



AFS Contact: Beverly Pike,
Director, Student & Professional Development
American Fisheries Society
5410 Grosvenor Lane, Suite 110
Bethesda, MD 20814-2199
Email: bpike@fisheries.org
Phone: 301.897.8616, ext. 213
Fax: 301.897.8096

**AMERICAN FISHERIES SOCIETY
CONTINUING EDUCATION COURSE APPROVAL FORM
CONTINUING EDUCATION COMMITTEE (CEC)**

Procedures for Course Approval

The Continuing Education Committee must approve all continuing education courses or activities sponsored by the American Fisheries Society for which formal continuing education credit is to be awarded. Courses or activities which carry academic credit, lead to a high school equivalency certificate, or are organization oriented programs or short direction programs only casually related to any specific upgrading purpose or goal would normally not qualify for approval.

The objective of the AFS Continuing Education (CE) Program, administered by the Continuing Education Committee (CEC), is to provide members with quality opportunities to develop their expertise throughout their careers as fisheries professionals. Workshops and CE courses, which are often sponsored and/or prepared by AFS members, are a primary means of fulfilling this goal. AFS has contracted with the American Council on Education (ACE) to provide and maintain records of Continuing Education Units (CEU's) to be earned by participants wishing to receive them, provided that CE offerings meet the standards that are explained in these instructions to providers. CE offerings also can be used to receive Professional Development Qualifying Points (PDQPs) needed to meet and retain Associate and Certified Fisheries Professional accreditation through the AFS Certification Program.

The following form was prepared to assist providers and reviewers in the task of ensuring that AFS CE offerings meet the standards of the ACE process. Please review it carefully and answer all questions or provide requested information, being thorough but succinct in your response. Remember, this form is the primary means that the CEC has to judge your proposal. Much like a well-constructed abstract enhances a scientific paper, a thoughtful, informative, well-prepared application attests to the quality of the proposed CE offering, and will reduce the chance of rejection or delay in its approval by the CEC.

Typed course approval forms must be completed and returned to the Continuing Education Liaison, American Fisheries Society, 5410 Grosvenor Lane, Suite 110, Bethesda, MD 20814-2199. The course contact is responsible for completing the course approval form and returning it at least three months prior to the presentation date. Completed forms submitted electronically can be processed more quickly when sent to bpike@fisheries.org . **When submitting electronic copies, please delete the cover page of this application.**

The Continuing Education Committee will review course approval forms for completeness. If more information is needed, the CE Committee Chair will send anonymous reviewer comments,

suggestions, and questions electronically to the course contact. The course contact will submit a revision implementing the recommendation(s) made by the Continuing Education Committee within two weeks of notification of the need to revise. Completed forms should be submitted to the Director of Student & Professional Development at least 2 months prior to the beginning of the course. A response will be issued within 3 weeks from the date received by the Continuing Education Committee Chair.

The course contact will receive notice from the Continuing Education Committee of the results of the review. During the program, the course contact will (1) have all registrants sign an attendance register; and (2) ask registrants to complete the course and instructor evaluation forms included in this application.

After the program, the course contact must return (1) the attendance register and (2) the completed course and instructor evaluations to:

Beverly Pike
Director of Student & Professional Development
American Fisheries Society
5410 Grosvenor Lane, Suite 110
Bethesda, MD 20814-2199

Programs may be repeated for a maximum of three years without further assessment unless content of the program is changed.

Additional information and suggestions for completing this form precede each section. Questions on completing this form should be directed to the Director of Student & Professional Development and the Continuing Education Committee Chair.

TITLE OF PROGRAM (complete, formal title): **Planning & Executing Safe & Effective Rotenone & Antimycin Projects**

PROGRAM CODES

COURSE INSTRUCTION CATEGORY (1, 2, & 4)

1. Classroom Instruction

2. Lecture/Lecture with lab

3. *Workshop/Institute/Conference Seminar*

4. Field Instruction

COURSE TYPE (**2400 Other, Fish Management Chemicals**)

1. 1000 Bioengineering
2. 1100 Early Life History
3. 1200 Introduced Fishes
4. 1300 Fish Health/Culture
5. 1400 Leadership/Communications
6. 1500 Socioeconomics
7. 1600 Education
8. 1700 Population Management/Techniques
9. 1800 Marine Fisheries
10. 1900 Water Quality
11. 2000 Computer Science in Fisheries
12. 2100 Fish Habitat Management/Techniques
13. 2200 Policy/Administration
14. 2300 Environmental Law
15. **2400 Other – Fish Management Chemicals**

PROGRAM PROVIDER(S) (i.e. Chapter, Section, Division, Agency, University): AFS Fish Management Chemicals Subcommittee

