

Implementing, Auditing & Certifying Veterinary Biosecurity Programs in Aquaculture Operations



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1st International Biosafety and Biocontainment Symposium
Animal Production & Protection: Challenges, Risks, and Best Practices
February 6-9, 2011

Objectives

A brief overview of new approaches to implementing biosecurity programs that are:

- Internationally acceptable, standardized approaches (OIE Code/Manual consistent)
- Can be applied to:
 - *Any* infectious & contagious disease
 - *Any* type of operation (aquaculture & livestock from the farm to nation)

Veterinary Biosecurity

To be effective & meet specific end points –
biosecurity is more than
good hygienic practices, quarantine, etc.



Needs / Endpoints

- Standardized, scientifically sound & justifiable
- Encompass disease prevention, control & eradication
- Meets regulatory requirements (State/National/OIE)
- Promotes business continuity
 - Fits routine production systems
 - Economical, practical, efficient & effective
 - Producer, veterinary & government incentives/rewards (government / industry collaboration & cost-sharing)



Much an outcome of numerous international collaborators over ~10 years

2009 International Aquaculture Biosecurity Conference

Trondheim Norway

www.IABConference.org

OIE Collaborating Centers



**INTERNATIONAL
AQUACULTURE
BIOSECURITY
CONFERENCE**

**Practical Approaches for the
Prevention, Control, and
Eradication of Disease**
August 17-18, 2009
Trondheim, Norway

Held in conjunction
with Aqua Nor 2009, the
international aquaculture venue.



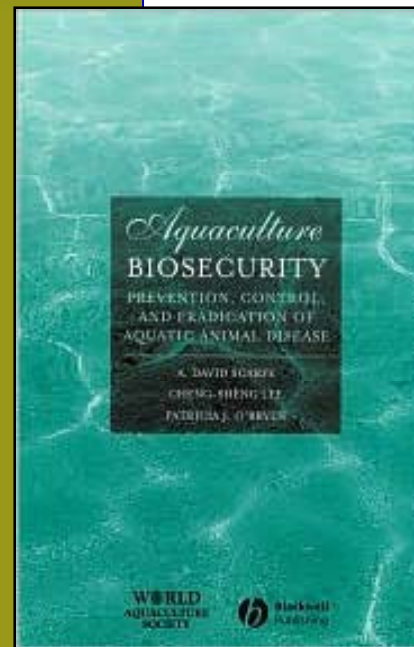
NOVARTIS
ANIMAL HEALTH

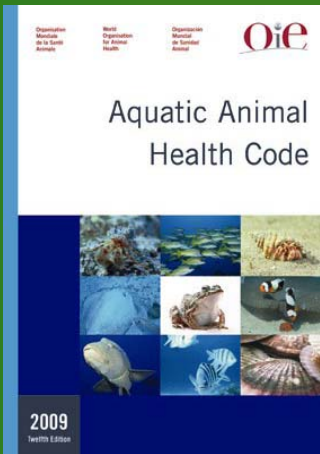


europharma
med helse som fag

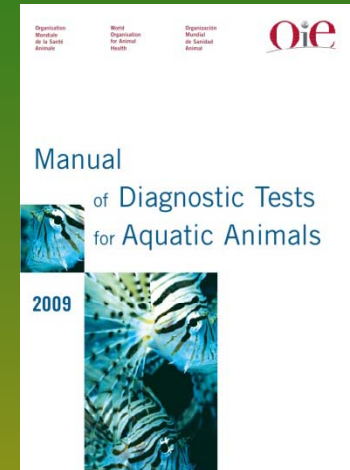


**The Research Council
of Norway**





Relevant OIE Code & Manual Sections



- Farmed fish, amphibian, mollusc & crustacean diseases
- Risk analysis
- Disease prevention & control recommendations
- Disease diagnosis, surveillance & notification
- Trade, importation, exportation & health certification

Motivation

Producers

- Protect investments
- Maximize production
- Value-added certified product

Governments

- Meet regulations
- Protect industries
- Increase production & trade

International

- Prevent disease spread
- Protect domestic industries
- Meet international trade requirements



The Focal Point & Ultimate Objective of Biosecurity

To ensure that an epidemiological unit is not diseased/infected ...

... and remains that way.

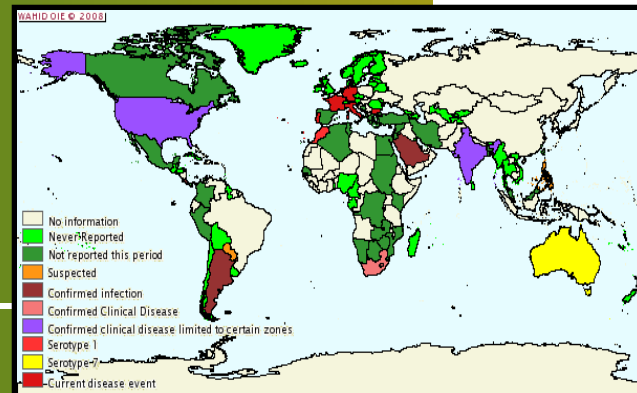
Prevention! ... Control! ... Eradication!



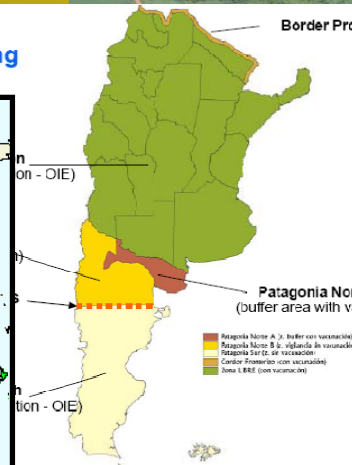
Epidemiological Units: from a Farm to a Nation

Epidemiologic Unit—a defined population of animals, separated to some degree from other populations, in which infectious and contagious diseases can be transmitted

- Establishment
- Compartment
- Zone
- Region
- Country



Patagonia Zoning



Biosecurity Components

Procedures & processes for prevention, control & eradication of infectious & contagious diseases?

