



Linking Land and Sea: A Northern California Coastal Conservation Needs Assessment

for
Mendocino, Humboldt and Del Norte Counties



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Linking Land and Sea: A Northern California Coastal Conservation Needs Assessment

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TABLE OF CONTENTS

Executive Summary	1
1. Introduction	4
2. Project Methodology	6
2.1 Expert Input	6
2.2 Existing Plan Synthesis	7
2.3 Stakeholder Input	8
Basic Survey Design	9
Utilization of Survey Data	10
One-on-One Interviews	10
3. Results	11
3.1 Need for Regional Planning	11
Do We Need More Regional Coastal Conservation Planning?	11
Marine Planning	12
Terrestrial Planning	12
Address the Connection Between Marine and Terrestrial Resources	12
3.2 Implementation Strategies for Existing Plans	13
Gaps In Existing Coastal Conservation Plans	14
Need for Implementation Strategies for Existing Plans	15
Education and Public Relations Regarding Existing Conservation Plans	15
Need for more specific (local geographic focus or resource focus) plans	16
Need to Implement Existing Plans	17
3.3 Priority Needs of Conservation Organizations	18
Prioritization of Needs - Categories	18
Priority Needs Within Each Category	19
Organizational Needs	19
Data Needs	21
Socio-Political Needs	21
Outreach and Education Needs	23
Technical and Training Needs	23
Regulatory and Other	24
3.4 Existing Marine and Terrestrial Plan Synthesis - Overlap	24
4. Interviews	26
5. Recommendations and Discussion	27
5.1 Summary of Needs Assessment Recommendations	27
5.2 Implementation of Existing Plans	29
5.3 Building and Maintaining Conservation Organization Capacity on the North Coast	30
5.4 Development New Data and Conservation Plans	31
5.5 Access to Existing Data and Planning Information	33
5.6 Communication and Collaboration	34
5.7 Incentives	35
5.8 Creating Broad Support for North Coast Conservation	36

6. Appendices

- Appendix A - Advisory Team Members
- Appendix B - Synthesis of Existing Marine Planning Documents
- Appendix C - Synthesis of Existing Terrestrial Planning Documents
- Appendix D - Stakeholder Meeting Summaries by County
- Appendix E - Contact Information for Northern California Coastal Conservation Stakeholders
- Appendix F - Linking Land and Sea Coastal Conservation Planning Questionnaire
- Appendix G - Linking Land and Sea Needs Assessment Survey
- Appendix H - Additional Survey Results
- Appendix I - Qualitative Needs Assessment Survey Results
- Appendix J - Quantitative Needs Assessment Survey Results
- Appendix K - Humboldt State University, Natural Resources Planning and Interpretation, Senior Practicum Project Final Report, "A Humboldt County Coastal Needs Assessment"

LIST OF FIGURES

Table 1 - Planning Team Members and Affiliations	6
Table 2 - Existing Marine and Terrestrial Reports Reviewed and Summarized	7
Table 3 - Synopsis of Stakeholder Participation	8
Table 4 - Example Needs Assessment Category Resource Allocation Sheet	9
Table 5 - Ideas for Plans with a Specific Focus	17
Table 6 - Sources of the Needs Assessment Recommendations	28
Needs Assessment Survey Results	
Figure 1 - Total Need by Category	19
Figure 2 - Priority Organization Specific Organizational Needs: Building and Maintaining Your Organization	20
Figure 3 - Priority Regional Organizational Needs	20
Figure 4 - Priority Data Needs	21
Figure 5 - Priority Regional Social-Political Needs	22
Figure 6 - Priority Organization Specific Social-Political Needs	22
Figure 7 - Priority Outreach and Education Needs	23
Figure 8 - Priority Training and Technology Needs	24

EXECUTIVE SUMMARY

Background

During the period from November 2005 to July 2006 the California State Coastal Conservancy (Conservancy or SCC), through a one-year contract by the National Oceanic and Atmospheric Administration Coastal Services Center (NOAA CSC), contracted with the Redwood Community Action Agency (RCAA) and the Pacific Marine Conservation Council (PMCC) to conduct a Northern California Coastal Conservation Needs Assessment (“Linking Land and Sea”)

The primary purpose of Linking Land and Sea was to assess and document the need for regional strategic coastal (marine and terrestrial) conservation planning and describe the specific needs of conservation organizations to facilitate both planning and implementation of coastal conservation in Mendocino, Humboldt, and Del Norte Counties. Linking Land and Sea sought to identify and assess knowledge, data, and resource gaps that need to be filled in order to more effectively plan for and implement coastal conservation projects.

Methodology

Information for this project was gathered through interviews with and surveys completed by coastal conservation experts and a diversity of regional stakeholders, and a review of existing conservation plans, strategies, and studies.

A Planning Team was developed to oversee and provide input to Linking Land and Sea on a regular basis. This oversight included a review of and input to the project methodology, outreach materials, meeting agendas and minutes, interview questions, and drafts of the Needs Assessment Report.

Stakeholder input was largely obtained at three facilitated meetings (one in each county). Data were gathered at the meetings through a Needs Assessment Survey and Regional Planning Questionnaire. Additional information on marine planning efforts was gathered through individual interviews of marine professionals.

RCAA and PMCC reviewed and summarized the information gathered from participating stakeholders as well as existing marine and terrestrial plans/assessments as a basis for identifying regional needs and gaps, and developing the coastal conservation recommendations reflected in this document.

Results/Priority Needs

Priority Needs identified by stakeholders who participated in the project fell into the following categories: Implementation of existing plans, Building and maintaining conservation organization capacity on the north coast, Development and access to current data, Communication, collaboration, and incentives, and Creating broad support for north coast conservation. The specific needs identified within each of these categories are listed below. The following section provides a list of the recommendations identified as actions necessary to meet these needs.

- Implementation of priority conservation actions as identified in existing terrestrial and marine plans.
- Strategies and/or funds to cover the up front costs of developing conservation projects
- Development of diversified funding sources that are long-term and sustainable
- Filling of priority data gaps with accurate and up-to-date information. Especially for the marine environment; sediment and its impacts to near shore environment; marine fisheries habitats; and estuarine habitat functions for anadromous and marine fisheries.

- Development of site specific terrestrial and estuarine plans.
- Implementation of marine conservation planning on a regional scale.
- Knowledge of and access to existing data and information especially regarding marine resources and the link between land and sea
- Improved access to and understanding of existing terrestrial and marine conservation plans.
- Improved communication and collaboration between conservation partners
- Increased number and utilization of incentives and decrease in the number of disincentives for resources users and managers to conduct coastal conservation and use Best Management Practices
- Development of a sense of stewardship in general population and decision makers for coastal resources

Recommendations

1. Provide resources for protection of (via easements, fee-title acquisition) priority coastal areas identified in existing coastal conservation plans.
2. Provide resources for adaptive management of existing conservation areas.
3. Increase staffing of state and federal agencies conducting coastal conservation.
4. Develop long-term State funding sources for coastal conservation other than General Obligation Bond Funds.
5. Establish a regional funding mechanism for coastal conservation. Creation of an open-space district or other special district mechanism for the North Coast should be explored.
6. Conduct a detailed data gap analysis and GIS mapping of coastal Del Norte, Humboldt and Mendocino counties
7. Mapping of marine habitats. Lobby to get DFG marine habitat mapping effort prioritized/expedited for the North Coast.
8. Increase research and monitoring to link changes in land use and runoff (especially sediment) to impacts on estuarine and near shore water quality and habitat.
9. Conduct regional marine conservation planning for the North Coast, building from The Nature Conservancy's Northern California Marine Ecoregional Assessment.
10. Develop site specific terrestrial and estuarine plans. See Table 4.1.1 for detailed site information.
11. Facilitate access to region specific information and spatial data for marine/coastal environment and conservation by developing either a centralized information system or a coordinated network of information systems.
12. Maximize communication and collaboration between groups that generate and manage regional data and GIS including Humboldt Bay Harbor Recreation and Conservation District (HBHRCD), University of California Cooperative Extension Sea Grant (UCCE Sea Grant), NOAA Fisheries, California Department of Fish and Game (DFG) both marine and inland fisheries, The Nature Conservancy (TNC), Center for Integrative Coastal Observation Research and Education (CICORE), Legacy the Landscape Connection, county planning departments, Klamath Resource Information System (KRIS), CalFish data base, Central and Northern California Ocean Observation System (CENCOOS).

13. Provide for outreach and education regarding existing regional coastal conservation plans and priorities for implementation.
14. Additional support for existing groups that bring together conservation partnerships and facilitate collaboration.
15. Determine the feasibility of creating a regional resource network or conservation framework that could bring together the following elements: collaborative body (representatives from stakeholder groups and agencies); means for public process; science advisory panel; communication body for interactions with state and federal programs; and ability to develop proposals for, accept and administer funds to support projects on a regional scale.
16. Determine the feasibility of creating regional resource centers to provide support for small coastal conservation groups.
17. Create incentives for the use of best management practices by marine and terrestrial resources users.
18. Develop strategies for working with private landowners. Development of a regional strategy that provides an analysis of how conservation of coastal resources on private lands can be economically viable/desirable.
19. Support for and development of programs that connect people to place.

1. INTRODUCTION

In 2005, The California State Coastal Conservancy (Conservancy or SCC) was awarded a one-year contract by the National Oceanic and Atmospheric Administration Coastal Services Center (NOAACSC) to conduct a **Northern California Coastal Conservation Needs Assessment**. The Conservancy retained the Redwood Community Action Agency (RCAA) and the Pacific Marine Conservation Council (PMCC) to conduct the Needs Assessment in consultation with Conservancy and NOAA CSC staff.

A key aspect of the project was including both marine and terrestrial conservation and considering the land to sea continuum. As such the project was named *Linking Land and Sea: A Northern California Coastal Conservation Needs Assessment*. **The primary purpose of Linking Land and Sea was to assess and document: 1) the need for regional strategic coastal (marine and terrestrial) conservation planning and 2) specific needs of conservation organizations to facilitate both planning and implementation of coastal conservation in Mendocino, Humboldt, and Del Norte Counties.** Linking Land and Sea sought to identify and assess knowledge, data, and resource gaps that need to be filled in order to more effectively plan for and implement coastal conservation.

Linking Land and Sea provided an opportunity for the northern California coastal conservation community (agencies, NGOs, businesses, land managers, researchers, educators) to collectively document and communicate needs to regional, state, and federal organizations who may be able to fill the priority needs identified. In addition, the results of the project may be utilized to identify potentials for increased collaboration between coastal conservation organizations. The audience for the Linking Land and Sea report includes any person, organization, or agency with a vested interest in the success of coastal conservation on the North Coast.

The **geographic scope** of the project was coastal Mendocino, Humboldt, and Del Norte counties including California State Waters out to three nautical miles from the shoreline. The terrestrial boundary was not fixed but was generally considered to be the coastal zone as well as encompassing coastal watersheds. The project area boundaries were selected based on resource and socio-political considerations including: The three counties share a tradition of rural, resource-based economies; are much less influenced by San Francisco Bay and are much less densely populated than the other North Coast counties of Marin and Sonoma; and have similar habitat and ecotypes (e.g., large tracts of coniferous forests). Consequently, these three counties have similar coastal issues (sediment impaired watersheds, low population density, conversion from resource-based economies, increasing growth pressures) and conservation opportunities (large areas of open space on the coast, active conservation groups). Compared to the southern and central California coast, the region has not been well studied (especially the marine environment); and due to the small population the North Coast has difficulty competing for state resources.

Identifying how to better support existing conservation organizations is a vital step in ensuring the protection and restoration of this unique coastal region. The Mendocino, Humboldt and Del Norte County coastal region is globally outstanding in its diversity of species, rare habitats, and ecological condition. The region includes a World Heritage Site and International Biosphere Reserve (Redwood National and State Park). The California North Coast eco-region represents the southern extension of the temperate rain forests of the Pacific Northwest, and includes many of California's most significant rivers (Smith, Klamath, Mad, Eel, Mattole, Navarro, Big and Noyo), that are home to California's most significant remaining populations of wild salmon. The regions coastal and marine habitats include tidepools, estuaries, bays, rocky headlands, sandy beaches, mudflats, eelgrass, surfgrass, high and low-relief rocky features, and kelp forests. The region supports a diversity of marine species with important commercial value including Dungeness crab, rockfish, lingcod, perch, sole, anchovies, herring, salmon and albacore.

