Establishing a Statewide Baseline and Long-Term Marine Protected Area (MPA) Monitoring Program for Commercial and Commercial Passenger Fishing Vessel Fisheries in the State of California

DRAFT PROPOSED METHODOLOGY: FOCUS GROUPS
Port Community Well-being Assessment Tool to Inform Long-term Socioeconomic Monitoring of California's MPA Network

This project team is working on developing a baseline and long-term socioeconomic monitoring of California's marine protected area (MPA) network for Commercial and Commercial Passenger Fishing Vessels (CPFV -- essentially charter boats) in California. As a part of this larger project, our team proposed to conduct focus groups in every major port or port group to gather information related to outcomes from MPAs and socioeconomic conditions in California fishing ports. This document describes our proposed methodology for the focus groups and presents a draft instrument or assessment tool with questions we propose to ask during the focus group workshops. Our goal is to get feedback from you: agency staff members; academic and NGO experts; and fishing community members about our proposed approach and questionnaire. We hope to use the feedback to design a methodology that is rigorous, complete, reflective of the reality of commercial and CPFV fishing communities, and repeatable overtime should long-term monitoring continue to be funded. This document will have three components:

(1) A description of our proposed approach and why we chose that approach
(2) A draft version of our assessment tool with the questions we propose to ask
(3) A brief description of plans for analysis of data once collected
(4) A list of questions we hope the reviewers might reflect on prior to our discussion.

1. Proposed Approach:

The goal of the focus group approach will be to gather both quantitative and qualitative data about the well-being of California fishing communities in the context of MPA formation. The assessment tool is designed in a way that will allow for the comparison of fishing community well-being metrics and MPA outcomes assessment across ports and across time, should the study continue to be implemented over time. Since it is not feasible, financially or logistically, to continue to do one-on-one surveys with fishing community members to gain this information about the socioeconomic conditions of their fishing communities, we will employ a focus group approach, that will allow for the collection of data about fishing community well-being and MPA outcomes through a structured deliberative process with community experts and key informants.

For this approach, the project team proposed to hold fishing community focus groups in each of the major ports or port groups on the California coast (see Appendix A). A group of individuals from the fishing community will be invited to attend the focus group conversations who have strong awareness of the state of the commercial and/or CPFV fishing port community overall and can speak beyond their individual perspective. We want to make sure that a broad range of perspectives in the port are represented and also invite those who would contribute to the deliberative process in a productive manner. We will want to consider age range, education level, fishery of participation, gender, familiarity with each other, and level of experience in the fishery. Participants for the focus groups will be identified by fishing leaders and project team leaders.

We recognize that most definitions of fishing communities extend beyond commercial and CPFV captains and operators to include processors, support industries, fishing families, etc. We were worried that a ranking exercise with all of those different interest groups together would not work as well, because processors or support industries may have really different (and sometimes opposing) perceptions of economic, social, and other factors associated with the ports. At present we propose limiting the focus group conversations to commercial operators with a smaller side conversation with CPFV folks. However, we welcome your feedback on this decision. A question we are still hoping to address is whether to limit the focus groups to nearshore fishermen (who would be more likely to be affected by the state waters MPA network) or to include all types of fishermen in a given port including trawlers, tuna fishermen, etc.

Currently we propose to hold **one large focus group workshop comprised of commercial fishermen (8-20) from each port** and to hold an **additional smaller conversation with CPFV fishermen (2-4)**. We envision that the commercial fishing focus group would be a half-day workshop where we would provide refreshments and lunch. We envision that the CPFV conversations would be shorter and more informal, about 1-2 hours, and possibly over breakfast or a coffee at a relevant outlet in the port. Our budget includes compensation for commercial and CPFV participants. We plan to hold the focus group conversations between April and October 2020. We will hold a pilot focus group in April and get responses from the participants and facilitators and tweak the process accordingly so it can be consistent and effective in the rest of the ports.

