

(30) Physical and Operational Security program: An increase of $10,000 and 0 staff years ($5,153,000 and 4 staff years available in the FY 2021 Appropriation)

APHIS oversees and implements precautionary measures to ensure continued, efficient mission operations, and protection from disruption, degradation, or destruction of its facilities through the Physical and Operational Security (POS) program. The program provides year-round security measures, such as physical security upgrades, alarms, badging and identification systems, guard services, security assessments, safety and risk assessments, workplace violence training, and investigations of both internal and external threats. These measures protect APHIS employees, as well as visitors and stakeholders from harm, acts of terrorism, and violence. In addition, this program supports part of USDA's contribution to the U.S. Department of State's continuing implementation of the Capital Security Cost Sharing program, which provides safe and secure workplaces for all government employees located overseas.

APHIS provides numerous types of security training, using a variety of formats. This includes providing training to more than 1,700 agency employees annually, including seminars relating to active shooter response, situational awareness, scenario-based role playing, illegal drugs, self-defense, terrorism, local crime trends, and travel safety. In

addition, the program also provides workplace violence training seminars and multiple security briefings for employees who work along the border or in foreign countries. To enhance preparedness and response, APHIS continues its required on-line and classroom based active shooter training for all employees and live active shooter training exercises at agency offices across the United States. This scenario-based training provides a dynamic, interactive exercise for APHIS personnel, and utilizes the participation of local law enforcement, fire, and emergency medical service personnel. The APHIS active shooter training plan and materials are evaluated by 40 law enforcement agencies, as well as one of the nation's leading active shooter private consulting firms.

APHIS investigates and assesses all reported internal and external threats directed at agency facilities, programs, and personnel. These threats include, but are not limited to, death threats, terrorist threats, and assaults. APHIS also works to ensure employee safety in the same manner, at or near the Mexican border, and at APHIS offices in Mexico, Panama, and Guatemala. Specifically, near the Mexican border, the program investigates threats and responds to requests for protection for APHIS employees, such as veterinarians and inspectors, who enforce regulations in challenging environments.

Additionally, APHIS ensures the safety of its employees who enforce the Animal Welfare Act (AWA) and Horse Protection Act (HPA). APHIS security specialists investigate threats and respond to requests for protection throughout the country for APHIS veterinarians and inspectors who are enforcing regulations in difficult situations. Program personnel also worked across the agency to develop standard operating procedures for security support for AWA and HPA inspections and investigations.

The Homeland Security Presidential Directive-12 and Interagency Security Committee (ISC) directives create the standard for secure and reliable forms of identification for facility and network access and compliance regarding physical security at Federal facilities. In support of this standard, APHIS completes physical security assessments and reevaluates previous facility assessments using the updated ISC criteria and USDA reporting format. In addition, the program is responsible for issuing, activating, or updating new or renewed personal identification verification cards to approximately 5,000 APHIS, USDA and other federal personnel and contractors annually.

APHIS also works with other USDA agencies, the U.S. Department of Justice, U.S. Department of Homeland Security, the U.S. Department of State, and local law enforcement agencies to ensure that the appropriate organization takes the lead, contributes to program costs, and integrates security where employees are co-located overseas. APHIS maintains a presence overseas to facilitate agricultural trade and monitor pest and disease threats. The Security Embassy Construction Counterterrorism Act's Capital Security Cost Sharing Program requires the agency to help fund the construction of new Embassy compounds based on the number of authorized positions. In FY 2020, the program continued to work with the U.S. Department of State to establish a security baseline for APHIS facilities overseas and ensure that mission operations are protected from disruption and degradation.

Overall, base funding for the POS program currently supports contracts, programmatic agreements, and personnel costs, as well as other normal operating expenses such as travel and supplies. In addition, this program supports the mandatory cost share with the Department of State for the Capital Security Cost-Sharing program.

An increase of $10,000, which includes $7,000 for pay inflation and $3,000 for FERS:
This increase will support a 2.7% Cost of Living pay increases for civilian employees, and a 1.1% increase to cover the expenses for the mandated increase of USDA's contribution to FERS.

(31) Rent and Department of Homeland Security (DHS) Security Payments ($42,567,000 and 0 staff years available in the FY 2021 Appropriation)

APHIS personnel are in every State working to carry out our mission and the Rent and DHS Security Payments program assists the Agency in strategically managing the payment portfolio of approximately 250 General Services Administration occupancy agreements, DHS security payments, as well as other leased, owned, and agreement funded facilities. For example, the funding for this program ensures that APHIS programs and employees can effectively and efficiently carry out all mission-related activities, including surveillance for animal and plant pests and diseases, pest and disease eradication programs, diagnostic and methods development work at laboratories, animal welfare inspections, and wildlife damage management activities. APHIS continually identifies opportunities to consolidate, reduce or transform spaces to most effectively and efficiently manage space. Without funding for rent and security payments, APHIS would have to cover these costs by reducing program activities, decreasing levels of service, and diverting fiscal resources from other appropriated line items.

This program supports USDA's goal of maximizing the ability of American agricultural producers to prosper by feeding and clothing the world. In FY 2022, the program will continue to ensure mission operations while effectively managing its space portfolio.

Overall, base funding for the program currently maintains rent payments and security agreements in support of program activities.

GEOGRAPHIC BREAKDOWN OF OBLIGATIONS AND FTE

Table APHIS-10. Discretionary Geographic Breakdown of Obligations and FTE (thousands of dollars, FTE)

State/Territory/Country	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	2022 Budget	FTE
Alabama	4,595	30	5,912	29	5,857	32	5,943	33
Alaska	512	2	574	2	577	3	584	3
Arizona	8,448	50	10,274	57	9,761	55	9,909	55
Arkansas	3,583	21	3,676	21	3,667	24	3,732	24
California	108,376	185	81,217	175	70,563	168	71,013	171
Colorado	55,872	320	76,773	371	74,985	401	76,060	405
Connecticut	1,051	6	1,873	8	1,684	7	1,704	7
Delaware	1,372	3	843	5	781	3	790	3
Florida	46,894	215	46,317	267	41,290	241	41,935	242
Georgia	6,076	39	7,986	56	5,521	35	5,616	35
Hawaii	23,077	284	23,496	261	22,902	296	23,695	298
Idaho	8,204	66	8,338	61	8,321	71	8,511	71
Illinois	3,485	29	3,875	31	3,392	30	3,472	30
Indiana	3,978	27	4,189	27	4,203	31	4,286	31
Iowa	74,964	274	75,292	294	75,702	348	76,636	351
Kansas	4,559	25	3,846	25	3,861	29	3,938	29
Kentucky	4,365	31	4,653	28	4,637	32	4,721	32
Louisiana	4,368	26	5,581	30	5,440	33	5,527	33
Maine	1,078	8	1,270	8	1,266	9	1,291	9
Maryland	280,183	742	290,462	848	275,989	792	278,114	802
Massachusetts	19,750	100	21,497	98	21,468	111	21,767	111
Michigan	7,095	49	6,679	50	6,249	53	6,392	53
Minnesota	29,284	181	35,859	205	34,808	214	35,383	218
Mississippi	7,894	43	8,012	41	7,961	48	8,089	48
Missouri	9,190	47	14,447	51	14,378	59	14,537	59
Montana	5,972	40	6,653	39	6,647	45	6,768	45
Nebraska	3,004	22	3,160	20	3,129	23	3,192	23
Nevada	2,396	22	2,397	21	2,381	25	2,447	25
New Hampshire	16,551	18	16,671	18	16,692	21	16,748	21
New Jersey	5,578	20	5,059	31	4,091	25	4,158	25
New Mexico	4,541	33	4,431	32	4,402	36	4,500	36
New York	31,221	98	43,778	138	32,238	145	32,627	145
North Carolina	38,400	181	65,936	235	42,200	196	42,726	200
North Dakota	2,815	17	2,734	17	2,700	20	2,753	20
Ohio	15,603	80	18,419	80	18,380	92	18,627	92
Oklahoma	6,794	42	6,318	35	6,329	41	6,439	41
Oregon	4,484	27	6,718	24	6,659	27	6,731	27
Pennsylvania	18,269	94	12,169	102	11,946	100	12,215	102
Rhode Island	264	1	456	1	454	1	456	1
South Carolina	3,113	25	9,174	30	9,007	32	9,094	32
South Dakota	2,177	15	2,459	15	2,475	17	2,521	17
Tennessee	6,828	40	7,288	40	7,265	46	7,388	46
Texas	54,795	343	84,779	365	62,196	401	63,272	403
Utah	6,386	41	8,835	43	8,883	51	9,019	51
Vermont	1,137	9	1,066	9	1,069	10	1,097	10
Virginia	8,753	31	6,439	31	6,323	35	6,416	35
Washington	5,567	28	6,475	34	5,558	28	5,633	28
West Virginia	2,567	17	2,521	17	2,539	20	2,593	20
Wisconsin	4,068	22	3,629	21	3,585	24	3,650	24
Wyoming	4,087	28	3,987	28	4,012	33	4,101	33

State/Territory/Country	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	2022 Budget	FTE
U.S. TERRITORIES:								
District of Columbia	22,213	80	24,880	87	24,281	97	24,541	98
Guam	307	1	510	3	351	2	357	2
Puerto Rico	8,926	116	11,092	122	9,666	119	9,985	120
Virgin Islands	187	1	210	1	210	1	213	1
INTERNATIONAL REGIONS								
AFRICA:								
Egypt	-	-	304	-	304	-	304	-
Ethiopia	-	-	-	-	-	-	-	-
Ghana	-	-	-	-	-	-	-	-
South Africa	865	2	882	2	882	2	882	2
Senegal	888	2	532	1	532	1	532	1
Other	150	-	-	-	-	-	-	-
ASIA/PACIFIC:								
China	1,936	4	2,333	4	2,333	4	2,333	4
Japan	1,483	2	1,842	2	1,842	2	1,842	2
South Korea	529	1	527	1	527	1	527	1
United Arab Emirates	-	-	-	-	-	-	-	-
Other	3,446	5	3,354	5	3,354	5	3,354	5
CARIBBEAN:								
Dominican Republic	506	1	744	2	744	2	744	2
Other	42	-	37	-	37	-	37	-
CENTRAL AMERICA:								
Guatemala	31,107	5	34,025	4	34,025	4	34,025	4
Panama	14,569	4	15,580	3	15,580	3	15,580	3
Other	878	1	809	1	809	1	809	1
EUROPE/NEAR EAST:								
Austria	352	-	325	-	325	-	325	-
Belgium	1,527	2	1,465	2	1,465	2	1,465	2
Other	265	1	248	-	248	-	248	-
NORTH AMERICA:								
Canada	-	-	-	-	-	-	-	-
Mexico	5,300	3	5,147	2	5,147	2	5,147	2
SOUTH AMERICA:								
Argentina	-	-	-	-	-	-	-	-
Brazil	1,027	2	958	2	958	2	958	2
Chile	238	-	206	-	206	-	206	-
Other	2,245	3	1,687	-	1,687	-	1,687	-
Obligations	1,072,610	4,333	1,182,187	4,719	1,081,936	4,870	1,094,917	4,908
Lapsing Balances	292	360	172	934	-	-	-	-
Rescinded Balances	0	0	0	0	0	0	0	0
Bal. Available, EOY	223,195	676	167,620	462	161,356	774	168,661	551
Total, Available	1,296,096	5,368	1,349,979	5,685	1,243,292	5,644	1,263,578	5,459

Table APHIS-11. Mandatory Geographic Breakdown of Obligations and FTE (thousands of dollars, FTE)

State/Territory/Country	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	2022 Budget	FTE
Alabama	1,057	2	1,469	5	1,656	6	1,651	6
Alaska	75	-	190	-	198	-	197	-
Arizona	2,403	13	2,066	9	2,837	16	2,829	16
Arkansas	789	2	1,043	3	1,148	4	1,145	4
California	49,944	75	35,989	53	50,619	89	50,472	89
Colorado	5,235	28	8,121	41	10,911	58	10,880	58
Connecticut	570	4	449	3	691	4	689	4
Delaware	1,227	4	1,253	2	1,414	4	1,410	4
Florida	24,114	127	18,704	92	25,826	155	25,751	155
Georgia	10,348	45	9,172	38	12,477	64	12,441	64
Hawaii	6,670	26	5,022	14	6,473	26	6,454	26
Idaho	2,061	2	1,100	1	1,347	2	1,343	2
Illinois	1,755	11	1,682	8	2,340	13	2,333	13
Indiana	457	1	440	1	499	2	498	2
Iowa	92	1	614	1	651	1	649	1
Kansas	257	0	749	0	799	1	796	1
Kentucky	689	2	637	1	745	2	743	2
Louisiana	912	4	816	5	1,068	7	1,065	7
Maine	390	1	694	0	745	1	743	1
Maryland	81,189	512	53,198	214	75,458	340	75,240	340
Massachusetts	3,300	9	2,574	10	2,981	15	2,972	15
Michigan	2,057	9	1,374	7	2,020	12	2,014	12
Minnesota	3,087	38	7,906	47	9,585	57	9,557	57
Mississippi	852	1	798	3	974	3	971	3
Missouri	1,906	3	515	2	780	4	778	4
Montana	868	2	1,437	1	1,577	2	1,573	2
Nebraska	360	1	647	1	739	2	737	2
Nevada	256	1	292	1	358	1	357	1
New Hampshire	316	0	375	0	406	0	405	0
New Jersey	5,313	19	3,711	13	5,098	23	5,083	23
New Mexico	367	2	266	2	366	3	365	3
New York	9,367	44	6,846	20	9,260	35	9,233	35
North Carolina	29,456	118	28,666	90	34,947	144	34,846	144
North Dakota	376	1	399	1	487	2	485	2
Ohio	1,608	4	1,125	3	1,394	6	1,390	6
Oklahoma	430	1	1,019	4	1,104	5	1,100	5
Oregon	3,501	4	1,909	2	2,244	4	2,237	4
Pennsylvania	9,188	11	6,453	7	7,481	12	7,459	12
Rhode Island	98	0	94	0	104	0	104	0
South Carolina	1,370	6	1,369	7	1,682	10	1,677	10
South Dakota	98	0	72	0	84	0	84	0
Tennessee	537	2	1,080	2	1,212	3	1,209	3
Texas	11,797	56	12,400	58	15,769	85	15,724	85
Utah	1,124	0	215	0	300	1	300	1
Vermont	234	1	257	1	285	1	284	1
Virginia	13,616	3	12,639	3	13,836	5	13,796	5
Washington	6,539	23	6,531	15	7,994	25	7,971	25
West Virginia	224	1	366	1	392	1	391	1
Wisconsin	794	1	1,218	1	1,361	2	1,357	2
Wyoming	315	1	390	1	431	0	430	0

State/Territory/Country	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	2022 Budget	FTE
U.S. TERRITORIES:								
District of Columbia	6,830	18	6,747	24	8,000	29	7,858	29
Guam	1,101	3	447	2	684	3	684	3
Puerto Rico	6,005	42	3,483	28	5,480	45	5,383	45
Virgin Islands	24	-	1	-	1	-	1	-
INTERNATIONAL REGIONS								
AFRICA:								
South Africa	21	-	21	-	23	-	22	-
Senegal	43	-	16	-	19	-	19	-
ASIA/PACIFIC:								
China	121	-	252	-	264	-	259	-
Japan	24	-	68	-	71	-	69	-
Other	-	-	104	1	-	-	-	-
CARIBBEAN:								
Dominican Republic	230	-	109	-	125	-	122	-
Other	229	1	138	-	154	-	151	-
CENTRAL AMERICA:								
Guatemala	592	-	151	-	189	-	186	-
Other	552	-	83	-	117	-	115	-
EUROPE/NEAR EAST:								
France			20,800	-	-	-	-	-
Other	-	-	190	-	193	-	190	-
NORTH AMERICA:								
Mexico	3,204	1	1,002	-	1,211	-	1,189	-
					-	-	-	-
SOUTH AMERICA:								
Argentina	-	-	6,000	-	-	-	-	-
Brazil	-	-	58	-	59	-	58	-
Other	-	-	152	-	-	-	-	-
Obligations	318,566	1,287	286,171	852	339,741	1,333	338,525	1,333
Lapsing Balances	41	5	543	66	-	-	-	-
Bal. Available, EOY	322,525	305	180,564	268	204,092	286	337,500	429
Total, Available	641,132	1,597	467,278	1,186	304,988	1,819	64,500	1,637

CLASSIFICATION BY OBJECTS

Table APHIS-12 Classification by Objects Discretionary (thousands of dollars)

Item No.	Item	2019 Actual	2020 Actual	2021 Enacted	2022 Budget
	Personnel Compensation:				
	Washington D.C.	81,828	94,812	87,029	89,501
	Personnel Compensation, Field	273,945	317,415	291,359	299,635
11	Total personnel compensation	355,773	412,227	378,388	389,136
12	Personal benefits	122,251	148,415	136,227	138,124
13.0	Benefits for former personnel	1,306	1,003	1,003	1,003
	Total, personnel comp. and benefits	479,329	561,645	515,618	528,263
	Other Objects:				
21.0	Travel and transportation of persons	31,640	17,074	17,574	17,604
22.0	Transportation of things	2,449	2,906	3,056	3,076
23.1	Rental payments to GSA	36,742	39,366	39,566	39,581
23.2	Rental payments to others	10,742	10,220	10,720	10,730
23.3	Communications, utilities, and misc. charges	18,198	10,084	10,384	10,404
24.0	Printing and reproduction	765	697	823	831
25	Other contractual services	38,323	41,983	39,483	39,493
25.1	Advisory and assistance services	4,320	3,841	3,991	4,006
25.2	Other services from non-Federal sources	52,320	53,623	52,823	52,873
25.3	Other goods and services from Federal sources	77,237	117,787	82,787	82,837
25.4	Operation and maintenance of facilities	5,997	10,095	10,595	10,615
25.5	Research and development contracts	224,847	207,807	208,108	207,861
25.7	Operation and maintenance of equipment	5,376	6,332	5,532	5,607
25.8	Subsistence and support of persons	623	679	729	749
26.0	Supplies and materials	45,256	52,067	48,867	48,917
31.0	Equipment	25,286	23,958	24,258	24,333
32.0	Land and structures	127	146	146	154
33.0	Investments and loans	-	-	-	-
41.0	Grants, subsidies, and contributions	249	288	288	295
42.0	Insurance Claims and Indemnities	12,769	21,585	6,585	6,685
43.0	Interest and Dividends	14	6	6	6
	Total, Other Objects	593,281	620,542	566,319	566,655
99.9	Total, new obligations	1,072,610	1,182,187	1,081,936	1,094,917
	DHS Building Security Payments (included in 25.3)	3,099	4,065	4,072	4,084

Item No.	Item	2019 Actual	2020 Actual	2021 Enacted	2022 Budget
	Information Technology Investments: (includes both mandatory and discretionary funding)				
	Name of Major Investment				
	Animal Disease Traceability Information System (ADTIS)				
11	Internal Labor	-	446	-	446
	External Labor (Contractors)	-	4,552	4,204	3,100
25.2	Outside Services (Consulting)	1,522	-	-	-
	Other Cost	-	-	150	-
	Sub-Total ADTIS	1,522	4,998	4,354	3,546
	CARPOL				
11	Internal Labor	-	1,077	-	1,092
	External Labor (Contractors)	-	19,360	12,470	8,000
25.2	Outside Services (Consulting)	11,775	-	-	-
	Other Cost	-	2,000	2,030	-
	Sub-Total CARPOL	11,775	22,437	14,500	9,092
	National Bio- and Agro- Defense Facility (NBAF)				
11	Internal Labor	-	617	617	617
	External Labor (Contractors)	-	4,000	4,223	-
25.2	Outside Services (Consulting)	25,293	7,490	600	4,221
	Other Cost	-	18,510	9,210	8,362
	Sub-Total NBAF	25,293	30,617	14,650	13,200
	Mission Area Non-Major Investment Totals	47,254	46,974	49,889	51,010
	Mission Area Standard Investment Totals	56,670	41,329	63,077	57,416
25.3	Mission Area WCF Transfers	21,297	38,368	63,811	66,330
	Total, Information Technology Investments	163,811	184,723	210,281	200,594
	Position Data:				
	Average Salary (dollars), ES Position	183,728	187,674	188,612	189,555
	Average Salary (dollars), GS Position	87,208	88,826	89,270	89,716
	Average Grade, GS Position	10.9	10.9	10.9	10.9

Table APHIS-13 Classification by Objects Mandatory (thousands of dollars)

Item No.	Item	2019 Actual	2020 Actual	2021 Enacted	2022 Budget
	Personnel Compensation:				
	Washington D.C.	26,436	16,846	26,534	26,534
	Personnel Compensation, Field	88,504	56,399	88,830	88,830
11	Total personnel compensation	114,940	73,245	115,364	115,364
12	Personal benefits	41,591	35,113	50,638	50,638
13.0	Benefits for former personnel	131	211	250	250
	Total, personnel comp. and benefits	156,663	108,570	166,252	166,252
	Other Objects:				
21.0	Travel and transportation of persons	6,534	3,490	3,487	3,487
22.0	Transportation of things	452	437	437	437
23.1	Rental payments to GSA	4,379	2,597	2,597	2,597
23.2	Rental payments to others	8,259	9,959	9,959	9,959
23.3	Communications, utilities, and misc. charges	3,062	6,169	6,170	6,170
24.0	Printing and reproduction	159	156	156	156
25	Other contractual services	7,183	9,423	9,490	9,490
25.1	Advisory and assistance services	46	178	177	177
25.2	Other services from non-Federal sources	11,921	14,076	13,135	13,135
25.3	Other goods and services from Federal sources	30,980	13,971	13,042	13,042
25.4	Operation and maintenance of facilities	1,037	1,938	1,356	1,356
25.5	Research and development contracts	74,305	79,613	79,467	78,867
25.7	Operation and maintenance of equipment	2,606	1,784	2,285	2,285
25.8	Subsistence and support of persons	5	5	5	5
26.0	Supplies and materials	4,201	31,158	29,190	28,574
31.0	Equipment	6,656	2,605	2,537	2,537
32.0	Land and structures	18	21	-	-
41.0	Grants, subsidies, and contributions	76	20	-	-
42.0	Insurance Claims and Indemnities	25	-	-	-
43.0	Interest and Dividends	-	4	-	-
	Total, Other Objects	161,903	177,601	173,489	172,272
99.9	Total, new obligations	318,566	286,171	339,741	338,525
	DHS Building Security Payments (included in 25.3).	166	283	290	295

STATUS OF PROGRAMS– SALARIES AND EXPENSES

SAFEGUARDING AND EMERGENCY PREPAREDNESS/RESPONSE

Current Activities

American agriculture faces many threats from foreign and domestic pests and diseases, which have the potential to negatively impact animal and plant agricultural production, trade, and the economy. APHIS monitors and responds to potential diseases of livestock and wildlife, invasive species, and conflicts between humans and wildlife as it strives to assure its stakeholders that it is on guard against the introduction or re-emergence of animal and plant pests and diseases that could limit agricultural production.

When a pest or disease is detected in the United States, APHIS works cooperatively with other Federal, State, Tribal and industry partners to conduct animal and plant health monitoring programs to rapidly diagnose them and determine if there is a need to establish new pest or disease management programs. APHIS, in conjunction with States, Tribes, industry, and other stakeholders, protects American agriculture by eradicating harmful pests and diseases or, where eradication is not feasible, by minimizing their economic impact. The Agency monitors endemic pests and diseases through surveys to detect their location and through inspection to prevent their spread into non-infested parts of the country. APHIS conducts diagnostic laboratory activities that support the Agency's veterinary disease prevention, detection, control, and eradication programs. The Agency also provides and directs technology development to support plant protection programs and cooperators at the State, national, and international levels. APHIS also develops methods to control animals and pests that are detrimental to agriculture, wildlife, and public safety.

The Agency maintains a cadre of trained professionals prepared to respond immediately to potential animal and plant health emergencies. Program personnel investigate reports of suspected exotic pests and diseases and take emergency action if necessary. To facilitate these efforts, APHIS develops pathway studies and thoroughly investigates the progression of outbreaks to determine the origin of animal and plant pests and diseases. APHIS also actively engages State, Tribal, and local governments, and industries to advance their emergency preparedness and response capabilities.

APHIS conducts operations to ensure the humane care and treatment of vulnerable animals covered under the Animal Welfare Act and the Horse Protection Act. The Agency also balances a regulatory system that safeguards agriculture while fostering innovative research and development in the field of biotechnology.

Selected Examples of Recent Progress - Animal Health:

1. Animal Health Technical Services

APHIS' Animal Health Technical Services develops and enhances tools for acquiring and managing information vital for improving global market access for U.S. livestock and animal products. Incorporating national surveillance standards into data management applications allows the program to compile animal health information nationally, thus leveraging the work of animal health professionals nationwide to meet local, State, and national veterinary health objectives. The National Veterinary Accreditation Program (NVAP) trains private veterinarians to help producers meet export requirements and disease program standards. Ultimately, this allows U.S. animals and animal products to compete in the global economy.

Animal Disease Traceability (ADT)

The national ADT framework allows Federal, State, Tribal, and private animal health professionals to work together to identify diseased animals, quickly trace their movements, and control disease spread to protect the livestock industry, whose production value was approximately $68 billion in 2019, (National Agricultural Statistics Service, USDA). The ADT framework enables animal health officials to trace an animal from the location of official identification to the animal's last location, which is often the termination point or slaughter plant. Knowledge of the location of diseased and at-risk animals helps preserve animal health; enables a rapid response in case of an animal disease event; reduces animal illnesses and deaths during outbreaks; and decreases the cost to producers, consumers, and the government. This system also assures our trading partners that States and USDA can rapidly contain an animal disease event. Each year, APHIS provides cooperative agreement funds to States to help them establish and maintain support for State ADT activities. Currently all States receiving program funds have approved ADT strategic plans in place with APHIS.

The ADT program continues to progress in maximizing flexibility while maintaining effectiveness and increasing the timeliness of retrieving traceability data. APHIS measures the success of the ADT program by conducting trace exercises. Trace exercises document a State's ability to properly administer, record, and retrieve documents pertaining to official livestock identification and interstate movement. In FY 2020, APHIS continued to conduct national priority trace exercises where States treat the trace as a national emergency. After the first round of these national priority trace exercises, States averaged approximately 2.5 hours to complete the exercise at a success rate of 98 percent. The ADT program will continue to administer national priority trace exercises in FY 2021, as part of its performance-based program to evaluate the States' ability to successfully complete a trace investigation.

In FY 2017, an APHIS-led working group was created to assist in reviewing the current ADT regulation, examine the feedback from public stakeholder meetings, and provide input based on their experiences with disease traceability issues. The group identified gaps in the ADT system, and opportunities to strengthen the system. One of the most significant opportunities to strengthen the system was to improve the accessibility for electronic identification tags in adult beef and all dairy cattle, as well as in bison. The electronic tags use radio frequency identification (RFID), which speeds information capture and sharing. In FY 2020, APHIS purchased official RFID tags to be provided to states as an option for the currently available metal tags. The tags are provided at no cost, and each State veterinarian distributes the tags in a way that best serves their industry. The tags are available as orange RFID official vaccination tags for use in heifers vaccinated for brucellosis, or white RFID tags for non-vaccinated heifers. In FY 2020, approximately 8.2 million RFID tags have been distributed as free tag alternatives to visual metal ID tags, about 58 percent of all USDA approved identification tags distributed for cattle in that year.

Information Management

Many of the APHIS information management systems are available to States and Tribal Nations to support their traceability plans and other animal health activities. APHIS conducts evaluations of existing data systems and applications to determine if they should modify and enhance them or if they should develop new systems and applications. In FY 2019, APHIS identified business requirements and gaps for all end users of the application, which includes a large-scale retirement of animal health tags. Subsequently, APHIS facilitated the installation of electronic ID readers in 13 slaughter plants, in exchange for tag retirement data. In FY 2020, APHIS worked with the plants to electronically transmit tag retirement data into the USDA reporting system, and in FY 2020 approximately 6.8 million tags were retired. Removing tags from the ADT Information System will reduce query/transaction time for completing a trace investigation.

To further strengthen the nation's animal disease traceability capabilities, in FY 2020, APHIS continued to improve the Animal Health Services (AHS) system, formally referred to as the Mobile Information Modernization system. The AHS system allows for State and Federal animal health officials and accredited veterinarians to gather data electronically instead of keying data or scanning paper records into electronic databases for animal tracing purposes. The improvements made in FY 2020 allow producers and accredited veterinarians to use a free web-based interface and mobile applications to complete electronic Certificates of Veterinary Inspection and program disease testing, print forms on location without the need for a live internet connection, and subsequently share the data with State and Federal systems once the system is back online.

National Veterinary Accreditation Program

More than 70,000 highly trained accredited veterinarians act as the first line of defense for reportable domestic and foreign animal diseases. The voluntary NVAP authorizes private veterinary practitioners to work cooperatively with Federal veterinarians and State animal health officials to report when they suspect these diseases to be present. This provides the first step in rapid diagnosis, quarantine, and other control measures to safeguard our nation's animal and human health. Accredited veterinarians also provide official animal, flock, and herd health certifications, disease testing, and traceability practices for billions of animals each year. Mandatory training and renewal of accreditation provide increased knowledge of animal disease surveillance, prevention, zoonoses, judicious use of antimicrobials, animal welfare, and disaster preparedness. APHIS currently hosts 31 web-based supplemental training modules for accredited veterinarians. Since FY 2011, accredited veterinarians have completed more than 800,000 web modules, with more than 40,000 modules completed at veterinary conferences nationwide.

2. Aquatic Animal Health

The Aquatic Animal Health program protects the health and value of U.S. farm-raised aquatic animals and natural resources by carrying out activities consistent with the National Aquatic Animal Health Plan (NAAHP), which calls for surveillance and testing of high-consequence aquatic animal diseases. The NAAHP helps the Federal government develop policies and programs to address aquatic animal diseases for the benefit of aquaculture and aquatic animal resources. APHIS, the U.S. Department of Commerce's National Oceanic and Atmospheric Administration, and the U.S. Department of the Interior's Fish and Wildlife Service developed and implement the plan. Program efforts position commercial producers in domestic and international trade markets, valued at $1.5 billion in 2018 (National Agricultural Statistics Service, 2018 Census of Aquaculture), and helps the commercial aquaculture industry demonstrate adherence to sound practices for aquatic animal health.

In FY 2020, APHIS continued working with the National Aquaculture Association to develop the Commercial Aquaculture Health Program Standards (CAHPS), a national and uniform approach to health standards for aquaculture. Several large land-based facilities in the New England region are evaluating the benefits of adopting the CAHPS concept. The goal of CAHPS is to support improved health management, protection and expansion of aquaculture business opportunities, promotion and facilitation of trade, and improved resource protection. The CAHPS establishes site-specific plans for biosecurity, surveillance, and response related to animal health events. Well-managed surveillance planning is the foundation for animal health activities that include disease control and eradication programs, support of emergency preparedness and response, and international trade.

On May 7, 2020, Executive Order (EO) 13921 *Promoting American Seafood Competitiveness and Economic Growth* was signed. This Executive Order seeks to realign Federal authorities and promote industry growth and opportunity for investment by removing regulatory barriers. The EO tasked USDA, in consultation with the Secretary of Commerce, the Secretary of the Interior, and other Federal officers and States to propose a modernized national plan to replace the NAAHP.

APHIS finalized an internal agency plan in FY 2020 to expand its aquatic animal health program over five years to fully implement a new NAAHP. This agency plan spells out APHIS' role in the aquaculture industry, which will require a more comprehensive approach to livestock health management, monitoring, and certification. Based on the CAHPS concept, the agency plan focuses on farm-raised aquatic animal health and will promote industry growth by improving marketability through consumer confidence, facilitating interstate and international trade and movement of live animals and animal products, and improving animal health. This requires a uniform national framework to harmonize laboratories, pathogen diagnostics, surveillance, inspection, and emergency preparation and training. APHIS convened a stakeholder working group to determine the infrastructure factors that must be addressed to enable appropriate diagnostics and sampling, sufficient State and Federal oversight to facilitate prompt disease outbreak responses, and measures to ascertain demonstrate aquatic animal health for our trading partners. Based on this agency plan, APHIS worked with Federal partners and stakeholders in FY 2020 to develop a new NAAHP, which will be finalized in FY 2021.

In FY 2020, APHIS – in consultation with the domestic tilapia industry – drafted a Federal Order to restrict the importation of fish species susceptible to tilapia lake virus (TiLV). TiLV was detected in U.S. fish for the first time in March 2019, but APHIS and State cooperators quickly contained it. The Order is designed to prevent further introductions. TiLV is an emerging virus affecting farmed and wild tilapia. It can cause high mortality in susceptible fish, and no treatments or vaccines are available. TiLV poses a significant health threat to Tilapia worldwide, and its introduction and spread in the United States could lead to substantial consequences for the industry. The value of tilapia produced in the United States in 2018, was approximately $39.4 million (National Agricultural Statistics Service, 2018 Census of Aquaculture). The 2019 outbreak demonstrated the risk of unregulated live animal imports and movements. The Order requires that all live TiLV-susceptible fish, as well as fertilized eggs and egg cells from TiLV-susceptible species, must meet U.S. import requirements. These requirements include a USDA import permit, an official health certificate, and a veterinary inspection. The Order took effect on December 12, 2019.

3. Avian Health

The Avian Health program protects the U.S. poultry industry, whose production value was $40.4 billion in 2019 (USDA, National Agricultural Statistics Service), while facilitating agricultural trade in poultry and poultry products. This program consists of the surveillance, prevention, and control of avian diseases; disease threat planning and response;

international avian health activities; and modeling activities. APHIS' surveillance programs detect foreign, zoonotic, and domestic diseases that could substantially impact domestic production and the economy. Surveillance information facilitates trade and protects public health by demonstrating that certain diseases do not exist in poultry populations. Prevention and control programs minimize the disease threat and protect the value of poultry markets. The Agency also maintains regulations and national program standards and guidelines that direct avian health activities at the Federal, State, and Tribal levels. Maintaining these standards supports interstate and international commerce by providing assurances about the health of avian species and products that are moved or traded. In addition, APHIS uses models to improve the understanding of historical events, estimate consequences, and inform decisions by evaluating the effectiveness of varying interventions. This program has the expertise and infrastructure to work with avian health industries, universities, and State and Federal partners to collect, analyze, and disseminate vital avian health information to those who might take action.

Surveillance, Prevention, and Control of Avian Diseases

To ensure that the U.S. poultry industry maintains worldwide competitiveness, APHIS must be able to quickly detect and address endemic, emerging, and foreign disease threats. To detect these threats, the Agency conducts surveillance in domestic poultry, live bird marketing systems (LBMS), and wild birds. APHIS helps prevent and/or control the spread of avian diseases through collaboration, education, and regulatory enforcement. These prevention and control activities are designed to quickly diagnose disease, improve biosecurity conditions, and minimize the effects of avian influenza (AI) and other diseases on the LBMS and commercial poultry industry. The LBMS is a voluntary network of U.S. live poultry markets and their production and distribution systems, which provides fresh poultry meat to consumers. As of September 30, 2020, 33 States and the U.S. Virgin Islands had live bird markets that participate in APHIS' AI prevention and control program. State cooperators help conduct surveillance and diagnostic activities for the LBMS. When these tests yield presumptive positive results, the Agency confirms the presence and strain of AI. LBMS testing prevents and controls AI in markets and among producers and distributors that supply those markets. Since the H5/H7 low pathogenicity avian influenza (LPAI) LBMS prevention and control program began in 2004, the number of AI-positive premises has trended downward. LBMS surveillance remained a high USDA priority in FY 2020. That year, there were no H5/H7 LPAI detections in the U.S. LBMS. The program conducted 101,819 AI surveillance tests in the LBMS in FY 2019 and 64,495 tests in the first half of FY 2020. Complete FY 2020 data will be available after the agreements with States conclude on March 31, 2021.

The National Poultry Improvement Plan (NPIP) is a cooperative Federal-State-industry program that helps participants guard against disease incursion and enhance the marketability of poultry and poultry products. The program includes the testing and monitoring of *Salmonella pullorum*, *Salmonella enteritidis*, *Salmonella gallinarum*, *Mycoplasma gallisepticum*, *Mycoplasma synoviae*, *Mycoplasma meleagridis*, and LPAI. Currently, the NPIP AI prevention and control program involves the participation of all 50 States and Puerto Rico; more than 95 percent of commercial broiler, turkey, and egg industries; and 100 percent of the primary poultry breeding industry. Approximately 100 authorized and approved laboratories in 41 States provide diagnostic testing for the program. Funding to support surveillance, diagnostic, and biosecurity activities are offered through cooperative agreements between APHIS and the requesting States.

In FY 2020, APHIS worked to update the NPIP Program Standards to align them with changes in the poultry industry and incorporate new scientific information and technologies. These updates, published in the *Federal Register* on October 11, 2019, are consistent with the recommendations approved by representatives from across the poultry industry at the 2018 NPIP Biennial Conference. The changes, which took effect on November 4, 2020, create a new program option with the U.S. Newcastle Disease (ND) clean program, as well as the U.S. ND Clean Compartment Program for Primary Breeding Companies; updates LPAI regulations on indemnity and compensation; and creates an NPIP subpart for the game bird industry. The ND clean program and compartment status focuses on the primary breeder sector of the egg-type chicken, meat-type chicken, and turkey industries. Through the program, owners can show that their flocks meet all requirements to be considered unaffected by ND by both APHIS and the Official State Agency. Meeting these requirements allows flocks to participate in international and interstate trade, even during an outbreak. The updated LPAI regulations reflect current policy and practices. The game bird industry subpart aligns with the terminology, production methods, and end uses in the industry, which differs from those in other poultry industries. The game bird industry has grown rapidly and become more complex in recent years. This subpart adds testing regimes, terminology, and programs specifically designed for this industry.