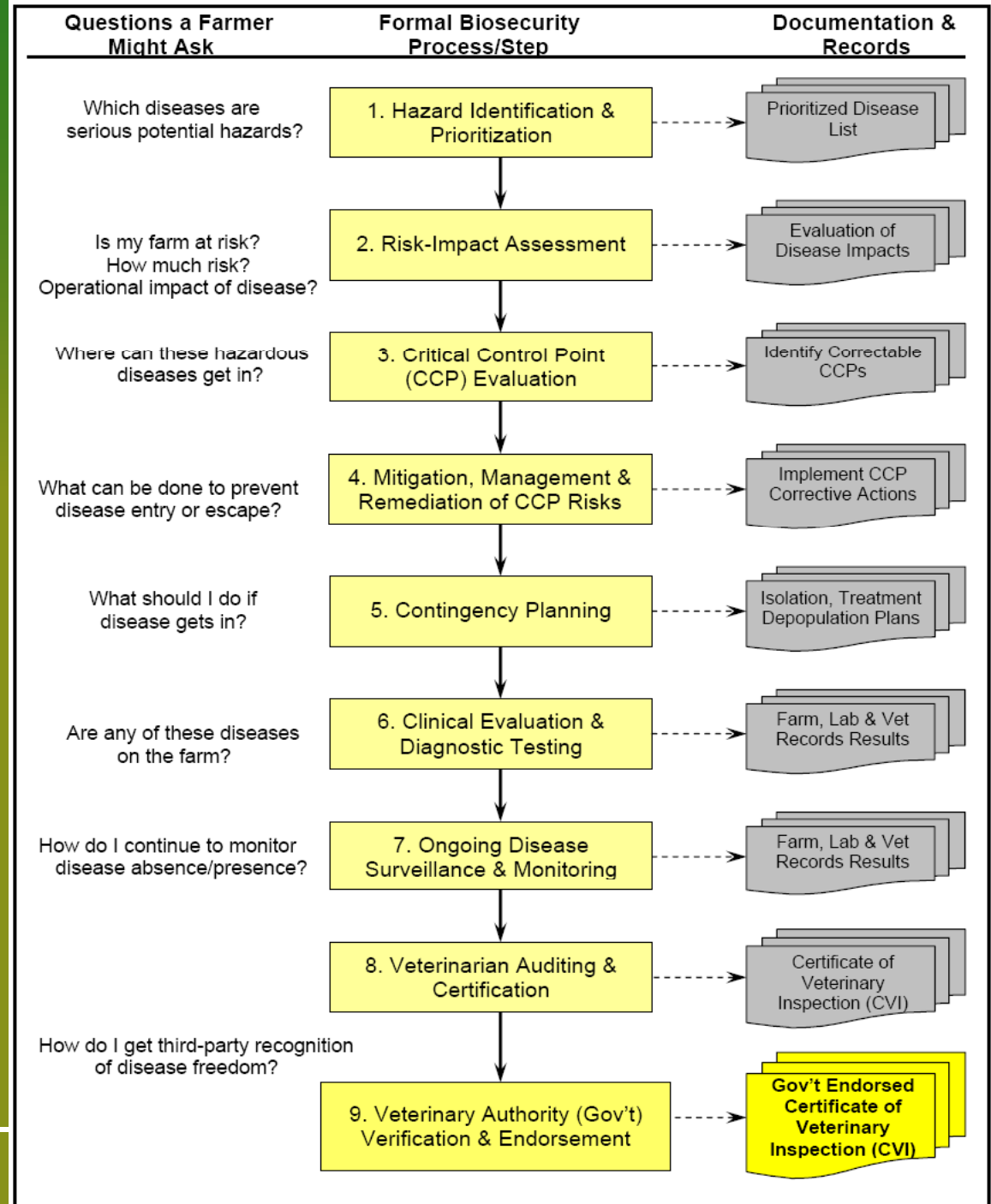
- Identify disease *Hazards & Risks* (risk analysis)
- Identify *Critical Control Points* (for disease entry / escape)
- *Mitigating Actions* for all Critical Control Points (risk management)
- Develop *Contingency Plans*
- Determine *Disease Status / Freedom*
- Monitor progress & *Audit* implementation
- *Certify* Biosecurity Levels / Disease Freedom



Integrating Biosecurity Components

Any Epidemiologic Unit (EU)

- Establishment
- Compartment
- Zone
- Region
- Country



Applying the Concepts



Principles of
Biosecurity

Capture site-specific **elements** in
a written Biosecurity Plan
& maintain records

