Elkhorn Slough National Estuarine Research Reserve
Coastal Training Program

Strategic Plan 2011-2016

Introduction

Decisions made on behalf of coastal communities can have profound, long-term consequences for natural and built environments. Elected officials, land use planners, regulatory personnel, biological consultants, land managers, and agricultural organizations are key decision makers who may not have adequate access to relevant science-based information, training, or technology to make informed decisions.

The National Estuarine Research Reserve System (NERRS) has been building the capability to address these information and technological needs through targeted training and education programs at the local and regional levels.

The Elkhorn Slough National Estuarine Research Reserve (ESNERR) Coastal Training Program (ESCTP) has been working to build on the experience and research of the NERRS community to deliver training. The goal and long term objectives of the ESCTP:

*The **goal** of the Elkhorn Slough Coastal Training Program is better informed decision-making by local and regional coastal decision-makers to improve coastal stewardship.*

*The long term **objectives** of the Coastal Training Program are:*

- *ESNERR's research is informed by coastal decision maker (CDM) needs.*
- *Decisions made and actions taken by CDMs reduce negative pressures on the following coastal ecosystems within the ESNERR watershed:*
  - *Estuarine*
  - *Coastal prairie*
  - *Maritime chaparral*
  - *Freshwater wetlands/riparian*
  - *Oak woodland*
- *Decisions made and actions taken by CDMs reduce negative pressures on the following rare species within the ESNERR watershed:*
  - *California red-legged frog*
  - *California tiger salamander*
  - *Western pond turtle*
  - *Santa Cruz long-toed salamander*
- *CDMs are committed to becoming better coastal stewards by recognizing the impact of their collective decisions and actions on natural resources in the ESNERR watershed.*
- *CDMs are committed to becoming better coastal stewards by improving their professional skills at working with other people.*

The Elkhorn Slough Coastal Training Program (ESCTP) will accomplish program objectives by enhancing the capability at Elkhorn Slough National Estuarine Research Reserve to[1]:

- Systematically assess the science-based knowledge and skill needs of decision- makers and environmental professionals located in coastal communities within California's central coast region with an emphasis on Monterey and Santa Cruz counties.

- Identify and/or develop informational products and technical resources relevant to audience needs, training delivery, and follow-up.

- Design and conduct technical training programs for decision makers, land managers, and environmental professionals, ranging from seminars, workshops, publications and web-based media to field-based courses and distance learning forums.

- Evaluate the effectiveness of training programs and continuously assess priority information needs of the local coastal communities.

The Elkhorn Slough NERR is uniquely positioned to assume a leadership role with its Coastal Training Program. The mission of the Elkhorn Slough NERR is to:

"To improve the understanding and stewardship of Elkhorn Slough and its watershed."

The Reserve staff is dedicated to applied research and education program support that informs training program content, design, and delivery. The Reserve has cultivated strong partnerships, including with the Elkhorn Slough Foundation, a highly successful land trust focusing on conservation within the Elkhorn Slough watershed, and the California Coastal Conservancy, a state agency that purchases, protects, restores, and enhances coastal resources.

The Elkhorn Slough NERR oversees a large, diversely talented staff of researchers, educators, and land stewards. Coastal Training Program staff has extensive experience developing and implementing training programs for coastal decision makers whose work affects the Monterey Bay region. Because the Elkhorn Slough NERR Coastal Training Program is located in the midst of 1700 acres managed by the Elkhorn Slough NERR and the Elkhorn Slough Foundation and within a short drive of an additional 40,000 acres of conservation lands, there are ample sites for the field components accompanying many types of training. Finally, reserve staff work with local communities and coastal decision makers on a regular basis and have developed close relationships, credibility, and a broad understanding of local and regional information and technology needs.

Partnerships

Reserve staff do not implement the CTP alone. Partnerships are an important aspect of the program. Current formal partnerships which assist with the operations and budget of the ESCTP include: National Oceanic and Atmospheric Administration (NOAA), Elkhorn Slough

[1] For more detail on planned activities that support these objectives, see Appendix 2.

Foundation (ESF), California Coastal Conservancy (CCC), and the California Department of Fish and Game (CDFG).

NOAA provides base program funding and general oversight for the CTP. The Elkhorn Slough Foundation provides grant and personnel administration services as well as expertise with local cultural, historic, and ecological knowledge. The California Coastal Conservancy administers the NOAA grant with the assistance of the ESF. The California Department of Fish and Game is the responsible agency for the NOAA grant and provides equipment, office and meeting space, program oversight, grant match and other services.