APHIS conducts AI surveillance in commercial poultry under the National H5 and H7 LPAI Prevention and Control program. Although most of the testing is performed locally, APHIS' National Veterinary Services Laboratories provides

reagents for testing, and performs confirmation and identification testing of presumptive positive specimens. In FY 2019, APHIS performed approximately 1.4 million AI surveillance tests through NPIP AI cooperative agreements and 683,683 tests in the first half of FY 2020. Complete FY 2020 data will be available after the agreements with States conclude on March 31, 2021. In FY 2020, there was one highly pathogenic H7N3 detection in a commercial meat-type turkey flock in Chesterfield County, South Carolina; ten H7N3 LPAI detections in commercial meat-type and breeder turkey flocks in Anson and Union counties, North Carolina, and a commercial meat-type turkey flock in Chesterfield County, South Carolina; and two H7 LPAI detections in commercial meat-type turkey flocks in Union County, North Carolina.

Wild bird surveillance provides insight into AI viruses in wild populations, and how and when AI viruses impact poultry. In FY 2020, APHIS coordinated the collection and laboratory analysis of approximately 3,666 wild bird samples from Alaska, Idaho, North Dakota, and 13 eastern States. No HPAI was detected in the FY 2020 samples. In addition, the Agency continued to collaborate with researchers at the University of Missouri and Mississippi State University on ecological and genetic studies of AI in wild birds. APHIS also works to identify biosecurity risks posed by wildlife, and possible mitigation measures. Also, in FY 2020, APHIS-Wildlife Services published a book chapter that outlines the appropriate methods for trapping, sampling, and testing peridomestic mammals (e.g., racoons, skunks, cottontail rabbits, mice, rats) for avian influenza A virus (IAV) for wildlife epidemiology research. This information provides a critical guide to outbreak investigations where wildlife may play a role in trafficking avian IAVs to and between farms. Scientists also explored antimicrobial resistance in wildlife samples, including the development and validation of an assay to detect colistin-resistant E. coli for bird and mammal samples. APHIS used the assay in an experiment that evaluated gulls as sources of environmental contamination for bacteria harboring antimicrobial resistant genes. This work found that gulls may facilitate E. coli transmission to humans and livestock through fecal contamination of water, public areas, and agricultural operations.

Regulatory enforcement is critical to contain HPAI. To deter the entry of HPAI and support its containment and eradication, APHIS investigated five new cases in FY 2020 involving avian health issues, primarily involving the import and export of hatching eggs. In addition, the Agency resolved two investigations by issuing Official Warning letters relating to the illegal import of hatching eggs on multiple dates. APHIS also resolved an accreditation case with a $3,750 civil penalty where the alleged violations involved, in part, exporting mute swans without ensuring the swans were subject to AI testing during pre-export quarantine.

Disease Threat Planning and Response

APHIS manages the NPIP U.S. Poultry Primary Breeder AI Compartmentalization program, which audits and certifies pedigree poultry stock breeding companies that practice high-level biosecurity measures to keep their flocks AI-free. Compartmentalization represents a major shift from the traditional disease control paradigm since it defines the health status of a subpopulation of animals by common biosecurity and management principles rather than a shared geographic boundary. The voluntary program supports the trade of poultry and poultry products if the United States encounters an AI outbreak. Participating breeders must meet the program's extensive biosecurity, personal training, disease monitoring, and laboratory infrastructure requirements, which are designed from evidence-based principles known to prevent AI virus introduction and spread. APHIS administers the program and serves as the regulatory authority that international trading partners can trust to verify that a participant meets the requirements.

In November 2019, an APHIS official conducted seminars on AI, Poultry Health, and Trade in Pretoria, South Africa, and in Dubai, UAE. This was part of a broader U.S. poultry sector effort to collaborate with our Middle East and African counterparts to engage officials from participating countries to discuss issues relevant to poultry health, specifically AI, and its relation to trade; explain approaches for controlling avian diseases in U.S. commercial poultry flocks; review international guidelines on the safe trade of poultry and poultry products during outbreaks; and explore the role of the NPIP and private-public partnerships in AI surveillance, monitoring, and control. This seminar, which was hosted by the USDA and USA Poultry and Egg Export Council, will help bilateral negotiations avoid country-level import bans for U.S. poultry during outbreaks. The curriculum was designed, and seminar conducted in coordination with APHIS officials in South Africa and the Middle East, as well as Agency international capacity building officials. The seminar also provided a platform for regulatory officials from 17 African countries, 9 Middle Eastern countries, and the United States to share their experiences in the development and implementation of surveillance and/or zoning programs focused on avian diseases. The seminar also highlighted the benefit and services of the NPIP to the U.S. poultry producers and government.

APHIS provides services to support agency and interagency emergency management activities, and protect the health, safety, and security of agency personnel. In this regard, respirators serve a vital function by protecting workers from

significant hazards including insufficient oxygen and harmful pollutants. The Occupational Safety and Health Administration requires employees to be fit tested before using respirators and at least annually to ensure proper fitting. In FY 2020, APHIS trained 1,692 employees as fit-testers, and fit-tested 426 employees for respiratory protection for use in an AI outbreak response. In addition, the Agency maintained and calibrated the 33 fit-testing units to ensure they met requirements. In FY 2020, APHIS implemented a streamlined process for tracking employee fit-testing information. The Agency can now track medical clearances, with information imported from the Department of Health and Human Services. This process will provide more rapid access to the information during an emergency response.

International Avian Health Activities

Overseas, APHIS facilitates agricultural trade, works with agricultural officials, monitors agricultural health, and supports efforts in sanitary and phytosanitary standard-setting. The Agency works with animal health counterparts to reduce the impact of AI in trade by promoting transparent communications; clarifying animal disease status; and in case of market closures, providing relevant data to reopen markets for U.S. poultry and poultry products and minimizing trade disruption of these products. In addition, APHIS works with the USDA's Foreign Agricultural Service and the U.S. Trade Representative's Office to maintain a coordinated, strategic approach to resolving avian health issues that affect U.S. exports. Further, APHIS coordinates with the World Organisation for Animal Health and other international organizations to assist with disease prevention, management, and eradication activities in HPAI-affected regions. The Agency has also worked closely with counterparts in Canada and Mexico to address avian disease threats affecting North America. APHIS also delivers capacity-building activities in the areas of biosecurity, poultry disease diagnostics, quality assurance in the laboratory, and poultry and wildlife surveillance. For FY 2020, most of these activities were cancelled or curtailed due to the travel restrictions imposed by the COVID-19 outbreak. One project, that took place before the travel restrictions took effect, assisted veterinary regulatory officials and wildlife managers in Senegal and Mauritania to develop a harmonized AI surveillance plan.

In addition, APHIS sponsors and staffs the Emergency Management Center at the Food and Agriculture Organization of the United Nations, in Rome, Italy. APHIS provides one veterinarian for this Center, which helps countries respond to animal disease threats. The Center provides assessments, guidance, and resources to enable rapid response to animal disease outbreaks in countries where the United States would have difficulties placing personnel or responding bilaterally. This approach reduces the threat of outbreaks from becoming widespread and evolving into pandemics.

4. Cattle Health

The Cattle Health Program protects and improves the quality, productivity, and economic viability of the U.S. cattle industry, valued at approximately $106 billion (National Agricultural Statistics Service, 2019). The Cattle Health Program has two major goals: to rapidly detect and respond to diseases that could significantly affect the U.S. cattle and bison population, and to prevent the spread of any newly detected disease in the United States as well as endemic diseases of concern in domestic cattle and bison.

APHIS activities in the Cattle Health Program include surveillance, disease prevention, disease investigation, and outbreak response actions. In addition, APHIS maintains regulations, national program standards, and guidelines that direct activities at the Federal, State, Tribal, and local levels. Establishing and maintaining these standards is critical to supporting interstate and international commerce by providing assurances about the health of cattle or bison being moved or traded.

In FY 2020, APHIS continued to conduct surveillance for foreign, emerging, and endemic diseases, including bovine tuberculosis (TB), brucellosis, and bovine spongiform encephalopathy (BSE) as well as disease vectors, such as the cattle fever tick (CFT). The Agency conducts surveillance through cattle testing at slaughter facilities, livestock markets, shows, sales, buying stations (first point testing), on-farm, and rendering facilities (operations that collect dead, dying, disabled, and diseased animals). APHIS also continued working with Canada and Mexico to exclude foot-and-mouth disease, new world screwworm, and other cattle diseases. The following are examples of the Agency's efforts to protect cattle health during FY 2020.

Bovine tuberculosis

Bovine TB primarily affects cattle but has the potential to affect other animal species and humans as well. APHIS' surveillance for this disease includes testing live cattle and using slaughter surveillance data from the USDA's Food

Safety and Inspection Service. The bovine TB program, initiated in 1917, has significantly decreased the prevalence of the disease in U.S. livestock. Today the prevalence rate in cattle herds is less than 0.001 percent.

In FY 2020, approximately 140 Federally inspected slaughter establishments submitted 6,299 samples for TB testing. Through these slaughter surveillance efforts, the program detected TB in four herds in FY 2020: two from Michigan's Modified Accredited Free Zone, one from Michigan's Accredited Free Zone, and one from Texas. APHIS uses a mix of depopulation and test-and-removal strategies to address bovine TB-affected herds. These strategies consider herd size, potential indemnity costs, State and owner preferences, genetics, and the probability of removing infection. These four herds were all placed under herd management plans and were either depopulated or are in various stages of a test and remove or depopulation protocol.

The Cattle Health Program has five State bovine TB classifications. A higher disease prevalence results in classifications that have more restrictive movement requirements. The classifications are, in descending order: accredited free, modified accredited advanced, modified accredited, accreditation preparatory, and non-accredited. Michigan is currently composed of two classification zones: accredited free and modified accredited status. At the end of FY 2020, 49 States, 2 Territories (Puerto Rico and the U.S. Virgin Islands), and 1 classification zone in Michigan were TB accredited free.

Bovine brucellosis

Bovine brucellosis is an infectious disease that can cause decreased milk production, weight loss, abortions, infertility, and lameness. These effects can negatively impact the livelihood of cattle producers and the supply of meat and dairy products. The Federal and State brucellosis eradication efforts have resulted in all 50 States, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands being Class-Free since July 2009. Class-Free States with brucellosis in wildlife work with APHIS to implement a State brucellosis management plan (BMP). Each BMP defines the basis for the area identified; describes the epidemiologic assessment and surveillance activities to determine if wildlife populations are affected; and describes surveillance and mitigation activities for cattle, bison, and wildlife. Although the U.S. is considered Class-Free of brucellosis, there continues to be a presence of brucellosis in free-ranging bison and wild elk in the Greater Yellowstone Area (GYA). APHIS provides expertise to land and wildlife management agencies to manage brucellosis in the GYA, which includes parts of Idaho, Montana, and Wyoming.

In FY 2020, APHIS tested approximately 480,000 head of cattle under the market cattle identification national slaughter surveillance program. The Agency, in conjunction with States, tests cattle and domestic bison on farms and ranches prior to movement, private sale, herd certification issuance for show and exhibition purposes. In FY 2020, the program tested and vaccinated over 3.6 million calves and 11,000 adult cattle for brucellosis, and certified 286 herds as brucellosis-free cattle herds. The number of certified-free herds varies year to year based on the producers' need for livestock movement. Agency-accredited veterinarians perform most of the vaccinations and the collection of samples, and State laboratories test the samples.

There were seven new brucellosis affected herds detected in the GYA designated surveillance area in FY 2020. Six herds were detected during annual certification tests and one was detected from slaughter tracing. All detected herds are currently undergoing a test-and-remove herd management plan. There is no indication that brucellosis has spread outside the GYA. APHIS's Approved Bison Quarantine Facility is used to capture bison inside Yellowstone National Park, test them to determine brucellosis disease status and release disease-free bison outside the GYA. In FY 2020, APHIS released 30 adult bison and 14 calves to the Fort Peck Bison Testing facility, an approved APHIS assurance testing facility, which APHIS has partnered with to increase the capacity for bison release.

Bovine spongiform encephalopathy

Bovine Spongiform Encephalopathy (BSE), widely referred to as "mad cow disease," is a progressive and fatal neurologic disease of cattle. The disease is caused by a transmissible agent, an abnormal prion protein. BSE is not a contagious disease and therefore is not spread through casual contact between cattle or with other species. The primary route of spread of classical BSE infection in cattle is feed contaminated with the infectious agent.

The World Organisation for Animal Health (OIE) evaluates countries that submit a request for disease freedom and assigns a points-based risk status for BSE. The BSE surveillance program uses OIE's weighted surveillance points system, which reflects that the best BSE surveillance programs focus on obtaining quality samples from targeted populations rather than looking at the entire adult cattle population. The OIE's surveillance points system also

incorporates a country's history with the disease, the implementation and enforcement of cattle feed regulations, and their overall BSE surveillance. In FY 2020, the Agency tested for BSE in 21,424 cattle, resulting in 331,770 points, exceeding the OIE's international surveillance standards (21,429 points per year) by 15 times. No cases of BSE were detected in FY 2020.

Cattle fever tick

The Federal-State Cattle Fever Tick Eradication Program is a partnership between APHIS and the Texas Animal Health Commission. CFT (*Boophilus annulatus*) and the southern cattle tick (*B. microplus*) are vectors for spreading babesiosis, also known as cattle fever. Even when not transmitting this disease, CFT can cause blood loss, damage to hides, and an overall decrease in the condition of livestock. Mortality in cattle without prior exposure to the disease ranges from 70 to 90 percent. The Agency focuses on controlling the spread of tick species that transmit the infectious agent through the inspection of livestock before they leave quarantined areas, surveillance at local markets, inspection of hunter-killed white-tailed deer and other exotic ungulates, and horseback river trail patrols that capture stray and smuggled Mexican livestock who may carry ticks into the United States.

The United States remains free of cattle fever. There is a permanent quarantine buffer zone established between Texas and Mexico. Bordering Mexican states harbor tick species, which carry the disease, and tick-infested wildlife or livestock near the U.S./Mexico border can bring the ticks into the United States. Tick eradication activities consist of identifying and quarantining infested premises and treating livestock and wildlife. Approved treatment methods for ticks include: dipping or spraying cattle with coumaphos, feeding ivermectin-treated corn to deer found in wildlife; and injecting cattle with Doramectin. To release a quarantine area, every infested premise must have all cattle treated for at least nine months, including inspections and treatments every two weeks. In FY 2020, APHIS conducted 104,169 individual animal inspections and 95,233 treatments throughout South Texas. For FY 2020, the permanent quarantine zone and the free area of Texas contained 74 newly quarantined premises, compared to 79 in FY 2019. Additionally, APHIS conducted several research studies on CFT, including studies examining the use of lavender as a repellant for CFT on horses; examining animal feces for CFT detection; using weather stations for CFT outbreak predictions; and the efficacy of CFT vaccines for cattle.

Carrizo cane is an invasive species and perennial bamboo-like grass that occupies the banks and floodplains of the Rio Grande in Texas. The cane makes for a particularly favorable habitat for CFT, which reside in the vegetation waiting for animals to brush by so they can attach. In FY 2020, Congress provided additional funding to APHIS to control invasive Carrizo cane along the U.S./Mexico border. The standard approach for keeping Carrizo cane under control is to cut it down to three feet twice a year using a mechanical cutter bar mounted on a tractor, a process referred to as "topping". In FY 2020, APHIS worked with contractors to top areas of most concern. Baseline data for a full year's worth of topping will be provided in FY 2021.

Screwworm

APHIS and its cooperators have eradicated screwworm from the United States, Mexico, Belize, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, and down to the southern-most portion of Panama. APHIS' international efforts prevent the reestablishment of screwworm in the United States by collaborating with Panama and Colombia to maintain a biological barrier zone in the Darien Gap, a narrow 102-mile stretch of jungle along the border of Colombia and Panama. The program relies on field operations and a sterile insect technique, a process where APHIS and cooperators produce and sterilize insects at a jointly managed facility in Panama and release them in the barrier zone to mate with wild insects, thereby preventing reproduction. This release of sterile flies is a proven method to eradicate insect populations. The United States also has access to the sterile flies in the event of an outbreak in U.S. territory. APHIS produces approximately 20 million sterile flies per week at its Panama rearing facility. In FY 2020, there were 33 positive screwworm cases in the barrier zone, with 29 of them located in the Chepigana District. The Chepigana District is one of the focal points for screwworm detections in the Darien Gap, where the program often makes the first detection of the year. In FY 2020, the program detected the first positive screwworm case on June 17, the first time since 2013, that no cases were detected earlier in the calendar year. The lack of earlier detections is likely due to the decrease of movement from Colombia to Panama because of COVID-19 restrictions. During the COVID-19 pandemic, APHIS successfully continued its production and field operations while maintaining health and safety rules and regulations.

5. Equine, Cervid and Small Ruminant Health

The Equine, Cervid, and Small Ruminant Health (ECSRH) program protects the health and improves the quality, productivity, and economic viability of the equine, cervid, sheep, and goat industries. APHIS activities include monitoring, surveillance, investigation, response, and disease prevention and preparedness to address animal health issues. The Agency's monitoring and surveillance activities detect foreign, emerging, zoonotic, and domestic diseases that could substantially impact the economy. APHIS also works with international and domestic trading partners to facilitate safe trade in equine, cervids, and small ruminants and their products and ensure diseases of trade concern incidents are reported to the World Organisation for Animal Health (OIE). In 2020, the ECSRH Program conducted disease surveillance and/or monitoring for the following diseases: scrapie, bovine tuberculosis (TB), chronic wasting disease (CWD), vesicular stomatitis virus (VSV), contagious equine metritis (CEM), equine piroplasmosis (EP), Eastern equine encephalitis (EEE), West Nile virus (WNV) and equine infectious anemia (EIA).

Sheep and Goat

The National Scrapie Eradication Program (NSEP) focuses on improving the health of domestic sheep and goat, reducing scrapie-associated economic losses and increasing international marketing opportunities. Regulatory scrapie slaughter surveillance efforts began in FY 2003 and were designed to identify scrapie infected flocks and herds by sampling animals at slaughter. Since the surveillance program began, the program has collected 666,954 samples at slaughter. When first measured in FY 2002, the rate of cull sheep sampled at slaughter that tested positive for classical scrapie was 1 in 500 (0.2%). In FY 2020, the rate of cull sheep sampled at slaughter that tested positive for classical scrapie was less than 1 in 25,000 (0.004%).

In FY 2020, APHIS collected samples from 33,839 sheep and goats for scrapie testing. This number represents sample results reported by October 15, 2020 and is expected to slightly increase as the remaining results are processed and reported. No animals tested positive for classical scrapie. Two sheep tested positive at slaughter for non-classical scrapie (Nor98-like). Unlike classical scrapie, non-classical scrapie is either not laterally transmissible or is transmissible at a very low rate. The OIE and APHIS determined that it is not a disease of trade concern.

The NSEP has a voluntary flock certification component, the Scrapie Free Flock Certification Program (SFCP). Participation in the SFCP enables producers to enhance the marketability of their animals by protecting them from scrapie and provides participants an avenue to export sheep and goats. At the end of FY 2020, 227 flocks were enrolled in the SFCP. Of these, 41 were export certified (scrapie-free), 41 were export monitored (working towards documenting scrapie freedom), and 145 were select monitored (reduced scrapie risk).

In FY 2020, APHIS' updated National Scrapie Surveillance Plan, and State sampling minimums went into effect. This update aligns scrapie surveillance efforts with the current disease situation and the Scrapie Final Rule published in March 2019. The new rule allows for a more flexible approach to disease investigations and affected flock management. In addition, goat identification and recordkeeping requirements are now equivalent to the higher standard already in place for sheep.

Cervids

APHIS coordinates with State agencies to encourage cervid owners to certify their herds and comply with the CWD Herd Certification Program Standards. APHIS also coordinates a voluntary cervid TB herd accreditation program. Herds that participate in the cervid TB herd accreditation program must test all cervids in the herd over 12 months of age, and have negative TB results from two rounds of testing 9 to 15 months apart using either the Dual Path Platform (DPP) test or the Single Cervical Test (SCT) for their herd to be classified as accredited free and retested every 3 years thereafter to remain accredited. In FY 2020, the program tested 12,034 animals using the DPP blood test and 2,762 animals using the SCT, for TB. Of the cervids tested using DPP, 36 suspects were identified on the first round of testing, and 16 were classified as reactors based on the second round of testing. Of the cervids tested using SCT, 44 suspects were identified on the first round of testing, and 1 was classified as positive on the follow up test. The program necropsied 15 of the 16 reactors from the DPP test, and their tissues were tested and ultimately found negative for TB.

APHIS continued a project to evaluate the DPP test for TB in mule and sika deer in FY 2020. The DPP test has been approved since 2012, as a primary test for elk, red deer, white-tailed deer, and fallow deer and will now be evaluated as a primary and secondary test for TB in mule and sika deer. The project uses serum samples that designated accredited

veterinarians submitted for herd TB certification purposes. The project will collect samples from 306 animals of each species submitted in accordance with APHIS guidelines. The Agency will consider tests conducted as part of the project to be official TB tests. In FY 2020, 101 mule deer and 48 sika deer were tested as part of the project. All animals tested negative.

APHIS' voluntary national CWD Herd Certification Plan (HCP) helps States, Tribes, and the cervid industry control CWD in farmed cervids by allowing the interstate movement only from certified herds. Currently, 28 States participate in the national CWD HCP. In FY 2020, more than 11,182 farmed cervids were tested for CWD at State and APHIS laboratories. As a result, APHIS identified 22 new CWD positive farmed cervid herds. APHIS provided Federal indemnity to depopulate 15 of the 22 newly identified deer herds in FY 2020. Four additional farmed cervid herds that were identified as CWD positive herds in FY 2019, were indemnified in FY 2020. The remaining infected herds are under State quarantines. APHIS determines the use of Federal indemnity payments within the CWD program on a case-by-case basis.

In FY 2020, APHIS and the Department of Interior held a virtual summit with representatives from State agriculture and wildlife agencies, Tribal Nations, conservation and hunting groups, and the cervid industry to identify and discuss stakeholder CWD management needs and information gaps that need to be addressed to effectively control CWD. The information from the summit helped APHIS establish priorities for proposals for competitive cooperative agreements dedicated to CWD control. These cooperative agreement opportunities allow for State departments of agriculture, State animal health agencies, State departments of wildlife or natural resources, and Tribal governments to further develop and implement CWD management and response activities in accordance with the following priorities:

- improving CWD management of affected farmed herds and free-ranging endemic populations;
- improving CWD management of affected areas or premises;
- conducting additional research on amplification assays;
- conducting additional research on predictive genetics; and,
- developing and/or delivering educational outreach materials or programs.

To execute projects based upon those priorities, APHIS funded awards to 25 entities: 19 to State Departments of Natural Resources, 5 to State Departments of Agriculture, and 1 to Tribal Nations.

Equines

APHIS collaborates with Federal, State, and industry partners to protect the equine industry from disease, improve the health of our domestic herd, and protect human health. These activities improve trade and facilitate equine movement, which are vital to maintaining the industry's economic value. APHIS provides veterinary support and consultation to the U.S. Department of the Interior's Bureau of Land Management Wild Horse and Burro Program through an interagency cooperative agreement.

APHIS provides expertise and helps develop the industry's National Equine Health Plan. The plan functions as a roadmap for owners, veterinarians, and industry organizations to coordinate with State and Federal animal health officials to recognize, prevent, control, and respond to diseases. APHIS integrates the roles of the State and Federal health officials with industry stakeholders to improve both equine health and the industry by decreasing the impact of infectious disease on the horse economy.

In FY 2020, APHIS coordinated with States and industry to develop national disease control strategies, and provided oversight, coordination and implementation of appropriate policies. Specifically, APHIS provided scientific, epidemiological and regulatory expertise, diagnostic assistance, and national-level situation reporting to respond to findings of equine diseases of high impact or concern. National surveillance is conducted for EIA, EP, VSV, CEM, EEE, and WNV. In FY 2020, positive detections of VSV, EIA and EP, identified during routine surveillance, led to subsequent response activities. These responses include: the coordination of State and Federal activities; diagnosis, sampling, and testing cohorts; trace-back investigations; euthanasia for EIA; treatment for EP; or lifetime quarantines in the case of EIA and EP; notification of OIE or trading partners; the gathering of epidemiologic data; and data analysis.

APHIS collaborated with States and other Federal agencies in the reporting of equine cases of certain zoonotic diseases such as EEE and WNV. In FY 2020, APHIS maintained certification and annual proficiency testing for 20 equine viral arteritis laboratories, 13 EP laboratories, and 13 CEM laboratories, and additionally certified and conducted annual

proficiency testing for 405 EIA laboratories. APHIS created and implemented national guidance for the submission and testing of approximately 1.1 million EIA samples submitted annually by accredited veterinarians.

6. National Veterinary Stockpile

The National Veterinary Stockpile (NVS), overseen by APHIS' Field Operations Logistics Center, serves as the primary source of materials, supplies, and equipment for the response to, control of, and containment of significant animal disease outbreaks. NVS has two primary objectives: to deploy countermeasures, within 24 hours of approval, against the most damaging animal diseases including highly pathogenic avian influenza, foot-and-mouth disease (FMD), virulent Newcastle disease, classical swine fever and African swine fever; and to assist States, Tribes, and Territories with planning, training, and exercises for the rapid request, receipt, processing, and distribution of NVS countermeasures during an event.

NVS continuously evaluates its inventory of supplies and replaces expired inventory. In FY 2020, NVS acquired additional equipment, specifically trailers used for small ruminants, and animal disposal equipment during an emergency response. NVS provided numerous shipments of personal protective equipment, supplies and equipment used by frontline responders to combat the virulent Newcastle disease outbreak in California and deployed critical supplies for the avian influenza response in North Carolina and South Carolina, within 24 hours. The program also responded to requests for assistance with mass swine depopulation in 5 States (Iowa, Indiana, Kansas, Oklahoma, and Missouri) that experienced supply chain disruptions due to COVID-19. NVS processed over 100 orders, primarily for supplies such as animal handling equipment, captive bolt kits/cartridges, and personal protective equipment. Additionally, the stockpile provided personal protective equipment, including nitrile gloves, respirators, paper masks and cloth masks to APHIS programs during the COVID-19 pandemic to ensure APHIS employees remained safe as they performed their field, port, and office duties.

In FY 2020, COVID-19 social distancing protocols prevented NVS from conducting in-person training and exercises, therefore activities focused on State preparedness were accomplished using virtual communication tools. A series of virtual webinars were held with Maine to help them complete their State NVS Plan. The program conducted two training webinars to ensure States impacted by supply chain disruptions knew how to request support from NVS. As a result, more Federal, State, Tribe, and Territory officials are better prepared to respond logistically to animal disease outbreaks. These activities enabled the Agency, as well as participating stakeholders and partners, to refine their preparedness procedures. NVS will continue to conduct exercises and trainings in the deployment of resources and response preparedness to animal health events in FY 2021. A full-scale exercise to test Oklahoma's State NVS Plan, originally scheduled for August 2020, has been postponed until the spring of 2021.

APHIS continued to maintain the North American Foot-and-Mouth Disease Vaccine Bank (NAFMDVB) as part of the agency's animal health readiness initiative in FY 2020. The NAFMDVB is a vaccine stockpile that APHIS, Mexico, and Canada have cooperatively supported. Each country has contributed funding to acquire vaccine and maintain a stockpile of vaccine concentrate, from which FMD vaccine is derived. Mexico has informed the NAFMDVB that they will no longer continue their participation in FY 2021. Canada and the United States will continue to ensure that the Bank maintains adequate stocks of vaccine concentrate and conduct necessary quality assurance testing. A portion of NVS funding was used to acquire new antigen for FMD preparedness.

7. Swine Health

APHIS' Swine Health Program protects the health and improves the quality, productivity, and economic viability of the swine industry. The 2019 production value of the swine industry was approximately $20 billion (National Agricultural Statistics Service). In addition, the program facilitates trade in swine and pork products, and addresses swine health issues at the human-swine interface and between wildlife and domestic swine. APHIS activities include comprehensive and integrated swine surveillance, emergency preparedness and response planning, disease investigation and control activities, zoonotic disease prevention and response, swine health studies and special projects, collaborations on emerging issues, and outreach and communication with stakeholders. In addition, the Agency maintains regulatory and programmatic guidelines that direct activities at the Federal, State, and Tribal levels. Establishing and maintaining national standards support interstate and international commerce by ensuring the health of animals and products being moved or traded.

For several years, this program has been closely following the spread of African Swine Fever (ASF), a highly contagious and deadly viral disease of domestic and wild pigs. Currently, the only way to stop it is to depopulate all affected or exposed swine herds. With the dramatic increase in detections in Asia in FY 2019 and FY 2020, and the recent spread across Europe, APHIS has increased its preparedness efforts with States and industry to guard against an incursion. While ASF has never been found in the United States and does not pose public health concerns, an introduction would be devastating for U.S. pork producers, their communities, and the economy. A 2020 Iowa State University study estimates that a U.S. outbreak could cost the U.S. swine industry $50 billion over 10 years. Early detection is the key to controlling, containing, and eliminating ASF. To enable early detection and bolster preparedness, APHIS continued implementing a nationwide ASF surveillance plan in FY 2020 and collaborated with stakeholders on an ASF Workshop scheduled for January 2021. This workshop will focus on examining response plans, policies, and procedures impacting meat packer operations in the case of an outbreak. The Agency took several steps in FY 2020, to enhance safeguards to prevent ASF from entering the United States. These steps included increasing inspections of products coming from areas where the disease may be present, increasing diagnostic capabilities, and coordinating preparedness and response exercises with the States, industry, Canada, and Mexico. On March 6, 2020, APHIS announced additional control and eradication measures if ASF is ever detected in the United States. These measures include issuing a 72-hour national standstill to prohibit all swine movement, thus increasing the Agency's ability to stop disease spread and quickly restore movement on a regionalized basis as well as other depopulation and disposal planning. APHIS is expanding its outreach efforts to South America to protect the entire Western Hemisphere. In May 2020, APHIS updated and expanded its ASF strategic plan as part of ongoing efforts to strengthen preparedness and response capabilities in the event of an outbreak.

APHIS announced a joint pilot project with Iowa State University to develop and implement an ASF-Classical Swine Fever (CSF)-Monitored Certification Program in FY 2020, modeled after the National Poultry Improvement Plan for U.S. commercial poultry operations. The pilot will provide a framework to further safeguard the swine industry by ensuring active and effective nationwide surveillance and the ability to quickly zone infected areas if necessary. It will enable the Agency to assure trading partners and consumers about the status of these diseases. U.S. pork producers and packing facilities in participating States that meet specified requirements can voluntarily enroll in the program. APHIS will assess the potential for transitioning to a more formal ongoing national plan to certify U.S. swine health and provide updates on this project after the initial standards are drafted.

APHIS collects swine samples from various surveillance streams as part of a comprehensive integrated surveillance approach to detect various swine diseases that could substantially affect domestic producers and the national economy. Comprehensive integrated surveillance includes field work and epidemiological investigations, designated surveillance streams, a veterinary diagnostic laboratory infrastructure, data management systems, and methodologies for data analysis and reporting. APHIS collects samples and data from the following surveillance streams: veterinary diagnostic laboratories, slaughter plants, high-risk producer premises, livestock markets, and feral swine during population elimination projects. Surveillance testing supports the swine industry by assuring trading partners and other stakeholders of the status of swine diseases in the United States.

Comprehensive surveillance enables APHIS to maintain effective surveillance using a risk-based approach that targets high-risk samples and reduces costs. In FY 2020, APHIS tested 89,059 samples for pseudorabies virus (PRV) and swine brucellosis (SBR), and the National Animal Health Laboratories (NAHLN) tested 1,074 samples for influenza A virus – swine (IAV-S). Also in FY 2020, APHIS continued an ASF/CSF combined hemorrhagic fever surveillance program, testing 6,029 samples at NAHLN laboratories and 3,326 CSF-only serum samples at the Agency's Foreign Animal Disease Diagnostic Laboratory on Plum Island, New York (830 from feral swine and 2,496 from high-risk domestic swine). While the COVID-19 situation delayed sample testing in FY 2020, testing results received by October 9, 2020, continued to confirm that all commercial swine herds were free from PRV and SBR, although these diseases continue to be found in non-commercial herds after exposure to feral swine. In FY 2020, two non-commercial herds tested positive for PRV in one State, and eight non-commercial herds tested positive for SBR in three States. One of the herds represented was dually infected with PRV and SBR. Some States have ongoing investigations, and complete FY 2020 herd data will not be available until February 2021. CSF remains eradicated from the United States, and the United States also continues to be free of ASF.

In all test-positive cases, APHIS and States investigate and quarantine infected herds, conduct outbreak testing to determine herd disease levels, and depopulate or remove infected animals through a test-and-removal strategy to eliminate disease risk from these herds. These efforts protect commercial herds that may be exposed to infected backyard herds. Because APHIS has eliminated PRV and SBR from all U.S. commercial swine herds, the Agency continues to modernize surveillance activities to reflect a comprehensive, risk-based, and science-based approach to swine

surveillance to support trade efforts while reducing burdens on States and producers. In FY 2020, APHIS efforts led to whole genomic sequencing of approximately 222 IAV-S samples entered into this program. Also in FY 2020, APHIS performed 3,028 investigations in swine for foreign animal diseases, and all were negative. A total of 2,988 of the investigations were for vesicular diseases, such as foot-and-mouth disease (FMD), and 47 were for hemorrhagic fever. Seven of the 3,028 investigations involved both conditions and are, therefore, counted in both categories.

APHIS has the responsibility under the Swine Health Protection Act to license and inspect swine production facilities that feed cooked garbage to swine, and to conduct searches for unlicensed facilities that may illegally feed raw garbage to swine. This practice could transmit infectious diseases such as ASF, FMD, or CSF to swine. By ensuring that food waste fed to swine does not threaten domestic swine, APHIS protects the commerce, health, and welfare of U.S. citizens. In FY 2020, APHIS supported 1,806 inspections of licensed premises and 4,751 searches for non-licensed facilities. Through these searches, the Agency identified 18 non-licensed feeders. APHIS worked with States to either bring unlicensed facilities into compliance or force them to cease their illegal activities.

In FY 2020, State public health officials reported one human variant influenza A case, but no history of swine exposure was identified. State public health and animal health officials, with support from APHIS and the Centers for Disease Control and Prevention, investigated all outbreaks. When warranted, APHIS helped States and industry identify the isolates from the swine associated with these outbreaks. Joint animal health and public health investigations support the One Health concept and strengthen the Agency's ability to respond when both animal and human health might be compromised. States and industry enter genetic sequences from these samples and other swine isolates into GenBank, a publicly accessible genomic database that provides the scientific community with updated, comprehensive DNA sequence information to support diagnostic test and vaccine development. Swine can harbor several zoonotic disease agents, such as IAV-S, swine brucellosis, and trichinellosis. In FY 2020, APHIS engaged the Agricultural Research Service (ARS) to conduct a trichinella prevalence study to establish the United States' negligible risk for the pathogen to trading partners to increase international market opportunities. Trichinella is a genus of parasitic roundworms that causes the trichinae disease in swine that consume contaminated feed. As of March 2020, ARS tested 1,179,337 animals, with all animals testing negative for the trichinae disease. However, the Agency has not tested any animals since March due to the COVID-19 pandemic. Because the study design calls for 3.1 million animals to be tested, ARS extended the projected completion date to October 2021. The prevalence estimate from this study is expected to strengthen U.S. pork industry access to international markets.

8. Veterinary Biologics

APHIS' Center for Veterinary Biologics (CVB) regulates veterinary biological products under the Virus-Serum-Toxin Act to ensure that these products are pure, safe, potent, and effective. Organizations develop these products, which include vaccines, bacterins, antisera, diagnostic test kits, and analogous products to prevent, diagnose, and treat animal diseases in a wide variety of animal species. The CVB develops regulations concerning the production and licensing of veterinary biologics, evaluates pre-licensing dossiers and issuance of licenses and permits, tests products submitted for licensure, inspects facilities and products, approves product certifications, investigates non-compliance, and conducts post-marketing surveillance to ensure that manufacturers comply with all relevant regulations and policies. This comprehensive regulatory approach is the most effective way to ensure that only quality, Federally licensed veterinary biological products are available to U.S. consumers, available for U.S. export markets, and also plays an essential role in protecting animal health and agriculture. In FY 2020, CVB hired seven additional staff to support the growing needs of the U.S. veterinary biologics regulatory system.

Licensed Products and Inspections

APHIS licenses and inspects facilities to ensure that all veterinary biological products produced and distributed within, imported into, or exported from, the United States are of the highest quality, and are not worthless, contaminated, dangerous, or harmful. Before the Agency began regulating these biologics, farmers and animal health officials found products to be ineffective or contaminated with harmful diseases, including foreign animal diseases. While most of the time required in the licensing process is in the control of the potential licensee in developing manufacturing processes and conducting required studies, the CVB analyzes data and conducts confirmatory testing before issuing licenses. To reduce the burden on the regulated industry, CVB has, over recent years, expedited turnaround times, streamlined required information collection under specific circumstances, and implemented electronic submissions for most required regulatory submissions.

In FY 2020, APHIS received 146 applications for new and renewal licenses/permits, and issued 30 licenses/permits for the prevention, diagnosis, management, or cure of existing or new/emerging animal diseases. This data depends on the biologics manufacturers and is outside CVB's control. A few large company mergers in recent years have slowed the number of new products being presented to CVB, while companies focus less on new product development and more on merger issues. APHIS does not expect this trend to continue once the mergers have been completed. Also in FY 2020, the Agency licensed 87 manufacturers and permittees for 1,579 active product licenses/permits for the control of 280 animal diseases. These products are vital for protecting American agriculture, facilitating trade, and enhancing agricultural economic opportunities.

