HUMBOLDT STATE UNIVERSITY

Dr. Steven C. Hackett
Professor of Economics
Chairman, Department of Economics

December 26, 2013

Erin Meyer, PhD
Associate Scientist
MPA Monitoring Enterprise Program
California Ocean Science Trust

Dear Dr. Meyer:

Please consider the following proposal modifications for our MPA project: *Socioeconomic dimensions of MPAs: Establishing a baseline and assessing initial changes in California North Coast fisheries.*

Steven Hackett, PI; Laurie Richmond, Co-PI; Cheryl Chen, Point 97 Co-PI; Charles Steinback, Point 97 Co-PI

A note on re-organization at Ecotrust: In the intervening time between original proposal submission and this revision, project partner Ecotrust has undergone a re-organization. A new entity, Point 97, is a wholly owned subsidiary of Ecotrust and was launched in late August 2013. Point 97 will continue the organization's mission on a global scale by providing new technologies and engagement strategies for the marine and ocean planning sectors. At the time of proposal submission the PIs from Point 97 were still Ecotrust staff. The formerly Ecotrust PIs now work within the Point 97 consulting firm along with several other key project staff, and so we have modified the name of the institution working with HSU to carry out this project work.

Proposed Project Modification Narrative

We were pleased to receive the preliminary award notification in November 2013, and a revised preliminary award notification in December 2013, which called upon us to revise our proposal in a manner congruent with reducing our overall budget by approximately 46%. This very substantial budget cut required us to sharply reduce our scope of work. In particular, we propose removing recreational fishing sector from our project, reducing the scope of our CPFV sector work (focusing on quantitative and spatial data, and on the ports of Shelter Cove and Eureka), and reducing the number of commercial fisheries (to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish)). If our budget allows we will also try to capture data from seaweed harvesters in the region, though we cannot promise we can accomplish this within the context of the reduced budget.

A reduction in project scope allowed for a reduction in staff salaries. This decrease in staff salaries reflects in part the reduction in staff time (outreach, field work, data analysis and report writing) associated with the reduced scope of work. The HSU PI and Co-PI took disproportionately large salary reductions relative to the reduction in overall project scope and oversight responsibilities. These disproportionately large salary reductions were deemed necessary in order for the project to go forward. The Dean of the College of Natural Resources and Sciences agreed to provide 2 weighted teaching units (WTUs) for Co-PI Richmond as match. These WTUs had been a part of the original budget request as buyout time.

As a result of the above changes, the HSU salary component of the budget was reduced by approximately 49% (including changes in graduate student compensation described below). Point 97 reduced salaries by approximately 33%. As a part of the budget cutting exercise, we reclassified the graduate student compensation requested for this project to "stipends for traineeships". Per HSU's federally negotiated indirect cost agreement (IDC), IDC is not applied to stipends, and therefore the updated budget for this project reflects a reduction in IDC related to the graduate student being reclassified under Stipends for Traineeships. In addition, benefits are not required for graduate student stipends, thereby further reducing our budget.

Travel costs were also reduced. This decrease in travel cost reflects in part the reduction in time required to conduct the outreach and field work under the reduced scope of work. It also reflects efficiencies linked to the PI and co-PI making their homes available for Point 97 and HSU field worker staff in lieu of using motels. The HSU travel budget was reduced by approximately 60%. Likewise, the Point 97 travel budget request was reduced by approximately 55%, both through a reduced project scope and through increased reliance on HSU staff to conduct outreach and field work. Furthermore, Point 97 reduced the number of staff attending annual PI meetings. The HSU team anticipates sufficient field staff to take on this increased field work, as well as realizing budgetary efficiencies due to HSU's proximity to the study area.

Per reviewer comments, we will retain the fisherman advisory committee (FAC) as a central component of our research project. As a result of the reduction in scope of our project, we anticipate meeting with the FAC fewer times compared to our original proposal. Therefore, we slightly reduced the annual stipends for representatives of the FAC to accommodate this change.

Due to the above changes, additional budgetary savings were also realized through reductions in overall staff benefit costs, as well as IDC charged by the HSU Sponsored Programs Foundation.

Due to the reduction in the overall budget request, and the provision of WTU match provided by the College of Natural Resources and Sciences, required overall volunteer time provided as match by staff was reduced and somewhat redistributed. Specific details are provided in the budget justification document.

Response to Reviewer Comments:

(1) Fisherman Advisory Committee (FAC): There was a request for greater clarity regarding the development of the FAC. We plan to develop and convene the committee in spring 2014 prior to the commencement of research activities. This will enable us to receive feedback from the fishing community regarding our research approach and survey design. We will select committee members to gain maximum coverage of ports, targeted fisheries, and type of participation (commercial, CPFV). Members will be selected based on their relationships within the fishing community, their political engagement with fisheries management processes, and their willingness to participate. As we have already conducted significant outreach with the fishing community, we have a preliminary idea of fishermen who would be useful and interested in this role. The committee will meet throughout the research process and will be convened at the end of the study to review and comment on the results.

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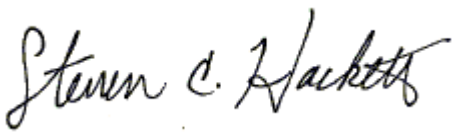
(2) Focus Groups: one reviewer asked for greater clarity with regards to focus groups. We will conduct a minimum of one focus group at each of the major ports within the fishery (Fort Bragg, Shelter Cove, Eureka, Trinidad, and Crescent City). In ports that have multiple fisheries with very little overlap in participation (e.g. urchin, seaweed, and finfish fisheries in Fort Bragg) we will attempt to convene multiple focus groups to capture knowledge regarding each of those unique fisheries. Focus groups will consist of 4-8 participants. They will be selected to provide a cross-section of different interests and demographics in the fisheries of interest. Special focus will be given to making sure at least one member of every group possesses a long historical view/involvement in the fishery. We will seek advice from the FAC with regards to potential focus group participants. Due to budget constraints we will likely not be able to include recreational or charter fishing interests in the focus group discussions. The project co-PI, Dr. Richmond, has experience leading focus groups comprised of members of fishing communities.

(3) Data Integration: one reviewer sought better information about our plans for integrating the various components of our data collection effort – survey data, heat maps, log book data analysis, and focus group data. While we cannot anticipate the myriad ways these data sets will speak to each other once the project is complete, we do have plans for how this data will be integrated. First, while our quantitative methods such as heat maps and log book data analysis can give us a sense of patterns occurring within the fishery, these methods cannot always give great insight into the reasons these patterns are occurring or how they are being received and experienced by fishermen and their families. Qualitative data from focus groups -- as well as quality of life information from surveys -- can help provide greater insights into the drivers of patterns within the fishery and as well as how these patterns affect fishermen in their daily lives. Feedback from the FAC and content from focus groups will be used to help understand and clarify patterns within our data sets. Local ecological knowledge collected from focus groups can also help to understand patterns within data sets collected by biologists. Efforts will be made to provide this information to biologists working on baseline monitoring for possible integration into their analyses. Finally, qualitative information from focus groups will provide much needed information about the context in which these changes and patterns are being received. We believe that the unique interdisciplinary, multi-methodological approach to our project (as well as the unique areas of expertise of each of the PIs) will provide for a truly robust and holistic examination of the socioeconomic dimensions of this MPA network.

Best wishes,



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PROJECT TITLE:
Socioeconomic dimensions of MPAs: Establishing a baseline and assessing initial changes in California North Coast fisheries

1.0 PROJECT LEADERS AND ASSOCIATED STAFF

Dr. Steven Hackett (HSU):	HSU co-lead—responsible for overall project leadership, design, and administration, methods, analysis, and report development
Dr. Laurie Richmond (HSU):	HSU co-lead—responsible for project design, survey design, project management/implementation, outreach, fieldwork, graduate student and research associate management, data analysis, and report development
Cheryl Chen (Point 97):	Point 97 (a company of Ecotrust) co-lead—responsible for Point 97 project design/management/implementation, survey instrument/tool design and development; design and implementation of data analyses, develop final data products, and report development
Charles Steinback (Point 97):	Point 97 (a company of Ecotrust) co-lead—responsible for overall oversight and guidance on Point 97 methods, tools, and analyses. Co-lead on designing electronic monitoring system project component.

Overall project leader Steven Hackett has 25 years of experience serving as principal investigator, project director, lead author or senior supervising economist. Much of his recent work has been focused on the economics of fisheries and renewable energy. His 2009 *economic structure of California's commercial fisheries* project for CDFW involved a large-scale state-wide survey methodology that resulted in comprehensive COFHE economic impact models for 22 fishery operational configurations at the county, region, and state-wide scales (Hackett et al. 2009). Hackett recently applied the COFHE model to estimate the overall economic contribution of commercial spiny lobster fishing in Southern California, and also helped design a spiny lobster recreational fishing survey and sampling design to estimate direct recreational contributions to the Southern California economy (Hackett et al. 2013). His work has also traced landings downstream and estimated value added for specific seafood product forms and market channels for California's Dungeness crab fishery (Hackett et al. 2003; 2004; 2005; Hankin et al. 2005; Dewees et al. 2004). He and a colleague Ana Pitchon are currently working on a Sea Grant-funded project to identify innovative strategies, product forms, and market channels that can enhance the value of commercial fisheries in California and beyond. Other relevant work by Hackett addresses the Oregon and California salmon fisheries (Hackett and Hansen 2008), the California wetfish industry complex (Hackett 2002), and the socioeconomic impacts of wave energy development (Hackett 2008).

Co-lead Laurie Richmond is an interdisciplinary scholar with expertise in the area of human dimensions of marine and coastal resources. She has significant experience conducting socioeconomic monitoring in the fisheries realm. Prior to her position at HSU, she worked as a social scientist for NOAA Fisheries Pacific Islands Fisheries Science Center. In this capacity she conducted social science research on the fisheries of the Western Pacific and worked to communicate this research to federal and state policy-makers in the region. She has worked on many types of projects including socioeconomic impact assessments of fishery management actions, policy evaluations of community-based marine management institutions, oral history explorations of traditional fishing practices, and sociocultural characterizations of fishing communities and markets (Richmond et al 2011; Richmond 2013; Richmond and Levine 2013).

To foster a more bottom-up and collaborative approach to the research, Hackett and Richmond have been in dialogue with the North Coast fishing community since the inception of this project. This proposal has been shaped by numerous discussions with representatives of commercial, charter, recreational, and tribal fisheries, and with representatives from key government agencies including the Humboldt Bay Harbor, Recreation, and Conservation District, Mendocino County, the Crescent City Harbor District, and the California Department of Fish and Wildlife.

Point 97 is a wholly owned subsidiary of Ecotrust and launched in August of 2013. Building on a decade of Ecotrust's work to support ocean health alongside coastal economies, Point 97 will continue the organization's mission on a global scale by providing new technologies and engagement strategies for the marine and ocean planning sectors. Since 2001, Point 97 staff working under the organization Ecotrust have worked with federal and state agencies, nonprofit organizations, and fishing communities to provide integrated ecological and economic assessments of fishery policy and marine conservation efforts. With Charles Steinback and Cheryl Chen (now Point 97 staff) serving as project managers or as a principal investigator, Ecotrust has assisted the California Marine Life Protection Act Initiative (MLPAI) with local knowledge collection, collection of spatial fishing data, economic analysis, and the development of decision support tool (MarineMap) (Scholz et al. 2004; 2005; 2006a; 2006b; 2008; 2010; 2011a; 2011b). Ecotrust staff served on the MLPAI Science Advisory Team during the MLPA planning process. Furthermore, Ecotrust staff have carried out or are currently conducting marine protected area (MPA) monitoring work in the North Central, Central, and South Coast regions utilizing the methods described in this study (Chen et al. 2012 and 2013). Ecotrust has also performed fisheries mapping for the state of Oregon (Steinback et al. 2010). As part of these various efforts, Ecotrust has conducted over 2,500 interviews with fishermen and other stakeholders to collect and compile spatial data representing patterns of economic value and use of the coastal and marine environment. Point 97 is also piloting an on-the-water digital data collection tool called Digital Deck which may serve as a model in designing a long-term electronic monitoring solution for commercial fisheries in the North Coast region.

Associated Staff: Mr. Terry Tillman, California Department of Fish and Wildlife, has worked at the Marine Region analyzing various commercial fishing programs and data since 1987. In this capacity he has conducted numerous economic impact analyses of commercial and recreation fisheries, for both the State's regulatory process as well as the legislative process. Most recently, Mr. Tillman completed analyses of commercial fishing activities inside and outside California's Central Coast MPAs, quantifying pre and post implementation ex-vessel revenue performance, and ex-vessel revenue performance relative to an unaffected reference group of fishermen.

2.0. PROJECT GOALS AND OBJECTIVES

The primary goals of this project are to collaborate with the California North Coast fishing community and California Department of Fish and Wildlife (CDFW) to:

1. Establish a baseline characterization of spatial fishing patterns and socioeconomic status for commercial fisheries and elements of CPFV operations in the North Coast region; and
2. Conduct an assessment of initial spatial and socioeconomic changes following MPA implementation.

To accomplish these goals, the objectives of this project are to:

1. Establish a Fisherman's Advisory Council (FAC) comprised of representatives from key fisheries and ports throughout the region to ensure fisherman collaboration throughout the project.
2. Collaborate with the CDFW to ensure existing commercial fishing landings data are fully utilized and appropriately analyzed to present historical trends and initial changes since MPA implementation. This is to assist in characterizing the California North Coast fishing community as a whole, as well as contrast historical activities inside and outside the MPAs, before and after their implementation.
3. Conduct interviews and focus groups with fishermen to collect detailed data on a) demographic characteristics; b) the social, political, and economic conditions of North Coast fishing communities; c) knowledge, attitudes, and perceptions related to MPAs; d) spatial use patterns; and e) economic characteristics for key commercial fisheries of the North Coast;
4. Utilize pre- and post-MPA data collected by Point 97 to conduct a baseline-and-change assessment of spatial and economic changes in key commercial fisheries and select CPFV port level fisheries since MPA implementation;
5. Through an integrated analysis of focus group/interview data and landings/logbook data, provide information on the direct and indirect effects of MPA establishment and other driving factors contributing to economic change (e.g., tracing changes in spatial activity, targeted fisheries, and landings; characterizing broader economic changes; effects of additional spatial fishing regulations; loss of port infrastructure) within key commercial fisheries in the North Coast.
6. Collaborate with the Fisherman Advisory Council to assess the feasibility and design a cost effective long-term monitoring solution in the form of an electronic monitoring tool.
7. Inform future monitoring efforts by developing recommendations of key metrics for long-term socioeconomic MPA monitoring.

The results of this study will provide a better understanding of the current socioeconomic conditions of the North Coast region's fishermen and fisheries and provide a benchmark of socioeconomic conditions and spatial fishing patterns against which future MPA impacts and benefits can be measured. The data collected in this analysis, as well as the spatial monitoring tools developed during the project, will help fill an important socioeconomic data gap for the fisheries in the North Coast region. Furthermore, the baseline data collected in this study, along with ecological data to be collected by others, will help researchers and managers understand the interactions between human uses of coastal and marine ecosystems and the North Coast MPA network. We aim to conduct a comprehensive assessment of fishery use patterns across the region and thus the socioeconomic study will likely overlap with all ecological data collection sites.

To ensure that baseline data sets are comparable across California regions, we will design the survey instrument and data analysis methods so that direct comparisons can be made with similar baselines established in other regions of California (e.g., California North Central Coast, Central Coast, and South Coast study regions) and the US West Coast, and so that it can be integrated with the ecological data being collected in the North Coast. This approach will inform a comprehensive and integrative assessment of the North Coast MPAs within a broader statewide context.

3.0. PROJECT RATIONALE

Humans are an integral part of the ecosystem in the North Coast, and their activities inside and outside the newly implemented MPAs are closely linked to the MPA network's ecological responses. In order to understand these interactions, and to establish baseline data for long-term monitoring and analysis, a comprehensive understanding of the current extent, pattern, and socioeconomic importance of human uses is required. Socioeconomic monitoring and assessment has become widely recognized as a central component to effective fishery management (Vanderpool, 1987; St. Martin 2005, 2006, 2007; Pollnac et al., 2006; Tuler et al., 2008; Hall-Arber et al., 2009). This project will provide data on spatial use patterns and close socioeconomic information gaps in the region. Furthermore, this project will directly inform the 5-year management review of the North Coast MPAs in which the California Department of Fish and Wildlife (CDFW) will make management recommendation to the California Fish and Wildlife Commission based on findings from the baseline MPA monitoring projects and other sources of information.

4.0. APPROACH TO BE USED (PLAN OF WORK)

This research will focus on consumptive uses of the North Coast marine environment by commercial fishermen (note: the term fisherman is intended to encompass individuals of all genders). North Coast tribal nations and their history, knowledge, and interests are a socioeconomic component of long-standing importance. While we initially approached tribes to seek collaboration, we understand that their concerns about research methods and confidentiality relating to culturally sensitive sites limit their ability to collaborate. As a result, we do not include a tribal dimension in our proposal, though we remain receptive to collaborations in order to generate a fuller understanding of North Coast socioeconomic conditions relating to MPAs.

Our project will utilize proven methodologies to develop a high quality socioeconomic assessment of the North Coast MPA network with a strong quantitative focus. We will incorporates socioeconomic methodologies that were developed and successfully implemented to support the MLPA and other marine spatial planning processes on the west coast (Scholz et al. 2004; 2005; 2006a; 2006b; 2008; 2010; 2011a; 2011b; Hackett 2008; Steinback et al. 2010). These methods demonstrate novel approaches for collecting, compiling, and analyzing spatial fishing patterns and associated socioeconomic information at various geographic resolutions to aid the design and assessment of marine spatial planning efforts. The methods build upon and contribute to increasing efforts to bring GIS technology and analysis into marine and fisheries management, particularly for the examination of socioeconomic information (Meaden 1996; Caddy and Carocci 1999; Kruse et al. 2001; Breman 2002; Valavanis 2002; Green and King 2003; Fisher and Rahel 2004; Wedell et al. 2005; Aswani and Lauer 2006; Hall and Close 2006; St. Martin et al. 2007; Ban et al. 2009; Parnell et. al 2010; Lee et. al 2010). Quantitative and spatial methodologies will be augmented with qualitative data collection through focus groups and interviews as well as mechanisms for collaboration with the fishing community throughout the research process. This collaborative approach will allow the project to better reflect the unique culture of the North Coast marine community which possesses a strong sense of community and a high capacity for involvement in research and management.

Many of the methods proposed in this study were implemented in the Central Coast and North Central Coast regions and are currently being implemented in the South Coast region to monitor the human dimensions of MPAs (Chen et al. 2012 and 2013). The successes and lessons learned from MPA monitoring work in the other regions will be directly applied to the methods and tools deployed in the North Coast region in order to help close existing coastal and marine use information gaps and provide a tested, consistent, and cost-effective method for long-term monitoring across California.

The approach we will take and the methods we will utilize are split into four components in this section of the proposal:

1) Community outreach
2) Data Collection
3) Data Analysis
4) Designing a long-term monitoring solution

To focus efforts upon information which may be most useful and effective in informing a 5-year review of the North Coast MPAs, this project has identified key consumptive user groups and associated fisheries in which to target our data collection and analysis efforts as indicated in each following sub section. These user groups and key fisheries have been identified as most likely to experience short-term spatial and socioeconomic changes associated with MPA implementation and are of high economic importance to the study region.

4.1. Community Outreach

Our proposed approach is to collaborate with the fishing community to conduct socioeconomic MPA monitoring that serves both fishing community needs and the goals of the overall MPA monitoring effort. To facilitate this collaboration, we propose to develop a 5-10 member fisherman advisory council (FAC) that will consist of representatives from key commercial and CPFV fisheries and ports from across the North Coast. The FAC will serve as the central entity for collaboration with the fishing community throughout the project. The Council will assist with project and survey design, outreach to the larger fishing community to conduct interviews, review and interpretation of data analysis results, design of a long-term cost effective digital commercial fishing monitoring tool, review of final project products, and the dissemination of results. FAC members will be compensated for their time with a stipend. We plan to develop and convene the committee in spring 2014 prior to the commencement of research activities. This will enable us to receive feedback from the fishing community regarding our research approach and survey design. We will select committee members to gain maximum coverage of ports as well as the fisheries targeted in our study. Members will be selected based on their relationships within the fishing community, their political engagement with fisheries management processes, and their willingness to participate. In our initial outreach efforts we have gained positive response from the fishing community about the development of this advisory council and we have identified several individuals who may be interested in serving on the council.

While the FAC will be our primary mechanism for fisherman collaboration across the project, we also plan to conduct outreach at the port level to gain input and inform the fishermen about our proposed research. Prior to conducting individual interviews, we plan to hold at least one focus group in each of the major ports of the North Coast. In the focus groups we will discuss our proposed research. The focus

groups will also serve as an opportunity for us to collect information about the baseline social, political, and economic conditions of the fishing communities and to gather local knowledge related to the MPAs.

4.2. Data Collection

To collect primary information about socioeconomic conditions and responses surrounding the MPAs we will utilize two primary methodologies. First, we will conduct focus groups with representatives from key commercial fisheries in each port. Second, we will conduct individual interviews with CPFV operators (in at least two ports) and commercial fishermen (region-wide) to collect spatial and survey data about the fisheries. With support from our CDFW collaborator Terry Tillman we will integrate interview and focus group information with CDFW landings and logbook data in order to generate a rich characterization of baseline conditions and to identify and in some cases quantify recent changes associated with MPA formation.

4.2.1 Focus Groups

The development of focus groups with a number of individuals to discuss key issues is a well-recognized qualitative methodology in the social sciences (Krueger, 2009; Morgan 1997) that has been increasingly utilized in a fisheries context (Coulthard 2008; Hampshire et al. 2004; Lobe and Berkes 2004; Ochiewo 2004). We will conduct a minimum of one focus group at each of the major ports within the fishery (Fort Bragg, Shelter Cove, Eureka, Trinidad, and Crescent City). In ports that have multiple fisheries with very little overlap in participation (e.g. urchin, seaweed, and finfish fisheries in Fort Bragg) we will attempt to convene multiple focus groups to capture knowledge regarding each of those unique fisheries. Focus groups will consist of 4-8 participants. They will be selected to provide a cross-section of different interests and demographics in the commercial fisheries of interest. Special focus will be given to making sure at least one member of every group possesses a long historical view/involvement in the fishery. We will seek advice from the FAC with regards to potential focus group participants. The focus groups will serve as a means to collect qualitative information about the baseline socioeconomic conditions of North Coast fishing communities and initial socioeconomic responses to the MPAs. The researchers convening the focus group will make nautical maps of the ocean and coastal area available to provide participants with a reference as they discuss these issues. Proposed topics for the focus group include:

(1) Composition, culture, and trajectory of local fishing communities.
(2) Regulatory and management landscape of the region and interaction of past and current regulations with MPA restrictions.
(3) Infrastructure history, availability, and needs (e.g. docks, markets, processors, supporting industries, management capacity)
(4) Perceptions of the MPAs and the MPA planning process
(5) Local ecological knowledge (LEK) of the marine environment, particularly related to the MPAs.

4.2.2 Individual Interviews

Sample Design

To determine a sampling method for the commercial fishing sector, we will utilize recent CDFW commercial fishing landings data as well as contact data (phone numbers taken from the CDFW permits database). We will then organize these data into port-fishery combinations to identify commercial fishermen to interview in each target fishery in each port in the region. In the process we will take into consideration various fishing gear configurations and scale of operations so that an appropriate cross-

section of fishermen is canvassed. Our sampling design will also be cognizant of bias towards commercial fishermen who land in multiple ports, and lower response rate among less active participants.

Given the considerations above, to the extent possible we will stratify lists of commercial fishermen by ex-vessel revenue so that our sample appropriately covers different revenue and activity levels. For some port-fishery combinations this may not be feasible, such as in the case of fisheries that only have 10 or less participants. In these cases we will strive to contact and interview all fishermen in these port-fishery combinations. Our sampling goal will then be to represent at least 50% of the ex-vessel revenue in each port-fishery combination and to spread out the sample as evenly as possible across gear configurations and ex-vessel revenue ranges.

Fisheries and Ports

For the commercial fishing sector we plan to collect data for the commercial fishing ports of Crescent City, Trinidad, Eureka, Shelter Cove, Fort Bragg, and Albion, and target fishermen in the following key fisheries (we may modify this list as we collaborate with the regional fishing community):

1. Dungeness crab – Trap
2. Nearshore Finfish (Rockfish)– Live – Trap
3. Nearshore Finfish (Rockfish)– Live - Hook and Line
4. Nearshore Finfish (Rockfish)– Dead – Hook and Line
5. Nearshore Finfish (Rockfish)– Dead – Longline
6. Urchin – Dive
7. Seaweed – Hand Harvest (if project resources permit)

For our commercial fishing landings analysis we will focus on our key fisheries, and also examine broader shifts in effort and landings before and after MPA formation.

Survey Questions

Point 97's Open OceanMap, a customized survey instrument, will be used to collect socioeconomic and spatial commercial fishing data using methods designed to complement existing data previously acquired for commercial fishing operations in other study regions. Data will be collected through individual interviews, and fishery data will be collected at the port, fishery, condition, and gear-type level (e.g., Fort Bragg Nearshore Finfish – Live – Hook and Line) so that summary information can be presented at the port and regional level.

We will collect spatially-explicit survey data on various dimensions of commercial fishing. Commercial fishermen will be interviewed on their full portfolio of targeted fisheries participation. Included below are some survey data of primary interest to be collected:

1. Spatial extent and relative value of fishery specific fishing areas from 2013
2. Quality of life and job satisfaction
3. Alternative sources of income
4. Operating costs
5. MPAs that affect specific fisheries in a port
6. How MPAs have affected a spatial fishing behavior (e.g., cannot fish in traditional grounds, need to travel further to fish, fish at the MPA boundary, and so forth)

7. Perceptions of change in ecological and economic conditions in each fishery (e.g., changes in abundance, size, fishing effort, and so forth).
8. Perceptions of regulatory history in the region, interaction of MPAs with other fishing regulations, and comparison of the impacts and effectiveness of various regulations.

4.2.3 Restored Commercial Passenger Fishing Vessel (CPFV) Project Component

We will utilize our customized survey instrument (Open OceanMap) to collect data on spatial use patterns, operation costs, demographic characteristics, the impact of MPAs, and information surrounding economic changes from the CPFV fleet. Data will be collected using individual interviews and we will target all categories of CPFV operations—including six-pack and larger charter vessels. Due to budgetary limitations the sampling goal will be to interview all CPFV operators in at least two ports (Shelter Cove and Eureka). If project resources permit we will expand the sampling scope to the entire study region.

CPFV operators will be interviewed on their full portfolio of fisheries. Included below are some survey data of primary interest to be collected:

1. Spatial extent and relative value of fishery specific fishing areas from 2013
2. Percentage of income from each fishery/activity
3. Quality of life and job satisfaction
4. Alternative sources of income
5. Annual gross revenue
6. Operating costs
7. Number of passengers and trips for each fishery
8. Average price paid per passenger
9. MPAs which affect specific fisheries in a port
10. How MPAs have affected a spatial fishing behavior (e.g., cannot fish in traditional grounds, need to travel further to fish, etc)
11. Perceptions of change in ecological and economic conditions in each fishery (e.g., changes in abundance, size, fishing effort, etc)
12. Perceptions of regulatory history in the region, interaction of MPAs with other fishing regulations, and comparison of the impacts and effectiveness of various regulations.

4.3. Data Analysis Methods

The data analysis component of our project will focus on the commercial fishing sector.

4.3.1 Commercial and CPFV Fisheries

Analysis of existing and primary commercial data collected during this project will involve four primary components:

1. Analysis of commercial fishery focus group data
2. Analysis of commercial and CPFV survey data
3. Spatial change analysis between pre and post-MPA spatial fishing datasets
4. CDFW landings and logbook data analyses

Analysis of Focus Group Data

Information collected from the focus groups will be utilized to describe the baseline socioeconomic conditions of fisheries and communities in the North Coast region to help understand patterns observed in the logbook, spatial, and survey data sets, and to gather local ecological knowledge (LEK) of North Coast marine ecosystems. If respondents grant permission to record, researchers will develop transcripts of the

discussion from focus groups and following tested qualitative analysis techniques (Creswell 2003) we will code those transcripts for key themes or narrative tropes. In addition, LEK will be collated based on key resource categories and geographic regions. Fishermen from the North Coast region possess vast knowledge about the local environment developed through years of experience and observation. This information has the potential to contribute greatly to ecological monitoring of the MPA network. Efforts will be made to communicate this information to scientists monitoring ecological aspects of the MPAs as the LEK may inform their understanding of MPA dynamics. In conversations with the fishing community, several representatives have expressed a strong interest in a LEK component to the project as there has been little prior to work to collect the information and fishermen feel their knowledge could contribute to MPA monitoring and management.

We will augment our examination of interview and focus group data collected in this project with an analysis and review of existing socioeconomic data that has been collected about the fisheries and fishing communities of the region. Potential sources of information include fishing community profiles of the North Coast (Pomeroy et al. 2010), a risk assessment and socioeconomic characterization conducted prior to the establishment of the MPAs (Impact Assessment 2010), economic analyses related to the region's fisheries (Hackett et al. 2009; Hackett and Hansen 2008; Hackett 2008; Hackett 2002), and others. Existing data will provide information about the socioeconomic context of the region allowing us to better understand the patterns uncovered in our research and allowing for the development of a robust socioeconomic characterization of North Coast fishing communities in relation to the MPA network.

Analysis of Survey Data

Analysis of spatial datasets collected during interviews will involve several steps. First, once interviews are complete, each fisherman will be mailed their individual fishery maps to review for accuracy and completeness. Any adjustments requested by a fisherman will then be modified and incorporated into the spatial analysis. Second, relative economic importance spatial datasets or 'economic heat maps' will be developed for each fishery at the port and region-wide levels. For the commercial fishery sector, relative economic importance maps will be created by weighting each individual's fishing grounds by their ex-vessel revenue for a particular fishery in the year 2013 and aggregating each individual's data to the appropriate spatial scale (e.g., port or study region scale). Third, after the individual fishery economic heat maps are created, they will be reviewed by the fishing community in each port to validate the results. If necessary, feedback from these community review meetings will then be incorporated.