Current informal partnerships for specific training programs/workshops have been developed with many organizations; other partnerships are being pursued. Discussion of core partners is included in the following text, and Appendix 1 contains an exhaustive list of current partners and potential partners along with the services that these agencies provide or could provide to the CTP. The California Coastal Commission and the planning departments with Monterey and Santa Cruz counties work with the ESCTP to identify key training topics and suggested program design to effectively address land use conflicts. Staff from these organizations participate in ESCTP events. UC Cooperative Extension, the University of California campuses at Santa Cruz and Berkeley, California State University Monterey Bay, the Santa Cruz County Resource Conservation District, and the Natural Resources Conservation Service all partner with the ESCTP in identifying and bringing their organization's expertise to our educational programs. Many individuals and organizations play crucial roles in partnership with the ESCTP as together we pursue answers to the regions many pressing conservation questions. For instance, a large number of private land owners, ranchers, government agency personnel, and non-profit conservation organization staff dedicate many hours monthly to achieve conservation outcomes for California's central coast grasslands, shrublands and forests through CTP partnership initiatives "The Central Coast Rangeland Coalition" and "The Central Coast Fire Learning Network."

Issues

Estuaries are critical living resources that provide Americans with vast aesthetic, recreation, and economic opportunities. Estuaries reduce polluted runoff, control flooding, and support birds, fish and other wildlife. As species rich and threatened ecosystems, estuaries also have intrinsic ecological values that may not be readily enumerated by their human utility. And, the health of estuaries depends on decisions about the surrounding watersheds. Through integrated scientific and educational programs, the National Estuarine Research Reserve System addresses a number of important topics to improve the management of these coastal areas.

Issues of National Priority

The National Estuarine Research Reserve System has identified the following 3 national priority issues:

- **Climate Change**
- **Habitat Protection**

- **Water Quality**

Issues of local importance for the Elkhorn Slough NERR

Issues that are locally important to ESNERR were identified based on a review of the following documents:

- Elkhorn Slough Wetland Management Plan (1989)
- Elkhorn Slough Watershed Conservation Plan (1999)
- Elkhorn Slough NERR CTP Market Analysis (2001)
- Elkhorn Slough at the Crossroads (2002)
- Coastal Planners and Regulators Audience Needs Assessment (2003)
- Biological Consultant Audience Needs Assessment (2005)
- ESNERR management plan (2006)
- Land Managers Audience Needs Assessment (2011)

Specific local and regional issues that are the focus of the Elkhorn Slough CTP have been tiered to the 3 national priority issues identified for the NERRS (above). Because of limited funding and personnel, the ESCTP has chosen two issues of primary importance: "Habitat Protection and Management" and "Pollution Reduction." In addition, because skills-based trainings are frequently requested by CTP audiences, and because such skills are crucial to achieving NERR priorities, the CTP also will continue to offer such trainings.

Community Background

It is important to recognize community attributes within which the ESCTP operates. The ESNERR is located in the midst of some of the most productive agricultural areas in the country which are, in turn, surrounded by what has been noted as one of the most important 'biodiversity hotspots'(Dobson et al. 1997). In addition, California is well known for its progressive environmental and land use planning laws. The areas surrounding ESNERR routinely are noted as some of the most expensive places to live, straining human communities and providing pressure on local decision makers to accommodate growth. These forces combine to create a very high level of demand for the services of the ESCTP.

Primary Priority Issues

Habitat Protection and Management

The habitat loss and alteration educational programs will focus on gathering baseline information and scientific consensus on conservation and policy issues regarding species, habitats, and ecological processes identified as critical by regional planning documents and ongoing local needs assessments. We have identified two specific educational foci (Coastal Training Program 2003, Applied Survey Research 2005, Elkhorn Slough Coastal Training Program 2011):

- Conservation, ecology, restoration, management, and monitoring of coastal habitats, including (in order of decreasing priority): tidal wetlands, maritime chaparral, coastal

prairie, freshwater wetlands and riparian areas, and oak woodlands (Coastal Training Program 2003, Applied Survey Research 2005, Elkhorn Slough Coastal Training Program 2011).

- Recovering endangered and other special status species, including: Santa Cruz long-toed salamander, California tiger salamander, California red-legged frog, western pond turtle, Santa Cruz tarplant, burrowing owl, and sea otter (Coastal Training Program 2003, Applied Survey Research 2005, Elkhorn Slough Coastal Training Program 2011).

Pollution Reduction

Pollution reduction educational activities will focus on better understanding decision maker needs and responding to those needs as they arise. Currently, needs include training about:

- Pollution sources and impacts
  (Coastal Training Program 2003, Applied Survey Research 2005).
- Efficacy of constructed treatment and restored wetlands and riparian areas and habitat buffers for reducing the effects of pollutants
  (Coastal Training Program 2003).
- Effects of treatment wetlands and buffers on organisms inhabiting those areas
  (Coastal Training Program 2003).