APHIS continued implementing the single-tier labeling rule, which changes the efficacy descriptions for veterinary biologics to a single, uniform label claim. This simpler format better communicates product performance, saves time and money for the manufacturer, and aligns U.S. labeling with international markets. In addition, APHIS clearly defined policy to allow the use of platform and prescription vaccines. These innovative policies allow stakeholders the flexibility to quickly change vaccines to match emerging and changing pathogen threats with very limited risk to people, animals, or the environment. Also in FY 2020, APHIS implemented a Virus-Serum-Toxin Act regulation requiring all veterinary biologics licensees and permittees to submit reports to the CVB concerning adverse events associated with the use of biological products they produce or distribute. An adverse event is any illness, reaction, or other undesirable occurrence after the use of an immunobiological product, whether or not the product caused the event. For diagnostics products, adverse events include anything that hinders the discovery of the correct diagnosis. Adverse event reports are a vital component of CVB's mission to ensure that veterinary biologics, including those marketed internationally, comply with regulations. Although the regulation took effect on June 18, 2018, it included a minimum 18-month phase-in implementation period. During this period, CVB worked with industry to develop guidance documents to help licensees and permittees comply with the new regulation.

APHIS' National Centers for Animal Health (NCAH) Portal allows real-time communication and data exchange between APHIS and biologics manufacturers, eliminating the time and costs of deliveries. By the end of FY 2020, 93 percent of licensed firms and permittees were using the NCAH Portal. This resulted in CVB receiving 98 percent of marketing documents, 98 percent of biographical summaries, 87 percent of licensing correspondence, and 68 percent of inspection and compliance correspondence via the Portal. In FY 2020, the Portal received 82 percent of export certificates and 95 percent of facility documents. Since CVB added import permit submission and processing to the Portal in late September 2019, 100 percent of Research and Evaluation Permits, 100 percent of Transit Permits, and 57 percent of Sales and Distribution Permits have been received electronically. In total, CVB received 35,587 submissions from the Portal in FY 2020, as opposed to 37,886 in FY 2019. Overall, 92 percent of FY 2020 CVB submissions were received through the Portal.

The United States and foreign countries require import and export certificates to certify that products are prepared in accordance with the Virus-Serum-Toxin Act. In FY 2020, APHIS reviewed/processed 2,579 Certificates of Licensing and Inspection and reviewed/processed 1,940 export certificates for veterinary biological products. The growth in export certificates processed from FY 2019 demonstrates that companies continue to be able to produce and export more of their products, even during the COVID-19 pandemic. The Agency processed all export certificates within 4 days, and all certificates of licensing and inspection within 28 days. Timely processing helps ensure that markets are accessible for manufacturers who export their product. APHIS also helped ensure there were no foreign animal disease events related to the importation of more than 342 million doses of biological products.

Each year, APHIS inspects an average of at least 50 biologics sites to assure compliance. This number decreased in FY 2020 due to COVID-19 travel restrictions. However, APHIS found innovative ways to conduct inspections virtually for the oversight and approval of new and remodeled facilities of licensed veterinary biologics manufacturers to allow for timely approval of new facilities. For example, CVB required licensed manufacturers to provide blueprints and legends of new or remodeled areas for review and approval. After CVB review, the manufacturers submitted videos detailing the construction, process, and personnel flow through these facilities to provide a virtual look at the areas. In some cases, the manufacturers provided additional videos to resolve CVB questions. More than 99 percent of the unlicensed entities investigated either move towards licensure of the product in question or cease the objectionable activity. This program has the expertise and infrastructure to work with animal health industries, universities, and State and Federal partners to collect, analyze, and disseminate vital animal health information to those who might take action. APHIS also inspects manufacturing facilities to ensure that they produce biologics according to regulations. In FY 2020, APHIS conducted 34 on-site inspections, 29 percent of which supported a new establishment/facility or product license for the industry. In addition, the Agency conducted seven virtual inspections of new or remodeled facilities. Licensed veterinary biologics

are vital since manufacturers can use them to make products to diagnose, prevent, or treat animal diseases, or improve existing biologics. In FY 2020, APHIS also performed 144 regulatory actions, issued 45 violation notices, and conducted 20 investigations of possible regulation violations. In addition, the Agency received 374 adverse event reports (an increase of 68 from FY 2019) regarding veterinary biological products. These events, which the product may or may not cause, occur after the product is used. APHIS gathers this information to better learn how producers use the products in field conditions and applied them to the evaluation process to assure that pure, safe, potent, and efficacious products are available. CVB has received Adverse Event Reporting on a limited basis since the early 1990's, and mandatory reporting will take effect in February 2021.

Collaborative Efforts

APHIS promotes U.S. policy as a regulatory model for both established and developing markets, and it improves worldwide marketability of USDA-licensed biologics. It participated in harmonization efforts with major trading partners including Japan and the European Union through the International Cooperation on Harmonization of Technical Requirements for Registration of Veterinary Medicinal Products. Additionally, CVB participates in the Veterinary International Conference on Harmonization's (VICH) Outreach Forum. This forum promotes the use of VICH harmonized guidelines in countries with developing regulatory systems for veterinary medicinal products. Also, in FY 2020, CVB met with Russian government officials to maintain market access for USDA-licensed biologics after Russia proposed its own Good Manufacturing Practices (GMP) regulations. Additionally, to further improve the marketability of USDA-licensed biologics in overseas markets, CVB worked with the industry to create and issue GMP certificates.

9. Veterinary Diagnostics

Laboratory and diagnostic services are essential components of the U.S. animal health infrastructure. The Veterinary Diagnostics line item provides partial funding for the National Veterinary Services Laboratories (NVSL), which consists of laboratories in Ames, Iowa and Plum Island, New York. The NVSL is recognized by the World Organisation for Animal Health and the Food and Agriculture Organization as an international reference laboratory for significant animal diseases, such as highly pathogenic avian influenza, foot-and-mouth disease (FMD), and, as of 2020, rinderpest. It provides diagnostic test services ranging from a single laboratory test to comprehensive laboratory services covering many pathogens for suspected outbreaks of domestic and foreign animal diseases (FADs). This line item supports the National Animal Health Laboratory Network (NAHLN), which is an animal disease surveillance and monitoring system that interconnects Federal and State laboratory resources to improve the security of the nation's livestock by providing disease diagnostics both daily and during outbreaks. This line item also supports efforts to stand up the National Bio and Agro-Defense Facility (NBAF) in Manhattan, Kansas which will help protect the nation's agriculture, farmers and citizens against the threat and potential impact of serious FADs.

National Veterinary Services Laboratories

Diagnostic testing and confirmation of surveillance samples improves the security of the nation's livestock. NVSL is often on the forefront of emerging and re-emerging diseases of concern including virulent Newcastle disease virus (vNDV), Tilapia Lake virus, infectious hypodermal and hematopoietic necrosis virus (IHHNV), Senecavirus A (SVA), bluetongue, vesicular stomatitis virus, and rabbit hemorrhagic disease virus. In FY 2020, NVSL managed more than 394,250 diagnostic tests and approximately 39,700 accessions (one or more diagnostic samples received from the same submitter on the same day). In FY 2020, NVSL implemented a web-based portal for entering sample information to minimize the manual re-entry of this information. The laboratories produced and filled more than 96,652 reagent order items in FY 2020, representing approximately 535 different types of products used in veterinary diagnostic testing. Many of these products are only available to stakeholders through APHIS. NVSL continued work to modernize its Laboratory Information Management System (LIMS) in FY 2020 by completing a fitness evaluation of the current LIMS and several alternate LIMS solutions. The program selected a LIMS vendor and acquired the modules required for the system. This is the same software solution that was purchased for the NBAF biological specimen inventory system. It will enable the program to leverage key efficiencies and minimize redundancies, since several of the modules will not have to be repurchased and APHIS can use the same support personnel team for both facilities.

In FY 2020, NVSL conducted testing on 536 samples to support FAD investigations and supported international capacity building and collaborative activities in Brazil, Bulgaria, Canada, Costa Rica, El Salvador, The Gambia, Guatemala, Honduras, Mexico, Poland, Senegal, and Venezuela. In FY 2020, NVSL's Foreign Animal Disease Diagnostic Laboratory (FADDL) delivered two FAD training courses to State and Federal participants, including military

veterinarians; other scheduled courses were postponed due to COVID-19. In collaboration with the Canadian Food Inspection Agency, APHIS worked on a strategy to improve and harmonize available diagnostic methods to enhance North American African swine fever (ASF) preparedness. Since 2014, APHIS has experienced a significant increase in FAD investigations, largely due to the emergence of SVA. SVA is a non-fatal infectious disease of pigs. Because its symptoms mimic FMD, APHIS must diagnose each case to exclude FMD. Testing all samples for FMD and SVA is time consuming and resource intensive. In FY 2020, FADDL developed an FMD/SVA multiplex assay and associated proficiency tests for deployment to the NAHLN laboratories to facilitate simultaneous testing for both diseases from a single sample. This will save time, money, and personnel resources. SVA has been reported across the United States and Canada, as well as in Australia, Brazil, and New Zealand. The program received and tested 13,890 classical swine fever (CSF) surveillance samples in FY 2020. NVSL tested 6,775 of these samples, and NAHLN laboratories tested 7,115.

APHIS conducts proficiency testing of Federal, State, and university-sponsored laboratories when these laboratories perform authorized diagnostic testing as part of APHIS-approved surveillance and/or response programs. This is done to ensure that they use standardized, rapid diagnostic techniques and to maintain the credibility of U.S. diagnostic test results in the international marketplace. In FY 2020, APHIS provided 22 types of proficiency panels to international, Federal, State, and private laboratories, both within and outside the NAHLN network. APHIS made the necessary controls and reference strains available for approximately 200 diseases to help other laboratories develop and validate diagnostic tests. User fees cover the cost of some reagents and proficiency panels.

NVSL has the testing capabilities to receive animal samples for SARS-CoV-2 testing for confirmatory testing. It conducts real time-polymerase chain reaction (PCR) testing, virus isolation, sequencing (partial and whole genome approaches), and virus neutralization for antibody detection. In addition, it has conducted animal testing when State animal and public health officials have approved the submissions. As of October 1, 2020, NVSL tested more than 430 animals for SARS-CoV-2 and confirmed SARS-CoV-2 in 66 animals. The confirmation testing results can be found on the APHIS website. As of October 1, 2020, NVSL had tested 2,846 samples for studies being conducted by other partners.

National Animal Health Laboratory Network

The Veterinary Diagnostics appropriation also provides support for limited infrastructure in NAHLN laboratories; NAHLN program staff; the APHIS Laboratory Portal, which provides a secure means of communication for NAHLN laboratories and proficiency test management for NAHLN and non-NAHLN APHIS-approved laboratories; personnel to provide information management system support for electronic messaging; and online quality management training the NAHLN laboratories use to maintain qualifications for participating in the network. The NAHLN serves as a vital early warning system for foreign and emerging animal diseases. NVSL trains NAHLN laboratory personnel to ensure proficiency and standardization for performing diagnostic tests. As of October 1, 2020, the NAHLN consisted of 60 State, Federal, and university veterinary diagnostic laboratories in 42 States. These laboratories work with the NVSL reference laboratories to test for 14 economically devastating and/or FADs and potential zoonotic diseases such as FMD, influenza in avian and swine species, bovine spongiform encephalopathy, and CSF. In FY 2020, network laboratories performed approximately 140,289 diagnostic tests to support APHIS' animal health surveillance and response programs for NAHLN scope diseases, including the NAHLN ASF/CSF active surveillance. Testing numbers decreased from FY 2019 due to COVID-19 related decreases in laboratory capacity. NAHLN program staff conduct exercises to prepare participating laboratories for animal disease outbreak scenarios and enable them to remain proficient in animal disease testing. It also enables them to generate a rapid, local preliminary diagnostic result while NVSL performs confirmatory testing.

APHIS has established various communication mechanisms to enable NAHLN program staff to efficiently exchange information between and among member laboratories and State and Federal officials. One method for gathering input on the network's function includes the NAHLN Coordinating Council, which consists of NAHLN laboratory directors, State animal health officials, and officials from APHIS and the National Institute of Food and Agriculture. A laboratory designation system reflects different capability levels for surveillance, preparedness, and emergency response preparation. NAHLN laboratories designated as Level 1, 2, or 3 receive infrastructure support from USDA, and conduct fee-for-service testing for the USDA. The Council approved 25 Level 1 laboratories including six branch laboratories, 27 Level 2 laboratories including one branch laboratory, six Level 3 laboratories, one Federal Affiliate laboratory, and one new laboratory awaiting designation assignment in FY 2020. The NAHLN Coordinating Council continued to maintain electronic messaging as a priority in the laboratory assessments for designation. By the end of FY 2020, all Level 1 and Level 2 laboratories were required to message test results for all NAHLN-approved testing where a message could be

sent. Several Level 2 laboratories have an extension until December 31, 2020, due to COVID-19 related delays. The Council's commitment is to have all Level 3 laboratories messaging their NAHLN-approved assay results by the end of FY 2021. Overall, 55 laboratories were capable of messaging results for at least one NAHLN scope disease in FY 2020, and APHIS projects that number will increase to 60 laboratories in FY 2021.

As of October 1, 2020, 36 NAHLN laboratories are capable of testing for SARS-CoV-2, and 22 have the capability to test human samples for SARS-CoV-2. NAHLN laboratories test only at the direction at the State animal and public health authorities and submit any presumptive positive samples to NVSL for confirmation. As of September 2020, 1,374 animals were reported to USDA as having been tested in the United States, of which approximately half were tested by NAHLN laboratories, and the other half was tested by private veterinary diagnostic laboratories and research laboratories. Dogs and cats comprise 80 percent of the total animals tested. NAHLN laboratories have reported testing approximately 611,000 human samples for SARS-CoV-2. However, not all NAHLN laboratories testing human samples are at liberty to report testing numbers.

African Swine Fever Diagnostic Preparedness

For several years, APHIS has closely followed the spread of ASF. The Agency continues to expand its rapid detection capability to maintain a timely, effective response and build surge capacity in case of an outbreak. In FY 2020, APHIS continued working with States, State veterinarians, and industry partners to prepare for a possible ASF incursion into the United States. APHIS engaged in collaborative efforts at the FADDL and at the NAHLN to strengthen ASF diagnostic preparedness. To enhance capacity in the NAHLN, FADDL provided proficiency testing to NAHLN laboratories, expanding its ASF testing capacity in FY 2020 from 11 to 47 approved laboratories in a six-month time period. APHIS now has more than 170 analysts approved to run ASF PCR tests in NAHLN laboratories. Also in FY 2020, the Agency expanded the list of approved sample types to include not only whole blood, but also tonsil, spleen, and lymph node. These samples can now be pooled from up to five animals into one test for ASF, increasing the NAHLN laboratories daily testing throughput from 40,000 to 200,000 animals per day. Spleen swabs and blood swabs are expected to be approved as additional sample types by November 2020, which will streamline both sample collection in the field and sample processing time in the laboratory.

APHIS has made progress in other areas based on lessons learned from the COVID-19 testing challenges. In FY 2020, FADDL produced large stockpiles of controls and proficiency tests for rapid deployment to NAHLN laboratories in case of an outbreak. In addition, the Agency worked to ensure that sufficient reagent kits and equipment are available to the laboratories by working with vendors to identify sources for a dedicated supply. For additional backup tests, FADDL completed a five-way comparison of commercially available ASF PCR kits and identified two that met the Agency's standard for deployment to NAHLN laboratories. FADDL developed a high-throughput sequencing strategy that decreases the time required to complete a full genome sequence from several days to four hours. This capability will provide vital information quickly during an outbreak. FADDL continues to evaluate the use of oral fluids as an ASF sample type with the Canadian Food Inspection Agency and industry partners, and has begun a pilot project using oral fluids for FAD investigations with four NAHLN laboratories. APHIS continues to develop strategies to use oral fluids to achieve early and rapid detection of positive cases.

National Bio and Agro-Defense Facility

In FY 2020, APHIS continued to work with the Department of Homeland Security (DHS) and USDA's Agricultural Research Service (ARS) to plan for the move from the Plum Island Animal Disease Center (PIADC) in New York to the state-of-the-art NBAF in Manhattan, Kansas. In addition, USDA and DHS continued planning for the transfer of NBAF management and oversight from DHS to USDA. PIADC, home to the FADDL, is the only U.S. laboratory that is permitted to work with virulent FMD virus and hold rinderpest virus. In addition, FADDL is the custodian of the North American FMD Vaccine Bank and now manages the U.S. National Animal Vaccine and Veterinary Countermeasures Bank, as outlined in the 2018 Farm Bill. NBAF will be a key national asset to protect the U.S. animal agriculture industry and the first and only U.S. facility with large animal Biosafety Level-4 (BSL-4) containment capability.

The NBAF schedule originally projected that USDA would begin operating the facility in December 2020, once construction was to be substantially complete. USDA would then begin an endurance testing period which will require significant staff to test the animal handling and animal disposal capability, operate laboratories, and test many other NBAF components while the construction contractor was on site to handle adjustments. However, the impact of the

COVID-19 situation on vendors and materials caused a construction delay that will extend the substantial completion date to the fall of 2021. Officials are assessing the impact of this delay regarding the complete transition from PIADC originally planned for August 2023. The NBAF steady-state operations are assumed to begin in FY 2025, once the BSL-4 laboratories are fully operational. After the transfer, ARS will own the buildings, and ARS and APHIS will have leadership responsibilities on operational aspects of the facility and for their own science programs. In FY 2019, the two agencies began recruiting for key operational positions. APHIS filled 44 of these operational positions in FY 2019, and 33 positions in FY 2020.

In FY 2020, APHIS and ARS continued to develop a workforce of subject matter experts in foreign, emerging, and zoonotic diseases to conduct diagnostics in preparation for the NBAF transition. Workforce development is critical, given the significant loss of expertise expected during the transition and the need to transfer FAD diagnostic institutional knowledge to the NBAF. While USDA can train diagnosticians to perform specific tests, interpreting unclear results and troubleshooting diagnostic assays when they do not perform properly requires a high level of experience. Additionally, APHIS anticipated a potentially significant expertise gap, particularly during the first 5 to10 years of operations at NBAF, based on the time required to develop expertise in this area. To address this possible workforce gap, APHIS is continuing the NBAF Scientist Training Program to meet the needs for subject matter experts in foreign animal and zoonotic diseases. Through this workforce development program, USDA is developing personnel to fill NBAF positions through continued service agreements. This program is critical because subject matter expertise and international recognition in FAD diagnostics take years to develop, yet not all the current FADDL workforce with that expertise is expected to relocate to NBAF. This development program will help preserve and transfer the U.S. FAD diagnostic institutional knowledge to NBAF. As of the end of FY 2020, the program is comprised of 21 fellows from 12 different universities nationwide. APHIS also developed an NBAF Laboratorian Training Program (NLTP) to train future NBAF laboratory technicians and held the first summer NLTP summer course in FY 2020. APHIS, in collaboration with ARS, held a virtual scientific symposium for current Plum Island scientists as well as students engaged in USDA workforce development initiatives.

APHIS prioritized certain science positions for hiring before FY 2021. Most of these positions will train on FADDL-specific assay protocols and instrumentation systems at PIADC, before transitioning to NBAF between 2021 and 2023. APHIS is placing the remainder of these positions at NBAF, since they are critical to developing standard operating procedures, ordering equipment and supplies, developing the International Organization for Standardization (ISO) accreditation paperwork, and assisting with the select agent registration process. The overarching responsibilities of all priority hires include the validation of the space for workflows and laboratory practices for both select agent registration and ISO 17025 accreditation, as well as proficiency in the required equipment care, use, and calibration to meet ISO accreditation and biosafety standards.

10. Zoonotic Disease Management

"One Health" is a collaborative, multisectoral, and trans-disciplinary approach—working at the local, regional, national, and global levels—with the goal to achieve optimal health outcomes while recognizing the interconnection between people, animals, plants, and their shared environment. The Zoonotic Disease Management Program enhances State, national, and international collaborative efforts to promote healthy animals, people, and ecosystems by addressing zoonotic diseases (those that pass between animals and people) and other relevant One Health issues.

According to the U.S. Centers for Disease Control and Prevention (CDC) and the World Organisation for Animal Health (OIE), 60 percent of human pathogens are zoonotic, and 75 percent of emerging diseases are zoonotic (including Ebola, Zika, MERS, and SARS). Most zoonotic diseases originate from animal reservoirs. APHIS leads the national effort to address the animal health component of the One Health approach. The Agency contributes animal health expertise, infrastructure, and networks in combination with those of human and environmental health to provide holistic solutions to complex One Health problems. The Agency collaborates with industry and State partners to develop strategies, policies, and training to help stakeholders effectively engage with public health counterparts, provide guidance, facilitate information exchange, and enhance responses to One Health issues. By enhancing APHIS' efforts to address the animal health component of One Health, the program protects public health and improves animal health and marketability.

Zoonotic Disease and One Health Engagement, Investigation, and Response

In FY 2020, APHIS completed an epidemiologic investigation of swine mortality events currently attributed to *Streptococcus equi* subspecies *zooepidemicus* (*S. zooepidemicus*). *S. zooepidemicus* can cause severe illness in humans exposed to infected horses or other infected species, including exposure through consumption of associated unpasteurized milk. The investigation identified four swine facilities in the United States where *S. zooepidemicus* was detected, and three additional slaughter facilities with epidemiologic connections. APHIS assembled a cross-unit emerging disease team to investigate and respond to these events as well as other possible linked events in the United States.

APHIS partnered with CDC to identify any connection to human cases, previous detections in other animals, and the possible threat to USDA Food Safety Inspection Service (FSIS) employees and swine slaughter plant workers. Recommendations for Personal Protective Equipment were provided to workers to reduce risk of zoonotic spread. APHIS also collaborated with the Canadian Food Inspection Agency and provincial experts to investigate connections between the events experienced in the United States and Canada.

In FY 2020 APHIS also provided support to the North and South Carolina State Veterinary Offices to respond to the detection of Low Pathogenic Avian Influenza (LPAI) in commercial turkey flocks. The combined response of APHIS officials and animal health officials from North and South Carolina was able to detect 14 flocks with LPAI. APHIS provided staff and laboratory capacity to support State, academic, and industry health in their response to detect the virus and depopulate the birds of the affected flocks, as well as clean and disinfect the farm buildings that had housed the turkeys. The swift collaborative response from the State Veterinary Offices, APHIS, and Industry served to bring this LPAI outbreak in commercial turkey flocks to a rapid conclusion, which prevented potential zoonotic disease exposure to a greater number of people, and provided a model One Health approach.

Additionally, in FY 2020, APHIS partnered with CDC to support State animal and public health responses to domestic animal *Coxiella burnetii* outbreaks. *Coxiella burnetii* is the bacterium that causes Q fever in animals and humans, and is found throughout most of the world. Cattle, sheep, and goats are considered prevalent domestic reservoirs of the bacteria. Although animals infected with *Coxiella burnetii* often show no clinical signs, the organism can cause abortions in sheep and goats. APHIS coordinated with animal and public health partners to conduct epidemiologic investigation, information sharing, and outreach regarding this zoonotic disease. The collaborative effort allowed APHIS to test over 4,000 goat samples from operations participating in an animal health monitoring study.

Agritourism is a growing trend across the U.S. and has become a popular way for the public to interact with agriculture and learn more about the origins of their food. The business, safety, and animal risks involved are known across agencies and many resources are available to operators of agritourism ventures, including the Compendium for Animals in Public Settings, which is considered the gold standard resource. In FY 2020, as part of an APHIS study, data on agritourism activities, farm visitors, and biosecurity were collected on goat operations in 24 States. The main goal of this study is to continue outreach, specifically to other core groups found to be vital in making agritourism a safe activity for visitors, including local boards of health staff and veterinarians that serve these farms and fairs. APHIS will continue to develop ways to engage the public to follow safe practices on these farms.

Antimicrobial Resistance

Antimicrobial resistance (AMR) is the ability of a microbe to resist the effects of medication previously used to treat them. To combat AMR, APHIS uses a One Health approach involving multidisciplinary coordination from public health and animal health sectors, and private sector organizations and stakeholders. APHIS works with its State, Federal, and industry partners to promote the judicious use of antimicrobials, which supports a strong, healthy, and thriving U.S. animal agriculture system as well as public health. Additionally, APHIS collaborates with State Departments of Agriculture, diagnostic laboratories, and public health officials to address AMR infections in humans found to have an animal component.

In FY 2020, APHIS continued to work with other USDA agencies to develop practical mitigation strategies to reduce AMR prevalence in human and animal health. These strategies cover a variety of efforts including AMR monitoring at the farm level, collection of antimicrobial drug use data, and efforts to promote stewardship of antimicrobial drugs by animal owners and veterinarians. In FY2020, APHIS funded a cooperative agreement to investigate methods for group

sampling *Mannheimia haemolytica* in feedlot cattle, an important bovine respiratory disease pathogen. APHIS also collaborated with USDA's Agricultural Research Service to develop alternative fecal sampling techniques in swine. These studies will help improve AMR sampling methods in future on-farm studies. APHIS continued investigating antimicrobial use and resistance trends in poultry. In FY 2020, APHIS completed data collection on antimicrobial use and stewardship on goat operations and sampled for AMR in bacterial organisms.

APHIS epidemiologists continued to support the development of on-farm antimicrobial use metrics that academic partners developed, collaborating to review and audit the researchers' methods and data streams. This activity is in support of the Food and Drug Administration (FDA)-Center for Veterinary Medicine approach to measure the use of antimicrobial drugs in food producing animals. APHIS also provided updates on activities to partner agencies that measured progress in completing work associated with the National Action Plan for Combating Antimicrobial Resistance. In FY 2020, APHIS helped develop the second National Action Plan for Combating Antimicrobial Resistant Bacteria for 2020-2025, as well as a U.S. Government-wide communication strategy for its publication. In FY 2020, APHIS, in conjunction with FDA, completed the third year of a program for collecting antimicrobial susceptibility data from veterinary diagnostic laboratories. A report summarizing the results from year 2 was published on the National Animal Health Laboratory Network website.

In FY 2020, APHIS continued to study 17 common *Salmonella* serotypes across all major animal groups, which incorporated antimicrobial susceptibility testing. APHIS also worked closely with the CDC to investigate human outbreaks of drug resistant bacterial organisms stemming from animal origins. APHIS continues to be involved with the National Antimicrobial Resistance Monitoring System, participating in the development of a 5-year strategic plan for 2021-2025.

APHIS participated in several international AMR activities in FY 2020. APHIS, along with FDA, submitted a report on U.S. antibiotic use in animal agriculture to the OIE Global Database on Antimicrobial Agents Intended for Use in Animals in compliance with the international standards. APHIS represented the U.S. at the OIE Regional Commission of the Americas virtual conference in September 2020, including participating in a panel discussion on antimicrobial resistance. APHIS participated in developing a 5-year strategic plan for the Transatlantic Taskforce on Antimicrobial Resistance. APHIS will continue to review AMR related statements and positions that stakeholders and other governmental and nongovernmental agencies promulgate that may have implications for animal agriculture.

One Health and Pandemic Disease Preparedness

APHIS hosted a second Pre-harvest Food Safety meeting in FY 2020 that included Federal, State and industry cross sector representatives. These meetings are used as a discussion forum with the goal of improving food safety and reducing pathogen transmissions between animals and humans. Pre-harvest Food Safety meetings garnered positive feedback from participants, and APHIS is now coordinating quarterly meetings with Federal, State and industry representative to develop actionable results to further food safety, including the development of an National Veterinary Accreditation Program module on Pre-Harvest Food Safety, and presentations from CDC, FSIS and APHIS on pathogen trends.

In addition to Pre-harvest Food Safety meetings, APHIS, FSIS, CDC, and the FDA also participate in regular Interagency Foodborne Outbreak Response Collaboration meetings. These weekly meetings are an opportunity to share information on foodborne outbreaks detected in humans and response efforts. These meetings improve collaboration on foodborne outbreaks and reduce pathogen transmission between animals and humans.

In FY 2020, the standing North American Plan for Animal and Pandemic Influenza Health Security working group meetings included discussions on prevention, response and control measures in the United States, Canada and Mexico. APHIS participates in these meetings alongside the Human Health Services Office of the Assistant Secretary for Preparedness and Response, and human and animal health officials from Canada and Mexico. The purpose of these meetings is to exchange information and situational awareness on animal and human health sector responses to COVID-19; examples include modeling, detection, diagnostic information and healthcare capacity and capability data.

APHIS used its position as a coordination leader on the national effort to address the animal health component of One Health during the COVID-19 pandemic. Examples of these efforts include: providing subject matter experts to serve on the One Health Federal COVID-19 Coordination Group led by the CDC One Health Office; leading development of guidance for animal diagnostics, testing, reporting and response and containment for One Health partners; and,

developing data collection and tracking methods for animals infected with COVID-19; and, collaborating with national and international animal health, public health and communications experts to developed processes for coordinating messages on COVID-19 in animals. APHIS subject matter experts provide consultation and guidance to state animal and public health agencies, on a case by case basis, on decisions and testing of animal for SARS-COV-2.

Global Health Security

The Global Health Security Agenda (GHSA) is a partnership of over 50 nations, international organizations, and non-governmental stakeholders to minimize the threat of infectious diseases on the world stage. APHIS coordinates and reports USDA's international efforts related to implementation of the relevant GHSA processes, including antimicrobial resistance, zoonotic disease, biosafety and biosecurity, national laboratory systems, and real time disease surveillance, ensuring interagency collaboration and communication in addition to interfacing with other relevant agencies and stakeholders. In FY 2020, APHIS collaborated with Senegal and Mauritania government officials and the Food and Agriculture Organization to train 22 government animal health officials on Avian Influenza Surveillance in Wild Birds in Senegal.

Selected Examples of Recent Progress - Plant Health:

1. Agricultural Quarantine Inspection

APHIS and the Department of Homeland Security's (DHS) Customs and Border Protection (CBP) safeguard U.S. agricultural and natural resources from the introduction of invasive pests and diseases through the Agricultural Quarantine Inspection (AQI) program. APHIS assesses the risks associated with international trade and specific imported agricultural products and develops import regulations to exclude foreign pests and diseases and protect U.S. agriculture. In addition, the Agency conducts off-shore pest risk reduction activities including pre-departure inspections of passenger baggage and cargo destined for the continental United States from Hawaii and Puerto Rico and foreign commodity pre-clearance programs; trains agricultural inspectors and detector dog teams to work at U.S. ports of entry; inspects and takes action as necessary on imported plant propagative materials; monitors the fumigation of arriving containers and cargo where necessary to mitigate pest risks; conducts trade compliance activities to detect potential violations of APHIS' import regulations and prevent smuggling; and provides the scientific support necessary to carry out these activities and those carried out by CBP, including, among other things, the authoritative and timely identification of pests necessary to determine whether regulatory actions on imported products are required.

APHIS receives appropriated funding for pre-departure inspections of passengers and cargo traveling from Hawaii and Puerto Rico to the continental United States to prevent the introduction of non-native agricultural pests and diseases into the continental United States while facilitating the movement of travelers and agricultural goods. APHIS inspects all passenger baggage leaving these islands because of the high volume of travelers from these islands to the continental United States, and the risks associated with numerous fruits and vegetables grown in these areas. When inspectors identify an item that poses a specific risk, they take immediate action to prevent the entry of materials that could harbor the pest or disease in question. This action prevents damage to the country's agricultural industry and negates the need for costly control and eradication programs. APHIS also partners with industry groups and State and Commonwealth counterparts to facilitate the safe movement of cargo. In Hawaii, the State Department of Agriculture conducts nursery inspections and certifies nursery stock for shipment to the continental United States.

In addition to the appropriated funding, APHIS collects AQI user fees under the authority of The Food, Agriculture, Conservation, and Trade Act of 1990, to recover costs for services provided by APHIS and CBP associated with preclearance inspections of passengers and the port-of-entry arrival of commercial vessels, trucks, loaded railroad cars, aircraft, and passengers entering the United States from a foreign destination. In FY 2020, APHIS also received $55 million from the Coronavirus Aid, Relief, and Economic Security (CARES) Act for APHIS AQI salaries and related costs following the decline in user fee collections due to COVID-19 travel restrictions and impacts to international trade. APHIS inspectors oversee the preclearance of commodities through inspecting shipments for export, monitoring treatments where required, or by monitoring systems approaches for pest mitigation (a combination of integrated pest management practices used in the field and after harvest). In most cases, exporters of the pre-cleared commodity cover the costs of this APHIS service through trust funds established for this purpose.

Cooperative Program Management

APHIS works with CBP to protect America's agricultural resources and food supply through inspecting international passenger baggage, cargo, and conveyances. APHIS and CBP share management of the program through working groups and close day-to-day collaboration. Senior leadership of both Agencies meet frequently to develop joint plans and coordinate their efforts in priority areas of enhancing security, ensure clear and balanced decision-making, streamline effective outreach and communication, and improve organizational structure and leadership to support the shared work in the agriculture safeguarding mission. APHIS and CBP improved communication at ports of entry through data system integration improvements, which facilitated 58,788 emergency action notifications on incoming cargo in FY 2020. APHIS facilitated entry through the monitoring of over 15,000 fumigations and over 27,000 cold treatments to reduce pest risks on cargo that would not otherwise have been allowed entry due to agricultural risks. In FY 2020, APHIS and CBP continued to implement the risk based sampling cargo inspection program to target higher risk plant pests potentially entering the country and utilize current inspection resources more efficiently. Data has shown that the risk based sampling approach reduced inspection times on the southern border for 8 commodities by 67 percent and expedited trade imports by 77 percent from June through December 2019. APHIS is continuing to track results for calendar year 2020. APHIS also trained 72 new CBP agriculture specialists, conducted basic agricultural threat training for 1,920 first line CBP officers, and provided agriculture fundamentals training for 50 CBP import specialists. In addition, APHIS provided training support to CBP Agriculture Specialists who delivered military cooperator inspector training to certify 836 Department of Defense (DOD) Cooperators who perform agriculture quarantine inspections in mainland U.S. military installations. These cooperators prevent the entry of agricultural pests and diseases associated with military equipment and/or personnel returning from overseas military installations to the United States. Additionally, APHIS trained 9 canine teams, 20 agriculture field trainers, and 10 agriculture canine team supervisors for CBP.

Pre-Clearance Inspections

One of the most effective ways to facilitate the safe movement of commodities into the United States is to address pest threats where they originate. In FY 2020, APHIS inspected and precleared 2.8 billion pounds of fresh fruits and vegetables and 1.05 billion plants and bulbs before they were shipped to the United States, resulting in zero pest interceptions detected at the U.S. ports of entry. This offshore work, which importers fully fund, allows inspected and precleared perishable products to enter through the U.S. ports of entry without delay. APHIS operated the commodity preclearance program in 23 countries for 68 different types of commodities. Additionally, APHIS inspected 2.2 billion pounds of avocados in Mexico as a part of a systems approach to facilitate safe trade. APHIS has overseen this program since 1997, and through 63 APHIS-certified facilities, the program accounts for about 90 percent of avocado imports to the United States. There were no quarantine pest interceptions at U.S. ports of entry in avocado shipments from Mexico in FY 2020.

To help the U.S. military prevent the spread of foreign animal diseases and plant pests, APHIS worked with the U.S. DOD to inspect 39,216 shipments of personal goods (17,994 household goods, 8,817 unaccompanied baggage, and 12,405 vehicles) and 1,273,286 pieces of cargo from 18 countries before they returned stateside. APHIS evaluated and recertified 57 military preclearance programs in eight countries in Europe and Africa and trained 115 military service members to manage these programs locally in this region. APHIS also supported a large-scale movement of equipment returning from South Korea to the United States by inspecting and certifying 850 pieces of equipment from two military installations, per a request from the U.S. Army. In FY 2021, DOD, citing cost-saving measures, is significantly reducing the scope of its agreement with APHIS for agriculture preclearance activities. As a result, only military equipment from authorized agricultural preclearance programs in Europe and Africa, supervised by an embedded APHIS advisor, will receive expedited entry in the United States. All equipment and personnel from Central, Southern, and Indo-Pacific Commands will require inspection by CBP at ports of entry.

Offshore Risk Reduction

APHIS conducts certain inspections and certifications overseas to verify that treatment or production facilities meet our standards and regulatory requirements to help protect U.S. plant health from pests that could move into our country with high-demand, large volume commodity imports. In FY 2020, APHIS certified 25 offshore facilities in 12 countries to support safe trade of several agricultural commodities such as Pelargonium (geranium) and Niger seed. APHIS successfully launched the implementation of the Offshore Greenhouse Certification Program (OGCP). APHIS worked with the nursery industry to design, test, and implement OGCP to effectively minimize pest risks in live plant cuttings

and expedite clearance at U.S. ports of entry. OGCP will help U.S. producers access varieties of healthy plants they need to be competitive in the global marketplace while protecting U.S. plant health from the introduction of harmful plant pests. Eight offshore facilities located in six countries will participate in the program during the 2020 – 2021 season.

Pre-Departure Inspections

APHIS inspected the baggage of more than 5.7 million passengers before they left Hawaii and Puerto Rico, and intercepted approximately 134,000 prohibited items and 900 quarantine-significant pests in FY 2020. APHIS conducts commodity certification and inspection programs to facilitate interstate trade between Hawaii, Puerto Rico and the continental United States. In FY 2020, the program conducted 31,464 inspections of regulated agricultural commodities shipped from Hawaii and 9,360 inspections of regulated agricultural commodities shipped from Puerto Rico. In addition, the program oversaw or conducted 1,655 cargo treatments in Hawaii and 4,795 cargo treatments in Puerto Rico.

The Pre-departure Inspections program experienced significant reductions in passenger travel and commercial cargo from Hawaii and Puerto Rico in FY 2020, directly related to COVID-19 impacts including travel restrictions between March and September. Pre-departure saw a reduction of 57 percent in passenger inspections and 58 percent in cargo inspections. Treatments for cargo from Hawaii to the continental United States increased by 43 percent, which allowed realignment of staffing resources from the travel arena to treatment monitoring. The number of treatments conducted has been increasing since FY 2019, as it allows Hawaiian farmers to expand the types of high-value, perishable products that they can ship to the continental United States, including sweet potatoes and tropical fruits such as litchi and longan.

