



The Ecology of Pacific Salmonids

Course ID: BIO-303

The Northwest Environmental Training Center presents:

The Ecology of Pacific Salmonids

Course ID: BIO-303 (1 day)

November 5, 2008, 8:30 A.M. to 5 P.M.

William A. Egan Civic & Convention Center - Board Room

555 West 5th Avenue

Anchorage, Alaska

Instructor: *Joseph E. Merz, Ph.D. Principal Scientist, Cramer Fish Sciences*

Description: Salmonids, including Pacific salmon and trout, are an important component of the ecological function and economy for western North America. Salmon and trout of the Pacific Coast have evolved in spite of natural disturbances such as floods, fires, volcanoes, wind-throw and disease. In fact, these influences have helped each species maintain their resiliency.

Natural disturbances tend to be relatively severe but localized, allowing for ecosystem recovery. However, human-caused disturbances may have a magnitude so great that irreversible changes to the aquatic community may occur or increase the severity of impacts from natural disturbances (e.g., flooding), having both acute and chronic impacts to salmonids. Human activities can also cause such widespread gradual changes across the landscape that the recovery potential of individual ecosystems or their components, including salmonid stocks, is altered.

While each salmonid species is unique, the genetic diversity within species across drainages may be as significant as those found across different species. Yet, certain fundamental biological requirements are the basis for all management, recovery or protection initiatives for salmonid streams. This course provides a greater understanding of:

- **The life stages of salmon and trout in both coastal and inland streams, and the habitat requirements applicable to each stage**
- **How substrate quality and hydraulic flow affect spawning behavior and redd success**
- **How habitat features, instream complexity, bank structure and large woody debris influence success of salmonids at different life stages**
- **How water chemistry, water temperature and food availability impact trout and salmon behavior and/or physiology**
- **How migration patterns can be impeded or enhanced by changes in flow, water quality, barriers or obstacles**

This course will provide general information on:

- Origins and evolution of Pacific North American Salmon;
- Life stages of salmon and trout in both coastal and inland streams and

- The habitat requirements applicable to each stage;
- Substrate quality and hydraulic flow affecting spawning behavior and redd success;
- How habitat features, instream complexity, bank structure and large woody debris influence success of salmonids at different lifestages;
- How water chemistry, water temperature and food availability impact trout and salmon behavior; and
- How migration patterns can be impeded or enhanced by changes in flow, water quality, barriers or obstacles

Intended Audience: This course is specifically designed for practitioners and agency personnel, including biologists, ecologists, hydrologists, planners and regulators involved with stream issues specifically dealing with salmonids, water supply and quality issues.

This course is immediately followed by: "[Pacific Salmonid Spawning Habitat Restoration - Design, Implementation and Monitoring of In-Stream Habitat Improvement Projects in Regulated Streams and Rivers](#)" by Joe E. Merz November 6-7, 2008

Prerequisites: None

About the Instructor: Joseph E. Merz, Ph.D., is a registered scientist with the American Fisheries Society. He has over 18 years experience working with aquatic resources and has been the principal scientist on several salmonid habitat restoration programs in the California Central Valley. He has taught environmental science, salmon biology and restoration courses for the past eight years.

Course Materials: Attendees will receive a binder containing workshop proceedings and reference material.

Continuing Education Units: 0.7

What to Bring: Pen or pencil, notepad, coffee mug, and a water bottle (to reduce waste). Please wear comfortable clothes appropriate for the prevailing weather. Coffee, tea, breakfast pasties, drinks and snacks will be provided each day. Lunch on your own.

Registration: \$250 (*\$200 reduced tuition is available for Native American tribes; government employees; nonprofits; students; and NAEP, NEBC, NWAEP members). You may register via the link below or by calling the Northwest Environmental Training Center at 206-762-1976.

Cancellation Policy: Registration fees are fully refundable up to 30 days prior to the event and 50 percent refundable (or 100% credit) thereafter up to 3 business days prior to the event. No refunds are issued for cancellations occurring less than 3 business days before the start day. You may register via the registration link or by calling the Northwest Environmental Training Center at 206-762-1976.



Pacific Salmonid Spawning Habitat Restoration

Course ID: BIO-304

The Northwest Environmental Training Center presents:

Pacific Salmonid Spawning Habitat Restoration

Course ID: BIO-304 (2 days)

November 6-7, 2008, 8:30 A.M. to 5 P.M.