The focus groups will be structured in a way to lead participants through a deliberative process to rank and discuss about 20 questions related to both MPA outcomes and overall well-being of their fishing community (see draft instrument below). First, the facilitators will pose a question and ask participants to rank their community using electronic clickers. After the participants rank each indicator, the facilitators will encourage respondents to engage in a qualitative discussion about why they chose their rankings. This conversation will allow for the capture of qualitative information in addition to the quantitative data collected in the rankings. To start the conversation, the facilitator will show the spread of the individual data and ask individuals to discuss the areas where their individual rankings differed. At the end of the discussion, the facilitators will ask the participants to rank the indicator again to see if the conversation changed any individual rankings and to move the group towards a more consensus-based or collaborative ranking. We envision that the statistics related to the individual rankings from the end of the discussion would be taken as the final ranking for that port's fishing community, but it would also be possible to analyze and compare how rankings shifted over the course of the discussion. Focus group conversations will be recorded (with consent) and transcribed. This will allow for the collection and analysis of qualitative data. Qualitative data will provide important information about the context of fishing communities and why participants chose to rank indices the way that they did.

The idea of using key informants to assess socioeconomic outcomes from the implementation of fisheries management strategies is quite common (Anderson et al., 2015; Smith et al., 2019; Ocean Health Index 2019). Additionally, the use of structured deliberative processes, like the one described above, is a commonly accepted methodology for economic evaluation and sustainability assessment (Frame and O'Connor, 2011; O'Connor et al., 2007; Proctor and Drechsler, 2006; Wilson and Howarth, 2002). Managers and scholars are increasingly using a human well-being approach to understand the social and economic outcomes from MPA

formation and to understand the socioeconomic components of marine systems (Ban et al., 2019; Breslow et al., 2016; Brueckner-Irwin et al., 2019).

In addition to clearly addressing monitoring needs laid out California's MPA Monitoring Action Plan, the proposed focus group methodology has the potential to gather information related to the health and well-being of California's fishing communities that could be useful to a variety of managers, NGOs, and interest groups including but not limited to: California Department of Fish and Wildlife (CDFW), California Fish & Game Commission, OPC, Pacific Fishery Management Council, National Oceanic and Atmospheric Administration (NOAA) Fisheries, the Nature Conservancy, academic scholars interested in the socioeconomics of marine and coastal issues, and California fishermen's organizations and associations (e.g., the California Sea Urchin Commission). Results from the well-being instrument could inform conversations about climate-resilience in fishing communities and connect to Fish & Game Commission and Marine Life Management Act goals related to fishing communities. Fishermen and fishing associations could use the information to advocate for their needs and begin their own conversations around sustainability planning.

Finally, we want to note that these focus groups are just one part of a multi-layer project which will include a temporal analysis of landings data across California's ports, an analysis of gathered spatial data, and well as these place-based focus groups. See the project website for more detail: www.mpahumanuses.com.

2. Assessment Tool:

Below are the draft questions for the Fishing Community Well-being Assessment Tool we plan to implement in each port. The tool is divided into two portions: first a long list of questions that will be asked in the larger commercial fishing focus groups. The second is a shorter list of questions that will be asked in smaller side conversations with 2-4 CPFV operators in each port. As a reminder, we plan to ask focus group participants to select a ranking for each of the questions using electronic clickers. We will then engage the participants in a qualitative discussion to learn more about the context of the port and why participants ranked things the way they did. The questions are listed in the order that we propose to ask them in the focus group. Well-being questions were developed loosely utilizing the community capitals framework (CCF), which views community well-being as deriving from a set of seven interdisciplinary and linked capitals: social, political, cultural, human, financial, built, and environmental (Emery and Flora, 2006; Fey et al., 2006; Flora, 2018). Questions below are labelled based on different groupings and the groupings will be useful in the analysis phase.

Question Groupings:
SOC-WB = Questions related to the social well-being of the port community, the social category relates to social, cultural, political, and human forms of capital.
ECON-WB = Questions related to the economic well-being of the port community, this includes financial and built forms of capital; aspects of markets and livelihood as well as infrastructure
ENV-WB = Questions related to the environmental well-being -- natural capital
MPA = Questions specifically related to the MPA Network
****** = Questions that we would like to include but may need to cut for time

Questions that are marked as the same number with an **A and B**, we envision that during the focus groups we ask the group to rank both those questions one after another before embarking in the discussion. At the end of the discussion, the questions will be ranked again. This is to avoid repetition and save time, and because we feel the content of the questions is linked.

