

Department of the Interior

U.S. Geological Survey

Northwest Climate Science Center

Education and Training Strategy, 2013-2016

FINAL



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Introduction

The Northwest Climate Science Center (NW CSC) was established by the Department of the Interior (DOI) in 2010 to provide objective scientific information and tools that Northwest managers of land, water, wildlife, and cultural resources can use to anticipate, monitor, and adapt to climate change. The NW CSC is one of eight regional climate science centers managed by the U.S. Geological Survey (USGS) National Climate Change and Wildlife Science Center (NCCWSC) and is a federally led research collaboration hosted by three primary universities: Oregon State University, the University of Idaho, and the University of Washington.

The NW CSC receives guidance from the Executive Stakeholder Advisory Committee (ESAC), which helps identify strategic science priorities and sets the long-term climate-science agenda for the NW CSC (<http://www.doi.gov/csc/northwest/Climate-Science-Agenda.cfm>). ESAC seats are held by representatives from federal, tribal, and state agencies and organizations (<http://www.doi.gov/csc/northwest/ESAC.cfm>).

The goals of the NW CSC are outlined in its Strategic Plan for 2012-2016 (<http://www.doi.gov/csc/northwest/Northwest-CSC-Strategic-Plan.cfm>), which identifies Education and Training Services as an essential element for achieving the NW CSC's second goal to *develop resources and programs to enhance climate science literacy, and give regional audiences the necessary tools and information to promote climate change awareness*. Specifically, the objective of Education and Training Services is *to promote broad participation and support education of young scientists in the work of the NW CSC*. To help meet this objective, the NW CSC prepared an Education and Training Strategy (this document) that will guide NW CSC Education and Training Services for 2013-2016.

Purpose and Scope

The purpose of this Education and Training Strategy is to describe the NW CSC education and training goals and objectives, the target audiences for these objectives, the approaches for effectively educating and training these audiences, the approach to program evaluation, and the implementation process and status of the education and training strategy.

Strategy Elements

The Education and Training Strategy identifies general goals, specific objectives and approaches for meeting the objectives. These strategy elements are described here and summarized in table 1.

Goal

The NW CSC Education and Training Strategy has five goals (table 1), which are to:

1. Provide education to prepare graduate research assistants and early career professionals for successful careers in climate science, climate education and communications, and natural and cultural resource management.
2. Advance the understanding and practice of knowledge integration in NW CSC educational programs.
3. Promote and support the development of a network of climate science professionals.
4. Distribute the results of NW CSC-funded research to climate researchers and educators, natural and cultural resource managers and policy makers
5. Coordinate on education and training goals at national and international levels with other CSCs and educational providers.

Objectives and Audiences

The NW CSC Education and Training Strategy identifies seventeen objectives (Table 1), supporting the five general education and training goals. The target audiences are graduate research assistants in the NW CSC consortium universities (Oregon State University, University of Idaho and University of Washington), graduate research assistants at universities in the seven other USGS regional CSCs, and early career climate science professionals working in federal and state agencies, tribes and non-profit/non-government organizations in the Northwest region.

Evaluation Process

Evaluations will be conducted for all education and training programs, and findings will be used to adapt programs to the evolution of issues and to audience needs. Learner objectives and intended outcomes will be written for each educational and training program. The effectiveness of programs will be determined using evaluation feedback from audiences and cooperators. Evaluations will focus on outputs, impacts and outcomes of programs, and evaluation findings will be used by program planners to strengthen our approaches and optimize our overall NW CSC education and training strategy.

Partnerships

The NW CSC is one of many organizations providing education and training on climate science, climate issues and adaptation, science communications and knowledge integration. To ensure that education and training are provided for as many graduate students and early career professionals as possible, and that we maximize leverage and synergy across programs, facilities and other resources, we will identify and work collaboratively with other providers who share or overlap with our mission and

goals. Our intention is to seek and work closely with partners at regional, national and international scales.

Strategy Implementation

The Education and Training Strategy will be implemented over time, subject to availability of funding. Initial focus will be on the implementation of priority objectives distributed within all five goal areas, including:

- Funding of fellowships for graduate research assistants (goal 1, objectives 1);
- Implementation of the Climate Boot Camp for graduate research assistants and early career practicing natural and cultural resource professionals (goal 1, objective 2);
- Delivery of educational modules on knowledge integration (goal 2, objectives 1-6);
- Promotion of a network of climate science professionals and graduate students from diverse backgrounds (goal 3, objectives 1-3);
- Distribution of NW CSC research results to graduate students and natural and cultural resource managers throughout the northwest region (goal 4, objectives 1-2); and
- Coordination of education and training programs at the national scale with strategic partners (goal 5, objectives 1-2).