Species of concern that inhabit this region include:

- Birds such as the northern spotted owl, marbled murrelet, Double-crested, Brandt's, and pelagic cormorants, tufted puffins, rhinoceros auklets, peregrine falcon, and western snowy plover.
- Amphibians including northern red-legged, tailed and foothill yellow-legged frogs, and Del Norte and southern torrent salamanders.
- Coho and Chinook salmon, steelhead and cutthroat trout, California halibut, tidewater goby, green sturgeon, pacific lamprey, large variety of rockfish.
- Northern elephant seal, Steller sea lion, California fur seal, Pacific harbor seal, California Grey, and Blue, Fin, Sperm, and Humpback Whales.
- Rare plants including McDonald's watercress, western bog violet, cobra lily, Mt. Eddy draba, Menzie's wallflower, Humboldt Bay owls clover, western lily, pink sand verbena, coastal *Trinquetrella*, and Wolf's evening primrose.

The Needs Assessment was designed to be **comprehensive in scope and include an analysis of coastal conservation needs of a diversity of organizations** including those focused on natural resources and biodiversity; recreation and public access; working landscapes; sport and commercial fisheries; and/or environmental education. The Needs Assessment gathered information from coastal conservation experts, stakeholder input, and from existing marine and terrestrial plans. This document reports the results of these investigations and integrates them to:

1. Identify priority needs and constraints of coastal conservation entities in seven categories including: organizational/business, data/information, socio-political, education, technology and training, regulatory, and other.
2. Determine if there is a need to develop a regional coastal conservation plan;
3. Provide recommendations regarding ways to fill priority needs for successfully implementing coastal conservation planning and/or projects.

The project sought to answer the central question, "What do the people and organizations that are involved in marine or terrestrial coastal conservation projects need to be able to continue to carry out their missions and implement their programs and projects?"

2. PROJECT METHODOLOGY

The approach to providing the final recommendations in this document was to gather information from coastal conservation experts, a diversity of regional stakeholders, and review of existing conservation plans, strategies, and studies. Project duration was November 2005 through July 2006.

2.1 Expert Input

Planning Team. The Planning Team (Table 1) oversaw and provided input to Linking Land and Sea on a regular basis, including: review of and input to methodology, outreach materials, meeting agendas and minutes, interview questions, and draft reports. Planning Team members were involved in regular conference calls, attended the kick-off meeting on January 18, 2006, and participated in the regional stakeholder meetings. The planning team also met in April 2006 at the NOAAASC Headquarters in Charleston, S.C. to review preliminary assessment results and develop the final report outline.

<i>Key Components of the Approach</i>	
•	Expert Input and Review <ul style="list-style-type: none"> ○ Planning Team ○ Technical Advisory Team
•	Existing Plan Synthesis (Marine and Terrestrial)
•	Stakeholder Input <ul style="list-style-type: none"> ○ Questionnaire-Regional Planning Needs ○ Surveys and County meetings in Humboldt, Del Norte, and Mendocino

Table 1. Planning Team members, affiliation, and roles.

Ruth Blyther (Project Lead and terrestrial focus)	Natural Resources Services Division, Redwood Community Action Agency (RCAA)
Jennifer Bloeser (marine focus)	Pacific Marine Conservation Council (PMCC)
Moira McEnespy (Project Lead for SCC and Contract Manager)	California State Coastal Conservancy (SCC)
Nancy Cofer-Shabica, and Cope Willis	NOAA Coastal Services Center, Charleston, South Carolina (NOAA CSC)
Rebecca Smyth, Adrienne Harrison	NOAA Coastal Services Center, San Francisco, California (NOAA CSC)

Technical Advisory Team. Initial identification of potential Advisory Team members was based upon RCAA’s Regional Watershed Coordinator contacts in each of the three counties, PMCC’s marine contacts and contacts listed in The Conservation Fund’s (TCF) report, *Conservation Prospects for the North Coast: A Review and Analysis of Existing Conservation Plans, Land Use Trends and Strategies for Conservation on the North Coast of California*. The Planning Team refined this list based on the potential members’ regional perspective and knowledge, coastal conservation focus, and ability to provide thoughtful input. Invitations to participate in Linking Land and Sea by attending an initial kick-off meeting were sent by email to 34 people. Follow up phone calls were also made to key individuals. Twenty potential Advisory Team members participated in the initial kick-off meeting in Humboldt County on January 18, 2006. At this meeting, the Advisory Team provided input on regional coastal conservation planning needs, identified key stakeholders and existing plans, and reviewed project methodology. Throughout the project, Advisory Team members also provided assistance with regional meeting organization and outreach, and review of the draft and final Needs Assessment documents. The final Advisory Team consisted of 17 members (three people who attended the

initial meeting decided not to participate for various reasons) from various backgrounds and counties within the region. Appendix A lists the members and their affiliation or area of expertise.

2.2 Existing Plan Synthesis

RCAA and PMCC reviewed and summarized existing marine and terrestrial plans/assessments as a basis for identifying regional needs and gaps, and developing potential coastal conservation recommendations (Table 2). More time was spent on synthesis of Marine Plans because of the lack of any previous efforts along these lines. Note that only one plan, The Nature Conservancy's *Northern California Marine Ecoregional Assessment* specifically considered the continuum between terrestrial and marine resources. This plan was reviewed in both the terrestrial and marine syntheses.

Marine. PMCC identified and reviewed 13 existing marine plans, ranging in scope from national to regional. This review resulted in a PMCC report, Synthesis of Existing Marine Planning Documents (Appendix B), which summarizes the plans, documents gaps in marine planning, and identifies opportunities for land-sea connections.

Terrestrial. The Conservation Fund (TCF), *Conservation Prospects for the North Coast*, provided a comprehensive assessment of the current status of terrestrial coastal conservation, including an inventory of existing plans and conservation organizations. RCAA reviewed this document along with two recent conservation assessments by The Nature Conservancy and combined and organized the recommendations (both region-wide and by Hydrologic Unit) into themes (data, education, training, collaboration etc). Grouping the recommendations in this way made it relatively easy to identify gaps in existing plans. The complete Terrestrial Plan Synthesis can be found in Appendix C.

Table 2 Existing marine and terrestrial reports reviewed and summarized in synthesis reports

Marine Plans	Prepared/Published By
National	
1. <i>America's Living Oceans, Charting a Course for Sea Change.</i>	Pew Commission on Ocean Policy
2. <i>An Ocean Blueprint for the 21st Century</i>	U.S. Commission on Ocean Policy
West Coast	
3. <i>Pacific Coast Groundfish Essential Fish Habitat Final Environmental Impact Statement</i>	Pacific Fishery Management Council / NOAA Fisheries
California	
4. <i>Protecting Our Ocean - California's Action Strategy</i>	California Resources Agency and California Environmental Protection Agency
5. <i>California Coastal and Ocean Science Needs Assessment</i>	The California Ocean Science Trust
6. <i>California Ocean and Coastal Information, Research and Outreach Needs Workshop Final Summary Report</i>	Ocean Protection Council
7. <i>California Ocean and Coastal Information, Research, and Outreach Strategy</i>	Ocean Protection Council
8. <i>California Sea Grant Strategic Plan 2006 – 2010</i>	California Sea Grant College Program
9. <i>Marine Life Management Act</i>	California Dept. of Fish and Game, Marine Region
Contain Region Specific Elements	
10. <i>Marine Life Protection Act</i>	California Department of Fish and Game
11. <i>Critical Coastal Areas Plan 2002</i>	California Coastal Commission
12. <i>California Coastal National Monument Cooperative Management Plan</i>	California State Office Bureau of Land Management
13. <i>Northern California Marine Ecoregional Assessment</i>	The Nature Conservancy
Terrestrial Plans	Prepared/Published By
1. <i>Conservation Prospects for the North Coast</i>	The Conservation Fund
2. <i>Working Toward a Humboldt – Del Norte Conservation Vision: Identifying Regional Conservation Priorities</i>	The Nature Conservancy, Save-the-Redwoods League, North Coast Regional Land Trust
3. <i>Northern California Marine Ecoregional Assessment</i>	The Nature Conservancy

2.3 Stakeholder Input

Stakeholder input was largely obtained at **three facilitated meetings** (one in each county). The meetings were organized and led by RCAA and Planning Team members. Data were gathered at the meetings through a Needs Assessment Survey and Regional Planning Questionnaire. Stakeholders and Advisory Team members were invited to the meetings through email and telephone contact. The meetings were approximately three hours in length and included presentations describing the project and its goals as well as information on existing terrestrial and marine planning efforts. The stakeholders participated in facilitated discussions regarding whether or not there is a need for more planning. Notes were taken on flip charts during this discussion. Participants were then provided with detailed instructions on completing the project survey and questionnaire. The three Regional Meeting Summaries are included as Appendix D.

Selecting the Stakeholders. The Planning Team and Advisory Team assisted in identification of the Linking Land and Sea Stakeholders (Appendix E). According to TCF’s study, there are over 100 terrestrial conservation organizations in the region; however, many of these terrestrial conservation organizations have a very specific geographic focus (a watershed, a coastal area, a municipality etc.). Because of the regional scope of this needs assessment, Linking Land and Sea focused on stakeholders known to provide thoughtful insights for coastal conservation and have at least one of the following attributes:

- Provide a regional perspective;
- Integrate marine and terrestrial conservation in their planning or project implementation; and
- Demonstrate a high degree of success in coastal conservation or having a high potential for success either because of geographic area or issue focus.

Table 3 Synopsis of Stakeholder participation

Stakeholder Type	Invited	Participated	Regional Planning Questionnaire	Needs Assessment Survey
Private Non-Profit Conservation Organizations	60	26	20	19
Tribes	11	3	1	3
Local Government Entities	21	6	3	2
State Government Entities	27	10	7	6
Federal Government Entities	14	5	3	5
Education Institutions	12	5	5	4
Private Business	25	7	7	6
TOTALS	170	62	46	45

Questionnaire for Regional Planning Needs - The *Regional Coastal Conservation Planning and/or Implementation Questionnaire* (Appendix F) was developed in order to gather input as to whether more regional coastal conservation planning is needed for the North Coast, and if so, what type? Participants were asked to consider the need for specific types of plans including those focusing on:

- Marine conservation;

- Terrestrial conservation;
- Connecting terrestrial and marine ecosystems;
- Specific regional priorities; and/or
- New plans to identify other specific needs.

The questionnaire also requested information from the stakeholders regarding priority gaps in existing coastal conservation plans; and the need for implementing existing plans.

Surveys - The *Linking Land and Sea Survey* was developed in order to perform the assessment in a quantifiable manner, and determine priorities for each organization and for the region. The survey was designed to assess each conservation **organizations’ specific needs** in order to successfully implement coastal conservation projects. The survey also asked stakeholders to quantify the **regional needs** to support coastal conservation on the North Coast region.

Basic Survey Design

Stakeholders were given an 8-page survey (Appendix G) with instructions that they had 200% resources (or \$200) to spend – 100 on their own organization’s needs (organization specific), and 100 on regional needs. Stakeholders were to consider their immediate needs and what they thought their organization and the region would need in the next 5-10 years. Table 4 depicts a sample of how a stakeholder chose to spend their 200% “resources” or \$200.

The survey consisted of seven broad need categories each with a number of specific needs available for selection. The categories included:

- Organizational Needs (Building and Maintaining your Organization);
- Data Needs (Development of and/or Access to the Best Available Science and Information);
- Social-Political Needs (Enhancing Collaboration, Incentives, and Policies);
- Outreach and Education Needs (developing Community Stewardship);
- Training and Technology Needs;
- Regulatory Needs (Understanding and Improving the Regulatory Environment); and
- Other (any additional needs not represented on the survey)

Table 4. Example of “resource distribution” from one Humboldt County conservation organization - The person prioritizes their organizations need for training and technology by spending the most resources in that category. The priority regional needs were identified in the social-political category. The detailed worksheets that the stakeholder filled out would show the specific conservation organization needs.