Skills-Based Training

In order to reach NERRS and ESNERR goals, CTP audiences must increase certain skills; needed skills-based trainings are prioritized through needs assessment. Audience needs assessments suggest prioritization of skills-based trainings in improved meeting facilitation and project design and evaluation, as well as training in geographic information systems (GIS). For meeting facilitation and project design foci, the CTP will work with the Coastal Services Center and experienced independent contractors to offer trainings. To respond to the need for GIS training, the ESCTP has partnered with the University of California at Santa Cruz's Center for Integrated Spatial Research (CISR) to offer a series of ongoing GIS trainings. CISR offers the otherwise prohibitively expensive GIS software, a computer teaching lab, experienced instructors, and very experienced education program managers at an affordable cost for participants.

Timeline

ESCTP training focus will vary throughout the five- year period of this plan (Appendix 2), but the patterns will remain the same throughout the planning period. For instance, the ESCTP will focus yearly on ecosystem conservation and management, but the focus in any given year may vary as to upon which ecosystem to focus. In 2011, the focus will be on maritime chaparral and freshwater wetlands; in 2012, we plan on focusing on riparian areas and coastal prairie; in 2013, we plan on emphasizing tidal wetlands; in 2014, we hope to emphasize oak woodlands; future years will repeat this cycle to maintain up-to-date trainings for each system. Maritime chaparral and coastal prairie emphasis will occur every other year as these are priority systems with much

emerging information. . Foci on freshwater wetlands will expand later in the strategic plan cycle as we develop capacity for this subject area. Also, each year the program will continue training programs focused on sensitive species. The CTP repeats training on California red-legged frog, California tiger salamander, and western pond turtle each year. Santa Cruz long-toed salamander workshops repeat every three years due to smaller demand. In the coming planning period, the Program will add workshops on additional sensitive species perhaps including burrowing owl, sea otter, tidewater goby, and salmonids. Invasive species foci will occur every other year as these dialogues slowly unfold and develop in our region.

Training delivery methods

The Elkhorn Slough CTP designs training delivery methods to maintain constructive and ongoing dialogues and to make information easily accessible in a timely manner to well-targeted audiences. Appendix 1 lists key partner organizations which assist with training and whose employees are specifically targeted for attendance. Appendix 2 lists specific proposed training efforts. Appendix 5 includes 'logic models' outlining the logical flow of actions to outcomes and including how the CTP interacts with the ESNERR team in obtaining long term goals. The appendices are intended to be updated annually and can be utilized to record actual partners, dates, and attendance after training is conducted. Because science constantly changes and new critical resource issues may surface, the ESCTP must remain flexible in developing its educational programs. In order to respond to unforeseen needs, the ESCTP may reevaluate this strategic plan and re-prioritize events in consultation with Reserve staff and the ESCTP Steering Committee (Appendix 7).

The training events listed in Appendix 2 represent a variety of meetings, workshops, and collaborative learning conferences. The ESCTP effort on special status species normally entails focus groups of experts who learn about the latest research from one another, and then design and improve the design of related trainings. Trainings on special status species are typically field workshops with 35 individuals. For ecosystem training, the ESCTP uses 40-200 person workshops to feature emerging science and to foster networking on single ecosystems. These workshops often contain a field component to familiarize decision makers with on-the-ground conservation issues. To meet ongoing requests by the ESCTP Steering Committee, twice yearly short ecosystem and conservation field tours for planners and regulators are envisioned for the time period of this strategic plan. Complimenting these ecosystem workshops, the ESCTP also hosts smaller, 10-30 person field trips to demonstrate ongoing conservation efforts. In the short term, these field trips focus on success stories, but as trust builds within our learning networks, we hope to use problem areas as teaching tools. Along with these more formal events, the ESCTP organizes very small, 2-10 person meetings between decision makers and scientists on an as-needed basis, particularly for core partners. Collaborative learning networks help to leverage ESCTP efforts into much larger communities and engage these communities in an ongoing dialogue over time. These efforts focus on grasslands (Central Coast Rangeland Coalition) and shrublands (Central Coast Fire Learning Network); the latter effort is the focus of a grant application and partnership funding and will not be prioritized until such resources are identified. Finally, the ESCTP uses internet resources such as its web page to disseminate information and facilitate dialogue; the website receives high praise from audiences and is highly trafficked.

Audiences

Coastal Planners and Regulators

The coastal planners and regulators audience consists of governmental agency personnel from a range of jurisdictions and geographical boundaries. The Elkhorn Slough National Estuarine Research Reserve and the vast majority of the watershed of the Elkhorn Slough is located in an unincorporated area of Monterey County, where the "*County of Monterey, Resource Management Agency, Planning Department*" has primary planning and regulatory jurisdiction. And so, employees of this department are a primary target for ESCTP activities. As a minority of the watershed (17%) lies within San Benito County, likewise employees of the "*County of San Benito Planning and Building Inspection Services*" are targeted by ESCTP activities. For both county governments, associated governmental bodies in planning and regulation are also targeted including county supervisors, public works, environmental health, and various appointed bodies overseeing planning and regulation. Although county governments shoulder the biggest burden for planning and regulation in the watershed, other agencies also play important roles including: Central Coast Regional Water Quality Control Board, California State Water Resources Control Board, Association of Monterey Bay Area Governments, California Coastal Commission, California Department of Fish and Game, U.S. Fish and Wildlife Service, Monterey Bay National Marine Sanctuary, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, and a variety of water provision agencies. Appropriate employees of these agencies are also important targets for ESCTP programs. In all, the ESCTP database lists over 450 coastal planners and regulators.