COMMERCIAL FISHING FOCUS GROUPS
Draft Questions

Topic	Question	Responses
Well-being Indicators		
ENV-WB1a. Natural Capital: Present State	Acknowledging that there are natural fluctuations, overall, how would you rank the current health and sustainability of the marine resources on which fishermen from this port rely?	(1) Very Low (2) Low (3) Neutral/Medium (4) High (5) Very High
ENV-WB1b. Natural Capital: Future Concerns	Overall, how worried are fishermen from your port about the future long-term health and sustainability of the marine resource populations on which you rely? Follow-ups for discussion: Why? What are the biggest concerns or potential threats? Climate/ocean change concerns/observations?	(1) Extremely Worried (2) Moderately Worried (3) Somewhat Worried (4) Slightly Worried (5) Not at all Worried
ECON-WB1a. Economic: Access	Overall, how would you rank your port in terms of the level access to commercial marine resources (both amount and diversity) to support the local fishing fleet/industry?	(1) Very Insufficient (2) Insufficient (3) Neutral (4) Sufficient (5) Very Sufficient
ECON-WB1b. Economic: Income	Overall, how would you rank the income that fishermen from your port earn from fishing in terms of supporting livelihoods?	(1) Very Insufficient (2) Insufficient (3) Neutral (4) Sufficient (5) Very Sufficient

	Notes: % of income from fishing? Is there a need for external sources of income?	
ECON-WB2. Markets	Overall, how would you rank the quality of the markets to which fishermen from your port are able to sell their catch? Market Quality to be assessed in terms of price, ease of use, stability/consistency, diversity/choice	(1) Very Poor (2) Poor (3) Neutral/Acceptable (4) Good (5) Very Good
ECON-WB3. Built Capital (Infrastructure)	Overall, how would you rank the state (availability and quality/maintenance) of infrastructure and services that support commercial fishing in your port?	(1) Very Poor (2) Poor (3) Neutral/Acceptable (4) Good (5) Very Good
SOC-WB1a. Human Capital: Labor	Overall, how would you rank your port in terms of being able to recruit new entrants to the commercial fishing industry (as crew and captains) and in terms of being able to retain current participants?	(1) Very Poor (2) Poor (3) Neutral/Acceptable (4) Good (5) Very Good
SOC-WB1b. Social/ Cultural: Job Satisfaction	Overall, how satisfied do you think fishermen from the port are with their jobs in the fishing industry?	(1) Very Dissatisfied (2) Dissatisfied (3) Neutral (4) Satisfied (5) Very Satisfied
SOC-WB2a. Social Capital: Within	Overall, how would you rank the strength of social relationships within your port in terms of leadership, trust, engagement, and bonding?	(1) Very Weak (2) Weak (3) Neutral (4) Strong (5) Very Strong
SOC-WB2b. Social/Political: External Relationships	Overall, how would you rank the strength of the port's relationship with policy-makers, managers, academics, NGOs, or other external groups who could help support community needs?	(1) Very Weak (2) Weak (3) Neutral (4) Strong (5) Very Strong