Port-of-Entry Inspections and Pest Interceptions

In FY 2020, more than 65 million passengers and pedestrians entered the United States by air, bus, ship, train, or on foot. CBP agriculture specialists inspected the baggage of 4 million of these travelers for agricultural risks through manual inspection, x-ray technology, or detector dogs. The program also conducted secondary agricultural inspections of 338,768 of the 67 million passenger vehicles entering the United States from Canada and Mexico in FY 2020. In addition, inspectors cleared 25,315 ships and more than 1.4 million cargo, mail, and express carrier shipments, intercepting 56,653 pests. Of the travelers inspected, the Agency found approximately 96.3 percent of international air passengers, 96.5 percent of southern border vehicles, and 93.8 percent of northern border vehicles to be in compliance with agriculture quarantine regulations.

The COVID-19 pandemic resulted in a significant decrease in all import pathways resulting in lower annual totals compared to FY 2019. Due to travel restrictions beginning in March, international air passengers and pedestrian arrivals were down 68 percent, with baggage inspection down 80 percent in FY 2020. To address the downturn in passenger and conveyance inspections CBP shifted resources to maritime cargo and express carrier pathways where impacts of COVID-19 on trade were not as severe. In contrast to air passenger numbers, vessel inspection was down only 16 percent in FY 2020. Despite the decrease in maritime and air cargo totals, cargo inspections by CBP and APHIS increased by 15 percent due to increased inspectional resources assigned to that pathway. The CARES Act provided $55 million for APHIS salaries and related costs to support continued AQI activities. This supplemental funding, along with the program's start of year balance, allowed the program to operate through FY 2020, despite the decreased revenue.

Plant Inspection Stations

Importations of nursery stock and other propagative plant materials can serve as significant pathways for invasive pests and diseases. To reduce the risks associated with such imports, APHIS requires that certain imported plant materials enter the United States through plant inspection stations, which are located at 16 ports of entry throughout the country at major international airports and seaports, and at major crossings along the U.S.-Mexican border. Specialists at these stations inspect shipments to ensure that imported plants and seeds do not contain pests and diseases of regulatory significance. In addition, they enforce the regulations that apply to the import and export of plant species protected by the Endangered Species Act and the Convention on International Trade in Endangered Species of Wild Fauna and Flora. In FY 2020, inspectors cleared 179,522 imported shipments containing 1.8 billion plant units (cuttings, rooted plants, tissue culture, etc.) and over 722,822 kilograms of seeds of woody plants. Through these inspections, APHIS employees detected 13,154 pests of which 6,786 were quarantine significant pests at the plant inspection stations. In addition, the stations conducted 3,403 treatments or other action to remediate pests on more than 11.7 million plant units and 5,907 kilograms of seed.

Plant Germplasm Quarantine

APHIS' Plant Germplasm Quarantine Program (PGQP) provides quarantine services for importing plant cultivars and germplasm safely to prevent foreign pathogens from entering our agricultural production areas and environment. In FY 2020, PGQP released from quarantine 28 bamboo clones, 5 cassava clones, 132 grass clones, 4 kiwis, 43 pome fruits, 33 potato clones, 57 potato true seed lots, 28 rice seed lots, 28 stone fruit clones, 211 Prunus seedlings, 70 sugarcane clones, 3 sweet potato clones, 5 woody ornamental clones, and 529 woody ornamental seedlings. Twenty-seven of the 43 pomes, 8 of the 28 stone fruit clones, 1 of the 33 potato clones, 2 of the 3 sweet potatoes, and 37 of the 70 sugarcane clones released this year resulted from therapy performed on the infected imported plants. New crops imported in FY 2020 included camellias, magnolias, oak and elm seeds, and a jasmine bonsai. The program detected new pathogens in grasses, pomes, and potato seeds. Quarantine regulations prohibit entry of these high-risk crops into the United States in commercial quantities, but importers can bring in small quantities through an APHIS-approved plant quarantine program, like the one at PGQP. This year, PGQP issued a High-throughput Screening Protocol Book which detailed the laboratory's best procedures for nucleic acid extraction, library preparation, sequencing, and bioinformatic analysis to detect pathogens in plants. PGQP has tested these protocols with more than 500 quarantined plant samples of many genera.

Pest Identification

When pests are detected in cargo, the program must identify them to determine if they are considered quarantine significant under APHIS regulations (i.e., they are exotic and could pose a significant threat to U.S. plant health, if the program can allow the cargo entry into the United States, and what, if any, mitigation measures would be required.) In FY 2020, APHIS' National Identification Services oversaw the processing and identification of more than 128,000 pests, with approximately 60,000 being quarantine significant pests. During the second half of FY 2020, APHIS increased its use of digital imaging technology in pest identification partly as a way to reduce staff presence in the pest identification laboratories and implement social distancing to protect the health of employees. APHIS will continue its expanded use of digital imaging technology to continue improving the timeliness of pest identifications for urgent submissions (i.e. those for which cargo is on hold pending a pest identification). APHIS and CBP also continued the Cargo Release Authority (CRA) program to reduce the pests that CBP must submit to APHIS for identification, speeding up the inspection process for shipments with no quarantine pests. Through the CRA program, APHIS provides training and job aids that allow CBP agriculture specialists to recognize frequently intercepted, easily identifiable, low-risk organisms and release the cargo if the organism is not a quarantine significant pest. APHIS grants CRA after the agriculture inspector has successfully identified a particular pest a certain number of times and submitted documentation to APHIS. Approximately 25 CBP Agriculture Specialists earned more than 150 CRAs in FY 2020, despite significant disruptions to international trade due to the COVID-19 pandemic. APHIS and CBP also initiated a review of the program and will finalize any changes during FY 2021. In FY 2020, APHIS responded to a surge in botany identification requests in the second half of the year related to the mass mailing of unsolicited seeds to U.S. citizens by exporters in China. APHIS completed 7,229 identifications of the more than 19,000 samples received and found that the seed packets contained mostly flower and vegetable seeds.

Risk Analysis

APHIS' Plant Epidemiology and Risk Analysis Laboratory (PERAL) develops pest risk analyses and epidemiological approaches to pest exclusion. In FY 2020, PERAL completed approximately 270 risk analyses associated with imports, exports, invasive pest threats, and programmatic requirements. This total includes 44 analyses to open, expand, or maintain export markets for U.S. producers and 53 risk assessments for import requests from foreign countries. The laboratory's work also included evaluations of 14 newly detected pests by the New Pest Advisory Group, 7 pathway analyses and spread models, 8 economic analyses supporting operational and policy decisions, and 8 New Pest Response Guidelines for preparedness purposes. In addition, PERAL made significant contributions to one North American Plant Protection Organization and six International Plant Protection Convention standards that the United States and other countries use to establish import requirements for plant products. PERAL's products identify potentially harmful plant pests and diseases and help APHIS decide what mitigating actions to take in order to prevent their entry into or limit their spread or economic impact within the United States.

Smuggling Interdiction and Trade Compliance (SITC)

SITC's core responsibility is to analyze, identify, and close potential smuggling pathways into U.S. commerce. SITC uses a multi-pronged approach that focuses on traces for non-compliant import materials, coordinating with investigative organizations across USDA and CBP, and extensive outreach to industry to increase compliance with APHIS' regulatory requirements. SITC works closely with CBP to identify and target potential agricultural risks at the ports of entry before they enter U.S. commerce and pose a threat to U.S. agriculture. In coordination with CBP, SITC conducted 17 port-of-entry operations that focused on specific pathways, prohibited commodities, and higher risk countries of origin. In FY 2020, SITC seized 2,523 prohibited agricultural items in retail commercial locations, including 508 items from internet sales and 1,323 from courier surveys. Those seizures totaled 182,569 pounds of prohibited and/or restricted plants and plant products and meat and meat products valued at $1.2 million. Additionally, SITC conducted 14 recalls for 23 various items, including wooden handicrafts with bark that did not meet treatment and entry requirements, posing a risk for borers (insects that bore into trees and that could pose risks to U.S. forests). Other recalled items include holiday ornaments made of Federal noxious weed seeds, which could pose a risk to U.S. crops. Total seizures as a result of recalls weighed 73,041 pounds and were worth an estimated value of $540,840. The program's efforts to stop agricultural smuggling result in increased protection of the U.S. pork industry, valued at $20 billion in FY 2019; the cattle industry, valued at $106 billion in FY 2019; and the poultry industry, valued at $40.4 billion FY 2019, and various U.S horticulture industries such as nursery stock, with a production value of $5 billion in FY 2019, and citrus valued at $3 billion in FY 2019 (values according to USDA's National Agricultural Statistics Service).

Phytosanitary Export Certification

APHIS facilitates the export of agricultural shipments by tracking plant health import requirements for approximately 200 countries and provides certifications to U.S. exporters to help ensure that U.S. products meet other countries' requirements. More than 2,100 Authorized Certification Officials at the Federal, State, and county levels can access countries' certification requirements on-line and conduct inspections to issue phytosanitary certificates. These certificates facilitate the entry of commodities into foreign markets. The program employs a web-based Phytosanitary Export Database. This database, which is free to exporters, enables them to research requirements and better prepare for shipping. In addition, this program uses a Phytosanitary Certificate Issuance and Tracking (PCIT) database that allows exporters to apply for certificates, schedule inspections, and pay certification fees. PCIT also collects State and county cooperator fees in addition to the USDA fees for phytosanitary certificates. In FY 2020, APHIS collected more than $37.7 million for certificates and remitted more than $20.3 million of that million to State and County cooperators for certificates they issued. Currently, 35 States and 34 counties use this feature. PCIT also enables APHIS to capture export application information, document inspection and certification information, print an original phytosanitary certificate on secure paper, and generate export reports. Additionally, the Agency is continuing its effort with international counterparts exchanging phytosanitary certificates electronically. Over the last several years, APHIS worked with the International Plant Protection Convention to establish an electronic hub that countries can access to exchange export certificates with trading partners. The hub provides a central point for document exchange that eliminates the need for countries to establish electronic connections with each trading partner individually. Recent studies by industry have shown that paperwork errors slow down exports, leading to the majority of costly delays. The United States began using the hub in May 2018 and is actively exchanging certificates with 43 countries now (an increase of 35 countries in 2020) with more than 100,000 phytosanitary certificates received and more than 122,000 sent. APHIS conducted more paperless case studies in conjunction with industry participants this year with an average cost savings of $70 per shipment in shipping costs and up to 2 days saved in time. In FY 2020, APHIS, State, and county officials issued more than 658,000 Federal export certificates for agricultural shipments.

2. Cotton Pests

The Cotton Pests program works with growers, the cotton industry, states, and Mexico to eradicate the boll weevil (BW) and pink bollworm (PBW) from all cotton-producing areas of the United States and northern Mexico. Collectively, the BW and PBW are the most destructive pests of cotton worldwide. The Cotton Pests program also maintains preparedness capabilities to address other cotton pests that could enter the United States. APHIS provides national coordination, operational oversight, and technology development (such as sterile moth production for PBW eradication), while program partners have provided more than two-thirds of the funding for the BW eradication effort and most of the operational funds for PBW eradication. APHIS also provides technical advice on trapping and treatment protocols to its partners in Mexico for their eradication efforts.

The boll weevil has cost cotton growers more than $13 billion since it entered the United States in the late 19th century. APHIS began an area-wide BW eradication program in 1983. The BW eradication effort involves mapping cotton fields, using pheromone traps to evaluate weevil presence, and applying pesticides. Once BW is eradicated from an area, cotton growers rely far less on insecticides, thus reducing their production costs. Over the course of the eradication efforts, the program has increased these growers' global competitiveness, primarily through reduced production costs and increasing yields.

To date, APHIS and cooperators have eradicated BW from 99 percent of the 12.2 million acres of U.S. cotton (Acreage Report, National Agricultural Statistics Service. 2020). The Lower Rio Grande Valley (LRGV) is the last zone within the United States where the pest persists. The LRGV is impacted by the neighboring Mexican cotton producing State of Tamaulipas and the area's security issues. In FY 2020, APHIS continued to work with partners in overcoming program challenges, including Hurricane Hanna making landfall directly into the LRGV during pre-harvest defoliation of the cotton crop. The Agency, along with the U.S. and Mexican cotton industry, continued working together to eradicate BW from Tamaulipas for a fifth year to assist the Tamaulipas BW Eradication Program by funding ultra-low volume Malathion and aerial treatment expenses. The Texas Boll Weevil Eradication Foundation (TX-BWEF) also continued providing regional management of the cotton-growing area of Tamaulipas and technical assistance through the use of their smart device application for monitoring trapping and treatment activities. Tamaulipas employees running this application on their smart phones allow TX-BWEF managers to monitor trap deployment, trap servicing, and treatment activities in real time.

In previous years, APHIS established a meeting schedule, beginning in the month of October through April, with Mexico's National Service for Agrifood Health, Safety and Quality (SENASICA) to discuss the boll weevil program in Tamaulipas. In FY 2020, organizational changes in SENASICA, restrictions on international travel for Mexican government officials, and the COVID-19 pandemic affected this schedule. In response, APHIS began hosting bimonthly virtual meetings with SENASICA to continue discussing the program and its efforts.

In FY 2020, Hurricane Hanna made landfall into the LRGV, bringing inclement weather that obstructed trap accessibility and delayed aerial treatments. In addition, the program experienced early season equipment failures that resulted in inadequate ground treatments. As a result, BW numbers in both LRGV and Tamaulipas spiked throughout August and September. The program saw a 14 percent decrease in BW captures totaling 34,787 in the LRGV, compared to 40,761 at the same time in FY 2019. By the end of FY 2020, cooperators treated 1,271,783 acres in the LRGV, compared with 1,336,924 treated at the same time last year. In contrast, BWs captures increased by 300 percent in Tamaulipas to 26,017, compared to 6,424 at the same time in FY 2019. By the end of FY 2020, cooperators treated 448,969 acres in Tamaulipas, compared with 336,301 treated at the same time last year.

APHIS will continue partner with the U.S. cotton industry to reduce the BW population in the LRGV and to conduct BW surveillance efforts for all U.S. cotton production areas in FY 2021. APHIS will also continue to partner with SENASICA's Mexican BW eradication program in Tamaulipas to provide technical assistance and funding for their parallel program to the LRGV program. APHIS is committed to monitoring BW to ensure the detection any of reintroductions quickly, and to work toward successful eradication of BW in the United States in the coming years.

In the United States, although the volume of acreage planted with cotton varies from year to year, the PBW commonly caused cotton losses of 20 percent or more in affected areas. Since the PBW control program began in 1967, APHIS and cooperative program partners have eradicated the PBW from Southern California, Arizona, large areas of New Mexico, and the El Paso/Trans Pecos region of Texas. On September 26, 2018, APHIS issued a Federal Order releasing Arizona, California, New Mexico and Texas from the PBW quarantine. On October 19, 2018, APHIS in conjunction with industry partners, officially announced the successful eradication of PBW from all commercial cotton-producing areas in the continental United States. In FY 2018, Florida added a PBW quarantine for an area in the Everglades where a wild PBW population has persisted for the last 80 years, and appears to only be active in wild cotton. As a result, APHIS, along with the Florida Department of Agriculture and Consumer Services, and the Florida cotton industry began surveying the perimeter of the commercial cotton area in the northern part of the state and the adjacent okra fields in the city of Homestead, to ensure that PBW has not spread. In FY 2020, APHIS continued to survey these areas in Florida to ensure that isolated pink bollworm populations in southern Florida do not move into the commercial cotton production areas north of the Everglades.

3. Field Crop & Rangeland Ecosystems Pests

The Field Crop and Rangeland Ecosystem Pests (FCREP) program protects U.S. agricultural crops and rangelands from the establishment or spread of invasive or economically significant pests, facilitates safe international trade and domestic commerce, preserves economic opportunities for U.S. farmers, and fosters healthy ecosystems in rangelands and natural lands. To accomplish these goals, APHIS provides national coordination, threat assessment, and strategies to prevent pests and diseases such as grasshoppers and Mormon crickets (GMC), imported fire ants, Karnal bunt, and witchweed from spreading and impacting export markets for U.S. farmers. These programs help protect resources that small, rural communities depend on for income.

Grasshoppers and Mormon crickets

Through the FCREP program, APHIS cooperates with Federal, State, Tribal, and local agencies, organizations, and institutions to conduct survey and suppression activities in western States to reduce damage that GMC outbreaks cause, protecting resources valued at nearly $8.7 billion (according to a 2012 economic analysis prepared by the University of Wyoming through a cooperative agreement with APHIS). Uncontrolled GMC infestations could cause significant economic losses for U.S. livestock producers by reducing animal food supply in rangeland and therefore forcing producers to buy supplemental feed or sell their livestock at reduced prices. Besides feeding on grass, GMC can also devastate cultivated crops such as alfalfa, wheat, barley, and corn. Infestations often cover vast acreage, and landowners may need Federal support to control them. The program helps land managers by providing population information, helping to predict where grasshopper populations could develop into outbreaks, and providing technical assistance about options for dealing with problem-level populations. By providing ongoing information, and advice to land managers and conducting suppression treatments where necessary and possible, this program helps protect 661 million acres of rangeland across the western United States.

In FY 2020, APHIS conducted surveys in 14 States for GMC, collecting data at more than 27,000 survey points. Due to warm, dry conditions in the spring, GMC populations reached outbreak levels in some areas, resulting in higher treatment needs in FY 2020 than in recent years. Based on the results of the surveys and needs of land managers, the program conducted treatments in five states in FY 2020 (Arizona, Idaho, Montana, Nevada, and Wyoming) using FCREP funding as well as funding from Plant Protection Act Section 7721, the Agency's Contingency Fund, and balances remaining from previous CCC releases. FCREP funding supported treatments in Arizona, Idaho, and Wyoming specifically. Overall, APHIS conducted six aerial treatments in Wyoming, eight aerial treatments in Montana, one ground treatment in Montana, and two small ground treatments in Arizona for grasshoppers. APHIS also conducted two aerial treatments in Idaho and two ground treatments in Nevada for Mormon cricket populations. In total, APHIS treated 486,161 acres of rangeland, which protected rangeland forage and wildlife habitat on approximately 932,168 acres while dealing with the challenges caused by COVID-19. Before conducting any grasshopper treatments, APHIS confirms the species of the grasshopper as some do not cause damage to rangeland and others can even provide ecological benefits by eating weeds (leaving grasses for grazing livestock). APHIS updated the environmental impact statement used by the program in the first quarter of fiscal year 2020. This updated document facilitates treatments and helps APHIS ensure that it is taking appropriate action to prevent grasshopper treatment impacts on wildlife habitat and wetlands, among other things.

Imported fire ants (IFA)

IFA is a major public nuisance and serious agricultural pest causing approximately $6.7 billion in damage to homeowners, agriculture, and natural ecosystems within the IFA federal quarantine area, according to the Ant Pests Community led by the National Institute of Food and Agriculture's Extension Service (https://ant-pests.extension.org). IFA infests more than 366 million acres in Puerto Rico and 14 States: Alabama, Arkansas, California, Florida, Georgia, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia which are under a partial or full-state quarantine. The IFA program provides regulatory guidelines to stakeholders for the treatment of regulated articles to help prevent the human-assisted spread of IFA. In FY 2020, the IFA program continued work with university researchers and the USDA Agricultural Research Service (ARS) to develop new pesticide treatments to prevent IFA movement on nursery stock and to stay informed on new opportunities for IFA biological control. The IFA program provided support to California to expand the scope of their annual IFA surveys and assisted New Mexico on procedures for deregulation of IFA quarantined areas. In addition, the IFA program began work with

Arkansas, North Carolina, Oklahoma, and Virginia to expand the federal quarantine area for new counties in those States.

Karnal bunt

The FCREP program also addresses Karnal bunt, a fungal disease of wheat that was first detected in the United States in 1996. Many U.S. trading partners will not accept U.S. wheat unless it is certified to originate from areas where Karnal bunt is known not to exist. The program prevents the disease from entering the grain market system, spreading beyond the areas of Arizona where it is currently found, and directly affecting most other States. Over the last several years, APHIS conducted an evaluation at the request of the cattle and dairy industries and determined that wheat, durum wheat, and triticale grown for silage (also known as wheatlage) posed a negligible risk of spreading Karnal bunt. Based on this determination, farmers in the regulated area increased the fields planted for wheatlage providing needed products to the local cattle and dairy industry. USDA's Economic Research Service estimated in 2010 that, without the program's efforts, there would be a cumulative reduction of national net farm income of $8 billion over the next eight years. In FY 2020, 29 wheat-producing States participated in the Karnal bunt national survey. The program tested 756 samples with no positive detections as of October 23, 2020. Based on this national survey, the program certifies wheat exports free of Karnal bunt, assuring trading partners about the safety of U.S. wheat exports, retaining export markets, and facilitating wheat movement into domestic and international markets. In 2019, farmers across the country planted approximately 45.2 million acres of wheat and harvested 1.9 billion bushels of wheat with a value of $8.9 billion (National Agricultural Statistics Service Crop Values 2019 Summary). The United States exported 24.3 million metric tons of wheat to 100 countries valued at $6.2 billion (FAS GATS, 2019; FAS 2019); without the Karnal bunt program to certify these exports, wheat trade would be disrupted.

Witchweed

Another concern for the FCREP program is witchweed, a parasitic plant that can significantly damage corn, sorghum, and sugarcane. If witchweed were to spread throughout the Corn Belt, it could decrease crop yields for corn and sorghum by 10 percent and could negatively impact trade in commodities from these areas. Since program activities began in 1957, APHIS and cooperators have successfully eradicated witchweed from 99 percent of the infested areas in North Carolina and South Carolina. These activities consist of frequent field inspections, treatment of infested acres (tillage, ethylene injections to stimulate seeds to sprout, and hand-pulling and herbicide application), conducting post-eradication surveys, and addressing any new infestations. The program surveyed a total of nearly 25,835 acres during the 2020 growing season for witchweed. Approximately 1,347 acres were infested at the beginning of the 2020 season, and 51 acres were newly infested or re-infested during the season. In 2020, APHIS treated 515 acres. Because witchweed seeds can remain viable in the soil for up to 15 years, and a host plant must be present for witchweed germination, year-to-year fluctuations in the number of acres infested are common. By preventing the spread of this damaging weed, the program indirectly protects nearly 89 million acres of corn valued at $51 billion in 2019 (National Agricultural Statistics Service, Crop Values 2019 Summary).

Roseau Cane Scale

Roseau cane is an important grass species in wetland areas of the lower Mississippi Delta, Louisiana. The plant's root system protects riverbanks from erosion, provides wildlife habitat, and protects the interior from storm surges. Research conducted since 2017, demonstrates that the cane dieback at the Mississippi River Delta might be the result of several stressors including high water levels, salinity intrusion, scale insects, and plant pathogens, among others. Due to the complexity of factors, Louisiana State University (LSU) AgCenter formed a multidisciplinary team with support from APHIS and ARS to investigate the causes of the die-off. APHIS provided funding to LSU in FY 2018 and FY 2019 to investigate the causes of the die-off. In FY 2020, APHIS continued to provide funding to the LSU AgCenter research team to expand efforts on the areas of host plant resistance, microbial interactions, and restoration ecology. The goals of the projects begun in FY 2020, include studying the interactive effects of soil/water conditions and herbivores on cane dieback and restoration; investigating effects of microbes (both beneficial and pathogenic) and herbivores on roseau cane dieback and restoration; and initiating long-term monitoring of roseau cane dieback sites and restoration plots using aerial imagery. In FY 2020, APHIS and ARS continued work through Plant Protection Act 7721 funding to evaluate roseau cane scale and its associated natural enemies in its native range with the aim of developing biological control methods.

Cogongrass

Cogongrass is an invasive perennial weed that is a prolific seed producer and forms an extensive rhizome network. The wind dispersed seeds are easily spread along rights of way encouraging population expansion. Cogongrass readily invades pine plantations and is believed to create chemical interference that decreases pine production. Moreover, cogongrass is difficult to control because the rhizomes are drought, fire, and herbicide tolerant. APHIS estimates that this species has the potential to spread across 82 percent of the United States. In FY 2020, APHIS completed an environmental assessment (EA) in preparation for conducting control treatment activities targeting cogongrass to ensure that the program is compliant with the National Environmental Policy Act. APHIS provided funds to Alabama and South Carolina to support survey, outreach, and control activities related to cogongrass infestations in these States. APHIS will work with the states to determine if the EA and/or biological assessment need to be updated in FY 2021 to add additional treatment methods.

4. Pest Detection

The goal of the Pest Detection Program is to document the presence or absence of plant pests and diseases of Federal regulatory significance in the United States. This documented information is the basis of APHIS' regulatory efforts and pest management programs that preserve economic opportunities for farmers (i.e., interstate commerce and international trade) and safeguard U.S. agricultural and natural resources. The program collaborates with Federal agencies, state departments of agriculture, Tribes, academic institutions, and industry partners in all 50 States and several U.S. Territories to conduct program activities.

APHIS and its State cooperators carry out plant pest surveys through the Cooperative Agricultural Pest Survey (CAPS) program. APHIS provides national coordination for the program and develops policies and procedures for surveys. In addition, the program funds survey coordinator positions in each State as part of the personnel infrastructure necessary to ensure early detection of phytosanitary pests and diseases of concern. The program enables APHIS and cooperators to target high-risk hosts and commodities, gather data about pests specific to a commodity, and provide information of pest distribution, including pest-free areas. Early pest detection is important to avert economic and environmental damage. In addition to lost farm revenues and damage to ecosystems, the mitigation costs can reach millions of dollars once a pest becomes established or spreads significantly. While many entities are involved in protecting crops and resources, APHIS verifies that U.S. products do not pose risks to other countries. Pest surveys conducted through the CAPS program demonstrate absence of a pest and are used in some cases to address importing countries' phytosanitary requirements and retain access to foreign markets.

In FY 2020, APHIS and cooperators conducted a total of 253 commodity- and taxon-based surveys in 50 States and 3 territories: APHIS conducted 130 surveys and the States conducted 122 surveys. The program targeted 126 high-risk priority pests of national concern for survey in corn, oak, pine, small grains, soybean, and nursery crop commodities, as well as exotic wood boring bark beetles and cyst nematodes, among others, representing 96 percent of the target pests suggested for survey in the FY 2020 Pest Surveillance Guidelines. Including pests of State priority, the program targeted 204 unique pests for survey in FY 2020. Surveys consisted of multiple pests for efficiency and economy of survey, with an average of 5 pests per survey, 20 pests per State, and 4 to 5 surveys per State. Including surveys conducted under the Plant Pest and Disease Management and Disaster Prevention program utilizing with funding from the 2018 Farm Bill (Plant Protection Act Section 7721), APHIS and cooperators added 152 additional taxon and specialty crop commodity surveys resulting in the targeting of 338 unique pests and a combined 433 survey in the overall pest surveillance effort during FY 2020.

APHIS used Pest Detection funding to coordinate the notification of 25 new or re-introduced species in the United States. Through Pest Detection funding, APHIS also funded a network of approximately 49 State Survey Coordinators that assisted States and the public in identifying and reporting any new pest detection. For example, a private citizen in the State of Washington contacted the State's survey coordinator when the citizen found an unknown hornet. Based on this contact, the program identified the hornet as an Asian giant hornet (AGH). Although AGH was not a target of Pest Detection surveys, the program evaluated this found pest through its normal process and determined it was new to the United States and if it could cause significant damage. Following the confirmed detection of AGH, APHIS worked with the State to determine the next steps in the response. In addition to the annual surveys and pests that the program detects each year, the Pest Detection program increases awareness of invasive plant pests and diseases and ensures that trained professionals are in the field, monitoring the health of U.S. agricultural production areas, forests, and rangelands.

The program's FY 2020 survey target was to detect 90 percent of the 126 targeted pests before they spread to new areas. The program exceeded the target in that all (100 percent) new detections were localized at the time of their detection in FY 2020. The negative survey results for the remaining pests demonstrate that the United States is free from these pests.

5. Plant Protection Methods Development

The Plant Protection Methods Development (PPMD) program develops scientifically viable and practical tools for exotic plant pest exclusion, detection, and management. These tools preserve economic opportunities for farmers and industries who engage in interstate commerce and international trade, and safeguard U.S. agricultural and natural resources from invasive plant pests. The program is essential to APHIS' mission by developing tools for detecting exotic pests in survey programs; developing molecular diagnostic tests and identification tools for pest identification; developing integrated pest management methods, including biological control, to help eliminate or manage invasive pests; and developing phytosanitary treatments to support interstate and international trade. A major focus of this program is to develop and implement biological control technologies that allow for the use of natural enemies alone, or in combination with other control tactics, to effectively mitigate the impacts of introduced, invasive insect pests, weeds, and plant pathogens, while minimizing impacts to the environment.

In support of methods development for ongoing pest program issues, the PPMD program continues to make advances in new technologies for pest detection and management, including the use of unmanned aerial systems and detector canines. In FY 2020, the program improved unmanned aerial systems for use in multiple applications, such as the application of fruit fly and grasshopper baits and, releasing sterile insects for pest eradication programs and fire ant management. In support of pest detection programs, PPMD continued the use of canines to detect Mexican fruit fly, coconut rhinoceros beetle, and citrus greening. In addition, the program performed pilot testing for use of canine detection within the spotted lanternfly program (SLF).

In support of methods development for pest emergency programs, the PPMD program developed improved traps for the SLF program in Pennsylvania and developed effective insecticide application methods for the pest in FY 2020. In addition, the PPMD program developed recommendations for pesticide treatments, as well as, new rapid diagnostics to support survey and management efforts for the European cherry fruit fly program in New York.

The PPMD program also maintains its own quarantine and rearing facilities for biological control agents in Arizona, California, Colorado, Massachusetts, Michigan, Texas and Guatemala. APHIS partners with USDA's Agricultural Research Service (ARS), the U.S. Fish and Wildlife Service, State departments of agriculture, universities in 30 States and territories, and two Native American Tribes to evaluate and establish biological control agents for invasive plants, pests, and diseases. Some key program targets included Asian citrus psyllid (ACP), brown marmorated stink bug, emerald ash borer (EAB), SLF, and Asian longhorned beetle. For example, since 2011, a biocontrol rearing facility in Mission, Texas, produced a cumulative total of 12.7 million biological control agents for ACP, the vector for citrus greening. The program also began field tests of an entomopathogenic biocontrol fungi, that can act as a parasite and kill or seriously disable ACP, as a control method.

In support of the EAB eradication efforts, new research on EAB biological control agents has identified species that climatologically adapt to cooler or warmer U.S. regions and surrounding areas. This discovery allows the program to better target biocontrol releases, while protecting the next generation of ash trees in eastern region forests. Ongoing field evaluation of these EAB biological control agents are determining best management practices for their operational release. As a result, the EAB biocontrol rearing facility in Brighton, Michigan, produced four different parasitoid species in FY 2020, and released over 593,942 insects at 234 sites, in 142 counties, in 25 States.

The PPMD program also supports research related to invasive honey bee pests, specifically Varroa mites. A Varroa mite feeds on the honey bee's fat body tissue (an organ similar to the human liver), in turn weakening and shortening the bee's life. The Varroa mite is considered the greatest single driver of the global honey bee colony losses (ARS). In FY 2020, the program funded priority projects with other Federal and State agencies, as well as the public, to support managing, suppressing, and eradicating Varroa mites, as well as small hive beetles and other pests and diseases contributing to a decline in honey bee health. These projects include methods development for the integrated control of Varroa mites, breeding Varroa-resistant bees, and researching viruses that have a significant impact on honey bees.

6. Specialty Crop Pests

The goal of the Specialty Crop Pests (SCP) Program is to protect U.S. fruits and vegetables, tree nuts, horticulture, and nursery crops from adverse impacts associated with invasive pests, such as crop damage or threats to international trade and interstate commerce. APHIS works with State, Tribal, university, and industry partners to develop and implement practices, policies, and regulations that prevent or mitigate impacts for invasive pests of Federal regulatory significance. These activities include verifying pest distribution, identifying and mitigating risk pathways to prevent long distance spread of the pests, developing and implementing diagnostic tools and pest mitigation strategies, and communicating with the public to gain support for program strategies. These efforts help U.S. farmers export their products, prevent damage to specialty crop production (helping to ensure the availability of fresh fruits and vegetables), and protect natural resources, including forests and residential landscapes. Among the pests and diseases the program currently addresses are exotic fruit flies, a variety of citrus pests and diseases, the glassy-winged sharpshooter (GWSS), spotted lanternfly (SLF), pale cyst nematode (PCN), the light brown apple moth (LBAM), European grapevine moth (EGVM), navel orange worm (NOW), and *Phytopthora ramorum*, among others. Overall, the program protects specialty crop production worth at least an estimated $18 billion (based on the latest available data from USDA's National Agricultural Statistics Service). The program indirectly protects additional specialty crop production worth more than $21 billion by preventing the spread of these damaging pests and diseases to new areas (based on APHIS analysis using Economic Research Service data). Without the SCP program, U.S. trading partners might not accept a variety of U.S. fruits and vegetables. The value of trade in specialty crops that could potentially be disrupted was $8.9 billion in 2017, according to an internal APHIS report using data from the Foreign Agricultural Service and the Global Trade Atlas.

Grapes

The SCP program targets several devastating pests and diseases, including GWSS, EGVM and SLF, that could affect grape production and impact export markets. Thirteen States produce grapes commercially, with California accounting for more than 90 percent of the total acres in production in 2019 (NASS Noncitrus Fruits and Nuts 2019 Summary). In August 2016, APHIS declared the successful eradication of EGVM from California, and lifted quarantine regulations from the remaining 446 square miles of Napa and Sonoma counties. In FY 2020, APHIS, in collaboration with the California Department of Food and Agriculture (CDFA), and industry partners, continued monitoring for EGVM with 49,000 traps placed over 37 participating counties. APHIS and cooperators found no infestations. The post-eradication monitoring is complete, and cooperators are evaluating what level of survey to continue for EGVM.

APHIS also continued the successful, cooperative GWSS program designed to suppress populations of this pest where established in grapes, citrus, and nursery stock. GWSS is a vector for Pierce's disease, which is lethal to grapevines. The program's suppression and regulatory activities work to prevent the spread of the vector and disease across California. In FY 2020, the program continued to conduct surveys and other regulatory activities including inspections of nursery stock and bulk citrus for the pest in 49 California counties, and continued area-wide suppression activities in affected agricultural production areas of 4 California counties. With citrus growers' voluntary suppression treatments, the program covered 21,000 acres. Of the more than 40,000 shipments of nursery stock from infested areas, California county inspectors rejected 5 shipments due to GWSS life stages being present. Together, the EGVM and GWSS programs directly protected 860,000 acres of grape production worth $5.4 billion in the State of California in 2019 (NASS Noncitrus Fruit and Nuts 2019 Summary).

In FY 2020, APHIS and cooperators in Delaware, Maryland, New Jersey, Pennsylvania, and Virginia continued addressing SLF, while new detections occurred in Connecticut, New Hampshire, New York, and West Virginia. This invasive pest feeds on more than 70 types of plants including apples, hops, walnuts, and other hardwood trees, but vineyards in impacted areas have experienced the most damage related to SLF. The insect sucks sap from stems and leaves, causing damage to plants as they feed. Over the last two years, SLF has continued to spread in the affected States and into new States, and in FY 2020, APHIS and cooperators shifted the goal of the program from suppression and containment to slowing the spread. APHIS and cooperators will use an area-wide strategy that includes expanded surveillance, control, and outreach activities. APHIS is using treatments to suppress populations on the leading edge of the infestation, and to eradicate outlying populations. In June 2020, APHIS completed an environmental assessment that added ground-based broadcast applications in 11 States, and the assessment concluded with a finding of no significant impact. In FY 2020, APHIS and cooperators treated more than 1,220 properties covering 39,557 acres, and treated approximately 143,369 trees in the States listed above. The program is continuing to evaluate treatment strategies and implement new approaches, such as treating areas along rail lines using ground-based broadcast applications.

Citrus

Citrus fruits are high-value specialty crops and a nutritious food for consumers across the world. The United States was the fourth largest exporter of citrus by value and sixth by volume in 2019 (International Trade Centre database). APHIS supports the citrus industry's continued ability to produce, harvest, process, and ship citrus fruits and nursery stock despite the presence of diseases such as citrus canker, citrus greening or Huanglongbing (HLB), sweet orange scab, and citrus black spot, which decrease fruit quality, increase production costs for producers, and threaten export markets in areas when found. HLB is one of the most serious diseases of citrus currently impacting Florida and Texas, and threatening the citrus crop in Arizona, California, and Louisiana. The insect vector, the Asian citrus psyllid (ACP), spreads the disease. Through the Citrus Health Response Program, APHIS and State partners also conduct surveys for other diseases not known to occur in the United States, including citrus leprosis virus and citrus variegated chlorosis.

APHIS and cooperators in citrus-producing States survey more than 1.84 million acres of citrus across the country, providing timely information about the presence of pests and diseases to growers and State government partners. This information allows growers to take necessary actions to manage their groves, and allows APHIS and States to update quarantine boundaries and regulations to prevent the spread of serious citrus pests and diseases through the movement of regulated materials. In FY 2020, based on the results of surveys, APHIS adjusted quarantine boundaries for HLB and sweet orange scab in California, for HLB and citrus canker in Texas, and for citrus black spot in Florida. In areas affected by citrus pests and diseases, APHIS' flexible regulatory protocols have minimized the impact of the quarantines on growers, who can move citrus out of quarantined areas to packinghouses if they follow mitigation procedures to prevent the disease or its insect vector from spreading. APHIS works with citrus nurseries across the United States to ensure that nursery stock produced in areas quarantined for citrus diseases is free from the pests, ensuring that clean plants are moving between the States and available for citrus producers and residential use. In FY 2020, more than 12,000 businesses moved regulated host materials such as citrus fruit and nursery stock under compliance agreements with APHIS.

APHIS and cooperators continued extensive surveys that establish citrus black spot-free production units, and low prevalence areas for citrus canker in Florida, for export packing to the European Union. In Florida, APHIS also continued to support area-wide management of the ACP by providing survey data every three weeks to the growers participating in Citrus Health Management Areas (CHMAs). Citrus growers participating in CHMAs, which is managed by the Florida Department of Agriculture and Consumer Services, coordinate the applications of pesticides to suppress ACP populations in commercial citrus groves. Citrus production in Florida was valued at $958 million for the FY 2020 growing season (NASS Citrus Fruits 2020 Summary).