It is important to recognize that planners and regulators often learn from one another how best to implement regulations and policies that best protect natural resources while maintaining resilient human communities. County agency personnel are very interested in learning from those working in similar positions with similar issues in other counties. Large organizations with large geographic scope, such as the California Department of Fish and Game and the U. S. Fish and Wildlife Service, benefit from employee networking between regional offices at ESCTP training. Cross jurisdictional networking is also of value, with various regulatory agencies better understanding each others' approaches. The ESCTP works to better understand these linkages as they are key to improving outcomes; oftentimes, this involves including as instructors or participants planners and regulators with jurisdictions and experiences from outside the immediate bounds of the Elkhorn watershed. For instance, employees of the "*County of Santa Cruz Planning Department*" face many of the same issues as those working in similar positions in Monterey County, and so are often networked with these colleagues through ESCTP events.

Biological Consultants

Environmental regulations often result in the need for analysis by privately employed biological consultants, which are therefore a key target audience of the ESCTP. For instance, the California Environmental Quality Act (CEQA) requires varying levels of analysis and reporting for all proposed development or restoration and management projects, resulting in a very large pool of biological consultants working independently or with small or large firms. In total, the ESCTP

audience database lists 650 biological consultants. In the NERR CTP database of audiences, this audience is not explicitly listed, but falls into the 'business' category because these are privately employed people. However, the ESCTP tracks attendance of these individuals separately, and they are both highly frequent and numerous attendees at events.

Land Managers

The ESCTP land manager audience consists of a diverse array of publically and privately employed people who are responsible for caring for natural lands. The ESCTP reaches employees from a large number of public agencies that are responsible for natural land management in the region, including: California Department of Fish and Game, California Department of Parks and Recreation, California Department of Water Resources, U.S. Forest Service, U.S. Fish and Wildlife Service, Bureau of Land Management, and the National Parks Service, as well as a number of regional, county, and local parks departments. In addition, the region supports a number of land trusts, which are private conservation lands management organizations. The ESCTP also reaches a number of private landowners who manage natural lands, including private preserves, conservation easements, and ranches. The ESCTP audience database lists 530 land managers.

CTP and Integration with Other Programs at ESNERR

The CTP works with all other programs at ESNERR to implement the Reserve Management Plan. Collaboration includes reserve management planning, development of this strategy plan update, ongoing reserve strategic planning for priority conservation goals, and grant application. The collaborative approach is largely fostered by interpersonal interactions combined with regular staff meetings.

Increasingly, CTP and ESNERR research program personnel are collaboratively developing audience needs assessment and evaluation methodology. A particular CTP-research collaborative focus through this strategy update will be water quality as we work together to inform decision makers using the reserve's extensive water quality database and scientific expertise. The CTP works to assess and provide priority training and skills development subjects to other Reserve staff, including training in meeting facilitation, environmental negotiation, grassland management and monitoring, and GIS skills.

Medium and Long Term Objectives

ESCTP will conduct decadal impact evaluations to determine progress towards medium and long term objectives (Appendix 6). ESCTP staff will apply for grants or work with partners to conduct focus group meetings combined with literature reviews as informed by suggestions provided during short-term evaluation input requesting information about longer term application of trainings. Focal group meetings with key CTP audience members will help clarify links between trainings and outcomes.

Monitoring and Evaluation

A number of specific measures will be used to regularly monitor and evaluate the impact of the ESCTP training programs. Some of the specific criteria used to evaluate the quality of the ESCTP will be summarized on a bi-annual basis and submitted to the Estuarine Reserves Division (ERD) at NOAA. Appendix 3 lists the metrics mandated by the ERD for system-wide performance monitoring of the Coastal Training Program. These measures include key indicators such as participants' intention to apply the information they gain through the ESCTP; the program has fared well with these indicators in the past. A key measure that the ESCTP is currently working to improve is participants' intention to collaborate with those with which they interact at ESCTP events. We are working to better define potential collaborations and approaching collaborators to assess barriers to such.

Medium and Long Term Evaluation

The ESCTP will also monitor longer term effects of its programs. After each program, the ESCTP will ask participants to indicate where someone might look in at least a year to see application of ESCTP information. The ESCTP will then follow these leads to collect information about the application of knowledge and skills in years following training events. The ESCTP will also collect written material such as professional reports to track evidence of application of ESCTP information. The information collected will be compiled at decadal intervals to analyze how much the program has met objectives (Appendix 6).