COURSE CONTACT

Name: **Brian Finlayson**

Address: **2271 Los Trampas**

City, State, Zip, Country: **Camino, CA 95709**

Phone: **530.644.2185** Cell: **530-957-0333**

E-mail: briankarefinlayson@att.net

Name: **Don Skaar**

Address: **Montana Fish, Wildlife and Parks, 1420 East Sixth Avenue**

City, State, Zip, Country: **Helena, MT 59620**

Phone: **406.444.7409** Cell: **406.465.6135**

E-mail: dskaar@mt.gov

DATES & LOCATION

Beginning Date: **May 18, 2015** Ending Date: **May 22, 2015**

Meeting Place: **Utah State University**

City, State or Province: **Logan, Utah**

NEEDS IDENTIFICATION: Clearly identify the needs for the planned program/activity for participants, their supervisors, their organization and/or profession. Discuss what changes or advancements in technology that have occurred and the relevancy of the planned program/activity to address the changes to participants. Take into consideration other complementary and competitive courses. Clearly identify the target audience (example: new employees, journey level professionals, administrators, etc). Standard: The program is planned in response to the identified needs of a target audience and needs assessment if applicable, for professionals of a given level in the organization.

Fish biologists in AFS rely on a wide variety of tools including piscicides rotenone and antimycin for the management and assessment of fish populations to maintain diverse and productive aquatic ecosystems and high quality recreational fisheries. This training course provides the foundation for planning and executing successful rotenone and antimycin projects using the recently released AFS Rotenone SOP Manual. The AFS Rotenone SOP Manual is required labeling by the U.S. Environmental Protection Agency for the application of all rotenone products. Both the EPA-approved product labels and the AFS Rotenone SOP Manual recommend the hands-on training of safe, legal, and effective application methods that are provided for in this course. Rotenone and antimycin recently went through EPA-reregistration procedures, and this has resulted in a variety of new use restrictions including the use of new semi-closed application systems to protect the applicator, mandatory deactivation of flowing water bodies to protect the environment, and more rigorous safety procedures. The course was developed and is taught by the two senior authors of the AFS Rotenone SOP Manual and the new use restrictions are emphasized in the course and the manual. The course meets the U.S. EPA's requirements that rely on standard operating procedures for the use of rotenone and antimycin and successfully completing the course will ensure that fish biologists who use these products do so in a safe, effective, and legal manner. Participants receive a copy of the new AFS Rotenone SOP Manual (written by the instructors) which is required labeling. Successful completion of a final exam will give the participant a certificate of completion.

OBJECTIVES OR LEARNING OUTCOMES: State what new knowledge or skill the participant will be able to utilize or perform upon completion of the course. List the learning objectives and action items associated with each objective. Learning objectives should be measurable. Standard: *The program/activity has clear and concise written statements of intended learning outcomes. The learning outcomes should specify the determined skills, knowledge and/or attitudes that the learner should be able to demonstrate following the continuing education experience.*

Example: Participants will be able to utilize _____ principles to develop a plan for control of _____

Participants will be able to apply the plan during development of management strategies for _____
Participants will be able to demonstrate skill in _____ by completing class exercises and databases

Upon completion of the course, participants will be able to plan and execute a successful (i.e., effective, legal and safe) project with rotenone or antimycin by performing the following:

- **Develop strategies for fish sampling/control/eradication projects that reflect sensitivities of target species to piscicides, characteristics of the piscicides and influencing environmental conditions;**
- **Develop preliminary, intermediate, and implementation plans for public involvement, application, deactivation, monitoring, and safety;**
- **Develop strategies that deal positively and effectively with unanticipated events;**
- **Implement piscicide application and deactivation techniques that minimize environmental impacts;**
- **Explain piscicide label and MSDS requirements and how these affect use;**
- **Characterize effects on target and non-target organisms and environmental fate of the piscicides and the deactivation agent potassium permanganate;**
- **Understand the need and techniques available for involving the public during the planning process; and**
- **Describe key environmental laws, regulations, and processes and how these affect piscicide use**

CONTENT & METHODOLOGY: Briefly describe the topic(s) to be covered and the instructional methods that will be employed during the activity/program. Active instructional methods are strongly encouraged and should be identified. (Example: participants will learn to manipulate data in the program to complete the exercises; active discussions will incorporate problem solving techniques that participants will be able to apply upon returning to the home station.) *Standard: The content and instructional methodologies are consistent with the objectives or learning outcomes, sequenced to facilitate learning and permit opportunities for the learner to participate and receive feedback.*

The 4 ½ day training course stresses public involvement, safety, planning and new application techniques and safety from the AFS Rotenone SOP Manual. The course was developed to meet the U.S. Environmental Protection Agency reregistration requirements that rely on the label and standard operating procedures for the piscicides, rotenone & antimycin. The course uses classroom lectures, laboratory and field exercises, participant presentations, classroom discussions, and quizzes on the

content as instructional methods. The course emphasizes public involvement in the process of planning and executing successful fish sampling/control/eradication projects. Topics include: soliciting and incorporating public involvement, fisheries management/conservation plans; piscicide uses and strategies; species sensitivities; proper safety equipment; piscicide and potassium permanganate chemistry and toxicology; reading and following labels and MSDSs; preliminary and intermediate planning; project implementation and management; crisis management strategies; and characteristics of successful projects.

