

**Aquaculture/Aquatic Animal Health Program  
Business Plan  
Fiscal Years 2017 to 2019  
Animal and Plant Health Inspection Service  
Veterinary Services**

## **I. Program Goals**

The APHIS Veterinary Services Aquaculture/Aquatic Animal Health Program provides guidance, support, and standards for aquaculture and aquatic animals. We also partner with commercial aquaculture industries, other Federal agencies, and States to protect and certify the health of farm-raised aquatic animals, facilitate trade, and safeguard all the nation's aquatic animal populations and resources.

The broad goals of the Aquaculture/Aquatic Animal Health Program are to 1) protect and promote the health of U.S. farm raised aquatic animals (including but not limited to finfish, mollusks, and crustaceans, both freshwater and saltwater), and 2) support U.S. aquaculture to facilitate and leverage domestic and international trade.

**Operational goals to support broader goals in the next three fiscal years** (click link to go to program objectives for each goal):

1. [Collaborate with our federal partners to advance the National Aquatic Animal Health Plan \(NAAHP\).](#)
2. [Advance Commercial Aquaculture Health Program Standards \(CAHPS\) with engagement of VS, industry and state and federal partners.](#)
3. [Implement components of Comprehensive and Integrated Surveillance \(CIS\) for commercial aquaculture to affirm US' commitment to providing its producers with the best science in determining and monitoring pathogen status.](#)
4. [Prepare for and respond to nationally significant endemic disease, foreign animal disease \(FAD\), and emerging disease in aquaculture.](#)
5. [Support the productivity and viability of the aquaculture industry sectors through outreach and education.](#)

## **II. Program Funding Source(s)**

The Aquaculture/Aquatic Animal Health Program is funded through the Aquatic Animal Health (AAH) line item. Total FY 2016 AAH appropriated funding was \$2.23 million. Total FY 2017 AAH appropriated funding is not known at this time as we are operating under a continuing resolution. Other aquaculture/aquatic animal health activities such as

licensing of veterinary biologics are funded in whole or in part through other line items, or via user fees such as trade facilitation and import/export activities.

With the smallest line appropriation for a commodity, the Aquaculture Program recognizes that not all activities proposed in this plan can be achieved given the current AAH line allocation. However, the goals outlined, especially surveillance strategies for finfish, mollusk and crustacean pathogens, and implementation of CAHPS are critical to achieve over-arching program objectives. Therefore increased or alternative funding sources will be considered and explored by the team. Strategic activities that could be accomplished if additional funds become available have been identified below with “*If additional funding becomes available*” or “*as resources permit*”.

### III. Value and Impact of Industry

U.S. commercial aquaculture involves a broad diversity of species (including finfish, amphibians, crustaceans, mollusks, and other invertebrates) and production systems. Worldwide, aquaculture has been identified by the Food and Agriculture Organization of the United Nations (FAO) as the “fastest growing animal food-producing sector,” recently outpacing capture fisheries in its contribution to global seafood supply. Over 600 species are farmed globally in systems that range from subsistence to intensive production, and from freshwater to estuarine or marine. This adaptability, together with aquaculture’s potential for efficient feed conversion and reduced carbon footprints, positions aquaculture as a key component in future solutions to nutrition demands of an expanding human population.

An existing U.S. trade deficit underscores the growth potential for aquaculture in the United States, with over 90 percent of U.S. seafood demand met through imports. However, the economic impact of aquaculture in the United States is already substantive. The National Agricultural Statistics Service (NASS) reported that the value of aquaculture products sold in 2015 in the United States was almost \$1.5 billion. The U.S. Department of Commerce estimates that U.S. domestic aquaculture production has the potential to increase to more than \$3 billion by 2025.

The annual U.S. seafood trade deficit has grown to \$11.2 billion. However, the value of U.S. seafood exports has increased 40 percent in the last decade, indicating room for continued growth in international market share for U.S. products. The ability to provide rapid, reliable information on the health status of U.S. aquaculture operations will enhance the Nation’s ability to capitalize on export opportunities. In addition to international trade, enhanced domestic movements between States can also improve cost efficiencies as States understand, and harmonize requirements for interstate movement.