Staffing, infrastructure, and finances

Staffing

The ESNERR CTP consists of a full time coordinator, a full time assistant coordinator, and a half time assistant coordinator. The program foresees maintaining this level of staffing through the strategic plan timeframe. Additional ESNERR staff and partners provide specific expertise.

> CTP Coordinator – Responsible for development and scheduling of training programs identified in the ESNERR CTP strategic plan. This is a full time position.
>
> CTP Assistant Coordinators – Responsible for logistical support of workshops.
>
> ESNERR staff – The ESNERR staff provides a variety of specialized skills which are utilized as needed to accomplish CTP objectives. ESNERR staff includes:
>
> - Reserve Manager
> - Education Coordinator and staff
> - Research Coordinator and staff
> - Stewardship Coordinator and staff
> - GIS Coordinator

Infrastructure

The California Department of Fish and Game (CDFG) provides office space, support, and conference room facilities for the CTP at the Elkhorn Slough NERR facility. A number of partner organizations provide venues for training events.

Finances

Appendix 4 outlines financial resources supporting the ESCTP. The budget assumes flat funding from the Reserve's funding of CTP through the NOAA 315 funds along with supplemental income from grants and workshop registration fees. Typically, the NOAA 315 funds provide a little over half of CTP revenue with ~30% of funds coming from grants lasting 2-4 years. The remaining 10-20% of funding is generated by registration fees for CTP events. Registration fees from special status species workshops have been a reliable income stream as such listed species-based training is in high demand, so the CTP will increase the diversity of these workshops to meet needs and increase revenue. Future grant funding will focus on federal and state agency funding to promote water quality improvement, an area that typically has more funding opportunities along with a high degree of regional need.

Appendix 4 also outlines projected year-to-year expenses for the CTP. Typically, salaries and fringe represent ~80% of budget outlay in a given year; this supports 2 full time and one half time position. The bulk of the remainder of expenses are workshop-related expenses and the bulk of those expenses is food, where the CTP normally provides lunch, snacks, and refreshments that are locally and sustainably produced and certified organic. Other workshop expenses include presenter fees and travel expenses, venue rental, and handouts/supplies.

Literature Cited

Applied Survey Research. 2005. *Biological Consultants Audience Needs Assessment: A Web Survey*. Unpublished Report. Elkhorn Slough National Estuarine Research Reserve Watsonville, CA. 68 pp.

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Appendix 1: Partnerships and the CTP

Present Partner	partnership services
• Agricultural and Land Based Training Association	information about training needs for agricultural community, site for training, partnership with current EPA grant
• American Planning Association	credit for CTP training entice core audience to attend events
• Agricultural Water Quality Alliance	information about training needs for agricultural community, access to trainers
• California Coastal Commission	CZMA partner, CTP Steering Committee member
• California Invasive Plant Council	information about training needs for lands managers, access to trainers, funding for invasive species workshops, marketing assistance
• California Native Grassland Association	information about training needs for lands managers, access to trainers, marketing assistance
• California Native Plant Society	information about training needs for lands managers, access to trainers, marketing assistance, funding for publications on sensitive species
• California State University Monterey Bay	interns to assist CTP, CTP Steering Committee member
• Cal Poly San Luis Obispo	technical assistance for reaching ranching audience
• Center for Ocean Solutions	information about training needs for coastal decision makers and climate change, strategy partner for sea level rise training

Present Partner	partnership services
• County of Monterey, Resource Management Agency, Planning Department	information about training needs for local planners, CTP Steering Committee member
• East Bay Regional Park District	training venues and assistance, funding
• Midpeninsula Regional Open Space District	funding
• Monterey Bay National Marine Sanctuary	key partner in improving Slough habitat and regional water quality – many functions
• Monterey County Resource Conservation District	key recipient of CTP information and conduit of such to community
• Santa Clara Open Space Authority	training venues and assistance
• Santa Cruz County Planning Department	information about training needs for local planners, assistance prioritizing training for impact
• Santa Cruz County Resource Conservation District	key recipient of CTP information and conduit of such to community
• The Nature Conservancy	funding
• University of California Cooperative Extension	provides trainers, funding, and technical support/review for CTP products and services
• University of California – Santa Cruz and Berkeley campuses	provides trainers and technical support/review for CTP products and services
• US Department of Agriculture Natural Resource Conservation Service	provides trainers and technical support/review for CTP products and services
• US Fish and Wildlife Service	advisory role for sensitive species and water quality issues

Potential Partners	**partnership services**
• Association of Environmental Professionals	marketing to local planners and consultants
• California Department of Transportation	funding, trainers, assistance with review of wildlife corridors issues
• California Society for Range Management	trainers, marketing, review of CTP products related to rangeland conservation
• Regional Water Quality Control Board	funding, marketing – potential regular contractually-based revenue stream
• County of San Benito Planning and Building Inspection Services	information about training needs for local planners, assistance prioritizing training for impact
• Society for Ecological Restoration	credit-based professional licensing agreement entice core audience to attend CTP events, marketing
• US Army Corps of Engineers	funding, trainers, technical review of CTP products