APHIS also supports area-wide management efforts in Texas and California. The Agency manages multiple citrus canker quarantines around Texas. In FY 2020, APHIS and cooperators continued to conduct risk-based surveys for HLB in residential and commercial citrus areas in California to ensure they detect the disease quickly if it is present. Additionally, APHIS assists CDFA in aggressively responding to positive detections of HLB, and implementing an area-wide management approach for ACP population control. APHIS continued biological control efforts targeting ACP. This program, which employs a predatory wasp against ACP, augments other management methods, especially in residential areas in Arizona, California, Louisiana, and Texas, where use of chemical pesticides is undesirable. The program produces and releases approximately 5 million biological control agents annually to help reduce ACP populations in residential and urban areas. These citrus health activities directly protect citrus production on 681,300 acres in the United States worth approximately $3.398 billion for the 2019-2020 growing season (NASS Citrus Fruits 2020 Summary). Without APHIS' activities, citrus exports could be at risk each year. In 2019, the value of U.S. citrus exports totaled approximately $898 million (U.S. International Trade Commission).

Tree Fruit and Nursery Stock

APHIS protects a wide variety of specialty crops (especially tree fruit and citrus) through exotic fruit fly exclusion and detection activities. One of the Agency's key strategies is maintaining a barrier against the spread of the Mediterranean fruit fly (Medfly) northward from Central America. Medfly is one of the most destructive agricultural pests in the world, attacking more than 300 cultivated and wild fruits and vegetables. APHIS and cooperators produced an average of 1.2 billion sterile Medflies per week in FY 2020, to maintain the barrier in Mexico, Guatemala, and Belize, and to release in high-risk areas of California and Florida on a preventive basis. In FY 2020, the international cooperative program continued addressing Medfly outbreaks that began the previous year in the program-designated free areas of Mexico and

Guatemala. In response, the program increased production and release of sterile Medflies in northwest Guatemala and implemented aerial bait spray treatments. The program also provided sterile pupae to cooperators in Mexico for release in areas with outbreaks. Mexico issued an official emergency declaration in areas of southern Chiapas, providing its government authority to conduct additional actions necessary to eradicate the Medfly outbreaks, such as establishing quarantine stations to control the movement of host material out of the affected area. While overall detections continue at high levels (146,111 detections in FY 2020 compared to 159 in FY 2018, pre-outbreak), treatments are showing results. In areas treated aerially with bait spray, Medfly detections were reduced by as much as 80 percent. The program maintained the Medfly-free area in Mexico and Guatemala, and Belize, at approximately 148,000 square kilometers with these additional activities. In FY 2020, subject matter experts organized by the International Atomic Energy Agency conducted a technical review of the program. The program utilized the review to develop a comprehensive regional strategy for addressing Medfly outbreaks in the program area, and return the infestation front to within Guatemala. In FY 2021, APHIS and its counterparts in Mexico and Guatemala are continuing increased control and surveillance activities.

Since 2015, when the first Medfly outbreak occurred in the Caribbean, APHIS has worked with partner countries in the region to improve surveillance for Medfly and other exotic fruit flies. In FY 2020, 19 Caribbean countries participated in this effort with active trapping and surveillance programs. Going forward, APHIS will continue to support surveillance in the Caribbean through the supply of basic trapping supplies and capacity building, to maintain the early warning network for the occurrence of this damaging pest close to U.S. shores.

Domestically, APHIS and State cooperators maintain the cooperative Preventive Release Program, which releases sterile fruit flies in high-risk areas to prevent any introduced Medflies or Mexican fruit flies (Mexflies) from reproducing and establishing a population in the United States. APHIS and cooperators also maintain a detection network of more than 160,000 traps in California, Florida, Puerto Rico, Texas, and New York. When outbreaks occur, APHIS and cooperators implement immediate emergency response activities to eradicate them. In FY 2020, the program completed four Mexfly quarantines in Texas that had begun in FY2019. The program responded to five new fruit fly outbreaks (four Mexfly outbreaks in Texas and one Medfly outbreak in California), and completed eradication for four of these outbreaks during the fiscal year. The remaining outbreak is in the Lower Rio Grande Valley of Texas, which APHIS continues to address. APHIS produced and released an average of 165 million sterile Mexflies per week in Texas and northern Mexico in FY 2020, to support eradication and control programs in that region. During the year, APHIS and cooperators managed Mexfly quarantines covering 1,419 square miles in Texas and California. As the program completed operations, they released many of these areas from quarantine. At the end of FY 2020, 221 square miles remain under quarantine (related to Mexfly in Texas).

APHIS continued to address the European cherry fruit fly (ECFF) in New York during FY 2020. This temperate fruit fly species differs from the tropical species that APHIS more typically detects and eradicates in Florida, Texas or California by having only one life cycle per year, whereas other species have many lifecycles per year and can usually be eradicated within several months. APHIS declares an outbreak eradicated if there are no detections within three lifecycles. Additionally, one of ECFF's primary hosts is the honeysuckle plant, which is widespread throughout New York, surrounding States, and Canada. In part because of the abundance of host material for ECFF, APHIS has shifted from the goal of eradication to management, and is continuing to evaluate the best methods for controlling the species, and reducing the risk that it will spread to other cherry-producing areas. The ECFF quarantine includes 2,182 square miles in northwestern New York. Cherry producers can mitigate damage it might cause to crops through current management practices. Growers also use a systems approach that APHIS developed for the movement of cherries from the quarantine zone to processing plants outside the quarantine area to prevent ECFF from spreading through this movement.

APHIS and cooperators also work to address plum pox virus (PPV), LBAM, NOW and *Phytopthora ramorum (P.ramorum)* to protect producers of tree fruit and other specialty crops. PPV is one of the most devastating viral diseases of stone fruit in the world. On October 17, 2019, USDA declared the United States free of this disease. APHIS continued the second year of post-eradication surveys in FY 2020 in the Hudson Valley, Adirondack, and Niagara regions of New York, with no positive samples. APHIS plans to conduct one more year of post-eradication monitoring in FY 2021. The New York State Department of Agriculture and Markets (NYSDAM) will continue to conduct surveillance along the U.S.-Canada border and other fruit-producing areas using Plant Protection Act (PPA) Section 7721 funds. APHIS continues to support yearly PPV detection surveys through PPA Section 7721 to ensure that any PPV would be found if it appeared in other States.

In FY 2020, APHIS and the State of California continued to monitor for LBAM across California and found that the pest had not spread to any new counties. The quarantined area continues to include 22 counties in California. APHIS

currently requires entities shipping regulated products out of the quarantined area to take measures to prevent the spread of LBAM to new areas. APHIS is coordinating with State cooperators and trading partners on how best to manage the pest in the future following a decade of experience with the pest and learning that it can be managed effectively through current integrated pest management methods. APHIS is preparing to deregulate the pest domestically and concurrently change import requirements.

In FY 2020, APHIS and cooperators in California and Arizona began implementing a pilot management program, targeting the NOW, a serious pest of tree nut crops, including almonds, pistachios, and walnuts. The moth lays eggs in nuts while they are on the tree, and newly hatched larvae feed on the nuts as they develop. Nuts that have been damaged by NOW contain decayed materials, and secondary fungal invaders that produce potentially poisonous aflatoxins leave the nut unmarketable. The pistachio industry, and more recently the almond industry, provided funding for APHIS to develop sterile insect technology (SIT) for NOW at its Phoenix, Arizona Rearing facility, where APHIS previously reared sterile moths for the successful pink bollworm eradication program. APHIS, State, and industry cooperators began the initiative in 2015, and have developed successful methods to mass-rear and sterilize NOW, transport and store moths for aerial release, and recapture moths from the release fields (to measure survivability of the moths after shipping, storage, and aerial release). In FY 2020, APHIS and cooperators implemented an area-wide integrated pest management (IPM) program covering nearly 4,000 acres. The IPM program includes grower-managed pheromone mating disruption treatments, coordinated pesticide applications, and field sanitation practices that remove NOW host material to help sustain effective, long-term pest management. The program incorporated the release of sterile moths on approximately 2,000 acres to determine the impact of SIT along with the other IPM measures. In 2020, from May through November, the program mass reared, transported, and released more than 700,000 sterile moths per day over the targeted area. Cooperators and managers generated preliminary data and GIS maps to track moth releases and recapture numbers. In FY 2021, cooperators and stakeholders hope to expand the area for sterile moth releases, and collect quantitative data to determine the impact of the sterile moths on the NOW in tree nut crops.

APHIS protects natural resources and nursery stock production and trade by limiting the spread of *P. ramorum* from quarantine areas and affected nurseries through regulatory strategies and adoption of mitigations and changes to cultural practices. *P. ramorum,* which causes sudden oak death, can be moved through host nursery stock and can affect a variety of forest trees. The disease is present in coastal northern California and a small area in Curry County, Oregon. In September 2020, APHIS confirmed that a sample from Del Norte County, California, was positive for *P. ramorum*. This county connects the quarantined areas in California and Oregon, and brings the number of California counties affected to 16 (APHIS and State officials have not completed the regulatory process to add the newly impacted county to the quarantine as of October 2020). Because of the presence of *P. ramorum* in the surrounding environment, nurseries within the quarantine area that ship interstate must meet annual certification survey and sampling requirements to prevent the movement of potentially infested material. The program also regulates nurseries outside the quarantine areas that are positive within the preceding three years and that ship host nursery stock interstate. Any interstate shipping nurseries that test positive must participate in a compliance program using disinfestation protocols to eliminate the pathogen, and implement required mitigations focused on critical control points to reduce the risk of reintroduction. Currently, 23 nurseries are participating in the program. APHIS and State cooperators evaluated sampling procedures during FY 2020, and will increase the number of samples taken during compliance inspections to improve the effectiveness of inspections.

Through all these activities, APHIS directly protects nursery stock production worth approximately $1.5 billion (2012 Census of Agriculture), and tree fruit production worth approximately $1.4 billion (APHIS internal analysis based on NASS and Economic Research Service data in 2017). By preventing pests and diseases like exotic fruit flies, PPV, and *P. ramorum* spreading to new areas, the program indirectly protects more than $10.4 billion in fruit and nursery stock production (APHIS internal analysis based on NASS data).

Potatoes

APHIS addresses two major potato pests, PCN in Idaho and the golden nematode (GN) in New York. APHIS and cooperators have confined each to a relatively small area, and continued survey and regulatory efforts to protect export markets for U.S. potatoes from 36 States. In Idaho as of September 31, 2020, APHIS processed 11,008 soil samples for the PCN eradication effort in Idaho and detection surveys in other States. PCN has not been detected outside of Idaho, and fumigations of infested fields in Idaho have reduced PCN populations by 99 percent since the pest was first detected in 2006. There are currently 31 PCN-infested fields, totaling 3,446 infected acres within 7,150 acres in the regulated area. In FY 2020, the program conducted eradication treatments on 5 infested fields with a total of 450 acres. In the

treated fields that no longer show PCN viability, according to a greenhouse bioassay test, producers can plant potatoes with continued monitoring by APHIS and cooperators to ensure PCN is not present. During the greenhouse bioassay (three rounds of greenhouse bioassay that is the equivalent of three crop cycles), the program tests the viability of any PCN nematodes found in the soil. If the nematodes are found to be non-viable (they fail to reproduce under favorable conditions in the presence of a host), the fields from which they came are eligible to immediately return to potato production at the landowners' discretion. The PCN program requires infested fields that return to potato production to undergo full-field surveys following each of three subsequent potato crops to check for viable PCN populations. These fields remain regulated but benefit from reduced sanitation requirements. Growers planted four fields with potatoes in FY 2019, and the program collected samples from each field following harvest and analyzed for the presence of viable PCN. Three of the fields tested negative, and one of the fields tested positive for viable PCN and must repeat the eradication plan. Growers planted potatoes on four additional eligible fields in 2020. The PCN program collected soil samples from the fields following potato harvest and will screen them for the presence of viable PCN over the winter of 2020-2021. The program is working with USDA's Agricultural Research Service (ARS) and other cooperators to develop PCN-resistant potato varieties. APHIS has funded several projects on PCN-resistant potato varieties through PPA 7721 for this long-term effort.

In FY 2020, APHIS and New York cooperators continued an effective survey and regulatory program targeting GN with a focus on deregulation of all eligible land. Adopting strategies used in the more recently established PCN program, the GN program is focusing on fields that are either infested or associated with infested fields rather than political boundaries such as townships. APHIS, working closely with the NYSDAM, has removed 1,147,693 acres from the GN regulated area in New York since 2010, allowing several farmers to grow their crops without continued golden nematode restrictions. APHIS continues to manage an active control and mitigation program to prevent GN from spreading from the remaining 140,972 regulated acres, including 5,945 acres that are infested with GN in 8 New York counties. The program enforces regulations designed to prevent the spread of GN and requires sanitation treatments on farm equipment and other items moving out of the quarantined area. In FY 2020, the program conducted more than 2,000 treatments of used farm equipment, and certified approximately 600 shipments of potatoes and other regulated articles for movement. The program processed nearly 5,000 national survey samples with negative results for GN. APHIS has cooperated with USDA's ARS, NYSDAM, and Cornell University to develop GN-resistant potato varieties for several decades. The program is now headquartered at a newly renovated laboratory on the Cornell University campus to continue this and other work on methods of eradicating GN. The program has developed a total of 45 GN-resistant varieties. Because the pest can overcome resistant potato varieties over time, continued development of new GN-resistant varieties is necessary.

Together, these efforts to address PCN and GN protected 310,000 acres of potatoes in Idaho, valued at $1 billion in 2019 (NASS Quick Stats), and 14,300 acres in New York valued at $45 million in 2018 (NASS 2018 Potatoes Summary). These programs indirectly protect more than one million acres of potato production nationwide worth $4.2 billion in 2019 (NASS Quick Stats).

7. Tree & Wood Pests

The Tree and Wood Pests (TWP) program protects forests, private working lands, and natural resources from the Asian longhorned beetle (ALB), emerald ash borer (EAB), gypsy moths, and most recently shot hole borers (SHB). Numerous native hardwood tree species that are common throughout the United States are vulnerable to these pests. APHIS cooperates with Federal, State, Tribal, and local agencies, organizations, and institutions to conduct survey, regulatory, control, and outreach activities in 48 States to manage and, in some cases, eradicate these pests. Conserving forests enhances the economic vitality of rural communities by supporting forest-related industries, recreation and tourism, and the overall livability of communities. The value of forest products that APHIS protects is over $200 billion (U.S. Forest Service 2014). In addition, trees in residential areas lower cooling bills, filter pollutants from the air, decrease runoff, and improve residents' quality of life (U.S. Environmental Protection).

Asian longhorned beetle

The ALB threatens forest resources nationwide, as roughly 30 percent of U.S. trees are potential ALB hosts. The program's ALB eradication activities prevent multi-billion-dollar losses to the maple syrup, timber, tree nursery, trade, and tourism industries.

ALB was first detected in Brooklyn, New York, in August 1996, and was later found in other areas of New York, Illinois, New Jersey, Massachusetts, Ohio, and in FY 2020, Charleston, South Carolina. The program has successfully eradicated ALB from Chicago, Illinois; Islip, Staten Island, and Manhattan, New York; Jersey City, Middlesex County, and Union County, New Jersey; and Batavia and Stonelick Townships, as well as Monroe Township, Ohio. The program continues to match State and Federal quarantine boundaries and conduct activities in regulated areas of New York, Massachusetts, Ohio and South Carolina.

APHIS' eradication strategy for ALB includes surveys, regulatory inspections and quarantine restrictions, removal of infested and high-risk trees, and chemical treatment applications. APHIS conducts several cycles of surveys to determine the scope of infestation, establish a quarantine area, identify trees to remove or treat, determine if the pest has spread outside of the established quarantine area, and determine when to release an area from quarantine. A survey cycle is the time it takes to complete a survey of a given area, which can take several years depending on the size of the area, the density and type of trees in the area, and type of landscape or land use. Four years is the minimum amount of time between that last detection of the pest in a given area and the completed final survey cycle, when APHIS can declare eradication. APHIS provides ongoing support to evaluate new methods and protocols to combat regulated pests and tailors project responses to site-specific conditions, resulting in a more efficient program.

In FY 2019, the program began continued investigating the use of unmanned aerial systems (UASs) equipped with digital cameras as an additional survey tool. In FY 2020, the program planned to continue the investigation of this tool and its use. Due to travel related COVID-19 restrictions, much of the FY 2020 planned work did not occur at the planned pace and these studies of UAS use will continue in FY 2021. If successful, the Agency could use UASs to examine trees too risky to climb or in otherwise difficult to access areas, improving safety for program personnel and lowering the cost to survey these types of trees.

In FY 2020, APHIS, in cooperation with the South Carolina Clemson University's Department of Plant Industry, placed 58.6 square miles under quarantine for ALB in South Carolina. This action was made in response to the June 4, 2020, confirmation of ALB at a residence in Charleston County, South Carolina. In FY 2021, following the 'No Significant Impact' results of an environmental assessment, the program will proceed with using an eradication strategy similar to those used for other ALB infestations. The strategy includes removing infested trees and using, with the landowner's permission, a combination of tree removal, tree girdling, and chemical treatment for trees that are within a half-mile radius of an infested tree. If the landowner does not give permission for chemical treatments, the program will continue to survey and inspect trees, and remove or girdle them only if they become infested.

Emerald ash borer

Another forest pest of concern is the EAB. In 2002, this pest was first detected in Michigan and has since been detected in 34 additional States and the District of Columbia. In FY 2020, APHIS did not detect EAB in any new States, but confirmed detections in 59 new counties in States within the Federal quarantine.

EAB has spread beyond what a regulatory program can control. To more efficiently address EAB, in FY 2019, APHIS initiated proposed rulemaking to deregulate EAB and redirect resources for controlling the spread of this devastating pest by expanding the application of biological control for EAB and exploring ways to preserve ash resources. On September 19, 2018, APHIS published a proposed rule in the *Federal Register* to remove the EAB Federal domestic quarantine regulations. In FY 2020, APHIS has reviewed and prepared responses to all comments received during the open public comment period. A final rule to remove the Federal domestic EAB quarantine is currently proceeding through the regulatory clearance process.

In FY 2020, APHIS provided traps and lures to States and Tribal cooperators that conduct EAB surveys without cost, as well as provide training for EAB biocontrol release and recapture efforts. As a result, APHIS provided a total of 2,935 EAB traps to cooperators in 22 States for EAB survey and held a hands-on training workshop and virtual consultation for State cooperators. In addition, APHIS maintained more than 1,000 compliance agreements with businesses that handle EAB host materials. With these agreements, the program regulated the treatment and movement of host materials from quarantined areas.

The program's biological control initiative, which is designed to effectively manage EAB populations, provides a promising strategy, using four species of parasitic stingless wasps for long-term EAB management. In FY 2020, the Brighton, Michigan EAB parasitoid rearing facility produced more than 593,942 parasitic wasps for release at 234 sites

in 142 counties in 25 states. To date, the EAB program has cumulatively released a total of approximately 8 million parasitic wasps in 340 counties within 30 states and Washington D.C. APHIS and cooperators continue to assess the impacts of the parasitic wasps on EAB populations and tree health at release sites and nearby areas. In FY 2020, the program has recovered the parasitic wasps in 22 States, up from 17 in FY 2019, demonstrating that the biological control agents are reproducing and becoming established in the areas where they were released. In FY 2020, the EAB program updated the APHIS Biological Control Release and Recovery Guidelines to provide current information on the methods for field releases of the EAB parasitic stingless wasps. Additionally, in FY 2020, the EAB program recommended that States conduct EAB surveys to locate potential sites for release of EAB parasitic stingless wasps.

Gypsy Moths

European Gypsy Moth (EGM) is a destructive pest for some of North America's most beautiful and popular deciduous trees, including maples, oaks, and elms. This pest is established in all or parts of 20 northeastern, mid-Atlantic, and Midwestern States, as well as the District of Columbia. APHIS and State cooperators conduct regulatory activities in the quarantine area to prevent the human-assisted spread of the pest and the establishment of gypsy moth populations in non-quarantine areas. These efforts include inspection, treatment, and certification of regulated articles for movement from quarantine to non-quarantine (non-infested) areas. The program issues compliance agreements and conducts public outreach to ensure that businesses and residents in infested areas comply with regulations to prevent long-distance spread of the pest. EGM also spreads naturally into areas bordering the quarantined zone. APHIS monitors the transition zone along the 1,200-mile-long border of the quarantine area to ensure that newly infested areas are added to the quarantined zone and regulated effectively. Working with the U.S. Forest Service (USFS) and the EGM Slow-the-Spread Foundation, APHIS and cooperators have greatly reduced the rate of EGM's spread and eradicated isolated populations, preventing this pest from becoming a larger issue. In FY 2020, APHIS and State cooperators continued to conduct EGM surveys to detect, delimit, and eradicate any isolated populations.

Asian gypsy moth (AGM) is an invasive threat to North American urban and natural forests because of its broad host range, demonstrated damage potential, and its ability to compromise an effective management system that has taken nearly 100 years of research to assemble. AGM poses a particular risk to western areas because of its ability to hitchhike on shipping vessels from Asia. APHIS supports the exclusion of AGM through negotiations and support of offshore ship inspection and certification. Due to an increase in AGM egg masses that were intercepted on ships in 2012, APHIS, the Department of Homeland Security's Customs and Border Protection, and the Canada Food Inspection Agency conducted increased outreach to the maritime shipping trade over the last several years.

In FY 2020, APHIS and State cooperators performed eradication treatments for Asian and European gypsy moths at two locations in Washington and a single location in Minnesota. The program and its partners conducted delimiting surveys at multiple locations in Minnesota, Oregon, and Washington that received eradication treatments in FY 2017 and FY 2018, ensuring the eradication treatments are successful.

Shot Hole Borers

Various non-native shot hole borers have been detected in several States and hosts, including numerous woody trees in forests and urban landscapes, cultivated tea, and avocado. Shot hole borers also are called ambrosia beetles because they have a symbiotic relationship with ambrosia fungi, which they vector from tree to tree. The fungi disrupt the vascular system of impacted trees. In recent years the polyphagous and Kuroshio shot hole borers and diseases they cause have been devastating riparian habitats in southern California and urban areas in other parts of California. At California's request, APHIS and USFS helped establish a working group, led by USFS, with the goal of strategically addressing the shot hole borers in California.

In FY 2020, APHIS continued to provide support for projects addressing the management of shot hole borers in California. As a result, APHIS has identified potential biological control agents and several semiochemicals that could be used as attractants and repellents for shot hole borers. These semiochemicals come in the form of a pheromone or other chemical that conveys a signal in an attempt to modify the behavior of the shot hole borers. APHIS plans to continue the work on these projects in FY 2021.

Selected Examples of Recent Progress – Wildlife Services:

1. Wildlife Damage Management

APHIS provides Federal leadership and expertise to resolve wildlife conflicts. Specifically, APHIS works to protect agriculture, human health and safety, property, and natural resources from disease and damage caused by wildlife. Cooperator participation and support is critical to the success of the Wildlife Damage Management Program. APHIS' wildlife biologists coordinate activities in every State with Federal and State agencies, Tribes, local governments, private homeowners, farmers, ranchers, and other property owners to protect agriculture, human health and safety, natural resources, and property.

Agriculture

Feral swine are a harmful and destructive invasive species whose geographic range is expanding, and populations are increasing across the nation. These invasive animals cause significant damage to property, agricultural animal health and crops, natural resources, public health and native ecosystems. To address this growing problem, APHIS initiated the National Feral Swine Damage Management Program in 2014, with the goal of reducing damage and risk to agriculture, natural resources, property, animal health, and human health and safety in the United States and its Territories. Initial estimates cited damages from feral swine to exceed $1.5 billion annually. However, in recent years the Agency has collected more data to include additional resources impacted by feral swine. Therefore, in FY 2020, APHIS estimates damages could exceed $2.5 billion per year.

The Agency's strategy is to provide resources and expertise at a National level, while allowing flexibility to manage operational activities from a local or State perspective. Collaboration with other Federal, State, Tribal, and local entities, universities, and organizations, along with landowners and others experiencing damage, is essential for controlling the spread of feral swine and suppressing or, where possible, eliminating populations. In FY 2020, APHIS conducted cooperative, cost-share operational feral swine programs on approximately 192 million acres in 37 States and 3 Territories, directly protecting 119 threatened and endangered species and habitats. APHIS considers feral swine eliminated from a State after the State is able to complete two years of detection status with no additional sightings. Over the past 6 years of the program, APHIS and partners successfully eliminated feral swine from five States (Idaho, Maine, Maryland, New Jersey, and New York), and have moved six States (Colorado, Iowa, Minnesota, Vermont, Washington and Wisconsin) to detection status.

In collaboration with our partners, APHIS conducted disease surveillance and monitoring, and assessed disease risk, to protect the health of domestic swine, other livestock, and people by collecting a variety of samples from approximately 3,200 feral swine during FY 2020. Other activities include: conducting several economic analyses to better assess feral swine damage to agriculture, livestock, and limited resource farmers; collecting and analyzing environmental DNA to detect feral swine presence through genetic markers in water; and maintaining a National Feral Swine Genetic Archive to assess the movement of feral swine and determine source populations. Finally, the Agency, along with university partners, is working to develop a feral swine toxicant to help control feral swine populations. In FY 2020, the Agency continued refinements to the sodium nitrite bait and baiting strategies, which will allow the maximum efficacy on feral swine while reducing risks to nontarget species. APHIS will continue efforts to have a toxicant bait registered with the Environmental Protection Agency (EPA) by FY 2023, however the timeframe is dependent on EPA review times and potential further required studies.

While predators serve a vital role in ecosystems, they pose challenges for agriculture producers in the United States. Livestock losses attributed to predators cost producers approximately $232 million annually, according to the most recent surveys by National Agriculture Statistics Service. APHIS prevents and reduces livestock predation through technical assistance (education and outreach) to producers, and operational management programs. In FY 2020, APHIS provided assistance to more than 19,400 livestock producers. APHIS and cooperators often share the cost of APHIS-conducted livestock protection activities. In FY 2020, APHIS conducted 88 predator management workshops attended by more than 6,900 individuals from 23 States and Puerto Rico.

In collaboration with State wildlife agencies, the U.S. Fish and Wildlife Service (FWS), and Tribes, APHIS conducts wolf damage management programs, and provides additional services to capture and mark wolves and grizzly bears for research and population monitoring purposes. In FY 2020, APHIS conducted operational grizzly bear management work

to protect livestock through new partnerships with the FWS in Montana. Upon request, and with appropriate authorizations, APHIS may remove depredating wolves to resolve conflicts. In FY 2020, livestock producers reported 870 animals killed by wolves. APHIS responded by providing a combination of direct control and technical assistance for wolf depredation to 3,706 instances reported by farmers and ranchers. APHIS provides technical assistance to producers on preventative measures to supplement direct control activities, which producers then implement themselves.

Nonlethal wildlife damage management often involves modifying human activities and practices, manipulating habitats, and other actions to change the behavior of wildlife or reduce its presence and impact. In FY 2020, APHIS promoted nonlethal methods to cooperators in the form of range riding, fladry, fencing, and husbandry practices. APHIS also implemented a new program to increase and expand use of nonlethal methods in 16 States to protect livestock from avian and mammalian predators. In Wyoming, APHIS used some form of nonlethal predator management at over 90 percent of cooperator sites experiencing damage from predators such as black bears, coyotes, cougars, and gray wolves. APHIS plans to continue researching, using, and promoting nonlethal predator management techniques for cooperators in FY 2021.

Black vulture populations have increased in both abundance and range during the past 30 years. The Migratory Bird Treaty Act, enforced by the FWS, protects black vultures, which prey on livestock. Under the Migratory Treaty Bird Act, the public cannot kill, destroy, or remove migratory birds, their nests, or their eggs without a Migratory Bird Depredation Permit from FWS. APHIS works collaboratively with FWS recommending short and long-term options to provide producers with relief from damage. If removing vultures is necessary, APHIS assists producers in obtaining a depredation permit from FWS. With cooperator funding, APHIS conducted direct control in 14 States in FY 2020, removing approximately 14,300 black vultures and dispersing approximately 99,300 black vultures, in addition to providing technical assistance to guide private management efforts.

Fish-eating birds, especially double-crested cormorants, can have major impacts on the U.S. aquaculture industry. According to the National Marine Fisheries Service, annual aquaculture production in the United States is valued at $1.5 billion, and APHIS' National Wildlife Research Center estimates that the aquaculture industry incurs approximately $25 million in costs associated with bird damage and damage prevention. APHIS provides operational and technical assistance to aquaculture producers, particularly on roost management of double-crested cormorant, harassment of fish-eating birds on catfish facilities, and helping farmers acquire depredation permits under the Migratory Bird Treaty Act. Work is concentrated at lower Mississippi valley and southeastern aquaculture facilities in the fall and winter. During this timeframe in FY 2020, APHIS removed 11,797 and dispersed 164,378 double-crested cormorants from 61 roosts at 251 aquaculture facilities in 21 States.

APHIS provides technical assistance, wildlife disease surveillance and wildlife disease management for more than 30 wildlife diseases, pathogens, and syndromes. In FY 2020, the Agency coordinated wild bird surveillance in response to highly pathogenic avian influenza outbreaks in domestic birds in the Atlantic flyway, sampled for avian influenza in 16 States, feral swine diseases in 30 States, plague in 14 States and tularemia in 18 States. APHIS assists with cervid disease surveillance including chronic wasting disease, epizootic hemorrhagic disease, and bovine tuberculosis. In addition, APHIS collected and archived ticks from 465 animals from across the United States for pathogen testing. APHIS surveilled wildlife for West Nile virus, canine heartworm, Leptospirosis, Lyme disease, rabies, raccoon roundworm, tapeworms, toxoplasmosis and other diseases.

Human Health and Safety

Rabies is one of the oldest known viral diseases, yet it remains a significant wildlife-management and public-health challenge. APHIS is the lead Federal agency to prevent the further spread of wildlife rabies, with the goal of eliminating rabies in carnivores in the United States using oral rabies vaccination (ORV). In FY 2020, APHIS and cooperators distributed over 8.2 million ORV baits to combat raccoon rabies in 17 eastern States and more than 1.1 million in Texas to prevent the reemergence of rabies in coyotes and gray foxes along the border with Mexico. This is a continuation of the strategic distribution of more than 215 million baits since the program began in 1995. These programs have eliminated canine rabies in coyotes, resulting in the United States being declared canine rabies free in 2007; the near elimination of gray fox rabies from Texas; and containment of raccoon rabies in the eastern United States. An internal economic analysis projected a $1.1 billion economic impact over 22 years in the absence of the APHIS-led ORV program. Since 2005, APHIS has conducted more than 108,000 tests using a rapid rabies diagnostic field procedure, documenting more than 2,200 rabies cases that, in turn, facilitated science-based wildlife rabies management responses. APHIS also coordinates with international partners through the North American Rabies Management Plan – which

includes the United States, Canada, Mexico and the Navajo Nation – on surveillance activities, control programs, vaccine development, and field trials. In FY 2020, APHIS collected more than 3,800 raccoon blood and 800 tooth samples in 14 States to estimate rabies antibody levels and bait intake in target species in or near ORV zones.

Increased air traffic, faster and quieter aircraft, increased populations of some Federally protected species of birds, and other wildlife all impact the safety of aircraft, particularly in rural communities. Since 1988, bird and other wildlife strikes have destroyed more than 271 civilian and military aircraft and killed 292 people globally. With funding provided by airports, and other Federal, State and local cooperators, APHIS works to reduce wildlife strike hazards to protect people and aircraft. APHIS estimates the annual value of damage prevented from wildlife strikes exceeds $100 million. In FY 2020, APHIS mitigated wildlife hazards by assisting nearly 865 civil and military airports worldwide which included 140 Department of Defense airports in domestic and international settings.

Property

Beaver damage in the southeastern United States has exceeded $3 billion during the last 40 years. To address and prevent costly beaver damage, APHIS provides assistance by removing beaver dams that clog waterways and flood roads and timber sources. Every dollar invested in beaver damage management protects approximately $45 in natural resources on average. With cooperator funding, APHIS conducted beaver damage management activities in 44 States in FY 2020.

Natural Resources

Non-native, invasive animals can devastate ecosystems. APHIS focuses on eliminating damage from brown tree snakes (BTS), nutria, and other invasive species. In Guam, BTS have eliminated most species of native birds, lizards, and bats, and continue to cause power outages leading to economic losses and public safety problems. In FY 2020, with funding other Federal departments and the Guam Department of Agriculture, APHIS continued the multi-agency partnership to prevent BTS movement from Guam to other Pacific Islands, Hawaii, and the continental United States. It is through this partnership that the Agency intercepted approximately 13,000 BTS in Guam during FY 2020.

Nutria damage wetlands, agricultural crops, and structural foundations such as dikes and roads. This South American rodent has destroyed tens of thousands of acres of marshlands critical to the health of the Chesapeake Bay. APHIS is leading the first large-scale North American effort to eradicate a mainland nutria population in the Chesapeake Bay through agreements with the FWS and other cooperators. Between 2002 and 2015, APHIS, in cooperation with Federal and State agencies and private landowners, removed nutria from more than 250,000 acres of coastal marshland. APHIS continues to monitor this land to remove any remaining nutria and has conducted rigorous systematic surveys without finding any nutria since May of 2015. In FY 2020, APHIS monitored approximately 207,700 acres in 4 watersheds. The elimination of nutria has protected remaining wetlands and the culturally, ecologically, and economically important fish and wildlife that depend on them.

APHIS partners with various Federal and State resource agencies, private organizations, and community groups to conduct damage management benefiting protected bird species by preventing predation from other birds and mammals to nests, eggs, and juveniles. APHIS has estimated damages or damage threats to birds, including threatened and endangered species, to be more than $70 million annually. Approximately 6,000 projects across 39 States, Guam, Virgin Islands, and Cuba (Guantanamo Bay) benefitted protected species in FY 2020.

2. Wildlife Services Methods Development

Wildlife Services uses Methods Development (WSMD) to research effective and socially responsible methods and information to manage conflicts between people and wildlife to protect agriculture, natural resources, and human health and safety. WSMD provides research in support of the Agency's project areas such as feral swine, invasive species, rabies, wildlife disease, and population and reproduction control, among others. APHIS' National Wildlife Research Center (NWRC) provides the only dedicated Federal leadership in developing methods to manage wildlife-related damage problems. Scientists work on a variety of wildlife damage management problems through discovery, development, and technology transfer and use of products and management methods to Wildlife Services operational programs as well as public and private partners. The majority of NWRC studies involve partnerships with State and Federal agencies, non-governmental organizations, universities, tribal governments, and private sector businesses. In FY 2020, NWRC initiated 108 new studies and published 123 scientific papers, book chapters and technical reports in 65 professional scientific journals.

Agriculture

The WSMD Program develops methods to safeguard livestock from predators, manage invasive species, and minimize the impact of wildlife diseases. The following are examples of efforts to protect American agriculture, which includes protecting resources related to farming and ranching such as livestock, crops, animal products and other associated industries.

The APHIS National Feral Swine Damage Management Program was created in 2014, to protect agricultural and natural resources, property, animal health, and human health and safety from feral swine damage. The program focuses on reducing the amount of feral swine damage, as well as decreasing the spread of feral swine and their subsequent damage. NWRC improves the efficiency of existing control methods and develops new strategies to ensure the program and partners use safe, acceptable, and science-based management tools. In FY 2020, APHIS continued efforts to develop a feral swine toxicant, optimize control methods, monitor feral swine populations, assess damage to agriculture and natural resources, and understand public perceptions related to feral swine.

A toxicant and delivery system will serve as a critical component to reduce feral swine populations and the damage they cause in the long term. In FY 2020, the Agency continued refinements to the bait and baiting strategies, which will allow the maximum efficacy on feral swine while reducing risks to nontarget species. APHIS will continue efforts to have a toxicant bait registered with the Environmental Protection Agency (EPA) by FY 2023, however the timeframe is dependent on EPA review times and potential further required studies. In conjunction with efforts to develop a toxicant and feral swine-specific bait station, NWRC researchers are identifying cost-effective strategies for optimizing toxicant delivery. Geneticists analyze the diet of feral swine, assesses their genetic ancestry in North America, detect feral swine movements through human-mediated transport, and evaluate the success of feral swine eradication efforts. In FY 2020, researchers determined that the recent and rapid expansion of feral swine across the country is primarily the result of animals being moved from established populations to new habitats by people as opposed to novel introductions of either domestic pigs or wild boar. The Agency will use these findings, as well as research that has sought to understand how the public and other stakeholders perceive feral swine, to develop new management strategies to prevent the spread of this invasive species. In FY 2021, APHIS will continue to evaluate, refine, and optimize tools for use in feral swine damage management. In addition, we will develop new monitoring strategies to assess the size of feral swine populations and measure the agricultural and natural resource benefits of removing feral swine from the landscape and strategies to best detect feral swine reinvasions.

The common vampire bat feeds on the blood of Central and South American wildlife and livestock. Because of the high numbers of cattle and other livestock in northeastern Mexico and southern Texas, wildlife managers and ranchers are concerned about the potential movement of vampire bats to areas within the United States as a result of rising global temperatures. Historic and current methods of controlling their damage involve reducing local bat populations using anti-coagulant pesticides and vaccinating livestock and other domestic animals against rabies. However, even under optimal conditions, the results of these methods may be short-lived and may negatively impact other bat species that share roosts with vampire bats. Research and development using modern technologies to deliver specific, effective and sustainable strategies for vampire bat rabies control are necessary.