List of Potential Needs Categories (See attached forms for more details)	Enter your final percent/amount spent in each category to total 100 per column.	
	Your Org. Needs	Regional Need
I. Organizational Needs	7	3
II. Data Needs	20	20
III. Social-Political Needs	3	30
IV. Outreach and Education Needs	20	15
V. Training and Technology Needs	30	10
VI. Regulatory Needs		7
VII. Other (<i>you decide</i>)	20	15
TOTAL (should be 100 in each column)	100	100

Utilization of Survey Data

In order for the survey data to be utilized in the Needs Assessment, it was necessary for the Stakeholders to fill the forms out correctly. For instance, if the numbers in each column (see the example above) did not add up to 100, it was impossible to utilize those numbers when determining final results. After the first meeting in Humboldt County it became apparent that the directions needed to be more explicit. At the Del Norte and Mendocino meetings a sample that was correctly filled out was provided and the pre-survey instructions were described with more clarity, stressing the importance of a properly filled out survey. In most cases, RCAA staff contacted stakeholders to complete the survey again if the form was improperly filled out; however, of the 51 surveys that were completed by stakeholders, six could not be utilized.

After the meetings, surveys were reviewed to ensure they were filled out accurately, sorted by stakeholder type, and survey data were entered into spreadsheets. A spreadsheet was developed for each need category and numbers were entered for each individual survey; this allowed results to be sorted by stakeholder type. These numbers were tallied to identify priorities within each need category and between categories. Bar graphs were developed from spreadsheets to allow for visual representation of obvious priorities and trends. The resultant bar graphs in Section 4. display these priorities. For more detail in each category (e.g. exactly which subcategory resources were “allocated,” or which stakeholder type did the “allocating”), Appendix K provides a full accounting of stakeholder responses.

One-on-One Interviews

Based on the stakeholder representation reflected in the attendance at the regional meetings, the Planning Team determined that there was a need to collect additional information from marine stakeholders. In order to obtain more comprehensive, diverse input regarding marine conservation planning and implementation needs, six interviews of one to two hours in length were conducted with marine professionals. The individual interviews, which allowed for in-depth conversations and dialogue, were based on similar questions that were drafted for the regional meetings. The results from these interviews were incorporated into the results, discussion and recommendations sections of this report.

3. RESULTS

Linking Land and Sea Needs Assessment results are presented in the following order:

- Need for Regional Planning – results from ‘Questionnaires’ and stakeholder meetings (Sections 3.1 and 3.2);
- Organization and Regional Needs – results from the ‘Stakeholder Survey’ (Section 3.3); and
- Existing Terrestrial and Marine Plans/Assessments – synthesis of existing plans (Section 3.4).

Each method of information collection provided distinct data results. Open-ended ‘Questionnaire’ responses were diverse and not easily summarized. ‘Survey’ responses provided quantitative data, presented here as bar charts. Synthesis of marine and terrestrial plans (Appendices B and C) focuses on recommendations regarding land and sea linkages.

3.1 Need for Regional Planning

Stakeholder meetings were conducted in early 2006 in Mendocino (March 22), Humboldt (February 18), and Del Norte (March 14) Counties and were attended by a total of 62 people. Forty-six participants completed a *Regional Coastal Conservation Planning and/or Implementation Questionnaire*.

Stakeholder questionnaire responses and meeting discussions provided a great deal of information regarding the status of planning in the north coast region. Detailed summaries of each county meeting discussion and Questionnaire feedback can be found in Appendix F. This section further condenses the meeting results without losing content and reflecting the depth and richness of the stakeholder feedback.

Do We Need More Regional Coastal Conservation Planning?

Of the 46 written responses to this question, twenty-nine people (63 percent) responded that more regional planning is needed to address marine resources and/or the connection between marine and terrestrial ecosystems.

Eleven participants answered **“maybe”**, and noted that the first step should be to categorize existing plans and then fill the gaps. Six participants answered **“not sure”** because they did not have enough information about what plans exist and the information contained within them. All of the participants agreed that they **need a better understanding of:**

- What plans currently exist;
- What goals, objectives and recommendations they contain; and
- How they link together and compliment each other.

Responses indicated that the region needs a mechanism to knit together existing planning efforts – both those completed and those planned. This mechanism should include a spatial representation of existing plans, a database with links, be centrally housed and be updated regularly. It would be useful to categorize existing plans (marine and terrestrial) and to clearly identify and prioritize planning gaps that exist. Having a central clearinghouse for information and a few people who are knowledgeable about what exists and can then educate others would be very helpful.

It was noted that there is a great deal of variability between the plans, and that very few are peer reviewed. It would be useful to integrate existing plans as many of them have a narrow focus (e.g. birds, marine habitat, open space, development, land use, recreation).

Do We Need More Marine Planning?

A 'regional marine resources conservation plan' should be developed that contains strategies to accomplish explicit short- and long-term objectives at various geographic scales. However, there is a lack of data for developing such a plan. Very little detailed information exists regarding marine resources specific to the state's North Coast. Basic marine seafloor habitat mapping (GIS layers of marine resources) needs to be conducted in this region. The region needs a coordinated mechanism to identify and monitor mapping and research activities and facilitate the sharing and management of data for marine planning.

Do We Need More Terrestrial Planning?

Five Questionnaire responses indicate that there is no need for more terrestrial conservation planning. Specific responses were:

- There are hundreds of existing (terrestrial) plans, and no one person can know what is in all of these plans. (Note: Conservation Prospects for the North Coast (The Conservation Fund, 2005) has a good synopsis).
- There are so many plans it is difficult to know if there is a need for more or what type of planning is needed.
- It seems like it would be good to take a break in terrestrial planning so people can catch up with what exists.

Seven stakeholders who identified a need for more terrestrial planning were specific about the type of plans needed. "We need more site-specific plans that lead to implementation." There is a need to constantly review, update, **adapt and improve existing plans along with the need to implement** projects on the ground.

Need to Address the Connection Between Marine and Terrestrial Resources

Twenty-eight Questionnaire responses (61 percent) indicate a **need to integrate marine and terrestrial plans** and to complete more planning efforts **that address terrestrial and marine resource connections**. County stakeholder meeting discussions and Questionnaire responses recommended a number of ways to address the 'land to sea continuum':

Effects of Terrestrial Land Use on Marine Resources

- The impacts of terrestrial land use practices on marine resources and inter-tidal and estuarine ecosystems should be addressed. We need to understand the interaction between **sediment coming from the land and its affect on marine life**. For example, what are the sediment impacts from the major rivers on the near shore habitat? (Note: two reports exist – Jeff Borgeld's strataform project and an Humboldt State University thesis addressing Eel River sediment impacts on kelp beds.)
- **Making the connection** between increased biodiversity and a healthy marine ecosystem and fisheries – by studying and abating the impacts from coastal watersheds – will be extremely beneficial on many levels.
- Marine resource protection, through the use of marine protected areas (MPAs) or other forms of ocean zoning can best be moved forward by making a strong connection between impacts to these resources from coastal watersheds.

- First, finish marine planning; then integrate with terrestrial plans if an identified need.

Estuaries

- “What’s being done to protect and enhance estuaries in our region?”
- What are the current conditions of and threats to regional estuary habitats? (Note: addressed somewhat in TNC and SRL regional planning efforts.)

Data/Education

- More **education** regarding the linkages between marine and terrestrial ecosystems is needed. There **are a few data sets** currently available that would increase our understanding of some marine/terrestrial relationships.
- An **on-site inventory** of resources should be developed and **public access** to information marine conservation planning documents should be increased. For example, the *Mineral Management Surveys* (Minerals Management Service, US Department of Interior, various dates) contain a lot of Mendocino coastal data, but is not readily available.
- **Data** are needed on the impacts of river water quality on marine resources; and potential of long term effects of global warming on ocean levels, etc.

Overlap in Existing Plans

- Analyze where existing marine and terrestrial plans overlap. Integration of marine and terrestrial plans can be accomplished by thinking of them as merely one plan.
- Anadromous fish are an obvious link between freshwater or terrestrial and marine habitats, but there are also other less obvious links, such as the marbled murrelet, other seabirds, and many other species that move between the two.

3.2 Implementation Strategies for Existing Plans

Twenty Questionnaire responses (43 percent) identified the **need to implement existing plans**. Additionally, during discussion, stakeholders at all meetings felt this was a high priority. It is a priority to make sure there are funds to implement existing plans.

There was specific mention of several plans that people wanted to see more resources focused on for implementation:

- The California Coho Recovery Strategy (Department of Fish and Game, 2005)
- The Smith River Anadromous Fish Action Plan (Smith River Alliance, 2005)
- Mendocino County Coastal Conservation Plan (Mendocino Land Trust, 2005)

Other: The North Coast Needs Plans That...

Lead to Implementation

- Can be implemented and that provide for a human and natural resources future.
- Prioritize across the north coast. Save the Redwood's perspective: Where within the range of coast redwood should we focus our efforts?
- Lead to Action that addresses the impact of human activity on wildlife (vehicle-induced injuries, monofilament, deliberate cruelty, etc)

Are Ecosystem Based

- Forecast trends: Modeling is important to help us understand the impacts of our management decisions. Trend forecasts can be a real motivator for policy implementation.

Have a Specific Geographic or Resource Focus

- Contain more detail to be useful for our area (Gualala). Identify areas that fall between two larger plans – that fall through the cracks.
- Are more geographically focused and address estuarine restoration in Humboldt Bay; and cover the Eel and Smith Rivers, and the coastal tributaries that have been overlooked in planning (Bear River).
- Plans/strategies that address site-specific issues along the coast such as improved access/trails, discharge to ASBS/Critical Coastal Areas.
- We need basic marine habitat mapping.
- Invasive exotics management/eradication plans

Educate

- Create basic knowledge on terrestrial/marine linkages
- Recognize the need to educate the public as to why plans are needed and how they will benefit the community.
- In addition to ecosystem-based planning, we need assistance with sociological planning and getting the political support required for conservation in this region.

Summarize and Prioritize

- Summarize what already exists, determine what is out there. Conservation needs that are the result of local input should be the only ones given high priority.
- The region needs a way to organize, summarize and catalogue existing plans

Important Gaps In Existing Coastal Conservation Plans

Stakeholder meeting participants were asked to identify gaps in existing plans to the best of their knowledge. During discussions, this was a difficult topic, as many people did not feel they had enough knowledge of existing plans – especially marine plans. On the Questionnaire, 27 responses identified gaps in existing plans, including:

Long range forecasts

- Reliable **long-range forecasts** and trends information in ecosystem change/impacts is needed so people know where we are headed. Forecasts can be used to add a sense of urgency and increase public awareness and support for conservation.

Data Gaps

- Significant need exists for regional and local data on fish recruitment and documentation of the importance of **estuarine habitat to marine fish** and invertebrate recruitment.

- **Marine fisheries data** especially regarding **nursery locations**: Off shore? Near shore? Deep reefs? You can manage fish and conservation only if you have these focused data to support the management decisions.
- **Data gaps that exist regarding the marine/terrestrial ecotone should be categorized and prioritized.** These data gaps include mapping of marine habitats, water quality impacts to marine environment, depiction of seasonal changes and natural variation, and the bathymetry of small-scale areas among others.
- Lidar coverage is very sporadic: the North Coast needs coverage for prioritized areas.
- Need recent data on **Coho abundance** and more site-specific data for steelhead.
- Need good facts-based assessment on what **baseline data** currently exists, what is the use of the area, and what are the current needs of existing conservation areas.
- Need **seamless coverage** of the coast with comparable data sets, so patterns can be identified.

Implementation Strategies

- Most of the existing plans for the region lack specific **implementation and funding strategies**.
- A significant gap is being able to **identify actions** that will affect the most critical limiting factors or “drivers” of habitat degradation and then having the resources to do something about them.
- Need staff to implement existing plans and trained people to volunteer.
- There is a gap between strategic vision and project implementation. Building the collaborative partnerships, conducting necessary research and analysis, finding the funds, obtaining permits, garnering public support, etc... all need to be completed before implementation can occur.