Appendix 2: Training Event Topics and Schedule

Appendix 2: Training Event Topics and Schedule 2011 Trainings			
Month	**Species**	**Ecosystem**	**Skills**
January			
February			Introduction to GIS
March			
April	California red-legged frog	Central Coast Rangelands Coalition – management planning and endangered species recovery	Remote Sensing Experts Roundtable Data acquisition in GIS
May	California tiger salamander Improving management for California red-legged frog: workshop design meeting		
June			Geodatabase Design and Modeling (GIS)
July			
August	Western pond turtle	Nitrogen from the Lower Salinas River Basin: impacts on the Elkhorn Slough	Introduction to Remote Sensing (GIS)
September		Historic and prehistoric patterns inform tidal wetland management in the face of climate change Priority restoration practices for ecosystem recovery in California	GIS in Ecology and Conservation
October		Central Coast Rangelands Coalition – native grass restoration; collaborative approaches to management Planning and implementing wetland restoration on the agricultural fringe	Introduction to Cartographic Design (GIS)
November	Improving management for California tiger salamander: workshop design meeting		Introduction to Spatial Analysis and Modeling (GIS)
December			

Appendix 2: Training Event Topics and Schedule 2012 Trainings			
Month	**Species**	**Ecosystem**	**Skills**
January		Maritime chaparral ecology and conservation	Improving wetland restoration permitting: workshop design meeting
February	Management and restoration of California red-legged frog		Introduction to GIS
March		Sensitive habitats of northern Monterey County: an overview for planners…focus on riparian and wetland restoration and buffering+ Ecosystem services of wetlands: provision of clean water	Intermediate Spatial Analysis and Modeling (GIS)
April	California red-legged frog	Central Coast Rangelands Coalition – soil carbon sequestration to combat climate change	Data acquisition in GIS
May	California tiger salamander	Riparian management and restoration: planning for the entire suite of species: workshop design	Successful permit application for wetlands restoration
June	Management and restoration of California tiger salamander	Water quality impairments in the Elkhorn Slough	Geodatabase Design and Modeling (GIS)
July	Improving management for Santa Cruz long toed salamander: workshop design meeting		
August	Western pond turtle		Introduction to Remote Sensing (GIS)
September		Riparian management and restoration: planning for the entire suite of species Monitoring and reporting on restoration projects to inform adaptive approaches to restoration	Statistical Modeling in GIS

Appendix 2: Training Event Topics and Schedule 2012 Trainings			
Month	**Species**	**Ecosystem**	**Skills**
October	Sea otter	Central Coast Rangelands Coalition – co-management for recreation and livestock Sensitive habitats of northern Monterey County: an overview for planners: upland focus Clean water and endangered species: a case study in restoration for planners and regulators	Introduction to Cartographic Design (GIS) Streambed alteration permits and restoration
November	Santa Cruz tarplant recovery workshop		Introduction to Spatial Analysis and Modeling (GIS) Facilitation Skills for Scientists and Resource Managers CEQA – riparian and wetlands restoration in Monterey County
December			

Appendix 2: Training Event Topics and Schedule 2013 Trainings			
Month	**Species**	**Ecosystem**	**Skills**
January		Coastal prairie management and restoration	Intermediate Cartographic Design (GIS) Coastal Act: Restoring ESHA and working with local coastal programs
February	Management and restoration of Santa Cruz Long-toed salamander	Water quality impairments in the Elkhorn Slough	Introduction to GIS
March		Sensitive habitats of northern Monterey County: an overview for planners: grasslands focus	Intermediate Spatial Analysis and Modeling (GIS)
April	California red-legged frog	Central Coast Rangelands Coalition – TBD	Data acquisition in GIS
May	California tiger salamander		GIS in Wetland Science
June			Geodatabase Design and Modeling (GIS)

Appendix 2: Training Event Topics and Schedule 2013 Trainings			
Month	**Species**	**Ecosystem**	**Skills**
July			
August	Western pond turtle		Introduction to Remote Sensing (GIS)
September	Burrowing owl		Statistical Modeling in GIS
October	Sea otter	Central Coast Rangelands Coalition – TBD Sensitive habitats of northern Monterey County: an overview for planners	Introduction to Cartographic Design (GIS)
November			Introduction to Spatial Analysis and Modeling (GIS) Program Design and Evaluation
December			