As opportunities arise, the NW CSC will expand its education and training efforts to include the other objectives within goals 1-5. Northwest Knowledge Network (NKN) data services and NW CSC on-line data repositories, which contain data from NW CSC-sponsored research will be utilized in goals 1, 2 and 4 of the education and training strategy. Also, goals and objectives in the NW CSC Tribal Engagement Strategy and NW CSC Communications Strategy will be addressed by Goals 2 and 4, respectively, in the Education and Training Strategy. The NW CSC will leverage and build on education, training and communication efforts by other entities, such as Landscape Conservation Cooperatives (LCCs) and others within the geographic area of the NW CSC.

The dedication of resources to satisfying any of the stated education and training objectives will depend on the relative costs associated with all other activities funded through the NW CSC budget, the timing and level of urgency accompanying regional and national priorities, and tactical opportunities to capitalize on partnerships and new alliances.

Table 1. Summary of elements of the Northwest Climate Science Center (NW CSC) Education and Training Strategy and their implementation status, November 2013.

Goal One. Provide education to prepare graduate research assistants and early career professionals for successful careers in climate science, climate education and communications, and natural and cultural resource management.

1. Fund research fellowships for graduate research assistants who show excellent academic promise at NW CSC host universities (Oregon State University, University of Idaho and University of Washington).
2. Offer an annual Climate Boot Camp (CBC) for NW CSC graduate research assistants, CSC network-wide graduate research assistants, and early career professionals in the northwest region, with educational modules on climate science, climate adaptation, science communications, and knowledge and data integration.
3. Promote leadership activity by NW CSC graduate assistants (e.g., leading interdisciplinary seminars on campuses, presenting NW CSC-related research, at scientific meetings, and implementing segments of Climate Boot Camp).
4. Provide NW CSC graduate assistants with mentoring and shadowing opportunities with scientists and/or managers in state and federal natural resource agencies.

Goal Two. Advance the understanding and practice of knowledge integration in NW CSC educational programs.

1. Raise awareness of the concept of Traditional Ecological Knowledge (TEK) and its application to climate research (see NW CSC Tribal Engagement Strategy).
2. Engage practicing professionals from tribal organizations to participate as educators and Fellows in the annual CBC and other educational programs of the NW CSC.
3. Cooperate with tribal and other institutions that have similar TEK educational goals.
4. Develop/promote education modules on TEK, social-ecological sciences, interdisciplinary research methodology, and data integration/interoperability (see NW CSC Data Management Strategy document, in preparation) and ensure delivery to appropriate forums.
5. Encourage the Pacific Northwest Climate Science Conference organizing committee to include presentations broadly accessible across disciplines and professions.
6. Educate scientists about translational research, management and constraints, and ensure that translational themes are incorporated into the design of research proposals seeking funding from the NW CSC.

Table 1 (continued)

Goal Three. Promote and support the development of a network of climate science professionals. Distribute the results of NW CSC-funded research to climate researchers and educators, natural and cultural resource managers and policy makers (see [NW CSC Communications Strategy](#)).

1. Support the work of the Early Career Climate Forum (ECCF), an online communications network created and maintained by alumni of the CBC, and utilize the NW CSC CBC website as an education and communications medium.
2. Promote involvement of practicing professionals from Native American tribal organizations, federal agencies and non-profits as educators and Fellows in the annual CBC and other educational forums sponsored by the NW CSC.
3. Increase the number of federal CBC Fellows representing a diverse array of agencies.

Goal Four. Promote the results of NW CSC-funded research to climate researchers and educators, natural and cultural resource managers and policy makers (see [NW CSC Communications Strategy](#)).

1. Support the planning and implementation of the annual PNW Climate Science Conference. Provide funding and sponsorship, and encouraging participation by NW CSC co-PIs, staff, Fellows and partners.
2. Support and participate as NW CSC representatives in other topical conferences by professional societies focused on climate science and adaptation and natural resource and cultural management.

Goal Five. Promote education and training goals/efforts to other CSCs and educational providers and cooperate on implementation of goals through strategic partnerships.

1. Engage other regional CSCs in planning and populating the annual CBC.
2. Explore opportunities for offering the CBC as a national CBC, a series of regional CBCs, or a larger national or international education and training effort in climate science.