In partnership with States, the Agency is using a multi-disciplinary approach to manage vampire bat rabies that includes enhanced surveillance, targeted risk assessments, habitat modification, renewed research and collaborations, as well as greater public and professional awareness, education, and outreach. Since 2016, WS has conducted more than 885 surveys at livestock sales barns, ranches, feedlots and dairy barns in Texas, Arizona, New Mexico and Florida and inspected more than 300,000 cattle. The Agency has found no evidence of bat bites during these surveys. In 2020, APHIS hosted an expert Blue-Ribbon Panel to discuss risk assessment and best practices related to vampire bat rabies virus surveillance and monitoring. The panel included 34 experts representing 20 agencies and organizations. The panel of experts provided input on the likelihood of vampire bats expanding to the United States; primary risks posed by vampire bats; surveillance methods most likely to detect vampire bats and the vampire bat rabies virus variant; and potential vampire bat management methods. The Agency will use this information in future research activities.

Natural Resources

Invasive species can have profound and transformative effects on native plants, animals, and ecosystems. This is especially true on islands, where native species have evolved in relative isolation from predators. APHIS aids in

designing, implementing, and evaluating wildlife damage management activities on islands; coordinates and provides guidance on the legal use and registration of vertebrate control methods; and assists in protecting reintroduced or recovering native species. In 2019, APHIS established the Island Restoration Committee (IRC) to provide leadership, guidance, and technical assistance to employees and partners in the management, control, and mitigation of invasive species and introduced vertebrate species for island restoration projects. In 2020, the IRC supported island rodent eradication planning efforts for several Pacific islands, as well as the research and development of new products, such as bait matrices and bait delivery mechanisms, for island invasive vertebrate species. In FY 2020, the IRC finalized label amendments with the EPA for three current APHIS island conservation rodenticides in order to make them available for purchase by all Federal agencies and more adaptable to island-specific conditions. The IRC also proposed new island conservation registrations to the EPA for two commercially available rodent baits and a third is in development. These new registrations will provide additional control options for invasive rodents on islands and on abandoned or grounded vessels that harbor rodents.

Rose-ringed parakeets are an invasive species in the United States, with established populations in California, Florida, and Hawaii. They cause significant damage to natural resources and agriculture because of their generalist diet. Large flocks of rose-ringed parakeets also roost on and near human-made structures resulting in human health and safety concerns related to parakeet collisions with aircraft, disease transmission, feces accumulation, and noise complaints. In Hawaii, the spread of rose-ringed parakeets is not only a concern to agricultural producers, but also conservationists because they potentially impact native wildlife, spread invasive plant seeds, and destroy native plants. In FY 2020, in collaboration with Texas A&M University, the Agency began testing a variety of feeders for use in delivering population control agents, such as reproductive inhibitors or toxicants, to rose-ringed parakeets on the island of Kauai. This project was jointly funded by APHIS and the State of Hawaii. The Agency will complete additional field trials in FY 2021, to evaluate parakeet-specific feeders that effectively deliver treated bait while reducing access to the bait by nontarget species.

Human Health and Safety

NWRC develops new tools and techniques, as well as evaluates the effectiveness of different rabies surveillance strategies to ensure the most effective use of resources. In FY 2020, the Agency incorporated surveillance information from Quebec, as well as the Center for Disease Control's National Rabies Surveillance data for New Hampshire, Vermont and New York. The inclusion of this data has increased the confidence in raccoon rabies elimination strategies along the U.S. and Canada border. The Oral Rabies Vaccine (ORV) management program continues to significantly reduce raccoon rabies case occurrences.

Mongooses account for 40 to 80 percent of the reported rabies cases in Puerto Rico. Starting in 2011, APHIS began efforts to develop a rabies surveillance and control program for mongooses in Puerto Rico by determining the mongoose population density, home range behavior and habitat use, exposures to rabies virus, effective bait formulations and delivery mechanisms, in addition to potential nontarget hazards and public health and environmental risks. In 2016, the Agency began field trials to determine ORV bait consumption and effectiveness in areas of Puerto Rico. In partnership with the University of Montreal, APHIS is studying domestic dogs and mongoose interactions and the role these interactions may play in rabies virus transmission to people. A limited field vaccine trial, the first of its kind for mongooses, is tentatively planned for the fall of 2021.

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, highlights the substantial public health, economic, and societal consequences of virus spillover from a wildlife reservoir. Given the likely bat origin of SARS-CoV-2 and related beta-coronaviruses, free-ranging bats are a key group of concern for spillover from people back to wildlife. In collaboration with universities and other organizations, APHIS reviewed the diversity and natural host range of beta-coronaviruses in bats and examined the risk of humans inadvertently infecting free-ranging bats with SARS-CoV-2. Findings show more than 40 species of temperate-zone North American bats could be susceptible to infection by SARS-CoV-2.

Partnerships and Technology Transfer

The Federal Technology Transfer Act of 1986 allows Federal laboratories and industry to form partnerships that enhance the development of new technologies and move them to the marketplace to meet public and consumer needs. APHIS regularly partners with Federal and State entities, private companies, international groups, and non-governmental organizations to encourage the development and licensing of new wildlife damage management products to manage

wildlife conflicts. Most NWRC technology development activity and partnerships involve partnerships with universities and small businesses. Technologies pursued include development of devices, baits, formulations and vaccines. In FY 2020, NWRC furthered its partnership efforts to make sure its research and development activities had a path for commercial development and operational management with the following: 10 Confidentiality Agreements, 12 Material Transfer Agreements, 7 Material Transfer Research Agreements, 2 Memorandums of Understanding, 3 Cooperative Research and Development Agreements, 3 Invention Disclosures, 3 Provisional Patent Applications, 2 Non-provisional patent applications, 2 U.S. patents issued, and 2 foreign patents issued.

NWRC collaborates on average with 150 unique entities each year. Since 2013, these collaborations have led to nearly 400 intellectual property agreements, including 30 Cooperative Research and Development Agreements. Examples of recently patented and licensed NWRC technologies include a wildlife contraceptive and several repellents to protect agricultural crops and structures from wildlife damage.

Selected Examples of Recent Progress – Regulatory Enforcement:

1. Animal and Plant Health Regulatory Enforcement

Animal and Plant Health Regulatory Enforcement (APHRE) provides investigative, enforcement, and regulatory support services to the Agency's four regulatory programs and Agricultural Quarantine Inspection (AQI) activities carried out through the Department of Homeland Security, Customs and Border Protection (CBP). APHRE investigates alleged violations of Federal laws under its jurisdiction and pursues appropriate enforcement actions through administrative, civil, or criminal procedures.

In FY 2020, APHRE initiated 1,129 new cases, issued 473 official warnings, issued 549 pre-litigation settlements resulting in the collection of $1,696,990 in stipulated penalties, and obtained administrative orders assessing $553,925 in civil penalties. The Agency considers a case complete after it issues an official warning or voluntary settlement to which the recipient agrees, finds there is insufficient evidence to support enforcement action, or refers a case to the USDA's Office of the General Counsel (OGC). Highlights from APHRE are described below.

To support animal health, APHRE initiated 129 cases, issued 106 official warnings, issued 28 pre-litigation settlements resulting in the collection of $44,338 in stipulated penalties, and obtained administrative orders assessing $14,000 in civil penalties against persons for violations of laws aimed at protecting animal health and American agriculture. In one such settlement agreement, a subject agreed to pay a civil penalty of $6,250 for importing a mixed breed equine from Spain without a certificate of veterinary inspection. In another matter, a federally accredited veterinarian was assessed a $3,750 civil penalty for failing to accurately complete an export health certificate used to export 20 mute swans and 4 mandarin ducks to Taiwan.

To support plant health, APHRE initiated 63 cases, issued 51 official warnings, and negotiated 29 pre-litigation settlement agreements resulting in the collection of $143,728 in stipulated penalties. In one case, APHRE negotiated a pre-litigation settlement for $26,563 relating to international mail violations of the Plant Protection Act. In another case, APHRE negotiated a pre-litigation settlement for $25,000 for multiple fruit fly violations of the Plant Protection Act that involved the importation of prohibited fruit by a large chain store.

To support AQI activities, APHRE initiated 907 cases, issued 316 official warnings, issued 488 pre-litigation settlement agreements resulting in the collection of $1,393,424 in stipulated penalties, and obtained one administrative order, assessing $18,750 in civil penalties. In one case, APHRE negotiated a pre-litigation settlement agreement for $364,000 to resolve over 100 alleged violations of the Plant Protection Act and the Animal Health Protection Act relating to the handling of regulated garbage. In another case, APHRE entered into a Consent Decision and Order relating to multiple violations of shipment holds placed by CBP, resulting in a $18,750 civil penalty.

To support animal welfare, APHRE initiated 30 cases for alleged violations of the Animal Welfare Act (AWA), issued 4 pre-litigation settlements resulting in the collection of $115,500 in stipulated penalties, and obtained 24 administrative orders, assessing $509,375 in civil penalties. In one case, working with the OGC, APHRE entered into a Consent Decision and Order relating to multiple violations of the AWA, resulting in a $7,500 civil penalty and a revocation of the respondent's AWA license. In another case, APHRE obtained an administrative order against an individual relating to alleged AWA violations, assessing a $340,000 civil penalty and revoking the respondent's AWA license. APHIS also negotiated several pre-litigation settlement agreements, including one involving a research facility that agreed to the

assessment of a $74,000 civil penalty to resolve multiple alleged AWA violations. Beginning in late December 2020, APHIS also began posting copies of enforcement records (such as initial decision and orders, default decisions, consent decisions, and administrative complaints) on its website: https://www.aphis.usda.gov/aphis/ourfocus/animalwelfare/enforcementactions/awa-enforcement-actions.

To support horse protection, APHRE worked with the OGC to obtain 11 administrative orders assessing $11,800 in civil penalties and disqualifying 10 persons for a total of approximately 7 years from participating in activities regulated under the Horse Protection Act. In one case involving the entrance of a horse for the purpose of showing the horse at a horse show while the horse was sore, a subject consented to a $1,100 civil penalty and an eight-month disqualification. In another matter concerning similar allegations, a subject consented to a fifteen-month disqualification and a $2,500 civil penalty.

To support biotechnology, APHRE completed one case relating to the possible detection of genetically engineered (GE) wheat in Washington State. The case was initiated as part of an internal collaborative effort with the Agency's Biotechnology Regulatory Services program to further the protection and safeguarding of plant health throughout the United States. The investigation found that there was no evidence that any GE wheat had entered commerce or the food supply. APHIS strengthened its oversight of regulated GE wheat field trials by requiring developers to apply for a permit for field trials beginning with GE wheat planted on or after January 1, 2016. Bringing GE wheat under permit enables APHIS to create and enforce permit conditions that ensure confinement and minimize the risk that the regulated GE wheat will persist in the environment. This case was initiated in FY 2019 and finalized in FY 2020.

2. Biotechnology Regulatory Services

APHIS' biotechnology regulatory system safeguards agriculture and fosters innovative research and development. Under the Plant Protection Act's (PPA) plant pest authority, APHIS safeguards agriculture by overseeing certain organisms developed using genetic engineering that might pose a pest risk to plants. The implementing regulations allow APHIS to place requirements on field testing, importation, and interstate movement of regulated organisms to protect American agriculture and other plants from potential plant pests, unless APHIS determines the organisms are unlikely to pose a pest risk.

Regulatory Changes

In FY 2020, APHIS published a final rule known as the Sustainable, Ecological, Consistent, Uniform, Responsible, Efficient (SECURE) rule (7 CFR part 340), to update the APHIS' biotechnology regulations in a number of areas based on advancements in genetic engineering and the Agency's three decades of experience regulating organisms developed using genetic engineering. This is the first comprehensive revision of APHIS' biotechnology regulations since they were established in 1987. The SECURE rule allows APHIS to regulate organisms developed using genetic engineering with greater precision and reduces regulatory burden for developers of organisms that are unlikely to pose plant pest risks. To support the SECURE rule, in FY 2020, the Agency launched a user-friendly website, held 10 domestic and international webinars, and 38 one-on-one sessions with developers and other stakeholders, among other things. APHIS will implement the SECURE rule in various stages throughout FY 2021.

In August 2020, APHIS implemented the first key component of the SECURE rule – new regulatory exemptions and a confirmation process that allows developers to request a confirmation from APHIS that a plant qualifies for an exemption and is not subject to biotechnology regulations. A similar type of activity had been completed as part of the "Am I Regulated" (AIR) process prior to the SECURE rule implementation. As part of the transition to the SECURE rule, APHIS completed 85 AIR responses and retired the AIR process in June 2020.

Authorizations

Depending on the characteristics of an organism developed using genetic engineering, developers must obtain an authorization for the movement of the organism—importation, interstate movement, or environmental release. As part of the authorization process, APHIS conducts scientific assessments to determine potential plant pest risks and may impose specific permit conditions to ensure that the regulated organism stays confined. Prior to the adopting the SECURE rule, APHIS authorized introductions of regulated organisms through permits and notifications. In FY 2020, APHIS authorized over 730 permits and notifications in 49 States for 123 different species of organisms. The Agency was able to complete 97 percent of permit and notification reviews within the designated timeframe. The Agency also launched a

new eFile system for authorizations and conducted a pilot with 45 stakeholders and issued 40 permits and notifications in the new system. Under the SECURE rule, APHIS will streamline the process and, starting in April 2021, will only issue permits. The SECURE rule's permit process requires developers to apply for a permit for any organism that falls within the scope of the regulations.

Risk Assessment and Petitions

Prior to adopting the SECURE rule, biotechnology developers could request, or petition, APHIS to remove their organism developed using genetic engineering from regulation if they provide scientific information that demonstrates their organism does not pose an increased plant pest risk relative to the parental organism from which it was derived. As part of this process, APHIS conducts thorough scientific reviews and gathers data to determine if the regulated organism poses a risk to plant health, including a plant pest risk assessment, and an environmental review in compliance with the National Environmental Policy Act. If APHIS determines that the regulated organism is unlikely to pose a plant pest risk, the Agency makes a determination of nonregulated status (deregulation), and biotechnology developers can move and release the organism without APHIS' oversight. In FY 2020, APHIS reviewed and deregulated 1 potato variety bringing the cumulative total of APHIS deregulations to 133. APHIS is currently reviewing 13 petitions for nonregulated status.

Under the SECURE rule, the petition process will be eliminated, and developers have the option of requesting a regulatory status review (RSR) of a plant developed using genetic engineering. The RSR process evaluates whether a plant requires oversight based on the characteristics of the plant itself and not on the method by which the plant was modified. The new RSR process will be implemented for certain crops in April 2021, and fully implemented on October 1, 2021. APHIS will continue to accept petitions pursuant to the previous regulations until April 4, 2021 for six crops (corn, soybean, cotton, potato, tomato, alfalfa) and until September 30, 2021 for all other plants.

Compliance and Inspections

APHIS ensures developers, growers, and other individuals, organizations and universities take steps to prevent unauthorized releases of regulated organisms. The Agency requires developers to comply with notification performance standards or permit requirements, to help ensure that regulated organisms remain confined and do not persist in the environment. To ensure that activities meet standards outlined in the permit or notification, APHIS inspects fields, equipment, and other associated facilities. In FY 2020, APHIS and the States (authorized by APHIS) conducted more than 500 inspections. The virtual inspection process, launched in FY 2018, proved critical with travel restrictions imposed during the COVID-19 pandemic, enabling APHIS to complete over 400 of these inspections during this time period. The Agency was able to effectively determine compliance of trials through interviews with developers and by using technology to virtual monitor and evaluate of field trials. Approximately 95 percent of field trials inspected were in compliance with APHIS biotechnology regulations.

Following the 2008 and 2015 recommendations from the USDA's Office of the Inspector General, APHIS continues to take steps to strengthen its oversight of regulated field trials. In FY 2020, APHIS continued to develop and implement an improved risk-based inspection selection process and enhanced compliance oversight of regulated field trials. As part of this effort, the Agency utilized technology to develop and transition digital mapping capabilities and enhance effectiveness of oversight and used technology through its virtual monitoring and evaluations of field trials. APHIS also continues to update certain requirements for field trials authorized under permits, increasing consistency and improving clarity of requirements for regulated entities and increasing enforceability of requirements.

Partnerships

APHIS continued to work with the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA) to share information about and improve regulatory oversight of organisms developed through genetic engineering, in support of a White House Executive Order on Modernizing the Regulatory Framework for Agricultural Biotechnology Products. In particular, APHIS worked with EPA and FDA to launch a Unified Biotechnology web-based platform that provides a single point of entry for the regulated community and the public to obtain and access information on the Coordinated Framework and the U.S. biotechnology regulatory system. This includes a mechanism for developers to submit questions to regulators and obtain a single coordinated response from the agencies. In addition, APHIS serves as the U.S. government lead and Chair of the Working Group on Harmonisation of Regulatory Oversight in Biotechnology in the Organization for Economic Co-operation and Development. The working group promotes

international harmonization in environmental risk/safety assessment and regulation of organisms produced through modern biotechnology.

APHIS is also part of the interagency working group for the Cartagena Protocol on Biosafety, as well as its parent convention, the Convention on Biological Diversity. International outreach efforts aim to reduce the likelihood of trade disruptions of biotechnology and other agricultural products by helping countries to focus on practical, science-based regulatory approaches. APHIS is engaged in capacity building efforts for foreign regulatory officials and scientific advisors by hosting visitors at APHIS headquarters and by serving as resource persons in biotechnology regulation training. In FY 2020, APHIS organized sessions with FDA and EPA counterparts to present information to over 50 visitors representing 16 countries.

Selected Examples of Recent Progress – Emergency Management:

1. Emergency Preparedness & Response

The Emergency Preparedness and Response (EPR) program improves APHIS' capability to prevent, prepare for, respond to, and recover from animal health emergencies. This program's goal is to respond to an animal health event within 24 hours from the time APHIS determines that a Federal emergency response is needed to manage an agricultural outbreak. It develops strategies, policies, and procedures for incident management and response coordination that meet national and international standards. The program participates in joint Federal, State, and local animal health and all-hazards test exercises to improve response capabilities. In addition, this program works with major commodity groups to ensure the continuous movement of livestock products during animal health emergencies. The EPR program funds activities that enable APHIS to achieve a high state of readiness and be able to respond rapidly and effectively to emergency events, thus lessening the impact of those events on producers, consumers, taxpayers, and the overall economy. Also through this program, APHIS and the Centers for Disease Control and Prevention (CDC) jointly manage the Federal Select Agent Program (FSAP), which oversees the possession, use, and transfer of biological select agents and toxins that have the potential to pose a severe threat to public, animal or plant health or to animal or plant products.

The EPR program provides coordinators in the 10 Federal Emergency Management Agency (FEMA) regions for Emergency Support Function #11: Agriculture and Natural Resources (ESF #11). These coordinators work with local, State, Tribal, Territorial, Insular Area Governments, and other Federal agencies during animal and agricultural health incident responses; provide technical expertise to support animal and agricultural emergency management, ensure the safety and defense of the Nation's supply of meat, poultry, and processed egg products; provide nutrition assistance, and work with the Department of the Interior to ensure the protection of historic properties and natural and cultural resources. Often, ESF #11 support uses USDA capabilities and resources from within APHIS, the Food and Nutrition Service, and the Food Safety Inspection Service, along with collaboration with the Farm Service Agency, the Natural Resources Conservation Service, and Rural Development to provide support to disaster-impacted areas. In addition, APHIS provides technical support to FEMA for the care of pets and service animals during disasters. The EPR program also maintains Emergency Qualifications System (EQS) dispatchers, who coordinate the delivery of emergency resources, as well as the APHIS security coordinator program and the Volunteer Emergency Ready Response Corps program, continuity planning aligned with Federal guidance, and Geographic Information System (GIS) capability during incidents.

Preparedness, Partnerships, & Planning

APHIS' National Preparedness and Incident Coordination Center (NPIC) develops animal health emergency management guidelines to protect U.S. animal agriculture through collaborative, science- and risk-based strategies. The guidelines are based on the National Incident Management System (NIMS) and National Response Framework. The NPIC National Training and Exercise Program (NTEP), which is designed to address national priorities and the needs of APHIS' stakeholders, is dedicated to improving preparedness, mitigation, and response to animal disease emergencies among all stakeholder groups. It creates dynamic, real-world learning scenarios to build the response capabilities of emergency responders and maintain the Agency's personnel response readiness. In FY 2020, the NTEP relied on more than 250 volunteers working more than 10,000 support hours on 55 simulated emergency scenarios. APHIS, State cooperators, and industry developed tabletop exercises for the Secure Milk Supply and Secure Pork Supply Plans. In addition, the Agency delivered webinars on those plans as well as on the Secure Beef Supply Plan and Secure Poultry Supply Plan. These Plans provide continuity-of-business and biosecurity guidance to producers with no evidence of foreign animal disease infection on their premises in a regulatory control area. Under the plans, these producers could move products to processing if approved by local, State, Tribal, and Federal regulatory officials. The plans are the result

of a multi-year collaboration by industry, State, Federal, and academic representatives. In FY 2020, APHIS continued to expand its animal health readiness capacity by increasing the number of first responders to enable the Agency to respond more rapidly and effectively to animal health emergency events. As of the end of FY 2020, the NIMS program had filled 135 of the 150 (90 percent) National Incident Management Team Command and General Staff positions available. These volunteer positions involve consistent personnel turnover, but this turnover reflects permanent personnel cycling to volunteer positions rather than full-time positions gained or lost. IMT members participate in Incident Command System training and workshops, as well NTEP training and exercises.

APHIS provides subject matter expertise on pet owners and their pets, as well as for breeders, dealers, and exhibitors regulated by the Animal Welfare Act to enhance emergency response coordination. In FY 2020, APHIS extended its reach through collaborative projects with industry, the Zoo and All-Hazards Preparedness (ZAHP) Center, to more than 350 individual zoos, aquariums, sanctuaries, nature centers, and rehabilitation organizations. In addition, 13 States responded to a targeted ZAHP survey on emergency preparedness for exotic animals. APHIS is increasingly using GIS to pinpoint areas in which regulated facilities should be monitored during hurricanes, floods and wildfires.

Response Efforts and Foreign Animal Disease (FAD) Investigations

In FY 2020, APHIS conducted 3,001 FAD investigations, of which 2,470, or 82 percent, were vesicular disease investigations. Vesicular diseases are viral diseases that affect various livestock animals, primarily swine and cattle. The most prominent vesicular disease is foot-and-mouth disease (FMD), which is the highest-consequence FAD in terms of regulatory intervention and economic consequences. Several vesicular diseases exhibit similar clinical signs and can only be differentiated through laboratory testing. In FY 2020, the high number of vesicular disease investigations resulted from the ongoing Seneca Valley A virus (SVA) disease in pigs in the United States and Canada. Although SVA is not regulated, it mimics FMD. As a result, APHIS has been conducting a high number of SVA investigations for several years. Also, in FY 2020, APHIS continued its response to vND in California. APHIS and State personnel responded to 27 infected premises in FY 2020.

In FY 2020, FEMA activated ESF-11 coordinators for emergency incidents including wildfires, earthquakes, and hurricanes, issuing 29 alerts. In addition, EQS dispatchers participated in emergency response incidents including European Cherry Fruit Fly, Mexican Fruit Fly, *Ralstonia*, Tomato Brown Rugose Fruit Virus, vND, and COVID-19 responses for FSIS and within APHIS. APHIS trained 1,260 individuals outside of the Agency in various aspects of emergency response.

APHIS' Wildlife Services (WS) program supports the Agency's response efforts for animal diseases, natural disasters, and wildfires. In FY 2020, WS collaborated and coordinated with the CDC and Utah state agencies and deployed six personnel to respond to a COVID-19 outbreak in domestic mink, sampling off-farm areas to understand the role wildlife may play or possible spillover events from domestic animals to wildlife. Additionally, the Agency collaborated with other Federal and State agencies and deployed personnel to Minnesota to better characterize the role wildlife play in spreading Chronic Wasting Disease. The program also helped feed and water livestock and domestic pets that were left behind fire lines during wildfires in Oregon and California and assisted with APHIS' vND response in California.

Safeguarding of Select Agents

APHIS and the CDC jointly administer the select agents and toxins regulations as the Federal Select Agent Program (FSAP). Any individual or entity possessing, using, or transferring select agents or toxins must register with APHIS if the agent affects plant or animal health, or the CDC if it affects human health. Facilities must meet biosafety requirements, including having measures in place to ensure the safety and security of the select agents. APHIS and CDC inspect facilities that possess, use, or transfer select agents to ensure compliance with select agent regulations. To eliminate potential conflicts of interest, CDC inspects USDA facilities, and APHIS inspects CDC facilities that possess select agents. APHIS' Agriculture Select Agent Services (AgSAS) ensures that registered facilities promptly address all non-compliances and initiate any necessary enforcement actions.

As of September 30, 2020, 36 entities are registered with AgSAS and 40 entities are registered with CDC. In FY 2020, AgSAS conducted 63 inspections: 26 verification inspections, 25 renewal inspections, 8 Biosafety Level 4 (maximum containment) inspections, 3 compliance inspections, and 1 new space inspection. Of the 63 total inspections, due to the COVID-19 pandemic 28 of these inspections were performed remotely. APHIS identified deficiencies during these inspections and released findings to the inspected entities. The Agency also conducted joint inspections with the CDC, the Department of Homeland Security (DHS), and the Department of Defense. In addition, AgSAS provided entities with

opportunities to develop Corrective Action Plans to address serious noncompliance issues. AgSAS worked with the Federal Bureau of Investigation (FBI), who conducts Security Risk Assessments (SRA) for the program, to determine the suitability of individuals requesting access to the select agents and toxins. Calendar year (CY) 2020 figures will be available in January 2021. In CY 2019, however, FSAP facilitated 3,880 FBI SRAs, and restricted the access of 30 individuals based on the results. In FY 2020, AgSAS supported entities and other partners during several hazardous events to ensure the safety and security of select agents and toxins during disasters. In FY 2020, AgSAS continued to respond to an Office of Inspector General audit by providing information on inspection performance, training, standard operating procedures, and inspection reports. In FY 2020, FSAP continued to coordinate with representatives from APHIS and the Agricultural Research Service (ARS) overseeing the construction and stand-up of the National Bio and Agro-Defense Facility in Manhattan, Kansas, to provide guidance on the select agent registration process. FSAP provided input into select agent regulatory standards and the select agent program's facility registration approval process.

Select Agents, including *Brucella*, are subject to regulations on storage, use, and movement regulations. In FY 2020, APHIS worked with the CDC, DHS, and leaders in the Greater Yellowstone area (GYA) to develop a draft policy statement through the FSAP to address research with *Brucella* species in outdoor settings. *Brucella* is a serious threat to livestock and wildlife. Endemic *Brucella abortus* is expanding its range in the GYA and *Brucella suis* is being found in more feral swine populations throughout various areas of the United States. This expansion emphasizes a critical need to enhance diagnostics and vaccine development related to wildlife. This policy outlines the information researchers must provide to FSAP before they may conduct outdoor studies on large animals that would otherwise be prohibitively difficult to conduct indoors. The ability to conduct outdoor host animal studies involving large animals will help APHIS gain vital tools and information to advance brucellosis control and eradication. The information gathered from these studies will help wildlife managers and livestock producers across the country, while addressing the need to handle *Brucella* according to select agent requirements. AgSAS will review the proposed research plans to ensure they comply with FSAP regulations. APHIS formally issued the draft policy statement on October 14, 2020, and the policy was published in the Federal Register in November 2020.

Modeling and Monitoring

APHIS uses epidemiologic and economic models to better understand historical events, estimate future consequences, and inform strategic, logistical, and budgetary decisions by evaluating varying interventions related to animal health. In FY 2020, the Agency continued to develop and/or update disease-spread and control models for African swine fever (ASF), bluetongue, classical swine fever, FMD, highly pathogenic avian influenza, and vND. APHIS also developed disease-spread and control models to better understand animal disease epidemiology to support emergency preparedness. In collaboration with the ARS, the Agency continued to develop modeling applications and disease-spread scenarios in the InterSpread Plus model to explore the impact of alternative control strategies on the severity and duration of simulated ASF and FMD outbreaks. Also, in FY 2020, APHIS continued parameter development in the Australian Animal Disease Spread Model with U.S. data to support future regional-level simulations of bluetongue disease and parameter development for future modeling to describe disease spread at the wildlife-domestic animal interface. Additionally, APHIS completed the second phase of a collaborative project with the Texas Center for Applied Technology to develop a comprehensive conceptual model, high-level software design specifications, and a software testbed to assess the component-based architecture for a computationally efficient, cloud-friendly national disease-spread and control model. In addition, APHIS continued the development and application of the U.S. Animal Movement Model (USAMM), continued GIS mapping support during animal disease outbreaks, and collaborated with academic partners to initiate projects associated with ASF outbreak surveillance and scenario development assessing the impact of enhanced traceability on the severity and duration of transboundary disease. The USAMM estimates the number of animal shipments between any two counties in the contiguous United States. APHIS will use USAMM information to support decision-making in response and planning contexts. Currently, the Agency is working to enhance the model's predictions to include the size of shipments, and information on the types and sizes of premises involved in shipping.

SAFE TRADE AND INTERNATIONAL TECHNICAL ASSISTANCE
Current Activities

APHIS monitors animal and plant health throughout the world and uses this information to set effective agricultural import policies to prevent the introduction of foreign animal and plant pests and diseases. APHIS and the Department of Homeland Security cooperate to enforce these policies at U.S. ports of entry. APHIS also develops and conducts pre-clearance programs to ensure that foreign agricultural products destined for the United States do not present a risk to U.S. agriculture. The Agency engages in cooperative programs to control pests of imminent concern to the United States

and to strengthen foreign plant protection and quarantine organizations. The Agency also provides scientific and technical support in resolving sanitary (animal) and phytosanitary (plant) trade barriers.

APHIS negotiates animal and plant health certification requirements, assists U.S. exporters in meeting foreign regulatory requirements, ensures requirements are proportional to risk without being excessively restrictive, and provides any necessary technical information to support the safety of U.S. agricultural products destined for foreign markets.

Selected Examples of Recent Progress in Facilitating Safe Trade:

1. Agriculture Import/Export

APHIS works with other Federal agencies, States, foreign governments, industry, and academia to protect U.S. agriculture while facilitating the safe trade of animals and animal products. APHIS' animal health experts ensure that U.S. import requirements safeguard U.S. livestock health and negotiate requirements for the export of U.S. animals and animal products worldwide. These requirements are based on compliance with international standards, sound scientific principles, and fair-trading practices for animals and animal products. In addition, APHIS sets quarantine, testing, and other requirements under which animals and animal products can be imported or exported. These requirements help ensure that global markets can be accessed, expanded, or maintained with little or no risk to U.S. animal production and human health. APHIS also outlines activities to support aquatic livestock imports and exports through the development of the Aquaculture Business Plan and the National Aquaculture Health Protection and Inspection Plan.

APHIS conducts activities related to the 2008 Farm Bill amendments to the Lacey Act, which prohibit the importation of any plants, with limited exceptions, that are taken or traded in violation of domestic or international laws. The Act requires a declaration for imported shipments of most plants or plant products. A 2012 study by the United Nations Environmental Programme estimated the value of illegal logging, including processing, to be between $30 to $100 billion dollars, or 10 to 30 percent of the global wood trade. The Lacey Act amendments are designed to help combat this illegal logging by encouraging importers to research their supply chains and be aware of the laws governing products they purchase in other countries. APHIS' role is to evaluate and implement existing regulations, provide guidance to importers regarding the required declaration, perform compliance checks, provide enforcement agencies with declaration information to assist their investigations, and maintain declaration records.

Imports

To facilitate imports, APHIS evaluates the animal health status of regions that wish to export animals and/or animal products to the United States. This evaluation process minimizes the risk of introducing animal diseases through importation and is consistent with international trade requirements. In FY 2020, APHIS completed several evaluations and published regulatory actions based on those evaluations in the Federal Register. These include notices to recognize Serbia and Nicaragua as negligible risk for Bovine Spongiform Encephalopathy (BSE), and Ecuador as controlled risk for BSE. Additionally, APHIS published the final rule for the evaluation and recognition of compartments for animal disease status, consistent with World Organization for Animal Health international standards. Compartments are established through biosecurity and management practices as opposed to regions which are established by geographical boundaries. The final rule to establish standards for recognition of foreign tuberculosis (TB) and brucellosis status were also published.

APHIS conducted a site visit to Mexico in FY 2020 to confirm their surveillance, prevention, and control measures are sufficient to minimize the likelihood of introducing TB into the United States. Due to restrictions on international travel as a result of COVID-19, several site visits to other countries were postponed. Five additional countries were declared affected with African Swine Fever (ASF) due to continuing spread and new outbreaks, as of September 30, 2020. APHIS is working closely with other Federal and State agencies, the swine industry, and producers to take the necessary actions to protect our nation's pigs and keep ASF out of the United States. APHIS and its partners are also conducting exercises and updating response plans as necessary to bolster preparedness efforts as we continue to monitor the global status of ASF. In addition, Malaysia and Thailand were declared affected with African Horse Sickness, a vector-borne, viral disease traditionally prevalent in sub-Saharan Africa and parts of the Middle East.

APHIS continues to ensure that import regulations are effective and science-based, and to work with U.S. businesses and importers to facilitate safe trade. For example, in FY 2020, the Agency implemented improved traceability of imported animals by implementing the use of identification scanners at the Mexican border that will upload ear tag information

into our traceability databases. Additionally, APHIS issued 18,267 import permits for live animals, animal products, organisms, and vectors in FY 2020. These include new permits, renewals, and amendments.

APHIS worked in collaboration with Canada to harmonize the trade protocols for bulk processed animal proteins, and unprocessed pet food and pet treats. This resulted in removal of requirements for import permits for raw pet food/treats and streamlined the required health certifications.

Exports

To open, re-open, and maintain U.S. access to worldwide export markets, APHIS negotiates science-based conditions with trading partners for various commodities that protect their country while also facilitating trade. In FY 2020, APHIS negotiated or re-negotiated 84 export protocols for animal products (10 new markets, 28 re-opened markets, 28 expanded markets, and 18 retained markets). This includes retaining market access for poultry exports in numerous countries that imposed restrictions due to outbreaks of avian influenza and Newcastle disease.

APHIS negotiated 209 export protocols for live animals (156 new or reopened markets, 13 retained markets, and 40 expanded markets). To complete export requests, APHIS conducted voluntary inspections of 882 U.S. manufacturing facilities to maintain, expand, or open export markets in many countries. APHIS also assisted export markets by participating in industry stakeholder meetings on obtaining new market access, provided technical support to the Office of the U.S. Trade Representative for World Trade Organization (WTO) cases, coordinated or supported audits with trade partners with whom we have requested new market access, and engaged in bilateral trade meetings with 11 countries. In addition, APHIS developed information packages and questionnaire responses from various countries to maintain, expand, or open export markets as well as to release held shipments.

APHIS endorses export certificates for live animals and inedible animal-origin products, documenting the animal health status and facilitating export to all markets. In FY 2020, APHIS endorsed more than 85,048 export health certificates for animal products, livestock, poultry, germplasm, and pets.

APHIS continued to increase the number of animal health export certificates issued electronically this year by expanding the system capabilities for APHIS' online Veterinary Export Health Certification System (VEHCS). VEHCS capabilities include digital signature capabilities, multiple user roles, a certificate upload feature, certificate re-issuance, inclusion of supporting documents and payment information, and is working to expand the number of countries and commodities for which electronic certification is available. This year, APHIS issued a notice to the WTO indicating our acceptance of USDA Accredited Veterinarian signature on the issuance of all certificates submitted to APHIS for endorsement, creating the opportunity to use electronic certification at least partially for all live animal exports. Additionally, Canada now accepts APHIS digital signature for all live animal commodities and Mexico accepts APHIS digital signature for all horses, cattle, and poultry genetics. As a result of the WTO Notification and more trading partners accepting electronically issued and/or digitally endorsed export health certificates in FY 2020, APHIS more than doubled the number of export health certificates issued within VEHCS.

Lacey Act

In FY 2020, APHIS received approximately 900,000 Lacey Act declarations electronically or on paper (the vast majority were received electronically). With the electronic declaration collection process fully operational, APHIS continued to perform enhanced compliance monitoring and enforcement of the Lacey Act requirements in FY 2020. In FY 2020, APHIS issued letters of noncompliance for importers whose declarations contain errors. This non-punitive outreach tool informs filers that there are likely errors in their declaration, that corrections should be made in future filings, that enforcement action could be taken on future filings, and provides contact information for questions or concerns. APHIS also worked closely with the Department of Homeland Security's Customs and Border Protection's (CBP) Regulatory Audit and Office of Trade to implement compliance surveys for Lacey Act declarations and requirements. Due to COVID-19, surveys for Lacey Act declarations were conducted virtually for the first time in FY 2020. APHIS and its Federal partners (including other USDA agencies, CBP, U.S. Department of Justice, and the U.S. Fish and Wildlife Service) continued to expand and improve Lacey Act compliance programs by developing plans for and conducting documentation reviews of importers, continuing development of wood identification technologies and considering alternatives to seizing and forfeiting shipments due to the time and cost involved.

In FY 2020, APHIS received additional funding under the United States-Canada-Mexico trade agreement to carry out enforcement of the Lacey Act Amendments related to trade in plant and plant products between the United States and Mexico. With this additional funding APHIS' plans to: (1) develop data analysis projects to guide enforcement efforts; (2) continue development of the global wood identification library; and (3) work cooperatively with other Federal agencies such as CBP as well as non-governmental organizations. In addition, APHIS and the U.S. Forest Service established an interagency agreement in FY 2020 to support the several initiatives, including: Development of the Arbor Harbor data aggregation system for Lacey Act compliance monitoring; field collection of timber species coming from and through Mexico for wood identification technologies' reference libraries; build-up of reference databases for species coming from and through Mexico; and development of the capacity for U.S. Government agencies to conduct Stable Isotope Ratio Analyses.

2. Overseas Technical & Trade Operations

Through the Overseas Technical and Trade Operations (OTTO) program, APHIS facilitates markets for U.S. farmers and ranchers to export their products to other countries by resolving concerns over animal and plant health issues that affect trade of agricultural products. APHIS uses its technical expertise to develop science-based agreements with other countries for U.S. exports and international standards for trade. The Agency also collaborates with USDA's Foreign Agricultural Service (FAS), the Office of the U.S. Trade Representative, and other technical agencies to provide a coordinated effort on trade issues that affect U.S. producers. These efforts facilitated the export of U.S. agricultural products, which totaled $135.5 billion in 2019 (Economic Research Service Outlook for U.S. Agricultural Trade, August 2020).