APHIS’ leadership, engagement, and commitment are critical for the U.S. aquaculture industry to grow within the United States and expand markets worldwide. This leadership and direction not only provides assistance to domestic U.S. aquaculture industries working to prevent and control diseases to maintain aquatic animal health, but also helps

the industries credibly demonstrate and document aquatic animal health to improve marketability of their animals and products. Ultimately, U.S. farm raised aquatic animals provide the U.S. population with a secure high quality food product.

#### IV. Current Aquaculture Program Efforts

##### [Multiagency Collaboration to Administer the National Aquatic Animal Health Plan \(NAAHP\)](#)

The NAAHP is a national non-regulatory roadmap drafted jointly by APHIS, the National Marine Fisheries Service (NMFS) of the National Oceanographic and Atmospheric Administration (NOAA), and the U.S. Fish and Wildlife Service (USFWS) with the goal of protecting the health of all aquatic animal species--both farm raised and wild – in the U.S. The NAAHP gives general guidelines to industry sectors, States, Tribes, Federal agencies, and other stakeholders. The guidelines describe ways to 1) protect health; 2) facilitate safe trade; 3) ensure availability of diagnostic, inspection and certification services; and 4) minimize the impacts of disease on all aquatic animal populations.

##### [Commercial Aquaculture Health Program Standards \(CAHPS\)](#)

*Commercial aquaculture* is defined as the business of farming aquatic animals for sale or trade, with some level of intervention in the rearing or farming process to enhance production, such as regular stocking, feeding, protection from predators, etc. CAHPS is a set of non-regulatory standards, developed in collaboration between aquaculture industry sector leaders and APHIS. The intention is to provide an alternative to formal rulemaking, while implementing elements of the NAAHP critical to commercial aquaculture. By establishing principles that protect, improve, and verify farm raised aquatic animal health; CAHPS promises to improve marketability and facilitate fair, robust trade, both domestically and internationally. This effort aligns with APHIS' national authority for farm raised aquatic animals and health certification for cultured animals and their products.

CAHPS participants must implement each of the five CAHPS principles on production sites: 1) establishment of an engaged aquatic animal health team; 2) onsite risk characterization and management for specific pathogens; 3) pathogen-specific surveillance; 4) disease investigation and reporting; and 5) incident response and recovery. Methods of implementation of each of the principles must be documented in a CAHPS-dedicated, site-specific health plan for each farm site.

##### [Comprehensive and Integrated Surveillance: Commercial Aquaculture Plan \(CIS-CAP\)](#)

The goal of CIS-CAP is to improve surveillance in disease detection and health verification for commercial aquaculture in the United States. CIS-CAP provides a robust data-based framework for surveillance intended to meet the objectives of the enormous variety of aquaculture producers.

Designed as a voluntary corollary to CAHPS and aligned with CAHPS' principles, CIS-CAP aims to leverage the power of site-specific health monitoring plans to improve

aquatic animal pathogen surveillance and using surveillance data to create zones where freedom from specific pathogens is established. This will be done by actively partnering onsite with stakeholders to identify and advance the most efficient strategies in pathogen testing, data collection, and analysis for aquaculture.

### Emergency Preparedness, Response and Recovery

Natural disasters, intransigent endemic diseases, outbreaks of foreign animal diseases (FADs), and emerging diseases may all have devastating effects on commercial aquaculture operations, as well as the potential to impact natural resources. Emergency preparedness and response planning is imperative to protect public and animal health, the food supply, national and local economies, the environment, and private enterprise. To safeguard the U.S. aquaculture industry sectors, VS collaborates with local, State, Tribal, and Federal government agencies to develop emergency plans relevant to aquaculture production scenarios, and to coordinate quick response to and rapid recovery from disease outbreaks of concern to secure animal health and minimize disruption to animal production, movement, and trade.

Aquaculture/aquatic animal health emergency planning, response and recovery efforts include these goals:

- Develop case definitions for significant pathogens of concern;
- Develop emergency response plans and contacts;
- Detect and control/contain or eradicate significant diseases/pathogens as quickly as possible;
- Provide science and risk-based approaches to restore continuity of business quickly.

