Fish Health Management Policy

September 12, 2003
Oregon Department of Fish and Wildlife

Fish Health Management Policy

635-007-0960
Purpose
The purpose of the Fish Health Management Policy is to describe measures that minimize the impact of fish diseases on the state's fish resources. This policy applies to all Department hatchery operations and programs, including Salmon and Trout Enhancement Program (STEP), fish propagation projects (OAR 635-009-0090 through 635-009-0240), Cooperative Salmon Hatchery Programs (OAR 635-009-0400 through 635-009-0455), and to all other persons importing, transporting, releasing, or rearing non-aquaria species in this state, including, but not limited to persons operating private fish rearing facilities and research facilities.

Stat: Auth.: ORS 496, ORS 497, ORS 498, ORS 506 and ORS 508
Stats. Implemented: ORS 496, ORS 497, ORS 498, ORS 506 and ORS 508
Hist.:

635-007-0965
Policy
The Department must restrict the introduction, amplification, and dissemination of disease agents in hatchery- produced fish (hatchery-produced stock or naturally-produced native stock) and in natural environments by controlling egg and fish movements and by prescribing a variety of preventative, therapeutic, and disinfecting strategies to control the spread of disease agents in fish populations of the state. This entails inspecting and detecting disease agents from fish in all hatchery facilities and natural environments. It also entails containing and treating disease agents to minimize impacts on fish populations.

Stat: Auth.: ORS 496, ORS 497, ORS 498, ORS 506 and ORS 508
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635-007-0970
Fish Disease and Pathogen Categories
(1) "Category I" or "Emergency" fish disease agents are those for which there is no known treatment and that have not been determined to occur in Oregon as of September 1, 2003. Disease agents in this category are the European strain of Viral Hemorrhagic Septicemia (VHS), *Onchorhyncus masou* virus (OMV) and Channel Catfish Virus (CCV). Disease agents may be added to this category as they are identified.

(2) “Category II” or "Certifiable" disease agents can be highly contagious, may cause catastrophic losses and do not have a known cure. Disease agents in this category are the North American strain of Viral Hemorrhagic Septicemia (VHS), Infectious Hematopoietic Necrosis Virus (IHN), Infectious Pancreatic Necrosis Virus (IPN), Infectious Salmon Anemia (ISA), Spring Viremia of Carp (SVC), *Myxobolus cerebralis* (whirling disease), and *Piscirickettsia salmonis*. Disease agents may be added to this category as they are identified in state waters or may be moved to a more or less strict category as disease concerns change.

(3) “Category III” or “Reportable” disease agents may be enzootic in populations or watersheds but are not necessarily of such concern as to prevent all transfer or release of fish. This category includes drug resistant strains of fish disease agents otherwise falling in Category IV. Disease agents in this category are Erythrocytic Inclusion Body Syndrome (EIBS virus), Viral Erythrocytic Necrosis Virus (VEN), sturgeon iridovirus, *Renibacterium salmoninarum* (bacterial kidney disease), *Flavobacterium psychrophilum* (cold water disease), *Aeromonas salmonicida* (furunculosis disease), *Yersinia ruckeri* (enteric red mouth disease), drug resistant strains of bacterial disease agents, *Tetracapsuloides bryosalmonae* (Proliferative Kidney Disease), *Ceratomyxa shasta* (ceratomyxosis), and *Nucleospora salmonis*. Disease agents may be added to this category as they are identified in state waters or may be moved to a more or less strict category as disease concerns change.

(4) “Category IV” or “Historical“ disease agents are those associated with a particular area, water body, or facility either in Oregon or in another state or country in which fish are raised or where a disease agent is associated with an intermediate non-fish host. This category also includes Category I through III diseases if previously found at a particular facility but no longer occurring there. Disease agents in this category are flatworms, round worms, tapeworms, ciliated and flagellated parasites, myxosporean (other than *Myxobolus cerebralis*, *Tetracapsuloides bryosalmonae* and *Ceratomyxa shasta*), microsporidian parasites (other than *Nucleospora salmonis*), fungal agents, bacterial agents, transient viral agents, and other classes of infectious agents not previously listed. Disease agents may be added to this category as they are identified in state waters or may be moved to a stricter category as disease concerns change.