Summary statistics of additional survey data collected will also be developed reporting out on the various information such as: 1) demographics; 2) operating costs; 3) percent income from fishing and from each fishery; 4) stated effects of MPAs; 5) MPAs which have affected specific fisheries; 6) perceptions of change in ecological and economic conditions in each fishery and drivers of those changes; and 7) assessments of quality of life and job satisfaction. This information will provide an important socioeconomic profile of the commercial fishing fleet representing the majority of landings in each fishery-port combination as well as provide potential insights into the direct/indirect impacts of MPA implementation and other significant drivers of change. Furthermore, data collected in this study will be compared to survey data collected pre-MPA in the 2010 Ecotrust study to asses any socioeconomic change since MPA implementation. This survey data will be combined with qualitative information collected through the focus groups, individual interviews, and participant observation of the fisheries and fishing communities by social researchers during their visits to the communities.

Spatial change analysis between pre and post-MPA spatial fishing datasets
Once analysis of post-MPA datasets are complete a spatial change analysis will be conducted by utilizing complementary spatial fishing data collected by Ecotrust in 2009 and summarizing each pre and post-MPA fishery datasets to a planning unit grid. For each fishery at the port and study-region scale the pre and post-MPA planning unit datasets will be analyzed together to create a 'heat map' of relative spatial change—highlighting the planning units in which the most economic change has occurred over time.

CDFW landings and logbook data analysis
To provide further socioeconomic information, we will analyze CDFW commercial landings data for each fishery of interest at the port and study region scale across the years 1992 to 2014. Contingent on support from our CDFW collaborator we will analyze CPFV logbook data from selected harbors for the year 2000 to 2014. This analysis will provide the following information on general trends across time at both the port and region level:

1. Commercial landings (pounds) and revenue in a specific fishery and in aggregation
2. Number of commercial fishing vessel making landings in a specific fishery and in aggregation
3. Numbers of commercial fishermen active in the fisheries, aggregate ex-vessel revenue trends, and changes in fishing gears used or fishing practices.
4. Price per pound received for commercial fisheries
5. Average landings and revenue per fisherman for specific fisheries
6. Total number of CPFV anglers and average number of anglers per vessel from selected ports
7. Total number of CPFV trips for each specific fishery from selected ports

Conducting this type of descriptive analysis will enable a macro-level identification of trend disruptions such as peaks/dips in the number of fish caught or number of fishermen participating in fisheries. Identifying these trends can serve as a starting point from which to investigate driver(s) of the change—with MPA implementation as one possible driver. This analysis of landings data will be reviewed with the fishing community and CDFW staff to help interpret results, and this information will be incorporated into the final report. If project resources permit we will utilize the COFHE model (Hackett et al. 2009) where appropriate to estimate the economic impacts and contributions associated with changes in the pattern and extent of commercial landings.

Data Integration:
While we cannot anticipate the myriad ways these different data sets (survey data, heat maps, catch statistics analysis, and focus group data) will speak to each other once the project is complete, we do have plans for how this data will be integrated. First, while our quantitative methods such as heat maps and catch data analysis can give us a sense of patterns occurring within the fishery, these methods cannot always give great insight into the reasons these patterns are occurring or how they are being received and experienced by fishermen and their families. Qualitative data from focus groups -- as well as quality of life information from surveys -- can help provide greater insights into the drivers of patterns within the fishery and as well as how these patterns affect fishermen in their daily lives. Feedback from the FAC and content from focus groups will be used to help understand and clarify patterns within our data sets. Local ecological knowledge collected from focus groups can also help to understand patterns within data sets collected by biologists. Efforts will be made to provide this information to biologists working on baseline monitoring for possible integration into their analyses. Finally, qualitative information from focus groups

will provide much needed information about the context in which these changes and patterns are being received. Ultimately, quantitative information from surveys and catch data analysis will serve as the backbone of our analysis while qualitative information will be incorporated throughout the text to provide valuable information about context, causality, and the human face of fishery changes. We believe that the unique interdisciplinary, multi-methodological approach to our project (as well as the unique areas of expertise of each of the PIs) will provide for a truly robust and holistic examination of the socioeconomic dimensions of this MPA network.

4.4. Designing a Long-term Monitoring Solution

We propose to support long-term socioeconomic monitoring efforts for the North Coast region through two means. (1) We will inform the development of North Coast monitoring metrics based on conversations with the fishing community and our research findings. (2) We propose to collaborate and consult with the fishing community, California Ocean Science Trust, and CDFW to assess the feasibility and to design a cost-effective technical system to collect, manage, deliver, and query MPA monitoring data. If developed, this tool could facilitate the collection of fisheries socioeconomic and spatial data well beyond the life of the baseline monitoring program.

Existing technology can be leveraged to support this project. Point 97 has developed an innovative technology solution (the "Digital Deck") that provides a cost effective data collection and data access program that we can adapt for long-term MPA monitoring efforts. Digital Deck is a tool deployed on GPS enabled mobile phones or tablet devices to collect spatial fishing data and fishing trip characteristics in digital format that is geo-referenced. The data may then be uploaded to a server after each trip, and in conjunction with a data delivery website interface the data may then be accessible in near real-time to provide the information collected back to fishermen, fishing communities, MPA managers, and MPA researchers.

The data collected via this electronic monitoring tool can be centralized in a secure, spatially-enabled online relational database that provides fishermen and MPA managers with the ability to view and query fishing activity to display spatial fishing patterns and trip statistics at several scales. The system and security model may be designed to be fishermen-centric in design – individual fishermen can access their individual data, but only aggregated data are available to others, in accordance with data security and confidentially requirements.

Feasibility Assessment

The first step will be to assess the feasibility of implementing a digital monitoring tool. Consideration and design of the tool will be a collaborative process and we will proceed only in the fisheries where the fishermen are interested in a digital monitoring tool. We have received positive feedback from initial outreach to fishermen about the utility of such as system and some fishermen have expressed interest in helping to design the system. We will meet with representatives of the fishing community to assess data needs to inform the design of the tool, assess their exposure to and use of mobile phones or tablets to gauge feasibility of utilizing such GPS enabled technology for data collection, and to assess their willingness to participate based on a range of possible options.

Design and Recommendation
Following the feasibility assessment we will work with interested commercial fishermen (including the FAC), managers, and scientists to design a user-friendly spatially-enabled data collection and query tool that best complements existing fisherman work flows yet collects data in a method and at a scale that best informs long-term monitoring efforts. Tool design will incorporate the needs of fishermen and managers and where possible incorporate established North Coast monitoring metrics. Whenever possible our design recommendation will integrate existing technologies such as the OceanSpaces website.

At the end of this process, we will generate a Long-term Digital Monitoring Feasibility and Design Report that describes our recommendations for implementing long term digital monitoring in the North Coast fisheries. In addition, if fishermen express interest, we will seek additional funding to develop a pilot monitoring tool for at least one commercial fishery in the region. The design and possible implementation of a digital monitoring tool has the potential to revolutionize MPA monitoring and fisheries data collection more broadly by providing a low cost, long-term, continuous system for collecting spatial fisheries data. Being mutually beneficial to fishermen and resource managers, a data collection tool such as this has the potential to facilitate the support and participation of fishermen in the collection of MPA monitoring data.

5.0. DATA CONFIDENTIALITY APPROACH

This project will involve collecting, compiling, and analyzing data and information provided by individual fishermen. Research results will be only be described and submitted as final products of this project in aggregated form (aggregated across individuals). Data points in which less than three fishermen are included will remain confidential and suppressed.

Data provided by the CDFW will be utilized under a strict non-disclosure agreement, and data collection in interviews will follow a strict protocol. Building upon experience conducting large scale human use data collection projects with fishing communities, HSU staff and Point 97 have established rigorous field staff training procedures and interview protocols to ensure that:

1. Field staff are able to constructively engage with fisherman about the goals/objectives of this project and the larger MPA monitoring/assessment effort this project will inform;
2. Sensitive fishermen contact information is kept secure and confidential;
3. Fishermen are properly informed of the research project goals and possible risk and agreements on data use before the fishermen signs a consent form and engages in an interview;
4. Fisherman data remains confidential and is securely stored, transmitted, and analyzed;
5. Interviews are conducted professionally and consistently; and
6. High quality data is consistently collected across interviews.

To accomplish this, the team will develop an informed-consent and confidentiality protocol and will sign and comply with CDFW non-disclosure agreement rules and HSU Institutional Review Board guidelines. The protocol will assure that individual fisherman data (including an individual's fishing grounds) is kept secure and confidential throughout the project from data collection, to transmission of the data, to data analysis, and subsequent storage of the data. HSU and Point 97 staff trained in human subject research protocols will conduct extensive training with field staff on proper research protocols and interview approach and procedures and informed consent. This training includes providing background on the Marine Life Protection Act planning process, the MPA monitoring program, and possible reservations

fisherman may have to participate in interviews in order for field staff to effectively engage in meaningful conversations with fishermen to solicit interviews.

6.0. OUTCOMES AND DELIVERABLES

The following are the deliverables for this project:

1. Geospatial database and maps of post MPA commercial and CPFV fishery datasets
2. Geospatial database and maps displaying the results from the spatial change analysis for each key commercial and CPFV fishery at the port and study region scale
3. Spreadsheets and graphs/tables summarizing all survey data collected
4. Spreadsheets and graphs/tables summarizing and compiling all relevant CDFW commercial and CPFV fishing data
5. All associated metadata in accordance with FGDC standards and EML standards as appropriate
6. Executive summary report
7. Technical report
8. Long-term digital monitoring feasibility and design report
9. Recommendations for North Coast monitoring metrics
10. Brochure summarizing findings to be distributed to the fishing community

The geospatial databases, map products, non-spatial survey data summaries, and associated metadata will be delivered to the Monitoring Enterprise (ME), CDFW, and the California Ocean Protection Council. Project staff will communicate with ME throughout the project to identify the most appropriate data delivery methods which may include presenting the project metadata in Ecological Metadata Language. Metadata delivered will be in accordance with FGDG standards and EML standards which fully describe the data, collection methods, and reporting structure. The spatial data delivered will be the aggregated spatial data and will not contain individual fisherman data. The non-spatial data will also be delivered in aggregate form, however, if less than three individuals compose of a summary statistic, the data will be excluded in accordance with Point 97's privacy and confidentiality protocols.

The executive summary report will summarize methods, key findings, and conclusions in 2-3 pages of text, and if needed, an additional 1-2 pages of figures. This report will be written appropriately for broad public release such as on the Monitoring Enterprise website or as a provision to the California Fish and Wildlife Commission. The technical report will fully detail the methods used, data summaries, analyses, and interpretations of results to describe, assess, and understand the project and its findings.

In addition to these materials, we will develop an accessible brochure that will summarize key findings from our research. This brochure will be distributed to members of the fishing community and interested agencies, organizations, and government entities. In addition to the brochure, an electronic copy of the report will be made available to any participant in the study or party who is interested. The development of these materials along with follow-up meetings in key ports will ensure that the results of this study are disseminated to the fishing community and remain available for community members to utilize.

7.0. MILESTONE CHART NARRATIVE

Below is a description of each project milestone displayed in the timeline in Figure 1.

Project design/management/coordination

Internal: Develop and update a detailed work plan for task coordination and to track progress towards objectives and budget. External: Collaborate with FAC and other partners to ensure our work is useful to the fishing community, MPA managers, and researchers.

Community outreach/engagement

Continue the outreach efforts which we have initiated to develop this proposal. Outreach effort will involve meeting with key fishermen in each port community and forming FAC.

Long-term electronic monitoring feasibility and design

Engage with the FAC and other interested fishermen to assess the feasibility of implementing an electronic data collection tool to serve as a long-term monitoring solution. Develop report.

Survey, and sample design

Design a draft survey and focus group questions based on input gathered in outreach efforts, and review draft survey and focus group questions with the FAC and other stakeholders; compile landings data to facilitate an interview and sampling design.

Survey tool development

The modifications mentioned above in the survey design will be incorporated into the development of a final survey tool appropriate for the North Coast region.

Data collection field work and oversight

Hire and train field staff; prepare field work materials; conduct focus groups and interviews.

Quality assurance and quality control (QAQC) internal

Edit spatial interview data to specific depth boundaries and geographic landmarks; mail review maps to each fisherman interviewed for them to review the accuracy and completeness of the spatial data collected; review non-spatial survey data collection for consistency and accuracy.

Data analysis and final products

Analysis of survey and spatial interview data; analysis of commercial data; analysis of changes in fishing patterns from pre to post MPA.

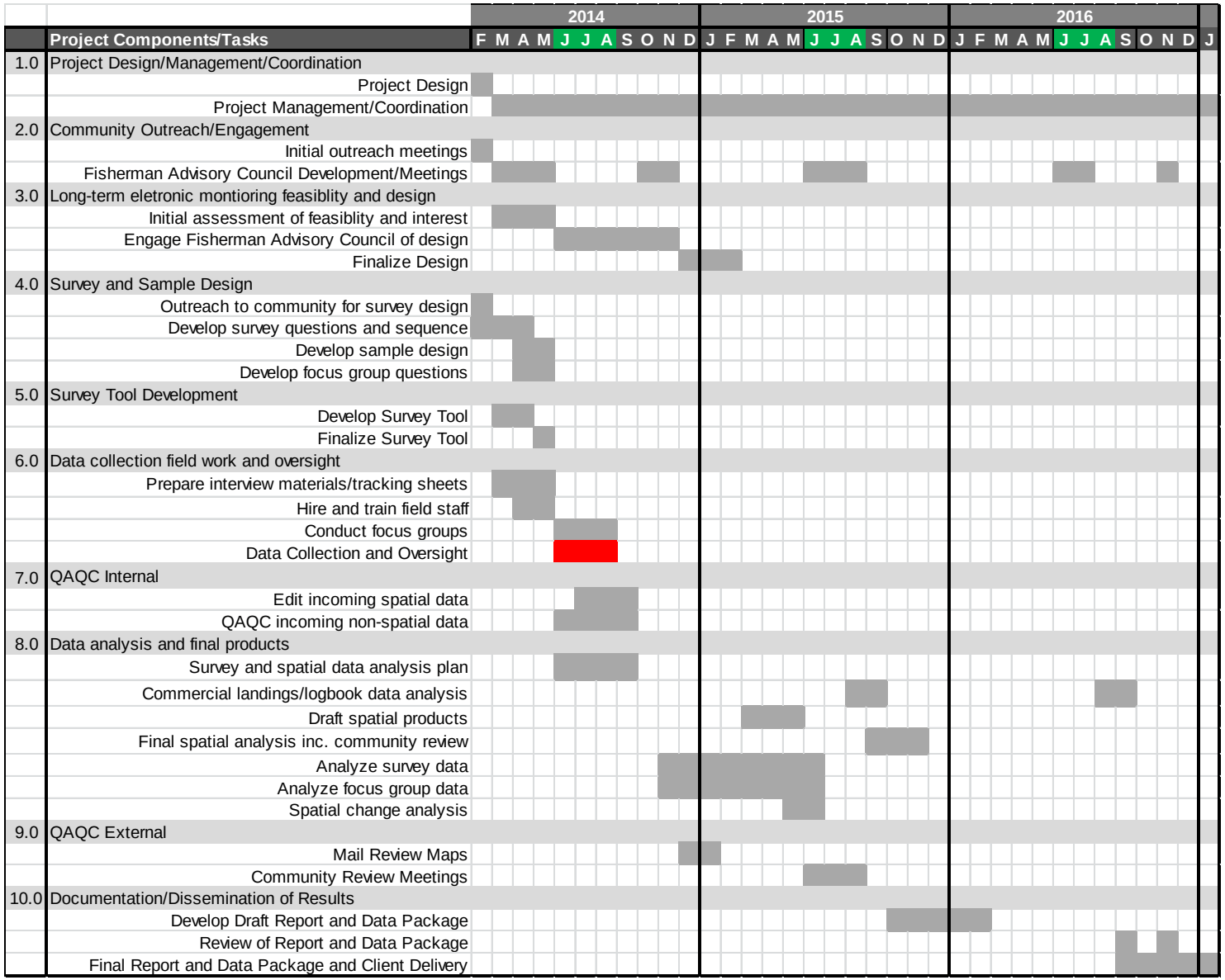
Quality assurance and quality control (QAQC) external

Conduct data review meetings to interpret and validate spatial data and CDFW landings and logbook data analysis results, with feedback incorporated into the final report and final products.

Documentation/dissemination of results

Development of the executive summary report, full technical report, spatial geodatabase, spreadsheets on non-spatial survey data, map products, and brochure for submission.

Figure 1. MILESTONE CHART



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Hackett_4266
Proposal Number

BUDGET UPDATED FOR RESUBMISSION 1-8-14

Steve Hackett
Project Leader(s)
Humboldt State University
Institution

					Year 1 - 2011-12		Year 2 - 2012-13		Year 3 2013-14		Cumulative	
A. SALARIES AND WAGES	Yr1	Yr2	Yr3		SG	Cost-Share	SG	Cost-Share	SG	Cost-Share	SG	Cost-Share
1. SENIOR PERSONNEL												
a. PROJECT LEADER - Steve Hackett	0.577	0.577	0.980		6,293		6,293	2,355	10,698	0	23,284	2,355
b. CO-PROJECT LEADER - Laurie Richmond	2.019	1.153	0.576		13,797	4,100	7,884	2,246	3,942	0	25,623	6,346
2. OTHER PERSONNEL							0		0			
a. Professionals	0.000	0.000	0.000			0	0	0	0	0	0	0
b. Research Associate - TBD	4.495	0	0		15,000	0	0	0	0	0	15,000	0
c. Graduate Students:	2.769	0	0		0	0	0	0	0	0	0	0
d. Prof. School Students	0.000	0	0		0	0	0	0	0	0	0	0
e Pre-Bachelor/Undergraduate Students	1.846	0	0		9,840	0	0	0	0	0	9,840	0
f Secretarial-Clerical	0.000	0.000	0.000		0	0	0	0	0	0	0	0
g Technical					0	0	0	0	0	0	0	0
h Other = Terry Tillman, F&W	0.33	0.33	0.33			2,790	0	2,790	0	2,790	1	8,369
TOTAL SALARIES AND WAGES	**12.04**	**2.06**	**1.89**		44,930	6,890	14,177	7,391	14,640	2,790	73,747	17,070
B. FRINGE BENEFITS					7,085	1,665	2,236	0	2,309	0	11,630	1,665
TOTAL SALARIES, WAGES, FRINGE BENEFITS (A+B)					52,015	8,555	16,413	7,391	16,949	2,790	85,377	18,735
C. PERMANENT EQUIPMENT						0	0	0	0	0	0	0
D. EXPENDABLE SUPPLIES					800	0	0	0	0	0	800	0
E. TRAVEL											0	0
Domestic					24,400	0	2,460		4,500	0	31,360	0
Foreign						0	0	0	0	0	0	0
F. PUBLICATION AND DOCUMENTATIONS						0	0	0	0	0	0	0
G. OTHER COSTS EXCLUDING TUITION REMISSION					5,800	0	5,000		6,000	0	16,800	0
H. TUITION/REMISSION					19,200	0	19,200	0	0	0	38,400	0
I. SHIP TIME						0	0	0	0	0	0	0
J. TOTAL DIRECT COSTS *(A THROUGH I,*					102,215	8,555	43,073	7,391	27,449	2,790	172,737	18,735
K. INDIRECT COSTS					20,754	16,603	5,968	4,775	6,862	5,490	33,584	26,867
L. SUBTOTAL PROJECT COSTS (Line H + Line I)					122,969	25,158	49,041	12,165	34,311	8,279	206,321	45,602
M. RESEARCH TRAINEE COSTS - 1.0 **Trainee(s) @ $19,800/yr**					0	0	0	0	0	0	0	0
N. TOTAL PROJECT COSTS (Line J + Line K)					122,969	25,158	49,041	12,165	34,311	8,279	206,321	45,602
Cost-Share to Federal Percentage						20.5%		24.8%		24.1%		22.1%

Hackett_4266
Proposal Number

BUDGET UPDATED FOR RESUBMISSION 1-8-14

Cheryl Chen
Project Leader(s)
Point 97
Institution

				Year 1 - 2010-11		Year 2 - 2011-12		Year 3 2012-13		Cumulative	
A. SALARIES AND WAGES	Yr1	Yr2	Yr3	SG	Cost-Share	SG	Cost-Share	SG	Cost-Share	SG	Cost-Share
1. SENIOR PERSONNEL											
a. (Co)PROJECT LEADER (C.V. REQUIRED	7.00	1.30	1.30	35,905	13,967	9,879	0	10,217	0	56,001	13,967
b. ASSOCIATE (Faculty or Staff)				0	0	0	0	0	0	0	0
2. OTHER PERSONNEL				0	0	0	0	0			
Professionals - Senior GIS Analyst	9.96	2.60	1.10	29,213	20,000	14,262	0	6,719	0	50,194	20,000
Professionals - Marine Planning Bus. Mger				0	0	0	0	0	0	0	0
Professionals - Marine Program Associate				0	0	0	0	0	0	0	0
Professionals - Economist				0	0	0	0	0	0	0	0
Professionals - Software Developer III				0	0	0	0	0	0	0	0
Professionals - GIS Technician				0	0	0	0	0	0	0	0
Professionals - Graphic Designer				0	0	0	0	0	0	0	0
Professionals - Development/finance Staff				0	0	0	0	0	0	0	0
TOTAL SALARIES AND WAGES	**16.96**	**3.90**	**2.40**	65,118	33,967	24,141	0	16,936	0	106,195	33,967
B. FRINGE BENEFITS				22,140	11,549	8,208	0	5,758	0	36,106	11,549
TOTAL SALARIES, WAGES, FRINGE BENEFITS (A+B)				87,258	45,516	32,349	0	22,694	0	142,301	45,516
C. PERMANENT EQUIPMENT				0	0	0	0	0	0	0	0
D. EXPENDABLE SUPPLIES				0	0	0	0	0	0	0	0
E. TRAVEL											
Domestic				10,500	0	4,560	0	4,080	0	19,140	0
Foreign				0	0	0	0	0	0	0	0
F. PUBLICATION AND DOCUMENTATIONS				0	0	0	0	0	0	0	0
G. OTHER COSTS EXCLUDING TUITION REMISSION				0	0	0	0	1,500	0	1,500	0
H. TUITION/REMISSION				0	0	0	0	0	0	0	0
I. SHIP TIME				0	0	0	0	0	0	0	0
J. TOTAL DIRECT COSTS *(A THROUGH I,*				97,758	45,516	36,909	0	28,274	0	162,941	45,516
K. INDIRECT COSTS				24,440	11,379	9,227	0	7,069	0	40,736	11,379
L. SUBTOTAL PROJECT COSTS (Line H + Line I)				122,198	56,895	46,136	0	35,343	0	203,677	56,895
M. RESEARCH TRAINEE COSTS 0.0 **Trainee(s) @ $19,800/yr**										0	0
N. TOTAL PROJECT COSTS (Line J + Line K)				122,198	56,895	46,136	0	35,343	0	203,677	56,895
Cost-Share to Federal Percentage					46.6%		0.0%		0.0%		27.9%

California Sea Grant College

Hackett_4266

Proposal Number	2014-2016	BUDGET UPDATED FOR RESUBMISSION 1-8-14	Steve Hackett and Cheryl Chen
	Fiscal Year(s)		Project Leaders
1/8/2014			Humboldt State University and Point 97
Date			Institutions

				Year 1 - 2010-11		Year 2 - 2011-12		Year 3 2012-13		Cumulative	
A. SALARIES AND WA	Yr1	Yr2	Yr3	SG	Cost-Share	SG	Cost-Share	SG	Cost-Share	SG	Cost-Share
1. SENIOR PERSONNEL											
a PROJECT LEADERS	7.58	1.88	2.28	42,198	13,967	16,172	2,355	20,915		79,285	16,322
b Co-PROJECT LEADERS	2.02	1.15	0.58	13,797	4,100	7,884	2,246	3,942		25,623	6,346
2. OTHER PERSON											
a Professiona	9.96	2.60	1.10	29,213	20,000	14,262		6,719		50,194	20,000
b Research Associates	4.50			15,000						15,000	
c. Res. Asst./Grad. Stude	2.77										
d Prof. School Students											
e Pre-Bachelor Student(s	1.85			9,840						9,840	
f Secretarial-Cleri											
g Technical											
h Other	0.33	0.33	0.33		2,790	0	2,790	0	2,790	1	8,369
TOTAL SALARIES AND WAGES	**29.00**	**5.96**	**4.29**	110,048	40,857	38,318	7,391	31,576	2,790	179,942	51,037
B. FRINGE BENEFI				29,225	13,214	10,444		8,067		47,736	13,214
- SALARIES, WAGES, FRINGE BENEFITS (A+B)				139,273	54,071	48,762	7,391	39,643	2,790	227,678	64,251
C. PERMANENT EQUIPMENT											
D. EXPENDABLE SUPPLIES				800						800	
E. TRAVEL											
Domestic				34,900		7,020		8,580		50,500	
Foreign											
F. PUBLICATION AND DOCUMENTAT											
G. OTHER COSTS EXCLUDING TUITION RE				5,800		5,000		7,500		18,300	
H. TUITION/REMISSION				19,200		19,200				38,400	
I. SHIP TIME											
J. TOTAL DIRECT COS *(A THROUGH I*				199,973	54,071	79,982	7,391	55,723	2,790	335,678	64,251
K. INDIRECT COST				45,194	27,982	15,195	4,775	13,931	5,490	74,320	38,246
L. SUBTOTAL PROJECT COSTS (Line H +				245,167	82,053	95,177	12,165	69,654	8,279	409,998	102,497
M. RESEARCH TRAINEE COS 1.0 **Trainee(s) @ $19,800/yr**											
N. TOTAL PROJECT COSTS (Line J +				245,167	82,053	95,177	12,165	69,654	8,279	409,998	102,497
Cost-Share to Federal Percen					33.5%		12.8%		11.9%		25.0%

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HSU Budget, Socioeconomic Dimensions of MPAs, Year 1

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

Steven Hackett [PI - on-campus], Mos. Effort: 0.577. SG 0 Grantee. Benefits Rt.: 0.1577, Mo. Salary: $10906. 0.577 months of salary coverage is budgeted for the Principle Investigator (PI). The PI will be responsible for overall project oversight, coordination with Point 97, HSU, and CDFW, and coordinating progress reporting to Sea Grant. The PI will provide overall leadership on community relationships, and provide broad supervisory-level input on project design, survey design and development of the data analysis plan. Reduced time base is congruent with reduced scope of work – removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish). Also, delegating more operational task leadership to the Co-PI.

Laurie Richmond [Co-PI - on-campus], Mos. Effort: 2.019. SG 0 Grantee. Benefits Rt.: 0. 1577, Mo. Salary: $6,833. Dr. Richmond's Dean is providing 2 weighted teaching units (WTUs) of release time as match, worth $4,100. 2.019 months of salary coverage is budgeted for the Co-Principle Investigator. The Co-PI will provide oversight over field work and take the operational lead on developing and maintaining fishing community relationships; provide expertise and input with project design and survey design; provide expertise and input in developing data analysis plan; be the primary manager for the HSU Research Associate; conduct and provide primary oversight of field work; and supervise graduate student. Reduced time base is congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish).

2. OTHER PERSONNEL

Research Associate – TBD [on-campus], Mos. Effort: 4.495. SG 0 Grantee. Benefits Rt.: 0.1577, Mo. Salary: $3336.67. Year 1 is the primary year for development and implementation of interview instrument and subsequent field work. The RA will work with the fishing community to develop the Fisherman Advisory Council; seek input on survey/project design from the fishing community; coordinate and manage summer field work; transfer all data collected to Point 97 (subcontractor); manage field work budget; and review data collected with the fishing community. Reduced time base is congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish).

Graduate Student - TBD [Res. Asst/Grad. Student - on-campus]

We are converting the graduate student to a stipend. As a part of the budget cutting exercise, we reclassified the graduate student compensation requested for this project to "stipends for traineeships". Per HSU's federally negotiated indirect cost agreement (IDC), IDC is not applied to stipends, and therefore the updated budget for this project reflects a reduction in IDC related to the graduate student being reclassified under Stipends for Traineeships. Graduate student will prep interviews, perform

interviews, and assist with focus groups, perform data analysis, perform background literature review, and assist in narrative report writing.

Field Tech #1: Graduate student TBD: Mos Effort: 2.769. SG (FT match): 0

Total charges derive from reasonable estimate of hours worked in summer as a field staff assistant at $15 per hour. Student will support field work interviews and support focus group work, primarily in summer. Student will be an employee of HSU SPF. No cost of living increase or salary increase is budgeted. All salary/personnel costs are allowable. Field Tech #1 is a graduate student so he/she will receive a higher hourly wage compared to Field Tech #2 who will be an undergraduate.

Field Tech #2: Undergraduate – TBD: Mos Effort: 1.846. SG (FT match): 0

Total charges derive from reasonable estimate of hours worked in summer as a field staff assistant at $12 per hour.

Terry Tillman - DFW [Other - off-campus], Mos. Effort: 0 Match: SG 0.333 Grantee. Benefits Rt.: 0, Mo. Salary: $8369. Terry Tillman, with the California Department of Fish and Wildlife, will provide matching funds through work effort, providing approximately 60 hours per year of donated time. Terry Tillman will assist with generating and analyzing commercial landings data, Commercial Passenger Fishing Vessel (CPFV) data, and California Recreational Fishing Survey (CRFS) data.