REQUIREMENTS FOR SATISFACTORY COMPLETION: Briefly state the requirements for satisfactory completion of the activity/program. *Standard:* Requirements for satisfactory completion are based on the purpose and intended learning outcomes. Participants should be informed of the requirements for satisfactory completion prior to their participation. High attendance should be required (e.g. 90% and above).

In addition to attending the lectures and participating in the laboratory, field, and planning exercises, the participants take a final exam of 30 questions testing their knowledge of the eight enabling objectives listed above. Participants will receive a certificate of completion upon successful (score of 80% or higher) examination.

ASSESSMENT OF LEARNING OUTCOMES: Briefly state how individual performances in relation to the intended learning outcomes will be assessed. *Standard:* Procedures established during program planning are used, when applicable, to measure the achievement of intended learning outcomes specified for the program/activity as they relate to changes in learner's knowledge, skills, or attitudes. Assessment may take diverse forms, such as performance demonstration under real or simulated conditions, written or oral examinations, written reports, completion of a project, self-assessment, or locally or externally developed standardization examinations.

The participants perform laboratory, field and planning exercises during the course that reflect the eight course enabling objectives. The exercises include performing toxicity tests on the two piscicides and the deactivating agent at realistic concentrations, performing calculations to determine amount of piscicide needed to treat flowing and standing waters, constructing and operating piscicide delivery and deactivation equipment, and developing public involvement, application, deactivation, safety and monitoring plans. All exercises are judged by the instructors and critically discussed by the class for strong and weak points. Additionally, several quizzes are given during the course to provide the biologists with a gauge of their progress in learning.

PROGRAM EVALUATION: Briefly describe how major aspects of the continuing education experience, i.e. organizational input, participant input, the design, content, content level, and operation will be evaluated. Participant evaluations, which may include self-assessments, are strongly encouraged. Evaluation examples are attached at the end of this application. *Standard:* Evaluation refers to the quality of the administration and operation of the continuing education experience as a whole. Participant reaction surveys can be designed to measure what the participants consider to be the benefits of the learning experience and to determine satisfaction with the physical arrangements. Please provide copies of the course evaluations to the Units Coordinator

and the CE Committee Chair. The attached examples may be modified to meet your specific course needs.

We plan on using the attached course evaluation forms.

INSTRUCTION: List the instructional personnel involved in planning and conducting the program/activity and indicate the approximate proportion of instruction time for each. A resume of up to two pages must be submitted for major instructors. Standard: Qualified instructional personnel are directly involved in determining the program purpose, developing intended learning outcomes, and planning and conducting each learning experience.

Mr. Brian Finlayson will provide 50% of instruction time (see attached resume).

Mr. Don Skaar will provide 50% of instruction time (see attached resume).

DETERMINING NUMBER OF CEUs TO BE AWARDED: The 60-minute clock hour is used as the contact hour. Coffee breaks, lunches, etc. are not included. Field trips (minus travel and other administrative time) may be awarded CEUs, but usually on a basis of at least two hours of field trip equivalent to one contact hour of classroom instruction

The following and similar activities are not included when calculating the number of contact hours:

- ➔ Time for study, assigned reading, and other related activities, outside the classroom or meeting schedule.
- ➔ Meeting time devoted to business of committee activities.
- ➔ Meeting time devoted to announcements, welcoming speeches, or organizational reports.
- ➔ Time allocated to social activities, refreshment breaks, luncheons, receptions, dinner and so forth.

Note: time devoted to a luncheon or dinner presentation integral to the continuing education experience may be included in calculating instructional contact hours.