Stat: Auth.: ORS 496, ORS 497, ORS 498, ORS 506 and ORS 508
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635-007-0975
Import, Export or Transfer of Pathogens and Diseases

(1) The Department may allow a transfer or release fish if the disease agent has not occurred within the past three years of fish rearing, fish are appropriately treated to prevent disease transmission before transfer, or if the disease agent also occurs in the receiving waters.

(2) No person may import, export, or transfer susceptible fish from a site or area where a Category I disease agent has been found until the Department has determined that the site or area is acceptable and has issued a valid Fish Transport Permit pursuant to OAR 635-007-0600. One of the Department's fish health specialists may make the required determination and provide a memorandum to Fish Division.

(3) The Department may authorize a person to import, export, or transfer fish that have or are from a station or area with a recent or continuing history of Category II disease agent by issuing a Fish Transport Permit. The Department must restrict the import, transfer, or release of fish from facilities in which Category II disease agents have been detected within the life cycle of a fish species or that have not been eliminated by effective treatment to only those areas where that disease is already endemic. The Department must restrict the transfer or release of fish that may expand the geographic distribution of disease agents in this category.

(4) The Department must restrict the import, transfer, and release of fish from facilities in which Category III disease agents have been detected within the life cycle of a fish species or that have not been eliminated by effective treatment to only those areas where that disease is already endemic.

(5) Fish from facilities with a history of, but no current occurrence of Category I through III diseases will be treated as if they were in Category IV. The Department may issue a Fish Transport Permit for transfer or release of fish with the presence of disease agents in this category if the disease agent has not occurred within the past three years of fish rearing, the fish are appropriately treated for disease before transfer, or the disease agent occurs in the receiving waters. The Department may deny a Fish Transport Permit to transfer or import fish from facilities where Category III and IV diseases agents have been identified until acceptable treatment or improved history record (three years without disease detection) requirements have been met through appropriate fish health examinations.

Stat: Auth.: ORS 496, ORS 497, ORS 498, ORS 506 and ORS 508
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635-007-0980
Additional Reference Material for Fish Disease Management

Guidelines for inspection of fish for diseases are found in the Integrated Hatchery Operation Team Policies and Procedures for Columbia Basin Anadromous Salmonid Hatcheries (IHOT 1995), American Fisheries Society Fish Health Blue Book (AFS-FHS Suggested procedures for the detection and identification of certain finfish and shellfish pathogens. 5th ed., 2002, Fish Health Section, American Fisheries Society), the inspection manual of this reference may be found at http://fisheries.fws.gov/FHC/handbook.htm), the Fish Health Protection Regulations Manual of Compliance of Canada, 1984 and the Pacific Northwest Fish Health Protection Committee Model Comprehensive Fish Health Protection Program (September 1989), http://www.efw.bpa.gov/Environment/EW/EWP/DOCS/REPORTS/HATCHERY/A60629.pdf

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635-007-0985
Inspection and Detection of Disease Agents at the Department's Facilities

(1) The Facility Manager must ensure that inspections are performed on all fish stocks no more than six weeks before fish are released or transferred to other locations in the state and on any fish to be imported into the state. The Department's Fish Health Services must maintain a database of fish health examination results.

(2) The Facility Manager must complete a Fish Liberation Report for the import, export, or transfer of live fish or eggs in Oregon before moving any fish or eggs.

(3) The Facility Manager must ensure regular monitoring of all fish by a Department fish health specialist. Appropriate fish tissues must be screened for the presence of parasitic and bacterial agents and viral examinations of appropriate organs and lesions of moribund or dead fish depending on disease signs on affected fish.

(4) Examinations for *Myxobolus cerebralis*, agent of whirling disease, must be conducted annually on 60 salmonid fish held for a minimum of 180 days at each facility. In cases where multiple water supplies exist, fish reared in each supply must be sampled.

(5) The Facility Manager must direct the treatment or destruction of fish infected with any disease agent, whether listed in these rules or not, that may adversely affect the health of the fish of this state. The Department's Fish Division will determine whether the affected fish must be destroyed.

(6) If fish loss exceeds 0.1 percent per day over five consecutive days in any rearing or incubation container, then the Facility Manager must:

(a) Have an examination promptly performed on live and dead fish from each pond of concern by a Department fish health specialist and, if the fish health specialist determines it is necessary, from the entire facility.

(b) Notify in writing by E-mail, fax, or equivalent means the Department's Regional Office and Fish Division of the location, extent, and probable cause of such losses and provide written documentation of a planned Department-approved treatment regimen to control the fish disease agent.

