

Standards and Procedures for the Certification and Re-certification of FISH PATHOLOGISTS 11-09 vers.

I. INTRODUCTION

The Fish Health Section (FHS) provides a peer review system to identify professionals possessing the competence, training, and ethics required to effectively serve the aquatic animal health needs of fisheries programs and aquaculture. Individuals meeting the following requirements shall be eligible for certification by the FHS as "Fish Pathologists."

The AFS/FHS certified Fish Pathologist is a professional who specializes in the causes, nature, and control of the diseases of non-mammalian aquatic animals, (hereinafter referred to as "fish.") Through a regimen of academic education, specialized training, and experience, the individual has developed a thorough understanding of the fish, its environment, infectious and non-infectious diseases, and the interrelationships involved.

The Fish Pathologist is an individual in the fish health field who utilizes various disciplines including fisheries biology, water quality, microbiology, parasitology, toxicology, pharmacology, and histopathology to provide an accurate evaluation and diagnosis of fish health problems. When necessary, the Fish Pathologist is capable of seeking appropriate specialized assistance in determining the etiology of a health problem. If a definitive diagnosis is not possible, the Fish Pathologist must have the ability to utilize all available information to establish the most logical cause of the problem.

The Fish Pathologist is competent to conduct fish health inspections, process samples, perform or supervise laboratory work, and interpret in-house results, as well as those from specialized reference laboratories. The Fish Pathologist is also capable of providing responsible recommendations and/or prescriptions (licensed veterinarians only) for control measures for fish diseases within legal constraints.

Technical skills, experience, and high ethical standards enable the Fish Pathologist to serve fisheries programs and aquaculture through the evaluation and diagnosis of fish health problems, through responsible recommendations for disease control, and through the administration of programs designed to enhance the health of cultured and free-ranging fishes.

II. OBJECTIVES

- A. To maintain a peer review system within the FHS which can efficiently and judiciously evaluate the basic academic training, specialized training, and work experience required for certification as a Fish Pathologist.

- B. To identify individuals possessing technical and professional competence that qualifies them to evaluate and diagnose disease problems, recommend and/or prescribe control measures within legal constraints, and administer programs designed to enhance the health of cultured and free-ranging fishes.
- C. To foster and promote the maintenance of high ethical standards for individuals involved in fish health.
- D. To provide minimum standards for education, experience, and ethics required by the FHS for certification as a Fish Pathologist.
- E. To guide educators in the development of curricula that will qualify graduates for Fish Pathologist certification, and to assist employers with the development of position classifications commensurate with the requirements for certification as a Fish Pathologist.

III. QUALIFICATIONS

A. Basic academic education

1. Bachelor's Degree, or advanced degree, in a biological science from an accredited college or university. Applicant must provide documentation of degree earned.
2. A minimum of 12 quarter or 8 semester hours of fisheries courses at an accredited college or university. Course work must include fish anatomy and physiology (laboratory required), ichthyology or fish biology, and fish culture.

B. Specialized training

1. **Fish Health:** A minimum of 5 quarter or 3 semester hours at an accredited college or university; or 100 lecture hours at a Professional Standards Committee approved or accredited training center. Laboratory required. Credit may be calculated on the basis of 3 quarter hours or 2 semester hours earned for each 40 hours of formal lecture-laboratory training. (NOTE: Each hour of laboratory training counts as 1/2 hour for calculation purposes.) Applicant must submit certified transcripts and document course content.
2. **Academic Science:** The applicant must have taken a minimum of 29 semester hours or 40 quarter hours in the following general course areas at an accredited college or university. Applicants already holding a Doctor of Veterinary

Medicine (DVM) degree will be considered to have met the academic science requirements with the exception of the Water Quality/Pollution Biology/Limnology requirement. It is recognized that course titles for the same subject matter may vary between schools, therefore the applicant must document course content as well as submit certified transcripts.

Subject	Lab Required?	Minimum Hours: Semester (Quarter)
Pathogenic Bacteriology	Yes	3 (4)
Parasitology	Yes	3 (4)
Virology	Yes	3 (4)
Immunology	Yes	3 (4)
Pathology/Histopathology	Yes	3 (4)
Nutrition	No	2 (3)
Biochemistry	No	4 (6)
Vertebrate Physiology	Yes	3 (4)
Pharmacology	No	3 (4)
Water Quality/Pollution Biology/Limnology	No	2 (3)

C. Stipulations and Considerations

1. A grade of "C" or greater is required in all course work. Courses taken "Pass/Fail" are not acceptable.
2. Academic science requirements 1 through 9 (III.,B.,2.) are considered satisfied by graduates of accredited veterinary schools.
3. College accredited or Professional Standards Committee approved correspondence or training courses may be used to fulfill fisheries (III.,A.,2.) and academic science (III.,B.,2.) course requirements.