### Laboratory Diagnostics and Support

The mission of NVSL is to ensure timely and accurate laboratory support through a nationwide animal health diagnostic system and to serve as the national reference laboratory for the U.S. aquaculture industry. NVSL accomplishes this mission through:

- Providing diagnostic services, reagents, and training in its facilities (i.e., diagnostic virology laboratory [DVL])
- Responding to animal health emergencies through material supplies, and advisory and logistic support
- Managing the National Animal Health Laboratory Network (NAHLN)
- Serving as an international reference laboratory

Specifically for aquaculture and aquatic animal health, the NVSL's DVL serves as the national reference laboratory for many aquatic animal viral pathogens, particularly those listed by the World Organization for Animal Health (OIE). DVL leads the process of approval for laboratories to perform diagnostic assays for export inspection requirements and pathogen surveillance. DVL also develops and administers proficiency testing and oversight for export laboratories and NAHLN laboratories.

### Outreach, Support and Special Projects for Commercial Aquaculture

The VS Aquaculture Program is committed to enhancing the growth of cooperative networks of aquaculture/aquatic animal health professionals and producers that can work together in disease investigation, response, and control activities. Collaboration between State Animal Health Officials, accredited veterinarians, and producers to address needs for the continued development and expansion of U.S. aquaculture is essential. Activities focus on the development of internal and outreach training materials, such as aquatic animal modules for the National Veterinary Accreditation Program; industry census, such as the proposed Aquaculture 2020 survey; training events, such as the first Fish Foreign Animal Disease and Investigation course; and special projects to address the challenges faced by U.S. commercial aquaculture.

### National Veterinary Accreditation Program (NVAP)

Through the National Veterinary Accreditation Program (NVAP), VS provides free online modules to help accredited veterinarians maintain a current understanding of APHIS activities and regulatory processes, including health certification and recognition of foreign and emerging animal diseases. The Aquaculture Program currently has four aquatic animal NVAP modules, and shares responsibility for updating those, creating new modules, and adapting modules for mobile devices.

### National Animal Health Monitoring System (NAHMS)

NAHMS conducts studies on the health and health management of domestic livestock, including fish, historically catfish only (the last NAHMS catfish project was released in FY 2010). NAHMS is currently planning Aquaculture 2020, a survey that will include a general needs approach covering a variety of aquaculture species, fish, crustaceans and mollusks, with the goal of providing new baseline information on aquatic animal health topics affecting the industry.

## **V. APHIS Multi-Unit Approach for U.S. Aquaculture**

The VS Aquaculture Program has developed an exceptionally collaborative team approach that involves multiple units maintaining open communication and support. These VS units include Surveillance, Preparedness, and Response Services (SPRS); National Import and Export Services (NIES); and Science, Technology, and Analysis Services (STAS).

SPRS: Leads the Program and coordinates policy and services, with a focus on disease prevention and response efforts.

NIES: Mitigates the introduction of foreign animal diseases by establishing import health requirements, and facilitates trade by maintaining and opening global export markets. NIES is working toward the implementation of electronic certificate endorsement, has completed several related pilot projects, and is expanding efforts to include other countries and commodities.

**STAS:**

National Veterinary Services Laboratories (NVSL): Provides confirmatory diagnostics for program and emerging diseases, provides diagnostic reagents, coordinates proficiency test panels for exporting and NAHLN laboratories, and provides laboratory training. The NVSL also maintains an aquaculture wet lab to support reagent development, vaccine studies, research opportunities for USDA and other researchers, and training.

Center for Epidemiology and Animal Health (CEAH): Integrates current epidemiological expertise with aquaculture-specific needs.

Center for Veterinary Biologics (CVB): Focuses on maintaining safety, security and efficacy in biologics used in aquatic animals.