Education and Public Relations Regarding Conservation Plans

- Need a **strong educational component**, so people can see that they ultimately will benefit from coastal conservation.
- Dissemination of knowledge, existing plans, and current information. Need a huge public relations and public information blitz. Awareness of what is in the existing plans is thin, maybe non-existent.

Other Gaps

- Need to address resource management on **private lands**.
- Community shoreline park potentials.
- Effects of seawalls, armoring, riprap, and sea level rise on shoreline/estuaries/near shore resources.
- Balancing coastal recreation with resource/species conservation/preservation.
- Addressing **commercial interests and resource-based industry** (marine and watershed-based.)
- Include **wildlife rescue and rehabilitation** centers, (seabirds and shore birds, especially important for rare/threatened/endangered species and during oil spills/disasters).

Is there a need for more specific (local geographic focus or resource focus) plans within the region? If so what would be the specific focus?

Twenty-eight people provided written responses to this question (23 yes, 3 no, 2 maybe). One person that answered 'no' remarked that various parties within the region will make opportunistic use of existing plans, and that conservation strategies will arise in this way. 'Maybe' responses related to the need to understand more about what existing plans say.

Specific responses from the Questionnaire and the discussions during the meetings resulted in a number of ideas for more specific plans in the region. These can be categorized into plans with specific geographic focus, either estuary or coastal sites or watersheds; or plans focusing on specific types of resources or resource use. These are presented in Table 5 below. Responses that were more detailed or had a data/information/research focus are presented as bullets.

Data/Information/Research-Specific

- **Follow up on oil spill prevention and response** (DFG/OSPR). The current plan has a large amount of information about coastal resources that could be damaged by oil spills. Need to add to this effort and gather more and more detailed/better baseline data and add information.
- Increased information on **sea level rise** due to climate change and the potential impacts to coastal resources.
- **Watershed level planning** to identify potential sites for conservation.
- Regional priorities should be specified and developed from an **ecosystem-based** management approach. Such a plan should identify ecosystem-based management projects for watershed/estuary/near-shore ecosystems.
- Identify areas that should be conserved as shoreline parks (bluffs, beaches, estuaries).

Table 5 Ideas for Plans with Specific Focus

Response by County	Geographic Focus Site Specific	Geographic Focus Watershed/River	Resource Focus
Del Norte	Estuary of Elk Creek, Smith River; Crescent City Harbor. Restoration plan for Lake Earl Lagoon, wildlife area and WS and Tolowa Dunes State Park..	Smith River; Klamath River watershed wetland conservation plan. Coastal streams action plan between Klamath and Oregon border.	Conservation plans, ditch the bogus “multi-use plans”. Seventh generation kind of thesis. Bird rehab as mitigation coastal access impacts. Need focus on education & wild bird rescue is a good vehicle.
Humboldt	Humboldt Bay and Eel River with focus on the estuaries	Eel River fisheries, and water and sediment supply and management. Mattole River long-term infrastructure plan	Restoration of diked tidelands. Coastal plans, which are a nexus of natural resource, agriculture, recreation, and residential/commercial values. Terrestrial land management and how it relates to MPA, CCA, ASBS
Mendocino	Ten Mile River and Albion River estuaries. Gualala geologic study water runoff land sediment slides. Pygmy forest. Cottonveva creek public access	Estuaries and places with watershed wide significance to protection of aquatic and marine biodiversity.	Trails, stewardship forestry, conservation of marine and intertidal resources, fishery & watershed restoration. Address exotic invasives. Priorities for conservation across the range of coast redwood. Public access to seashore. Seashore armoring & influences on marine life & public access

Focus on Implementing Existing Plans

A total of 32 people responded to the following statement: “We don’t need any more planning, we need to focus on implementing plans we already have.” The responses were: Strongly Agree, 12; Somewhat Agree, 8; Neutral, 8; Somewhat Disagree, 6; Strongly Disagree, 1 (for marine and estuaries). Responses in the discussions and from the Questionnaire included:

- Need both **more planning and help in implementing existing plans**. “My organization (SRL) primarily needs help with implementation (we have sufficient funds for planning).”
- Implementation of identified strategies is where resources and efforts should be focused.
- Need additional agency staff capacity (more of them and with better resources) to work with conservation partnerships. Example, the need for streamlining the permitting process is identified on a regular basis, and if there were **more agency staff (DFG, CC, NMFS, COE), permit processing would get done faster**.
- The need is for **implementing actions** that have clear benefits to terrestrial and marine resources.
- Existing planning efforts have provided one valuable byproduct: digital **GIS-based data**. The next focus of any conservation planning effort should be getting this information into the hands of those who are going to be on the ground identifying specific projects for implementation.

- Plans are much like statistics: they are used by people to prove they are right but unless they are implemented no water quality improves, fish populations don't increase, etc.... We need both - implement existing plans and fill gaps where needed. **Adaptive management is the key.** Implement what is “on the shelf” but build upon what will be done or needs to be done.
- Strongly agree if implementation means abandoning intrusive, recreational activities.
- Conservation plans should be cross-referenced with other plans such as economic, transport, and land use plans.

Coordination and Collaboration

- **Agencies should assist with helping to coordinate funding**, finding other matches and bringing others to the table. Example: in one acquisition project, instead of the agencies working together, the initial funding agency required the local organization to find matching funds. This added another step for the local organization, made up of volunteers, to go and find the match funding for acquisition. Since the matches often come from other government agencies they should assist in coordinating the search.
- **Project design** - the smaller organization/grantee needs better collaboration with other organizations and agencies.
- A lot of planning does not get implemented. Implementation will happen regardless of whether you plan or not – so if you do more planning “How do you make sure the plan reflects the reality of ongoing implementation?” We need **better coordination of projects that are being implemented** by numerous land managers and entities. “How can we connect projects and land management across ownerships and across public/private and agency to agency?”
- Rather than piecemeal conservation, we need better ways to **collaborate and do conservation on a larger scale by linking efforts**. From a land managers point of view we want to coordinate with adjacent properties. Agencies need to coordinate and communicate with each other and with private efforts.

Acquisition, Operation and Maintenance

- Need **more funds for acquisition and for operations and maintenance**.
- There is a lot of agency land in the region (especially Del Norte County), but agencies **lack resources and money for operations and maintenance**. They are under funded to manage what they have.

3.3 Priority Needs of Conservation Organizations

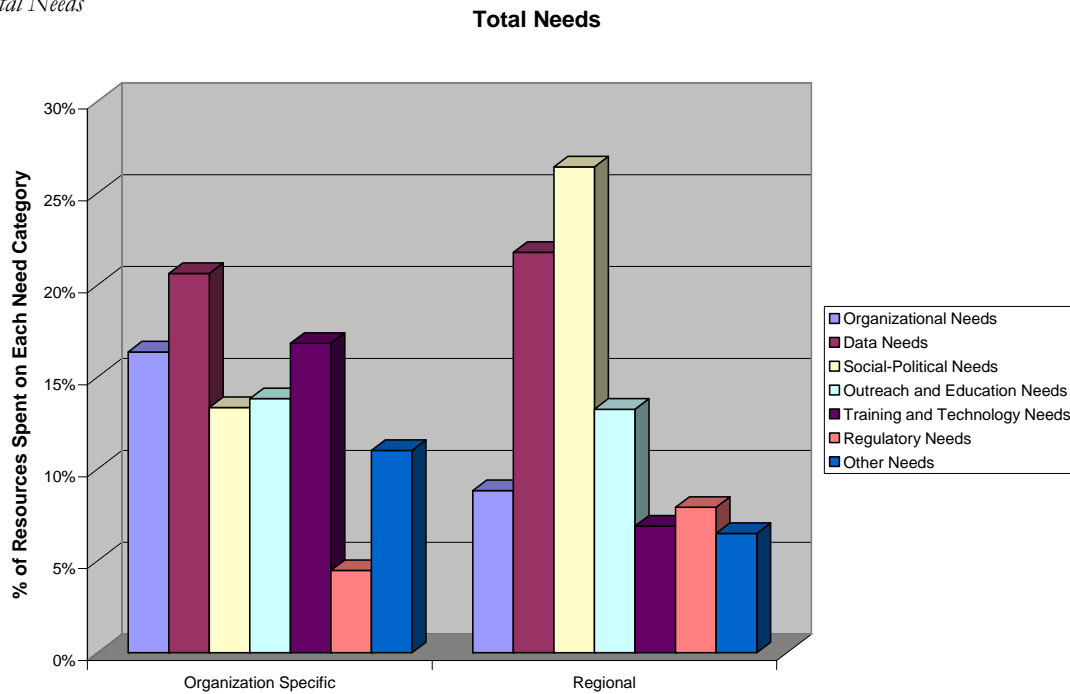
Priority Need Categories

This section presents results from 45 Needs Assessment Surveys conducted at three County meetings. The results are presented by need category: Organizational, Data, Social-Political, Outreach and Education, and Training and Technical. The results are shown for both organization specific need (What does your organization need?) and regional need (What is needed across the region to improve coastal conservation?).

There were a total of 4500 points available for organization specific needs and 4500 for regional needs (45 surveys, 200 points each). The priority categories (Figure 1) for **organization specific** needs were Data

(21% of total), and Training and Technology (17%), followed closely by Organizational Support needs (16%), Outreach and Education (14%) and Social-Political (13%). For **regional** needs the two highest priority categories were Social-political (26%) and Data (22%). There were slight differences in Organization Specific needs by stakeholder type: with Government (Local, State, Federal) prioritizing data, and training and technology; Private Business prioritizing socio-political needs; Education organizations prioritizing data; and NGOs prioritizing organizational support needs. Regulatory and “Other” needs were a low priority across the board. Regional need priorities were similar for all stakeholder groups.

Figure 1. Total Needs



Priority Needs Within Each Category

Organizational Needs

Overall Organizational Needs: Building and Maintaining Your Organization was a high priority from an **organization specific** perspective receiving 16% of the total available resource points for this category. Within this category there were two clear priorities for Organization Specific Needs: Solutions/strategies to covering up front costs of developing projects (29%); and State General funding (not tied to bond acts) for Coastal Conservation (19%) (Figure 2). From a **regional** perspective the need priorities were Support for developing implementation strategies for Regional Marine and Coastal Conservation Plans (34%); and State General funding (not tied to bond acts) for Coastal Conservation (27%) (Figure 3). NGO’s also identified assistance with creation of business and marketing plans; and strategies to cover or reduce indirect operating costs as priority needs. Otherwise the stakeholder responses were similar.