B. FRINGE BENEFITS

The HSU Sponsored Programs Foundation employer-paid benefit rate is 15.77% for Steve Hackett, Laurie Richmond, and the Research Associate. As Dr. Richmond's Dean is donating 2 WTUs as match, fringe benefits budgeted for Dr. Richmond have been reduced accordingly. All field work will be conducted during the summer requiring a benefit rate of 15.77% for the salaries of the two field technicians.

C. PERMANENT EQUIPMENT

D. EXPENDABLE SUPPLIES AND EQUIPMENT

$800 is requested to purchase one laptop computer for field staff to conduct field work.

E. TRAVEL

1. Domestic - US and its Possessions (inc. Puerto Rico)

PROJECT AND FIELD WORK TRAVEL BUDGET - YEAR 1

Project travel will primarily occur in year one. Travel includes travel for outreach meetings prior to initiation of the study as well as field work travel to collect interview and focus group data. It also includes project staff travel to fisherman advisory committee meetings.

Estimated Maximum Survey Work Costs - In 2009 approximately 219 commercial fishermen and 22 CPFV operators were interviewed. It is estimated that 100-200 fishermen will be interviewed for this project. Following travel budget numbers assume most interviews will take place in Eureka, California and Trinidad, California areas.

$22,900 is requested for staff to conduct project travel and perform fieldwork and data collection in Year 1.

1) Laurie Richmond, Co-PI - 10 days; $50 per day for meals; $200 lodging; $100 mileage/car = $800.

2) Research Associate - 80 days; $50 per day for meals; $1,500 lodging; $2,000mileage/car = $8,600.

3) Graduate Student - 70 days; $50 per day for meals; $1,500 lodging; $2,000 mileage/car = $7,000.

4) Field Tech #1 (Graduate Student) - 45 days, $50 per day for meals; $500 lodging; $500 mileage/car = $3,250.

5) Field Tech #2 (Undergraduate), 45 days; $50 per day for meals; $500 mileage/car = $3,250.

Total travel budget for fieldwork and data collection for Year 1 = $22,900

Reduced travel budget is congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish). In addition, we will gain efficiencies in travel expenditures by: (1) hiring one field staff member that is based in one of the southern ports of the North Coast to reduce mileage and lodging costs; (2) obtaining communal lodging such as vacation rentals that field staff will share; (3) insisting that field project staff drive together whenever possible to reduce mileage costs; and (4) making the project PI's home available for any out of town project staff members to stay at while conducting fieldwork or project travel in the Arcata/Eureka area.

TRAVEL BUDGET FOR FISHERMEN ADVISORY COUNCIL MEETINGS

$1,500 is requested for mileage and meals for participants on the Fishermen Advisory Council.

2. International

F. PUBLICATIONS AND DOCUMENTATION COSTS

N/A

G. OTHER COSTS

Other cost subject to indirect: Stipends - Fishermen Advisory Council - $4,800 Total. $4,800 is requested to compensate Fisherman Advisory Council participants for their time and travel expenses.

Other cost subject to indirect: Meeting Expenses, Space Rental - Fishermen Advisory Council - $100 Total. $100 is requested to reserve meeting spaces for the various fishermen meetings held off campus. Meetings are usually held at harbor offices or other meeting spaces near fishing harbors that are convenient to fishermen. A small fee is usually charged for utilizing these spaces.

Other cost subject to indirect: Food for Meetings - Fishermen Advisory Council - $100 Total. $100 is requested to provide food for Fishermen Advisory Council and focus group meetings. As it is difficult to attract fishermen and others to participate in research projects, food is an essential element to create a welcoming setting for participation.

Other cost subject to indirect: Cell phone charges - Field Staff - $800 Total. $800 is requested to reimburse monthly cell phone charges for field staff using their own cell phones to contact fishermen to schedule and conduct interviews.

The field work component of this project involves field staff travelling throughout the region. Field staff will be responsible for contacting fishermen and solicit and arrange to meet them for in-person interviews. A cell phone will be needed to contact fisherman and ensure field staff are reachable in the case that fisherman may need to reschedule interviews. A cell phone is also critical to staying connected with the project team to communicate interview progress. This project work will occur intensively over an approximate 3-month period.

Reduced FAC stipends and other costs are congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish). INDIRECT COSTS

[on-campus] includes: salaries (SG rt: 0.25, Inst. rt: 0.45), fringe benefits (SG rt: 0.25, Inst. rt: 0.45), expendable eq. (SG rt: 0.25, Inst. rt: 0.45), travel (SG rt: 0.25, Inst. rt: 0.45), publications (SG rt: 0.25, Inst. rt: 0.45), other costs (SG rt: 0.25, Inst. rt: 0.45)

Indirect costs are being requested.

Humboldt State University Sponsored Programs Foundation's federally approved IDC rate is 45%; however, the NCMPA Sea Grant maximum IDC rate is 25%. HSU SPF is applying Sea Grant's 25% IDC rate to this project and the remaining 20% is applied to waived IDC match.

HSU Budget, Socioeconomic Dimensions of MPAs, Year 2

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

Steven Hackett [PI - on-campus], Mos. Effort: 0.5777. Match: SG 0.216 Grantee. Benefits Rt.: 0.1577, Mo. Salary: $10906. 0.5777 months of salary coverage is budgeted for the Principle Investigator (PI). The PI will be responsible for overall project oversight, coordination with Point 97, HSU, and CDFW, and coordinating progress reporting to Sea Grant. The PI will provide overall leadership on community relationships, and provide broad supervisory-level input on project operations and preliminary report development. Reduced time base is congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish). Also, delegating more operational task leadership to the Co-PI.

Laurie Richmond [Co-PI - on-campus], Mos. Effort: 1.153. Match: SG 0.329 Grantee. Benefits Rt.: 0.1577, Mo. Salary: $6833. 1.153 months of salary coverage is budgeted for the Co-Principle Investigator. The Co-PI will provide oversight over field work and take the lead on maintaining fishing community relationships; provide expertise and input with project operations and data analysis; conduct and provide oversight of field work; supervise graduate student; and assist PI with elements of preliminary report development. Reduced time base is congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish)..

2. OTHER PERSONNEL

Graduate Student - TBD [Res. Asst/Grad. Student - on-campus]

We are converting the graduate student to a stipend. As a part of the budget cutting exercise, we reclassified the graduate student compensation requested for this project to “stipends for traineeships”. Per HSU’s federally negotiated indirect cost agreement (IDC), IDC is not applied to stipends, and therefore the updated budget for this project reflects a reduction in IDC related to the graduate student being reclassified under Stipends for Traineeships. Graduate student will prep interviews, perform interviews, and assist with focus groups, perform data analysis, perform background literature review, and assist in narrative report writing.

Terry Tillman - DFW [Other - off-campus], Mos. Effort: 0 Match: SG 0.333 Grantee, Benefits Rt.: 0, Mo. Salary: $8369. Terry Tillman, with the California Department of Fish and Wildlife, will provide matching funds through work effort, providing approximately 60 hours per year of donated time. Terry Tillman will assist with generating and analyzing commercial landings data, Commercial Passenger Fishing Vessel (CPFV) data, and California Recreational Fishing Survey (CRFS) data.

B. FRINGE BENEFITS

The HSU Sponsored Programs Foundation employer-paid benefit rate is 15.77% for Steve Hackett, Laurie Richmond, and the Research Associate.

C. PERMANENT EQUIPMENT

D. EXPENDABLE SUPPLIES AND EQUIPMENT

N/A

E. TRAVEL

1. Domestic - US and its Possessions (inc. Puerto Rico)

PROJECT TRAVEL BUDGET - YEAR 2

$960 is requested for travel expenses related outreach meetings and meetings with the project PIs.

$960 is requested for 1 person for 5 days: $140 for Hotel; $50 for Meals, $43.40 for car/gas.

Total Project Travel, Year 2 = $960

Reduced travel budget is congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish). In addition, we reduced travel for communication with project PIs and will instead rely on phone or web-based communication for coordinating data analysis.

FISHERMEN ADVISORY COUNCIL MEETINGS - YEAR 2

$1,500 is requested for mileage and meals for participants on the Fishermen Advisory Council.

2. International

F. PUBLICATIONS AND DOCUMENTATION COSTS

N/A

G. OTHER COSTS

Other cost subject to indirect: Stipends - Fishermen Advisory Council - $4,800 Total. $4,800 is requested to compensate Fisherman Advisory Council participants for their time and travel expenses.

Other cost subject to indirect: Meeting Expenses, Space Rental - Fishermen Advisory Council - $100 Total. $100 is requested to reserve meeting spaces for the various fishermen meetings held off campus. Meetings are usually held at harbor offices or other meeting spaces near fishing harbors that are convenient to fishermen. A small fee is usually charged for utilizing these spaces.

Other cost subject to indirect: Food for Meetings - Fishermen Advisory Council - $100 Total. $100 is requested to provide food for Fishermen Advisory Council and focus group meetings. As it is difficult to attract fishermen and others to participate in research projects, food is an essential element to create a welcoming setting for participation.

Reduced FAC stipends and other costs are congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish).

INDIRECT COSTS

[on-campus] includes: salaries (SG rt: 0.25, Inst. rt: 0.45), fringe benefits (SG rt: 0.25, Inst. rt: 0.45), expendable eq. (SG rt: 0.25, Inst. rt: 0.45), travel (SG rt: 0.25, Inst. rt: 0.45), publications (SG rt: 0.25, Inst. rt: 0.45), other costs (SG rt: 0.25, Inst. rt: 0.45)

Indirect costs are being requested.

Humboldt State University Sponsored Programs Foundation's federally approved IDC rate is 45%; however, the NCMPA Sea Grant maximum IDC rate is 25%. HSU SPF is applying Sea Grant's 25% IDC rate to this project and the remaining 20% is applied to waived IDC match.

HSU Budget, Socioeconomic Dimensions of MPAs, Year 3

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

Steven Hackett [PI - on-campus], Mos. Effort: 0.980 SG 0 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $10906. 0.980 months of salary coverage is budgeted for the Principle Investigator (PI). The PI will be responsible for overall project oversight, coordination with Point 97, HSU, and CDFW, and coordinating progress reporting to Sea Grant. The PI will provide overall leadership on community relationships, and provide broad supervisory-level input on final project operations and report development. Reduced time base is congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish). Also, delegating more operational task leadership to the Co-PI.

Laurie Richmond [Co-PI - on-campus], Mos. Effort: 0.576. SG 0 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $6833. 0.576 months of salary coverage is budgeted for the Co-Principle Investigator. The Co-PI will provide primary oversight over completion of field work and take the lead on maintaining fishing community relationships; provide expertise and input with completion of project operations; and assist the PI with final report development. Reduced time base is congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish).

2. OTHER PERSONNEL

Terry Tillman - DFW [Other - off-campus], Mos. Effort: 0 Match: SG 0.333 Grantee, Benefits Rt.: 0, Mo. Salary: $8363. Terry Tillman, with the California Department of Fish and Wildlife, will provide matching funds through work effort, providing approximately 60 hours per year of donated time. Terry Tillman will assist with generating and analyzing commercial landings data, Commercial Passenger Fishing Vessel (CPFV) data, and California Recreational Fishing Survey (CRFS) data.

B. FRINGE BENEFITS

The HSU Sponsored Programs Foundation employer-paid benefit rate is 15.77% for Steve Hackett, Laurie Richmond, and the Research Associate.

C. PERMANENT EQUIPMENT

D. EXPENDABLE SUPPLIES AND EQUIPMENT

N/A

E. TRAVEL

1. Domestic - US and its Possessions (inc. Puerto Rico)

PROJECT TRAVEL BUDGET - YEAR 3

$3,000 is requested for travel expenses related outreach meetings and conference travel.

Outreach Meetings

$1075 is requested for 1 person for 5 days: $120 for Hotel; $50 for Meals, $45 for car/gas.

$165 is requested for additional gas/mileage coverage for day trips for outreach purposes.

Conference Travel

$1,760 is requested for 2 people for 2 days to attend a conference: $400 for Airfare; $140 for Hotel; $50 for Meals, $45 for car/gas.

Total Project Travel, Year 3 = $3,000

Reduced travel budget is congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish).

FISHERMEN ADVISORY COUNCIL MEETINGS - YEAR 3

$1,500 is requested for mileage and meals for participants on the Fishermen Advisory Council.

2. International

F. PUBLICATIONS AND DOCUMENTATION COSTS

N/A

G. OTHER COSTS

Other cost subject to indirect: Stipends - Fishermen Advisory Council - $4,800 Total. $4,800 is requested to compensate Fisherman Advisory Council participants for their time and travel expenses.

Other cost subject to indirect: Meeting Expenses, Space Rental - Fishermen Advisory Council - $100 Total. $100 is requested to reserve meeting spaces for the various fishermen meetings held off campus. Meetings are usually held at harbor offices or other meeting spaces near fishing harbors that are convenient to fishermen. A small fee is usually charged for utilizing these spaces.

Other cost subject to indirect: Food for meetings - Fishermen Advisory Council - $100 Total. $100 is requested to provide food for Fishermen Advisory Council and focus group meetings. As it is difficult to attract fishermen and others to participate in research projects, food is an essential element to create a welcoming setting for participation.

Other cost subject to indirect: Conference Registration Expense - $1000 Total. $1,000 is requested to cover registration fees to attend a conference in Year 3.

Reduced FAC stipends and other costs are congruent with reduced scope of work -- removing the recreational fishing sector from our project, removing part of the CPFV data collection effort, and reducing the number of commercial fisheries to focus on Dungeness crab, sea urchin, seaweed, and nearshore finfish (rockfish).

INDIRECT COSTS

[on-campus] includes: salaries (SG rt: 0.25, Inst. rt: 0.45), fringe benefits (SG rt: 0.25, Inst. rt: 0.45), expendable eq. (SG rt: 0.25, Inst. rt: 0.45), travel (SG rt: 0.25, Inst. rt: 0.45), publications (SG rt: 0.25, Inst. rt: 0.45), other costs (SG rt: 0.25, Inst. rt: 0.45)

Indirect costs are being requested.

Humboldt State University Sponsored Programs Foundation's federally approved IDC rate is 45%; however, the NCMPA Sea Grant maximum IDC rate is 25%. HSU SPF is applying Sea Grant's 25% IDC rate to this project and the remaining 20% is applied to waived IDC match.

Hackett - 2466 | **BUDGET JUSTIFICATION** | Chen, C
PROPOSAL NUMBER | 2014-2015 | PROJECT LEADER

A. SALARIES AND WAGES | YEAR 1 | Point 97

1. SENIOR PERSONNEL | INSTITUTION 1

# of People	Effort in Man-Months SG	Effort in Man-Months Cost-Share	Cost Salary SG	Cost Salary C-S	
					a. (Co) Principal Investigator
1	4.1	2.0	28,633	13,967	Co-PI Cheryl Chen will perform overall project management of all internal Point 97 staff and lead coordination with project partners. Project management responsibilities include developing and tracking implementation of work plans and tracking timelines and budgets. Chen will also provide expertise and input on overall project design such as survey design and lead Point 97 staff to collaborate with HSU staff to design and develop the data collection effort and survey instrument. Chen will also co-lead the technical design of a long-term monitoring tool/system.
1	0.9		7,272		Co-PI Charles Steinback will provide overall project technical expertise and input for project design. Steinback will also co-lead on engaging stakeholders and provide technical expertise to design a long term monitoring tool/system.
2	5.0	2.0	35,905	13,967	**Subtotal 1a**
					b. Associates (Faculty or Staff)
0	0.0	0.0	0	0	**Subtotal 1b.**
					2. OTHER PERSONNEL
					a. Professionals:
1	2.40		11,992		Project Coordinator Dan Crowther will help provide overall project support, conduct initial data analysis for sample design, conduct Digital Deck outreach, prepare interview materials, train field staff, assist in data collection/field work, and assist in data analysis tasks.
1	0.60	2.4	2,456	10,000	Program Associate Leanne Weiss will assist with overall project support, prepare interview materials, train field staff, provide guidance on data collection/field work
1	0.80		5,286		Software Developer Tim Glaser will provide technical design specification for the design of a long term monitoring solution/system.
1	0.50	1.0	2,439	5,000	Economist Taylor Hesselgrave will help analyze CDFW landings data to help develop a data collection sample design. The economist will also begin to analyze CDFW landings data for the commercial landings analysis
1	0.60	1.0	2,869	5,000	GIS Analyst Nick Lyman will provide base spatial layer to include in the mapping component of the survey instrument. The GIS Analyst will also conduct a QAQC and edit all spatial data collected as it is being gathered in the field.
1	0.60		4,005		Software Developer Ryan Hodges will lead on developing and customizing the survey/data collection tool according to the survey design needs identified by project leads. This includes survey question flow, survey mapping tool development, data management and delivery, and interview tracking features
1	0.01		166		Senior GIS Analyst Jon Bonkoski will provide technical expertise and oversight on work provided by the GIS Technician and provide expertise and input on developing a spatial data analysis plan.
7	5.51	4.45	29,213	20,000	**Subtotal 2a.**
					b. Research Associates
0	0.0	0.0	0	0	**Subtotal 2b.**
					c. Research Asst/Grad Students
					d. Prof School Students
					e. Pre-Bachelor Students
					f. Secretarial
					g. Technical
					h. Other
			65,118	33,967	**Subtotal Salaries**
			22,140	11,549	**B. FRINGE BENEFITS** Fringe benefits are calculated at a rate of 34% for all personnel
9	11	6	87,258	45,516	**Subtotal Salaries and Benefits**

C. PERMANENT EQUIPMENT			
	0	0	**Subtotal Equipment**
D. SUPPLIES			
	0	0	**Subtotal Suppliees**
E. TRAVEL: Domestic			
	10,500		Travel is budgeted for travel for 35 days of travel for outreach and field work: $140 for Hotel; $50 for Meals, $50 for car/gas.
	10,500	0	**Subtotal Domestic Travel**
Foreign			
	0	0	**Subtotal Foreign Travel**
F. PUBLICATION	0	0	
G. OTHER COSTS (excluding Tuition/Remission)			
	0	0	**Subtotal Other Costs**
H.Tuition/Remission	0	0	
I. Ship Time	0	0	
J. Total Direct Costs	97,758	45,516	
K. INDIRECT COSTS			**Include an explanation of the calculaiton of IDC applied.**
SG C-S	24,440	11,379	Indirect costs are budgeted at 25% calculated on a base of salaries, benefits, travel, and other costs.
Base: 97,758 45,516			**Type:** _____ **Indicate if On Campus or Off-Campus Rate**
Rate **25%** **25%**	24,440	11,379	**Total F&A**
L. Subtotal Project Costs	122,198	56,895	
M. RESEARCH TRAINEE COSTS			
# of Trainees: 0	0		
N. Total Costs	122,198	56,895	
Total Project Costs (SG & C-S)		179,093	
C-S to SG percentage (25% or higher)		46.6%	

Hackett - 2466
PROPOSAL NUMBER

BUDGET JUSTIFICATION
2015-2016
YEAR 2

Chen, C
PROJECT LEADER
Point 97
INSTITUTION 1

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

# of People	Effort in Man-Months SG	Effort in Man-Months Cost-Share	Cost Salary SG	Cost Salary C-S	
					a. (Co) Principal Investigator
	1.2		8,788		Co-PI Cheryl Chen will continue to perform overall project management of all internal Ecotrust staff and coordinate with project partners.Chen will also continue to collaborate with HSU staff and provide expertise and input on overall project/survey instrument design, assist in stakeholder outreach, provide technical support/expertise and training to HSU staff on use of the survey tool and data collection effort. Chen will also co-lead the process to engage stakeholders in the technical design of a long-term monitoring tool/system.
	0.1		1,091		Co-PI Charles Steinback will will continue to provide overall project technical expertise and input for project design/implementation. Steinback will also continue to co-lead and provide oversight and technical expertise to engage stakeholders in designing a long term monitoring tool/system.
0	1.3	0.0	9,879	0	**Subtotal 1a**
					b. Associates (Faculty or Staff)
0	0.0	0.0	0	0	**Subtotal 1b.**

2. OTHER PERSONNEL

					a. Professionals:
	0.5		2651		Project Coordinator Dan Crowther will help provide overall project support and analyze survey data, assist in conducting community reviews of data analysis results, and assist in report development.
	0.6		3807		Economist Taylor Hesselgrave will continue to analyze CDFW landings data for the commercial, fishing sector and begin to develop the final technical report containing this data.
	1.2		6,407		GIS Analyst Nick Lyman will analyze all spatial data collected during interviews and analyze pre MPA spatial data collected by Ecotrust/Point 97 in preparation to conduct the spatial change analysis. The GIS Technician will also create, print, and mail all individual spatial data to individual fishermen to review. The GIS Technician will also incorporate any feedback gathered from fishermen on edits to the spatial data required.
	0.30		1,397		Senior GIS Analyst Jon Bonkoski will provide technical expertise and oversight on work provided by the GIS Analyst and lead on implementing the spatial data analysis plan. The Senior GIS Analyst will also create draft final products to review with the fishing community and draft geodatabase and metadata.
0	2.60	0.00	14,262	0	
					b. Research Associates
0	0.0	0.0	0	0	
					c. Research Asst/Grad Students
					d. Prof School Students
					e. Pre-Bachelor Students
					f. Secretarial
					g. Technical
					h. Other
			24,141	0	**Subtotal Salaries**
B. FRINGE BENEFITS			8,208	0	Fringe benefits are calculated at a rate of 34% for all personnel
0	4	0	32,349	0	**Subtotal Salaries and Benefits**

C. PERMANENT EQUIPMENT			
	0	0	**Subtotal Equipment**
D. SUPPLIES			
	0	0	**Subtotal Suppliees**
E. Travel: Domestic			
	4,560		Travel is budgeted for travel for 3 separate trip for two Fisherman Advisory Council meetings and annual PI meeting @ $140 for Hotel; $50 for Meals, $50 for car/gas.
	4,560	0	**Subtotal Domestic Travel**
Travel: Foreign			
	0	0	**Subtotal Foreign Travel**
F. PUBLICATION			
G. OTHER COSTS excluding Tuition/Remission			
	0	0	**Subtotal Other Costs**
H. Tuition/Remission			
I. Ship Time			
J. Total Direct Costs	36,909	0	
K. INDIRECT COSTS			**Include an explanation of the calculaiton**
SG C-S	9,227	0	Indirect costs are budgeted at 25% calculated on a base of salaries, benefits, travel, and other
Base: 36,909 0			**Type:** **Indicate if On Campus or Off-Campus Rate**
Rate 25% 25%	9,227	0	**Total F&A**
L. Subtotal Project Costs	46,136	0	
M. RESEARCH TRAINEE COSTS			
rainees: 0	0		
N. Total Costs	46,136	0	
Total Project Costs (SG & C-S)		46,136	
C-S to SG percentage (50% or higher)		0.0%	

Hackett - 2466
PROPOSAL NUMBER

BUDGET JUSTIFICATION
2016-2017
YEAR 3

Chen, C
PROJECT LEADI
Point 97
INSTITUTION 1

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

# of People	Effort in Man-Months SG	Effort in Man-Months Cost-Share	Cost Salary SG	Cost Salary C-S	
					a. (Co) Principal Investigator
	1.10		8,499		Co-PI Cheryl Chen In Year 3 Chen will continue to perform overall project management of all internal Point 97 staff and coordinate with project partners.This includes coordinating with HSU staff and managing internal Point 97 staff to analyze survey data collected. Data analysis includes analysis of fisheries landings data and analysis of spatial data collected. Chen will also collaborate with HSU staff to summarize project results and develop final products and reports. Chen will also co-lead on finalizing and reporting out on findings as it relates to
	0.20		1,718		Co-PI Charles Steinback will continue to provide overall project technical expertise and input for project design and implementation. Steinback will also continue to co-lead and provide oversight and technical expertise to engage stakeholders in designing a long term monitoring tool/system
0	1.30	0.00	10,217	0	**Subtotal 1a**
					b. Associates (Faculty or Staff)
0	0.00	0.00	0	0	**Subtotal 1b.**

2. OTHER PERSONNEL

					a. Professionals:
	0.2		1044		~~Project Coordinator Dan Crowther will help provide overall project support and analyze survey~~ data, assist in conducting community reviews of data analysis results, and assist in report development.
	0.3		1582		Economist Taylor Hesselgrave will finalize all analyses and write ups of CDFW landings data for the commercial fishing sector. This includes incorporating all feedback/input received from fishermen and stakeholder that help interpret results.
	0.1		316		GIS Analyst Nick Lyman will provide technical expertise and oversight on creating all final spatial data products and data sets for final delivery.
	0.40		3,044		Graphic Designer Sarah Cline will help develop a polished product that may be used to easily disseminate project results to a wide audience in a compelling and graphically driven format
	0.10		733		Communications Manager Oakley Brooks help develop an executive summary final report and press release to promote the findings of the project.
0	1.10	0	6719	0	
					b. Research Associates
0	0.00	0.00	0	0	
					c. Research Asst/Grad Students
					d. Prof School Students
					e. Pre-Bachelor Students
					f. Secretarial
					g. Technical
					h. Other
			16,936	0	**Subtotal Salaries**
B. FRINGE BENEFITS			5,758	0	Fringe benefits are calculated at a rate of 34% for all personnel
0	2.40	0.00	22,694	0	**Subtotal Salaries and Benefits**

C. PERMANENT EQUIPMENT			
	0	0	**Subtotal Equipment**
D. EXPENDABLE SUPPLIES			
	0	0	**Subtotal Suppliees**
E. TRAVEL: Domestic			
	4,080		Travel is budgeted for travel for 3 separate trip for two Fisherman Advisory Council meetings and annual PI meeting @ $140 for Hotel; $50 for Meals, $50 for car/gas.
	4,080	0	**Subtotal Domestic Travel**
Foreign			
	0	0	**Subtotal Foreign Travel**
F. PUBLICATION			
G. OTHER COSTS excluding Tuition/Remission			
	1,500		Funds are requested to print final project materials to widely disseminate and promote project results to the North Coast fishing community, researchers, managers, and other stakeholders.
	1,500	0	**Subtotal Other Costs**
H. Tuition/Remission	0	0	
I. Ship Time	0	0	
J. Total Direct Costs	28,274	0	
K. INDIRECT COSTS			**Include an explanation of the calculaiton**
SG **C-S**	7,069	0	Indirect costs are budgeted at 25% calculated on a base of salaries, benefits, travel, and other
Base:			**Type:** _____ **Indicate if On Campus or Off-Campus Rate**
Rate 25% **25%**	7,069	0	**Total F&A**
L. Subtotal Project Costs	35,343	0	
M. RESEARCH TRAINEE COSTS			
Trainees: 0	0		
N. Total Costs	35,343	0	
Total Project Costs (SG & C-S)		35,343	
C-S to SG percentage (50% or higher)		0.0%	

Proposal Number: Hackett 4266

California Sea Grant College Program

MAIL ORIGINAL AND 1 COPY TO:
JAMES E. ECKMAN, DIRECTOR
CALIFORNIA SEA GRANT COLLEGE PROGRAM
UNIVERSITY OF CALIFORNIA
9500 GILMAN DRIVE DEPT 0232
LA JOLLA, CA 92093-0232

NEW FULL PROPOSAL - TITLE PAGE

PROJECT TITLE:

Socioeconomic dimensions of MPAs: Establishing a baseline and assessing initial changes in California North Coast fisheries

FINANCIAL SUMMARY

	Year 1	Year 2	Year 3	Total
Federal Funds:	$232,864.00	$ 103,536.00	$ 121,511.00	$ 457,911.00
Matching Funds:	$ 57,665.00	$ 36,824.00	$ 39,755.00	$ 134,244.00
Number of Trainees:	0	0	0	
Duration:	3			
Proposed Start/Completion Dates:	2/1/2014 to 2/1/2017			

APPROVAL SIGNATURES

PROJECT LEADER:

Name: Steven C. Hackett
Position/Title: Professor
Department: Economics
Institution: Humboldt State University
Address: 1 Harpst Street
City, State & Z: Arcata, CA 95521
Telephone: 707.826.3237
Fax:
E-mail: sh2@humboldt.edu
% of Time: 0.17 0.14 0.18
Signature:

CO-PROJECT LEADER:

Name: Laurie S. Richmond
Position/Title: Assistant Professor
Department: Environmental Science & Management
Institution: Humboldt State University
Address: 1 Harpst Street
City, State & Z: Arcata, CA 95521
Telephone: 707.826.3202
Fax:
E-mail: lr982@humboldt.edu
% of Time: 0.35 0.17 0.24
Signature:

INSTITUTIONAL REPRESENTATIVE:

Name: Steve Karp
Position/Title: Director
Department:
Institution: Sponsored Programs Foundation Humboldt State University
Address: P.O. Box 1158
City, State & Zip: Arcata, CA 95518
Telephone: 707-826-4189
Fax: 707-826-4783
E-mail: karp@humboldt.edu
Signature:

Will animal subjects be used? ☐ Yes ☒ No
APPROVAL DATE: PROTOCOL #: PENDING:

Does this application involve any recombinant DNA technology or researc ☐ Yes ☒ No

Proposal Number: _____

California Sea Grant College Program

MAIL ORIGINAL AND 1 COPY TO:
JAMES E. ECKMAN, DIRECTOR
CALIFORNIA SEA GRANT COLLEGE PROGRAM
UNIVERSITY OF CALIFORNIA
9500 GILMAN DRIVE DEPT 0232
LA JOLLA, CA 92093-0232

NEW FULL PROPOSAL - TITLE PAGE

PROJECT TITLE

Socioeconomic dimensions of MPAs: Establishing a baseline and assessing initial changes in California North Coast fisheries

FINANCIAL SUMMARY

	Year 1	Year 2	Year 3	Total
Federal Funds:	$ 102,348	$ 91,614	$ 104,931	$ 298,893
Matching Funds:	$ 74,723			$ 74,723
Number of Trainees:				

Duration: 3 years

Proposed Start/Completion Dates: 2/1/2014 - 2/1/2017

APPROVAL SIGNATURES

CO-PROJECT LEADER:

Name: Cheryl Chen
Position/Title: Marine Planning Project Manager
Department: Marine Consulting Initiative
Institution: Ecotrust
Address: 721 NW 9th Ave. Suite 200
City, State & Zip: Portland, Oregon 97209
Telephone: 503-467-0812
Fax: 503-222-1517
E-mail: cchen@ecotrust.org
% of Time: Year 1 - 29%; Year 2 - 23%; Year 3 - 30%
Signature:

CO-PROJECT LEADER:

Name: Charles Steinback
Position/Title: Director of Marine Planning
Department: Marine Consulting Initiative
Institution: Ecotrust
Address: 721 NW 9th Ave. Suite 200
City, State & Zip: Portland, Oregon 97209
Telephone: 503-467-0777
Fax: 503-222-1517
E-mail: charles@ecotrust.org
% of Time: Year 1 - 6%; Year 2 - 4%; Year 3 - 5%
Signature:

INSTITUTIONAL REPRESENTATIVE:

Name: Adam Lane
Position/Title: Chief Financial Office/ Chief Operating Officer
Department:
Institution: Ecotrust
Address: 721 NW 9th Ave, Suite 200
City, State & Zip: Portland, Oregon 97209
Telephone: 503-467-0753
Fax: 503-222-1517
E-mail: adam@ecotrust.org
Signature:

Will animal subjects be used? ☐ Yes ☒ No

APPROVAL DATE: _____ PROTOCOL #: _____ PENDING: _____

Does this application involve any recombinant DNA technology or research? ☐ Yes ☒ No

Project Summary Form

OMB Control Number : 0648-0362
Expiration Date : 1/31/2017

Sea Grant Institution : University of California, San Diego

ICODE : **2500**

Project Title : **Socioeconomic dimensions of MPAs: Establishing a baseline and assessing initial changes in California North Coast fisheries**

Project Number :

Revision Date :

Project Status :

Initiation Date : 2/1/2014

Grant Number :

Completion Date: 12/25/2016

Sub Program :

Principal Investigator & Affiliations	Steven Hackett Humboldt State University	Total Months effort : 5.9426 SG .957 Grantee
Other Investigator(s) & Affiliations	Laurie Richmond Humboldt State University	Total Months effort : 9.1959 SG 1.317 Grantee
	Cheryl Chen Ecotrust Marine Consulting Initiative	Total Months effort : 9.8364 SG 2.2834 Grante
	Charles Steinback Ecotrust Marine Consulting Initiative	Total Months effort : 1.7885 SG 1 Grantee

Fiscal Year Beginning : 2014	Sea Grant Funds : $ 335212	Matching Funds : $ 132388
Fiscal Year Beginning : 2015	Sea Grant Funds : $ 195150	Matching Funds : $ 36824
Fiscal Year Beginning : 2016	Sea Grant Funds : $ 226442	Matching Funds : $ 39755
Last Year's Funds :	Sea Grant Funds : $	Matching Funds : $
Pass Through Funds :	Sea Grant Funds : $	Matching Funds : $

Related Projects :

Parent Projects :

Sea Grant Classification(s) : 111

Keywords : Marine protected areas, socioeconomics, commercial and recreational fisheries, fishermen, spatial fishing patterns, landings, North Coast fishing communities

Objectives :

Goals: To collaborate with the California North Coast fishing community and California Department of Fish and Wildlife (CDFW)

to:

1. Establish a baseline characterization of spatial fishing patterns and socioeconomic status for commercial and recreational fisheries in the North Coast region; and
2. Conduct an assessment of initial spatial and socioeconomic changes following MPA implementation;

To accomplish these goals, the objectives of this project are to:

1. Establish a Fisherman's Advisory Council (FAC) comprised of representatives from key fisheries in key ports throughout the region to ensure fisherman collaboration throughout the project.
2. Collaborate with the CDFW to ensure existing commercial fishing landings, commercial passenger fishing vessel (CPFV) logbooks, and recreational fishing data are fully utilized and appropriately analyzed to present historical trends and initial changes since MPA implementation. This is to assist in characterizing the California North Coast fishing community as a whole, as well as contrast historical activities inside and outside the MPAs, before and after their implementation.
3. Conduct interviews and focus groups with fishermen to collect detailed data on a) demographic characteristics; b) the social, political, and economic conditions of North Coast fishing communities; c) local ecological knowledge, attitudes, and perceptions related to MPAs; d) spatial use patterns; and e) economic characteristics for key commercial and CPFV fisheries of the North Coast;
4. Utilize previous pre-MPA baseline data collected by Ecotrust to conduct an assessment of spatial and economic changes in commercial and CPFV fisheries since MPA implementation;
5. Through an integrated analysis of focus group/interview data, spatial data, and landings/logbook data, provide information on the direct and indirect effects of MPA establishment and other driving factors contributing to economic change (e.g., tracing changes in spatial activity, targeted fisheries, and landings; characterizing broader economic changes; effects of additional spatial fishing regulations; loss of port infrastructure) within the commercial and CPFV fisheries in the North Coast. Contingent upon expected CDFW staff support, we will also provide a supplemental analysis of recreational fishing data.
6. Collaborate with the Fisherman Advisory Council to assess the feasibility and design a cost effective long-term monitoring solution in the form of an electronic monitoring tool.
7. Inform future monitoring efforts by developing recommendations of key metrics for long-term socioeconomic MPA monitoring.

Methodology :

This research will focus on consumptive uses of the North Coast marine environment by commercial, CPFV, and recreational fishermen (note: the term fisherman is intended to encompass individuals of all genders). Quantitative and spatial methodologies will be augmented with qualitative data collection through focus groups and interviews as well as mechanisms for collaboration with the fishing community throughout the research process. This collaborative approach will allow the project to better reflect the unique culture of the North Coast marine community which possesses a strong sense of community and a high capacity for involvement in research and management.

The approach we will take and the methods we will utilize are split into four components:
1) Community outreach
2) Data Collection
3) Data Analysis
4) Designing a Long-term Monitoring Solution

1. Community Outreach
Our proposed approach is to collaborate with the fishing community to conduct socioeconomic MPA monitoring that serves both fishing community needs and the goals of the overall MPA monitoring effort. To facilitate this collaboration, we propose to develop a 5-10 member fisherman advisory council (FAC) that will consist of representatives from commercial, CPFV, and recreational fisheries from across the North Coast. The FAC will serve as the central entity for collaboration with the fishing community throughout the project. The Council will assist with project and survey design, outreach to the larger fishing community to conduct interviews, review and interpretation of data analysis results, design of a long-term cost effective digital commercial fishing monitoring tool, review of final project products, and the dissemination of results.

2. Data Collection
2.1. Focus Groups

The development of focus groups with a number of individuals to discuss key issues is a well-recognized qualitative methodology in the social sciences that has been increasingly utilized in a fisheries context. We propose to convene focus groups with multiple commercial fishermen and CPFV operators from particular fisheries in various ports. The focus groups will serve as a means to collect qualitative information about the baseline socioeconomic conditions of North Coast fishing communities, initial socioeconomic responses to the MPAs, and local ecological knowledge related to the MPAs.

2.2. In-Person Interviews

We will conduct in-person interview with commercial fishermen and CPFV operators in the North Coast region to establish a socioeconomic and spatial fishing baseline data set.

Ecotrust's Open OceanMap, a customized survey instrument, will be used to collect data on spatial use patterns, operation costs, demographic characteristics, the impact of MPAs, and information on other factors that are driving change in the commercial and CPFV fishing fleet. Data will be collected at the port-fishery level so that summary information can be presented at the port and regional level.

3. Data Analysis Methods

The data analysis component of our project will involve analyzing data from the commercial, CPFV, recreational fishing, and recreational abalone harvesting sectors

4.3.1 Commercial and CPFV Fisheries

Analysis of existing and primary commercial and CPFV fisheries data collected during this project will involve four primary components:

1. Analysis of focus group data
2. Analysis of survey data
3. CDFW landings and logbook data analyses

Analysis of Focus Group Data

Focus groups data will be analyzed and coded utilizing established qualitative analysis techniques. Local ecological knowledge will be collated based on region and resource category and where possible communicated to scientists investigating ecological process of the MPA network. Focus group data will also be utilized to describe the baseline socioeconomic conditions of fisheries and communities in the North Coast region and to help understand patterns observed in the logbook, spatial, and survey data sets.

Analysis of Survey Data

Analysis of spatial datasets collected during interviews will involve several steps. First, once interviews are complete, each fisherman will be mailed their individual fishery maps to review for accuracy and completeness. Any adjustments requested by a fisherman will then be modified and incorporated into the spatial analysis. Second, relative economic importance spatial datasets or 'economic heat maps' will be developed for each fishery at the port and region-wide levels. For the commercial fishery sector, relative economic importance maps will be created by weighting each individual's fishing grounds by their ex-vessel revenue for a particular fishery in the year 2013 and aggregating each individual's data to the appropriate spatial scale (e.g., port or study region scale). Third, after the individual fishery economic heat maps are created, they will be reviewed by the fishing community in each port to validate the results. If necessary, feedback from these community review meetings will then be incorporated.

CDFW landings and logbook data analysis

To provide further socioeconomic information, we will analyze CDFW commercial landings data for each fishery of interest at the port and study region scale across the years 1992 to 2014 and analyze CPFV logbook data for the year 2000 to 2014. This analysis will provide the following information on general trends across time at both the port and region level:

1. Commercial landings (pounds) and revenue in a specific fishery and in aggregation
2. Number of commercial fishing vessel making landings in a specific fishery and in aggregation
3. Numbers of commercial fishermen active in the fisheries, aggregate ex-vessel revenue trends, and changes in fishing gears used or fishing practices.
4. Price per pound received for commercial fisheries
5. Average landings and revenue per fisherman for specific fisheries
6. Number of CPFV operators active
7. Total number of CPFV anglers and average number of anglers per vessel
8. Total number of fish caught for each species fishery

9. Total number of CPFV trips for each specific fishery

Conducting this type of descriptive analysis will enable a macro-level identification of trend disruptions such as peaks/dips in the number of fish caught or number of fishermen participating in fisheries. Identifying these trends can serve as a starting point from which to investigate driver(s) of the change—with MPA implementation as one possible driver. This analysis of landings data will be reviewed with the fishing community and CDFW staff to help interpret results and provide insights into why landings have changed over time. The information provided by fishermen and CDFW will be incorporated into the final report. We will utilize the COFHE model where appropriate to estimate the economic impacts and contributions associated with commercial landings.

4. Designing a Long-term Monitoring Solution

We propose to support long-term socioeconomic monitoring efforts for the North Coast region through two means. (1) We will inform the development of North Coast monitoring metrics based on conversations with the fishing community and our research findings. (2) We propose to collaborate and consult with the fishing community, California Ocean Science Trust, and CDFW to assess the feasibility and to design a cost-effective technical system to collect, manage, deliver, and query MPA monitoring data. If developed, this tool could facilitate the collection of fisheries socioeconomic data well beyond the life of the baseline monitoring program.

PROJECT TITLE:
Socioeconomic dimensions of MPAs: Establishing a baseline and assessing initial changes in California North Coast fisheries

1.0 PROJECT LEADERS AND ASSOCIATED STAFF

Dr. Steven Hackett (HSU):	HSU co-lead—responsible for overall project leadership, design, and administration, methods, analysis, and report development
Dr. Laurie Richmond (HSU):	HSU co-lead—responsible for project design, survey design, project management/implementation, outreach, fieldwork, graduate student and research associate management, data analysis, and report development
Cheryl Chen (Ecotrust):	Ecotrust co-lead—responsible for Ecotrust project design/management/implementation, survey instrument/tool design and development; design and implementation of data analyses, develop final data products, and report development
Charles Steinback (Ecotrust):	Ecotrust co-lead—responsible for overall oversight and guidance on Ecotrust methods, tools, and analyses. Co-lead on designing electronic monitoring system project component.

Overall project leader Steven Hackett has nearly 25 years of experience serving as principal investigator, project director, lead author or senior supervising economist. His 2009 *economic structure of California's commercial fisheries* project for CDFW involved a large-scale state-wide survey methodology that resulted in comprehensive COFHE economic impact models for 22 fishery operational configurations at the county, region, and state-wide scales (Hackett et al. 2009). Hackett recently applied the COFHE model to estimate the overall economic contribution of commercial spiny lobster fishing in Southern California, and also helped design a spiny lobster recreational fishing survey and sampling design to estimate direct recreational contributions to the Southern California economy (Hackett et al. 2013). His work has also traced landings downstream and estimated value added for specific seafood product forms and market channels for California's Dungeness crab fishery (Hackett et al. 2003; 2004; 2005; Hankin et al. 2005; Dewees et al. 2004). He and his colleague Ana Pitchon are currently working on a Sea Grant-funded project to identify innovative new product forms and market channels that can enhance the value of commercial fisheries in California and beyond. Other economic studies address the Oregon and California salmon fisheries (Hackett and Hansen 2008) and the California wetfish industry complex (Hackett 2002).

Co-lead Laurie Richmond is an interdisciplinary scholar with expertise in the area of human dimensions of marine and coastal resources. She has significant experience conducting socioeconomic monitoring in the fisheries realm. Prior to her position at HSU, she worked as a social scientist for NOAA Fisheries Pacific Islands Fisheries Science Center. In this capacity she conducted social science research on the fisheries of the Western Pacific and worked to communicate this research to federal and state policy-makers in the region. She has worked on many types of projects including socioeconomic impact assessments of fishery management actions, policy evaluations of community-based marine management institutions, oral history explorations of traditional fishing practices, and sociocultural characterizations of fishing communities and markets (Richmond et al 2011; Richmond 2013; Richmond and Levine 2013).

To foster a more bottom-up and collaborative approach to the research, Hackett and Richmond have been in dialogue with the North Coast fishing community since the inception of this project. This proposal has been shaped by numerous discussions with representatives of commercial, charter, recreational, and tribal fisheries, and with representatives from key government agencies including the Humboldt Bay Harbor, Recreation, and Conservation District, Mendocino County, the Crescent City Harbor District, and the California Department of Fish and Wildlife.

Since 2001, Ecotrust has worked with federal and state agencies, nonprofit organizations, and fishing communities to provide integrated ecological and economic assessments of fishery policy and marine conservation efforts. With Charles Steinback and Cheryl Chen serving as project managers or as a principal investigator, Ecotrust has assisted the California Marine Life Protection Act Initiative (MLPAI) with local knowledge collection, collection of spatial fishing data, economic analysis, and the development of decision support tool (MarineMap) (Scholz et al. 2004; 2005; 2006a; 2006b; 2008; 2010; 2011a; 2011b). Ecotrust staff served on the MLPAI Science Advisory Team during the MLPA planning process. Furthermore, Ecotrust staff have carried out or are currently conducting marine protected area (MPA) monitoring work in the North Central, Central, and South Coast regions utilizing the methods described in this study (Chen et al. 2012 and 2013). Ecotrust has also performed fisheries mapping for the state of Oregon (Steinback et al. 2010). As part of these various efforts, Ecotrust has conducted over 2,500 interviews with fishermen and other stakeholders to collect and compile spatial data representing patterns of economic value and use of the coastal and marine environment. Ecotrust is also piloting an on-the-water digital data collection tool called Digital Deck which may serve as a model in designing a long-term electronic monitoring solution for commercial fisheries in the North Coast region.

Associated Staff: Mr. Terry Tillman, California Department of Fish and Wildlife, has worked at the Marine Region analyzing various commercial fishing programs and data since 1987. In this capacity he has conducted numerous economic impact analyses of commercial and recreation fisheries, for both the State's regulatory process as well as the legislative process. Most recently, Mr. Tillman completed analyses of commercial fishing activities inside and outside California's Central Coast MPAs, quantifying pre and post implementation ex-vessel revenue performance, and ex-vessel revenue performance relative to an unaffected reference group of fishermen.

2.0. PROJECT GOALS AND OBJECTIVES

The primary goals of this project are to collaborate with the California North Coast fishing community and California Department of Fish and Wildlife (CDFW) to:

1. Establish a baseline characterization of spatial fishing patterns and socioeconomic status for commercial and recreational fisheries in the North Coast region; and
2. Conduct an assessment of initial spatial and socioeconomic changes following MPA implementation;

To accomplish these goals, the objectives of this project are to:

1. Establish a Fisherman's Advisory Council (FAC) comprised of representatives from key fisheries in key ports throughout the region to ensure fisherman collaboration throughout the project.

2. Collaborate with the CDFW to ensure existing commercial fishing landings, commercial passenger fishing vessel (CPFV) logbooks, and recreational fishing data are fully utilized and appropriately analyzed to present historical trends and initial changes since MPA implementation. This is to assist in characterizing the California North Coast fishing community as a whole, as well as contrast historical activities inside and outside the MPAs, before and after their implementation.
3. Conduct interviews and focus groups with fishermen to collect detailed data on a) demographic characteristics; b) the social, political, and economic conditions of North Coast fishing communities; c) knowledge, attitudes, and perceptions related to MPAs; d) spatial use patterns; and e) economic characteristics for key commercial and CPFV fisheries of the North Coast;
4. Utilize previous pre-MPA baseline data collected by Ecotrust to conduct an assessment of spatial and economic changes in commercial and CPFV fisheries since MPA implementation;
5. Through an integrated analysis of focus group/interview data and landings/logbook data, provide information on the direct and indirect effects of MPA establishment and other driving factors contributing to economic change (e.g., tracing changes in spatial activity, targeted fisheries, and landings; characterizing broader economic changes; effects of additional spatial fishing regulations; loss of port infrastructure) within the commercial and CPFV fisheries in the North Coast. Contingent upon expected CDFW staff support, we will also provide a supplemental analysis of recreational fishing data.
6. Collaborate with the Fisherman Advisory Council to assess the feasibility and design a cost effective long-term monitoring solution in the form of an electronic monitoring tool.
7. Inform future monitoring efforts by developing recommendations of key metrics for long-term socioeconomic MPA monitoring.

The results of this study will provide a better understanding of the current socioeconomic conditions of the North Coast region's fishermen and fisheries and provide a benchmark of socioeconomic conditions and spatial fishing patterns against which future MPA impacts and benefits can be measured. The data collected in this analysis, as well as the spatial monitoring tools developed during the project, will help fill an important socioeconomic data gap for the fisheries in the North Coast region. Furthermore, the baseline data collected in this study along with the ecological data to be collected will help researchers and managers understand the interactions between human uses of coastal and marine ecosystems and the North Coast MPA network. We aim to conduct a comprehensive assessment of fishery use patterns across the region and thus the socioeconomic study will likely overlap with all ecological data collection sites.

To ensure that baseline data sets are comparable across California regions, we will design the survey instrument and data analysis methods so that direct comparisons can be made with similar baselines established in other regions of California (e.g., California North Central Coast, Central Coast, and South Coast study regions) and the US West Coast, and so that it can be integrated with the ecological data being collected in the North Coast. This approach will inform a comprehensive and integrative assessment of the North Coast MPAs within a broader statewide context.

3.0. PROJECT RATIONALE

Humans are an integral part of the ecosystem in the North Coast, and their activities inside and outside the newly implemented MPAs are closely linked to the MPA network's ecological responses. In order to

understand these interactions, and to establish baseline data for long-term monitoring and analysis, a comprehensive understanding of the current extent, pattern, and socioeconomic importance of human uses is required. Socioeconomic monitoring and assessment has become widely recognized as a central component to effective fishery management (Vanderpool, 1987; St. Martin 2005, 2006, 2007; Pollnac et al., 2006; Tuler et al., 2008; Hall-Arber et al., 2009). This project will provide data on spatial use patterns and close socioeconomic information gaps in the region. Furthermore, this project will directly inform the 5-year management review of the North Coast MPAs in which the California Department of Fish and Wildlife (CDFW) will make management recommendation to the California Fish and Wildlife Commission based on findings from the baseline MPA monitoring projects and other sources of information.

4.0. APPROACH TO BE USED (PLAN OF WORK)

This research will focus on consumptive uses of the North Coast marine environment by commercial, CPFV, and recreational fishermen (note: the term fisherman is intended to encompass individuals of all genders). North Coast tribal nations and their history, knowledge, and interests are a socioeconomic component of long-standing importance. While we initially approached tribes to seek collaboration, we understand that their concerns about research methods and confidentiality relating to culturally sensitive sites limit their ability to collaborate. As a result, we do not include a tribal dimension in our proposal, though we remain receptive to collaborations in order to generate a fuller understanding of North Coast socioeconomic conditions relating to MPAs.

Our project will utilize proven methodologies to develop a high quality socioeconomic assessment of the North Coast MPA network with a strong quantitative focus. We will incorporates socioeconomic methodologies that were developed and successfully implemented to support the MLPA and other marine spatial planning processes on the west coast (Scholz et al. 2004; 2005; 2006a; 2006b; 2008; 2010; 2011a; 2011b; Hackett 2008; Steinback et al. 2010). These methods demonstrate novel approaches for collecting, compiling, and analyzing spatial fishing patterns and associated socioeconomic information at various geographic resolutions to aid the design and assessment of marine spatial planning efforts. The methods build upon and contribute to increasing efforts to bring GIS technology and analysis into marine and fisheries management, particularly for the examination of socioeconomic information (Meaden 1996; Caddy and Carocci 1999; Kruse et al. 2001; Breman 2002; Valavanis 2002; Green and King 2003; Fisher and Rahel 2004; Wedell et al. 2005; Aswani and Lauer 2006; Hall and Close 2006; St. Martin et al. 2007; Ban et al. 2009; Parnell et. al 2010; Lee et. al 2010). Quantitative and spatial methodologies will be augmented with qualitative data collection through focus groups and interviews as well as mechanisms for collaboration with the fishing community throughout the research process. This collaborative approach will allow the project to better reflect the unique culture of the North Coast marine community which possesses a strong sense of community and a high capacity for involvement in research and management.

Many of the methods proposed in this study were implemented in the Central Coast and North Central Coast regions and are currently being implemented in the South Coast region to monitor the human dimensions of MPAs (Chen et al. 2012 and 2013). The successes and lessons learned from MPA monitoring work in the other regions will be directly applied to the methods and tools deployed in the

North Coast region in order to help close existing coastal and marine use information gaps and provide a tested, consistent, and cost-effective method for long-term monitoring across California.

The approach we will take and the methods we will utilize are split into four components in this section of the proposal:

1) Community outreach
2) Data Collection
3) Data Analysis
4) Designing a Long-term Monitoring Solution

To focus efforts upon information which may be most useful and effective in informing a 5-year review of the North Coast MPAs, this project has identified key consumptive user groups and associated fisheries in which to target our data collection and analysis efforts as indicated in each following sub section. These user groups and key fisheries have been identified as most likely to experience short-term spatial and socioeconomic changes associated with MPA implementation and are of high economic importance to the study region.

4.1. Community Outreach

Our proposed approach is to collaborate with the fishing community to conduct socioeconomic MPA monitoring that serves both fishing community needs and the goals of the overall MPA monitoring effort. To facilitate this collaboration, we propose to develop a 5-10 member fisherman advisory council (FAC) that will consist of representatives from commercial, CPFV, and recreational fisheries from across the North Coast. The FAC will serve as the central entity for collaboration with the fishing community throughout the project. The Council will assist with project and survey design, outreach to the larger fishing community to conduct interviews, review and interpretation of data analysis results, design of a long-term cost effective digital commercial fishing monitoring tool, review of final project products, and the dissemination of results. FAC members will be compensated for their time with a stipend. In our initial outreach efforts we have gained positive response from the fishing community about the development of this advisory council and we have identified several individuals who may be interested in serving on the council.

While the FAC will be our primary mechanism for fisherman collaboration across the project, we also plan to conduct outreach at the port level to gain input and inform the fishermen about our proposed research. Prior to conducting individual interviews, we plan to hold focus groups with representatives of key fisheries in each of the ports of the North Coast. In the focus groups we will discuss our proposed research. The focus groups will also serve as an opportunity for us to collect information about the baseline social, political, and economic conditions of the fishing communities and to gather local knowledge related to the MPAs.

4.2. Data Collection

Focus Groups

The development of focus groups with a number of individuals to discuss key issues is a well-recognized qualitative methodology in the social sciences (Krueger, 2009; Morgan 1997) that has been increasingly utilized in a fisheries context (Coulthard 2008; Hampshire et al. 2004; Lobe and Berkes 2004; Ochiewo 2004). We propose to convene focus groups with multiple commercial fishermen and CPFV operators

from particular fisheries in various ports (e.g. seaweed harvesters in Ft. Bragg, commercial fishermen in Shelter Cove, CPFV operators in Eureka). The focus groups will serve as a means to collect qualitative information about the baseline socioeconomic conditions of North Coast fishing communities and initial socioeconomic responses to the MPAs. The researchers convening the focus group will make nautical maps of the ocean and coastal area available to provide participants with a reference as they discuss these issues. Proposed topics for the focus group include:

(1) Composition, culture, and trajectory of local fishing communities.
(2) Regulatory and management landscape of the region and interaction of past and current regulations with MPA restrictions.
(3) Infrastructure history, availability, and needs (e.g. docks, markets, processors, supporting industries, management capacity)
(4) Perceptions of the MPAs and the MPA planning process
(5) Local ecological knowledge (LEK) of the marine environment, particularly related to the MPAs.

4.2.1 Commercial Fisheries

To collect primary information about socioeconomic conditions and responses surrounding the MPAs we will utilize two primary methodologies. First we will conduct focus groups with representatives from key fisheries in each port. Second we will conduct individual interviews with fishermen to collect spatial and survey data about the fisheries. With support from our CDFW collaborator Terry Tillman we will integrate interview and focus group information with CDFW landings and logbook data in order to generate a rich characterization of baseline conditions and to identify and in some cases quantify recent changes associated with MPA formation.

Sample Design

To determine a sampling method for the commercial fishing sector, we will utilize recent CDFW commercial fishing landings data as well as contact data (phone numbers taken from the CDFW permits database). We will then organize these data into port-fishery combinations to identify commercial fishermen to interview in each target fishery in each port in the region. In the process we will take into consideration various fishing gear configurations and scale of operations so that an appropriate cross-section of fishermen is canvassed. Our sampling design will also be cognizant of bias towards fishermen who land in multiple ports, and lower response rate among less active participants.

Given the considerations above, to the extent possible we will stratify lists of fishermen by ex-vessel revenue so that our sample appropriately covers different revenue and activity levels. For some port-fishery combinations this may not be feasible, such as in the case of fisheries that only have 10 or less participants. In these cases we will strive to contact and interview all fishermen in these port-fishery combinations. Our sampling goal will then be to represent at least 50% of the ex-vessel revenue in each port-fishery combination and to spread out the sample as evenly as possible across gear configurations and ex-vessel revenue ranges.

Commercial Fisheries and Ports

For the commercial fishing sector we plan to collect data for the commercial fishing ports of: Crescent City, Trinidad, Eureka, Shelter Cove, Fort Bragg, and Albion and target fishermen in the following key fisheries. We may add or remove fisheries from this list (e.g., include sablefish, California halibut, trawl

fisheries, lingcod, etc) as we collaborate with the fishing community to develop a list of relevant commercial fisheries:

1. Dungeness crab – Trap
2. Nearshore Finfish (Rockfish)– Live – Trap
3. Nearshore Finfish (Rockfish)– Live - Hook and Line
4. Nearshore Finfish (Rockfish)– Dead – Hook and Line
5. Nearshore Finfish (Rockfish)– Dead – Longline
6. Seaweed – Hand Harvest
7. Salmon - Troll
8. Smelt – Brail/Dip Net
9. Urchin – Dive

For our commercial fishing landings analysis we will examine the full portfolio of North Coast fisheries to better characterize the fishing community and shifts between fisheries over time.

Survey Questions

Ecotrust's Open OceanMap, a customized survey instrument, will be used to collect socioeconomic and spatial commercial fishing data using methods designed to complement existing data previously acquired for commercial fishing operations in other study regions. Data will be collected through individual interviews, and fishery data will be collected at the port, fishery, condition, and gear-type level (e.g., Fort Bragg Nearshore Finfish – Live – Hook and Line) so that summary information can be presented at the port and regional level.

We will collect spatially-explicit survey data on various dimensions of commercial fishing. Commercial fishermen will be interviewed on their full portfolio of targeted fisheries participation. Included below are some survey data of primary interest to be collected:

1. Spatial extent and relative value of fishery specific fishing areas from 2013
2. Quality of life and job satisfaction
3. Alternative sources of income
4. Operating costs
5. MPAs that affect specific fisheries in a port
6. How MPAs have affected a spatial fishing behavior (e.g., cannot fish in traditional grounds, need to travel further to fish, fish at the MPA boundary, etc)
7. Perceptions of change in ecological and economic conditions in each fishery (e.g., changes in abundance, size, fishing effort, etc)
8. Perceptions of regulatory history in the region, interaction of MPAs with other fishing regulations, and comparison of the impacts and effectiveness of various regulations.

4.2.2. Commercial Passenger Fishing Vessels (CPFVs)

As stated above, we will utilize our customized survey instrument (Open OceanMap) to collect data on spatial use patterns, operation costs, demographic characteristics, the impact of MPAs, and information surrounding economic changes from the CPFV fleet in the study region. Data will be collected using individual interviews and we will target all CPFV operations—including six-pack and larger charter vessels. The sampling goal will be to interview all CPFV operators in the study region. Prior to

interviews, we will conduct focus groups with key CPFV operators as described above.

Sample Design

CDFW maintains a comprehensive database of CPFV operators in the study region. However, many of these operators may be registered but do not operate or only operate in freshwater and estuary areas. Thus, in order to identify CPFV operators to interview, project staff will utilize the list of CPFV operators in the region but also network within a port community and develop a list of CPFV operators currently operating in a given port to interview. This list of operators will be refined as each CPFV operator is interviewed. It should be noted that while only CPFV operators will be targeted, information on non-consumptive activities (e.g., whale watching or nature tours) will be collected as part of a CPFV operator's economic portfolio. The sampling goal will be to interview all known or identified CPFV operators in the region.