APHIS uses its strong scientific base and team of technical experts located in the United States and abroad to advocate on behalf of U.S. agriculture and address sanitary and phytosanitary (SPS) barriers to trade. These scientists build relationships with counterparts and use scientific principles to make the case for American agricultural exports and explain to foreign officials why U.S. commodities are safe to import. These conversations take place in ongoing discussions, technical bilateral meetings, and multilateral fora. APHIS has scientists, including veterinarians and entomologists, stationed throughout the world in more than 30 countries who collaborate with their foreign counterparts on animal and plant health issues to support U.S. exports and the establishment of science-based international animal and plant health standards that facilitate trade and reduce risk.

Examples of APHIS' FY 2020 successes in creating new market access include: live cattle to Uzbekistan worth an estimated $25 million per year; live cattle to Morocco worth an estimated $10 million per year; California pomegranates to Colombia worth an estimated $150,000 per year; fresh blueberries to the Philippines worth an estimated $500,000 per year; and bovine genetic material to Turkmenistan worth an estimated $5 million per year (values based on industry and APHIS analysis). In FY 2020, Guatemala's Ministry of Agriculture, Livestock, and Food signed a protocol for the import of refrigerated eggs for human consumption from the United States. This agreement was the result of extensive negotiations involving USDA's Agricultural Marketing Service, FAS, and APHIS with Guatemala, a market for U.S. eggs with a potential annual value of more than $2 million.

APHIS also works to expand U.S. producers' access to export markets and to retain markets that are threatened due to changing requirements in other countries or pest and disease outbreaks in the United States. APHIS worked with Turkey to restore access to its market for U.S. feeder cattle worth an estimated $25 million per year and expanded access for U.S. pet food to China, a market with potential to reach an annual value of $300 million. APHIS preserved access to Cuba for U.S. poultry following the detection of a poultry disease in Pennsylvania that is considered non-notifiable by the World Organisation for Animal Health (OIE). Cuba is a major market for U.S. poultry exports, totaling nearly $189 million in 2019 (International Trade Centre database).

APHIS continues efforts to retain markets threatened or lost due to outbreaks of avian health diseases including highly pathogenic avian influenza), low pathogenic avian influenza (LPAI), and virulent Newcastle disease (vND). APHIS completed the response to the vND outbreak and lifted the quarantine on the affected area in California on June 1, 2020 and completed avian influenza responses in several States including South Carolina, North Carolina, and California. Following the declarations of eradication and removing quarantine restrictions, APHIS worked with trading partners to resume U.S. poultry exports. Japan lifted its remaining restriction on the import of live poultry from a 10-kilometer radius zone in California in September 2020. This full re-opening of the market follows an intensive effort by APHIS to address Japan's restrictions based on vND and various detections of LPAI. The European Union and Japan reopened markets to poultry and poultry from South Carolina in August 2020. APHIS' outreach to its counterparts in other

countries on the U.S. surveillance system for avian influenza continues to lessen the impact of individual detections on U.S. poultry trade.

Even for markets that are open to U.S. agricultural products, APHIS must continually address issues to keep trade flowing smoothly. APHIS works with foreign counterparts to clarify or streamline certification requirements, making it easier and less costly for U.S. exporters to move their products overseas. When shipments are delayed at foreign ports, APHIS negotiates the overseas process to get products moving again. APHIS successfully secured the release of 300 shipments worth more than $56 million in FY 2020. These detained shipments included a shipment of high value breeding poultry worth $1 million and 7 shipments worth $8 million held up at ports in the Philippines (based on APHIS analysis of industry and shipper-reported values).

Building relationships in emerging markets often involves field visits, or training of foreign government officials to build their capacity to put in place scientifically sound SPS requirements. In FY 2020, APHIS educated 140 foreign officials about the U.S. regulatory process by hosting them during 26 visits, before international travel was halted due to COVID-19. APHIS also coordinated 55 requests received for subject matter expertise, trainings, and other outreach-related activities. For example, APHIS collaborated with the Inter-American Institute for Cooperation in Agriculture to train 41 government animal health officials on emergency management practices and African swine fever exercises in Guatemala. APHIS also collaborated with the International Plant Protection Convention to host 26 foreign government plant health officials from 26 South African countries for an ePhyto (electronic phytosanitary certificate) training. APHIS postponed or cancelled some courses due to COVID-19 but was able to hold others virtually. APHIS cooperated with CaribVET (a network of veterinary regulatory officials in the Caribbean) to provide a virtual workshop for 64 participants from 20 countries/territories on African swine fever (ASF) emergency preparedness in the Caribbean. Through an interagency agreement with USDA's FAS, APHIS provided two virtual presentations for 54 plant health officials in Cambodia focused on phytosanitary certification processes and pest free area implementation. The U.S. Department of Defense's Defense Threat Reduction Agency provided funding for APHIS to conduct virtual workshops on ASF and foot-and-mouth disease for nearly 700 animal health officials representing South Africa and 28 additional countries. These activities are designed to help other countries increase their regulatory capacity, which over the long term, help prevent the trans-national spread of serious pests and diseases as well as increase other countries' ability to engage in safe agricultural trade.

APHIS emphasizes the use of scientific principles as a basis for international trade decisions to help ensure that the same rules apply to countries around the world and foster a successful trading environment. To achieve this level playing field, APHIS works with international standard-setting bodies such as OIE and the International Plant Protection Convention (IPPC) to encourage other countries to follow this model. APHIS increases U.S. agricultural exports by gaining support for scientific decision-making and following international standards when considering what can be imported into the United States. In FY 2020, APHIS participated in the consultation for the development of for 16 draft phytosanitary standards for the IPPC and 17 draft regional phytosanitary standards for the North American Plant Protection Organization. Examples of the topics covered include measures for determining the pest status of an area and harmonizing diagnostic protocols in North America for seed pests focused on the tomato brown rugose virus. Adoption of the standards is still pending. Likewise in the animal health arena, OIE will consider updates to animal health standards in FY 2021 in areas such as notification of diseases, surveillance, and official control programs for animal diseases.

APHIS continued its comprehensive succession planning efforts, with special emphasis on developing the Foreign Service cadre and establishing an annual overseas rightsizing effort. The recruitment, assessment, and developmental process emphasizes applicants' animal and plant science backgrounds while also increasing new officers' knowledge of all APHIS mission areas, understanding of U.S. embassy protocols, and increasing cooperation with other international partners like USDA's FAS. The training program further develops Foreign Service trainees' diplomatic, cross-cultural, and leadership skills. Through this succession effort, APHIS is augmenting its current overseas Foreign Service cadre, many of whom are eligible for retirement in the next five to ten years. The succession effort helps ensure that APHIS has trained staff to support U.S. exports and overseas animal and plant health programs. As a result of this program, APHIS has deployed ten new Foreign Service personnel over the last several years to Belgium, Brazil, China, Costa Rica, the Dominican Republic, Japan, Peru, Senegal, South Africa, and Thailand. APHIS recently hired an additional six Foreign Service trainee veterinary medical officers for future deployment into the Foreign Service. In addition to the trainee program, APHIS has established a process to evaluate resource allocation overseas, assess which locations are optimal, and determine the necessary staffing required to support the Agency's mission, strengthening APHIS' ability to address SPS and other issues overseas in traditional and emerging markets.

Agricultural trade is essential for the U.S. export market and may be subject to costly disruptions from animal and plant health barriers. APHIS' technical trade, capacity building, and regulatory activities support export opportunities for U.S. producers while providing fruit, vegetables, and animal protein sources to international markets. The Agency will continue to cultivate international trade opportunities for America's animal and plant products while safeguarding U.S. agriculture from pests and diseases.

ANIMAL WELFARE

Current Activities

The Agency ensures the humane care and treatment of certain animals and horses as required by the Animal Welfare Act of 1966 as amended (7 U.S.C. 2131-2159), and the Horse Protection Act (HPA) of 1970 as amended (15 U.S.C. 1821-1831) through inspection, education, and enforcement efforts. Animal welfare activities include inspection of certain establishments that handle animals intended for research, exhibition, wholesale pet trade, or transported in commerce. During these inspections, APHIS reviews the animals, premises, facilities, husbandry practices, programs of veterinary care, records, and animal handling procedures. APHIS also administers the HPA, as amended, which prohibits the showing, sale, auction, exhibition, or transport of sore horses. Program personnel evaluate the performance of industry-licensed inspectors and conduct unannounced inspections at horse shows, exhibitions, sales, and auctions.

Selected Examples of Recent Progress in Animal Welfare:

1. Animal Welfare

APHIS' Animal Welfare Program has the unique Federal role of ensuring the humane care and treatment of animals covered by the Animal Welfare Act (AWA) through inspection, learning opportunities, and enforcement efforts. More than fifty years ago, in 1966, the AWA was signed into law. Since that time, APHIS, acting through the Animal Care Program and its predecessors, has protected millions of regulated animals used in research, exhibition, and the pet trade as well as those transported in commerce. In FY 2020, the program oversaw 8,751 licensees and registrants.

Licensing Activities

The AWA requires all facilities that use animals regulated under the Act to obtain a license or registration with APHIS. Prior to issuing a license, APHIS works closely with potential applicants to ensure they understand the requirements of the AWA regulations and standards and demonstrate compliance with them. The Agency develops customized materials and presentations to focus on specific aspects at each facility, and, by regulation, allows facilities up to three inspections to demonstrate compliance prior to issuing a license. In FY 2020, APHIS conducted 476 pre-licensing inspections, and issued 368 new licenses. The Agency determines initial compliance by conducting unannounced inspections within three months of issuing the license. At the first unannounced inspection, 98 percent of these newly licensed facilities were in substantial compliance, with no critical AWA citations on the inspection report.

For licensed and registered facilities, APHIS inspectors perform primarily unannounced inspections to assess compliance with the AWA. During inspections, Agency officials examine and inspect all areas of animal care and treatment covered under the AWA. The Agency reviews the animals, premises, facilities, husbandry practices, program of veterinary care, records, and animal handling procedures. In FY 2020, APHIS conducted 5,620 inspections and found 97 percent of all facilities to be in substantial compliance with the AWA. Inspection activities were significantly impacted by COVID-19 pandemic. Several regulated species are susceptible to COVID-19 transmission from humans and therefore the Agency took appropriate measures to safeguard employees and animals. To ensure ongoing oversight of facilities, APHIS made more than 18,000 contacts, by phone or other electronic means, between March and August. This process allowed inspectors to review records, provide remote assistance and monitor compliance.

APHIS' compliance support program assists facilities struggling to achieve or sustain compliance with the AWA. The program conducts a root cause analysis of the compliance challenges, works with the licensee to develop an individual plan to address the non-compliances, and provides learning opportunities for facility employees. The Agency also maintains a team of animal welfare specialists to conduct additional visits to regulated facilities with specialized species.

Permitting Activities

In August 2014, APHIS amended the AWA to require that dogs imported into the United States for resale are healthy, vaccinated, and are over six months of age, with limited exceptions. Since November 2014, importers, prior to import, are required to demonstrate proof of age, vaccination, and health of dogs imported for resale. In FY 2020, APHIS issued 2,667 permits covering 9,941 dogs entering the United States. Beginning in FY 2017, APHIS automated the permitting process to allow importers to obtain a permit online. In FY 2020, the Agency was able to significantly improve the processing time of requests – reviewing and responding to permit requests within one week of receipt.

Registered Research Facilities Activities

Of the 8,751 regulated entities, nearly 1,055 are comprised of Research Facilities (RFs) registered under the AWA. APHIS collaborates with The National Institutes of Health (NIH) and the Food and Drug Administration (FDA) to help oversee the welfare of animals used in research. While each agency has distinct authorities and areas of responsibility, we work together to ensure laboratory animals receive the level of care required under Federal regulations. All three agencies require research facilities to have an Institutional Animal Care and Use Committee (IACUC). This oversight body is empowered to conduct facility inspections, investigate complaints of inhumane animal care, and approve or suspend animal research activity. In FY 2020, APHIS continued to partner with NIH, FDA, and other agencies on the Interagency Collaborative Animal Research Education Project, designed to empower IACUC's and their institutions to improve animal welfare and increase compliance with Federal standards while minimizing regulatory burdens.

In addition to conducting unannounced inspections of research facilities, all USDA-registered research facilities and Federal research facilities are required to submit an Annual Report that documents its use of animals for research, testing, teaching, experimentation, and/or surgery. The reports identify the number of animals used or held for research, testing, teaching, experimentation, and/or surgery. In FY 2020, the Agency finalized the electronic reporting system that now allows all facilities to complete their reporting electronically, saving Agency resources while improving the overall customer experience and reducing burden for registered facilities.

Since FY 2016, USDA's Agricultural Research Service (ARS) has voluntarily registered its animal research facilities with APHIS to promote animal welfare and establish the fully functioning IACUC. APHIS has registered 38 ARS research facilities under the AWA. APHIS monitors the health and welfare of animals housed at ARS facilities using our unannounced inspection process. In FY 2020, APHIS conducted 48 inspections at all ARS facility sites. Of those inspected in FY 2020, all but three facilities were found in compliance during the unannounced inspection process.

Enforcement Activities

When APHIS inspectors discover conditions or records that are noncompliant with the regulations, the Agency may establish a deadline for corrective action and increase the frequency of unannounced inspections to determine whether the facility made the necessary modifications. Continued, serious noncompliance may warrant an investigation that can result in sanctions ranging from monetary penalties to suspension or revocation of the facility's license, after notice and an opportunity for a hearing.

In FY 2020, APHIS initiated 30 cases for alleged violations of the AWA, issued 4 pre-litigation settlements resulting in the collection of $115,500 in stipulated penalties, and obtained 24 administrative orders, assessing $509,375 in civil penalties. In one case, working with the Office of the General Counsel, APHIS entered into a Consent Decision and Order relating to multiple violations of the AWA, resulting in a $7,500 civil penalty and a revocation of the respondent's AWA license. In another case, the Agency obtained an administrative order against an individual relating to alleged AWA violations, assessing a $340,000 civil penalty and revoking the respondent's AWA license. APHIS also negotiated several pre-litigation settlement agreements, including one involving a research facility that agreed to the assessment of a $74,000 civil penalty to resolve multiple alleged AWA violations. Beginning in late December 2020, APHIS also began posting copies of enforcement records (such as initial decision and orders, default decisions, consent decisions, and administrative complaints) on its website: https://www.aphis.usda.gov/aphis/ourfocus/animalwelfare/enforcementactions/awa-enforcement-actions.

Regulatory Changes

On May 13, 2020, APHIS announced a final rule amending the AWA licensing requirements for all regulated animals, as well as certain veterinary care standards. The new regulations will promote compliance, reduce licensing fees, and

strengthen safeguards that prevent individuals and businesses with a history of noncompliance from obtaining a license or doing any regulated activities with regulated animals. With this change, licensees must demonstrate compliance with the AWA and show that the animals in their possession are adequately cared for in order to obtain a new license every three years. These changes also strengthen existing regulations to prevent individuals and businesses whose licenses were suspended or revoked from doing any regulated activities for regulated entities and streamline the licensing process and reduce the regulatory burden for licensees who are fully compliant, by reducing licensing fees and simplifying the payment process. The final rule also includes additional updates such as requiring a written program of veterinary care that demonstrates regular visits by an attending veterinarian. In addition, the rule requires that dogs have continuously available potable water unless restricted by an attending veterinarian. The regulatory changes incorporate the feedback from the more than 110,000 comments on the proposed rule.

The 21st Century Cures Act directs several Federal agencies to reduce administrative burden on investigators while maintaining the integrity and credibility of research findings and the protection of research animals. In FY 2020, APHIS published a proposed rule that would remove duplicative and unnecessary information requirements for more than 1,000 AWA registered biomedical facilities, while maintaining scientific integrity and humane animal care. The Agency will review all comments received before November 16, 2020 before issuing a final rule.

The AWA authorizes the regulation of birds not bred for use in research. In fall 2020, APHIS held a series of virtual listening sessions to gather information to assist in the development of regulations that will ensure the humane care and treatment of birds not bred for use in research, consistent with the AWA. The Agency will consider public input from stakeholders before developing a proposed rule.

1. Horse Protection

Since 1970, APHIS has enforced the Horse Protection Act (HPA), a Federal law aimed at ending the cruel and inhumane practice of soring and preventing unfair competition by making it unlawful to show, sell, or transport sore horses. Soring is a practice in which people apply caustic chemicals and/or mechanical devices to a horse's pasterns, which cause the horse to experience pain or distress while walking or moving. This practice is used primarily in training Tennessee Walking Horses, racking horses and related breeds to produce a high stepping gait, which is prized at some competitive horse shows and other events. USDA conducts oversight of the program through evaluation of the performance of industry-licensed inspectors and conducting unannounced inspections at horse shows, exhibitions, sales, and auctions.

Inspection Activities

Under the HPA, the management of horse shows, exhibitions, sales, and auctions are responsible for ensuring that sored horses do not unfairly compete alongside horses that are not sore. If a horse is found to be sore, management has the responsibility of disqualifying them from participating in HPA-covered events. Management may use third-party inspectors that USDA-certified horse industry organizations (HIOs) train and license to inspect horses for compliance with the HPA. These third-party inspectors are known as Designated Qualified Persons (DQPs).

APHIS attends a number of HPA-covered events each year to observe DQP performance and inspect horses for HPA compliance. In FY 2020 there was a significant decrease in the number of horse shows held by the HIOs due to the COVID-19 pandemic. However, APHIS attended 8 horse events, inspected 328 horses and identified 80 instances of suspected noncompliance with the HPA in FY 2020. The DQPs attended 150 HPA events and inspected 37,639 horse entries. In total, DQPs identified 423 HPA noncompliances, and management disqualified 399 entries. Inspections conducted by DQP's decreased in number from the previous fiscal year (over 51,000 horses and detected 990 instances of noncompliance with the HPA in FY 2019).

In FY 2020, the Agency continued to build its relationship with horse show management. This included collaborating with horse industry officials to develop and implement an industry testing protocol for prohibited substances. Previously, testing was completed by Agency officials. The results of instituting industry led testing across the four participating HIOs will increase testing by more than 75 percent from previous years. The Agency expects to see fewer violations for prohibited substances at future shows.

APHIS also hosted joint training with Agency inspectors and DQPs to promote consistency in compliance inspections, increasing direct communication with management to ensure they receive updates on USDA's HPA Disqualification List. APHIS provided full inspection report data, including noncompliant items identified by type, and number of horses

management disqualified from participating in HPA-covered events on the APHIS website: https://www.aphis.usda.gov/aphis/ourfocus/animalwelfare/SA_HPA

Enforcement Activities

In collaboration with the USDA's Office of the General Counsel, APHIS obtained 11 administrative orders assessing $11,800 in civil penalties and disqualifying 10 persons for a total of approximately 7 years from participating in activities regulated under the HPA. In one case involving the entrance of a horse for the purpose of showing the horse at a horse show while the horse was sore, a subject consented to a $1,100 civil penalty and an eight-month disqualification. In another matter concerning similar allegations, a subject consented to a fifteen-month disqualification and a $2,500 civil penalty.

AGENCY MANAGEMENT

Current Activities

The Agency Management programs support the daily operations of APHIS and provide for a safe and secure work environment. These programs provide the information technology, space, and telecommunications infrastructure that gives Agency employees the tools they need to carry out their responsibilities. These programs also oversee and implement precautionary security measures for continued mission operations while ensuring the safety of APHIS people and facilities. In addition, these programs support APHIS' contribution to the U.S. Department of State's continuing implementation of the Capital Security Cost Sharing Program, which provides safe and secure workplaces for all U.S. government employees located overseas.

Selected Examples of Recent Progress in Agency Management:

1. APHIS Information Technology and Infrastructure

APHIS' Information Technology Infrastructure (AITI) is comprised of the hardware, software, cloud computing and cyber-security infrastructure that provides Agency employees with office automation tools, Internet access, and access to mission-critical information technology (IT) programs and administrative applications. APHIS maintains, enhances, and operates the IT infrastructure to support Agency business, conduct research and analysis, carry out administrative processes, record program activities, and deliver program services. AITI objectives and priorities are to continually improve sharing of information across the Agency; improve integrity and accessibility of information, processes, and resources available to assist programs in emergencies; and improve APHIS' cyber-security. APHIS uses AITI funding to maintain annual software license and hardware agreements, cloud services, and for regular life-cycle replacement of enterprise hardware.

The FY 2020 accomplishments listed below support these objectives.

License Renewal

APHIS supported approximately 9,700 users including contractors with license renewals so they can access and legally use the enterprise software in conducting business.

Availability

APHIS supported internal and external stakeholders by providing optimal levels of service. The Agency continued to maintain 99.97 percent availability for its key computing systems in FY 2020. The AITI program also maintained applications availability outside of the normal operational hours, on weekends, and holidays to ensure availability of systems.

Cloud Services

As a requirement of the Federal government's Data Center Optimization Initiative, APHIS has completed migration of all business applications from on-site data centers to the remote cloud servers. As of April 2019, APHIS closed all on-site Agency data centers. To date, APHIS has moved to phase three of its cloud migration plan. This phase of the plan focuses on managing modernization efforts of cloud hosted applications, reducing duplicated business applications within the cloud server.

In response to the COVID-19 pandemic, APHIS employees utilized the ability to telework with little, to no, access to physical office sites. As a result, cloud services have allowed the Agency to continue monitoring and accessing business applications remotely. Additionally, the cloud servicing offered a seamless transition from the usual on-site IT support for APHIS employees.

Cyber-Security

APHIS maintained the current version of National Institute of Standards and Technology and Federal Information Security Management Act testing standards to continue protecting our cyber security infrastructure and reducing vulnerabilities of our systems. APHIS also introduced an Agency led intrusion prevention security system called Checkpoint, further increasing security protection. In FY 2020, this security system has provided technological threat insight, allowing the Agency to detect and block attempts of unauthorized access to APHIS systems at a faster and more accurate rate.

Security Monitoring

The Agency renewed the upgraded security monitoring system that tracks improper use of personally identifiable information data stored in the APHIS infrastructure. This action helps protect confidential information that could potentially identify a specific individual such as citizenship, legal status, gender, race and/or ethnicity. In just one year, the software was able to identify vulnerabilities in APHIS forms that contain bank account, credit card, driver license, passport, social security and telephone numbers as well as date of birth details. Collectively, the numbers exceed over a million incidents of vulnerable information. The Agency's security branch continues to work with the human resources office to mitigate the identified vulnerabilities.

2. Physical Operational Security

APHIS oversees and implements precautionary measures to ensure continued, efficient mission operations, and protection from disruption, degradation, or destruction of its facilities through the Physical and Operational Security (POS) program. The program provides year-round security measures, such as physical security upgrades, alarms, badging and identification systems, guard services, security assessments, safety and risk assessments, workplace violence training, and investigations of both internal and external threats. These measures protect APHIS employees, visitors, and stakeholders from harm, acts of terrorism, and violence. In addition, this program supports part of the USDA's contribution to the U.S. Department of State's continuing implementation of the Capital Security Cost Sharing program, which provides safe and secure workplaces for all government employees located overseas.

The POS program provides numerous security trainings to Agency employees. In FY 2020, the program provided training to more than 1,700 employees, including seminars relating to active shooter response, situational awareness, scenario-based role-playing, illegal drugs, self-defense, terrorism, local crime trends, and travel safety. The program also provided multiple security briefings for employees who work along the U.S.-Mexico border or in foreign countries.

APHIS investigates, educates, assesses, and mitigates internal and external security threats directed at agency facilities, programs, and personnel. For example, APHIS focuses on employee security at or near the Mexican border, specifically, investigating threats and responding to requests for protection for APHIS employees who enforce regulations in this challenging environment. In FY 2020, APHIS investigated 104 external threats to its employees, and 42 workplace violence incidents to ensure employee safety.

The Homeland Security Presidential Directive-12 (HSPD-12) and Interagency Security Committee (ISC) directives create the standard for secure and reliable forms of identification for facility and network access and compliance regarding physical security at Federal facilities. In FY 2020, the POS program completed physical security assessments at 12 facilities and began reassessing 184 previous facility assessments using the updated ISC criteria and USDA reporting format. As a result, the POS program provided security upgrades and repairs to 102 facilities. In addition, the POS program is also responsible for issuing, activating, or updating approximately 5,000 personal identification verification cards to APHIS personnel.

APHIS security specialists investigate threats and respond to requests for protection throughout the country for APHIS veterinarians and inspectors who are enforcing regulations in challenging environments. In support of safety precautions for APHIS employees who enforce the Animal Welfare Act (AWA) and Horse Protection Act (HPA), the POS program

provided security during 10 inspections of regulated AWA entities, 13 HPA events, and provided protection for more than 20 personnel representing Federal agencies at a multi-day AWA hearing.

The program also works with other USDA agencies, the U.S. Department of Justice, U.S. Department of Homeland Security, the U.S. Department of State, and local law enforcement agencies to ensure that the appropriate organization takes the lead, contributes to program costs, and integrates security where employees are co-located overseas. APHIS maintains a presence overseas to facilitate agricultural trade and monitor pest and disease threats. The Security Embassy Construction Counterterrorism Act's Capital Security Cost Sharing Program requires the Agency to help fund the construction of new Embassy compounds based on the number of authorized positions. The POS program worked with the U.S. Department of State to establish a security baseline for APHIS facilities overseas. In FY 2020, APHIS had approximately 300 full-time employees based in countries around the world. This program provides safe and secure diplomatic facilities for the Agency's overseas personnel.

3. Rent and Department of Homeland Security Payments

This account supports costs associated with General Services Administration (GSA) leased facilities the Agency uses to safeguard the health and value of U.S. agriculture and natural resources. The account funds approximately 250 locations associated with GSA leases and Department of Homeland Security (DHS) payments. The funding allows APHIS programs to continue carrying out mission-related activities, including surveillance for animal and plant pests and diseases, pest and disease eradication programs, diagnostic and methods development work at laboratories, animal welfare inspections, and wildlife damage management activities, without diverting fiscal resources from operations to cover these costs.

APHIS continued to take steps to better utilize space within its facilities and offices in FY 2020. In April 2019, the Agency awarded a lease for its Raleigh, North Carolina hub. This project will consolidate two agency leases and one GSA lease under one Raleigh GSA lease. APHIS will take occupancy of the new space in March 2021. This account also funds the other major APHIS hub locations in Riverdale, Maryland; Minneapolis, Minnesota; and Fort Collins, Colorado.

This account also funds the DHS/Federal Protective Service basic security costs. These costs are projected to increase by an additional 52 percent in FY 2021 and another 27 percent in FY 2022.

APHIS will continue efforts to strategically manage its space portfolio in FY 2022.

CONTINGENCY FUND

Selected Examples of Recent Contingency Fund Releases:

1. Grasshoppers and Mormon Crickets

APHIS used $442,167 in Contingency Funds to conduct treatments related to high populations of grasshoppers and Mormon crickets (GMC) in Montana and Wyoming. Although GMC are natural components of the rangeland ecosystem, their populations can reach outbreak levels and cause serious economic losses to U.S. agricultural resources particularly in warm, dry conditions. APHIS cooperates with Federal, State, Tribal, and local agencies, organizations, and institutions to conduct survey and suppression activities in western States to reduce damage that GMC outbreaks cause. Due to warm, dry conditions in spring of FY 2020, GMC populations reached outbreak levels in some areas, resulting in higher treatment needs than in recent years. The program treated 133,314 acres, which protected nearly 251,000 acres for 19 landowners, 1 tribe, and on Federal lands. These treatments protected rangeland forage for livestock, preventing ranchers from having to buy supplemental feed or sell animals at reduced prices.

CONTINGENCY FUND

	Emergency/Activity	Total Available in FY 2020	Total Obligations in FY 2020
1	Grasshopper	$2,819,472	$442,167
	Total	$2,819,472	$442,167

MULTI-AGENCY COORDINATION (MAC) GROUP

Selected Examples of Recent Progress in Multi-Agency Coordination Group:

1. Huanglongbing

Huanglongbing (HLB) is a serious citrus disease that threatens U.S. citrus production valued at $3.398 billion for the 2019-2020 growing season (NASS Citrus Fruit 2020 Summary). HLB is widespread in Florida resulting in higher production costs, lower yields, and lower productive acreage. Additionally, the disease is present in all of Texas' citrus producing areas and residential areas of Los Angeles, Orange, San Bernardino, and Riverside Counties in California. HLB's insect vector, the Asian citrus psyllid (ACP), is widespread in urban areas in southern California, threatening the State's more than $2.3 billion citrus industry (NASS Citrus Fruits 2020 Summary). ACP is also present in Arizona, Alabama, Georgia, Florida, Louisiana, Nevada, South Carolina and Texas. APHIS established the HLB Multi-Agency Coordination (MAC) response framework in December 2013 to help address the citrus industry's immediate and long-term needs in dealing with this devastating disease. In addition to APHIS, the MAC is comprised of representatives from USDA's Agricultural Research Service, National Institute of Food and Agriculture, and Office of Pest Management Policy; the Environmental Protection Agency; State departments of agriculture in Arizona, California, Florida, and Texas; citrus research organizations in California and Texas; and citrus industry organizations in California, Florida, and Texas. Since FY 2014, the HLB MAC group has funded a total of 98 projects carried out by State cooperators, universities, private companies, and Federal agencies. The projects have focused on strategies for vector control, therapies for infected trees, sustainability of new plantings, early detection technologies, best management practices for citrus groves, and support for the development of HLB-resistant citrus varieties.

In FY 2020, the HLB MAC funded 7 new projects. The largest of these projects supports continued implementation of the Citrus Research and Field Trials (CRaFT) project in Florida, which is designed to improve management of citrus in HLB- affected groves. The CRaFT Foundation is in the second year of a five-year effort to field test HLB management practices on 5,000 acres. The FY 2020 effort supports the continued planting of test sites and ongoing testing of combinations of management and therapeutic strategies to determine the best techniques for growing citrus in HLB infested areas. The goal is to provide citrus growers with simple and proven strategies for keeping their groves productive. Additionally, the HLB MAC supported three projects in California focused on improved scouting and data analysis to support early detection of HLB in California, standardizing the use of microbial agents targeting HLB, and developing new treatments for the ACP using alternatives to neonicotinoids (pesticides that may have adverse impacts on honey bees and other pollinators). In Texas, the HLB MAC supported a project focused on enhancing productivity in HLB-affected groves through soil health management strategies.

Over the last several years, HLB MAC funded projects have:

- Field tested two antimicrobial treatments to improve the overall health and quality of infected trees. This work led to a chemical therapy that reduces bacterial stress on infected trees; stabilizes/restores productivity and extends productive life of infected trees; helps new plantings in transitioning to full production; and reduces fruit drop, improves fruit quality, and stabilizes fruit production.
- Developed a harmonized methodology for evaluating breeding materials across growing areas and regions.
- Trained and field tested canines to detect HLB in commercial and residential settings. The canines can also detect ACP adults and nymphs and are used in areas where ACP is known to occur at low incident rates. If the dogs detect ACP, the trees and/or insects can be tested for HLB. Growers in southern California continue to use the canine teams for early detection.

- Developed soil acidification technology that could be used on a broad scale to lower the pH of infected tree roots, helping to improve overall tree health and production.
- Tested the impact of novel planting designs on ACP population pressure and HLB symptoms including variations of raised beds and ground cover and using other technologies developed through HLB MAC projects such as the soil acidification technology mentioned above. These novel designs significantly reduced ACP pressure and HLB positive trees displayed less decline. As a result of this project, more than 18 percent of new groves planted in Texas are using these planting designs to produce healthier trees, better fruit, and reduce water and herbicide use.
- Supported the development of an ACP attract and kill device that has been shown to reduce ACP intensity by over 60 percent.
- Removed nearly 6,000 acres of abandoned groves in Florida through a demonstration project showing that eliminating uncontrolled ACP habitat can help prevent pest and disease spread and prompting State legislation to incentivize further removal of abandoned groves.

Growers are using one out of every three HLB MAC-funded shovel-ready technologies today. APHIS will continue working closely with partners in industry, private research, State departments of agriculture, and other government agencies to support continued development of tools to address HLB.

EMERGENCY ACTIVITIES FUNDED BY TRANSFERS FROM COMMODITY CREDIT CORPORATION

Selected Examples of Recent Progress in Transfers from Commodity Credit Corporation:

1. Bovine Tuberculosis

In FY 2020, APHIS spent $2.8 million in Commodity Credit Corporation funds (CCC) on tuberculosis (TB) eradication activities. In FY 2020, APHIS identified four TB affected herds: two from Michigan's Modified Accredited Free Zone, one from Michigan's Accredited Free Zone, and one from Texas. These four herds were placed under herd management plans. APHIS used CCC funds to conduct test-and-remove protocols and depopulation activities in accordance with each herd's management plan.

The detection of these herds demonstrates the effectiveness of APHIS' surveillance system. To respond to TB detections, APHIS works closely with State animal health officials to quickly identify any cattle that may have come into contact with the infected herds and conduct thorough trace back investigations. In addition, the States work closely with the herd owners involved, as well as the State dairy industry, to ensure the disease is quickly contained, and affected owners can return to normal business practices as soon as possible.

2. Grasshoppers and Mormon Crickets

In FY 2020, APHIS used $184,601 in CCC balances to conduct treatments for grasshoppers and Mormon crickets (GMC) in Idaho. Although GMC are natural components of the rangeland ecosystem, their populations can reach outbreak levels and cause serious economic losses to U.S. agricultural resources particularly in warm, dry conditions. APHIS cooperates with Federal, State, Tribal, and local agencies, organizations, and institutions to conduct survey and suppression activities in western States to reduce damage that GMC outbreaks cause. Due to warm, dry conditions in spring of FY 2020, GMC populations reached outbreak levels in some areas, resulting in higher treatment needs than in recent years. Along with funding from the Field Crops and Rangeland Ecosystem Pests line item, the program used the funding to treat 12,050 acres and protected 29,300 acres on Federal lands in Idaho. These treatments protected rangeland forage for livestock, preventing ranchers from having to buy supplemental feed or sell animals at reduced prices.

3. Virulent Newcastle Disease

In FY 2020, APHIS spent approximately $4.9 million in emergency funds to conclude the Agency's emergency response to an outbreak of virulent Newcastle disease (vND) mainly in California. On June 1, 2020, the Agency certified that it had satisfied the World Organisation for Animal Health (OIE) criteria for eradicating vND, and there are no further infected zones. As a result, the California Department of Food and Agriculture (CDFA) removed the quarantine. This quarantine encompassed Los Angeles, western Riverside, and western San Bernardino Counties, an area where millions

of commercial and backyard poultry live. This action allowed California producers to once again move poultry freely within the State without a CDFA permit.

Between May 17, 2018 and May 31, 2020, USDA confirmed 476 positive premises in California as infected with vND, including 4 commercial premises. These positive premises were found in 6 counties, including 263 in Riverside County, 164 in San Bernardino County, 46 in Los Angeles County, 1 in Ventura County, 1 in Alameda County, and 1 in San Diego County. USDA also confirmed 1 infected premises in Utah County, Utah and 1 infected premises in Coconino County, Arizona, both linked to birds that were moved from the California quarantine area. This outbreak affected approximately 1.2 million birds in the three States.

APHIS responded to this emergency by working with State officials and other Federal agencies according to Federal and State Newcastle disease response plans. These plans included implementing quarantine restrictions on the movement of poultry and poultry products from affected areas, depopulating affected flocks to prevent disease spread, indemnifying producers, monitoring virus elimination procedures on affected premises, and conducting surveillance and testing of birds near infected commercial poultry operations and backyard premises, live bird markets, and other premises with susceptible birds. In addition, State and Federal responders worked with owners and workers at commercial poultry facilities in affected areas to ensure that they were taking proper biosecurity precautions. To minimize trade impacts, APHIS immediately reported each of the detections in poultry to trading partners and to the OIE and held bilateral discussions to encourage acceptance of OIE trade standards. With the latest case having been detected and depopulated in September 2019, APHIS efforts in FY 2020, focused on intensive surveillance and outreach activities in the affected areas to identify and eliminate any remaining cases of disease. The Agency completed surveillance testing goals to allow State officials to release quarantine areas and provide data for APHIS to report to the OIE and assure trading partners that the U.S. is again free of vND. Despite this outbreak, the Agency was able to protect export markets. Most the trade restrictions were limited to the county or regional level and did not have a widespread impact on export markets.

4. Farm Bill

The Agricultural Act of 2014 consolidated two of APHIS' Farm Bill programs under Section 10007: Plant Pest and Disease Management and Disaster Prevention Program (formerly Section 10201 of the Food, Conservation, and Energy Act of 2008) and the National Clean Plant Network (NCPN) (formerly Section 10202 of the Food, Conservation, and Energy Act of 2008). This authority was codified in Section 7721 of the Plant Protection Act (PPA). For FY 2020, PPA 7721 provided $75 million for the consolidated program. These funds are subject to the sequestration of mandatory funds ($4.425 million in FY 2020).

Through the program, APHIS funds projects for early plant pest detection and surveillance, identification and mitigation of plant pests and diseases, and technical assistance in the development and implementation of audit-based certification systems and nursery plant pest risk management systems. Since 2009, USDA has supported more than 4,400 projects and provided nearly $670 million in funding through the Plant Pest and Disease Management and Disaster Prevention Program. Collectively, these projects allow USDA and its partners to quickly detect and rapidly respond to invasive plant pests and diseases. In addition, the NCPN provides reliable sources of pathogen-free planting stock of high-value specialty crops. Since its inception in 2008, the NCPN, through its Cooperative Agreements Program, has provided about $58 million in support of 47 initiatives at 34 clean plant centers or programs and in 20 States and U.S. territories. These initiatives span commodities ranging from fruit trees, grapes, citrus, berries, hops, sweet potato, and roses.