SOC-WB3. Cultural: Attachment to Place** (may need to cut for time)	Overall, how would you rank the level of attachment and or connection that fishermen have to this port and this community? To consider in assessing: how likely would fishermen be to move to another port/area if things got difficult or new opportunities arose?	(1) Very Weak (2) Weak (3) Neutral (4) Strong (5) Very Strong
SOC-WB4. Cultural: Supportive Environment** (may need to cut for time)	Overall, how supportive do you feel the port's surrounding environment is towards the fishing industry and/or fishing communities? "Environment" to mean: government, consumers, community partners, NGOs	(1) Very Unsupportive (2) Unsupportive (3) Neutral (4) Supportive (5) Very Supportive
MPA Specific Indicators		
MPA1. Ecological Outcomes	How would you rank the effect that California MPA network has had on marine resource health in your area? (Remind the group to focus on trying to tease out effects from MPAs against other non-MPA related ocean changes that have been occurring since MPAs implemented)	(1) Strongly Negative (2) Negative (3) No Effect or Neutral (4) Positive (5) Strongly Positive
MPA2. Monitoring	Overall, how satisfied do you think fishermen from your port are with the monitoring of the MPA network? Follow-up for discussion: how have fishermen felt about the inclusion of opportunities for fishermen to participate in monitoring and to contribute their knowledge to decisions?	(1) Very Dissatisfied (2) Dissatisfied (3) Neutral/Neither (4) Satisfied (5) Very Satisfied
MPA2. Livelihood Outcomes	Overall, how would you rank the effect that the MPA network had on the ability for fishermen from your port to	(1) Strongly Negative (2) Negative (3) No Effect or Neutral

	earn a living/gain income from fishing?	(4) Positive (5) Strongly Positive
MPA3. Effects Overall	What types of effects or impacts have fishermen from your port experienced from MPA implementation?	Open-ended -- to be coded
MPA4. Effects - MPA Specific	Which MPAs have had the most impact (positive or negative) on fishermen from your port and why?	Show a map of the different MPAs and allow them to select -- responses to be coded based on MPA.
MPA5. Management	Overall, how satisfied do you think fishermen from your port are with the management of the MPA network? Follow-up for discussion, how have fishermen felt about the inclusion of opportunities for fishermen to participate in the management discussions and decisions? Are there sufficient avenues to be heard?	(1) Very Dissatisfied (2) Dissatisfied (3) Neutral (4) Satisfied (5) Very Satisfied
MPA6. Enforcement	Overall, how satisfied do you think fishermen from your port are with the enforcement of MPAs? Considerations: fairness, effectiveness, clarity of the rules and regulations.	(1) Very Dissatisfied (2) Dissatisfied (3) Neutral/Neither (4) Satisfied (5) Very Satisfied
MPA7. Overall	Any comments or concerns about the MPAs and MPA management you would like to communicate?	Open-ended -- to be coded

CPFV FISHING CONVERSATIONS
Draft Questions

Topic	Question	Responses
Well-being Indicators		
WB1. CPFV Industry Health and Well-being	Overall how would you rank the heath of the CPFV industry that operates out of this port?	(1) Very Poor (2) Poor (3) Neutral/Acceptable (4) Good (5) Very Good
10. WB: Overall/ Open-ended	What are some of the key concerns and hopes that CPFV fishermen have related to the future of their industry and the fishing community? Consider: Environmental conditions/changes, economic concerns, infrastructure, sociopolitical concerns. What, broadly, would you like managers to know about the state of the CPFV fishing industry in your port?	Open-ended -- to be coded
MPA Specific Indicators		
MPA1. Ecological Outcomes	How would you rank the effect that California MPA network has had on marine resource health in your area? (Remind the group to focus on trying to tease out effects from MPAs against other non-MPA related ocean changes that have been occurring since MPAs implemented)	(1) Strongly Negative (2) Negative (3) No Effect or Neutral (4) Positive (5) Strongly Positive
MPA2. Livelihood Outcomes	Overall, how would you rank the effect that the MPA network had on the ability for CPFV fishermen from your port to earn a living/gain income from fishing?	(1) Strongly Negative (2) Negative (3) No Effect or Neutral (4) Positive (5) Strongly Positive

MPA3. Effects	What types of effects or impacts have CPFV fishermen from your port experienced from MPA implementation?	Open-ended -- to be coded
MPA4. Effects	Which MPAs have had the most impact on CPFV fishermen from your port and why?	Show a map of the different MPAs and allow them to select -- responses to be coded based on MPA.
MPA5. Enforcement	Overall, how satisfied do you think fishermen from your port are with the enforcement of MPAs? Considerations: fairness, effectiveness, clarity of the rules and regulations.	(1) Very Dissatisfied (2) Dissatisfied (3) Neutral/Neither (4) Satisfied (5) Very Satisfied
MPA6. MPA Overall	Any comments or concerns about the MPAs and MPA management you would like to communicate?	Open-ended -- to be coded