Survey Questions

We will collect spatially-explicit survey data on various dimensions of CPFV operations. CPFV operators will also be interviewed on their full portfolio of fisheries. Included below are some survey data of primary interest to be collected:

1. Spatial extent and relative value of fishery specific fishing areas from 2013
2. Percentage of income from each fishery/activity
3. Quality of life and job satisfaction
4. Alternative sources of income
5. Annual gross revenue
6. Operating costs
7. Number of passengers and trips for each fishery
8. Average price paid per passenger
9. MPAs which affect specific fisheries in a port
10. How MPAs have affected a spatial fishing behavior (e.g., cannot fish in traditional grounds, need to travel further to fish, etc)
11. Perceptions of change in ecological and economic conditions in each fishery (e.g., changes in abundance, size, fishing effort, etc)
12. Perceptions of regulatory history in the region, interaction of MPAs with other fishing regulations, and comparison of the impacts and effectiveness of various regulations.

4.3. Data Analysis Methods

The data analysis component of our project will involve analyzing data from the commercial, CPFV, recreational fishing, and recreational abalone harvesting sectors

4.3.1 Commercial and CPFV Fisheries

Analysis of existing and primary commercial and CPFV fisheries data collected during this project will involve four primary components:

1. Analysis of focus group data
2. Analysis of survey data
3. Spatial change analysis between pre and post-MPA spatial fishing datasets
4. CDFW landings and logbook data analyses

Analysis of Focus Group Data

Information collected from the focus groups will be utilized to describe the baseline socioeconomic conditions of fisheries and communities in the North Coast region to help understand patterns observed in the logbook, spatial, and survey data sets, and to gather local ecological knowledge (LEK) of North Coast marine ecosystems. If respondents grant permission to record, researchers will develop transcripts of the discussion from focus groups and following tested qualitative analysis techniques (Creswell 2003) we will code those transcripts for key themes or narrative tropes. In addition, LEK will be collated based on key resource categories and geographic regions. Fishermen from the North Coast region possess vast knowledge about the local environment developed through years of experience and observation. This information has the potential to contribute greatly to ecological monitoring of the MPA network. Efforts will be made to communicate this information to scientists monitoring ecological aspects of the MPAs as the LEK may inform their understanding of MPA dynamics. In conversations with the fishing community, several representatives have expressed a strong interest in a LEK component to the project as there has been little prior to work to collect the information and fishermen feel their knowledge could contribute to MPA monitoring and management.

We will augment our examination of interview and focus group data collected in this project with an analysis and review of existing socioeconomic data that has been collected about the fisheries and fishing communities of the region. Potential sources of information include fishing community profiles of the North Coast (Pomeroy et al. 2010), a risk assessment and socioeconomic characterization conducted prior to the establishment of the MPAs (Impact Assessment 2010), economic analyses related to the region's fisheries (Hackett et al. 2009; Hackett and Hansen 2008; Hackett 2008; Hackett 2002), and others. Existing data will provide information about the socioeconomic context of the region allowing us to better understand the patterns uncovered in our research and allowing for the development of a robust socioeconomic characterization of North Coast fishing communities in relation to the MPA network.

Analysis of Survey Data

Analysis of spatial datasets collected during interviews will involve several steps. First, once interviews are complete, each fisherman will be mailed their individual fishery maps to review for accuracy and completeness. Any adjustments requested by a fisherman will then be modified and incorporated into the spatial analysis. Second, relative economic importance spatial datasets or 'economic heat maps' will be developed for each fishery at the port and region-wide levels. For the commercial fishery sector, relative economic importance maps will be created by weighting each individual's fishing grounds by their ex-vessel revenue for a particular fishery in the year 2013 and aggregating each individual's data to the appropriate spatial scale (e.g., port or study region scale). Third, after the individual fishery economic heat maps are created, they will be reviewed by the fishing community in each port to validate the results. If necessary, feedback from these community review meetings will then be incorporated.

Summary statistics of additional survey data collected will also be developed reporting out on the various information such as: 1) demographics; 2) operating costs; 3) percent income from fishing and from each fishery; 4) stated effects of MPAs; 5) MPAs which have affected specific fisheries; 6) perceptions of change in ecological and economic conditions in each fishery and drivers of those changes; and 7) assessments of quality of life and job satisfaction. This information will provide an important

socioeconomic profile of the commercial fishing fleet representing the majority of landings in each fishery-port combination as well as provide potential insights into the direct/indirect impacts of MPA implementation and other significant drivers of change. Furthermore, data collected in this study will be compared to survey data collected pre-MPA in the 2010 Ecotrust study to asses any socioeconomic change since MPA implementation. This survey data will be combined with qualitative information collected through the focus groups, individual interviews, and participant observation of the fisheries and fishing communities by social researchers during their visits to the communities.

Spatial change analysis between pre and post-MPA spatial fishing datasets

Once analysis of post-MPA datasets are complete a spatial change analysis will be conducted by utilizing complementary spatial fishing data collected by Ecotrust in 2009 and summarizing each pre and post-MPA fishery datasets to a planning unit grid. For each fishery at the port and study-region scale the pre and post-MPA planning unit datasets will be analyzed together to create a 'heat map' of relative spatial change—highlighting the planning units in which the most economic change has occurred over time.

CDFW landings and logbook data analysis

To provide further socioeconomic information, we will analyze CDFW commercial landings data for each fishery of interest at the port and study region scale across the years 1992 to 2014 and analyze CPFV logbook data for the year 2000 to 2014. This analysis will provide the following information on general trends across time at both the port and region level:

1. Commercial landings (pounds) and revenue in a specific fishery and in aggregation
2. Number of commercial fishing vessel making landings in a specific fishery and in aggregation
3. Numbers of commercial fishermen active in the fisheries, aggregate ex-vessel revenue trends, and changes in fishing gears used or fishing practices.
4. Price per pound received for commercial fisheries
5. Average landings and revenue per fisherman for specific fisheries
6. Number of CPFV operators active
7. Total number of CPFV anglers and average number of anglers per vessel
8. Total number of fish caught for each species fishery
9. Total number of CPFV trips for each specific fishery

Conducting this type of descriptive analysis will enable a macro-level identification of trend disruptions such as peaks/dips in the number of fish caught or number of fishermen participating in fisheries. Identifying these trends can serve as a starting point from which to investigate driver(s) of the change—with MPA implementation as one possible driver. This analysis of landings data will be reviewed with the fishing community and CDFW staff to help interpret results and this information will be incorporated into the final report. We will utilize the COFHE model (Hackett et al. 2009) where appropriate to estimate the economic impacts and contributions associated with commercial landings.

4.3.3 CDFW Recreational Fishing and Abalone Harvesting Data

Pending a formal pledge of staff and data from CDFW, we will work with CDFW staff to analyze the California Recreational Fishing Survey (CRFS) and abalone punch card data to examine historical use of the recreational fisheries as well as explore how the MPAs, fishing regulations, and other factors that may have affected recreational fisheries on the North Coast. We will do this by first analyzing the CRFS and

Abalone data and then we will convene focus groups consisting of North Coast recreational fishermen to identify and discuss the possible factors influencing observed changes in recreational fishing trends (e.g., increased or decreased catch in a given port), as well as collect information on recreational fishers' knowledge, attitudes, and perceptions related to the MPAs.

4.4. Designing a Long-term Monitoring Solution

We propose to support long-term socioeconomic monitoring efforts for the North Coast region through two means. (1) We will inform the development of North Coast monitoring metrics based on conversations with the fishing community and our research findings. (2) We propose to collaborate and consult with the fishing community, California Ocean Science Trust, and CDF&W to assess the feasibility and to design a cost-effective technical system to collect, manage, deliver, and query MPA monitoring data. If developed, this tool could facilitate the collection of fisheries socioeconomic and spatial data well beyond the life of the baseline monitoring program.

Existing technology can be leveraged to support this project. Ecotrust has developed an innovative technology solution (the "Digital Deck") that provides a cost effective data collection and data access program that we can adapt for long-term MPA monitoring efforts. Digital Deck is a tool deployed on GPS enabled mobile phones or tablet devices to collect spatial fishing data and fishing trip characteristics in digital format that is geo-referenced. The data may then be uploaded to a server after each trip, and in conjunction with a data delivery website interface the data may then be accessible in near real-time to provide the information collected back to fishermen, fishing communities, MPA managers, and MPA researchers.

The data collected via this electronic monitoring tool can be centralized in a secure, spatially-enabled online relational database that provides fishermen and MPA managers with the ability to view and query fishing activity to display spatial fishing patterns and trip statistics at several scales. The system and security model may be designed to be fishermen-centric in design – individual fishermen can access their individual data, but only aggregated data are available to others, in accordance with data security and confidentially requirements.

Feasibility Assessment

The first step will be to assess the feasibility of implementing a digital monitoring tool. Consideration and design of the tool will be a collaborative process and we will proceed only in the fisheries where the fishermen are interested in a digital monitoring tool. We have received positive feedback from initial outreach to fishermen about the utility of such as system and some fishermen have expressed interest in helping to design the system. We will meet with representatives of the fishing community to assess data needs to inform the design of the tool, assess their exposure to and use of mobile phones or tablets to gauge feasibility of utilizing such GPS enabled technology for data collection, and to assess their willingness to participate based on a range of possible options.

Design and Recommendation
Following the feasibility assessment we will work with interested commercial fishermen (including the FAC), managers, and scientists to design a user-friendly spatially-enabled data collection and query tool that best complements existing fisherman work flows yet collects data in a method and at a scale that best informs long-term monitoring efforts. Tool design will incorporate the needs of fishermen and managers and where possible incorporate established North Coast monitoring metrics. Whenever possible our design recommendation will integrate existing technologies such as the OceanSpaces website.

At the end of this process, we will generate a Long-term Digital Monitoring Feasibility and Design Report that describes our recommendations for implementing long term digital monitoring in the North Coast fisheries. In addition, if fishermen express interest, we will seek additional funding to develop a pilot monitoring tool for at least one commercial fishery in the region. The design and possible implementation of a digital monitoring tool has the potential to revolutionize MPA monitoring and fisheries data collection more broadly by providing a low cost, long-term, continuous system for collecting spatial fisheries data. A data collection tool such as this that is is mutually beneficial to fishermen and resource managers has the potential to facilitate the support and participation of fishermen in the collection of MPA monitoring data.

5.0. DATA CONFIDENTIALITY APPROACH

This project will involve collecting, compiling, and analyzing data and information provided by individual fishermen. Research results will be only be described and submitted as final products of this project in aggregated form (aggregated across individuals). Data points in which less than three fishermen are included will remain confidential and suppressed.

Data provided by the CDFW will be utilized under a strict non-disclosure agreement, and data collection in interviews will follow a strict protocol. Building upon experience conducting large scale human use data collection projects with fishing communities, HSU staff and Ecotrust have established rigorous field staff training procedures and interview protocols to ensure that:

1. Field staff are able to constructively engage with fisherman about the goals/objectives of this project and the larger MPA monitoring/assessment effort this project will inform;
2. Sensitive fishermen contact information is kept secure and confidential;
3. Fishermen are properly informed of the research project goals and possible risk and agreements on data use before the fishermen signs a consent form and engages in an interview;
4. Fisherman data remains confidential and is securely stored, transmitted, and analyzed;
5. Interviews are conducted professionally and consistently; and
6. High quality data is consistently collected across interviews.

To accomplish this, the team will develop an informed-consent and confidentiality protocol and will sign and comply with CDFW non-disclosure agreement rules and HSU Institutional Review Board guidelines. The protocol will assure that individual fisherman data (including an individual's fishing grounds) is kept secure and confidential throughout the project from data collection, to transmission of the data, to data analysis, and subsequent storage of the data. HSU and Ecotrust staff trained in human subject research protocols will conduct extensive training with field staff on proper research protocols and interview approach and procedures and informed consent. This training includes providing background on the

Marine Life Protection Act planning process, the MPA monitoring program, and possible reservations fisherman may have to participate in interviews in order for field staff to effectively engage in meaningful conversations with fishermen to solicit interviews.

6.0. OUTCOMES AND DELIVERABLES

The following are the deliverables for this project:

1. Geospatial database and maps of post MPA commercial fishery datasets for each port and at the study region scale
2. Geospatial database and maps of post MPA CPFV fishery datasets for each port and at the study region scale
3. Geospatial database and maps displaying the results from the spatial change analysis for each commercial and CPFV fishery at the port and study region scale
4. Spreadsheets and graphs/tables summarizing all survey data collected
5. Spreadsheets and graphs/tables summarizing and compiling all CDFW commercial fishing, CPFV, and contingent on expected CDFW support recreational fishing data
6. All associated metadata in accordance with FGDC standards and EML standards as appropriate
7. Executive summary report
8. Technical report
9. Long-term digital monitoring feasibility and design report
10. Recommendations for North Coast monitoring metrics
11. Brochure summarizing findings to be distributed to the fishing community

The geospatial databases, map products, non-spatial survey data summaries, and associated metadata will be delivered to the Monitoring Enterprise (ME), CDFW, and the California Ocean Protection Council. Project staff will communicate with ME throughout the project to identify the most appropriate data delivery methods which may include presenting the project metadata in Ecological Metadata Language. Metadata delivered will be in accordance with FGDG standards and EML standards which fully describe the data, collection methods, and reporting structure. The spatial data delivered will be the aggregated spatial data and will not contain individual fisherman data. The non-spatial data will also be delivered in aggregate form, however, if less than three individuals compose of a summary statistic, the data will be excluded in accordance with Ecotrust's privacy and confidentiality protocols.

The executive summary report will summarize methods, key findings, and conclusions in 2-3 pages of text, and if needed, an additional 1-2 pages of figures. This report will be written appropriately for broad public release such as on the Monitoring Enterprise website or as a provision to the California Fish and Wildlife Commission. The technical report will fully detail the methods used, data summaries, analyses, and interpretations of results to describe, assess, and understand the project and its findings.

In addition to these materials, we will develop an accessible brochure that will summarize key findings from our research. This brochure will be distributed to members of the fishing community and interested agencies, organizations, and government entities. In addition to the brochure, an electronic copy of the report will be made available to any participant in the study or party who is interested. The development of these materials along with follow-up meetings in key ports will ensure that the results of this study are disseminated to the fishing community and remain available for community members to utilize.

7.0. MILESTONE CHART NARRATIVE

Below is a description of each project milestone displayed in the timeline in Figure 1.

Project design/management/coordination

Internal: Develop and update a detailed work plan for task coordination and to track progress towards objectives and budget. External: Collaborate with FAC and other partners to ensure our work is useful to the fishing community, MPA managers, and researchers.

Community outreach/engagement

Continue the outreach efforts which we have initiated to develop this proposal. Outreach effort will involve meeting with key fishermen in each port community and forming FAC.

Long-term electronic monitoring feasibility and design

Engage with the FAC and other interested fishermen to assess the feasibility of implementing an electronic data collection tool to serve as a long-term monitoring solution. Develop report.

Survey, and sample design

Design a draft survey and focus group questions based on input gathered in outreach efforts, and review draft survey and focus group questions with the FAC and other stakeholders; compile landings data and a CPFV operator list to facilitate an interview and sampling design.

Survey tool development

The modifications mentioned above in the survey design will be incorporated into the development of a final survey tool appropriate for the North Coast region.

Data collection field work and oversight

Hire and train field staff; prepare field work materials; conduct focus groups and interviews.

Quality assurance and quality control (QAQC) internal

Edit spatial interview data to specific depth boundaries and geographic landmarks; mail review maps to each fisherman interviewed for them to review the accuracy and completeness of the spatial data collected; review non-spatial survey data collection for consistency and accuracy.

Data analysis and final products

Analysis of survey and spatial interview data; analysis of commercial, CPFV, and recreational data; analysis of changes in fishing patterns from pre to post MPA.

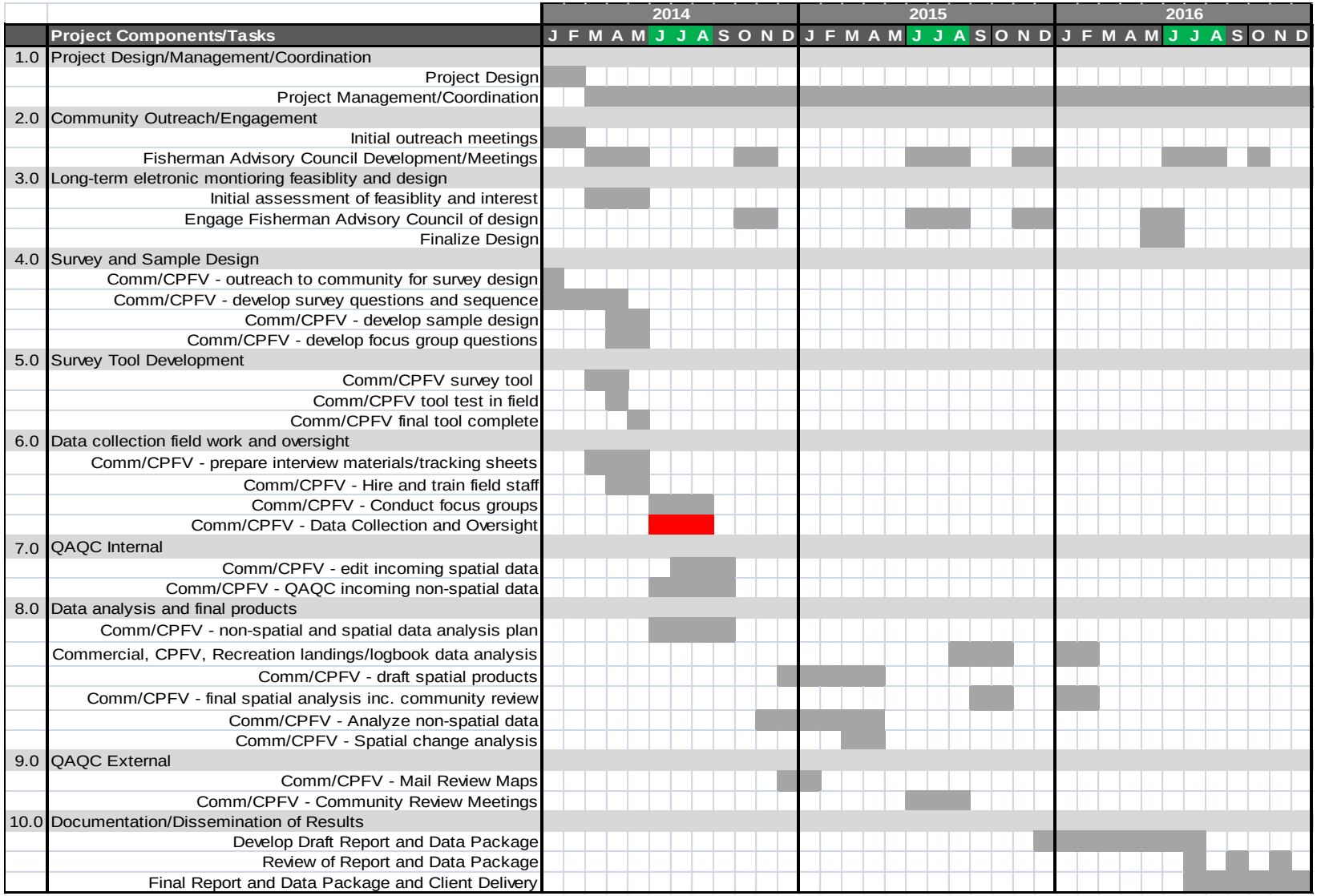
Quality assurance and quality control (QAQC) external

Conduct data review meetings to interpret and validate spatial data and CDFW landings and logbook data analysis results, with feedback incorporated into the final report and final products.

Documentation/dissemination of results

Development of the executive summary report, full technical report, spatial geodatabase, spreadsheets on non-spatial survey data, map products, and brochure for submission.

Figure 1. MILESTONE CHART



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SEA GRANT BUDGET WORKSHEET

Is this award to a non-UCSD investigator? yes

If yes, does your institution have an active sub-award w/ this SG program?

Duration (months) : 02/01/14 - 01/31/15

Worksheet Title : Socioeconomic Dimensions of MPAs - Year 1

Budget Type : on-campus

A. SALARIES AND WAGES	mo. salary	benefits %	sea grant mos. effort	grantee mos. effort	**SEA GRANT FUNDS**	**GRANTEE SHARE**
1. SENIOR PERSONNEL						
Hackett, Steven [PI]	10,906	0.1577	2.077	0.319	22,652	3,479
Richmond, Laurie [Co-PI]	6,833	0.192	4.35	0.439	29,724	3,000
2. OTHER PERSONNEL						
Terry Tillman - DFW [Other]	8,369	0	0	0.333	0	2,787
Undergraduate - TBD [Pre-Bachelor Student]	2,080	0.1322	5.538	0	11,519	0
Graduate Student - TBD [Res. Asst/Grad. Student]	2,600	0.1052	5.8846	1.282	15,300	3,333
TBD [Research Associate]	3,337	0.1577	6.11	0	20,389	0
Total Salaries and Wages					99,584	12,599
B. FRINGE BENEFITS					15,627	1,475
C. PERMANENT EQUIPMENT - *No Indirect Costs*						
Total Permanent Equipment						
D. EXPENDABLE SUPPLIES AND EQUIPMENT					1,500	0
E. TRAVEL						
1. Domestic - US and its Possessions (inc. Puerto Rico)					59,280	0
2. International						
Total Travel					59,280	0
F. PUBLICATIONS AND DOCUMENTATION COSTS					0	0
G. OTHER COSTS						
Other cost subject to indirect - Stipends - Fishermen Advisory Council					8,000	0
Other cost subject to indirect - Meeting Expenses, Space Rental - Fishermen Advisory Council					200	0
Other cost subject to indirect - Food for Meetings - Fishermen Advisory Council					600	0
Other cost subject to indirect - Cell phone charges - Field Staff					1,500	0
Total Other Costs					10,300	0
Total Direct Costs (A through G)					186,291	14,074
H. INDIRECT COSTS						

IDC Management by Section Included:	A ☒	B ☒	D ☒	E ☒	F ☒	G ☒	IDC Subtotal sea grant	IDC Subtotal grantee		
	0.25	0.25	0.25	0.25	0.25	0.25	186,291	14,074	46,573	6,333
	0.45	0.45	0.45	0.45	0.45	0.45	☒ Waived IDC as Match			37,258
Total Costs									232,864	57,666

BUDGET JUSTIFICATION

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

Laurie Richmond [Co-PI - on-campus], Mos. Effort: 4.35 SG 0.439 Grantee, Benefits Rt.: 0.192, Mo. Salary: $6833
4.35 months salary coverage is budgeted for the Co-Principle Investigator. The Co-PI will provide oversight over field work and take the lead on developing and maintaining fishing community relationships; provide expertise and input with project design and survey design; provide expertise and input in developing data anlaysis plan; Co-manage HSU Research Associate; conduct and provide primary oversight of field work.

Steven Hackett [PI - on-campus], Mos. Effort: 2.077 SG 0.319 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $10906
2.07 months salary coverage is budgeted for the Principle Investigator (PI). The PI will be responsible for overall project oversight, coordination with Ecotrust and CDFW, and progress reporting to Sea Grant. The PI will take the lead on developing and maintaining fishing community relationships; provide expertise and input with project design and survey design; provide expertise and input in developing the data analysis plan; co-manage the HSU Research Associate.

2. OTHER PERSONNEL

TBD [Research Associate - on-campus], Mos. Effort: 6.11 SG 0 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $3337
6.11 months salary coverage is budgeted for a Research Associate (RA). Year 1 is the primary year for development and implementation of interview instrument and subsequent field work. The RA will work with the fishing community to develop the Fisherman Advisory Council; seek input on survey/project design from the fishing community; coordinate and manage summer field work; transfer all data collected to Ecotrust (subcontractor); manage field work budget; and review data collected with the fishing community.
Graduate Student - TBD [Res. Asst/Grad. Student - on-campus], Mos. Effort: 5.8846 SG 1.282 Grantee, Benefits Rt.: 0.1052, Mo. Salary: $2600
Graduate student TBD. Costs were calculated based on a reasonable estimate of anticipated work hours in academic year and summer at a $15 per hour rate.

Graduate student will prep interviews, perform interviews and assist with focus groups, perform data analysis, perform background literature review and assist in narrative report-writing.

Graduate student will be employed by HSU SPF. No cost of living increase or salary increase is built in to the budget.

all salary/personnel costs are allowable.
Undergraduate - TBD [Pre-Bachelor Student - on-campus], Mos. Effort: 5.538 SG 0 Grantee, Benefits Rt.: 0.1322, Mo. Salary: $2080
Pre-bachelor student TBD. Total charges derive from reasonable estimate of hours worked in summer as a field staff assistant at $12 per hour.

Pre-bachelor student will support field work interviews and support focus group work, primarily in summer.

Student will be an employee of HSU SPF. No cost of living increase or salary increase is budgeted.

All salary/personnel costs are allowable.
Terry Tillman - DFW [Other - on-campus], Mos. Effort: 0 SG 0.333 Grantee, Benefits Rt.: 0, Mo. Salary: $8369
TerryTillman, with the California Department of Fish and Wildlife, will provide matching funds through work effort, providing approximately 60 hours per year of donated time. Terry Tillman will assist with generating and analyzing commercial landings data, Commercial Passenger Fishing Vessel (CPFV) data, and California Recreational Fishing Survey (CRFS) data.

B. FRINGE BENEFITS

The HSU Sponsored Programs Foundation employer-paid benefit rate is 15.77% for Steve Hackett, Laurie Richmond, and the Research Associate. Laurie Richmond's benefits rate for Year 1 is an average, including the cost of benefits for Dr. Richmond's buyout of 2 weighted teaching units (WTUs).

The Graduate Student and Undergraduate students benefits rate is calculated at different rates depending on the time of year the student works (HSU's identified summer months worked versus academic year months worked.). The rate during HSU's summer months is 15.77%; the rate during the academic year months is 8.12%. An average rate of .1052 is used to

calculate benefits for the Graduate Student and .1322 for the Undergraduate students.

$1475 in Fringe Benefits is being calculated on the Grantee Share salary in the required eseagrant budget template. The match salary is volunteer time and therefore no fringe is/should be expensed. This issue was brought to the attention of Rose Madson and Carol Bailey-Sumber with Sea Grant. Carol indicated there is no fix to this problem at this time. They indicated to make a notation of this issue in this Justify tabs.

C. PERMANENT EQUIPMENT

D. EXPENDABLE SUPPLIES AND EQUIPMENT

$1500 is requested to purchase two laptop computers for field staff to conduct field work.

E. TRAVEL

1. Domestic - US and its Possessions (inc. Puerto Rico)

PROJECT TRAVEL BUDGET (excludes field work travel) - YEAR 1

Outreach Meetings - Year 1
$4,800 is budgeted for travel for 2 people for 10 days: $140 for Hotel; $50 for Meals, $50 for car/gas.

Meetings with Monitoring Enterprise and other Project PIs - Year 1
$480 is budgeted for 2 people for 1 day: $140 for Hotel; $50 for Meals, $50 for car/gas

Project Travel Year 1 = $5,280

FIELDWORK/DATA COLLECTION TRAVEL BUDGET - YEAR 1

Estimated Maximum Survey Work Costs - In 2009 approximately 219 commercial fishermen and 22 CPFV fishermen were interviewed. It is estimated 240 fishermen will be interviewed for this project. Following travel budget numbers assume most interviews will take place in Eureka, California and Trinidad, California areas.

$52,500 is requested for staff to perform fieldwork and data collection.

1) Laurie Richmond, Co-PI - 60 days; $50 per day for meals; $1,500 lodging; $1,000 mileage/car = $5,500.
2) Research Associate - 90 days; $50 per day for meals; $8,000 lodging; $4,000 mileage/car = $16,500. RA will share housing with one other staff.
3) Graduate Student - 90 days; $50 per day for meals; $3,000 mileage/car = $7,500.
4) Graduate Student, Field Staff - 90 days, $50 per day; $3,000 mileage/car = $7,500
5) Graduate Student, Field Staff - 90 days, $50 per day; $3,000 mileage/car = $15,500. Graduate student will share housing with one other staff.

Total travel budget for fieldwork and data collection for Year 1 = $52,500

TRAVEL BUDGET FOR FISHERMEN ADVISORY COUNCIL MEETINGS

$1,500 is requested for mileage and meals for participants on the Fishermen Advisory Council.

2. International

F. PUBLICATIONS AND DOCUMENTATION COSTS

N/A

G. OTHER COSTS

Other cost subject to indirect : Stipends - Fishermen Advisory Council - $8000 Total
$8,000 is requested to compensate Fisherman Advisory Council participants for their time and travel expenses.

Other cost subject to indirect : Meeting Expenses, Space Rental - Fishermen Advisory Council - $200 Total
$200 is requested to reserve meeting spaces for the various fishermen meetings held off campus. Meetings are usually held at harbor offices or other meeting spaces near fishing harbors that are convenient to fishermen. A small fee is usually charged for utilizing these spaces.

Other cost subject to indirect : Food for Meetings - Fishermen Advisory Council - $600 Total
$600 is requested to provide food for Fishermen Advisory Council and focus group meetings. As it is difficult to attract fishermen and others to participate in research projects, food is an essential element to create a welcoming setting for participation.

Other cost subject to indirect : Cell phone charges - Field Staff - $1500 Total
$1500 is requested to reimburse monthly cell phone charges for field staff using their own cell phones to contact fishermen to schedule and conduct interviews.

The field work component of this project involves field staff travelling throughout the region. Field staff will be responsible for contacting fishermen (approximately 240 fishermen) and solicit and arrange to meet them for in-person interviews. A cell phone will be needed to contact fisherman and ensure field staff are reachable in the case that fisherman may need to reschedule interviews. A cell phone is also critical to staying connected with the project team to communicate interview progress. This project work will occur intensively over an approximate 3-month period.