D. Professional work experience

1. **Definition:** Full-time fish health work experience is defined as a minimum of 75% of the applicant's professional work time during a 12-month period engaged in fish health activities which may include: (1) disease diagnostics and control; (2) fish disease/health research; (3) fish

disease/health instruction at the university level or its equivalent; or (4) administrative work directly related to fish disease diagnostics and control.

2. **Requirement:** The applicant must have a minimum of 3 years of professional level fulltime fish health work experience during the 5 years preceding application.
3. **Restriction:** Work experience gained prior to meeting the Basic Academic Education requirement III.,A.,1. (i.e., Bachelor's Degree) does not qualify as professional work experience. All other educational requirements (III.,A.,2.,and III.,B.,1.& 2.) must be completed at least one year prior to applying for certification.

E. Work status at time of application

The applicant must be engaged in fish health activities at the minimum rate of 75% of the total work time.

IV. APPLICATION PROCEDURES

- A. Applicants must be members of the American Fisheries Society and the Fish Health Section.
- B. Application forms may be obtained from the Executive Secretary of the Professional Standards Committee and on the website (<http://www.fisheries.org/units/fhs/certific.htm>).
- C. Individuals seeking certification as Fish Pathologists must file completed application forms, including required supporting documents, and a \$50.00 non-refundable application fee with the Executive Secretary of the Professional Standards Committee. The applicant is responsible for an accurate and complete application as well as arrangements for the timely submission of letters of recommendation. Applications with discrepancies will be returned.
- D. At the time of application, applicants shall promptly arrange for the forwarding of 4 letters of recommendation directly to the Executive Secretary of the Committee from the following:
 1. The applicant's immediate supervisor or employer must submit a letter of recommendation directly to the Professional Standards Committee Executive Secretary which documents the applicant's current work status (III.,E.). If appropriate, this letter may also document the applicant's

previous professional work experience (III.,D.,2.) as defined in (III.,D.,1.), technical proficiency and total years and months of professional level fish health work experience of which he or she has direct knowledge. Self-employed persons are exempt but must submit 4 letters of recommendation from fish health professionals (IV.,D.,2.).

2. Letters of recommendation on the applicant's behalf must be submitted directly to the Professional Standards Committee Executive Secretary by 3 fish health professionals (4 for self-employed persons). At least one recommender must be an AFS/FHS certified pathologist or inspector (<http://www.fisheries.org/units/fhs/certific.htm>). Other recommenders must be recognized as authorities in the fish health field. These letters must attest to the applicant's professional work experience (III.,D.,2.) as defined in (III.,D.,1.), technical proficiency and, if appropriate, total years and months of professional level fish health work experience of which he or she has direct knowledge.
- E. The Professional Standards Committee shall review all applications. Upon satisfactory completion of all application requirements, the Executive Secretary of the Committee shall notify successful applicants, in writing, that they are eligible to take the written examination and must do so within one year of the notification.
 - F. Applications not approved by the Professional Standards Committee shall be returned to the applicant with a summary explanation.
 - G. Applicants desiring a review of a negative decision by the Committee may file a request with the President of the Fish Health Section for a formal review. The President shall review the decision of the panel and hear arguments from both applicant and the Professional Standards Committee. The decision of the President shall be final and shall be completed within 3 months of the formal review request.

V. EXAMINATION

- A. All applicants who have fulfilled the qualification requirements in A through D above shall be required to take a written examination administered by a member of the Professional Standards Committee or an agent appointed by the Committee. The examination will cover topics such as fish disease etiology,

diagnostic procedures, pathology of fish diseases, fish disease therapy, fish pond management, fish disease control, general fisheries, fish culture, and other items essential to a thorough knowledge of the care and health of fish. A list of potential study material is provided below. A minimum score of 70% will be required to pass the written examination.

- B. The intent of the Committee is to administer the examination at the Eastern and Western Fish Disease Meetings. Other arrangements for the examination may be considered on a case by case basis. Eligible applicants must notify the Executive Secretary at least 60 days prior to the meeting date of their interest in taking the exam at that meeting. Prior to taking the examination, the applicant must submit a non refundable \$100.00 examination fee to the Executive Secretary of the Professional Standards Committee by personal or certified check made payable to the AFS/FHS. The Executive Secretary will notify the Chairperson of the Professional Standards Committee who will prepare the exam and coordinate with the applicant and organizers of the meeting to ensure appropriate facilities are available.
- C. Upon successful completion of the written examination, the Professional Standards Committee Chairperson shall notify the applicant and the President of the Fish Health Section. The Section President, when assured that all certification procedures have been completed, shall then officially notify the applicant of his/her certification as a Fish Pathologist by a congratulatory letter and a certificate indicating the period of certification, which will be 5 years.
- D. Applicants failing the examination must wait one year before retaking the exam. Applicants failing the exam a second time must reapply for certification under the current certification requirements.