Figure 2. Priority Organization-Specific Organizational Needs

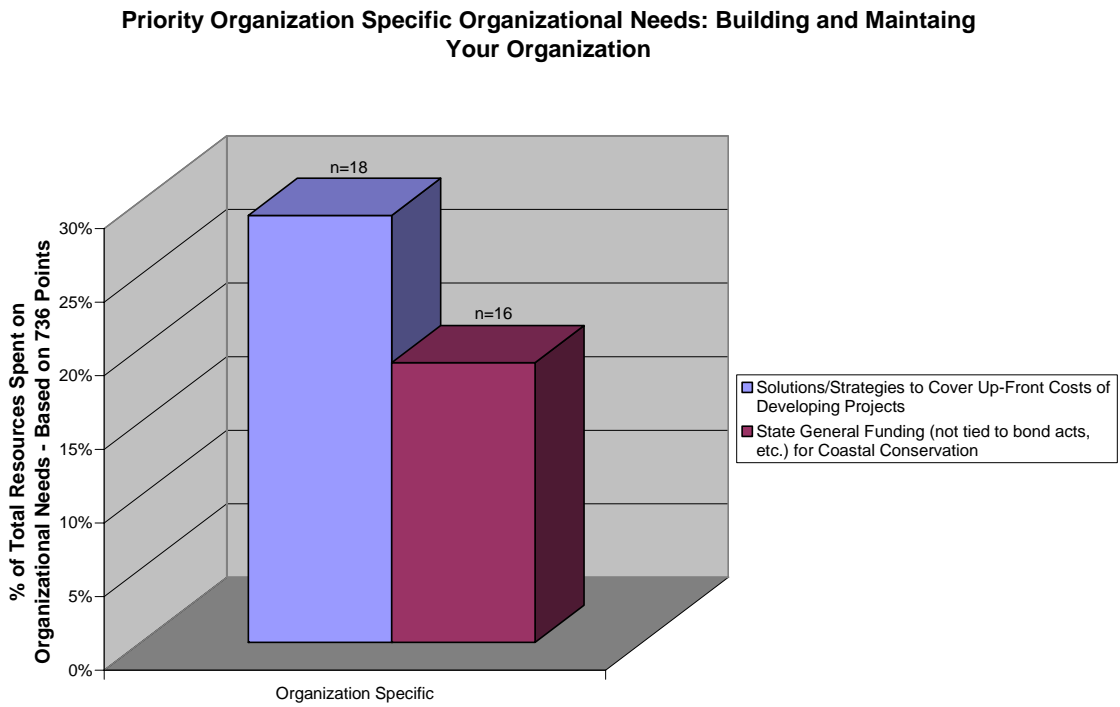
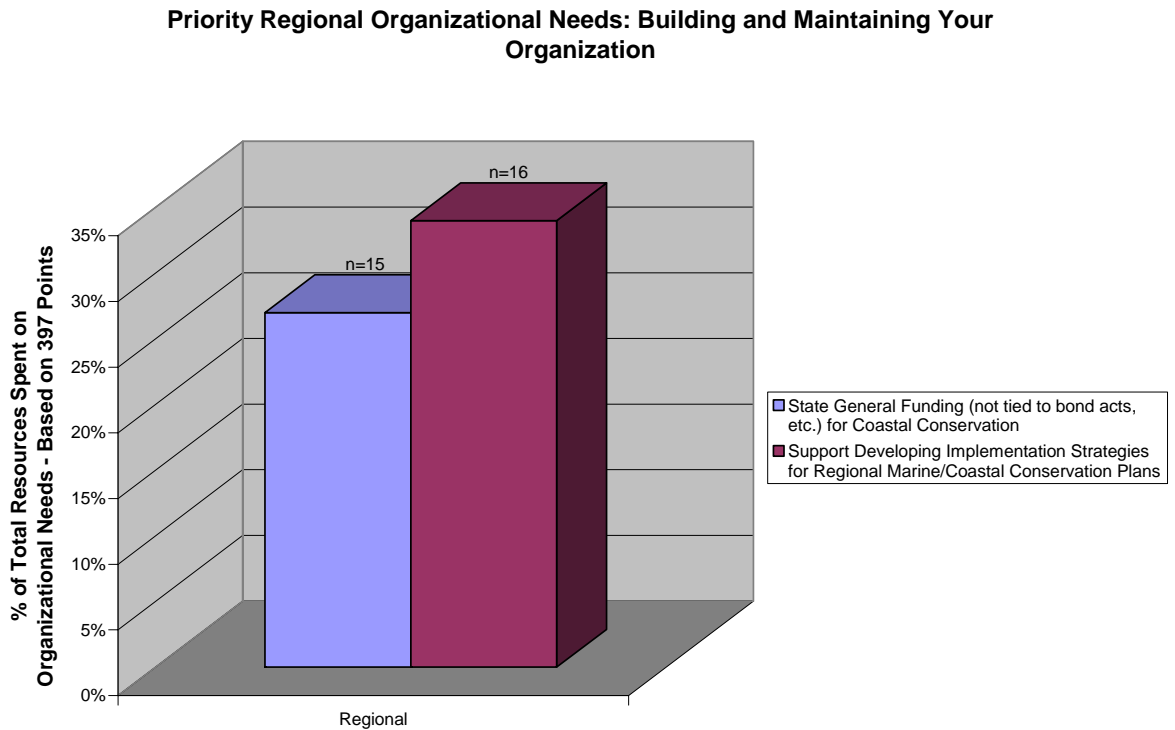


Figure 3. Priority Regional Organizational Needs



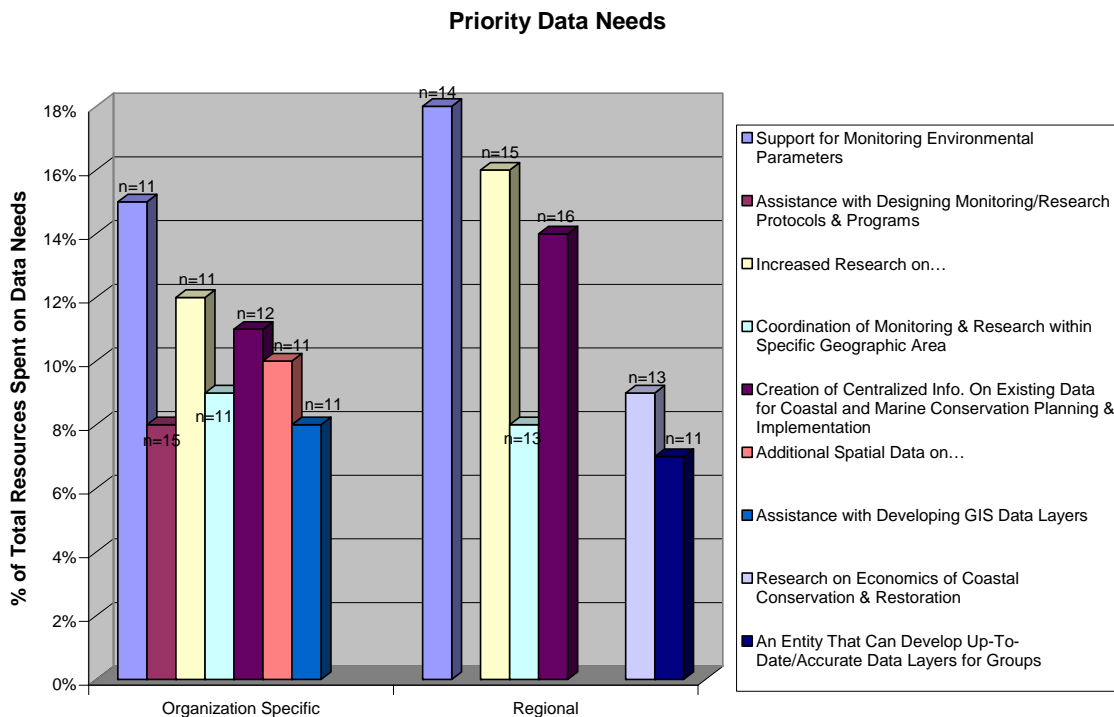
Data Needs

Data Needs were a high priority from an organization specific perspective (21%) and from a regional perspective (22%). Within this need category there were a larger number of priorities identified (Figure 4). **Organization specific** need priorities were: Support for Monitoring Environmental Parameters (15%); Increased Research (12%); and Creation of a Centralized Information on Existing Data for Coastal and Marine Conservation Planning and Implementation (11%). **Regional** need priorities were Support for Monitoring Environmental Parameters (18%); Increased Research (16%); and Creation of a Centralized Information on Existing Data for Coastal and Marine Conservation Planning and Implementation (14%).

The federal government entities prioritized the Support for Monitoring of Environmental Parameters; NGO and State government prioritized Creation of Centralized Information on Existing Data to Support Coastal and Marine Conservation Planning and Implementation.

There were numerous parameters identified under Support for Monitoring Environmental Parameters; the most prevalent being water quality and sediment. Increased Research comments were all across the board; marine and estuary topics were common but no one topic was selected by multiple people. To see a complete list of the qualitative comments go to Appendix J.

Figure 4. Priority Data Needs



Social-Political Needs

Overall Socio-Political Needs: Enhancing Collaboration, Incentives, and Policies, was a high priority from a **regional** need perspective receiving 26% of the total available resource points (Figure 5). Within this category the priorities were: Improved Collaboration with Conservation Partners (13%); Incentives for Resource Users (12%); and Incentives for Landowners Conducting Conservation Activities (11%), and Development of a Regional Funding Mechanism (11%). This category was not as high a priority from an **organization specific** need perspective and received only 13% of the total points available. The Organization Specific needs in this category were similar to the Regional needs as the graph below shows (Figure 6). All stakeholder groups dedicated points/resources to the need for improved communications or

collaboration with conservation partners. NGOs, State Agencies, and Private Business gave higher priority to the regional funding mechanism. Incentives for landowners were mainly a priority for NGO and State agency representatives.

Figure 5. Priority Regional Social-Political Needs

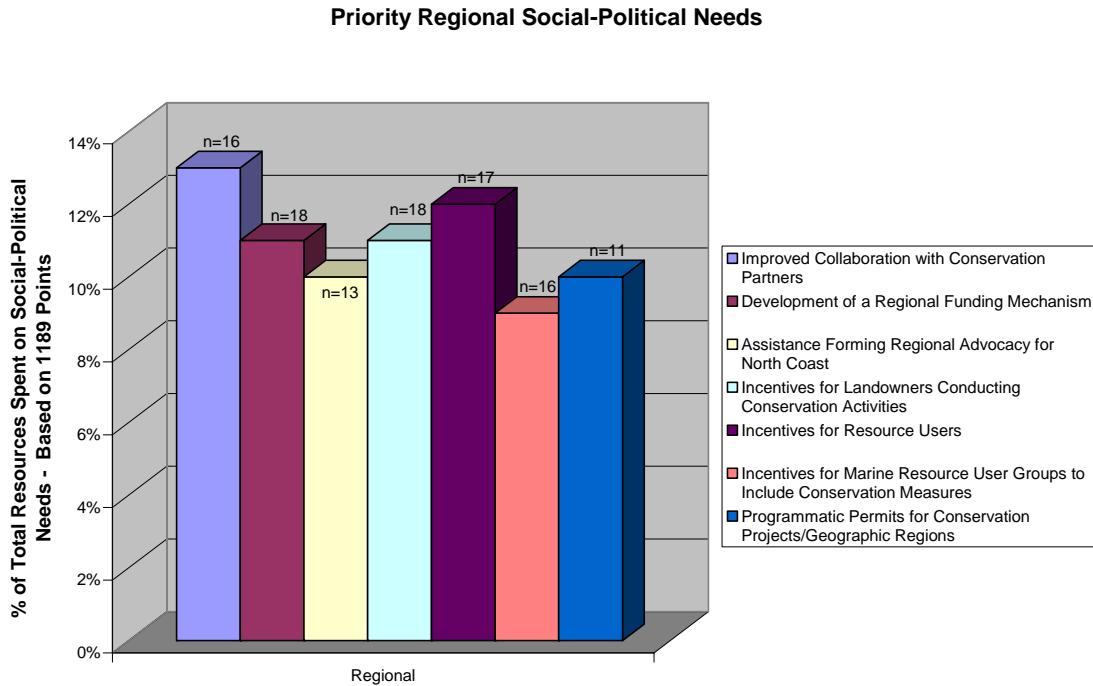
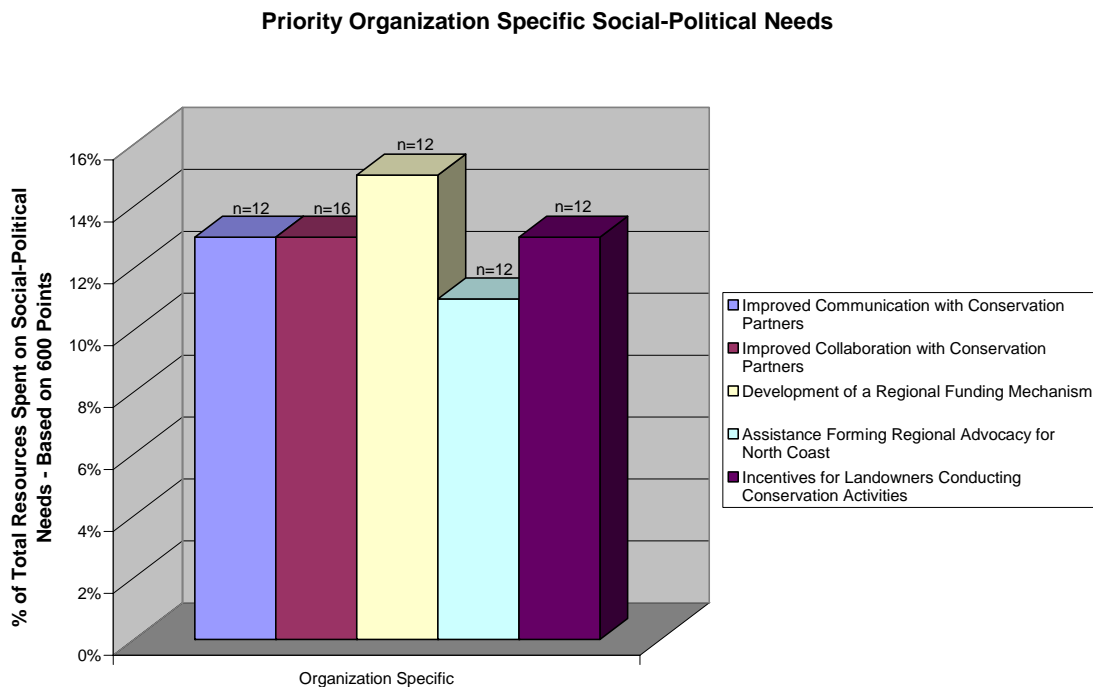