**VI. Program Accomplishments in 2016**

- Concluded infectious salmon anemia (ISA) surveillance in the Pacific Northwest and prepared manuscript for peer-reviewed journal.
- Initiated NAHMS Aquaculture 2020 pre-assessment survey.
- Provided \$15,000 in an interagency agreement to the U.S. Geological Survey for work on emerging aquatic animal diseases.
- Provided \$35,000 in cooperative agreement support for CAHPS pilot projects.
- Assisted CEAH with the conclusion of the bait and sportfish survey and helped initiate the trout and salmon survey. These surveys are designed with collaborators to determine impact of regulations on aquaculture sectors and determine the impact of uniform aquaculture health standards.
- Conducted extensive internal and external outreach.
- Facilitated productive communication and dialogue at the Aquaculture Sector meeting with the Office of APHIS Administrator Kevin Shea.
- Drafted ISA case definition and initiated emergency response planning.

**VII. FY 2017 - 2019 Goals to align with APHIS, Aquaculture Program, and Stakeholder Concerns.**

**Goal 1.** Collaborate with our partners to advance the National Aquatic Animal Health Plan ([NAAHP](#))

**FY 2017 Priority Activities**

<b>Objective</b>	<b>What this Means</b>	<b>Priority Program Focus</b>
<b>1.1 Maintain and improve relationships with federal NAAHP partners.</b>	Aquatic animal health leaders from each agency maintain open communication and transparency with each other.	1.1.1. Maintain monthly calls with NAAHP partners (USFWS and NOAA NMFS) to discuss high priority aquaculture and aquatic animal health issues, agency activities relevant to the NAAHP. 1.1.2. Identify implementation activities for the NAAHP.
<b>1.2 Maintain and improve relationships with other federal partners, state and local officials, academic institutions, and aquatic animal producers to engage in the NAAHP for farmed and wild aquatic animals.</b>	Aquaculture Program needs to provide outreach and updated information on activities/status of the NAAHP to various stakeholder groups.	1.2.1. Improve communication and outreach (e.g., website) on the status of the NAAHP.
<b>1.3 Collaborate with NAAHP federal partners to review the October 2008 NAAHP document.</b>	Every 5 years the NAAHP is to be reviewed by the federal partners. Since 2008 the NAAHP has not been thoroughly reviewed.	1.3.1. Remove the outdated reportable animal pathogens and program animal pathogens from the NAAHP. Replace with current OIE listed pathogens and reference emerging disease framework.
<b>1.4 Identify additional industry relevant pathogens to include in NAHLN testing capabilities through outreach activities.</b>	The Aquaculture Program needs to work with NAAHP partners to fulfill the laboratory component of the NAAHP.	1.4.1. Discuss ideas for new testing capabilities with NAAHP partners with the goal of expanding the aquatic animal pathogen testing at NAHLN labs

## APHIS VS AQUACULTURE BUSINESS PLAN FY 2017 – FY 2019

### FY 2018 – 2019 Activities

Objective	What this Means	Priority Program Focus
<b>1.5 Prepare for next 5 year update and signing of the NAAHP MOU.</b>	2015 was the last time all three agencies signed the MOU for commitment to the NAHHP. Aquaculture Program needs to be prepared for next round of revisions for the NAAHP MOU.	1.5.1. Review current MOU and propose changes to Director.  1.5.2. Review approved changes with NAAHP partners.

### Goal 2: Implement Commercial Aquaculture Health Program Standards ([CAHPS](#))

#### FY 2017 Priority Activities

Objective	What this Means	Priority Program Focus
<b>2.1 Finalize and get approval for CAHPS document.</b>	A draft document of CAHPS has been reviewed by industry stakeholders and aquaculture program.	2.1.1. Correlate pilot feedback and strengthen CAHPS implementation section within the draft document.  2.1.2. Send final copy to LPA for review and clearance.
<b>2.2 Close-out FY16 CAHPS pilots.</b>	Three CAHPS pilot projects were initiated in FY16. These will be completed by the end of FY17.	2.2.1. Review materials and progress reports for pilot cooperative agreements.  2.2.2. Create outreach material on challenges and successes of CAHPS pilots.  2.2.3. Identify gaps in CAHPS and challenges in application. Create solutions.
<b>2.3 Identify additional CAHPS pilot opportunities.</b>	In order for CAHPS to be successful, pilot projects need to be in states/areas that have support of the state authority for aquaculture.	2.3.1. Develop idea of CAHPS pilot for limited resource aquaculture farmers in western Alabama.