3. Analysis Methods:

Quantitative Data

We intend to use results from the focus group rankings on questions from the Assessment Tool to develop two indices for each port: an “MPA outcomes/perceptions” index and a commercial fishing port community “well-being index”. The MPA outcomes/perceptions index will be developed by combining the mean (we will consult with a statistician to determine if mean is the correct statistic here) rankings from all of the quantitative questions in the assessment tool that are labelled MPA. A higher index score will mean more negative impacts from or perceptions of the MPA network and a lower will mean the opposite. For the well-being index, we intend to weight the questions a bit differently. We will develop indices for SOCIAL (SOC), ENVIRONMENTAL (ENV), and ECONOMIC (ECON) aspects of well-being separately, based on the mean rankings for each of the questions labeled in those respective categories. The overall well-being score will be developed by equally weighting the indices developed from SOC, ENV ECON. Under this methodology, not all questions will be ranked equally as SOC-WB is composed of 6 questions, ENV-WB of 2, and ECON-WB of 4. We will develop these indices and rankings for all of the commercial fishing focus groups we hold in every port. For the CPFV conversations we do ask sufficient questions to develop an MPA outcomes/perceptions index for each port, but given that the conversations will likely be with only 2-4 individuals we are not

sure if it would make sense to develop and publish those indices qualitatively. In addition to develop these indices, we hope to use the gather date to generate statistical comparisons between ports in California based on MPA outcomes, MPA perceptions, and community well-being. If this methodology is implemented into the future we also hope to make statistical comparisons over time. We would appreciate any feedback on our proposed methods for analyzing the data and developing well-being indices.

Qualitative Data

With permission we intend to record and transcribe the focus group conversations. We will analyze the data using standard qualitative data analysis methods. We will develop a list of themes and code the data for those themes using a qualitative coding software such as Atlas.ti or Dedoose. Additionally, for each port we will develop a spreadsheet of key or relevant quotes that are pulled from the responses to each of the questions or question groups. All identifying information will be stripped from the quotes. This collated data will be made available to the state and the public as part of our data management and sharing plan.

Communication Tool

We hope to develop an effective means to communicate findings from the focus groups so that they can be accessible to fishermen, managers, academics, and the public. Our hope is to develop a web-based visualize tool where results from the focus groups can easily be searched and queried. We were thinking of developing a tool similar to the one for the Ocean Health Index where site visitors would be able to look at the MPA outcomes/perceptions, social, economic, environmental, and overall well-being scores for each of the ports. We also hope that the tool would be able to incorporate some qualitative data in the form of relevant quotes from each port for each of those 5 indices. We'd appreciate any feedback or thoughts on a possible communication tool for these findings.

5. Review Questions:

1. **Process Design -- Focus Groups and Clickers:** Can you provide any feedback on the process design overall: on the use of focus groups with clickers to gather quantitative and qualitative data about the nature of commercial and CPFV fishing port-communities? Do you think the protocol will work and provide reliable, usable information about fishing community well-being in the context of MPA formation? Do you think that fishermen we be interested in and able to engage in this type of process? Do you have suggestions for improving this design to encourage participation?
2. **Process Design -- Selecting Participants:** Can you provide some thoughts or feedback about how we determine who should be invited to the commercial focus groups and the CPFV conversations? In past MPA studies we have limited our scope to near-shore fishermen who would be most affected by MPAs. Given the well-being focus,

should we broaden it to include all types of commercial fishermen in a given port (i.e. include trawlers, tuna fishermen, and others)?