For Illustration Purposes: An Epidemiological Unit

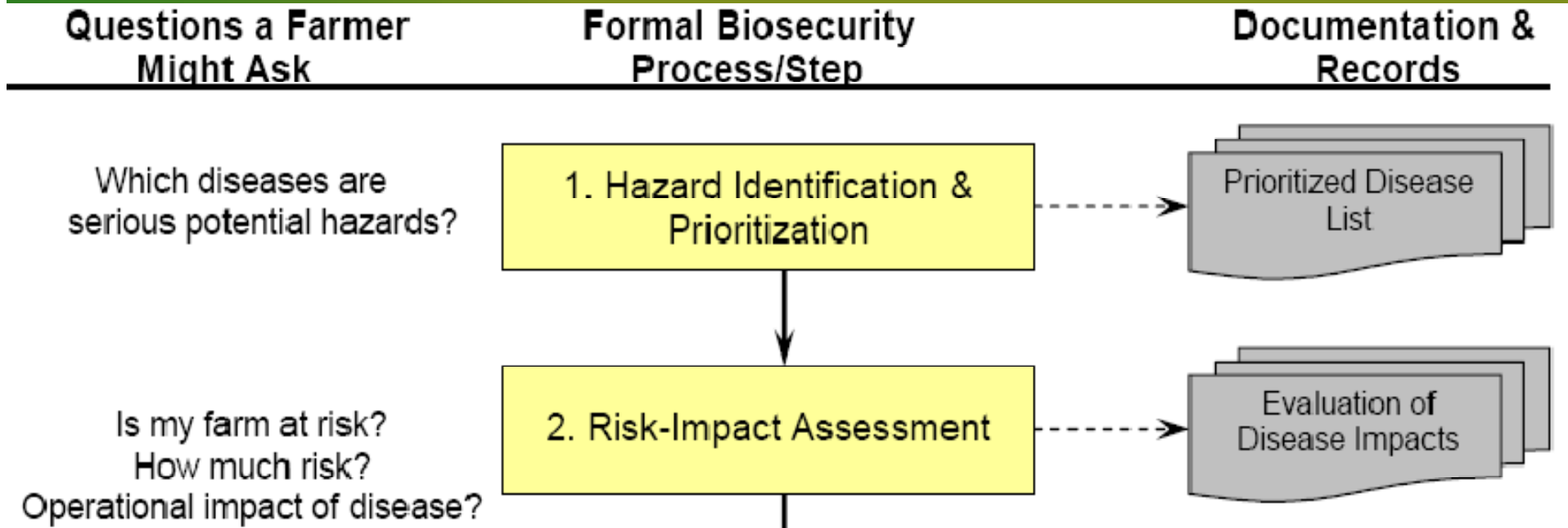
- Located in the Midwest
- 300,000 lbs. (\$1.5M) annual production
- Integrated production - sells live fish, larvae & fillets (interstate & international)
- Imports breeding stock
- Uses deep well groundwater
- ~500 visitors / year
- 50 employees



e.g. Tilapia Farm

Has no biosecurity plan in place
– a lot at risk in a disease outbreak

Identify Disease Hazards & Risks



Process: Disease Hazards & Risks

- Which important diseases are present or can potentially affect the farm (Epi-Unit)?
- What might be the impacts on the farm?
 - Decreased production, increased costs
 - Negative product demand & price
 - Regulatory restrictions
- Create prioritized disease list based on severity of potential impact



Process: Identified Hazards & Risk Levels

Disease Hazardous

Risk Level

Impact

- | | | |
|------------------------------|---|----------|
| ■ VHS | ■ High
(Endemic - OIE/Nat'l/State regulated / lethal) | High |
| ■ <i>Streptococcus iniae</i> | ■ High
(Ubiquitous / Unregulated / high morbidity/mortality) | Moderate |
| ■ Columnaris Disease | ■ Low
(State regulated / high morbidity) | Moderate |
| ■ EUS | ■ Low
(Exotic - OIE/Nat'l/State regulated / lethal) | High |

➤ Biosecurity Plan tailored to selected disease hazards



Determine & Mitigate Critical Points where disease can enter or leave



Where can these hazardous diseases get in?

3. Critical Control Point (CCP) Evaluation

Identify Correctable CCPs

What can be done to prevent disease entry or escape?

4. Mitigation, Management & Remediation of CCP Risks

Implement CCP Corrective Actions

Process: Determine Critical Points



- Animals
- Fomites
- Water
- Vectors
- Personnel
- Feed



Process: Mitigating Critical Points



What actions will rectify critical points where disease can enter or leave?

- ✓ Animals;
- ✓ Water;
- ✓ Personnel;
- ✓ Fomites;
- ✓ Vectors;
- ✓ Feed

Developing Contingency Plans (what if ...?)

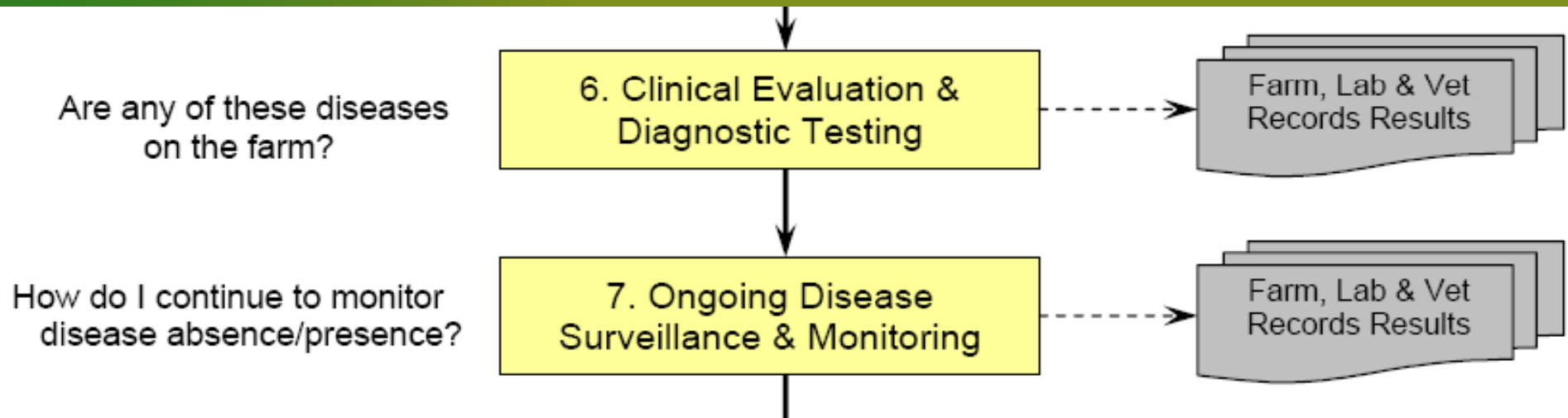
What should I do if disease gets in?