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		2.3.2. Conduct outreach for additional areas where CAHPS may be piloted.
<b>2.4 Identify means to distribute and make CAHPS accessible to users.</b>	Aquaculture program needs to determine the most user-friendly format for stakeholders to implement CAHPS.	<p>2.4.1. Develop checklists or SOPs for participants and reviewers for CAHPS site specific health plans.</p> <p>2.4.2. Identify audiences and outreach opportunities for communicating about CAHPS.</p> <p>2.4.3. <i>(If additional funding becomes available)</i> Create an online forum to create CAHPS site specific health plans.</p> <p>2.4.4. <i>(If additional funding becomes available)</i> Rollout CAHPS.</p>

**FY 2018 – 2019 Activities**

<b>Objective</b>	<b>What this Means</b>	<b>Priority Program Focus</b>
<b>2.5 Establish process to evaluate and update CAHPS documents, based on results from pilot projects, lessons learned, reviewers, or other feedback mechanisms.</b>	For CAHPS to be consistently implemented and evaluated the Aquaculture Program will need a process to review and maintain CAHPS application and participation.	<p>2.5.1. Identify methods and process for review of site specific health plans.</p> <p>2.5.2. Test checklists for applicability. Revise as needed.</p> <p>2.5.3. Evaluate the performance and results of the CAHPS program.</p>
<b>2.6 Close out FY17 CAHPS pilot project.</b>	CAHPS pilot projects initiated in FY17 will be completed by the end of FY18.	2.6.1. Review materials and progress reports for pilot cooperative agreements.

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		2.6.2. Create outreach material on challenges and successes of CAHPS pilots.
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**Goal 3:** Implement components of Comprehensive and Integrated Surveillance (CIS) for commercial aquaculture.

### FY 2017 Priority Activities

Objective	What this Means	Priority Program Focus
<b>3.1 Implement comprehensive integrated surveillance plans for aquatic animals to support Program and VS mission.</b> <i>(If additional funding becomes available)</i>	Model and structure risk based surveillance plans to selected aquaculture sectors, such as mollusks and fish.	3.1.1. Continue partnerships with groups to advise and assist with regional surveillance efforts and decision support.
<b>3.2 Explore and investigate data management options for surveillance-related data.</b>	Currently the aquaculture program is testing SCS for CAHPS participants.	3.2.1. Test utility of SCS for aquaculture activities and CAHPS.  3.2.2. Verify that aquaculture is included in the VS data management effort for comprehensive solutions for surveillance data issues.  3.2.3. Establish messaging between databases of EMRS and NVSL LIMs.
<b>3.3 Continue outreach on surveillance activities.</b>	Integrated and comprehensive surveillance requires partnerships to be formed for consistent data collection and analysis.	3.3.1. Continue to establish partnerships with groups in the aquaculture sectors to advise and assist with regional surveillance efforts and decision support.

### FY 2018 – FY 2019 Priority Activities

Objective	What this Means	Priority Program Focus
<b>3.4 Implement comprehensive integrated</b>	Model and structure risk based surveillance plans to	3.4.1. Continue partnerships with groups to advise and

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<p><b>surveillance plans for aquatic animals to support Program and VS mission.</b> <i>(If additional funding becomes available)</i></p>	<p>selected aquaculture sectors, such as mollusks and fish.</p>	<p>assist with regional surveillance efforts and decision support.</p> <p>3.4.2. Initiate CIS plans for aquaculture sectors. (Sector selection to coordinate with CAHPS pilot project efforts)</p> <p>3.4.3. Cost-benefit evaluation of partnership-based surveillance as a model for other animal commodity groups.</p> <p>3.4.4. Work with NIES to negotiate processes for trading partners to review surveillance plans as needed to support and streamline trade.</p> <p>3.4.5. Implement surveillance plans to support pathogen specific-free zones.</p>
<p><b>3.5 Identify surveillance gaps and challenges for creating establishments, zones, and compartments for various aquaculture sectors.</b></p>	<p>CAHPS incorporates CIS-Aquaculture for surveillance approaches.</p>	<p>3.5.1. Evaluate the efficacy of routine moribund sampling.</p> <p>3.5.2. <i>(If additional funding becomes available.)</i> Execute CIS plans for identified aquaculture sectors.</p>
<p><b>3.6 Continue to explore and investigate data management options for surveillance-related data.</b></p>	<p>Aquaculture needs to continue to identify best data management systems to address program needs.</p>	<p>3.6.1. Continue to verify that aquaculture is included in the VS data management effort for comprehensive solutions for surveillance data issues.</p>
<p><b>3.7 Continue outreach on surveillance activities.</b></p>	<p>Integrated and comprehensive surveillance partnerships need to be formed for consistent data collection and analysis.</p>	<p>3.7.1. Continue to establish partnerships with groups in the aquaculture sectors to advise and assist with regional surveillance efforts and decision support.</p>