INDIRECT COSTS

[on-campus] includes: salaries (SG rt: 0.25, Inst. rt: 0.45), fringe benefits (SG rt: 0.25, Inst. rt: 0.45), expendable eq. (SG rt: 0.25, Inst. rt: 0.45), travel (SG rt: 0.25, Inst. rt: 0.45), publications (SG rt: 0.25, Inst. rt: 0.45), other costs (SG rt: 0.25, Inst. rt: 0.45)
Indirect costs are being requested.

Humboldt State University Sponsored Programs Foundation's federally approved IDC rate is 45%; however, the NCMPA Sea Grant maximum IDC rate is 25%. HSU SPF is applying Sea Grant's 25% IDC rate to this project and the remaining 20% is applied to waived IDC match.

Fringe Benefits are being calculated on the Grantee Share salary in the required eseagrant budget template. The match salary is volunteer time, therefore no fringe or IDC is/should be expensed. This issue was brought to the attention of Rose Madson and Carol Bailey-Sumber with Sea Grant. Carol indicated there is no fix to this problem at this time. They indicated to make a notation of this issue in this Justify tabs on eseagrant budget templates.

SEA GRANT BUDGET WORKSHEET

Is this award to a non-UCSD investigator? yes

If yes, does your institution have an active sub-award w/ this SG program?

Duration (months) : 02/01/14 - 01/31/15

Worksheet Title : ECOTRUST, Subcontractor, Year 1

Budget Type : off-campus

A. SALARIES AND WAGES	mo. salary	benefits %	sea grant mos. effort	grantee mos. effort	SEA GRANT FUNDS	GRANTEE SHARE
1. SENIOR PERSONNEL						
Chen, Cheryl [Co-PI]	4,675	0.39	3.4615	2.2834	16,183	10,675
Steinback, Charles [Co-PI]	6,692	0.39	0.7212	1	4,826	6,692
2. OTHER PERSONNEL						
Program Associate [Professional]	4,033	0.39	3.2885	2.5	13,263	10,082
Economist [Professional]	4,033	0.39	0.1154	1	465	4,033
GIS Technician [Professional]	3,025	0.39	0.5192	1	1,571	3,025
Senior GIS Analyst [Professional]	4,675	0.39	0.2308	1	1,079	4,675
Software Developer III [Professional]	4,767	0.39	2.0191	1	9,625	4,767
Graphic Designer [Professional]	4,675	0.39	0	0.5	0	2,338
Development Staff [Professional]	5,233	0.39	0.12	0	628	0
Finance Staff [Professional]	4,385	0.39	0.12	0	526	0
MCI Business Director [Professional]	6,692	0.39	0.2596	0	1,737	0
Total Salaries and Wages					49,903	46,287
B. FRINGE BENEFITS					19,462	18,052
C. PERMANENT EQUIPMENT - *No Indirect Costs*						
Total Permanent Equipment						
D. EXPENDABLE SUPPLIES AND EQUIPMENT					0	0
E. TRAVEL						
1. Domestic - US and its Possessions (inc. Puerto Rico)					18,760	0
2. International						
Total Travel					18,760	0
F. PUBLICATIONS AND DOCUMENTATION COSTS					0	0
G. OTHER COSTS						
Total Other Costs						
Total Direct Costs (A through G)					88,125	64,339
H. INDIRECT COSTS						

IDC Management by Section Included: A ☒	B ☒	D ☒	E ☒	F ☒	G ☒	IDC Subtotal sea grant	grantee		
0.1614	0.1614	0.1614	0.1614	0.1614	0.1614	88,125	64,339	14,223	10,384
0.1614	0.1614	0.1614	0.1614	0.1614	0.1614	☐ Waived IDC as Match			0

Total Costs								102,348	74,723

BUDGET JUSTIFICATION

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

Cheryl Chen [Co-PI - off-campus], Mos. Effort: 3.4615 SG 2.2834 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4675
REQUEST: Chen will contribute 3.4615 months effort in Year 1.
MATCH: Chen will contribute 2.2834 months effort in Year 1.
In Year 1 Chen will perform overall project management of all internal Ecotrust staff and lead coordination with project partners. Project management responsibilities include developing and tracking implementation of work plans and tracking timelines and budgets. Chen will also provide expertise and input on overall project design such as survey design and lead Ecotrust staff to collaborate with HSU staff to design and develop the data collection effort and survey instrument. Chen will also co-lead the technical design of a long-term monitoring tool/system.
Charles Steinback [Co-PI - off-campus], Mos. Effort: 0.7212 SG 1 Grantee, Benefits Rt.: 0.39, Mo. Salary: $6692
REQUEST: Steinback will contribute 0.7212 months effort in Year 1.
MATCH: Steinback will contribute 1.0 months effort in Year 1.
In Year 1 Steinback will provide overall project technical expertise and input for project design. Steinback will also co-lead on engaging stakeholders and provide technical expertise to design a long term monitoring tool/system.

2. OTHER PERSONNEL

Program Associate [Professional - off-campus], Mos. Effort: 3.2885 SG 2.5 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4033
REQUEST: Program Associate will contribute 3.2885 months effort in Year 1.
MATCH: Program Associate will contribute 2.5 months effort in Year 1.
The Program Associate will help provide overall project support, conduct initial data analysis for sample design, prepare interview materials, train field staff, assist in data collection/field work, and assist in data analysis tasks.
Economist [Professional - off-campus], Mos. Effort: 0.1154 SG 1 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4033
REQUEST: Economist will contribute 0.1154 months effort in Year 1.
MATCH: Economist will contribute 1.0 months effort in Year 1.
The Economist will help analyze CDFW landings data to help develop a data collection sample design. The economist will also begin to analyze CDFW landings data for the commercial, CPFV, and recreational fishing sectors.
GIS Technician [Professional - off-campus], Mos. Effort: 0.5192 SG 1 Grantee, Benefits Rt.: 0.39, Mo. Salary: $3025
REQUEST: GIS Technician will contribute 0.5192 months effort in Year 1.
MATCH: GIS Technician will contribute 1.0 months effort in Year 1.
The GIS Technician will provide base spatial layer to include in the mapping component of the survey instrument. The GIS Technician will also conduct a QAQC and edit all spatial data collected as it is being gathered in the field.
Senior GIS Analyst [Professional - off-campus], Mos. Effort: 0.2308 SG 1 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4675
REQUEST: Senior GIS Analyst will contribute 0.2308 months effort in Year 1.
MATCH: Senior GIS Analyst will contribute 1.0 months effort in Year 1.
The Senior GIS Analyst will provide technical expertise and oversight on work provided by the GIS Technician and provide expertise and input on developing a spatial data analysis plan.
Software Developer III [Professional - off-campus], Mos. Effort: 2.0191 SG 1 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4767
REQUEST: Software Developer III will contribute 2.0191 months effort in Year 1.
MATCH: Software Developer III will contribute 1.0 months effort in Year 1.
Software Developer III will lead on developing and customizing the survey/data collection tool according to the survey design needs identified by project leads. This includes survey question flow, survey mapping tool development, data management and delivery, and interview tracking features. The Software Developer III will also provide technical design specification for the design of a long term monitoring solution/system.
Graphic Designer [Professional - off-campus], Mos. Effort: 0 SG 0.5 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4675
MATCH: Graphic Designer will contribute 0.5 months effort in Year 1.
The Graphic Designer through related project work will design a template that will help develop a polished product that may be used to easily disseminate project results to a wide audience in a compelling and graphically driven format.
Development Staff [Professional - off-campus], Mos. Effort: 0.12 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $5233
REQUEST: Ecotrust development staff will contribute .12 months effort each year of the project, working closely with the project team and Ecotrust finance staff to ensure the timely and accurate submission of all progress reports, financial reports, and other administration as required by Sea Grant. Ecotrust's development personnel have significant past experience with managing Sea Grant program awards, along with relevant matching funds, according to the specifications of the program. Development staff will actively support the project team throughout the duration of the award.
Finance Staff [Professional - off-campus], Mos. Effort: 0.12 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4385
REQUEST: Ecotrust finance staff will contribute 0.12 months effort each year of the project, working closely with the project team and Ecotrust development staff to ensure the timely and accurate submission of all invoices, financial reports, and other administration as required by Sea Grant. Ecotrust's finance personnel have significant past experience with managing Sea Grant awards, along with relevant matching funds, according to the specifications of the program. Finance staff will actively support the project team throughout the duration of the award.

MCI Business Director [Professional - off-campus], Mos. Effort: 0.2596 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $6692
REQUEST: Marine Consulting Initiative (MCI) Business Director will contribute 0.2596 months effort in Year 1.
The MCI Business Director works closely with project staff and finance and development personnel to approve all final documents/reports, invoices, and budgets to ensure the timely and accurate submission of all required materials to Sea Grant.

B. FRINGE BENEFITS

Fringe benefits are calculated at 39% of base salary (Ecotrust's approved institutional rate). Benefits include health, dental, and vision insurance, paid time off, payroll taxes, retirement, and disability.

C. PERMANENT EQUIPMENT

D. EXPENDABLE SUPPLIES AND EQUIPMENT

E. TRAVEL

1. Domestic - US and its Possessions (inc. Puerto Rico)

REQUEST: Funds are requested to support travel for project staff to meet and work with project partners, stakeholders, and fishermen in the study region. This estimate includes airfare, hotel, meals, car rental, gas, and other trip expenditures. This estimate is based on past costs incurred for similar work organized by staff on previous projects.

2. International

F. PUBLICATIONS AND DOCUMENTATION COSTS

G. OTHER COSTS

INDIRECT COSTS

[off-campus] includes: salaries (SG rt: 0.1614, Inst. rt: 0.1614), fringe benefits (SG rt: 0.1614, Inst. rt: 0.1614), expendable eq. (SG rt: 0.1614, Inst. rt: 0.1614), travel (SG rt: 0.1614, Inst. rt: 0.1614), publications (SG rt: 0.1614, Inst. rt: 0.1614), other costs (SG rt: 0.1614, Inst. rt: 0.1614)
Indirect costs are budgeted at 16.14% calculated on a base of salaries, benefits, travel, and other costs.

SEA GRANT BUDGET WORKSHEET

Is this award to a non-UCSD investigator? yes

If yes, does your institution have an active sub-award w/ this SG program?

Duration (months) : 02/01/15 - 01/31/16

Worksheet Title : Socioeconomic Dimensions of MPAs - Year 2

Budget Type : on-campus

A. SALARIES AND WAGES	mo. salary	benefits %	sea grant mos. effort	grantee mos. effort	**SEA GRANT FUNDS**	**GRANTEE SHARE**
1. SENIOR PERSONNEL						
Hackett, Steven [PI]	10,906	0.1577	1.673	0.319	18,246	3,479
Richmond, Laurie [Co-PI]	6,833	0.1577	2.019	0.439	13,796	3,000
2. OTHER PERSONNEL						
Terry Tillman - DFW [Other]	8,369	0	0	0.333	0	2,787
Undergraduate - TBD [Pre-Bachelor Student]	2,080	0.1577	0.923	0	1,920	0
Graduate Student - TBD [Res. Asst/Grad. Student]	2,600	0.1052	5.8846	1.282	15,300	3,333
TBD [Research Associate]	3,337	0.1577	2.8528	0	9,520	0
Total Salaries and Wages					58,782	12,599
B. FRINGE BENEFITS					8,467	1,372
C. PERMANENT EQUIPMENT - *No Indirect Costs*						
Total Permanent Equipment						
D. EXPENDABLE SUPPLIES AND EQUIPMENT					0	0
E. TRAVEL						
1. Domestic - US and its Possessions (inc. Puerto Rico)					6,780	0
2. International						
Total Travel					6,780	0
F. PUBLICATIONS AND DOCUMENTATION COSTS					0	0
G. OTHER COSTS						
Other cost subject to indirect - Stipends - Fishermen Advisory Council					8,000	0
Other cost subject to indirect - Meeting Expenses, Space Rental - Fishermen Advisory Council					200	0
Other cost subject to indirect - Food for Meetings - Fishermen Advisory Council					600	0
Total Other Costs					8,800	0
Total Direct Costs (A through G)					82,829	13,971

H. INDIRECT COSTS

IDC Management by Section Included:	A ☒	B ☒	D ☒	E ☒	F ☒	G ☒	IDC Subtotal sea grant	IDC Subtotal grantee		
	0.25	0.25	0.25	0.25	0.25	0.25	82,829	13,971	20,707	6,287
	0.45	0.45	0.45	0.45	0.45	0.45	☒ Waived IDC as Match			16,566
Total Costs									103,536	36,824

BUDGET JUSTIFICATION

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

Laurie Richmond [Co-PI - on-campus], Mos. Effort: 2.019 SG 0.439 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $6833
2.01 months salary coverage is budgeted for the Co-Principle Investigator. The Co-PI will provide oversight over field work and take the lead on developing and maintaining fishing community relationships; provide expertise and input with project design and survey design; provide expertise and input in developing data anlaysis plan; Co-manage HSU Research Associate; conduct and provide oversight of field work; and assist PI with elements of preliminary report development.
Steven Hackett [PI - on-campus], Mos. Effort: 1.673 SG 0.319 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $10906
1.67 months salary coverage is budgeted for the Principle Investigator (PI). The PI will be responsible for overall project oversight, coordination with Ecotrust and CDFW, and progress reporting to Sea Grant.. The PI will take the lead on developing and maintaining fishing community relationships; provide expertise and input with project design and survey design; provide expertise and input in developing the data analysis plan; co-manage the HSU Research Associate; and oversee elements of preliminary report development.

2. OTHER PERSONNEL

TBD [Research Associate - on-campus], Mos. Effort: 2.8528 SG 0 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $3337
2.85 months salary coverage is budgeted for a Research Associate (RA). The RA will work with the Fisherman Advisory Council in reviewing progress on field work and seek input on any deficiencies or gaps in data; coordinate and manage summer field work; transfer all data collected to Ecotrust (subcontractor); manage field work budget; and review data collected with the fishing community.
Graduate Student - TBD [Res. Asst/Grad. Student - on-campus], Mos. Effort: 5.8846 SG 1.282 Grantee, Benefits Rt.: 0.1052, Mo. Salary: $2600
Graduate student TBD. Costs were calculated based on a reasonable estimate of anticipated work hours in academic year and summer at a $15 per hour rate.

Graduate student will prep interviews, perform interviews and assist with focus groups, perform data analysis, perform background literature review and assist in narrative report-writing.

Graduate student will be employed by HSU SPF. No cost of living increase or salary increase is built in to the budget.

all salary/personnel costs are allowable.
Undergraduate - TBD [Pre-Bachelor Student - on-campus], Mos. Effort: 0.923 SG 0 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $2080
Pre-bachelor student TBD. Total charges derive from reasonable estimate of hours worked in summer as a field staff assistant at $12 per hour.

Pre-bachelor student will support field work interviews and support focus group work, primarily in summer.

Student will be an employee of HSU SPF. No cost of living increase or salary increase is budgeted.

All salary/personnel costs are allowable.
Terry Tillman - DFW [Other - on-campus], Mos. Effort: 0 SG 0.333 Grantee, Benefits Rt.: 0, Mo. Salary: $8369
TerryTillman, with the California Department of Fish and Wildlife, will provide matching funds through work effort, providing approximately 60 hours per year of donated time. Terry Tillman will assist with generating and analyzing commercial landings data, Commercial Passenger Fishing Vessel (CPFV) data, and California Recreational Fishing Survey (CRFS) data.

B. FRINGE BENEFITS

The HSU Sponsored Programs Foundation employer-paid benefit rate is 15.77% for Steve Hackett, Laurie Richmond, the Research Associate, and Undergraduate Student in Year 2.

The Graduate Student and Undergraduate students benefits rate is calculated at different rates depending on the time of year the student works (HSU's identifed summer months worked versus academic year months worked.). The rate during HSU's summer months is 15.77%; the rate during the academic year months is 8.12%. An average rate of .1052 is used to calculate benefits for the Graduate Student.

$1,372 in Fringe Benefits is being calculated on the Grantee Share salary in the required eseagrant budget template. The match salary is volunteer time and therefore no fringe is/should be expensed. This issue was brought to the attention of Rose Madson and Carol Bailey-Sumber with Sea Grant. Carol indicated there is no fix to this problem at this time. They indicated to make a notation of this issue in this Justify tabs.

C. PERMANENT EQUIPMENT

D. EXPENDABLE SUPPLIES AND EQUIPMENT

N/A

E. TRAVEL

1. Domestic - US and its Possessions (inc. Puerto Rico)

PROJECT TRAVEL BUDGET - YEAR 2

$5,280 is requested for travel expenses related outreach meetings, meetings with the Monitoring Enterprise, and other project PIs.

Outreach Meetings
$4,800 is requested for 2 people for 10 days: $140 for Hotel; $50 for Meals, $50 for car/gas.

Meetings with Monitoring Enterprise and other Project PIs
$480 is requested for for 2 people for 1 day: $140 for Hotel; $50 for Meals, $50 for car/gas.

Total Project Travel, Year 2 = $5,280

FISHERMEN ADVISORY COUNCIL MEETINGS - YEAR 2

$1,500 is requested for mileage and meals for participants on the Fishermen Advisory Council.

2. International

F. PUBLICATIONS AND DOCUMENTATION COSTS

N/A

G. OTHER COSTS

Other cost subject to indirect : Stipends - Fishermen Advisory Council - $8000 Total
$8,000 is requested to compensate Fisherman Advisory Council participants for their time and travel expenses.

Other cost subject to indirect : Meeting Expenses, Space Rental - Fishermen Advisory Council - $200 Total
$200 is requested to reserve meeting spaces for the various fishermen meetings held off campus. Meetings are usually held at harbor offices or other meeting spaces near fishing harbors that are convenient to fishermen. A small fee is usually charged for utilizing these spaces.

Other cost subject to indirect : Food for Meetings - Fishermen Advisory Council - $600 Total
$600 is requested to provide food for Fishermen Advisory Council and focus group meetings. As it is difficult to attract fishermen and others to participate in research projects, food is an essential element to create a welcoming setting for participation.

INDIRECT COSTS

[on-campus] includes: salaries (SG rt: 0.25, Inst. rt: 0.45), fringe benefits (SG rt: 0.25, Inst. rt: 0.45), expendable eq. (SG rt: 0.25, Inst. rt: 0.45), travel (SG rt: 0.25, Inst. rt: 0.45), publications (SG rt: 0.25, Inst. rt: 0.45), other costs (SG rt: 0.25, Inst. rt: 0.45)
Indirect costs are being requested.

Humboldt State University Sponsored Programs Foundation's federally approved IDC rate is 45%; however, the NCMPA Sea Grant maximum IDC rate is 25%. HSU SPF is applying Sea Grant's 25% IDC rate to this project and the remaining 20% is applied to waived IDC match.

NOTE: $1372 in Fringe Benefits is being calculated on the Grantee Share salary in the required eseagrant budget template. The match salary is volunteer time, therefore no fringe or IDC is/should be expensed. This issue was brought to the attention of Rose Madson and Carol Bailey-Sumber with Sea Grant. Carol indicated there is no fix to this problem at this time. They indicated to make a notation of this issue in this Justify tabs on eseagrant budget templates.

SEA GRANT BUDGET WORKSHEET

Is this award to a non-UCSD investigator? yes

If yes, does your institution have an active sub-award w/ this SG program?

Duration (months) : 02/01/15 - 01/31/16

Worksheet Title : ECOTRUST, Subcontractor, Year 2

Budget Type : off-campus

A. SALARIES AND WAGES	mo. salary	benefits %	sea grant mos. effort	grantee mos. effort	**SEA GRANT FUNDS**	**GRANTEE SHARE**
1. SENIOR PERSONNEL						
Chen, Cheryl [Co-PI]	4,909	0.39	2.769	0	13,593	0
Steinback, Charles [Co-PI]	7,026	0.39	0.4904	0	3,446	0
2. OTHER PERSONNEL						
Program Associate [Professional]	4,235	0.39	3	0	12,705	0
Economist [Professional]	4,235	0.39	1.3846	0	5,864	0
GIS Technician [Professional]	3,176	0.39	1.7308	0	5,497	0
Senior GIS Analyst [Professional]	4,909	0.39	0.6346	0	3,115	0
Software Developer III [Professional]	5,005	0.39	0.6923	0	3,465	0
Development Staff [Professional]	5,495	0.39	0.12	0	659	0
Finance Staff [Professional]	4,605	0.39	0.12	0	553	0
MCI Business Director [Professional]	7,026	0.39	0.2596	0	1,824	0
Total Salaries and Wages					50,721	0
B. FRINGE BENEFITS					19,781	0
C. PERMANENT EQUIPMENT - *No Indirect Costs*						
Total Permanent Equipment						
D. EXPENDABLE SUPPLIES AND EQUIPMENT					0	0
E. TRAVEL						
1. Domestic - US and its Possessions (inc. Puerto Rico)					8,380	0
2. International						
Total Travel					8,380	0
F. PUBLICATIONS AND DOCUMENTATION COSTS					0	0
G. OTHER COSTS						
Total Other Costs						
Total Direct Costs (A through G)					78,882	0
H. INDIRECT COSTS						

IDC Management by Section Included: A ☒	B ☒	D ☒	E ☒	F ☒	G ☒	IDC Subtotal sea grant	grantee		
0.1614	0.1614	0.1614	0.1614	0.1614	0.1614	78,882	0	12,732	0
0.1614	0.1614	0.1614	0.1614	0.1614	0.1614	☐ Waived IDC as Match			0
Total Costs								91,614	0

BUDGET JUSTIFICATION

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

Cheryl Chen [Co-PI - off-campus], Mos. Effort: 2.769 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4909
REQUEST: Chen will contribute 2.769 months effort in Year 2.
In Year 2 Chen will continue to perform overall project management of all internal Ecotrust staff and coordinate with project partners.Chen will also continue to collaborate with HSU staff and provide expertise and input on overall project/survey instrument design, assist in stakeholder outreach, provide technical support/expertise and training to HSU staff on use of the survey tool and data collection effort. Chen will also co-lead the process to engage stakeholders in the technical design of a long-term monitoring tool/system.
Charles Steinback [Co-PI - off-campus], Mos. Effort: 0.4904 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $7026
REQUEST: Steinback will contribute 0.4904 months effort in Year 2.
In Year 2 Steinback will continue to provide overall project technical expertise and input for project design/implementation. Steinback will also continue to co-lead and provide oversight and technical expertise to engage stakeholders in designing a long term monitoring tool/system.

2. OTHER PERSONNEL

Program Associate [Professional - off-campus], Mos. Effort: 3 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4235
REQUEST: Program Associate will contribute 3.0 months effort in Year 2.
The Program Associate will help provide overall project support and analyze survey data, assist in conducting community reviews of data analysis results, and assist in report development.
Economist [Professional - off-campus], Mos. Effort: 1.3846 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4235
REQUEST: Economist will contribute 1.346 months of effort in Year 2
The Economist will continue to analyze CDFW landings data for the commercial, CPFV, and recreational fishing sectors and begin to develop the final technical report containing this data.
GIS Technician [Professional - off-campus], Mos. Effort: 1.7308 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $3176
REQUEST: GIS Technician will contribute 1.73 months effort in Year 2.
The GIS Technician will analyze all spatial data collected during interviews and analyze pre MPA spatial data collected by Ecotrust in preparation to conduct the spatial change analysis. The GIS Technician will also create, print, and mail all individual spatial data to individual fishermen to review. The GIS Technician will also incorporate any feedback gathered from fishermen on edits to the spatial data required.
Senior GIS Analyst [Professional - off-campus], Mos. Effort: 0.6346 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4909
REQUEST: Senior GIS Analyst will contribute 0.6346 months effort in Year 2.
The Senior GIS Analyst will provide technical expertise and oversight on work provided by the GIS Technician and lead on implementing the spatial data analysis plan. The Senior GIS Analyst will also create draft final products to review with the fishing community and draft geodatabase and metadata.
Software Developer III [Professional - off-campus], Mos. Effort: 0.6923 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $5005
REQUEST: Software Developer III will contribute 0.6923 months effort in Year 2.
Software Developer III will continue to provide technical design specifications and tool/system mock ups to better engage stakeholders in the design of a long term monitoring system/tool.
Development Staff [Professional - off-campus], Mos. Effort: 0.12 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $5495
REQUEST: Ecotrust development staff will contribute .12 months effort each year of the project, working closely with the project team and Ecotrust finance staff to ensure the timely and accurate submission of all progress reports, financial reports, and other administration as required by Sea Grant. Ecotrust's development personnel have significant past experience with managing Sea Grant program awards, along with relevant matching funds, according to the specifications of the program. Development staff will actively support the project team throughout the duration of the award.
Finance Staff [Professional - off-campus], Mos. Effort: 0.12 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4605
REQUEST: Ecotrust finance staff will contribute 0.12 months effort each year of the project, working closely with the project team and Ecotrust development staff to ensure the timely and accurate submission of all invoices, financial reports, and other administration as required by Sea Grant. Ecotrust's finance personnel have significant past experience with managing Sea Grant awards, along with relevant matching funds, according to the specifications of the program. Finance staff will actively support the project team throughout the duration of the award.
MCI Business Director [Professional - off-campus], Mos. Effort: 0.2596 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $7026
REQUEST: Marine Consulting Initiative (MCI) Business Director will contribute 0.2596 months effort in Year 2.
The MCI Business Director works closely with project staff and finance and development personnel to approve all final documents/reports, invoices, and budgets to ensure the timely and accurate submission of all required materials to Sea Grant.

B. FRINGE BENEFITS

Fringe benefits are calculated at 39% of base salary (Ecotrust's approved institutional rate). Benefits include health, dental, and vision insurance, paid time off, payroll taxes, retirement, and disability.

C. PERMANENT EQUIPMENT

D. EXPENDABLE SUPPLIES AND EQUIPMENT

E. TRAVEL

1. Domestic - US and its Possessions (inc. Puerto Rico)

REQUEST: Funds are requested to support travel for project staff to meet and work with project partners, stakeholders, and fishermen in the study region. This estimate includes airfare, hotel, meals, car rental, gas, and other trip expenditures. This estimate is based on past costs incurred for similar work organized by staff on previous projects.

2. International

F. PUBLICATIONS AND DOCUMENTATION COSTS

G. OTHER COSTS

INDIRECT COSTS

[off-campus] includes: salaries (SG rt: 0.1614, Inst. rt: 0.1614), fringe benefits (SG rt: 0.1614, Inst. rt: 0.1614), expendable eq. (SG rt: 0.1614, Inst. rt: 0.1614), travel (SG rt: 0.1614, Inst. rt: 0.1614), publications (SG rt: 0.1614, Inst. rt: 0.1614), other costs (SG rt: 0.1614, Inst. rt: 0.1614)
Indirect costs are budgeted at 16.14% calculated on a base of salaries, benefits, travel, and other costs.

SEA GRANT BUDGET WORKSHEET

Is this award to a non-UCSD investigator? yes

If yes, does your institution have an active sub-award w/ this SG program?

Duration (months) : 02/01/16 - 01/31/17

Worksheet Title : Socioeconomic Dimensions of MPAs - Year 3

Budget Type : on-campus

A. SALARIES AND WAGES	mo. salary	benefits %	sea grant mos. effort	grantee mos. effort	**SEA GRANT FUNDS**	**GRANTEE SHARE**
1. SENIOR PERSONNEL						
Hackett, Steven [PI]	10,906	0.1577	2.1926	0.319	23,912	3,479
Richmond, Laurie [Co-PI]	6,833	0.1577	2.8269	0.439	19,316	3,000
2. OTHER PERSONNEL						
Terry Tillman - DFW [Other]	8,363	0	0	0.333	0	2,785
Graduate Student - TBD [Res. Asst/Grad. Student]	2,600	0.1172	3.923	1.282	10,200	3,333
Research Associate - TBD [Research Associate]	3,337	0.1577	3.411	0	11,383	0
Total Salaries and Wages					64,811	12,597
B. FRINGE BENEFITS					9,808	1,412
C. PERMANENT EQUIPMENT - *No Indirect Costs*						
Total Permanent Equipment						
D. EXPENDABLE SUPPLIES AND EQUIPMENT					0	0
E. TRAVEL						
1. Domestic - US and its Possessions (inc. Puerto Rico)					12,790	0
2. International						
Total Travel					12,790	0
F. PUBLICATIONS AND DOCUMENTATION COSTS					0	0
G. OTHER COSTS						
Other cost subject to indirect - Stipends - Fishermen Advisory Council					8,000	0
Other cost subject to indirect - Meeting Expenses, Space Rental - Fishermen Advisory Council					200	0
Other cost subject to indirect - Food for meetings - Fishermen Advisory Council					600	0
Other cost subject to indirect - Conference Registration Expense					1,000	0
Total Other Costs					9,800	0
Total Direct Costs (A through G)					97,209	14,009
H. INDIRECT COSTS						

IDC Management by Section Included:	A ☒	B ☒	D ☒	E ☒	F ☒	G ☒	IDC Subtotal sea grant	IDC Subtotal grantee		
	0.25	0.25	0.25	0.25	0.25	0.25	97,209	14,009	24,302	6,304
	0.45	0.45	0.45	0.45	0.45	0.45	☒ Waived IDC as Match			19,442
Total Costs									121,511	39,755

BUDGET JUSTIFICATION

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

Laurie Richmond [Co-PI - on-campus], Mos. Effort: 2.8269 SG 0.439 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $6833
2.82 months salary coverage is budgeted for the Co-Principle Investigator. The Co-PI will provide primary oversight over completion of field work and take the lead on developing and maintaining fishing community relationships; provide expertise and input with project design and survey design; provide expertise and input in developing data anlaysis plan; Co-manage HSU Research Associate; conduct and provide oversight of field work; and assist the PI with final report development.
Steven Hackett [PI - on-campus], Mos. Effort: 2.1926 SG 0.319 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $10906
2.19 months salary coverage is budgeted for the Principle Investigator (PI). The PI will be responsible for overall project oversight, coordination with Ecotrust and CDFW, and progress reporting to Sea Grant.. The PI will take the lead on developing and maintaining fishing community relationships; provide expertise and input with project design and survey design; provide expertise and input in developing the data analysis plan; co-manage the HSU Research Associate; and oversee final report development.