5. Contingency Planning

Isolation, Treatment
Depopulation Plans

- Communicating / reporting disease outbreak
- Isolating (quarantine) epidemiologic unit parts
- Re-evaluating & correcting Critical Control Points
- Implement recovery - depopulation / treatment / vaccination (business continuity

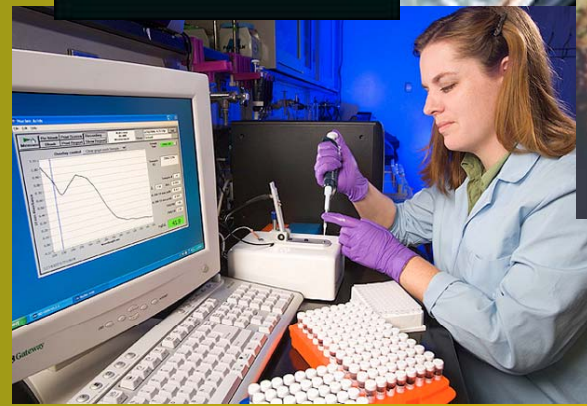
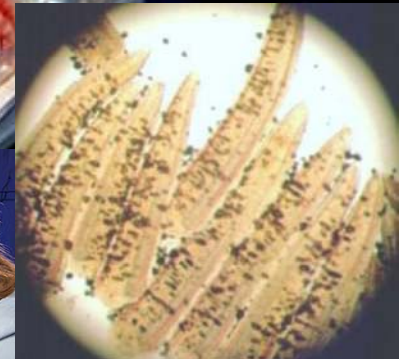
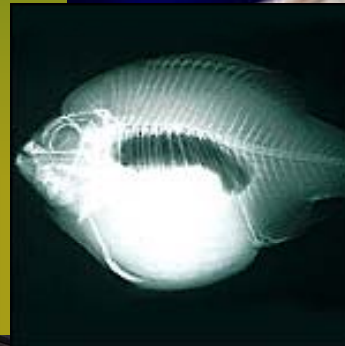
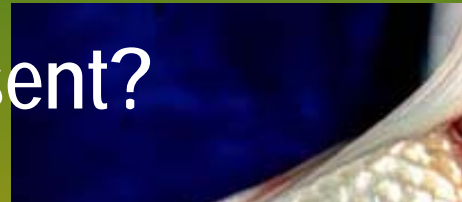
Veterinary Diagnostics, Surveillance & Monitoring



Process: Clinical & Lab Diagnostics

Is the disease present or absent?

- Appropriate veterinary clinical evaluation & sampling of all populations
- DX lab confirmation
- Full epidemiological evaluation & diagnostic interpretation



Process : Ongoing Surveillance & Monitoring

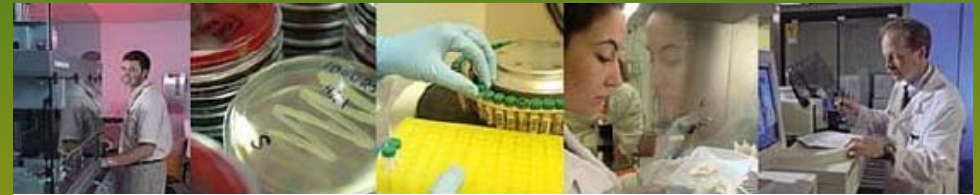
Periodic disease presence / absence evaluation

- ✓ Changing conditions
- ✓ Fixed time intervals
- Appropriate veterinary clinical evaluation & sampling of all populations
- DX lab confirmation
- Full epidemiological evaluation & diagnostic interpretation

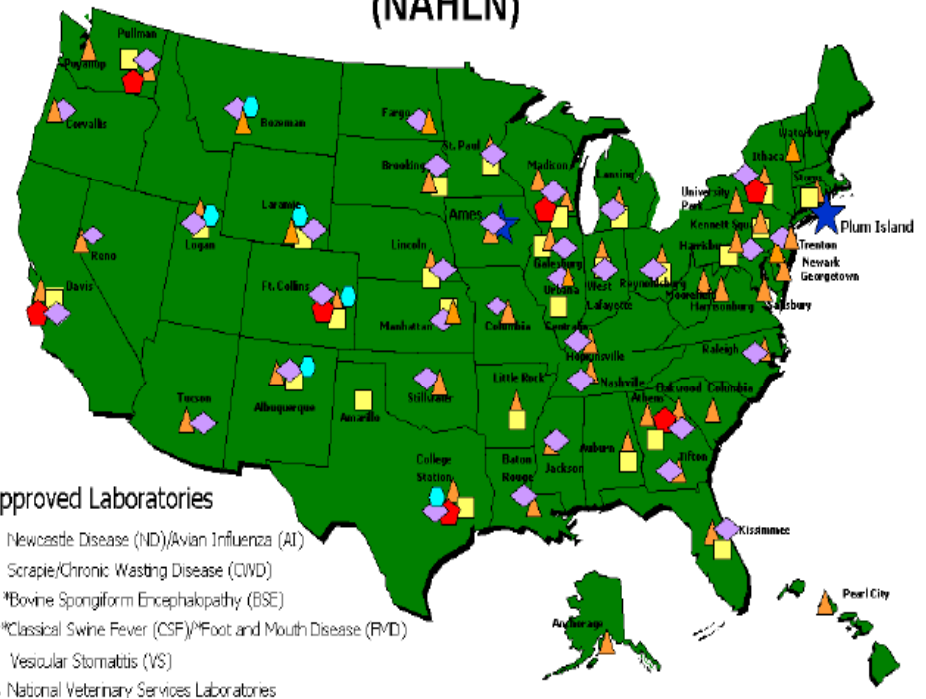


National Animal Health Laboratory Network

Parallel program developing for aquatic diseases
(National Aquatic Animal Pathogen Testing Network)