3. **Assessment Tool Questions:** Can you provide specific comments or feedback on the questions in the draft commercial and CPFV tools? Are the questions clear and understandable? What do you think of the proposed order of the questions starting with well-being and moving to MPA specific? We have considered integrating or interspersing the two questions types -- would this be preferred? When assessing the questions keep in mind that in order to keep the workshops a manageable length we would not be able to add a lot of new questions without taking some other questions away. We intend these questions to be fairly high level with more of the context and details to be fleshed out in the discussion.
    a. Assessment Tool Questions Well-being: Do you think that the questions related to port community well-being (ENV-WB, SOC-WB, ECON-WB) are sufficient for capturing the important aspects of fishing community well-being? If we had to remove questions for time considerations which questions do you think are less important?
    b. Assessment Tool Questions MPA outcomes/perceptions: Do you think the questions in the commercial and CPFV tools labeled “MPA” are sufficient for assessing the major outcomes, impacts, and perceptions of the MPA network? Are there important factors/questions not included? Are there questions you would remove?
4. **Data Analysis:** What do you think of the proposed analysis methods, particularly the proposal to develop MPA outcomes/perceptions and Well-being indices for each commercial port community? How about the proposal to develop the well-being indicators by bundling questions into environmental, social, and economic categories and weighting each three of those categories equally? Any suggestions for how we might analyze the data or additional experts we should consult?
5. **Communication Tool:** Any suggestions or ideas for what would be the most effective way to communicate findings from the work to fishermen, agencies, managers, academics, and the general public? What are thoughts about our ideas to develop web-based tools? Anything that you would like to see included?

Literature Cited:

Anderson, J. L., Anderson, C. M., Chu, J., Meredith, J., Asche, F., Sylvia, G., … & Valderrama, D. (2015). The Fishery Performance Indicators: A management tool for triple bottom line outcomes. *PLoS ONE*, *10*(5), 1-20.

Ban, N. C., Gurney, G. G., Marshall, N. A., Whitney, C. K., Mills, M., Gelcich, S., … & Breslow, S. J. (2019). Well-being outcomes of marine protected areas. *Nature Sustainability*, *2*, 524-532.

Breslow, S. J., Sojka, B., Barnea, R., Basurto, X., Carothers, C., Charnley, S., … & Levin, P. S. (2016). Conceptualizing and operationalizing human wellbeing for ecosystem assessment and management. *Environmental Science & Policy*, *66*, 250-259.

Brueckner-Irwin, I., Armitage, D., & Courtenay, S. (2019). Applying a social-ecological well-being approach to enhance opportunities for marine protected area governance. *Ecology and Society*, *24*(3).

Frame, B., & O'Connor, M. (2011). Integrating valuation and deliberation: The purposes of sustainability assessment. *Environmental Science & Policy*, *14*, 1-10.

Ocean Health Index. (2019). Global Scores: Ocean Health Index. http://www.oceanhealthindex.org/region-scores Accessed: 11/7/19.

O'Connor, M., Bureau, P., & Reichel, V. (2007). *Deliberative sustainability assessment with the online KerDST deliberation support tool* (Report No. 2007-03). Paris, France: Centre d'Economie et d'Ethique pour l'Environnement et le développement (C3ED).

Proctor, W., & Drechsler, M. (2006). Deliberative multicriteria evaluation. *Environment and Planning C: Government and Policy*, *24*, 169-190.

Smith, S. L., Karasik, R., Stavrinaky, A., Uchida, H., & Burden, M. (2019). Fishery Socioeconomic Outcomes Tool: A rapid assessment tool for evaluating socioeconomic performance of fisheries management. *Marine Policy*, *105*, 20-29.

Wilson, M. A., & Howarth, R. B. (2002). Discourse-based valuation of ecosystem services: Establishing fair outcomes through group deliberation. *Ecological Economics*, *41*, 431-443.

APPENDIX A:

List of the major ports or port-groups in California where we intend to hold focus group conversations:

1. Crescent City
2. Trinidad
3. Eureka
4. Shelter Cove
5. Fort Bragg
6. Albion
7. Point Arena
8. Bodega Bay
9. Bolinas
10. San Francisco Area Ports
11. Princeton - Half Moon Bay
12. Santa Cruz

13. Moss Landing
14. Monterey Bay
15. Morro Bay
16. Avila-Port San Luis
17. Santa Barbara
18. Ventura
19. Port Hueneme - Oxnard
20. Los Angeles - Long Beach Area Ports
21. Orange County Area Ports
22. Dana Point
23. Oceanside
24. San Diego Ports