William A. Egan Civic & Convention Center - Board Room

555 West 5th Avenue

Anchorage, Alaska

Instructor: *Joseph E. Merz, Ph.D. Principal Scientist, Cramer Fish Sciences*

Designed for practitioners and agency personnel involved with field data collection, detailed design and/or review of river restoration projects, this course provides general training in design, implementation and monitoring of in-stream habitat improvement projects in regulated streams and rivers, with an emphasis on the issues surrounding Pacific salmonid spawning.

You will learn techniques for assessing existing habitat and collecting and analyzing field data. Discover how to integrate physical, biological and aesthetic objectives into habitat improvement design; characterize and estimate sediment transport and budgets for enhancement sites; and to design effective monitoring programs. Material selection, contracting procedures, and data and project presentation will be covered. Examples of techniques will be provided from both successful and failed restoration projects. You will also visit an ongoing enhancement project where techniques will be demonstrated. All students receive a comprehensive habitat restoration manual.

The course will provide general training in:

- 1. Design, implementation, and monitoring of instream habitat improvement projects in regulated streams and rivers. Emphasis will be on improvements associated with salmonid spawning habitat. It will explain and demonstrate common techniques for**
- 2. Assessing existing habitat and collecting and analyzing field data;**
- 3. Integrating physical, biological and aesthetic objectives into habitat improvement design;**
- 4. Characterizing and estimating sediment transport and sediment budgets for enhancement sites;**
- 5. Designing effective monitoring programs;**
- 6. Choosing appropriate fish habitat improvement designs;**
- 7. Understanding enhancement limitations. It will also cover equipment and material selection, contracting procedures, and data and project presentation. As part of the course, participants will visit an ongoing enhancement project where several field techniques will be demonstrated.**

Intended Audience: Designed for practitioners and agency personnel involved with field data collection, detailed design and/or review of river restoration projects, this course provides general training in design, implementation and monitoring of in-stream habitat improvement projects in regulated streams and rivers, with an emphasis on the issues surrounding Pacific salmonid spawning.

This course is preceded by: "[The Ecology of Pacific Salmonids](#)" by **Joe E. Merz** November 5, 2008

Prerequisites: Suggested - *"The Ecology of Pacific Salmonids"*

About the Instructor: Joseph E. Merz, Ph.D., is a registered scientist with the American Fisheries Society. He has over 18 years experience working with aquatic resources and has been the principal scientist on several salmonid habitat restoration programs in the California Central Valley. He has taught environmental science, salmon biology and restoration courses for the past eight years.

Course Materials: Attendees will receive a binder containing workshop proceedings and reference material.

Continuing Education Units: 1.3

What to Bring: Pen or pencil, notepad, coffee mug, and a water bottle (to reduce waste). Please wear comfortable clothes appropriate for the prevailing weather. Coffee, tea, breakfast pastries, drinks and snacks will be provided each day. Lunch on your own.

Registration: \$495 (*\$395 reduced tuition is available for Native American tribes; government employees; nonprofits; students; and NAEP, NEBC, NWAEP members). You may register via the link below or by calling the Northwest Environmental Training Center at 206-762-1976.

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Northwest Environmental Training Center

A nonprofit 501(c)(3) program of the Northwest Environmental Education Council
650 S. Orcas Street, Suite 220, Seattle, Washington 98108
Phone: (206)762-1976, Fax: (206)762-1979
www.nwetc.org



Anchorage
Alaska

Accommodations near the William A. Egan Civic & Convention Center

555 West Fifth Avenue
Anchorage, Alaska 99501
(907) 263-2800
www.EganCenter.com

For more hotels in Anchorage, Alaska please visit www.anchorage.net

<u>Historic Anchorage Hotel</u> 330 E Street 1-800-544-0988 Anchorage, AK	907-272-4553	<u>Anchorage Hotel</u> 330 E Street Anchorage, AK 1-800-544-0988	907-272-4553
<u>Anchorage Hilton</u> 500 3rd Avenue Anchorage, AK 1-800-HILTONS	907-272-7411	<u>Sheraton Anchorage</u> 401 E 6th Avenue Anchorage, AK 1-800-478-8700	907-276-8700
<u>Day's Inn – Anchorage</u> 321 E 5th Avenue Anchorage, AK 1-800-DAYS-INN	907-276-7226	<u>Westmark Hotel</u> 720 W 5th Avenue Anchorage, AK 1-800-544-0970	907-276-2198