National Animal Health Laboratory Network (NAHLN)



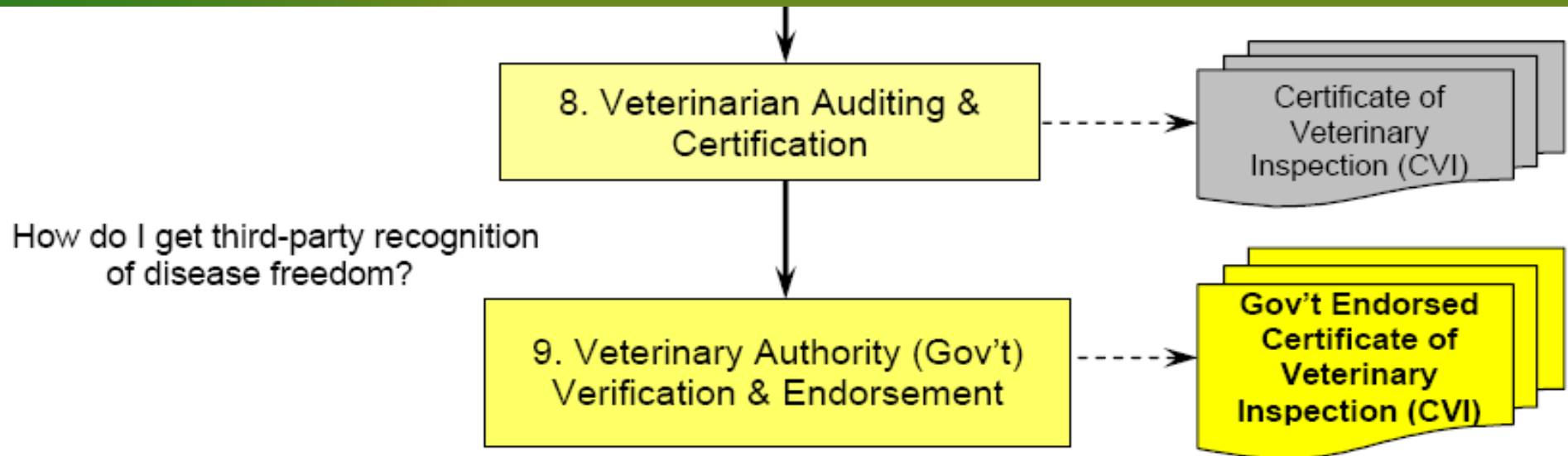
AquaVetMed.info

Search Directories of

Aquatic Veterinarians and Disease Diagnostic Laboratories

These directories assist veterinarians, veterinary-allied professionals, aquatic animal owners, aquaculture industries, governments, and the general public.

Auditing & Certification



Process: Audit / Certify

Audits

Periodic site visits to verify:

- ✓ Processes are in place
- ✓ Examine documentation
- ✓ Assist correcting deficiencies
- ✓ Look for clinical disease

Certification

Issue certificate to validate:

- ✓ Processes are in place
- ✓ Level of biosecurity
- ✓ Disease status of operation