2. OTHER PERSONNEL

Research Associate - TBD [Research Associate - on-campus], Mos. Effort: 3.411 SG 0 Grantee, Benefits Rt.: 0.1577, Mo. Salary: $3337
3.41 months salary coverage is budgeted for a Research Associate (RA). The RA will work with Fisherman Advisory Council in reviewing data prior to report preparation; coordinate and manage summer field work; transfer all data collected to Ecotrust (subcontractor); manage field work budget; and review data collected with the fishing community.
Graduate Student - TBD [Res. Asst/Grad. Student - on-campus], Mos. Effort: 3.923 SG 1.282 Grantee, Benefits Rt.: 0.1172, Mo. Salary: $2600
Graduate student TBD. Costs were calculated based on a reasonable estimate of anticipated work hours in academic year and summer at a $15 per hour rate.

Graduate student will prep interviews, perform interviews and assist with focus groups, perform data analysis, perform background literature review and assist in narrative report-writing.

Graduate student will be employed by HSU SPF. No cost of living increase or salary increase is built in to the budget.

all salary/personnel costs are allowable.
Terry Tillman - DFW [Other - on-campus], Mos. Effort: 0 SG 0.333 Grantee, Benefits Rt.: 0, Mo. Salary: $8363
TerryTillman, with the California Department of Fish and Wildlife, will provide matching funds through work effort, providing approximately 60 hours per year of donated time. Terry Tillman will assist with generating and analyzing commercial landings data, Commercial Passenger Fishing Vessel (CPFV) data, and California Recreational Fishing Survey (CRFS) data.

B. FRINGE BENEFITS

The HSU Sponsored Programs Foundation employer-paid benefit rate is 15.77% for Steve Hackett, Laurie Richmond, and the Research Associate.

The Graduate Student benefits rate is calculated at different rates depending on the time of year the student works (HSU's identifed summer months worked versus academic year months worked.). The rate during HSU's summer months is 15.77%; the rate during the academic year months is 8.12%. An average rate of .1172 is used to calculate benefits for the Graduate Student.

$1412 in Fringe Benefits is being calculated on the Grantee Share salary in the required eseagrant budget template. The match salary is volunteer time and therefore no fringe is/should be expensed. This issue was brought to the attention of Rose Madson and Carol Bailey-Sumber with Sea Grant. Carol indicated there is no fix to this problem at this time. They indicated to make a notation of this issue in this Justify tabs.

C. PERMANENT EQUIPMENT

D. EXPENDABLE SUPPLIES AND EQUIPMENT

N/A

E. TRAVEL

1. Domestic - US and its Possessions (inc. Puerto Rico)

PROJECT TRAVEL BUDGET - YEAR 3

$11,290 is requested for travel expenses related outreach meetings, Monitoring Enterprise meetings, meeting with project PIs, and conference travel.

Outreach Meetings
$4,800 is requested for 2 people for 10 days: $140 for Hotel; $50 for Meals, $50 for car/gas.

Meetings with Monitoring Enterprise and other Project PIs
$490 is requested for for 2 people for 1 day: $140 for Hotel; $50 for Meals, $50 for car/gas.

Data and Project Review Meetings with HSU staff
$3,360 is requested for 2 people for 7 days: $140 for Hotel; $50 for Meals, $50 for car/gas.

Conference Travel
$2,640 is requested for 3 people for 2 days to attend a conference: $400 for Airfare; $140 for Hotel; $50 for Meals, $50 for car/gas.

Total Project Travel, Year 3 = $11,290

FISHERMEN ADVISORY COUNCIL MEETINGS - YEAR 3

$1,500 is requested for mileage and meals for participants on the Fishermen Advisory Council.

2. International

F. PUBLICATIONS AND DOCUMENTATION COSTS

N/A

G. OTHER COSTS

Other cost subject to indirect : Stipends - Fishermen Advisory Council - $8000 Total
$8,000 is requested to compensate Fisherman Advisory Council participants for their time and travel expenses.

Other cost subject to indirect : Meeting Expenses, Space Rental - Fishermen Advisory Council - $200 Total
$200 is requested to reserve meeting spaces for the various fishermen meetings held off campus. Meetings are usually held at harbor offices or other meeting spaces near fishing harbors that are convenient to fishermen. A small fee is usually charged for utilizing these spaces.

Other cost subject to indirect : Food for meetings - Fishermen Advisory Council - $600 Total
$600 is requested to provide food for Fishermen Advisory Council and focus group meetings. As it is difficult to attract fishermen and others to participate in research projects, food is an essential element to create a welcoming setting for participation.

Other cost subject to indirect : Conference Registration Expense - $1000 Total
$1,000 is requested to cover registration fees to attend a conference in Year 3.

INDIRECT COSTS

[on-campus] includes: salaries (SG rt: 0.25, Inst. rt: 0.45), fringe benefits (SG rt: 0.25, Inst. rt: 0.45), expendable eq. (SG rt: 0.25, Inst. rt: 0.45), travel (SG rt: 0.25, Inst. rt: 0.45), publications (SG rt: 0.25, Inst. rt: 0.45), other costs (SG rt: 0.25, Inst. rt: 0.45)
Indirect costs are being requested.

Humboldt State University Sponsored Programs Foundation's federally approved IDC rate is 45%; however, the NCMPA Sea Grant maximum IDC rate is 25%. HSU SPF is applying Sea Grant's 25% IDC rate to this project and the remaining 20% is applied to waived IDC match.

NOTE: $1412 in Fringe Benefits is being calculated on the Grantee Share salary in the required eseagrant budget template. The match salary is volunteer time, therefore no fringe or IDC is/should be expensed. This issue was brought to the attention of Rose Madson and Carol Bailey-Sumber with Sea Grant. Carol indicated there is no fix to this problem at this time. They indicated to make a notation of this issue in this Justify tabs on eseagrant budget templates.

SEA GRANT BUDGET WORKSHEET

Is this award to a non-UCSD investigator? yes

If yes, does your institution have an active sub-award w/ this SG program?

Duration (months) : 02/01/16 - 01/31/17

Worksheet Title : ECOTRUST, Subcontractor, Year 3

Budget Type : off-campus

A. SALARIES AND WAGES	mo. salary	benefits %	sea grant mos. effort	grantee mos. effort	**SEA GRANT FUNDS**	**GRANTEE SHARE**
1. SENIOR PERSONNEL						
Chen, Cheryl [Co-PI]	5,154	0.39	3.6059	0	18,585	0
Steinback, Charles [Co-PI]	7,377	0.39	0.5769	0	4,256	0
2. OTHER PERSONNEL						
Program Associate [Professional]	4,447	0.39	1.7307	0	7,696	0
Economist [Professional]	4,447	0.39	1.4423	0	6,414	0
Senior GIS Analyst [Professional]	5,154	0.39	0.2885	0	1,487	0
Software Developer III [Professional]	5,255	0.39	1.3847	0	7,277	0
Graphic Designer [Professional]	5,154	0.39	0.4615	0	2,379	0
Development Staff [Professional]	5,770	0.39	0.12	0	692	0
Finance Staff [Professional]	4,835	0.39	0.12	0	580	0
MCI Business Director [Professional]	7,378	0.39	0.3462	0	2,554	0
Total Salaries and Wages					51,920	0
B. FRINGE BENEFITS					20,249	0
C. PERMANENT EQUIPMENT - *No Indirect Costs*						
Total Permanent Equipment						
D. EXPENDABLE SUPPLIES AND EQUIPMENT					0	0
E. TRAVEL						
1. Domestic - US and its Possessions (inc. Puerto Rico)					15,180	0
2. International						
Total Travel					15,180	0
F. PUBLICATIONS AND DOCUMENTATION COSTS					2,000	0
G. OTHER COSTS						
Other cost subject to indirect - Conference Registration Expense					1,000	0
Total Other Costs					1,000	0
Total Direct Costs (A through G)					90,349	0

H. INDIRECT COSTS

IDC Management by Section Included:	A ☒	B ☒	D ☒	E ☒	F ☒	G ☒	IDC Subtotal sea grant	grantee		
	0.1614	0.1614	0.1614	0.1614	0.1614	0.1614	90,349	0	14,582	0
	0.1614	0.1614	0.1614	0.1614	0.1614	0.1614	☐ Waived IDC as Match			0

Total Costs	104,931	0

BUDGET JUSTIFICATION

A. SALARIES AND WAGES

1. SENIOR PERSONNEL

Cheryl Chen [Co-PI - off-campus], Mos. Effort: 3.6059 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $5154
REQUEST: Chen will contribute 3.6059 months effort in Year 3.
In Year 3 Chen will continue to perform overall project management of all internal Ecotrust staff and coordinate with project partners.This includes coordinating with HSU staff and managing internal Ecotrust staff to analyze survey data collected. Data analysis includes analysis of fisheries landings data for the commercial, CPFV, and recreational fishing sector and analysis of spatial data collected. Chen will also collaborate with HSU staff to summarize project results and develop final products and reports. Chen will also co-lead on finalizing and reporting out on findings as it relates to designing a long-term monitoring tool/system.
Charles Steinback [Co-PI - off-campus], Mos. Effort: 0.5769 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $7377
REQUEST: Steinback will contribute 0.5769 months effort in Year 3.
In Year 3 Steinback will continue to provide overall project technical expertise and input for project design and implementation. Steinback will also continue to co-lead and provide oversight and technical expertise to engage stakeholders in designing a long term monitoring tool/system.

2. OTHER PERSONNEL

Program Associate [Professional - off-campus], Mos. Effort: 1.7307 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4447
REQUEST: Program Associate will contribute 1.7307 months effort in Year 3.
The Program Associate will help provide overall project support and analyze survey data, assist in conducting community reviews of data analysis results, and assist in report development.
Economist [Professional - off-campus], Mos. Effort: 1.4423 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4447
REQUEST: Economist will contribute 1.4423 months of effort in Year 3
The Economist will finalize all analyses and write ups of CDFW landings data for the commercial, CPFV, and recreational fishing sectors. This includes incorporate all feedback/input received from fishermen and stakeholder that help interpret results.
Senior GIS Analyst [Professional - off-campus], Mos. Effort: 0.2885 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $5154
REQUEST: Senior GIS Analyst will contribute 0.2885 months effort in Year 3.
The Senior GIS Analyst will provide technical expertise and oversight on creating all final spatial data products and data sets for final delivery.
Software Developer III [Professional - off-campus], Mos. Effort: 1.3847 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $5255
REQUEST: Software Developer III will contribute 1.3847 months effort in Year 3.
Software Developer III will continue to provide technical design specifications and tool/system mock ups to better engage stakeholders in the design of a long term monitoring system/tool. The Software Developer III will also provide a final technical write up, design specifications, and recommendation for a long-term monitoring system and tool.
Graphic Designer [Professional - off-campus], Mos. Effort: 0.4615 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $5154
REQUEST: Graphic Design will contribute 0.4615 months effort in Year 3.
The Graphic Designer will help develop a polished product that may be used to easily disseminate project results to a wide audience in a compelling and graphically driven format
Development Staff [Professional - off-campus], Mos. Effort: 0.12 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $5770
REQUEST: Ecotrust development staff will contribute .12 months effort each year of the project, working closely with the project team and Ecotrust finance staff to ensure the timely and accurate submission of all progress reports, financial reports, and other administration as required by Sea Grant. Ecotrust's development personnel have significant past experience with managing Sea Grant program awards, along with relevant matching funds, according to the specifications of the program. Development staff will actively support the project team throughout the duration of the award.
Finance Staff [Professional - off-campus], Mos. Effort: 0.12 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $4835
REQUEST: Ecotrust finance staff will contribute 0.12 months effort each year of the project, working closely with the project team and Ecotrust development staff to ensure the timely and accurate submission of all invoices, financial reports, and other administration as required by Sea Grant. Ecotrust's finance personnel have significant past experience with managing Sea Grant awards, along with relevant matching funds, according to the specifications of the program. Finance staff will actively support the project team throughout the duration of the award.
MCI Business Director [Professional - off-campus], Mos. Effort: 0.3462 SG 0 Grantee, Benefits Rt.: 0.39, Mo. Salary: $7378
REQUEST: Marine Consulting Initiative (MCI) Business Director will contribute 0.2596 months effort in Year 3.
The MCI Business Director works closely with project staff and finance and development personnel to approve all final documents/reports, invoices, and budgets to ensure the timely and accurate submission of all required materials to Sea Grant.

B. FRINGE BENEFITS

Fringe benefits are calculated at 39% of base salary (Ecotrust's approved institutional rate). Benefits include health, dental, and vision insurance, paid time off, payroll taxes, retirement, and disability.

C. PERMANENT EQUIPMENT

D. EXPENDABLE SUPPLIES AND EQUIPMENT

E. TRAVEL

1. Domestic - US and its Possessions (inc. Puerto Rico)

REQUEST: Funds are requested to support travel for project staff to meet and work with project partners, stakeholders, and fishermen in the study region. This estimate includes airfare, hotel, meals, car rental, gas, and other trip expenditures. This estimate is based on past costs incurred for similar work organized by staff on previous projects.

2. International

F. PUBLICATIONS AND DOCUMENTATION COSTS

REQUEST: Funds are requested to print final project materials to widely disseminate and promote project results to the North Coast fishing community, researchers, managers, and other stakeholders.

G. OTHER COSTS

Other cost subject to indirect : Conference Registration Expense - $1000 Total
REQUEST: Funds are requested for conference registration costs. Conference presentations will be used to promote and disseminate project results.

INDIRECT COSTS

[off-campus] includes: salaries (SG rt: 0.1614, Inst. rt: 0.1614), fringe benefits (SG rt: 0.1614, Inst. rt: 0.1614), expendable eq. (SG rt: 0.1614, Inst. rt: 0.1614), travel (SG rt: 0.1614, Inst. rt: 0.1614), publications (SG rt: 0.1614, Inst. rt: 0.1614), other costs (SG rt: 0.1614, Inst. rt: 0.1614)
Indirect costs are budgeted at 16.14% calculated on a base of salaries, benefits, travel, and other costs.

Current and Pending Support

Other Agencies (including NSF) to which this proposal has been/will be submitted

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Investigator : Steven Hackett

Support : current

Project / Proposal Title : Sustaining Fishing Communities by Enhancing Value in a Landings-Constrained Environment

Source of Support : California Sea Grant College

Total Award Amount : 166702 **Total Award Period Covered :** 2/1/2012 - 2/1/2014

Location of Project : California & West Coast US

Person-Months Per Year Committed to Project : **Cal.:** 0 **Acad:** 0 **Sumr:** 0.86

Investigator : Cheryl Chen

Support : current

Project / Proposal Title : U.S. Mid-Atlantic Coastal Recreation Study

Source of Support : Surfrider Foundation

Total Award Amount : 159000 **Total Award Period Covered :** 1/1/2013 - 7/31/2014

Location of Project : U.S. Mid Atlantic

Person-Months Per Year Committed to Project : **Cal.:** 2.5 **Acad:** 0 **Sumr:** 0

Investigator : Charles Steinback

Support : current

Project / Proposal Title : U.S. Mid-Atlantic Coastal Recreation Study

Source of Support : Surfrider Foundation

Total Award Amount : 159000 **Total Award Period Covered :** 1/1/2013 - 7/31/2014

Location of Project : U.S. Mid Atlantic

Person-Months Per Year Committed to Project : **Cal.:** 0 **Acad:** 0 **Sumr:** 0

Current and Pending Support

Other Agencies (including NSF) to which this proposal has been/will be submitted

---

Investigator : Cheryl Chen

Support : current

Project / Proposal Title : Monitoring and mapping human uses in the South Coast of California for MPA monitoring

Source of Support : California Sea Grant

Total Award Amount : 575000 **Total Award Period Covered :** 7/1/2011 - 6/30/2014

Location of Project : South Coast of California

Person-Months Per Year Committed to Project : **Cal.:** 3 **Acad:** 0 **Sumr:** 0

Investigator : Charles Steinback

Support : current

Project / Proposal Title : Monitoring and mapping human uses in the South Coast of California for MPA monitoring

Source of Support : California Sea Grant

Total Award Amount : 575000 **Total Award Period Covered :** 7/1/2011 - 6/30/2014

Location of Project : Sout'

Person-Months Per Year Committed to Project : **Cal.:** 1 **Acad:** 0 **Sumr:** 0

Investigator : Cheryl Chen

Support : current

Project / Proposal Title : The Values of Place: Recreation and Cultural Ecosystem Services in Puget SOund

Source of Support : Puget Sound Institute

Total Award Amount : 117000 **Total Award Period Covered :** 7/1/2013 - 12/31/2014

Location of Project : Washington Puget Sound

Person-Months Per Year Committed to Project : **Cal.:** 1 **Acad:** 0 **Sumr:** 0

Current and Pending Support

Other Agencies (including NSF) to which this proposal has been/will be submitted

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Investigator : Cheryl Chen

Support : pending

Project / Proposal Title : Mapping and understanding spatial patterns and the economic value of coastal recreation along the U.S. West Coast region

Source of Support : Sea Grant

Total Award Amount : 216013 **Total Award Period Covered :** 2/1/2014 - 1/31/2016

Location of Project : US West Coast

Person-Months Per Year Committed to Project : **Cal.:** 1.5 **Acad:** 0 **Sumr:** 0

Investigator : Cheryl Chen

Support : current

Project / Proposal Title : Southern California Digital Deck

Source of Support : Marisla Foundation

Total Award Amount : 40000 **Total Award Period Covered :** 6/15/2013 - 5/31/2014

Location of Project : South Coast of California

Person-Months Per Year Committed to Project : **Cal.:** 1 **Acad:** 0 **Sumr:** 0

Investigator : Charles Steinback

Support : current

Project / Proposal Title : Southern California Digital Deck

Source of Support : Marisla Foundation

Total Award Amount : 40000 **Total Award Period Covered :** 6/15/2013 - 5/31/2014

Location of Project : South Coast of California

Person-Months Per Year Committed to Project : **Cal.:** 1 **Acad:** 0 **Sumr:** 0

Current and Pending Support

Other Agencies (including NSF) to which this proposal has been/will be submitted

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Investigator : Charles Steinback

Support : current

Project / Proposal Title : US Virgin Islands Digital Deck Project

Source of Support : NFWF

Total Award Amount : 168587 **Total Award Period Covered :** 7/1/2013 - 6/30/2014

Location of Project : US Virgin Islands

Person-Months Per Year Committed to Project : **Cal.:** 1 **Acad:** 0 **Sumr:** 0

Investigator : Charles Steinback

Support : current

Project / Proposal Title : US Virgin Islands and Puerto Rico Digital Deck Project

Source of Support : NOAA Coral Reef Conservation Program

Total Award Amount : 75000 **Total Award Period Covered :** 7/1/2013 - 6/30/2014

Location of Project : US Virgin Islands and Puerto Rico

Person-Months Per Year Committed to Project : **Cal.:** 1 **Acad:** 0 **Sumr:** 0

Investigator : Charles Steinback

Support : current

Project / Proposal Title : Oregon Digital Deck Pilot Project

Source of Support : Goodman Foundation

Total Award Amount : 10000 **Total Award Period Covered :** 10/1/2013 - 9/30/2014

Location of Project : Oregon

Person-Months Per Year Committed to Project : **Cal.:** 0.5 **Acad:** 0 **Sumr:** 0

Abridged CV: Steven C. Hackett

Department of Economics, Siemens Hall 206b
Humboldt State University, Arcata, California 95521-8299

Professional Preparation:

- **Ph.D.** 1989 (Economics) Texas A&M University, College Station, Texas
- **M.S.** 1986 (Economics) Texas A&M University, College Station, Texas
- **B.S.** 1983 (Agricultural Business/Economics) Montana State University, Bozeman, Montana (honors)

Appointments:

- Professor, Department of Economics, HSU, Arcata, CA, July 2002 - present; Associate Professor, 1997 - 2002; Assistant Professor, 1994 – 97.
- Associated Faculty: ETaP; Env. Science & Mgmt; Env. Stud; HSU.
- Administration: Chair/Coordinator, Department of Economics, HSU (1996-2002; 2004-2006, Aug 2013-present). Chair, School of Business, 2011-12. Associate Dean of CPS, HSU, 2010-2013.
- Assistant Professor, Department of Economics, Indiana University, Bloomington, IN, 1989 - 1994.

Selected Publications Since 2000:

Scholarly Peer-Reviewed Articles:

- Hackett, S., L. Scheidler, and R. Garcia Jr. "Humboldt County as a Renewable Energy Secure Community: Economic Analysis Report." Report CEC-500-2013-020. Sacramento, CA: CEC, 2013.
- Hackett, S. "Economic and Social Considerations for Wave Energy Development in California." In P. Nelson and L. Engeman (eds.) *Developing Wave Energy in Coastal California: Socio-Economic and Environmental Effects.* Report CEC-500-2008-083. Sacramento, CA: CEC, 2008, pp. 23-49.
- Kellermann, J., M. Johnson, A. Stercho, and S. Hackett. "Ecological and Economic Services Provided by Birds on Jamaican Blue Mountain Coffee Farms," *Conservation Biology*, 22(5), 2008, 1177 - 1185.
- Hackett, S., D. Hankin, M. Krachey, and S. Brown. "Derby Fisheries, Individual Quotas, and Transition in the Fish Processing Industry," *Marine Resource Economics*, April 2005, 20, pp. 47-60.
- Dewees, C., K. Sortais, S. Hackett, M. Krachey, and D. Hankin. "Racing for Crabs: Costs and Management Options in Dungeness Crab Fishery," *California Agriculture*, 2004, 58, pp. 186-93.
- Hackett, S., M. Krachey, C. Dewees, D. Hankin, and K. Sortais. "Characteristics of Dungeness Crab (*Cancer magister*) Processing in California," *California Agriculture*, 2004, 58, pp. 190.
- Hackett, S., M. Krachey, C. Dewees, D. Hankin, and K. Sortais. "An Economic Overview of Dungeness Crab (*Cancer magister*) Processing in California," *California Cooperative Oceanic Fisheries Investigations Reports*, 2003, 44, pp. 86-93.
- Maxwell, J., T. Lyon and S. Hackett, "Self-Regulation and Social Welfare: The Political Economy of Corporate Environmentalism," *Journal of Law and Economics* October 2000, 43, pp. 583-618.

Scholarly Books:

- Hackett, S., *Environmental and Natural Resources Economics: Theory, Policy, and the Sustainable Society, 4th edition* (New York: M.E. Sharpe, 2011).

Scholarly Technical Reports and Contributions to Edited Volumes:

- Johnson, M., and S. Hackett. "Why Birds Matter Economically: Values, Markets, and Policies." In C. Sekercioglu, D. Wenny, and C. Whelan (eds.) *Why do birds matter? Birds' ecological functions and ecosystem services*. University of Chicago Press, 2014 (forthcoming).
- Hackett, S., S. Kramer, D. Hansen, and D. Zajanc. "An Economic Report on the Recreational and Commercial Spiny Lobster Fisheries of California." Technical Report under Contract HTH2012-01, California Department of Fish and Wildlife / CA Wildlife Foundation, Sacramento, CA. 2013.

- Hackett, S. "Weak vs. Strong Sustainability: Concepts and Indicators." In D. Fogel, S. Fredericks, and L. Harrington (eds.) *Encyclopedia of Sustainability, Volume 6: Measurements, Indicators, and Research Methods for Sustainability.* Great Barrington, MA: Berkshire Publishing Group, 2012.
- Hackett, S. "Weak vs. Strong Sustainability Debate." In K. Bosselmann, D. Fogel, and J. Ruhl (eds.) *Encyclopedia of Sustainability, Volume 3: The Law and Politics of Sustainability.* Great Barrington, MA: Berkshire Publishing Group, 2011, 505-07.
- Hackett, S., D. King, M. Hansen, and E. Price. *The Economic Structure of California's Commercial Fisheries*. Technical Report under Contract P0670015, California Department of Fish and Game, Sacramento, CA. 2009.
- Hackett, S., and M. Hansen. *Cost and Revenue Characteristics of the Salmon Fisheries in California and Oregon*. Technical Report under Contract 8404-S-004, National Marine Fisheries Service, Washington, DC. 2008.
- Hackett, S. "Natural Resources." In A. Vaidya (ed.) *Globalization: Encyclopedia of Trade, Labor, and Politics, Volume 2.* Santa Barbara, CA: ABC-CLIO, 2006, p. 820-828.
- Hankin, D., S. Hackett, and C. Dewees. "California's Dungeness Crab: Conserving the Resource and Increasing the Net Economic Value of the Fishery." 2005. *California Sea Grant College Program Research Completion Reports*.
- Hackett, S. "Management of Ocean Fisheries." In *Water: Science and Issues*, ed. E. Julius Dasch. New York: Macmillan Reference USA, 2003.
- Hackett, S. "An Economic Overview of the California Wetfish Industry Complex." In D. Pleschner-Steele (ed.) *California's "Wetfish" Industry: It's Importance Past, Present and Future.* Santa Barbara, CA: California Seafood Council, 2002.

Grants and Contracts:

- Co-Project Director (with Ana Pitchon), Sea Grant College Program grant, Sustaining Fishing Communities by Enhancing Value in a Landings-Constrained Environment, 2012-14.
- Co-Project Director (with H.T. Harvey & Associates), California Department of Fish and Wildlife / CA Wildlife Foundation, *Economic Overview of the California Spiny Lobster Fishery*, 2012-13.
- Co-PI, PG&E Wave Energy Contract, *Humboldt WaveConnect Pre-Licensing Studies*, 2010-2011.
- Faculty Research Associate (with SERC), California Energy Commission Public Interest Energy Research Program RESCO grant, *Planning for Renewable-Based Energy Security and Prosperity in Humboldt County*, 2009-2011 (also Headwaters Fund grant match for same project).
- Co-PI, California Ocean Protection Council Contract, *Economic and Social Considerations for Wave Energy Development in California*, 2008.
- Faculty Research Associate (with SERC), Department of Energy contract, *Wind and Hydro Energy Feasibility Study for the Yurok Tribe*, 2007-10.
- Project Director, NOAA Fisheries contract, *The Economic Structure of the Salmon Troll Fishery in California and Oregon*, 2007-08.
- Project Director, California Department of Fish and Game contract, *The Economic Structure and Impact of California's Commercial Fisheries*, 2007-09.
- Co-Project Director, California Integrated Waste Management Board contract, *Market Plan*, 2006-07.
- Co-Project Director, California Sea Grant College Program grant, *California's Dungeness Crab: Conserving the Resource and Increasing the Net Economic Value of the Fishery* (with Dave Hankin of HSU and Chris Dewees of UC-D), 2001-2004.
- Co-PI, California Seafood Council, *The Socio-Economics of the California Wetfish Industry*, (with Carrie Pomeroy of UC-SC), 2001.
- Principal Investigator, National Science Foundation grant award SBR-9222656, *Strategic Information in Bargaining and Contracting*, jointly funded by the Decision, Risk, and Management Sciences Program and Economics Program, 1992-94.

Awards:

- 2007 Outstanding Faculty Award, SDRC, Humboldt State University.
- 2005 Scholar of the Year, Humboldt State University.

CHERYL T. CHEN

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Cheryl is currently the marine planning project manager at Ecotrust Marine Consulting Initiative (MCI). She has extensive expertise in large scale spatial data collection projects that focus on mapping and understanding patterns of human uses to inform marine spatial planning efforts. These projects typically involve extensive community engagement and collaboration, mixed methods survey design, spatial survey tool design/development, and spatial data analytics.

PUBLICATIONS REFLECTING PROJECT EXPERIENCE

- **Chen, C.**, LaFranchi, C., Sheeran, K., and C. Steinback,. 2013 (pending submission in April 2013). A four-part report series for the California North Central Coast Baseline MPA Monitoring Program: 1) Spatial patterns of Coastal Recreation in the North Central Coast of California; 2) Establishing a spatial and economic baseline in the California North Central Coast Commercial Fisheries and assessing initial changes; 3) Establishing a spatial and economic baseline in the California North Central Coast CPFV Fisheries and assessing initial changes; and 4) Establishing a spatial and economic baseline in the California North Central Coast Recreational Abalone Fishery. Report to California Sea Grant.
- **Chen, C.**, and 9 other contributing authors. 2012. Assessing Spatial and Socioeconomic Change in the California Central Coast Commercial and CPFV Fisheries. Report to the MPA Monitoring Enterprise, California Ocean Science Trust.
- **Chen, C.**, T. Hesselgrave, J. Bonkoski, C. Steinback, J. Bloeser. 2011. Monterey Bay National Marine Sanctuary Socioeconomic Profile. Report to the Monterey Bay National Marine Sanctuary.
- Hesselgrave T., C. Steinback, **C. Chen**, K. Sheeran, J. Bonkoski, S. Kruse, J. Stevenson, S. Fletcher, L. Weiss, N. Lyman. 2011. Shoreside Economic Analysis for the Oregon Territorial Sea Plan. Report to the Oregon Department of Fish and Wildlife.
- Scholz, AJ., C. Steinback, S. Kruse, **C. Chen**, J. Bonkoski, L. Weiss, N. Lyman. 2011. *Commercial and recreational fishing grounds and their relative importance off the North Coast of California*. Report to the California Marine Life Protection Act Initiative. Contract No. 06-054, Ocean Protection Council and No. 2007-0114M, Resources Legacy Fund Foundation.
- Steinback, C., S. Kruse, **C. Chen**, J. Bonkoski, T. Hesselgrave, L. Weiss, N. Lyman., AJ. Scholz, E. Backus. 2010. *Supporting the Oregon Territorial Sea Plan Revision: Oregon Fishing Community Mapping Project.* Report to The David & Lucile Packard Foundation, Oregon Department of Land Conservation and Development, Oregon Wave Energy Trust, and Oregon Coastal Zone Management Association.
- Steinback, C., S. Kruse, **C. Chen**, J. Bonkoski, L. Weiss, N. Lyman. 2010. *St. Kitts and Nevis Fisheries Uses and Values Project.* Report to The Nature Conservancy Southeastern Caribbean Program and Global Marine Team. Contract No. FY10-C-AID-ECaribe-Ecotrust.