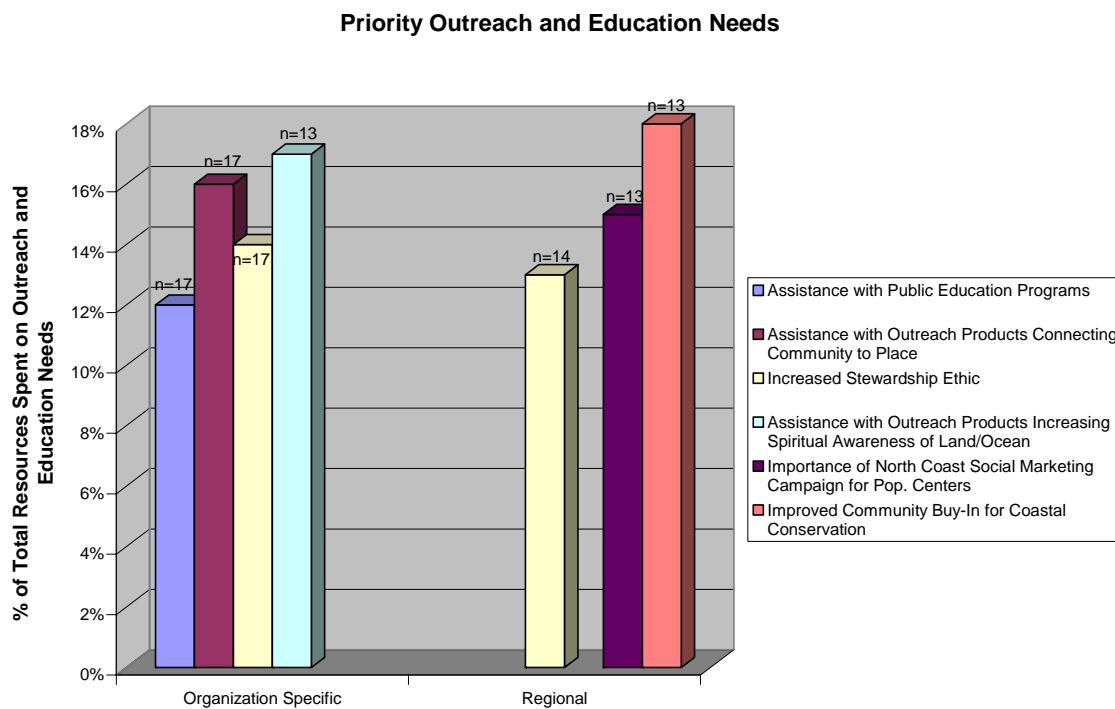
Figure 6. Priority Organization-Specific Social-Political Needs



Outreach and Education Needs

Overall Outreach and Education received 14% of the Organization Specific and 13% of the Regional points, making it a medium priority (Figure 7). The Organization Specific priorities were different from the Regional ones. The highest **organization specific** priority was Assistance with Outreach Products that Increase the Spiritual Awareness of Land and Ocean (17%) followed by Outreach Products Connecting Community to Place (16%). The **regional** priorities were Improved Community Buy-in for Coastal Conservation (18%); and Importance of North Coast Social Marketing Campaign for State Population Centers (15%). NGO's were most interested in support for and assistance with public education programs and increased stewardship ethic. Private business and tribal entities prioritized assistance with increasing awareness of the spiritual and historical context of the land and ocean.

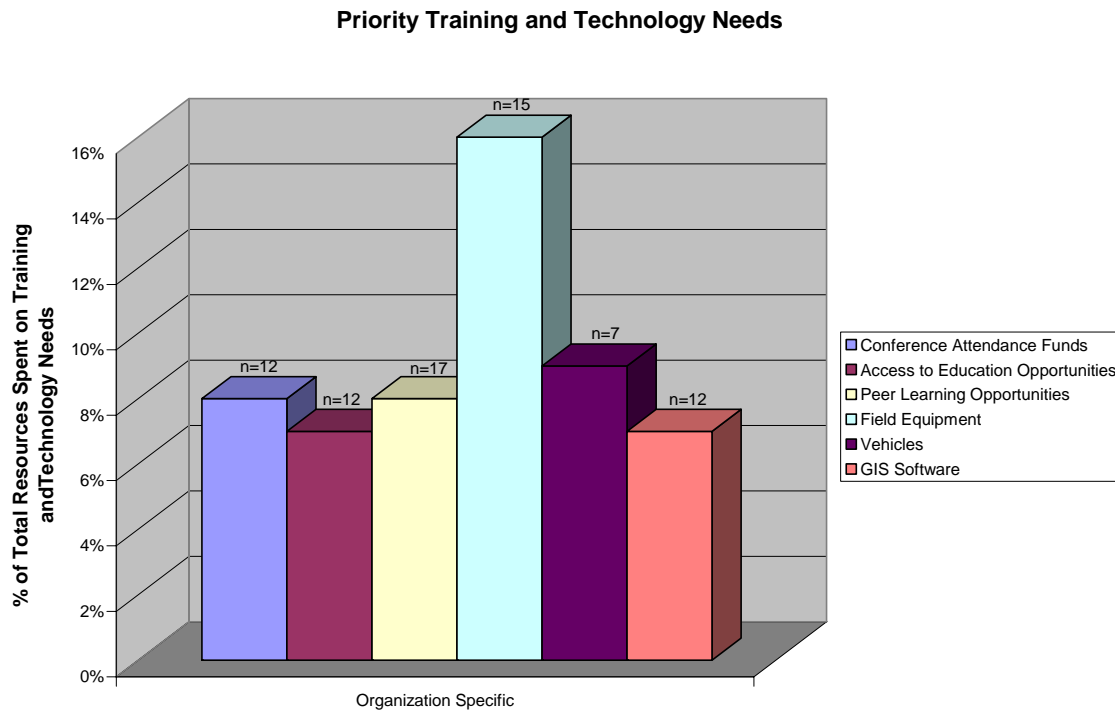
Figure 7. Priority Outreach and Education Needs



Training and Technology Needs

Training and Technology Needs was the second highest priority for Organization Specific needs with 17% of the total points (Figure 8). It was not a high priority from a **regional** need perspective with only 7% of the total points. The Organization Specific priorities were Field Equipment (16%) followed by vehicles (9%), Peer Learning Opportunities (8%), and Conference Attendance Funds (8%). The highest Regional Need was Increased Venues for Sharing Information (28%).

Figure 8. Priority Training and Technology Needs



Regulatory Needs and Other Needs

These two categories did not rank highly in the survey. Regulatory Needs received only 4% and 8% respectively of the **organization specific** and **regional** needs points. While the Other Category received 11% in Organization Specific needs this was due to one participant putting all their points (for Operations and Maintenance in this category). Figures of these categories can be viewed in Appendix I.

3.4 Existing Marine and Terrestrial Plan Synthesis - Overlap

Issues and opportunities that link terrestrial and marine ecosystems have not been addressed in existing plans in a focused and comprehensive manner for the North Coast region. The exception is the recently completed *Northern California Marine Ecoregional Assessment* (The Nature Conservancy (TNC), 2006) that includes assessment of marine and rocky shore, estuary, wetland, dune, coastal forest and prairie resources. According to TNC “the goal of the assessment was to identify a *portfolio* of conservation areas that contain multiple and viable examples of important ecological systems, communities, and species represented across environmental gradients.” All of the other marine planning documents reviewed for this assessment focused solely on the marine environment with very little overlap or connection identified to terrestrial environments.

The linkages between the terrestrial and marine environment need to be more clearly identified and assessed. One significant linkage is the flow of freshwater, containing sediments and pollutants, through watersheds to the near shore marine environments. This issue may offer a tangible starting place for quantifying a terrestrial/marine ecosystem linkage and presents the opportunity to take a more ecosystem-based approach to conservation issues in these environments. The following is synopsis of the existing issues identified in both the marine and terrestrial plans found in the marine and terrestrial plans listed in Table 2.

- There is a lack of coordination and collaboration between existing coastal, ocean, and watershed organizations and management entities.
- Terrestrial land use and runoff has impacts on near shore water quality and habitat, but there is a lack of understanding and data regarding what the impacts are and where they are occurring. What are the impacts of non-point source and storm water pollution on coastal environment? We need to understand the interaction between sediment coming from the land and its affect on marine life. What are the sediment impacts from the major rivers on the near shore habitat?
- Non-point source pollution (especially sediment) and water quality protection on a watershed basis should be addressed in marine and coastal planning and conservation strategies.
- The watersheds that are critical for coastal and marine resource protection (Critical Coastal Areas and ASBS) need sufficient technical and financial assistance to ensure that the waters they deliver do not adversely impact coastal resources.
- There have been numerous efforts to control and reduce non-point source and storm water pollution but there is a need to evaluate and monitor their effectiveness and to apply adaptive management.
- Estuary research is lacking in the region.
- Coastal communities manage coastal resources through local and County planning (Local Coastal Plans - LCP). There is a need to update and/or improve the effectiveness of LCPs, by ensuring that the policies, goals and objectives/actions are implemented. Evaluating of the effectiveness of LCPs and making adaptive changes to address problems identified needs to be done on a consistent basis. Humboldt County recently evaluated its LCPs and is in the process of updating these plans. A group of senior Natural Resources Planning and Interpretation students from Humboldt State University did an assessment of the Humboldt County LCPs as an addition to the Linking Land and Sea project (Appendix K).
- Whether it is marine, coastal or terrestrial environment effective protection, conservation and enhancement requires an involved citizenry, educated decision makers, and organizations with capacity to carry out conservation programs.
- Conservation of marine and terrestrial resources will require strengthening incentives to resource users and landowners/managers; technical assistance; and enforcement of existing regulations.

4. INTERVIEWS

Information collected in one-on-one interviews of marine professionals for the Needs Assessment resulted in specific project needs and recommendations for the region.

Research and Data

- Research on total suspended sediment load arriving in Humboldt Bay and other sensitive coastal areas from watersheds.
- Research and monitoring on the impacts of the application of fishery management tools such as the groundfish trawl buyback and closed areas on the shelf and slope to impacted communities.
- Research on stormwater runoff infrastructure needs and improvements.
- Centralized Data Management System for Marine Systems- CICORE (Center for Integrative Coastal, Observation, Research and Education)
cicore.humboldt.edu
- Dredge spoil disposal and prioritizing dredge disposal areas for restoration

Monitoring and Surveys

- Equipment and travel for marine mammal surveys (HSU, Northcoast Marine Mammal Research Center).
- Coastal Observation and Seabird Survey Team for this region.
www.coasst.org

Socio Economic Information

- Socioeconomic and market assessments of the fishing industry in this region.
- Socioeconomic analysis of the potential for increased marine ecotourism
- Analysis of the potential for increasing aquaculture in Humboldt Bay.