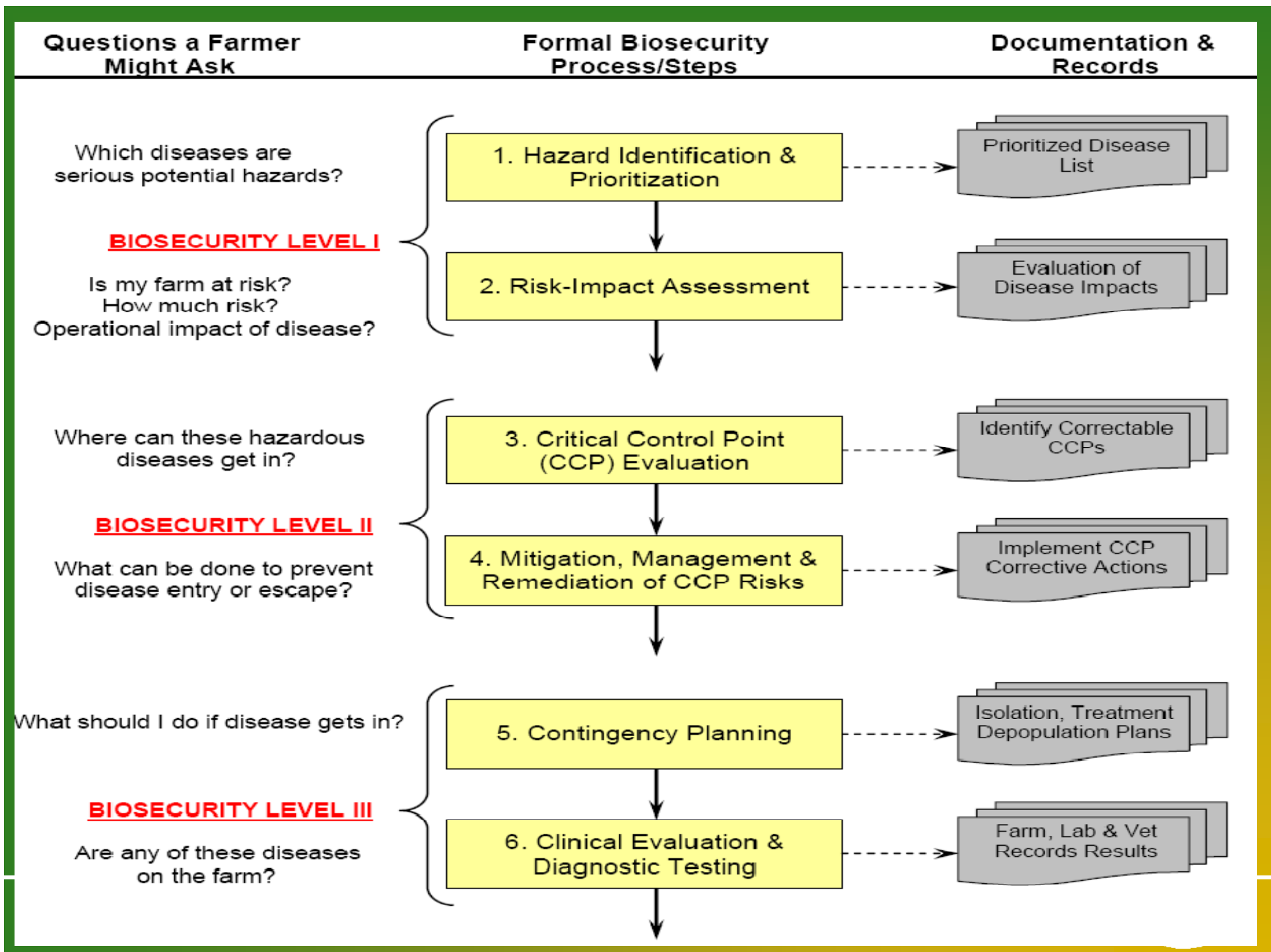


Examples: Certifying Biosecurity

A progressive process based on Audits

- **ABC Level I** – Committed to developing site-specific plan; decision – deciding disease hazards/risks
- **ABC Level II** – Risk analysis, CCP evaluation & mitigation evaluation complete, diagnostics started
- **ABC Level III** – CCP/risk management & contingency plan in place; diagnostics complete
- **ABC Level IV** – Full audit complete; disease-free/SPF
- **ABC Level V** – Government Agency endorsement





Questions a Farmer Might Ask

Formal Biosecurity Process/Steps

Documentation & Records

How do I continue to monitor disease absence/presence?

BIOSECURITY LEVEL IV

7. Ongoing Disease Surveillance & Monitoring

Farm, Lab & Vet Records Results

8. Veterinarian Auditing & Certification

Certificate of Veterinary Inspection (CVI)

How do I get third-party recognition of disease freedom?

BIOSECURITY LEVEL V

9. Veterinary Authority (Gov't) Verification & Endorsement

Gov't Endorsed Certificate of Veterinary Inspection (CVI)

Motivation, Implementation & Next Steps



Veterinary Biosecurity Certificates

- Need to be tailored specifically for biosecurity

COUNTRY:

Part I: Details of dispatched consignment

1.1. Consignor Name: _____ 1.2. Certificate reference number: _____
 Address: _____ 1.3. Competent Authority: _____

1.4. Consignee Name: _____
 Address: _____

1.5. Country of origin: ISO code* _____ 1.6. Zone or compartment: _____
 1.7. Country of destination: ISO code* _____ 1.8. Zone or compartment: _____

1.9. Place of origin Name: _____
 Address: _____

1.10. Place of shipment: _____ 1.11. Date of departure: _____
 1.12. Means of transport: _____ 1.13. Expected border point: _____

1.14. CITES permit No(s): _____

1.15. Description of commodity: _____ 1.16. Commodity code (HS): _____
 1.17. Total quantity/weight: _____

1.18. _____ 1.19. Total number of containers: _____
 1.20. Identification of container(s) number: _____ 1.21. Type of packaging: _____

1.22. Commodities intended for use as: _____
 Breeding Grow out Slaughter
 Ornamental Competition/Exhibition Other

1.23. For import or admission: _____
 Definitive import Re-entry

1.24. Identification of commodities: _____
 Amphibian Crustacean Fish
 Wild stock Culti
 Species (scientific name): _____ Age* _____ Sex* _____

* Optional
 ** If referenced in Part II

Submission Form for Aquatic Animals

Genus: _____ Species: _____
 Sex: _____ Age: _____
 Weight: _____ Length: _____
 Date of origin: _____
 Date of capture: _____
 Date of shipment: _____

SOUTH DAKOTA LIVESTOCK SANITARY BOARD
 OFFICIAL INTERSTATE CERTIFICATE OF VETERINARY INSPECTION

Date: 9-18-97 Place of issue: 4-18-97
 Inspected by: Stan Hall Date issued: 9-18-97

4 yr old Big Horn Ram
part of foot lot and no signs of disease
show no signs of infection or contagious disease

Jim Carlson 9-18-97
Clark SD

CERTIFICATE OF VETERINARY INSPECTION FOR LIVE AQUATIC ANIMALS AND ANIMAL PRODUCTS
 Page 1 of 2

Issuing Veterinarian/ Authority: _____ Certificate Number: _____
 Name: _____ Phone: _____
 Address: _____ Fax: _____

This Certificate is a Veterinary Inspection to verify that all information noted below are complete for import. If not, add N/A if not applicable, and contain the original signature of the licensed veterinarian issuing the certificate.