**Goal 4:** Prepare for and [respond to domestic diseases, foreign animal diseases \(FAD\), and emerging diseases in aquaculture settings and aquatic animals.](#)

**FY 2017 Priority Activities**

Objective	What this Means	Priority Program Focus
<p><b>4.1 Develop aquatic animal emergency preparedness and response plans in collaboration with stakeholders and, when necessary, trading partners.</b></p>	<p>The Aquaculture Program is transparent with stakeholders and other partners about the detection and response to high consequence pathogens affecting aquatic animals.</p>	<p>4.1.1. Draft case definitions for select OIE listed pathogens and NLRAD monitored pathogens.</p> <p>4.1.2. Initiate development of emergency response plans for aquaculture and aquatic animals with NPIC.</p> <p>4.1.3. When necessary, respond to disease outbreaks.</p>
<p><b>4.2 Contribute aquatic animal expertise to VS’ implementation of the Emerging Animal Disease Preparedness and Response Plan and the U.S. National List of Reportable Animal Diseases (NLRAD) Framework.</b></p>	<p>The Aquaculture Program will work closely with NAHRS, NLRAD, and Emerging Disease Framework initiatives to ensure appropriate listing of aquatic animal pathogens.</p>	<p>4.2.1. Assess current listing of aquatic animal pathogens in NAHRS and NLRAD. Make recommendations for any changes.</p> <p>4.2.2. Provide outreach to stakeholders, internal and external to APHIS, regarding listed aquatic animal pathogens.</p> <p>4.2.3. Provide outreach to stakeholders, internal and external to APHIS, regarding implementing the NLRAD.</p>
<p><b>4.3 Support APHIS field personnel with training for response to aquatic animal disease outbreaks (as resources permit)</b></p>	<p>APHIS field personnel (AHTs, VMOs, FADDs, and Aquaculture Liaisons) require support and training in order to be comfortable and confident when responding to the needs of aquaculture</p>	<p>4.3.1. In partnership with NVSL DVL host a 3 day training on fish foreign diseases.</p>

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	stakeholders and to protect natural resources.	
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### FY 2018 – 2019 Priority Activities

Objective	What this Means	Priority Program Focus
<b>4.4 Develop aquatic animal emergency preparedness and response plans in collaboration with stakeholders and, when necessary, trading partners.</b>	The Aquaculture Program is transparent with stakeholders and other partners about the detection and response to high consequence pathogens affecting aquatic animals.	<p>4.4.1. Continue to draft case definitions for OIE listed pathogens and NLRAD monitored pathogens.</p> <p>4.4.2. Continue development of emergency response plans for aquaculture and aquatic animals with NPIC.</p> <p>4.4.3. When necessary, respond to disease outbreaks.</p>
<b>4.5 Contribute aquatic animal expertise to VS' implementation of the Emerging Animal Disease Preparedness and Response Plan and the U.S. National List of Reportable Animal Diseases (NLRAD) Framework.</b>	The Aquaculture Program will work closely with NLRAD and Emerging Disease Framework initiatives to ensure appropriate listing of aquatic animal pathogens.	<p>4.5.1. Assess current listing of aquatic animal pathogens in NLRAD. Make recommendations for any changes.</p> <p>4.5.2. Conduct outreach to stakeholders, internal and external to APHIS, regarding listed aquatic animal pathogens.</p> <p>4.5.3. Conduct outreach to stakeholders, internal and external to APHIS, regarding implementing the NLRAD.</p>
<b>4.6 Support APHIS field personnel with training for response to aquatic animal disease outbreaks (<i>as resources permit</i>)</b>	APHIS field personnel (AHTs, VMOs, FADDs, and Aquaculture Liaisons) require support and training in order to be comfortable and confident when responding to the needs of aquaculture	4.6.1. In partnership with NVSL DVL, periodically provide a 3 day training on fish foreign diseases.