EDUCATION

- **University of California, Santa Barbara**
  Geography Department, *PhD Candidate in Human-Environment Relations*
- **University of California, Santa Barbara**
  The Donald Bren School of Environmental Science and Management,
  Masters of Environmental Science and Management
- **San Francisco State University**
  Bachelor of Science in Environmental Studies

LAURIE S. RICHMOND
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Humboldt State University, Arcata, CA 95521
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EDUCATION

University of Minnesota, Twin Cities, MN — February 2011
PhD Fisheries, Wildlife, & Conservation Biology
Dissertation: *Regulating a Mystery: Science, colonialism, and the politics of knowing in the Pacific halibut commons*
Research examined how Alaska Native communities have navigated changes in the science, management, and biology of the culturally and economically important Pacific halibut fishery.

Middlebury College, Middlebury VT — 2002
B.A. Biology Major, Spanish Minor

EMPLOYMENT

Humboldt State University, Arcata, CA — August 2012 - present
Assistant Professor, Environmental and Natural Resources Planning
Courses: Human Dimensions of Natural Resources, Coastal and Marine Planning, Environmental Impact Assessment, Senior Planning Practicum

NOAA Fisheries, Pacific Islands Fisheries Science Center, Honolulu, HI — 2010 – 2012
Social Scientist, Human Dimensions Research Program
Assisted with the design, implementation, and publication of human dimensions research regarding the fisheries of the Western Pacific region of the United States.

SELECTED PUBLICATIONS

Richmond, L. 2013. Incorporating Indigenous Rights and Environmental Justice into Fishery Management: Comparing Policy Challenges and Potentials from Alaska and Hawaii. *Environmental Management.* Online first.

Richmond, L. and A. Levine. 2012. Institutional Analysis of Community-based Marine Resource Management Initiatives in Hawai`i and American Samoa. NOAA Technical Memorandum: Pacific Islands Fisheries Science Center. Honolulu, HI.

Richmond, L., D. Kotowicz, J. Hospital, S. Allen. 2011. Adaptations in a Fishing Community: Monitoring Socioeconomic Impacts of Hawaii's Bigeye Tuna Closure. NOAA Internal Report: Pacific Islands Fisheries Science Center. Honolulu, HI

Kotowicz, D., **L. Richmond**, S. Allen, J. Amesbury, R. Oram. (in press). Traditional Fishing Patterns in the Islands Unit of the Marianas Trench Marine National Monument. NOAA Technical Memorandum: Pacific Islands Fisheries Science Center. Honolulu, HI.

Richmond, L. (in press). Anagyuk (Partner): Personal Relationships and the Exploration of Sugpiaq Fishing Geographies in Old Harbor, AK. In J. Johnson and S. Larson eds. *A Deeper Sense of Place: New Geographies of Indigenous-Academic Collaboration* Oregon State University Press.

Richmond, L.S., D. DiPiero, F. Espinoza, T. Simeonoff, and M. Faraday. 2010. We Shared the Same Chapter: Collaboration, learning, and transformation in the Environment and Community Well-being Native Youth Exchange in Old Harbor, Alaska. *Journal of Higher Education Outreach and Engagement.* 14 (4): 63 - 82.

SELECTED PRESENTATIONS

Richmond, L. 2013. Regulations and Power: Politics of 'Traditional Indigenous Fishing' in the Marinas Trench Marine National Monument. Association of American Geographers Annual Meeting: Coastal and Marine Specialty Group, Los Angeles, CA.

Richmond, L. and D. Kotowicz. 2011. Socioeconomic Impacts of the 2010 Bigeye Fishery Closure. 150th Western Pacific Regional Fishery Management Council Meeting. Pago Pago, American Samoa.

D. Kotowicz and **Richmond, L.** 2011. Distribution Channels for Longline-Caught Fish in Hawaii. Pelagic Fisheries Research Program Principal Investigators Workshop. Honolulu, HI.

Richmond, L. 2012. Fishscapes and Power: Alaska Natives and the Politics of Place-making in the Pacific Halibut Fishery. Association of American Geographers Annual Meeting: Coastal and Marine Specialty Group, Indigenous Peoples Specialty Group. New York, NY.

Richmond, L.S. 2011. Confronting the Colonial Legacy of Fisheries Management: Policy Challenges and Possibilities. Native American and Indigenous Studies Association (NAISA) Conference. Sacramento, CA.

Richmond, L.S. 2010. Allotting the Oceans: Impacts and renewal following halibut fishery privatization in Old Harbor, AK. NAISA Conference. Tuscon, AZ.

Richmond, L.S. 2009. Have you heard the one where…?: What contemporary stories from the Alaska Native village of Old Harbor reveal about the American Indigenous experience in a fishing context. American Society for Ethnohistory. New Orleans, LA.

SELECTED GRANTS & FELLOWSHIPS

Co-PI: *Knowledge, Attitudes, and Perceptions of Coral Reefs in the Two Hawaii Priority Sites.* NOAA Coral Reef Conservation Program 2012
Award: $130,000 over two years

NSF Graduate Research Fellowship 2006-2009
Award: $30,000 stipend, tuition, and health benefits per year for 3 years

NSF Doctoral Dissertation Improvement Grant 2007-2009
Award: $12,000 for research expenses

CIRRICULUM VITAE

Charles Steinback
Director of Marine Planning
721 NW Ninth Street, Suite 200
Portland, OR 97210
Phone: 503-467-0777 | E-mail: charles@ecotrust.org

Mr. Steinback leads Ecotrust's Marine Planning program and specializes in applying Geographic Information System (GIS) tools to a better understanding and integration of the social, economic, and ecological dimensions of marine spatial planning and resource management. He directs numerous spatial planning projects along the West Coast and internationally, has experience coordinating stakeholder meetings, and applies his learning to the ongoing development of spatial planning methodologies and tools.

At Ecotrust, Steinback is responsible for managing and implementing multi-phase projects and contracts to client-specific standards. He oversees a marine planning staff that includes GIS Analysts, Software Developers, Economists, and Technicians, and works with the Business and Project Managers to allocate these staff to projects.

Steinback's roots are in the fishing community of Astoria, Oregon.

Relevant Project Experience:

Fisheries Data Collection Using Mobile Technology
Co-directing the development, implementation, and use of mobile technology – eCatch mobile - to collect near real-time fishing effort information. This work is in support of The Nature Conservancy's Morro Bay trawl fishery permit leasing program. The use of eCatch mobile will allow TNC to further explore and implement diversification of harvest techniques, zoning of trawl fishing, community management of fishing privileges through field testing of Community Fishing Associations and Community Quota Banks, harvest information sharing, and collective bycatch avoidance planning.

Fisheries Data Collection to Support Marine Zoning in the Caribbean
Directed the collection and analysis of commercial fisher data in support of The Nature Conservancy's work to develop a national marine zoning plan for The Federation of St. Kitts and Nevis, a two-island nation located in the Leeward Islands of the Caribbean West Indies. The goals of the marine zoning plan were to accommodate both existing and future human uses while minimizing conflicts between user groups and maintaining healthy marine habitats and ecosystems.

Protected Area Support for California's Marine Life Protection Act (MLPA) Initiative
Directed a multi-phase project to compile a comprehensive picture of commercial and recreational fishing use patterns in California's territorial sea, Steinback has organized the collection of local expert knowledge in over 1,200 portside interviews, participated in dozens of stakeholder meetings, and worked with Ecotrust staff in the development of the Open OceanMap tool for spatially explicit data collection and aggregation.

Decision Support for the MLPA Initiative
Co-directed the development of MarineMap, a real-time, web-based decision support tool for use by managers, scientists, stakeholders, and others in the MLPAI.

Decision Support for Marine Spatial Planning in Oregon
Co-directed the development of Oregon MarineMap, a real-time, web-based decision support

tool for use by resource managers, scientists, stakeholders, and the public to conduct spatial planning in the Oregon Territorial Sea.

Fisheries Mapping for the Oregon Territorial Sea Plan
Directed the collection and compilation of spatially explicit information on commercial and recreational socioeconomic fishing values for inclusion in the design and implementation of special use areas for wave energy development as part of the Oregon Territorial Sea Plan.

Community Support for the California Fisheries Coalition
Directed project to provide analytical and technical support to recreational and commercial fishing groups seeking to engage in MLPAI process.

Community Support for the Port Orford Ocean Resource Team
Directed development of tools to support community-based mapping and participatory decision making on the Oregon coast.

Fisheries Profiles for the California National Marine Sanctuaries
Supported a process of research and stakeholder engagement to create fisheries profiles for the Gulf of the Farallones, Cordell Bank, and Monterey Bay National Marine Sanctuaries.

Education:

B.S. cum laude, Fisheries Conservation and Management, University of Massachusetts, 2001.

Selected Publications:

Scholz, A. J., C. Steinback, S. A. Kruse, M. Mertens, and Howard Silverman, In Press, Incorporation of spatial and economic analysis of human-use data in the design of marine protected areas. Conservation Biology.

Watts, M. E., I. R. Ball, R. S. Stewart, C. J. Klein, K. Wilson, C. Steinback, R. Lourival, L. Kircher, and H. P. Possingham, 2009. Marxan with Zones: software for optimal conservation based land- and sea-use zoning (in press).

Klein, C. J., C. Steinback, M. Watts, A. J. Scholz, and H. Possingham, 2009. Spatial marine zoning for fisheries and conservation. Frontiers in Ecology and the Environment (accepted for publication).

Alidina, H. M., D. T. Fischer, C. Steinback, Z. Ferdana, A. V. Lombana, and F. Heuttmann, 2008. "Assessing and Managing Data". In J. A. Ardron, H. P. Possingham, and C. J. Klein (eds.), Marxan Good Practices Handbook, Vancouver, Canada: Pacific Marine Analysis and Research Association.

Fischer, D. T., H. M. Alidina, C. Steinback, A. V. Lombana, P. I. Ramirez de Arellano, Z. Ferdana, and C. J. Klein, 2008. "Ensuring Robust Analysis". In J. A. Ardron, H. P. Possingham, and C. J. Klein (eds.), Marxan Good Practices Handbook, Vancouver: Pacific Marine Analysis and Research Assn.

Klein, C. J., C. Steinback, A. J. Scholz, and H. P. Possingham, 2008. Effectiveness of marine reserve networks in representing biodiversity and minimizing impact to fishermen: a comparison of two approaches used in California. Conservation Letters 1(1), 44–51.

Scholz, A. J., C. Steinback, S. Kruse, M. Mertens, and M. Weber, 2008. Commercial and recreational fishing grounds and their relative importance off the North Central Coast of California. Report to the California Marine Life Protection Act Initiative. Contract No. 06-054, Ocean Protection Council and No. 2007-0114M, Resources Legacy Fund Foundation.

Scholz, A. J., C. Steinback, and M. Mertens, 2006. Commercial Fishing Grounds off the Coast of Central California. Report to the California Marine Life Protection Act Initiative. Contract No. 2005-0067M.

ecotrust

July 15, 2013

Dr. James Eckman, Director
California Sea Grant College Program
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive, Dept. 0232
La Jolla, California 92093-0232

Re: Letter of Commitment for Marine Life Protection Act Support

Dear Dr. Eckman,

Please accept this letter confirming Ecotrust's collaboration with Dr. Steven Hackett and Dr. Laurie Richmond of Humboldt State University on their proposal to Sea Grant, entitled *Socioeconomic dimensions of MPAs: Establishing a baseline and assessing initial changes in California North Coast fisheries.*

On behalf of Ecotrust, this letter serves as confirmation of participation for Cheryl Chen, Charles Steinback, and the other Ecotrust employees listed in the proposal. The Ecotrust project team commits to completing the scope of work detailed in the proposal narrative and to submitting deliverables in a timely manner, as outlined in the narrative.

Ecotrust also commits to contribute a match of $74,723 to the project, as detailed in in the full budget and budget narrative. The Ecotrust project team commits their efforts, as described in the proposal, for the entire project period. It is our understanding that, if funded, the total budget allocated to Ecotrust in the Sea Grant proposal will be in the amount of $298,893.

Ecotrust looks forward to taking part in this important project to meaningfully engage fishermen in collaborative baseline monitoring efforts.

Sincerely,

Adam Lane — 7.15.13

Signed — Date

Adam Lane, Chief Financial Officer
Ecotrust

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Marine Region
350 Harbor Blvd
Belmont, CA 94002
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

August 2, 2013, 2013

Dr. Steven C. Hackett
Professor of Economics
Associate Dean, College of Professional Studies
Department of Economics
Humboldt State University
1 Harpster Street
Arcata, California 95501

Subject: Request for a Cooperative Agreement

Dear Dr. Hackett:

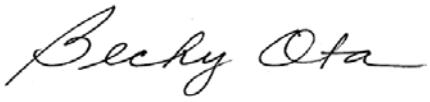
Dr. Craig Shuman, the Department of Fish and Wildlife's (Department) Marine Region Manager and I have considered your request for a cooperative agreement for the use of Mr. Terry Tillman's time on your proposed project. You are requesting Mr. Tillman's time to assist with baseline socio-economic analysis for the North Coast Marine Protected Areas as outlined in a proposal to California Sea Grant.

We understand that should your proposal be funded, you are seeking a 2.5 to 3 year project timeline and anticipate that work would begin in spring of 2014. Per your request, Mr. Tillman would specifically assist you with generating and analyzing commercial landings data, Commercial Passenger Fishing Vessel (CPFV) data, and California Recreational Fishing Survey (CRFS) data. Through your discussions with Mr. Tillman and an analysis of your data needs on the proposal, you anticipate needing approximately 40 - 60 hours per year as the time commitment from Mr. Tillman on this project.

After reviewing your request and the details of the time commitment required from Mr. Tillman, Dr. Shuman and I agree that the work is consistent with his regular duties and would not substantially increase his workload or interfere with existing assignments. As Mr. Tillman's supervisor, I will work him, as well as with you and your colleagues, to ensure that existing or future assignments are not compromised by the project commitments. If it is determined during the course of the project that Mr. Tillman's regular duties are compromised, we will need to revisit the agreement and determine whether he will be able to continue with assisting the project.

The Department appreciates the opportunity to work cooperatively and collaboratively on your proposed project. If you have any questions or need additional information from the Department please contact me at (650) 631-6789 or Becky.Ota@wildlife.ca.gov.

Sincerely,



Becky Ota
Environmental Program Manager
Habitat Conservation Program
California Department of Fish and Wildlife
Marine Region

ecc: California Department of Fish and Wildlife
Dr. Craig Shuman - Santa Barbara (Craig.Shuman@wildlife.ca.gov)
Terry Tillman – Sacramento (Terry.Tillman@wildlife.ca.gov)

HUMBOLDT BAY
HARBOR, RECREATION, AND CONSERVATION DISTRICT
(707) 443-0801
P.O. Box 1030
Eureka, California 95502-1030

July 22, 2013

To the Sea Grant Review Committee,

The Humboldt Bay Harbor, Recreation and Conservation District is writing to express our strong support for the research proposal of Dr. Steven Hackett, Dr. Laurie Richmond, and their associates for a collaborative project to carry out socioeconomic MPA monitoring of commercial, CPFV, and possibly recreational fishing activities in the North Coast region. The Harbor District has strong ties with the fishing community of the North Coast and is happy to participate in this project by helping to facilitate connections with and outreach to local fishermen. We support the project proponent's plan to develop a Fisherman's Advisory Council to collaborate on project and survey design, assist in reaching out to the fishing community, and provide feedback and review of project work. We believe that developing a Fisherman's Advisory Council will provide a useful platform in which to engage fishermen in long-term monitoring efforts. We hope the formation of this advisory group will encourage collaborative data collection efforts into the future to ensure that research results are both useful and made available to fishermen and other community members, as well as other researchers, and managers.

The Harbor District has worked closely with the local community and diverse stakeholders in helping design the MPA network on the North Coast, and in multiple collaborative fishing research projects. Concerns about the potential socioeconomic impacts of the North Coast MPA Network have been a recurring theme from the fishing community from the outset of the MPA process. Engaging with that same community to help monitor the actual impacts provides an opportunity to answer important questions and to 'close the loop' on this key area of concern.

We hope the Review Committee considers the merits of this project, and recognizes the value in reaching out to the fishing community to collaboratively develop this project. With the baseline data Hackett, Richmond, and associates will collect through this project, we see the beginnings of a socioeconomic and spatial knowledge base of our fisheries that can be utilized to benefit fishermen and the fishing community in the long-term.

Sincerely,

Jack Crider
Chief Executive Officer

Board of Harbor Commissioners
of the
Crescent City Harbor District
Phone (707) 464-6174 Fax (707) 465-3535
101 Citizens Dock Road
Crescent City, California 95531
www.ccharbor.com

July 16, 2013

To the Sea Grant Review Committee,

The Crescent City Harbor Commission enthusiastically supports working with Dr. Steven Hackett, Dr. Laurie Richmond, and their associates in a collaborative project to conduct social and economic monitoring of the effects the network of Marine Protected Areas (MPAs) established by the Marine Life Protection Act (MLPA) may have on commercial and recreational fishing activities in the North Coast Region. We especially support their plan to develop a Fishermen's Advisory Council to collaborate on project and survey design, assist in reaching out to the fishing community, and provide feedback and review of project work. A Fishermen's Advisory Council will engage fishermen in long-term monitoring efforts and encourage collaborative data collection efforts. Involving the fishing community directly will help ensure that research results are credible, useful and available to fishermen and other interested local entities, as well as researchers and managers.

The MLPA process on the North Coast was unusual in that a single array of MPAs was recommended by the Regional Stakeholder Group. This unique outcome was only possible because of the extensive participation of local residents in the design and selection of MPA sites. The Crescent City Harbor Commission very much appreciates that Dr. Hackett and Dr. Richmond are reaching out to the fishing community to collaboratively develop this project to monitor and assess the effects of MPAs on the North Coast.

We hope the Sea Grant Review Committee also appreciates the benefits of fully involving the local community in the monitoring process. The baseline data Dr. Hackett, Dr. Richmond and their associates will collect through this project is vital to improving our understanding of the social, economic, and spatial effects our fisheries have on our community. We strongly recommend selecting and funding this project.

Sincerely,

Ronald A. Phillips, President
Crescent City Harbor Commission

HUMBOLDT FISHERMEN'S MARKETING ASSOCIATION, INC.

3 Commercial Street
Eureka, California 95501-0241

(707) 443-0537 FAX (707) 443-1724

June 19,2013

To the Sea Grant Review Committee,

We are writing this letter to express the Humboldt Fisherman's Marketing Association's support in working with Dr. Steven Hackett, Dr. Laurie Richmond, and their associates in a collaborative project to carry out socioeconomic MPA monitoring of commercial and CPFV fishing activities in the North Coast region. We support their plan to develop a Fisherman's Advisory Council to collaborate on project and survey design, assist in reaching out to the fishing community, and provide feedback and review of project work. We believe that developing a Fisherman's Advisory Council will provide a useful platform in which to engage fishermen in long-term monitoring efforts. We hope the formation of this advisory group will encourage collaborative data collection efforts into the future to ensure that research results are both useful and made available to fishermen and other community members, as well as other researchers, and managers.

We hope the Review Committee considers the strong merits of this project and appreciate Dr. Hackett and Dr. Richmond in reaching out to the fishing community to collaboratively develop this project. With the baseline data Hackett, Richmond, and associates will collect through this project we see the beginnings of a socioeconomic and spatial knowledge base of our fisheries that can be utilized to benefit fishermen and the fishing community in the long-term.

Sincerely,

Aaron Newman
President
Humboldt Fisherman's Marketing Association
707-496-5158

RISING TIDE SEA VEGETABLES®

SINCE 1981

7-25-13

To the Sea Grant Review Committee,

Greetings. My name is Larry Knowles. I am the owner of Rising Tide Sea Vegetables and was a stakeholder for the Marine Life Protection act in the North Coast Region representing both commercial and recreational interests regarding issues around seaweed harvesting. My involvement in the MLPA process spans about 12 years.

I am writing this letter to express my support in working with Dr. Steven Hackett, Dr. Laurie Richmond, and their associates in a collaborative project to carry out socioeconomic MPA monitoring of commercial and CPFV fishing activities in the North Coast region. I support their plan to develop a Fisherman's Advisory Council to collaborate on project and survey design, assist in reaching out to the fishing community, and provide feedback and review of project work. I believe that developing a Fisherman's Advisory Council will provide a useful platform in which to engage fishermen in long-term monitoring efforts. I hope the formation of this advisory group will encourage collaborative data collection efforts into the future to ensure that research results are both useful and made available to fishermen and other community members, as well as other researchers, and managers.

Based on conversations with doctor Richmond I am confident they will take full advantage of the important data collected previously by such groups as the Eco Trust, DFW, and the MLPAI. I believe this data is critical to ensure a successful outcome for future Ongoing Monitoring projects regarding MPAs and more broadly with work done by other agencies such as the PMFC and DFW in fisheries management forums.

I hope the Review Committee considers the strong merits of this project and appreciate Dr. Hackett and Dr. Richmond in reaching out to the fishing community to collaboratively develop this project. With the baseline data Hackett, Richmond, and associates will collect through this project we see the beginnings of a socioeconomic and spatial knowledge base of our fisheries that can be utilized to benefit fishermen and the fishing community in the long-term.

Sincerely,

Larry Knowles, Owner, Rising Tide Sea Vegetables, Member NCRSG, MLPA

"From the Ocean Floor to your door"
Pacific Rim Seafood
Specializing in quality Uni & Sea Urchin
Tom Trumper *Owner / Diver*
32310 N. Harbor Drive
P.O. Box 2647 Fort Bragg, CA 95437
(707) 962-0877 Fax (707) 964-5689
www.pacificrimuni.com mail@pacificrimuni.com

7-10-13

: To Sea Grant Review Committee

My Name is Tom Trumper I WAS AN RSG member on The North Coast Region And Community Liaison For The Monitoring Enterprise - I'm A Commercial Sea Urchin Diver Since 1975 And Own Pacific Rim Seafood where my family and myself process Sea Urchins For Sale Around The World. We Employ 50+ People I Feel The work Dr Richmond And Dr Hackett propose To do will be of The most Important Value To determine The Value of MPA's. If you have any questions please Contact me - Tom Trumper

Email TRTrumper@gmail 707-972-9544

Laura R. Casali
P.O. Box 2116 Redway, CA 95560 (707) 496-2373 laurarcasali@gmail.com
July 4, 2013

To the Sea Grant Review Committee,

As a recreational fisherwoman from Shelter Cove, I am writing this letter to express my support in working with Dr. Steven Hackett, Dr. Laurie Richmond, and their associates in a collaborative project to carry out socioeconomic MPA monitoring of commercial, CPFV, and recreational fishing activities in the North Coast region. If the analysis of recreational fishing data becomes a part of their project I would be interested in collaborating with the researchers to help analyze and understand patterns in the recreational fishing data.

I also support their plan to develop a Fisherman's Advisory Council to collaborate on project and survey design, assist in reaching out to the fishing community, and provide feedback and review of project work. We believe that developing a Fisherman's Advisory Council will provide a useful platform in which to engage fishermen in long-term monitoring efforts. I hope the formation of this advisory group will encourage collaborative data collection efforts into the future to ensure that research results are both useful and made available to fishermen and other community members, as well as other researchers, and managers.

I feel that Dr. Richmond and Dr. Hackett's approach to sit down and speak with the local fishermen will be very beneficial to the breadth of this project. The expertise of these fishermen in both seamanship and angling in this remote port would be helpful to this project, as well as helping to formulate target areas of interest in this area of California where little data has been collected. The fishermen can give first hand accounts of what has happened to their livelihoods within the timeline of closures, and what they have been able to catch (or not catch) during that same timeline. Additionally, the involvement of the fishing community in this project will help to strengthen relationships and trust of the scientific community, regulatory agencies, and the fishing community while building an understanding of these complex interrelationships that make up the habitat of our unique coast of Northern California.

I hope the Review Committee considers the strong merits of this project and appreciate Dr. Hackett and Dr. Richmond in reaching out to the fishing community to collaboratively develop this project. With the baseline data Hackett, Richmond, and associates will collect through this project we see the beginnings of a socioeconomic and spatial knowledge base of our fisheries that can be utilized to benefit fishermen and the fishing community in the long-term.

Sincerely,
Laura R. Casali

Laura R. Casali
Research Assistant
Ocean Acidification Project
HSU Sponsored Programs Foundation

HUMBOLDT AREA SALTWATER ANGLERS, INC.

July 1, 2013

University of California, San Diego
Sea Grant Review Committee
9500 Gilman Dr., #0232
La Jolla, CA 92093-0232

RE: MPA SOCIOECONOMIC STUDY

To the Sea Grant Review Committee,

We are writing this letter to express HASA's support in working with Dr. Steven Hackett, Dr. Laurie Richmond, and their associates in a collaborative project to carry out socioeconomic MPA monitoring of commercial, CPFV, and recreational fishing activities in the North Coast region. If the analysis of recreational fishing data becomes a part of their project we would be interested in collaborating with the researchers to help analyze and understand patterns in the recreational fishing data. As a recreational fishing association, we are interested in learning all that we can about the fisheries of this region.

We also support their plan to develop a Fisherman's Advisory Council to collaborate on project and survey design, assist in reaching out to the fishing community, and provide feedback and review of project work. We believe that developing a Fisherman's Advisory Council will provide a useful platform in which to engage fishermen in long-term monitoring efforts. We hope the formation of this advisory group will encourage collaborative data collection efforts into the future to ensure that research results are both useful and made available to fishermen and other community members, as well as other researchers, and managers.

We hope the Review Committee considers the strong merits of this project and appreciate Dr. Hackett and Dr. Richmond in reaching out to the fishing community to collaboratively develop this project. With the baseline data Hackett, Richmond, and associates will collect through this project we see the beginnings of a socioeconomic and spatial knowledge base of our fisheries that can be utilized to benefit fishermen and the fishing community in the long-term.

Sincerely,

Cliff Hart

Cliff Hart
President of Humboldt Area Saltwater Anglers (HASA)

P.O. BOX 6191
EUREKA, CA. 95502

E-MAIL hasa6191@gmail.com
WEB SITE www.humboldttuna.com

JARED HUFFMAN
2ND DISTRICT, CALIFORNIA

COMMITTEE ON
NATURAL RESOURCES

COMMITTEE ON BUDGET

Congress of the United States
House of Representatives
Washington, DC 20515–0502

WASHINGTON OFFICE
1630 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
PHONE: (202) 225-5161
FAX: (202) 225-5163

WEBSITE: huffman.house.gov

July 16, 2013

Dear North Coast Baseline Management Team:

I am pleased to provide this letter of support for the California Sea Grant Proposal submitted by Dr. Hackett and Dr. Richmond on behalf of Humboldt State University entitled "Socioeconomic dimensions of MPAs: Establishing a baseline and assessing initial changes in California North Coast fisheries."

I understand this project will establish a baseline characterization of spatial fishing patterns and socioeconomic status for commercial and recreational fisheries in the North Coast region, and provide an assessment of initial spatial and socioeconomic changes following Marine Protected Area (MPA) implementation

Humans are an integral part of the ecosystem in the North Coast, and their activities inside and outside the newly implemented Marine Protected Areas should be studied. It is also important to better understand the current socioeconomic conditions of the North Coast region's fishermen and fisheries. This proposal plans to do both, as well as provide a benchmark of socioeconomic conditions and spatial fishing patterns against which future MPA impacts and benefits can be measured.

This proposal is timely and I hope it will receive full and fair consideration.

Sincerely,

JARED HUFFMAN
Member of Congress

SAN RAFAEL
999 FIFTH AVENUE, SUITE 290
SAN RAFAEL, CA 94901
PHONE: (415) 258-9657
FAX: (415) 258-9913

PETALUMA
206 G STREET, #3
PETALUMA, CA 94952
PHONE: (707) 981-8967

FORT BRAGG
430 NORTH FRANKLIN STREET
P.O. BOX 2208
FORT BRAGG, CA 95437
PHONE: (707) 962-0933
FAX: (707) 962-0905

EUREKA
317 THIRD STREET, SUITE 1
EUREKA, CA 95501
PHONE: (707) 407-3585
FAX: (707) 407-3559

HUMBOLDT STATE UNIVERSITY
Office of the President

July 15, 2013

To: North Coast Baseline Management Team

To Whom It May Concern,

It is my pleasure, as President of Humboldt State University (HSU), to provide this letter of support for the HSU proposal titled "Socioeconomic dimensions of MPAs: Establishing a baseline and assessing initial changes in California North Coast fisheries" being submitted to California Sea Grant. I am impressed with the efforts of Dr. Steven Hackett, the Principal Investigator (PI), and Dr. Laurie Richmond, the Co-PI, in developing this comprehensive proposal.

I believe it is of vital importance that baseline data be collected that will allow for an assessment of the spatial and socioeconomic changes following Marine Protected Area (MPA) implementation. I feel the proposal put forth by HSU is extremely strong, and made stronger still because it includes not only HSU staff but also staff from Ecotrust, an organization that has assisted the California Marine Life Protection Act Initiative (MLPAI) with local knowledge collection since the early 2000's. The proposal has been shaped by significant outreach efforts by the Principal Investigators in order to foster a collaborative approach with commercial, charter, and recreational fishermen. I believe the results of this study will provide a better understanding of the current socioeconomic conditions of the North Coast region's fishermen and fisheries and provide a benchmark of socioeconomic conditions and spatial fishing patterns against which future MPA impacts and benefits can be measured.

In closing, I want to emphasize my support for this California Sea Grant proposal. I look forward to hearing of the outcome of this proposal, and hope that HSU will be an award recipient.

Sincerely,

Rollin C. Richmond

Rollin C. Richmond, Ph.D.
President

1 Harpst Street · Arcata, California 95521-8299 · 707 826-3311 · fax 707 826-3505 · humboldt.edu/president