Issued for (check one ONLY): Individual animals Reptiles Amphibians Crustaceans Fish Mollusks Shellfish Other (specify): _____
 Purpose (check all that apply): Sale Breeding Movement Other (specify): _____

Origin (Country, Name, Address, Phone, Fax, e-mail): _____
 Coordinates (if required): _____
 Destination (Country, Name, Address, Phone, Fax, e-mail): _____
 Destination Permit No. or GPS Coordinates (if required): _____

Transporter: _____ Carrier Type: _____ Container Type: _____
 Name, Address, Phone, Fax, e-mail: _____ (Tank/20) (Stock) (Specimens)

Animal Information

Container No.	Animal Type	Genus species (Common name)	Size or Weight	Sex
1. <u>1000000</u>	<u>WHS</u>	<u>Salmo gairdneri</u>	<u>10cm</u>	<u>Male</u>
2. <u>1000001</u>	<u>WHS</u>	<u>Salmo gairdneri</u>	<u>10cm</u>	<u>Female</u>
3. <u>1000002</u>	<u>WHS</u>	<u>Salmo gairdneri</u>	<u>10cm</u>	<u>Male</u>
4. <u>1000003</u>	<u>WHS</u>	<u>Salmo gairdneri</u>	<u>10cm</u>	<u>Female</u>

Additional Labels: _____

1. Required Disease Diagnostic Laboratory Tests (see continuation page for additional tests)

Diagnostic Laboratory	Accession Number	Type/No Population Size of Samples Submitted	Date Submitted	Test Date
<u>1000000</u>	<u>1000000</u>	<u>WHS</u>	<u>May 6, 2000</u>	<u>May 7, 2000</u>

Disease/Pathogen Test

Disease/Pathogen	Test Type	Test Protocol	Test Results	Test Comments
<u>1000000</u>	<u>PCR</u>	<u>ISO Manual</u>	<u>Negative</u>	<u>Lab No - 1000000 - 0728</u>

Official Veterinarian Endorsement

Inspected by: _____ Date issued: _____
 Name: _____ Signature: _____
 Title: _____

Continuation Page
 (for additional diagnostic tests or Official Veterinarian Authority endorsement)

Issuing Veterinarian/ Authority: _____ Certificate Number: _____
 Name: _____ Phone: _____
 Address: _____ Fax: _____

1. Required Disease Diagnostic Laboratory Tests (continuation of diagnostic tests performed)

Diagnostic Laboratory	Accession Number	Type/No Population Size of Samples Submitted	Date Submitted	Test Date
<u>1000000</u>	<u>1000000</u>	<u>WHS</u>	<u>May 6, 2000</u>	<u>May 7, 2000</u>

Disease/Pathogen Test

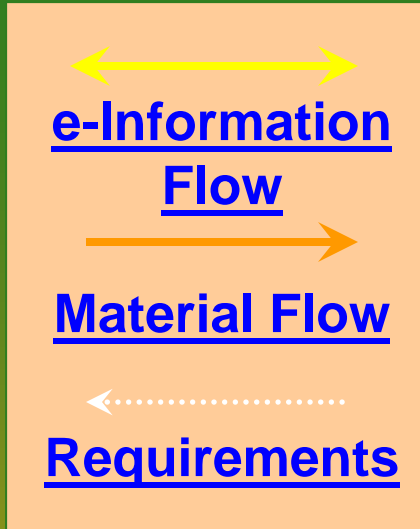
Disease/Pathogen	Test Type	Test Protocol	Test Results	Test Comments
<u>1000000</u>	<u>PCR</u>	<u>ISO Manual</u>	<u>Negative</u>	<u>Lab No - 1000000 - 0728</u>

Official Veterinarian Endorsement

Inspected by: _____ Date issued: _____
 Name: _____ Signature: _____
 Title: _____



Benefits - Expedited Movement / Trade of Certified Operations

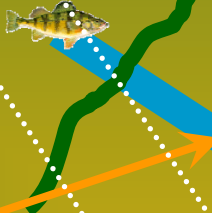


Accredited Veterinarian



Health, Disease & Diagnostic Requirements

Source



Hatcheries



On-Line (e-CVI)

Discussion DRAFT 19

Publics are submitted for explanation in attached (this description and Field Experiences)

1. Name of Health
2. Department of Agriculture and/or Consumer Services
3. Division of Animal Industry, Laboratory 12345-6789
4. Official Veterinarian
5. Official Veterinarian
6. Official Veterinarian
7. Official Veterinarian
8. Official Veterinarian
9. Official Veterinarian
10. Official Veterinarian
11. Official Veterinarian
12. Official Veterinarian
13. Official Veterinarian
14. Official Veterinarian
15. Official Veterinarian
16. Official Veterinarian
17. Official Veterinarian
18. Official Veterinarian
19. Official Veterinarian
20. Official Veterinarian

No.	Establishment	Location	Product	Quantity	Destination	Remarks
1	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789
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3	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789
4	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789
5	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789
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19	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789
20	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789	12345-6789

Hardcopy CVI

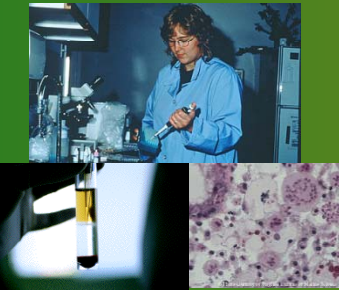
Authority



Processors



Farms

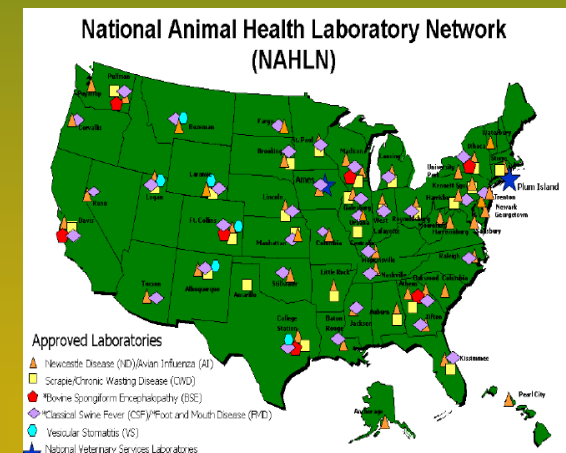


Diagnostic Lab



Workforce – Resources & Needs

- Licensed/accredited veterinarians
- Vet Techs & Paraveterinary field service personnel
- Diagnostic laboratory system
- Standardized process & infrastructure
 - Education
 - Compliance registry
 - Competency credentialing
- Governmental (regulatory) personnel & infrastructure



Workforce: National Veterinary Accreditation Programs

- ✓ Supplementing government regulatory activities workforce
- ✓ Supports OIE *Evaluation of Performance of Veterinary Services (PVS Tool)*.