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	stakeholders and to protect natural resources.	<p>4.6.2. Create refresher training for aquatic animal disease response.</p> <p>4.6.3. Plan for future trainings on aquatic animal FADs.</p>
<b>4.7 Increase stakeholder awareness and engagement in addressing potential threats of foreign and emerging disease and potential disasters that may affect aquatic animal health.</b>	Stakeholder awareness of early detection methods and reporting responsibilities for aquatic animal pathogens is critical for the protection of aquatic animal health.	<p>4.7.1. Identify gaps that put the U.S. aquaculture industry sectors at risk for the introduction of high consequence aquatic animal pathogens.</p> <p>4.7.2. Identifying reporting process and gaps.</p> <p>4.7.3. Partner with stakeholders in developing emergency response plans for aquaculture and aquatic animal.</p>
<b>4.8 Diagnostic laboratory support and proficiency testing.</b>	Consistent, uniform, and reliable diagnostic tests and performance are need to accurately identify aquatic animal pathogens.	<p>4.8.1. Support proficiency testing of NAHLN and labs performing tests for export purposes.</p> <p>4.8.2. Propose additional tests for aquatic animal pathogens to be added to the NAHLN.</p>

**Goal 5:** [Support the productivity and viability of U.S. aquaculture industry sectors.](#)

### FY 2017 Priority Activities

Objective	What this Means	Priority Program Focus
<b>5.1 Conduct education and outreach to provide science-based aquaculture health and disease information to decision makers and stakeholders.</b>	The Aquaculture Program will lead and participate in science-based discussions and educational information on farm raised aquatic animal	5.1.1. Provide aquatic animal health expertise and outreach at meetings and conferences.

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	health with other Federal agencies, States and others.	
<b>5.2 Develop and update a communication plan that identifies key stakeholders, and outlines planned activities for engaging stakeholders in identifying aquaculture sector needs.</b>	The Aquaculture Program strives to be current and transparent with aquaculture stakeholders and allied partners.	<p>5.2.1. Review and update Aquaculture Program public-facing and internal website design and content.</p> <p>5.2.2. Initiate internal SharePoint site enhancements.</p> <p>5.2.3. Maintain and update communication plan for CAHPS.</p> <p>5.2.4. Identify and engage under-represented aquaculture sectors.</p>
<b>5.3 Develop and enhance awareness of economic and health impacts affecting or influencing the viability of the aquaculture industry.</b>	Maintain open, two-way communication with stakeholders on current and emerging health issues impacting aquaculture production and economic success.	<p>5.3.1. Partner with NAHMS to continue developing Aquaculture 2020 survey which will analyze and report on aquatic animal health issues in the United States.</p> <p>5.3.2. Evaluate the economic impact of CAHPS for aquaculture.</p> <p>5.3.3. Continue outreach and listening sessions with aquaculture industry sectors and aquatic animal health experts on emerging issues.</p> <p>5.3.4. Seek funding opportunities for addressing identified concerns or gaps.</p>
<b>5.4 Ensure local VS, state personnel, and accredited veterinarians reach out to aquaculture producers, organizations, and industry</b>	The Aquaculture Program supports APHIS and State field personnel and accredited veterinarians and promotes	<p>5.4.1. Provide presentations to veterinary and veterinary technical colleges.</p> <p>5.4.2. <i>(If additional funding becomes available)</i> Review and update current aquatic</p>

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<p><b>to increase stakeholder education and engagement.</b></p>	<p>their interaction with stakeholders.</p>	<p>animal <a href="#">NVAP</a> modules as needed.</p> <p>5.4.3. <i>(If additional funding becomes available)</i> Draft new NVAP module.</p> <p>5.4.4. <i>(If additional funding becomes available)</i> Develop promotional material for APHIS Aquaculture/aquatic animal health activities.</p>
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**FY 2018 - 2019 Priority Activities**

