



U.S. Fish & Wildlife Service

National Conservation Training Center

Conserving the Nature of America

CSP1100 - Coldwater Fish Culture

Course Code	CSP1100
Course Title	Coldwater Fish Culture
Description	<p>Coldwater Fish Culture is an introductory course developed to explore all husbandry activities associated with coldwater fish culture. The curriculum follows the entire life cycle of a fish lot in a hatchery setting. Students will explore the various techniques and calculations most often used in the aquaculture industry including egg enumeration and handling, egg incubation, hatching methods, sac-fry care, managing fish from fry to catchable size, methods in brood stock management and fish stocking. Topics affecting fish behavior also will be investigated including; biological and environmental conditions, stress and pathogens, basic water chemistries, and various units utilized for egg incubation and fish rearing. Students will calculate egg and fish inventories, determine rearing capacities, project fish growth, develop feed schedules, and understand the parameters affecting fish distribution and stocking. The course curriculum will include a balance of applied fisheries science and the practical art of fish culture.</p> <p>OBJECTIVES:</p> <p>Upon completion of this course, participants will be able to:</p> <ul style="list-style-type: none">• utilize the power of observation to bridge the gap between the science and art of fish culture• enumerate both green and eyed eggs• maximize egg survival using proper handling techniques• recognize the critical point in fish development when feeding should begin• recognize the signs of over-feeding and under-feeding• identify and accurately record critical data needed to complete a lot history form• identify normal and abnormal fish behaviors• complete an accurate sample count and inventory• calculate fish growth and project fish size on a given date or time line• manipulate fish growth to achieve a desired size on a given date• project a weekly feed ration• calculate and develop a 90 day feed order• list the factors that affect the carrying capacity of a rearing facility or vessel• calculate density index and flow index and utilize them to predict when to thin a lot of fish• minimize fish stress during handling, loading, transportation and release• utilize basic genetic principles to develop a captive brood stock• describe the various spawning techniques used in fish culture• recognize the signs and causes of stress in fish• work with experts to prevent and manage fish disease• provide fish with the highest possible water quality• describe the advantages and disadvantages of the various techniques, equipment, and rearing units used in coldwater fish culture throughout the United States. <p>TARGET AUDIENCE:</p> <p>Fishery biologists, fish culturists, biological technicians, aquatic animal husbandry caretakers and other non-supervisory hatchery employees with less than 5 years work experience.</p>
Delivery Method	Instructor Led
Non-FWS Fee	\$2,390.00
Instructional Hours	72
Credits/CEUs	7.0
Course Content Contact	Matthew Patterson: matthew_patterson@fws.gov ; (304) 876-7473; matthew_patterson@fws.gov
Curriculum Category	Aquatic Species Biology and Conservation
Course Frequency	Once per year

Registration Link	Register in DOI Learn
DOI Talent Course Type	ILT
College Credit Name	Semester Hours
College Credit Value	2

Schedule: CSP1100 - Coldwater Fish Culture

Start	End	Session Information	Location	Session Contact
1/28/2019	2/8/2019	For registration questions: sharon_howard@fws.gov For course content questions: matthew_patterson@fws.gov Class begins at 8:00 AM on first day and ends as noon on last day	National Conservation Training Center (NCTC)	Sharon Howard, sharon_howard@fws.gov