Planning

- Development of an ecosystem based management plan for Humboldt Bay/Eel River Estuary, Smith River Estuary, Lake Earl/Tolowa Dunes.
- Plans and projects that measure and decrease the levels of pollution for the watersheds feeding into Humboldt Bay

5. RECOMMENDATIONS AND DISCUSSION

The following section identifies high priority needs; provides recommendations for filling these needs; and provides detailed discussion regarding the recommendations. The priority needs and recommendations are based upon a synthesis of the expert opinion from the Linking Land and Sea Planning and Advisory Teams, information gathered from the Needs Assessment survey, Regional Needs questionnaire, one-on-one interviews, and review of the existing terrestrial planning and existing marine planning. Table 6 provides a reference for the source of each recommendation.

5.1 Summary of Needs Assessment Recommendations

1. Provide resources for protection of (via easements, fee-title acquisition) priority coastal areas identified in existing coastal conservation plans.
2. Provide resources for adaptive management of existing conservation areas.
3. Increase staffing of state and federal agencies conducting coastal conservation.
4. Develop long-term State funding sources for coastal conservation other than General Obligation Bond Funds.
5. Establish a regional funding mechanism for coastal conservation. Creation of an open-space district or other special district mechanism for the North Coast should be explored.
6. Conduct a detailed data gap analysis and GIS mapping of coastal Del Norte, Humboldt and Mendocino counties
7. Mapping of marine habitats. Lobby to get DFG marine habitat mapping effort prioritized/expedited for the North Coast.
8. Increase research and monitoring to link changes in land use and runoff (especially sediment) to impacts on estuarine and near shore water quality and habitat.
9. Conduct regional marine conservation planning for the North Coast, building from The Nature Conservancy's Northern California Marine Ecoregional Assessment.
10. Develop site specific terrestrial and estuarine plans. See Table 4.1.1 for detailed site information.
11. Facilitate access to region specific information and spatial data for marine/coastal environment and conservation by developing either a centralized information system or a coordinated network of information systems.
12. Maximize communication and collaboration between groups that generate and manage regional data and GIS including Humboldt Bay Harbor Recreation and Conservation District (HBHRCD), University of California Cooperative Extension Sea Grant (UCCE Sea Grant), NOAA Fisheries, California Department of Fish and Game (DFG) both marine and inland fisheries, The Nature Conservancy (TNC), Center for Integrative Coastal Observation Research and Education (CICORE), Legacy the Landscape Connection, county planning departments, Klamath Resource Information System (KRIS), CalFish data base, Central and Northern California Ocean Observation System (CENCOOS).
13. Provide for outreach and education regarding existing regional coastal conservation plans and priorities for implementation.
14. Additional support for existing groups that bring together conservation partnerships and facilitate collaboration.

15. Determine the feasibility of creating a regional resource network or conservation framework that could bring together the following elements: collaborative body (representatives from stakeholder groups and agencies); means for public process; science advisory panel; communication body for interactions with state and federal programs; and ability to develop proposals for, accept and administer funds to support projects on a regional scale.
16. Determine the feasibility of creating regional resource centers to provide support for small coastal conservation groups.
17. Create incentives for the use of best management practices by marine and terrestrial resources users.
18. Develop strategies for working with private landowners. Development of a regional strategy that provides an analysis of how conservation of coastal resources on private lands can be economically viable/desirable.
19. Support for and development of programs that connect people to place.

Table 6 Sources of the Needs Assessment Recommendations

Recommendations	Marine Plans												Terrestrial Plans			Surveys	Meetings/ Questionnaires	Expert Input					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3								
1						x			x	x		x				x	x		x				
2	x				x	x	x			x			x			x	x		x				x
3																		x					x
4	x	x			x			x										x					x
5																		x					x
6																x		x	x				x
7				x														x					x
8	x	x			x	x	x	x											x				x
9																x			x				x
10						x										x	x	x					x
11																x							x
12			x														x						x
13																			x				
14																			x				x
15																							x
16	x																						x
17	x																x	x					x
18																							x
19					x																		x

5.2 Implementation of Existing Plans

Priority Need

- Implement priority conservation actions as identified in existing terrestrial and marine plans.

Recommendation

1. Provide resources for protection of (via easements, fee-title acquisition) priority coastal areas identified in existing coastal conservation plans.
2. Provide resources for adaptive management of existing conservation areas.
3. Increase staffing of state and federal agencies conducting coastal conservation.

Discussion

The existing coastal conservation plans are of limited use unless their recommendations are implemented. However, many of the existing plans for the region lack specific implementation and funding strategies. The challenge is to move from goals and objectives to project implementation. Many existing plans and assessments identify priority coastal resource areas to be protected for their unique habitat values, species, public access opportunities, open space, and/or cultural value but there is not enough funding to implement these recommendations.

In addition, many of the existing protected areas such as state and federal parks, wildlife areas, and refuges, have existing management and restoration plans but lack sufficient resources to implement, evaluate, and/or refine them. Over the past decade there have been significant cuts in both federal and state budgets for land management agencies such as California's Department of Fish and Game and State Parks, US Fish and Wildlife Service, US Forest Service, and the Bureau of Land Management. In addition, the California Conservation Corps, which used to carry out a significant amount of restoration work throughout the North Coast region has been severely reduced, and the Del Norte CCC Center was closed in 2004.

These budget cuts have resulted in loss of staff, and reduced capacity to conduct conservation activities from research and planning to operations and maintenance. Many of the participants in the Linking Land and Sea project stated that public lands should be used to model and perfect best management practices, implement adaptive management, and refine and evaluate restoration techniques. The public land management could provide models for conservation techniques that could be utilized on private lands.

Finally, going from goals and objectives to implementation requires the resources for building the collaborative partnerships, conducting necessary research and analysis, developing final designs and engineering, finding the funds, obtaining permits, and garnering public support. Agency staff play a large role in getting conservation projects implemented, and the lack of agency staff holds up many projects. Additional agency staff capacity (more of them and with better resources) to work with conservation partnerships would improve the efficiency of plan implementation. Example, the need for streamlining the permitting process is identified as a need on a regular basis, but if there were just a few more agency staff (DFG, CC, NMFS, COE) who could process permits, then the delays would be much shorter.

5.3 Building and Maintaining Conservation Organization Capacity on the North Coast

Priority Needs

- Strategies and/or funds to cover the up front costs of developing conservation projects
- Development of diversified funding sources that are long-term and sustainable

Recommendations

4. Develop long-term State funding sources for coastal conservation other than General Obligation Bond Funds.

Example: The current Senate Bill 1125 would establish a permanent source of state funds by dedicating a share of the more than \$200 million the state government expects to receive each year from its oil and gas leases on state-owned tidelands and ocean waters in Southern California. SB 1125 would annually allocate \$10 million from these revenues for salmonid habitat restoration; \$5 million, for the next ten years, for the Coastal Wetlands Account; \$10 million to the Marine Life and Marine Reserve Management Account; \$10 million to the Non-game Fish and Wildlife Program Account; \$10 million to the State Park System Deferred Maintenance account; \$5 million to the Wetlands and Riparian Habitat Conservation Account; and the remaining amount to the Natural Resources Infrastructure Fund.

5. **Establish a regional funding mechanism for coastal conservation.** Creation of an open-space district or other special district mechanism for the North Coast should be explored.

Example: Sonoma Agricultural Preservation and Open Space District.

Discussion

Planning for and implementing coastal conservation would not be possible without conservation groups with robust organizational capacity. The North Coast Region is blessed with a large and diverse set of organizations, with a terrestrial focus, that are actively involved in coastal conservation planning and implementation, including local government agencies; non-governmental organizations; state and federal agencies; citizen groups; small businesses; land managers; tribes; and resource user groups. Functional organizations with a specific focus on marine and/or the link between land and sea are much less common.

Coastal Conservation is a rapidly evolving, complex, and challenging field. Developing coastal conservation projects whether they involve acquisition, easements, feasibility analysis, research and monitoring, design or implementation, requires high levels of technical expertise and the ability to pull together multiple partners into collaborative efforts. Significant time is required to develop relationships with landowners, other organizations, regulatory agencies, and funding partners and there are few funding sources to cover these up-front costs.

Funding from state or federal sources is becoming scarcer and the competition for these funds has increased significantly. As we have become more sophisticated in our conservation efforts so has the complexity in the application requirements in funding Requests for Proposals (The new State Water Resources Control Board Consolidated Grants Program and Integrated Regional Water Management Program requirements are a case in point). Especially for smaller and recently established organizations finding resources for the development of a competitive proposal is often not possible. Even for established organizations and local

governments the need for covering these costs was a high priority identified by the stakeholder surveys and expert input.

The need to cover up-front costs ties closely with another high priority need: Additional funding mechanisms that are not tied to State General Obligation Bond Funding. Two-thirds of the California legislature and a majority of voters are needed to approve the sale of General Obligation (GO) Bonds. These bonds are long-term loans that allow the State to pay for the costs of long-lived facilities over time. From 1972 to the present there has been \$15 billion worth of bonds approved by voters for the environment (California Budget Project). California voters generally support bonds for the environment, especially parks and water.

Although GO Bonds are a successful way of funding coastal conservation projects there are some significant drawbacks to relying on bonds as the only funding source. GO Bond funds are generally restricted to implementation work (public works), and are specific both in type of projects covered and the timing and amount of funds available. GO Bonds do not provide funds for planning, organization support, building collaborative efforts, or conducting public education. The funds are available for a short period, and then a new bond must be drafted and passed by the voters.

The watersheds, coast, beaches, and ocean environment are part of the California's "green" infrastructure. Like any infrastructure these resources require protection, maintenance, and ongoing care to remain functional. There is a significant need for operation and maintenance for both public-lands (parks, preserves, wildlife areas), and lands under management by conservation organizations. In the past decade, while population growth on and visitation to the North Coast has grown. While we are "loving our coast to death", State General Funding for resource agencies has declined. State funding for coastal conservation should include long-term funding options. In addition, the North Coast needs to establish regional funding mechanisms such as an open space or special districts. The regional land trusts (Mendocino and North Coast Regional Land Trusts) would be a rational choice to lead such an effort

5.4 Development of New Data and Conservation Plans

Priority Needs

- Fill priority data gaps with accurate and up-to-date information. Especially for the marine environment; sediment and its impacts to near shore environment; marine fisheries habitats; and estuarine habitat functions for anadromous and marine fisheries.
- Site specific terrestrial and estuarine planning.
- Marine conservation planning on a regional scale.

Recommendations

6. Conduct a detailed data gap analysis and GIS mapping of coastal Del Norte, Humboldt and Mendocino counties
7. Map north coast marine habitats. Lobby to get DFG marine habitat mapping effort prioritized/expedited for the North Coast.
8. Increase research and monitoring to link changes in land use and runoff (especially sediment) to impacts on estuarine and near shore water quality and habitat.

Example: Provide necessary field equipment to support ongoing research, monitoring, and implementation. Field equipment is currently needed for marine mammal surveys, and sediment monitoring.

9. Conduct regional marine conservation planning for the North Coast, building from The Nature Conservancy’s Northern California Marine Ecoregional Assessment. This assessment is an excellent first step in identifying data gaps for marine and estuary systems.
10. Develop site specific terrestrial and estuarine plans. See Table 5, page 17, for detailed site information.

Discussion

Effective coastal conservation requires access to the best possible information. There are large gaps in basic data and information regarding marine and estuary ecosystems, and the land-to-sea ecotone in the North Coast region. **A detailed data gap analysis and GIS mapping of coastal Del Norte, Humboldt and Mendocino counties** would help to develop the necessary cohesive vision for development of a regional strategic marine conservation plan. This is especially important for management of existing and proposed marine protection areas/measures.

The region needs more support for ongoing research and development of new data to fill gaps in knowledge. For example **marine habitat mapping** has been completed or is occurring along sections of the south and central California coast, but has not been prioritized for the North Coast region.

The links between terrestrial and marine ecosystems have not been addressed in a focused, comprehensive manner. These linkages need to be more clearly identified and assessed. One significant linkage is the flow of freshwater, containing sediments and pollutants, through watersheds to the near shore marine environments. This issue may offer a tangible starting place for quantifying a terrestrial/marine ecosystem linkage and presents the opportunity to take a more ecosystem-based approach to conservation issues in these environments. The current Critical Coastal Areas program of the California Coastal Commission is a good start to addressing these issues.