USDA United States Department of Agriculture
Animal and Plant Health Inspection Service

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You are here: Animal Health > Veterinary Accreditation

Animal Health

Veterinary Accreditation

National Veterinary Accreditation Program (NVAP)
This voluntary program certifies private veterinary practitioners to work cooperatively with Federal veterinarians and State animal health officials.

Producers that export animals rely on the expertise of accredited veterinarians to help ensure that exported animals will not introduce diseases into another State or country. The accreditation program has served the animal industry well for many years and remains integral to their future growth.

Voluntary Participation
Participation in the NVAP is voluntary. It is not mandated by the Federal Government. Accredited veterinarians participating in NVAP must export their duties according to the Standards of Federal

Related Topics

- Animal Diseases
- Animal Diseases by Species
- Animal Health Report
- Emergency Management
- Laboratory Information & Services
- Veterinary Biologics
- Veterinary Services Process Streamlining
- Veterinarian Accreditation
- Proposed Regulations
- Requirements to Apply for Veterinarian Accreditation
- Monitoring & Surveillance
- Professional Development Training

Canadian Food Inspection Agency
Agence canadienne d'inspection des aliments

Canada

Accredited Veterinarian's Manual

Module List

Module Number, Title and Issue Date
1. Overview
1.1 Accredited Veterinarian's Mandate - April 2006
1.2 Accreditation Agreement - April 2006
1.3 Quality Control - April 2006
1.4 Special Provisions - April 2006
2. Identification
2.1 Identification of Livestock - April 2006
2.2 Identification of Horses - April 2006
3. Testing
3.1 Tuberculosis Testing - June 2009
3.2 Serologic Testing - June 2009
3.3 Approved Laboratories - June 2009
4. Exports
4.1 Export Veterinary Certification - April 2006
4.2 CFIA Fees - April 2006

ACCREDITATION PROGRAM FOR AUSTRALIAN VETERINARIANS

Initial Accreditation Training Program

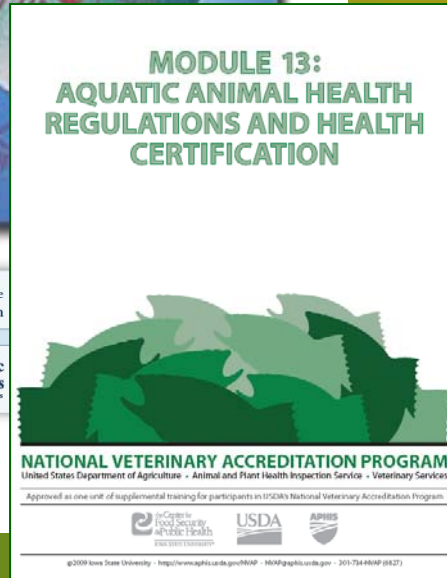
Revised July 2012

Animal Health

NVAP Training Programs



- Web-based & classroom
- Publications & manuals
- Veterinary school curriculum
- Other language translation



www.cfsph.iastate.edu/



US NVAP - Aquatic Veterinary Modules -

1. Priority diseases
2. Biosecurity
3. Health/disease regulations & certification

National Veterinary Accreditation Program
Aquatic Animal Health Certificates and Regulations

USDA APHIS

NEXT PAGE ▶

Introduction

Page 1 of 61

Welcome to the Aquatic Animal Health Certificates and Regulations module.

This module will provide information on the various agencies involved in regulating aquatic animal health and trade, with an emphasis on USDA and the role of accredited veterinarians. It will also address the proper completion of health certificates for farmed aquatic animals and provide resources for obtaining current regulations.

Upon completion of this module, you should be able to:

- List the regulatory agencies involved in aquatic animal health and trade
- Explain your role and responsibilities as an accredited veterinarian as they relate to aquatic animal health
- Find current health regulations for the international export and interstate movement of aquatic animals
- Accurately complete health certificates for farmed aquatic animals

Completion of this module is estimated to take 55-60 minutes, but will vary depending on your familiarity with the information presented.



[Image Description](#)

Biosecurity Implementation: Who does what?

Personnel

- Operation owner & employees
- Licensed/registered / accredited veterinarians
- Para-veterinary professionals – vet techs, nurses, fisheries biologists



Activities

- Written operation-specific Biosecurity Plan & records
- Veterinary evaluation, diagnostic interpretation, auditing, ABC certificates
- Diagnostic lab tests, general assistance

**Workforce – Training & credentialing needed
for all individual involved in activities**



Training, Competency & Implementation Recognition

- Veterinarian & Producer Training Workshops
 - theory & process
 - table-top exercises & scenario modeling
 - on-farm exercise
- Competency & Implementation Certification
 - Veterinarians & trainers completing V-ABC workshops
 - Farms actively implementing V-ABC programs



Training Programs

International Veterinary Aquaculture Biosecurity Consortium Initiatives

- State/Local/Organization Meetings/Workshops (2011+)
- ISA Biosecurity Workshop, Puerto Montt, Chile (Apr. 2011)
- IVABC Conference/Workshop, Trondheim, Norway (Aug. 2011)
- WVA Aquaculture Biosecurity Workshop, Cape Town, S. Africa (Oct. 2011)
- FAO/OIE EUS Biosecurity Workshops/Training Zambezi Valley, Southern Africa (2012+)



Biosecurity
A New Mentality



Thank you for your
attention