Appendix 2: Training Event Topics and Schedule 2014 Trainings			
Month	**Species**	**Ecosystem**	**Skills**
January		Conservation and ecology of freshwater wetlands of California's central coast	Intermediate Cartographic Design (GIS)
February			Introduction to GIS
March		Sensitive habitats of northern Monterey County: an overview for planners	Intermediate Spatial Analysis and Modeling (GIS)
April	California red-legged frog	Central Coast Rangelands Coalition – TBD	Data acquisition in GIS
May	California tiger salamander	Water quality impairments in the Elkhorn Slough	GIS in Wetland Science
June	Santa Cruz long-toed salamander		Geodatabase Design and Modeling (GIS)
July			Global Positioning Systems (GPS-GIS)
August	Western pond turtle		Introduction to Remote Sensing (GIS)

Appendix 2: Training Event Topics and Schedule 2014 Trainings			
Month	**Species**	**Ecosystem**	**Skills**
September	Burrowing owl		Statistical Modeling in GIS
October	Sea otter	Central Coast Rangelands Coalition – TBD Sensitive habitats of northern Monterey County: an overview for planners	Introduction to Cartographic Design (GIS)
November			Introduction to Spatial Analysis and Modeling (GIS)
December			

Appendix 2: Training Event Topics and Schedule 2015 Trainings			
Month	**Species**	**Ecosystem**	**Skills**
January		Tidal wetlands ecology and conservation on California's central coast	Intermediate Cartographic Design (GIS)
February			Introduction to GIS
March		Sensitive habitats of northern Monterey County: an overview for planners	Intermediate Spatial Analysis and Modeling (GIS)
April	California red-legged frog	Central Coast Rangelands Coalition – TBD	Data acquisition in GIS
May	California tiger salamander	Water quality impairments in the Elkhorn Slough	GIS in Wetland Science
June			Geodatabase Design and Modeling (GIS)
July			Global Positioning Systems (GPS-GIS)
August	Western pond turtle		Introduction to Remote Sensing (GIS)
September	Burrowing owl		Programming and Scripting in GIS

Appendix 2: Training Event Topics and Schedule 2015 Trainings			
Month	**Species**	**Ecosystem**	**Skills**
October	Sea otter	Central Coast Rangelands Coalition – TBD Sensitive habitats of northern Monterey County: an overview for planners	Introduction to Cartographic Design (GIS)
November			Introduction to Spatial Analysis and Modeling (GIS)
December			Intermediate Remote Sensing (GIS)

Appendix 3: Measures for evaluating the Elkhorn Slough CTP

Quantitative Measures

- Total # of CTP activities (Events & Technical Training) offered during reporting period.
- Total # and type of organizations, entities represented by participants during the reporting period. Organized into 11 defined organizational categories
- Total # of CTP participants involved in a distinct CTP activities (Events and Technical Training) over the reporting period.
- Total # of contact-hours for reporting period.
- % of CTP participants agreeing that participation in CTP events was a good use of their time.
- % of CTP participants reporting increased knowledge as a result of training.
- % CTP respondents reporting the intention to apply something they learned in their work or future decisions as a result of the training event.
- % of CTP respondents reporting increased skills or ability to use (technology, methodology, or BMP) as a result of the training event.
- Number of unique visitors and hits to CTP web pages

Qualitative Measures

The ESCTP will track program success and submit outcome statements, which are narratives of medium to long term impacts to which training activities have contributed.

Appendix 4: Projected Financial Plan for Elkhorn Slough NERR Coastal Training Program

	Fiscal Year			
	2011-12	**2012-13**	**2013-14**	**2014-15**
Funding Sources				
NOAA NERR CTP	102,037	102,037	102,037	102,037
Workshop fees	19,000	23,000	28,000	30,500
EPA-ALBA grant	33,000	45,000		
MidPen grant	5,000	5,000	5,000	5,000
Grants, other		15,000	54,000	60,000
Total funding for year	**159,037**	**190,037**	**189,037**	**197,537**
Program Expenses				
Salary and Benefits	145,297	152,745	157,328	162,047
Travel	3,000	3,000	3,000	3,000
Miscellaneous supplies	2,000	2,000	2,000	2,000
Equipment	1,500	1,500	1,500	1,500
Workshop expenses	7,000	30,000	25,000	27,000
Total expenses for year	**158,797**	**189,245**	**188,828**	**195,547**

Appendix 5: CTP Logic Models

<table>
<tr><th colspan="6">CTP Habitat and Species Conservation Logic Model</th></tr>
<tr><th>Resources</th><th>Actions</th><th>Outputs</th><th>Short Term Goal</th><th>Medium Term Goal</th><th>Long Term Goal</th></tr>
<tr><td>ESNERR CTP staff</td><td>Determine information needs of decision makers: regulators, planners, biological consultants and land managers</td><td rowspan="4">Workshops, meetings, collaborative conferences, and publications</td><td>Improved mapping and delineation of species distributions and habitat types</td><td rowspan="4">Increased protection and management of habitats and species</td><td rowspan="4">Sustainable protection and management of habitats as evidenced by all species sustaining healthy populations through time. Listed species are recovered and delisted</td></tr>
<tr><td>ESNERR research staff</td><td>Partner on grant-funded projects to fill research gaps</td><td rowspan="2">Improved mitigation, management and restoration strategies</td></tr>
<tr><td>ESNERR research staff</td><td>Continue monitoring and GIS land use mapping ; analyze data to detect changes linked to conservation practices</td></tr>
<tr><td>ESNERR CTP staff</td><td>Better synthesize and disseminate existing data - given guidance from users on what the end-product should look like</td><td>Regulators enforce existing regulations</td></tr>
</table>