VI. RECERTIFICATION

- A. FHS certified Fish Pathologists must be recertified 5 years after initial certification and every 5 years thereafter.
- B. Two months prior to each Fish Pathologist's five-year anniversary date, the Chairperson of the Professional Standards Committee will mail to the Fish Pathologist notification of the recertification requirements and appropriate forms. When so notified, the individual seeking recertification must submit a non refundable \$50.00 recertification fee to the Chairperson of the Professional Standards Committee and payable to the AFS/FHS.

C. To be recertified, the Fish Pathologist must meet the following criteria:

1. During the previous five years, the individual must have been engaged in fish health activities at the minimum rate of 50% percent of the total work time (full-time employment) for a minimum of 3 years.
2. Each individual must remain a member of the AFS/FHS for each of the five years prior to recertification.
3. Continuing Education Requirements:

Total Credits required: 100 credits since the last renewal. At least 50 credits must be earned with activities directly related to aquatic animal pathology (including all fields of aquatic animal health). The remaining credits may be earned in any of the following categories: (1) fisheries or aquatic sciences other than aquatic animal pathology, (2) veterinary or human medicine, (3) microbiology, toxicology, pharmacology, or other sciences that provide relevant continuing education.

Credit toward fulfilling the continuing education requirements may be obtained by attending short-courses, annual meetings (including workshops and conferences), and university courses. One unit credit is obtained for each clock hour of attendance, except credit for university courses is calculated as 15 hours for each semester unit of academic credit (or for the quarter system, 10 hours for each unit of academic credit). Presentation or organization of short-courses, annual meetings, and university courses provides the same number of credits as attending. However, multiple presentations of the same or similar subject matter can only be credited once during a certification renewal period.

Continuing education activities offered for credit toward recertification are subject to approval by the Professional Standards Committee. Each applicant for renewal of certification must retain independent documentation of all continuing education courses (including content). This documentation must be produced for inspection and verification if requested by the Professional Standards Committee during its verification process.

D. The requirements for recertification (VI.,C.,1.) must be substantiated in letters of recommendation from the individual's

immediate supervisor or employer and from 3 fish health professionals. One recommender must be an AFS/FHS certified pathologist or inspector (<http://www.fisheries.org/units/fhs/certific.htm>). The requirements for recertification in VI.,C.,2 & 3, must be documented in the application for recertification. Letters of recommendation are to be mailed directly to the Executive Secretary, Professional Standards Committee.

- E. Deficiencies in any of the recertification criteria will result in the loss of certification and the need to reapply under current application requirements. If extenuating circumstances arise, a letter describing the circumstances must be forwarded to the Professional Standards Committee for review.
- F. Upon recertification by the Professional Standards Committee, the Fish Pathologist will be so notified in writing by the Executive Secretary. With this notification, the Fish Pathologist will also receive an official seal, indicating the year of recertification, which is to be affixed to the original certificate where indicated.
- G. Any Fish Pathologist denied recertification shall be so notified in writing by the Chairperson of the Professional Standards Committee, within 2 months, with reasons for denying recertification.
- H. Fish Pathologists desiring a review of a negative decision by the Professional Standards Committee regarding their recertification may file a request with the President of the Fish Health Section for a formal review of their recertification credentials. The decision of the President shall be final and shall be completed within 3 months of the formal review request.

VII. REVOCATION

- A. Fish Pathologist certification may be revoked by the Professional Standards Committee for reasons such as gross negligence, incompetence, falsification of data or reports, misrepresentation, acceptance of a bribe or any other action determined by the Professional Standards Committee to be professionally unethical.
- B. Information concerning unethical action as indicated in A above should be filed with the Chairperson of the Professional Standards Committee.

Suggested Study Material for Certification Examination as a Fish Pathologist:

- Suggested Procedures for the Detection and Identification of Certain Finfish and Shellfish Pathogens
- Most recent versions: Manual of Diagnostic Tests for Aquatic Animals and International Aquatic Animal Health Code. OIE (World Organization of Animal Health), Paris, France (www.oie.int) ,
- Physiology of Fish in Intensive Culture Systems by Gary Wedemeyer, Chapman and Hall, 1996
- FHS Continuing Education Course Notebooks
- Current scientific journal articles
- Appropriate courses and texts relating to the applicable subjects listed in section III "Qualifications"