(c) Fish Health Services must maintain a copy of the disease examination record after completing appropriate tests.

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635-007-0990
Inspection and Detection of Disease Agents at Non-Department Facilities

(1) No person may import, export, release, or transfer live fish or fish eggs in Oregon without a Fish Transport Permit issued pursuant to OAR 635-007-0600.

(2) Except as provided in section (3) of this rule, any group of live fish or eggs found to have been imported into or transferred within Oregon without a Fish Transport Permit is subject to seizure and destruction by the Department.

(3) The Department, in its discretion, may direct the Facility Manager to undertake immediate steps to obtain proper, up-to-date fish health examinations from the original source of fish or eggs, and to have fish inspected for fish disease agents by a fish health specialist acceptable to the Department. Such fish or eggs must not be released or moved to any other facility until the owner has obtained a completed disease examination report from the fish health specialist. The Facility Manager is responsible for the costs of the inspection required by this rule.

(4) Except for fish reared for release under a private salmon hatchery permit pursuant to ORS 508.700, before importing any fish the Facility Manager must obtain an annual health examination of broodstock from which fish are to be imported and a copy of relevant fish health examinations of the lot of fish to be imported. If a facility has not previously exported fish to Oregon, the Facility Manager must also obtain a five-year fish-health history of stocks held at the facility and a description of the water supply source. Examinations for IHNV, IPNV, and VHSV must be conducted for salmonid broodstock. An examination for *Myxobolus cerebralis,* as described in section (5) of this rule, must

also be conducted on salmonid fish. Depending on the fish species, examinations for culturable viruses and specific bacterial and parasitic agents must be conducted for non-salmonid broodstock. The above-listed examinations must be performed by a fish health specialist acceptable to the Department. However, the Department may issue a Fish Transport Permit to import live fish into this state without the examination report if the Department finds:

(a) The fish eggs or larvae would mature to a stage at which they cannot be safely transported before a disease examination could take place or results are complete; and

(b) The fish or eggs are held in a facility approved by the Department until the permit holder can obtain a completed disease examination report.

(5) Examinations for *Myxobolus cerebralis*, agent of whirling disease, must be conducted annually on 60 fish held for a minimum of 180 days at each facility. In cases where multiple water supplies exist, fish reared in each supply must be sampled.

(6) Fish Health Services must maintain a database of fish health examination results.

(7) Any fish found to be infected with a disease agent that the Department determines may adversely affect the health of the fish of this state must be treated or destroyed at the Facility Manager's expense as directed by the Department or may be sold for human consumption, if appropriate.

(8) If fish loss exceeds 0.1 percent per day over five consecutive days in any rearing or incubation container, the Facility Manager, Facility Permittee, or Fish Propagation Licensee must:

(a) Have an examination promptly performed on live and dead fish from each pond of concern by a fish health specialist acceptable to the Department and, if required by the Department, from the entire facility.

(b) Notify in writing by E-mail, fax, or equivalent means the Department's Fish Division at its Headquarters and Fish Health Services laboratories in Corvallis, Clackamas and La Grande of the location, extent, and probable cause of such losses and provide written documentation of a treatment regimen planned to control the fish disease; and

(c) Provide Fish Health Services a copy of the disease examination record within seven business days after completion of appropriate tests.

(9) Failure to comply with these rules is grounds for the revocation of any Fish Propagation License, Cooperative Salmon Hatchery Agreement, or Fish Transport Permit.

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635-007-0995
Containment and Treatment of Fish Disease Agents

(1) The Department may approve the transfer or release of fish or issue a Fish Transport Permit with special conditions, depending on the disease history of the shipping station or watershed, the current disease inspection report, or the susceptibility of fish to disease agents endemic in the watershed to which the fish would be shipped.

(2) The Oregon exporter and importer (recipient) are responsible for getting the required permits and complying with all regulations concerning transporting fish within Oregon and importing fish to Oregon from any other state, province, or country.

(3) The annual examination (station check) of salmonids sampled at a particular hatchery for *M. cerebralis* must meet Oregon's requirements for *M. cerebralis* import or transfer of fish from that facility to or within Oregon.

(4) If the Department determines that live fish have a disease agent that may affect fish in Oregon, the fish may not be transported from one watershed to another within this state or exported from this state without the Department's written consent. The Department may restrict or prohibit a person from transporting infected fish or fish suspected of being infected to or from certain watersheds or areas within watersheds of the state.