Please include a syllabus or topical outline with time allocations

Monday, 5/18/2015

8:00 – 8:30	Welcome, Announcements, & Introductions Brian Finlayson, California Department of Fish & Game Don Skaar, Montana Department of Fish, Wildlife & Parks
8:30 – 9:15	Introduction to Piscicides – Chapter 1 Brian
	Preliminary Planning – Chapter 2
9:15 – 9:45	Fisheries Management Plans & Piscicide Uses – Chapter 2A Don
9:45 – 10:15	Public Involvement Plans – Chapter 2B Brian

10:15 – 10:30 BREAK
Piscicide Labels, Conversions & Calculations – Chapter 3

10:30 – 11:30 Piscicide Labels – Chapter 3A
Brian

11:30 – 11:45 Common Measurements, Units, & Conversions – Chapter 3B
Don

11:45 – 12:30 Toxicity & Deactivation Exercise – Chapter 4
Setup and start experiment
Don

12:30 – 1:30 LUNCH

1:30 – 2:30 Piscicide Label Calculations – Chapter 3C
Brian

2:30 – 3:30 Toxicity & Deactivation Exercise – Chapter 4
Data collection, LC₅₀ value & treatment level exposure
Don

3:30 – 3:45 BREAK

Good and Bad Fish Control Project Case Histories – Chapter 8

3:45: – 4:15 Bad Canyon Creek, MT – Chapter 8A
Don

4:15 – 4:45 Lake Davis, CA – Chapter 8B
Brian

4:45 – 5:00 Class Discussion of Good and Bad Fish Control Projects

5:00 Final Check on Toxicity & Deactivation Exercise – Chapter 4

Tuesday, 5/19/2015

8:00 – 8:15 Report & Discussion Toxicity and Deactivation Exercise
Don

8:15 – 9:00 Hazard Communication & Safety – Chapter 5
Brian

9:00 – 9:45 Problem Set Chapters 1 – 5
Brian

9:45 – 10:00 BREAK

10:00 – 11:00 Rotenone Characteristics – Chapter 6
Environmental Fate & Effects – Chapter 6A
Public Health – Chapter 6B
Brian

11:00 – 12:00 Antimycin & Potassium Permanganate Characteristics – Chapter 7
Environmental Fate & Effects – Chapter 7A
Public Health – Chapter 7B
Don

12:00 – 1:00 LUNCH

1:00 – 3:00 Application & Deactivation Techniques – Chapter 9

Application Techniques for Standing Water – Chapter 9A
Brian

Application & Deactivation Techniques for Flowing Water – Chapter 9B
Don

3:00 – 3:15 BREAK

3:15 – 4:00 Problem Set Chapters 6 – 9
Brian

4:00 – 5:00 Dripcan Construction and PPE Demonstration – Chapter 10
Brian

Wednesday, 5/20/2015

8:00 – 10:15 Role of Planning in Piscicide Treatments – Chapter 11

Review of Preliminary Planning – Chapter 11A
Don

Intermediate Planning (Environmental Laws & Analysis) – Chapter 11B
Brian

Project Implementation & Management – Chapters 11C – 11F

Safety & Security Plans – Chapter 11C
Don

Application Plan – Chapter 11D

Brian

Deactivation Plan – Chapter 11E

Don

Monitoring Plan – Chapter 11F

Brian

- 10:15 – 10:30 BREAK
- 10:30 – 11:00 Logan River Brown Trout Scenario Discussion – Chapter 12
First Dam (Chapter 13) Exercise
Temple Fork (Chapter 14) Exercise
Don and Brian
- 11:00 - 11:30 First Dam Reservoir Powdered Rotenone Aspirator Demo
Don Wiley - UDNR
- 11:30 – 12:30 LUNCH and drive to Temple Fork or return to First Dam Reservoir
- 1:00 – 4:30 First Dam Field Exercise – Chapter 13
Brian
- 1:00 – 4:30 Temple Fork Field Exercise – Chapter 14
Don
- 4:30 – 5:00 Return to USU

Thursday 5/21/2015

- 8:00 – 9:15 First Dam Reservoir & Temple Fork Calculations – Chapter 13 & 14
Brian & Don
- 9:15 – 10:00 Problem Set – Chapter 13
Brian
- 10:00 – 10:15 BREAK
- 10:15 – 12:00 Teams 1-4 Work on Plan Presentations – Chapter 12
- 12:00 – 1:00 Lunch
- 1:00 – 3:00 Teams 1-4 Work on Plan Presentations – Chapter 12
- 3:00 – 5:00 Teams 1-4 Make Plan Presentations & Class Discussion – Chapter 12

Friday, 5/22/2015

8:00 – 9:00 Class Review
9:00 – 10:15 Test
10:15 – 11:00 Review of Test
11:00 – 11:30 Course Evaluations & Concluding Remarks

Total Number of Contact Hours (that apply toward certification): 36

XVI. ADDITIONAL INFORMATION:

Submitted by:

Brian Finlayson

(NAME- electronic signature)

Brian Finlayson

(NAME & TITLE- please type)

October 18, 2014

(DATE)

Approved by:

(NAME- electronic signature)

(NAME & TITLE- please type)

(DATE)