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Directions to William A. Egan Civic & Convention Center

555 West Fifth Avenue
 Anchorage, Alaska 99501
 (907) 263-2800

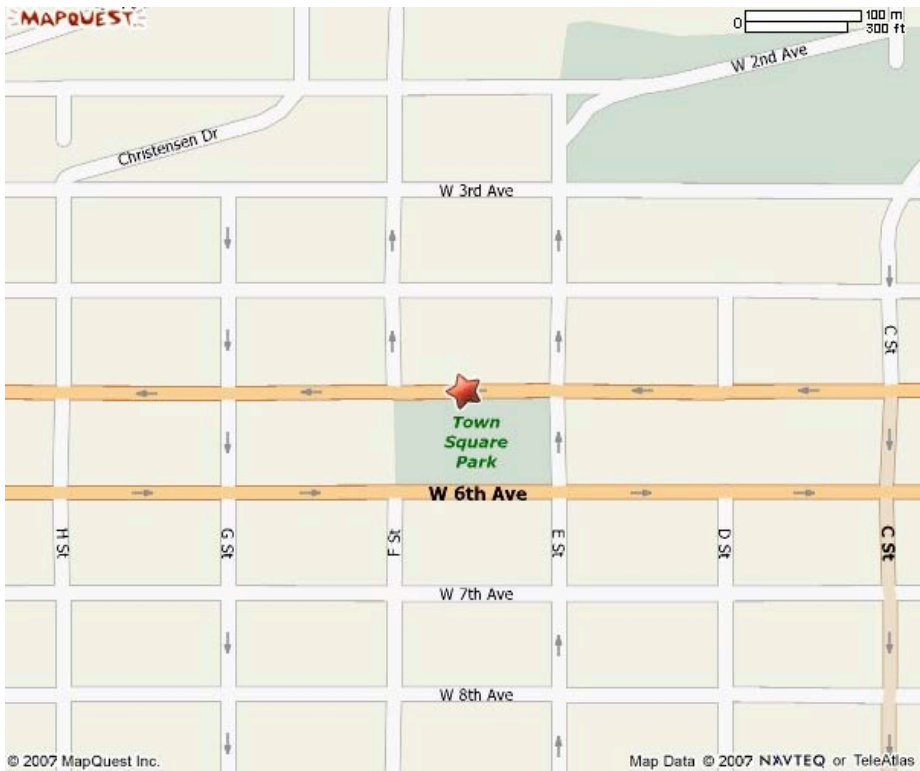
Transportation

The following services will get you around Anchorage if you do not wish to drive yourself:

<u>People Mover Bus</u> 3650 E Tudor Road 907 343-6543	Anchorage Yellow Cab Inc. 907 272-2422	<u>Alamo</u> 907-248-0017 Avis 907-249-8260	<u>Budget</u> 907-243-6492 or 907-243-0150
Anchorage Checker Cab 907 274-3333	AAA Metro Cab 907 677-7000	<u>Dollar Rent A Car</u> 907-248-5338	<u>Thrifty</u> 907-276-2855

Maps:







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650 S Orcas Street, Suite 220, Seattle, Washington 98108
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REGISTRATION FORM

Name: _____ Today's Date: _____

Agency/Organization: _____

Street Address: _____

Street Address (cont'd): _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Email: _____ Title: _____

Indicate Course[s]:

The Ecology of Pacific Salmonids \$ _____

Course ID: BIO-303 (1 day) November 5, 2008, 8:30 A.M. to 5 P.M.

William A. Egan Civic & Convention Center, 555 West 5th Avenue, Anchorage, Alaska

Registration: \$250 (\$200*)

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William A. Egan Civic & Convention Center, 555 West 5th Avenue, Anchorage, Alaska

Registration: \$495 (\$395*)

*Reduced rates for Native American Tribes; nonprofits; government; students; and NEBC, NAEP and NWAEP members. **An additional \$100 discount applies to all registrants when registering for both classes.**

Payment Method: Check PO Credit Card (Visa/Mastercard) Total: \$ _____

Credit Card or PO #: _____ Exp: _____

Checks: Please make checks payable to Northwest Environmental Training Center.

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