Objective	What this Means	Priority Program Focus
<p><b>5.5 Conduct education and outreach to provide science-based aquaculture health and disease information to decision makers and stakeholders.</b></p>	<p>The Aquaculture Program will lead and participate in science-based discussions and educational information on farm raised aquatic animal health with other Federal agencies, States and others.</p>	<p>5.5.1. Produce comprehensive reports and situation reports, and serve as coordination center and clearing house for information on aquatic animal high impact disease outbreaks.</p> <p>5.5.2. Provide aquatic animal health expertise and outreach at meetings and conferences.</p>
<p><b>5.6 Develop and update a communication plan that identifies key stakeholders, and outlines planned activities for engaging stakeholders in identifying aquaculture sector needs.</b></p>	<p>The Aquaculture Program strives to be current and transparent with aquaculture stakeholders and allied partners.</p>	<p>5.6.1. Continue to review and update Aquaculture Program public-facing and internal website design and content.</p> <p>5.6.2. Complete internal SharePoint site enhancements and add updates as needed.</p> <p>5.6.3. Maintain and update communication plan for CAHPS.</p>



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		5.6.4. Continue to identify and engage under-represented aquaculture sectors.
<p><b>5.7 Develop and enhance awareness of economic and health impacts affecting or influencing the viability of the aquaculture industry.</b></p>	<p>Maintain open communication with stakeholders on current and emerging health issues impacting aquaculture production and economic success.</p>	<p>5.7.1. Partner with NAHMS to continue developing Aquaculture 2020 survey which will analyze and report on aquatic animal health issues in the United States.</p> <p>5.7.2. Continue outreach and listening sessions with aquaculture industry sectors and aquatic animal health experts on emerging issues.</p> <p>5.7.3. Seek funding opportunities for addressing identified concerns or gaps.</p>
<p><b>5.8 Ensure local VS, state personnel, and accredited veterinarians reach out to aquaculture producers, organizations and industry to increase stakeholder education and engagement.</b></p>	<p>The Aquaculture Program supports APHIS and State field personnel and accredited veterinarians and promotes their interaction with stakeholders.</p>	<p>5.8.1. Provide presentations to veterinary and veterinary technical colleges.</p> <p>5.8.2. Deliver producer trainings on aquatic animal health.</p> <p>5.8.3. <i>(If additional funding becomes available)</i> Draft new NVAP module.</p> <p>5.8.4. <i>(If additional funding becomes available)</i> Develop promotional material for APHIS Aquaculture/aquatic animal health activities.</p>

**VIII. Abbreviations**

AAH	Aquatic Animal Health
APHIS	Animal and Plant Health Inspection Service
CAHPS	Commercial Aquaculture Health Program Standards
CEAH	Center for Epidemiology and Animal Health
CIS	Comprehensive and Integrated Surveillance
CVB	Center for Veterinary Biologics
DNR	Department of Natural Resources
DVL	Diagnostic Virology Laboratory
FAD	Foreign Animal Disease
FY	Fiscal Year
ISA	Infectious Salmon Anemia
LPA	Legislative and Public Affairs
MOU	Memorandum of Understanding
NAAHP	National Aquatic Animal Health Plan
NAHLN	National Animal Health Laboratory Network
NAHMS	National Animal Health Monitoring System
NAHRS	National Animal Health Reporting System
NIES	National Import and Export Services
NLRAD	National List of Reportable Animal Diseases
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NPIC	National Preparedness and Incident Coordination Center
NVAP	National Veterinary Accreditation Program
NVSL	National Veterinary Services Laboratories
OIE	World Organization for Animal Health
PDS	Professional Development Staff
PNW	Pacific Northwest
PSS	Program Support Services
PVS	Performance of Veterinary Services
SCS	Surveillance Collaboration System
SOP	Standard Operating Procedure
SPRS	Surveillance, Preparedness and Response Services
STAS	Science, Technology and Analysis
SVCV	Spring Viremia of Carp Virus
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
VS	Veterinary Services