(5) The Department may authorize a person to transfer salmonids from any waters of the state or other states without a health inspection to a facility approved by the Department for scientific study pursuant to the objectives of projects acceptable to the Department.

(6) Fish at all Department facilities must be treated so as to reduce the amplification of disease agents. Protocols listed in sub-paragraphs (a)-(c) are required for all Department facilities and are recommended for privately operated fish facilities to minimize the amplification of disease agents within their facilities.

(a) When fish disease agents are detected, preventative and therapeutic strategies must be implemented to reduce the impact of such disease agents on both hatchery-reared and naturally-reared native fish populations.

(b) Sanitation protocols:

(A) Eggs must be disinfected or water-hardened in buffered iodophor. Eggs must be disinfected after collection and, if transferred to a new facility, they must also be disinfected upon arrival. Imported eggs and their shipping containers must be disinfected at the approved destination

using methods acceptable to the Department's fish health specialists. (A list of acceptable disinfecting agents and methods is available from the Department).

(B) Disinfection footbaths or other means of disinfection must be provided at the incubation facility's entrance and exit areas for sanitizing footwear, raingear, and equipment while embryos are incubating in the facility.

(C) Equipment and rain gear used in broodstock handling or spawning must be sanitized after leaving the adult area and before being used in other rearing units or the hatch-house building.

(D) Equipment used to collect dead fish must be sanitized before being used in another pond, or equipment must be designated for each specific pond.

(E) Dead fish must be disposed of promptly and in a manner that will prevent the introduction of disease agents to waters of the State.

(F) Rearing units must be cleaned on a regular basis by vacuuming, brushing, or flushing. All equipment used for this purpose must be disinfected before being moved to a different pond.

(G) Equipment used to transfer eggs or fish among facilities, including fish liberation tankers, must be sanitized before being used with any other fish lot or at any other location. Disinfecting and disinfected water must be disposed of in an approved manner.

(H) Rearing units must be sanitized after removing fish and before introducing a new fish stock either by thoroughly cleaning the unit and using a disinfectant or by cleaning it and leaving it to dry for a minimum of three days.

(I) Use of pathogen-free water is preferable, especially for egg incubation and early fish rearing.

(c) Preventative and therapeutic fish health strategies must be implemented at all facilities in consultation with the Department's personnel to avoid or reduce disease agents and fish losses. Fish health strategies may include the following:

(A) Modifying hatchery practices such as water temperature, feeding or cleaning regimes, egg culling operations, isolating containers of infected fish, and using a different water supply;

(B) Changing release strategies, if approved by the Department's Fish Division;

(C) Destroying fish if the disease agent is untreatable and an epizootic event is likely, or where an exotic or non-endemic disease agent is detected, if approved by Fish Division;

(D) Increasing water releases from reservoirs when possible to increase flows and reduce water temperature.

(E) Treating fish with federally approved chemicals or drugs from one of the following categories:

(i) FDA-labeled and approved for use on food fish;

(ii) Allowed by the FDA as an Investigational New Animal Drug;

(iii) Obtained by extra-label prescriptions from veterinarians;

(iv) Allowed by the FDA as low regulatory priority or deferred regulatory status;

(v) Chemicals not allowed on food fish but approved by the FDA through the US Fish and Wildlife Service for fish listed under the federal Endangered Species Act.

(7) In order to continue improving the Department's expertise in fish health, the Department must develop and maintain partnerships with fish health specialists from other state and federal agencies, universities, and management partners.

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635-007-1000
Carcasses for Stream Enrichment

(1) Before approving the use of fish carcasses or fish components for stream enrichment programs, the Fish Division must determine that the use is consistent with the Department of Environmental Quality's requirements.

(2) The Department must review the disease history of the hatchery and particular fish stock, current fish health testing results, geographic location and history of fish disease, and presence of disease agents in the receiving stream and watershed as a whole in order to minimize the risk of introducing or disseminating disease agents into the receiving waters.

(3) Only fish that are killed as excess brood or that survive to spawn may be used for carcass distribution.

(4) Carcasses must be placed in the originating river basin or where identified in hatchery program management plans or other operational or conservation plans.

(5) The Fish Division may stop carcass distribution if pathogen levels increase in spawned adult fish during the spawning period.

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