Plant Pest and Disease Management

APHIS and cooperators have identified six major strategies (the first with two sub-goals) to implement Plant Pest and Disease Management efforts: 1a) enhancing plant pest/disease analysis; 1b) enhancing plant pest survey; 2) targeting domestic inspection activities at vulnerable points; 3) enhancing pest identification tools and technology; 4) developing programs to safeguard nursery production; 5) enhancing outreach and education; and 6) enhancing mitigation capabilities. The program funded 357 projects in FY 2020, supporting a variety of Federal, State, academic, Tribal, and private entity stakeholders.

Enhance Plant Pest/Disease Analysis

Under this goal, APHIS supports projects that compile, synthesize, or evaluate data to inform or enhance risk and pathway analysis, surveillance methodology, or resource prioritization. Examples include the development of analytical

models to identify and prioritize exotic pests for survey and response and improving risk modeling and monitoring for invasive fruit pests. In FY 2020, the program supported a project utilizing tangible landscape technology, a novel modeling platform that combines a physical model with a digital model and allows users to forecast complex geospatial models for pest and pathogen spread. The program also continued strategic analysis of developing Huanglongbing (HLB) epidemics in California and Texas. Overall, in FY 2020, the program provided approximately $2 million for 19 projects in this goal area.

Enhance Plant Pest Survey

Under this goal, APHIS supports surveys for multiple, high-risk pests in port environs, across pathways of introduction, and in specialty crop commodities nationally. These surveys protect and help small growers and nursery owners avoid control costs through a more rapid and thorough detection of pests that threaten their operations. One key project is the National Survey Supply Program that oversees timely procurement and delivery of quality survey supplies, such as traps and lures, to APHIS and State cooperators. In FY 2020, the National Survey Supply Program used PPA 7721 funds to distribute over 851,636 different plant pest trap and lure units to 50 States and 4 Territories; and executed approximately 486 different trap and lure procurement orders. The orders consisted of approximately 125 different products to support the various detection and surveys that APHIS and State cooperators conduct. These surveys complement those conducted under the Cooperative Agricultural Pest Survey and have expanded the number and scope of pest survey activities across the United States as well as help demonstrate our country's freedom from certain high-risk pests. In FY 2020, APHIS supported a total of 338 unique pests targeted for survey in all 50 States and one Territory. These included commodity surveys of apple, grape, stone fruit, palm, solanaceous, small fruit and berries, and other orchard crops, as well as surveys for Asian defoliators, exotic woodborers, bark beetles and other forest pests, cyst nematodes, mollusks, and pathway surveys covering multiple agricultural systems. Overall, the program provided approximately $14.3 million for 189 projects in this goal area in FY 2020.

Targeting Domestic Inspection Activities at Vulnerable Points

Under this goal, APHIS supports domestic inspection activities at high risk sites (e.g., warehouses and parcel facilities), inspects regulated articles moving interstate, and uses trained canine detection teams to improve detection capabilities. Developing these cooperative efforts with State agriculture regulatory agencies helps minimize impacts to producers and distributors of agricultural commodities. In FY 2020, the program continued to support canine team efforts in California where 12 teams work at Express Couriers and U.S. Postal Service offices in 10 counties, and in Florida where 4 teams work at Express Couriers in 3 counties and 2 teams are cross trained to detect giant African and Horntail snails. With their keen sense of smell, dogs can detect hidden agricultural products at an accuracy rate higher than 85 percent. The program uses canine teams to enhance capacity for early detection and better response to exotic pests found during surveys; increases liaison between State and Federal cooperators by reviewing, developing, and implementing educational programs; provides additional resources at high-risk areas within the State for inspection; and benefits inspections at parcel service locations to enhance interdiction efforts. Overall, the program provided approximately $6.4 million for five projects in this goal area in FY 2020.

Enhance Pest Identification Tools and Technology

Under this goal, APHIS supports the ongoing development of improvements in pest identification and detection. This includes improved identification capacity and taxonomic understanding of groups of organisms, taxonomic support for surveys targeting high consequence pests, and the development of pest detection technology. Through this goal area, the program supported a project to validate molecular identification tools that can identify multiple insects at once; continued supporting a variety of tools to enhance identification of exotic fruit fly species, including species commonly intercepted in trade and a group of fruit flies that includes more than 70 individual species; and supported development of tools for the identification and detection of exotic Tortricidae moths that threaten U.S. agriculture, among others. The program provided approximately $6.25 million on 81 projects in support of this goal in FY 2020.

Developing Programs to Safeguard Nursery Production

Under this goal, APHIS supports projects to develop science-based best management practices and risk mitigation practices to exclude, contain, and control regulated pests from the nursery production chain, and developing and harmonizing audit-based nursery certification programs. These activities help small producers and distributors establish best management practices for mitigating pest risks, reducing operational costs, and enhancing the value of nursery stock

they produce. Examples of projects funded in FY 2020 include continued support for the National Ornamentals Research Site at Dominican University of California, Tribal nursery certification program development, and an update of New York's apple tree nursery stock certification program to harmonize the State's requirements with surrounding States' certification programs. The program also continued to support the Systems Approach to Nursery Certification (SANC) pilot program. SANC brings together the National Plant Board and nursery industry groups to promote audit-based programs for nursery stock to reduce the risks of pest spread. The program provided approximately $1.95 million for 20 projects in this goal area in FY 2020.

Enhancing Outreach and Education

Under this goal, APHIS works to engage the public in early detection efforts by strengthening existing volunteer networks. APHIS emphasizes efforts that can lead to behavior changes among the public and the regulated community to prevent the introduction or spread of high-consequence pests into and throughout the United States. FY 2020 projects in this goal area include a nationwide campaign raising awareness of invasive species, such as the PlayCleanGo Campaign to stop the spread of invasive species through recreational activities, a variety of projects in multiple States targeting awareness of forest pest outreach, and the Mississippi Bug Blues outreach and education campaign. Overall, the program provided approximately $3.6 million for 61 projects in this goal area in FY 2020.

Enhance Mitigation Capabilities

Under the goal of enhancing mitigation capabilities, APHIS provides technical assistance prior to, during, and immediately following a plant pest outbreak, develops new mitigation tools and strategies, and increases emergency preparedness through the development of New Pest Response Guidelines and Incident Command System training. Some of these efforts provided continued support for developing new methods or treatments for economically significant pests including spotted lanternfly, khapra beetle, wood boring and bark beetles, and coconut rhinoceros beetle, among others, and supporting the development of potato varieties resistant to the pale cyst nematode. The program also supported rapid response to a variety of pest and disease outbreaks, including eradicating Mexfly outbreaks in Texas and Asian gypsy moth in Washington State; supporting grasshopper treatments in Montana, Wyoming, and Arizona; and supporting the nationwide effort to eliminate Ralstonia from greenhouses. In FY 2020, APHIS and Washington State cooperators used PPA 7721 funds to develop survey methods and implement surveys for the Asian giant hornet, an exotic hornet that poses risks to honeybees and other bee and wasp species. Overall, the program provided approximately $28 million on 146 projects in this goal area in FY 2020.

National Clean Plant Network (NCPN)

In FY 2020, APHIS used $7.5 million in PPA 7721 funds to provide NCPN support to qualified clean plant centers through a cooperative agreements program. The application process allowed stakeholders to offer input into projects proposed for funding through pre-proposals, which are designed to help clean plant centers prioritize and harmonize their resourcing requests. As a result, APHIS entered into 29 cooperative agreements with clean plant centers and related entities in 15 States and one U.S. territory (Puerto Rico). The clean plant centers that receive NCPN funding are using the resources to: 1) diagnose for harmful pathogens that cause disease in covered specialty crops; 2) apply therapeutic measures to eliminate these pathogens; 3) establish plantings of clean plant 'starter' material and make this material available to nurseries and growers; 4) work with nurseries and growers in education/outreach programs to communicate the economic value to industry of using clean nursery stock; 5) advance quality management initiatives to further strengthen confidence in program processes and products, and 6) engage in the process of establishing and governing a network of collaborative clean plant centers. These activities will result in clean plant centers providing additional sources of healthy planting stock for fruit trees, grapes, citrus, berries, and hops -- as well as sweet potato and roses. This healthy planting stock will be available to nurseries, growers, breeders, and others, ensuring that they have access to clean plant material necessary to sustain their businesses, maintain productivity, and improve the quality of their products.

Since the program's inception, the clean plant centers on an annual basis have helped the following commodities:

Fruit Trees - Maintain approximately 2,250 clean fruit tree accessions in foundations (blocks of pathogen-tested plant materials) that have delivered more than 525,000 cuttings, scions, and plantlets as well as more than 1.8 million buds to nurseries and growers.

Grapes – Maintain approximately 1,000 selections of clean grapevine accessions in foundations and distribute more than 725,000 clean grape-wood cuttings, buds, plants, or special seed to industry.

Berries – Diagnose and clean approximately 75 new berry accessions annually and maintain clean plant foundations that provide mother plants to industry that have produced nearly 35 million clean berry plants annually.

Citrus – Maintain approximately 1,000 clean citrus tree accessions in foundations and deliver 'starter material' to industry that has resulted in more than 60 million clean citrus trees over the past 10 years.

Hops – Maintain more than 75 clean hop selections in foundations that are used to accommodate about 30 percent of the world's need for clean hops. The program has distributed more than 5,000 clean propagative units to industry; each unit can be expanded rapidly to provide thousands of plants for planting annually.

Sweet potato – Add approximately 40 new sweet potato accessions annually to existing foundations, with 170 accessions currently available for use by industry in addition to numerous heirlooms and introductions maintained. Clean plant centers delivered more than 215, 000 clean plants to industry in FY 2020.

Roses – Continue advanced testing of approximately 750 rose selections currently maintained in foundations and associated collections. This material is then available to industry for further propagation.

Animal Disease Prevention and Management Program

The Animal Disease Prevention and Management Program (ADPMP) was authorized by Section 12101 of the Agriculture Improvement Act of 2018 (P.L. 115-334). It created two new animal health programs - the National Animal Disease Preparedness and Response Program (NADPRP) and the National Animal Vaccine and Veterinary Countermeasures Bank (NAVVCB) - and expanded on the existing National Animal Health Laboratory Network (NAHLN). The bill provided $30 million in mandatory funding per year beginning in FY 2019, with the first four years of funding ($120 million) provided upfront as no-year funding. APHIS has the discretion to distribute the total funding among the three programs, provided that the NADPRP receive at least $5 million per year through FY 2022, and $18 million per year beginning in FY 2023. The no-year funding provision provides APHIS with the flexibility to allocate funding in the most effective manner to safeguard American agriculture. For the NAVVCB, Congress directed the Agency to prioritize the acquisition of sufficient quantities of foot-and-mouth disease, (FMD) vaccine. The funds provided to the NAHLN in the Farm Bill are in addition to approximately $15 million per year in appropriated funds that go to USDA to support the NAHLN. Of this total, APHIS receives approximately $12 million and USDA's National Institute of Food and Agriculture receives approximately $3 million.

The NADPRP addresses the increasing risk of the introduction and spread within the United States of animal pests and diseases affecting the economic interests of the U.S. livestock and related industries, including the maintenance and expansion of export markets. APHIS offers annual competitive funding opportunities and enters into cooperative agreements with States, universities, industry groups, and other entities to carry out high-value projects to improve animal disease emergency preparedness efforts. The NAVVCB will significantly increase the supply of vaccine and other countermeasures to serve as an insurance policy in the extremely rare chance of an outbreak of high consequence foreign animal diseases like FMD. While APHIS is confident in its capability to continue excluding FMD from the country, vaccines are an important part of the Agency's strategy to eradicate any incursions, and they can be a critical tool to allow America's farmers and ranchers to get back on their feet more quickly. Through the Bank, APHIS will leverage the infrastructure developed for the management, storage, and distribution of the National Veterinary Stockpile; and prioritize the maintenance of sufficient quantities of FMD vaccine. The NAHLN is a nationally coordinated network and partnership of Federal, State, and university-associated animal health laboratories that provide animal health diagnostic testing to detect endemic and high-consequence pathogens in the nation's food animals. This effort is vital to protecting animal health, public health, and the nation's food supply. The NAHLN laboratories serve as an early warning system for detecting animal diseases and pathogens, and they provide surge capacity during an outbreak and recovery response. Rapidly diagnosing and detecting the extent of an outbreak will play a key role in limiting the impact on producers. These three programs will help APHIS protect and improve livestock health, helping farmers and ranchers provide high-quality agricultural products to domestic and consumers; and protect and preserve export markets, allowing the United States to send high quality agricultural products throughout the world.

In FY 2020, the Agency formed an NADPRP Consultation Board that includes State, academic, industry, and tribal representatives. APHIS consults with this Board on funding priorities, spending plans, and program improvements. In February 2020, APHIS awarded $5.2 million through the NADPRP to support disease prevention and emergency response training and exercise projects to advance the capabilities, capacity, and readiness of the nation's animal agriculture sector responders. These projects are led by State animal health authorities and land-grant universities in 25 States. They address training and exercise priorities in all major livestock industries nationwide, with a third of the projects impacting national or regional levels. In July 2020, APHIS began seeking proposals for projects to increase practical livestock biosecurity measures or advance large-scale rapid depopulation and disposal abilities for use during high-consequence animal disease outbreaks. APHIS was reviewing 59 submitted proposals as of October 2020, and intends to award up to $10 million to support projects in these two areas by January 2021. The Agency plans to announce the 2021 NADPRP funding opportunity by July 2021.

In FY 2020, APHIS continued its efforts to strengthen the NAVVCB, with its first priority being to increase the U.S. stockpile of FMD vaccines. Vaccines are a critical tool during an outbreak, but their use will depend on the circumstances of the incursion and require careful coordination with affected animal industries. Vaccination helps control the spread of infection by reducing the amount of virus shed by animals and controlling clinical signs of illness. While an outbreak would temporarily disrupt international markets, vaccination would allow animals to move through domestic production channels. On July 8, 2020, APHIS announced an initial $27.1 million purchase of vaccine for the Bank, which would be used in the event of an FMD outbreak to protect animals and help stop the disease from spreading. This is the first step toward the goal of acquiring 10 to 25 million doses of each of the 10 to 12 highest-risk FMD strains. APHIS awarded a contract to a private company to help supply the vaccine to the Bank. The company will create and maintain a strategic reserve of frozen vaccine antigen concentrate that they can quickly formulate into an FMD vaccine. On August 3, 2020, APHIS announced the availability of a sources sought notice to gather information from diagnostics manufacturers on their ability to supply test kits for FMD, African Swine Fever, and Classical Swine Fever. The manufacturers had until November 3, 2020 to respond to the notice. The Agency will analyze the information gathered through these responses to determine whether it would be possible to include test kits and their components in the NAVVCB. In addition, APHIS will complete a market analysis and develop next steps for acquiring these critical diagnostics. The Agency anticipates the potential need for diagnostic kits and reagents from more than one source to ensure an adequate supply of these products for a sudden surge of diagnostic samples that could result from an infectious disease epidemic. Limited reagent availability during the COVID-19 pandemic highlighted the potential need for a diagnostics stockpile to support a nationwide large-scale FAD outbreak. Understanding options for sourcing these vital test kits and components is important. APHIS wants to maintain a sufficient supply of diagnostic kits and reagents to facilitate disease surveillance and monitoring of animals in the event of a nationally significant infectious disease outbreak.

In January 2020, APHIS announced it will provide $5 million for NAHLN projects to enhance its ability to detect and respond to foreign animal diseases. These projects are being led by NAHLN laboratories in 19 States. They address test method development and validation, improving electronic data transmission, increasing laboratory biosafety and biosecurity, and enhancing emergency preparedness. These efforts will help the Agency bolster NAHLN diagnostic capability. In July 2020, APHIS began seeking additional proposals in these areas and plans to award additional funding up to $5 million by January 2021. APHIS plans to announce the 2021 NAHLN funding opportunity in the third quarter of FY 2021, in alignment with the NADPRP funding opportunity.

Feral Swine Eradication and Control Pilot Program

The Feral Swine Eradication and Control Pilot Program (FSCP) was authorized by Section 2408 of the Agriculture Improvement Act of 2018 (P.L. 115-334). The Farm Bill provided $75 million in mandatory funding for fiscal years 2019 through 2023. This funding is equally divided between the Natural Resources Conservation Service (NRCS) and the Animal and Plant Health Inspection Service (APHIS) to carry out the pilot program.

The objective of FSCP is to pilot collaborative efforts to address the threat that feral swine pose to agriculture, native ecosystems, and human and animal health. Feral swine are an invasive species that damage agricultural crops, degrade natural systems and carry diseases that can be passed on to livestock and humans. Feral swine occur across the United States, but the heaviest concentrations are found in Southeastern portions of the country and stretch as far west as Texas and Oklahoma with high populations also found in California.

Pilot areas for FSCP are identified collaboratively by NRCS and APHIS personnel in consultation with State technical committees. FSCP is delivered within pilot areas through three coordinated components. First, APHIS works directly to

control feral swine populations. Second, NRCS provides funding to partner organizations to provide technical and financial assistance to agricultural producers for on-farm trapping and other means of feral swine control. Partner organizations also provide other services including pre- and post-project damage assessments and other means to assess progress in control efforts. Finally, NRCS provides technical and financial assistance for restoration of damage caused by feral swine after those populations have been controlled.

Delivery of FSCP is prioritized to those States that have the highest and most damaging feral swine populations. While feral swine do have a wide distribution, APHIS has an existing program for controlling the species that has proved effective in addressing emerging populations in conjunction with States. The pilot program builds upon and expands work already underway by APHIS' National Feral Swine Damage Management Program to remove feral swine while reducing damages in areas with high population densities in partnership with local government, the private sector, industry, and academia.

In FY 2019, USDA identified 20 pilot projects in 10 of the highest density States and prepared for project implementation in early FY 2020. States included: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, and Texas. In addition to conducting necessary planning, APHIS purchased equipment required for further project implementation in FY 2020. For example, APHIS purchased five helicopters which are critical to reducing feral swine populations in difficult to reach areas. APHIS also entered into an agreement with Texas A&M University to identify and implement best practices for feral swine removal and implementation of agency pilot projects. In FY 2020, APHIS and NRCS funded an additional 15 projects in 8 States for a total of 35 projects across 12 States (adding Hawaii and Missouri in FY 2020). APHIS will begin reporting accomplishments from these projects in FY 2021.

SUMMARY OF KEY FY 2020 CCC FUNDED EMERGENCY ACTIVITIES

	Emergency/Activity	Total Available in FY 2020	Total Obligations in FY 2020
1	Bovine Tuberculosis	$18,952,888	$2,769,086
2	Grasshopper	25,215	25,215
3	Mormon Cricket	184,798	159,386
4	Virulent Newcastle Disease	17,067,929	4,942,671
5	Farm Bill – Plant Protection Act, Section 7721	70,052,723	70,037,199
6	Farm Bill – Animal Disease Prevention and Management, Section 12101	120,000,000	37,646,267
7	Farm Bill – Feral Swine Eradication and Control Pilot Program, Section 2408	34,508,331	6,627,374
	Total	$260,791,884	$122,207,198

a/ Total Available includes account recoveries, where applicable.

ACCOUNT 2: BUILDINGS AND FACILITIES

APPROPRIATIONS LANGUAGE

The appropriations language follows (new language underscored; deleted matter enclosed in brackets):

For plans, construction, repair, preventive maintenance, environmental support, improvement, extension, alteration, and purchase of fixed equipment or facilities, as authorized by 7 U.S.C. 2250, and acquisition of land as authorized by 7 U.S.C. 2268a, $3,175,000, to remain available until expended.

LEAD-OFF TABULAR STATEMENT

Table APHIS-14. Lead-Off Tabular Statement (In dollars)

Item	Amount
2021 Enacted	$3,175,000
Change in Appropriation	0
Budget Estimate, 2022	3,175,000
Budget Estimate, Current Law 2022	$3,175,000
Change Due to Proposed Legislation	0
Net 2022 Request	3,175,000

PROJECT STATEMENTS

Table APHIS-15. Project Statement – Appropriation (thousands of dollars, FTE)

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	Inc. or Dec.	FTE	2022 Budget	FTE
Discretionary Appropriations:										
Buildings and Facilities	3,175	-	3,175	-	3,175	-	-	-	3,175	-
Subtotal, Appropriated	3,175	-	3,175	-	3,175	-	-	-	3,175	-
Recoveries	2	-	114	-	-	-	-	-	-	-
Bal. Available, SOY	43,574	-	44,836	-	43,938	-	3,703	-	40,235	-
Total Available	46,751	-	48,125	-	47,113	-	3,703	-	43,410	-
Lapsing Balances	-	-	-	-	-	-	-	-	-	-
Bal. Available, EOY	44,836	-	43,938	-	-40,235	-	-675	-	40,910	-
Total Obligations	1,915	-	4,188	-	6,878	-	4,378	-	2,500	-

Table APHIS-16. Project Statement - Obligations (thousands of dollars, FTE)

Item	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	Inc. or Dec.	FTE	2022 Budget	FTE
Discretionary Obligations:										
Buildings and Facilities	1,915	-	4,188	-	6,878	-	4,378	-	2,500	-
Total Obligations	1,915	-	4,188	-	6,878	-	4,378	-	2,500	-
Balances Available, EOY:										
Discretionary										
Buildings and Facilities	2,724	-	3,803	-	100	-	675	-	775	-
GP 743 Fruit Fly Rearing Facility	42,112	-	40,135	-	40,135	-	-	-	40,135	-
Total Bal. Available, EOY	44,836	-	43,938	-	40,235	-	675	-	40,910	-
Total Available	46,751	-	48,125	-	47,113	-	3,703	-	43,410	-
Recoveries	-2	-	-114	-	-	-	-	-	-	-
Bal. Available, SOY	43,574	-	44,836	-	-43,938	-	3,703	-	40,235	-
Total Appropriation	3,175	-	3,175	-	3,175	-	-	-	3,175	-

JUSTIFICATION

Buildings and Facilities ($3,175,000 and 0 staff years available in FY 2021 Appropriation)

The Buildings and Facilities (B&F) program addresses APHIS' facility needs in support of the Agency's mission to protect the health and value of agriculture and natural resources nationwide. The program's goal is to systematically address the Agency's needs for maintaining and repairing existing facilities, as well as constructing new facilities. APHIS' Facility Condition Index (FCI) drives the projects; the FCI is the sum of the costs of needed repairs divided by the replacement value of the facility. APHIS strives to maintain an FCI for facilities assessed of less than 0.10, meaning that the cost to make repairs is less than 10 percent of the estimated replacement value for the facilities.

This program serves a vital role in maintaining APHIS' facilities so that employees can continue to carry out their responsibilities in a safe and efficient manner. The commitment to maintain the condition and functionality of facilities is an ongoing process that demands significant management of capital resources. The program manages the implementation of scheduled facility improvements, safety, construction, and maintenance. Contractors perform inspections and tests to substantiate that the supplies or services furnished under the contract conform to contract requirements. In addition, a design firm validates that the work aligns with approved plans and specifications. APHIS typically identifies on-site certified personnel to perform the contracting services. The Agency's engineering staff attends on-site construction progress meetings, and APHIS collects performance data through contractor reports and on-site verification.

In FY 2020, APHIS awarded 22 design/construction tasks associated with projects at a cost of approximately $2.9 million and completed 4 construction projects. Approximately 50 percent of these projects were major renovations and the remaining were for minor repairs. The program completed construction projects at the Animal/Border Inspection Station in Sweetgrass, Montana; the Plant Inspection Station in San Juan, Puerto Rico; the Pocatello Supply Depot in Pocatello, Idaho; and, the National Wildlife Research Center Field Station in Rock Springs, Wyoming. To ensure the construction modifications are in compliance with requirements for Federally operated facilities, the program performed Facility Condition Reassessments inspections before deeming projects complete. Some of the ongoing projects requiring major renovations include the resurfacing flooring at the Miami Animal Import Center in Miami, Florida; and designing the replacement of a laboratory chiller plant at the National Wildlife Research Center in Fort Collins, Colorado.

The B&F program allows APHIS to centrally coordinate and prioritize these types of projects. Without necessary maintenance and repairs to facilities there could be program delays, environmental impacts, and noncompliance with State and local laws and codes. Many of APHIS' facilities have specialized functions that support various Federal, State, and local government programs, stakeholders, and customers. B&F projects ensure that APHIS' programs can be conducted at safe, secure, sustainable, and high-performing facilities.

Approximately 99 percent of B&F funding supports indefinite delivery, indefinite quantity contracts (e.g., architect and engineering support), and construction contracts. These contracts, which provide indefinite supplies or services during a fixed time period, help streamline the contract process and expedite service delivery. The remaining funds support operating costs.

GEOGRAPHIC BREAKDOWN OF OBLIGATIONS AND FTE

Table APHIS-17. Discretionary Geographic Breakdown of Obligations and FTE (thousands of dollars, FTE)

State/Territory/Country	2019 Actual	FTE	2020 Actual	FTE	2021 Enacted	FTE	2022 Budget	FTE
California	-	-	1,477	-	-	-	-	-
Colorado	100	-	-	-	-	-	-	-
Florida	104	-	59	-	-	-	-	-
Hawaii	-	-	45	-	-	-	-	-
Idaho	1,312	-	-	-	-	-	-	-
Iowa	-	-	-	-	750	-	250	-
Maryland	57	-	96	-	749	-	250	-
Mississippi	50	-	20	-	-	-	-	-
Montana	4	-	-	-	-	-	-	-
New York	-	-	-	-	1,168	-	500	-
Texas	123	-	2,223	-	3,711	-	1,250	-
Utah	8	-	-	-	-	-	-	-
Virginia	84	-	46	-	500	-	250	-
Wisconsin	35	-	35	-	-	-	-	-
Wyoming	7	-	-	-	-	-	-	-
U.S. TERRITORIES:								
Puerto Rico	31	-	-	-	-	-	-	-
INTERNATIONAL REGIONS								
CENTRAL AMERICA:								
Guatemala	-	-	141	-	-	-	-	-
NORTH AMERICA:								
Mexico	-	-	45	-	-	-	-	-
Obligations	1,915	-	4,188	-	6,878	-	2,500	-
Lapsing Balances	-	-	-	-	-	-	-	-
Bal. Available, EOY	44,836	-	43,938	-	40,235	-	40,910	-
Total, Available	46,751	-	48,126	-	47,113	-	43,410	-

CLASSIFICATION BY OBJECTS

Table APHIS-18 Classification by Objects – Discretionary (thousands of dollars)

Item No.	Item	2019 Actual	2020 Actual	2021 Enacted	2022 Budget
	Other Objects:				
25.2	Other services from non-Federal sources	1,800	2,175	5,878	1,500
25.3	Other goods and services from Federal sources	-	1,979	-	-
25.4	Operation and maintenance of facilities	35	35	500	1,000
25.7	Operation and maintenance of equipment	80	-	500	-
	Total, Other Objects	1,915	4,188	6,878	2,500
99.9	Total, new obligations	1,915	4,188	6,878	2,500

STATUS OF PROGRAMS

The Buildings and Facilities (B&F) appropriation funds major, nonrecurring, construction projects in support of program activities, and recurring construction, alterations, and repairs of existing facilities. These projects and activities allow other programs and employees to focus on APHIS' mission of protecting the health and value of agriculture, and natural resources nationwide. The goal of the B&F program is to systematically address the Agency's needs for maintaining and repairing existing facilities, as well as constructing new facilities.

This program serves a vital role in maintaining APHIS' facilities so that employees can carry out their responsibilities safely and efficiently. Maintaining the condition and functionality of these facilities is an ongoing process that demands significant management of capital resources. Many of APHIS' facilities have specialized functions that support various Federal, state, and local government programs, as well as stakeholders and customers. B&F projects ensure that APHIS' programs are conducted at safe, secure, sound, sustainable and high-performance facilities that support the Agency's mission.

APHIS' B&F program maximizes its efficiency through comprehensive construction projects. The Agency spends approximately 99 percent of its funding on indefinite delivery, indefinite quantity, and construction contracts. These contracts, which provide an indefinite quantity of supplies or services during a fixed time period, help streamline the contract process and expedite service delivery. Remaining B&F funds support information technology projects (i.e., Facilities Capital Planning and Management software).

Facilities Condition Assessment

APHIS assigns each facility with a Facility Condition Index (FCI), which is the sum of the costs of needed repairs divided by the replacement value of the facility and uses the FCI scores to determine each year's projects. APHIS strives to maintain an FCI for facilities assessed of less than 0.10, meaning that the cost to make repairs is less than 10 percent of the estimated replacement value for the facilities.

Since FY 2000, APHIS has used a comprehensive Facilities Condition Assessment program to better understand the condition of facilities, strategically maintain them by identifying deficiencies and funding needs, stabilize the facilities repair backlog, predict maintenance needs, and implement financial management and capital asset improvement efforts. Caliber, the consulting firm tasked with assessing APHIS' facilities, has an automated process for assessing the relative condition of assets and facilitating comparisons both within and among facilities. The consulting firm calculates an FCI for each facility by program and Agency. At the end of FY 2020, the FCI for the 47 facilities assessed was 0.13, meaning the cost to correct currently identified and anticipated deficiencies is 13 percent of the estimated replacement value. Of these 47 facilities, 21 scored below the desired 0.10.

Summary of Current Projects

The B&F program implements scheduled improvements, and conducts security, construction, and maintenance activities. Contractors perform inspections and tests to substantiate that the supplies or services furnished under the contract conform to contract requirements. In addition, a third-party design firm validates that the work aligns with approved plans and specifications. APHIS typically identifies on-site certified personnel to perform the Contracting Officer's Representative services. The Agency's engineering staff attends construction progress meetings in person, on-site, or virtually and APHIS collects performance data through contractor reports and on-site verification.

As of October 2020, APHIS' B&F appropriation supported nine active projects. In FY 2020, APHIS awarded 22 design/construction tasks associated with projects at a cost of approximately $2.9 million and completed 4 construction projects. Approximately 50 percent of these projects were major renovations and the remaining were for minor repairs. In FY 2020, the program completed construction projects at the Animal/Border Inspection Station in Sweetgrass, MT; the Plant Inspection Station in San Juan, PR; the Pocatello Supply Depot in Pocatello, ID; and, the National Wildlife Research Center Field Station in Rock Springs, WY. To ensure the construction modifications are in compliance with requirements for federally operated facilities, the program performed Facility Condition Reassessments inspections before deeming projects complete. Some of the ongoing projects requiring major renovations include, the resurfacing flooring at the Miami Animal Import Center in Miami, Florida; and designing the replacement of a laboratory chiller plant at the National Wildlife Research Center (NWRC) in Fort Collins, Colorado. Progress on these ongoing major projects in FY 2020 is summarized below:

Supply Depot Modernization Project, Pocatello, Idaho
In FY 2018, the Supply Depot Modernization project began with CTA Architects Engineers, an architectural and engineering firm developing a design. In FY 2019, the construction contract was awarded to EPMH Joint Venture. The primary objective of this project is to address multiple facility deficiencies including updating the heating, ventilation and air conditioning system, upgrading the fire alarm system, and the installation of a shower and restroom. In FY 2020, the program completed this construction project.

Miami Animal Import Center in Miami, Florida
In FY 2019, the Miami Animal Import Center floor resurfacing project began design phase with Merrick & Company, an engineering, architecture, surveying, and geospatial firm. The primary objective of this project is to replace the existing flooring which is obsolete and approaching the end of its life cycle. The construction contract was awarded to LEGO Construction Company in FY 2019, and the floor resurfacing efforts continued in FY 2020. This project is currently estimated to be completed in FY 2021.

NWRC – Chiller Plant Replacement Project, Fort Collins, Colorado
In FY 2018, the Chiller Plant Replacement project began with Coffman Engineers, an architectural and engineering firm developing a study and basis of design. In FY 2019, the design contract was awarded to the same company. The primary objective of this project is to replace the existing chiller plant which is obsolete and approaching the end of its life cycle with one that would offer the most benefits on a long-term basis. By the end FY 2020, the construction contract was awarded and plans to begin construction will occur in FY 2021.

AGENCY-WIDE PERFORMANCE AND EVALUATION

Introduction

American agriculture continually faces threats arising from domestic and foreign pests and diseases that can have negative impacts on agricultural production, commerce, and trade. Identifying these threats early and maintaining response capabilities enables USDA and its stakeholders to anticipate potential outbreaks and act swiftly to prevent or mitigate potential damages. APHIS responds to the continually evolving situation by adjusting its strategies for the early and rapid detection of agricultural pests and diseases through surveillance and monitoring techniques, developing and maintaining diagnostic capabilities, and applying pest mitigations as necessary.

APHIS is a member of the USDA Performance, Evaluation, Evidence Committee and the Enterprise Risk Management Committee. These committees are led by the Office of Budget and Program Analysis (OBPA) and are comprised of individuals from different Mission Areas, and backgrounds throughout USDA, as well as the Chief Data Officer and Statistical Officer. The impact of these different perspectives and expertise allows for improvements regarding buy-in across the Department, augments technical expertise, and creates a greater diversity of perspectives. APHIS' Policy and Program Development unit spearheads its efforts in Strategic Planning, Performance, Evidence and Evaluation, and Enterprise Risk Management, works directly with OBPA and senior leadership, and actively engages with both internal and external stakeholders.

In addition to internal stakeholders discussed above, APHIS has a plethora of external stakeholders that have a vested interest in performance and evaluation findings including:

- Congress, OMB and other agencies;
- State departments of agriculture and natural resources, and regional and local governments;
- Farmers, ranchers, producers/grower groups;
- Associations, boards, cooperatives, and unions;
- Universities and other academic institutions;
- Research and science organizations;
- Non-governmental organizations;
- Food and agricultural industry and commodity groups;
- Environmental groups; and,
- Consumers, advocacy groups, and communities.

Alignment to Strategic Plan

APHIS activities contribute to the success of USDA's mission to provide leadership on agriculture, food, natural resources, rural infrastructure, nutrition, and related issues through fact-based, data-driven, and customer focused decisions. The Agency is responsible for achieving and measuring results within respect to the following Strategic Goal and Objectives:

1) Strategic Goal 2: Maximize the ability of American agricultural producers to prosper by feeding and clothing the world

    a) Objective 2.3: Protect agricultural health by preventing and mitigating the spread of agricultural pests and diseases.

Summary of Performance

A more detailed report of the performance plan can be found at https://www.usda.gov/our-agency/about-usda/performance. The following table summarizes the results for the Departmental Key Performance Indicators (KPIs) for which APHIS is responsible.

Table APHIS-19 KPIs on Animal and Plant Health

Strategic Objective 2.3		FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22
2.3.1. Animal Health--Number of hours it takes to mobilize resources once it is determined that a Federal emergency response is needed to manage an agricultural outbreak	Results	24	24	24	24	24	TBD	TBD
	Target	24	24	24	24	24	24	24
	Status	Met	Met	Met	Met	Met	TBD	TBD

Table APHIS-20 KPIs on Animal and Plant Health

Strategic Objective 2.3		FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22
2.3.2. Plant Health--Percent of high-risk plant pests for which early detection surveys are conducted (annual measure)	Results	92	96	96	96	96	TBD	TBD
	Target	82	85	93	95	96	96	96
	Status	Exceeds	Exceeds	Exceeds	Exceeds	Met	TBD	TBD

Exceeds: greater than target	Met: within 5% of Target	Needs Improvement (NI): within 10% of target	Unmet: greater than 10%

PROGRESS Toward the Achievement of Strategic Objectives in FY 2020

Accomplishments towards objectives are highlighted within the Status of Programs section contained within this chapter. Additional information regarding performance can be located within the Annual Performance Plan and Report submitted in conjunction with our Congressional Justifications. A high-level summary of progress is provided below.

APHIS conducts surveillance for domestic and foreign animal and plant pests and diseases to ensure the rapid detection of agricultural threats and to document the presence or absence of diseases in support of trade. When a serious pest or disease outbreak occurs, the Agency activates its emergency response mechanisms to contain the outbreak. Examples of FY 2020 efforts follow:

- After a 2-year response effort, APHIS and the California Department of Food and Agriculture announced on June 1, 2020 an end to the virulent Newcastle disease (vND) quarantine in Southern California. vND is a contagious and fatal viral disease affecting the respiratory, nervous, and digestive systems of birds and poultry. APHIS also mounted responses in FY 2020 to the detection of avian influenza, both low pathogenic and highly pathogenic, in North and South Carolina—12 cases of low pathogenic avian influenza and one case of highly pathogenic avian influenza. During the multiple disease response efforts, APHIS mobilized resources and logistics support for each instance within 24 hours of determining that a Federal emergency response was needed.

- In FY 2020, APHIS and cooperators conducted a total of 252 commodity- and taxon-based surveys in 50 States and 3 territories through early detection surveys for plant pests and diseases. APHIS and State cooperators conducted surveys for more than 96 percent of the high-risk plant pests and diseases identified as targets for FY 2020, with the goal of ensuring that newly arrived pests and diseases would be detected before they have a chance to spread. The program was able to meet the goal in that all new detections were localized at the time of their detection in FY 2020.

Expected Progress at the 2022 Proposed Resource Level

At the requested budget levels, APHIS will be able to meet its projected performance target outlined in the table above.

In FY 2021, APHIS will mitigate challenges presented in FY 2020 by:

- Upgrading equipment used to depopulate poultry flocks affected by animal diseases and working with State cooperators to extend cooperative agreements for surveys that were delayed due to COVID-19.

Funding at the proposed levels will allow APHIS to:

- Continue to maintain and deploy countermeasures against the most damaging animal diseases within 24 hours and exercise emergency response capabilities with State territories and Tribal partners. The Agency will schedule tabletop exercises and trainings in the deployment of resources and response preparedness, ensuring that the agency and its partners are prepared to respond quickly and effectively to animal health events.
- Conduct surveys in 50 States and 3 Territories for at least 96 percent of high-risk plant pests identified as having pathways into the United States. APHIS will continue to evaluate additional exotic pests and develop pest lists, datasheets, and manuals in support of the FY 2022 National Pest Surveillance Guidelines that States use to plan surveys for FY 2022.