<table>
<tr><th colspan="6">CTP Pollution Reduction Logic Model</th></tr>
<tr><th>Resources</th><th>Actions</th><th>Outputs</th><th>Short Term Goal</th><th>Medium Term Goal</th><th>Long Term Goal</th></tr>
<tr><td>ESNERR CTP staff</td><td>Determine information needs of water board, RCD, etc.</td><td rowspan="4">Workshops and publications for agencies and regulators (CTP)</td><td>Agricultural related agencies able to use information to obtain grant $ to help farmers implement BMPs</td><td rowspan="4">Farmers implement BMPs and reduce agricultural contaminants: for example, build larger sediment basins; use fertilizer more efficiently; properly align rows, etc.</td><td rowspan="4">Decrease agricultural pollutants in Slough and other habitats</td></tr>
<tr><td>ESNERR research staff</td><td>Partner on grant-funded projects to fill research gaps</td><td rowspan="2">Agricultural advisory agencies (NRCS, RCD, ALBA etc) understand how pollutants affect plants and animals; how improved management decreases pollutants</td></tr>
<tr><td>ESNERR research staff</td><td>Continue SWMP, water quality monitoring and GIS land use mapping ; analyze data to detect changes in WQ linked to changed management</td></tr>
<tr><td>ESNERR CTP staff</td><td>Better synthesize and disseminate existing data (local studies, and literature reviews from elsewhere) on agricultural impacts on estuarine wildlife and TMDLs - given guidance from users on end-product</td><td>Regulators understand sources and effects of contaminants in Slough and other habitats - and therefore enforce existing regulations</td></tr>
</table>

Appendix 6: Examples of typical medium and long term objectives for various program foci. In 2012, the ESCTP will be developing all medium and long term objectives during the ESNERR Management Plan process.

Reserve Objective	Training topic	Focus area	ESNERR Sector Involvement	Medium term objective	Long term goal
Protect and restore coastal prairie in the Elkhorn watershed	Habitat conservation	Coastal prairie	Stewardship – experiment with coastal prairie management, share results	By 2020, all watershed owners of coastal prairie are participating in a collaborative management process for coastal prairie conservation	By 2050, all coastal prairie organisms in the watershed have healthy, sustainable populations.
Protect and restore freshwater wetlands in the Elkhorn watershed	Habitat Conservation	Recovering the California red-legged frog	Research – conduct experiments on red-legged frog management Stewardship – demonstration sites for red-legged frog recovery	By 2020, 100% of the environmental documents produced by biological consultants working in the Elkhorn Slough watershed reflect current science.	By 2050, California red-legged frogs have double the minimum viable population size in the Elkhorn Slough watershed.

Reserve Objective	Training topic	Focus area	ESNERR Sector Involvement	Medium term objective	Long term goal
Reduce pollution in the Elkhorn watershed	Pollution prevention	Nitrogen sources and impacts	Research – conduct water quality monitoring and research Stewardship – participate with the Tidal Wetlands Project to adaptively manage Slough wetlands	By 2020, owners of tidal wetlands associated with the Elkhorn Slough are working together to address the impacts of water quality impairments	By 2050, nitrogen impacts to the Elkhorn Slough are reduced so that eutrophication no longer takes place.
All goals	Skill-based training	GIS	Research and Stewardship – attend trainings on GIS analysis	By 2020, decision makers use GIS analyses to support improved decision making	By 2050, habitat conservation in the Monterey Bay is informed by GIS analyses.
All goals	Skill-based training	Facilitation skills	All sectors – attend trainings on facilitation	By 2020, the majority of meetings about ESNERR priority issues are facilitated by people using ESCTP trained skills	By 2050, all meetings about ESNERR priority issues are facilitated by people using ESCTP trained skills

Appendix 7: Elkhorn Slough Coastal Training Program Steering Committee Members

David Feliz
Reserve Manager
Elkhorn Slough National Estuarine Research Reserve

Lawrence Ford
Biological Consultant/Rangeland Ecologist

Mark Hansen
President
ROI Properties

Dawn Hayes
Education/Outreach Coordinator
Monterey Bay National Marine Sanctuary

Bill Head
Professor
Earth Systems Science and Policy Institute CSUMB

Scott Hennessy
Past Director
Monterey County Planning Department

Carl Holm
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Monterey County Planning Department

Charles Lester
Deputy Director
North Coast District Office, California Coastal Commission