The North Coast region has numerous land use changes occurring that have the potential for both positive (restoration) and negative impacts to coastal resources. **Monitoring and evaluating** these activities is necessary for informing adaptive management practices. Although many coastal projects, from restoration to sub-divisions, require monitoring, there is a lack of financial and technical support for monitoring.

Very little planning exists on a regional level for the protection, enhancement, and management of marine resources. The Nature Conservancy’s Northern California Marine Ecoregional Assessment identifies areas for protection but does not prioritize those areas or identify mechanisms for their protection. An important next step would be the development of a **regional marine conservation plan** that prioritizes marine areas for protection and outlines a plan for implementation of management measures.

Important Environmental Parameters for Monitoring on the North Coast
<ul style="list-style-type: none"> • Water quality – including sediment and turbidity, stream flow, pH, pollution from septic tank leach fields, salinity, turbidity, oxygen, chlorophyll, temperature. Sediment sources. • Ocean water quality • Biological (birds/mammals/plants) for conservation easements; biological productivity; fish, aquatics; inverts; forest regrowth and regeneration • Marine - PISCO (rocky intertidal/sand habitat using Marine protocol); Kelp bed health; trends in ocean temperature • Trend – physical (LiDAR), biological, rainfall, hydrological, long-term environmental trends

5.5 Access to Existing Data and Planning Information

Priority Needs

- Knowledge of and access to existing data and information especially regarding marine resources and the link between land and sea.
- Improved access to and understanding of existing terrestrial and marine conservation plans.

Recommendations

11. Facilitate access to region specific information and spatial data for marine/coastal environment and conservation by developing either a centralized information system or a coordinated network of information systems.
12. Maximize communication and collaboration between groups that generate and manage regional data and GIS including Humboldt Bay HRCO, Sea Grant, NOAA Fisheries, DFG Marine Fisheries, TNC, CICORE, Legacy the Landscape Connection, County Planning Departments, KRIS, CalFish, Central and Northern California Ocean Observation System (CENCOOS).
13. Provide for outreach and education regarding existing regional coastal conservation plans and how they should be implemented.

Discussion

Creation of either a **centralized or a coordinated network of information systems** that contain existing data for coastal and marine conservation is a high priority. The region needs **seamless coverage of the coast with comparable data sets** so patterns can be identified. Digital GIS based data has been developed by numerous entities, mostly for terrestrial areas, but it is still difficult to know what is available and how it can be accessed. The amount, type of, and format of existing data sets, studies, GIS layers and the like is not consistent across the region and is lacking for marine resources. The *Northern California Marine Ecoregional Assessment* (TNC, 2006) has made significant headway in compiling existing marine and estuary information and spatial data and provides a good foundation to build upon.

There are several existing systems, all in some stage of development including:

- Klamath Resource Information System (KRIS) that covers many watersheds in the region;
- California Cooperative Fish and Habitat Data Program (CalFish), that is state wide and salmonid focused;
- Information Center for the Environment (ICE), state wide and watershed focus;
- Center for Integrative Coastal Observation Research and Education (CICORE).

An important component to the development of either a centralized information system or a network of information systems is regular communications between organizations that generate useful data and information. Networking between organizations will require a person in a coordination role. In addition support for existing data hubs and individuals who are known to be good regional “data-miners” is important.

There are hundreds of terrestrial plans for the region, but most people working in coastal conservation are not familiar with the plans that exist or what they contain. There is a need for an ongoing system to catalogue, summarize, organize and query existing conservation plans, including an update of the most recent catalogue of plans/assessments for the region, The Conservation Fund’s Conservation Prospects for

the North Coast. Another way to improve understanding of existing plans would be to convene a workshop of the main developers of current, significant conservation plans to determine common goals and prioritize regional actions. However, the most important planning need is to **ensure that the plans that already exist are implemented.**

5.6 Communication and Collaboration

Priority Needs:

- Improved communication and collaboration between conservation partners

Recommendations

14. Additional support for existing groups that bring together conservation partnerships and facilitate collaboration.

15. Determine the feasibility of creating a regional resource network or conservation framework that could bring together the following elements: collaborative body (representatives from stakeholder groups and agencies); means for public process; science advisory panel; communication body for interactions with state and federal programs; and ability to develop proposals for, accept and administer funds to support projects on a regional scale.

Example: Convene a North Coast regional coastal conservation interagency task force, to meet every six months to 1) update all stakeholders on the status of coastal conservation planning and implementation projects throughout the region 2) explore opportunities for coordinating research, monitoring, data collection and exchange, communications to state programs and public outreach activities 3) collaborate in development of funding opportunities 4) provide representatives from state and federal programs a contact point for interaction with regional stakeholders and collaboratives. Current contact for development of the first such meeting is Susan Schlosser, UC Cooperative Extension Sea Grant, Eureka, CA.

16. Determine the feasibility of creating regional resource centers to provide support for small coastal conservation groups.

Example: Tillamook Coastal Watershed Resource Center www.tcwrc.org, and the TREES Foundation.

Example: Support coordination between the Bureau of Land Management, California Department of Fish and Game and California Department of Parks and Recreation for day-to-day management of the California Coastal National Monuments. A key element will be future establishment of "gateway communities" up and down the coast, involving areas, cities, and towns in helping to manage and interpret the monument.

Discussion

Coastal **conservation can be more effectively accomplished on a regional scale by linking efforts.** The majority of stakeholder groups desire improved communication and collaboration between current and potential conservation partners. To complete successful conservation projects requires weaving together a complex fabric of partners, funding sources, and permits, and detailed understanding diverse ecosystems. Each successful project involves numerous individuals and organizations with various talents and resources.

Establishing effective interpersonal relationships is one of the biggest challenges in coastal conservation efforts. Inter- and intra-agency and agency/NGO communications can be improved by simply talking to each other on a more regular basis. This can be intimidating, on both sides, and takes some courage to

initiate discussions and allow for the free flow of ideas. Improved access to trainings and workshops regarding effective communications is needed.

Often it is not initially clear how partners can work together, and developing collaborative projects takes the attention of a dedicated person who has resources and abilities to tie efforts together. This is where watershed coordinators, Resource Conservation Districts (RCDs), land trusts, UC Cooperative Extension, community action groups, and innovative agency staff play a vital role. Funding for organizing meetings, facilitating communications, and bringing together collaborative efforts is scarce.

There are some excellent existing resource planning and conservation groups in the region that function as hubs of a regional network (Mendocino and Northcoast Regional Land Trusts, RCAA Natural Resources Services, Pacific Coast Joint Venture, Smith River Alliance, Rural Human Services, U.C. Cooperative Extension Sea Grant, Mattole Restoration Council, the local Resource Conservation Districts, Northcoast Environmental Center). These existing efforts can be seen as models for improving regional communications and coordination. Most of them have a local or countywide focus. Of these there are only a few that consider the marine and terrestrial environment. There are only a few groups that regularly bring together conservation partners and cover the entire region (Salmonid Restoration Federation, Pacific Marine Conservation Council, The Nature Conservancy), and only two that include some consideration of both terrestrial and the marine environment, the California Pacific Coast Joint Venture (PCJV) for birds, and The Nature Conservancy. In addition, staff from the State Coastal Conservancy, Department of Fish and Game and the California Coastal Commission often act as a conduit for sharing information and pulling together collaborative projects throughout the region.

The northern California region does not have a functioning collaborative group that could serve multiple roles as suggested in Recommendation #15. It does however have numerous smaller groups and collaboratives that could be part of a regional network. There are positive and negative aspects to establishment of a regional conservation framework/collaborative group, especially one that would have multiple roles. The Planning and Advisory Team felt that the potential positives warranted further investigation of what such a group could do, how it could be managed, and what impacts it would have on existing groups and efforts.

5.7 Incentives

Priority Needs:

- Increased number and utilization of incentives and decrease in the number of disincentives for resources users and managers to conduct coastal conservation and use Best Management Practices

Recommendations

17. Create incentives for the use of best management practices by marine and terrestrial resources users.

Example: PMCC's Spatial Community Outreach Project.

Example: Research and evaluate the impacts of the application of fishery management tools such as the groundfish trawl buyback and closed areas on the shelf and slope to impacted communities.

18. Develop strategies for working with private landowners.

Example: Analysis and development of management practices, incentive programs, and/or removal of disincentives that can increase the economic viability and desirability for landowners to enhance coastal resources on their private lands (e.g., The Aleutian Goose Working Group)

Discussion

Working landscapes play a key role in existing and future coastal conservation on the North Coast. In order to preserve the integrity and function of coastal environments it will be necessary to work with private landowners to develop best management practices for working landscapes and provide incentives for coastal conservation. Current incentive programs include those provided by the Natural Resource Conservation Service (Environmental Quality Incentives Program, Wildlife Habitat Incentives Program, Conservation Reserve Program), payment for establishing conservation easements, Williamson Act, and Non-Industrial, and Timber Management Plans. There are several groups on the North Coast that are working to develop additional incentive programs such as the Buckeye Conservancy's Forest Project. Landowners could benefit from better access to reliable up-to-date information for conducting conservation projects on their property such as the correct incentive programs for them, safe harbor agreements, and the permitting requirements.

A regional strategy for working with private landowner on conservation projects has not been developed. This should include establishing criteria for determining which landowners to outreach to (size of holdings, type of habitat, level of threat etc.). However, the two regional land trusts, Mendocino Land Trust and the Northcoast Regional Land Trust have developed conservation strategies that include strong working lands components.

In the marine environment developing Best Management Practices (BMPs) with fishermen and providing incentives for their use is equally as important. Information on community-specific impacts of management measures is typically lacking in the fishery management process. Management decisions would be better informed with annual updates on the impacts of fisheries management to communities. A methodology was developed by PMCC to collect input from fishermen regarding BMPs, improving fishery management, and developing incentives. (Spatial Community Outreach Project (SCOOP)

www.pmcc.org/News/Final%20report%20SCOOP.pdf)

5.8 Creating Broad Support for North Coast Conservation

Priority Needs:

- Develop a sense of stewardship in general population and state decision makers for Northern California's coastal resources.

Recommendation:

19. Support for and development of programs that connect people to place.

Examples: Mendocino Whale Festival, Friends of the Dunes Bay to Dunes and Docent Programs, Aleutian Goose Festival, Sanctuary Forest Docent Program, Salmon in the Classroom, BLM California Coastal National Monument, CCC Critical Coastal Areas Program

Discussion

Whether it is marine, coastal or terrestrial environment effective protection, conservation and enhancement requires an involved citizenry, and educated decision makers. Because the population base in on the North Coast is relatively small, and decisions concerning the region are often made by voters in large population centers there is a need to clearly emphasize the unique value of the North Coast's natural resources, and the threats they are under, in population centers and with state decision makers. This is also true on a national and global scale as significant threats to coastal resources do not arise locally such as climate change, off-shore oil drilling, water diversions, and changes in state and federal regulations (Clean Water Act, fisheries management, Endangered Species Act etc).

For people to support coastal conservation they must be able to connect to the land and sea in an emotional or spiritual way. People change behavior, fight for special places, and support conservation when they have a spiritual connection with place. There are numerous community efforts in the region that have successfully helped to develop sense of place by utilizing art, music, theatre, literature, spiritual gatherings and the like. The most obvious spiritual connection to the land and sea is that of the indigenous people of the North Coast. Talking with the tribes about the potentials for connecting people to place is important.

Development of a program to connect people to place in order for the general public land owners, land and marine resource managers to develop a sense of stewardship for coastal resources and support coastal conservation (e.g. the numerous campaigns and education programs regarding the California Grey Whale has created a desire in the main stream population to protect this creature and its habitat). The program should include assistance with the development of interpretive materials and displays (e.g. RCAA's Humboldt Bay Interpretive Signing Manual).

More in-depth analysis of economic and sociological parameters that influence land use decisions, community support for coastal conservation, resource allocations, would help conservation organizations to be more effective in their work.