

Overview: FISH/SHELLFISH HEALTH PROGRAM IN ALASKA

Alaska Department of Fish & Game



ADF&G Fish Pathology Section
Ted Meyers, Principal Pathologist

Purpose/Function as Required by Statute

- Provide pathology/diagnostic services to fisheries managers, state and private salmon hatcheries, aquatic farmers and sport fishers.
- Protect the health of wild and cultured fisheries resources through regulatory oversight of finfish/shellfish pathogens, development of disease policies and application of technical expertise to prevent, detect and treat fish diseases in cultured or wild fish and shellfish in Alaska

Products and Services

- Diagnostic Services- wild and cultured
- Hatchery Support
- Regulatory Authority
- Applied Research - Publications
- Public Education

PATHOLOGY LABS AND STAFF

- **Anchorage** – Fish Pathologist, Microbiologist II, Laboratory Technician
- **Juneau** – Principal Fish Pathologist/Fishery Scientist I, Microbiologist I
- Staff experienced and trained in microbiology, fish and shellfish health and veterinary medicine
- Certifications by the FHS/AFS held by staff as Fish Pathologist

LAB CAPABILITIES

- Virology and cell culture
- Bacteriology
- Histopathology
- ELISA-for Rs antigen detection
- PCR for several pathogens
- Transmission electron microscopy
- FAT
- Wet lab studies
- Nationwide affiliation with several fish health laboratories for additional specialized testing

Diagnostic Testing

- a) Fish health oversight for 34 rearing facilities statewide
- b) Wild fish/shellfish health - mortality, parasites, abnormalities, commercial product quality
- c) Instate finfish/shellfish Transport Permits (FTPs) requiring disease histories
- d) Courtesy requests by other agencies or laboratories for fish/shellfish diagnostic services

Hatchery Oversight/Support

- Advise good fish culture practices to maintain fish health
- Periodic hatchery inspections with written reports
- Preventative measures and therapy to control fish and shellfish diseases
- Collection of diagnostic samples
- Fish health workshops to train hatchery personnel
- Advise regarding use of aquaculture drugs and INAD permits
- Review FTPs/AMPs for permitted hatcheries

Regulatory Authority

- Signatory on permits (5AAC 41.005, 41.030, 41.050, 41.290, 41.300) for fish and shellfish
- Inspection, reporting, control of fish diseases (AS 16.40.150, 5AAC 41.020, 41.080, 41.310) – Fish/shellfish disease policy, Sockeye Culture Policy
- Inspection of hatcheries (5AAC 41.080); maintain health specialist certification (AS 16.05.868)
- Certification imported Pacific oyster seed (5AAC 41.070)
- Destruction of diseased fish (5AAC 41.080)

Applied Research

- Characterization of new/poorly described pathogens (Bitter Crab, VHSV IVa, *Phoma*, *Ichthyophonus*, aquabirna and reoviruses)
- Disease transmission studies
- Evaluation of new detection technology (ELISA, DNA probe, PCR, QPCR)
- Distribution of specific disease agents (disease history database) within fish/shellfish stocks
- Review literature, attend meetings/workshops to maintain relevant aquatic health program

Public Education

- Inform user groups through public media including web page with links to policies and documents
- Laboratory tours
- Mentoring students for school projects
- Publish research results in peer-reviewed journals
- Fish Pathology Procedures Manual requested by other laboratories - template for the US FWS National Wild Fish Health Survey manual
- Fishery Scientist serves as technical representative for ADF&G (PNFHPC and others)

Website links

- Common fish diseases booklet

http://www.adfg.alaska.gov/static/species/disease/pdfs/fish_disease_book.pdf

- Shellfish diseases booklet

http://www.adfg.alaska.gov/static/species/disease/pdfs/shellfish_disease_book.pdf

- Pathology labs and other document links

<http://www.adfg.alaska.gov/index.cfm?adfg=fishingpathologylab.main>

Protocol for Fish Pathology Lab Inquiry

- **First**-photograph specimen then email to the lab and telephone to discuss case. Some common diseases/parasites may be diagnosed from a photo. Most parasites are harmless to fish.
- Person calling should have knowledge of case to answer questions
- Keep potential fresh specimens cold but **do not freeze**
- Decomposed fish are not acceptable
- Provide required case information - sample submission form
- Samples other than whole fish may be requested

Human Health Concerns ?

- Public concern regarding contamination of fish or shellfish with toxic chemicals or other environmental hazards to human health should consult with the Alaska Department of Environmental Conservation Laboratories (<http://www.dec.state.ak.us/eh/lab/index.htm>)