Review of Fishery Data Collection and Analysis Proposal in Support of the Marine Life Protection Act Initiative

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Outline

- **What we did in the MLPA Central Coast Study Region**

- **How we propose to modify our approach for the MLPA North Central Coast Study Region**

  – Based on comments and suggestions by reviewers and the public

  – Based on our own lessons learned

Who we are

- **Community development in the Pacific Northwest;**
- **Building a conservation economy: balancing economy, ecology, equity (3E);**
- **Fisheries, forests, food & farm;**
- **Research, ecosystem mapping, decision support tools, investments**
  – Shorebank Enterprise Pacific, Natural Capital Fund, North Pacific Fisheries Trust.

- **Ecotrust contracted by Marine Life Protection Act Initiative**
  - See final report for details of the study

- **Characterized extent and relative importance of central coast commercial fishing grounds**
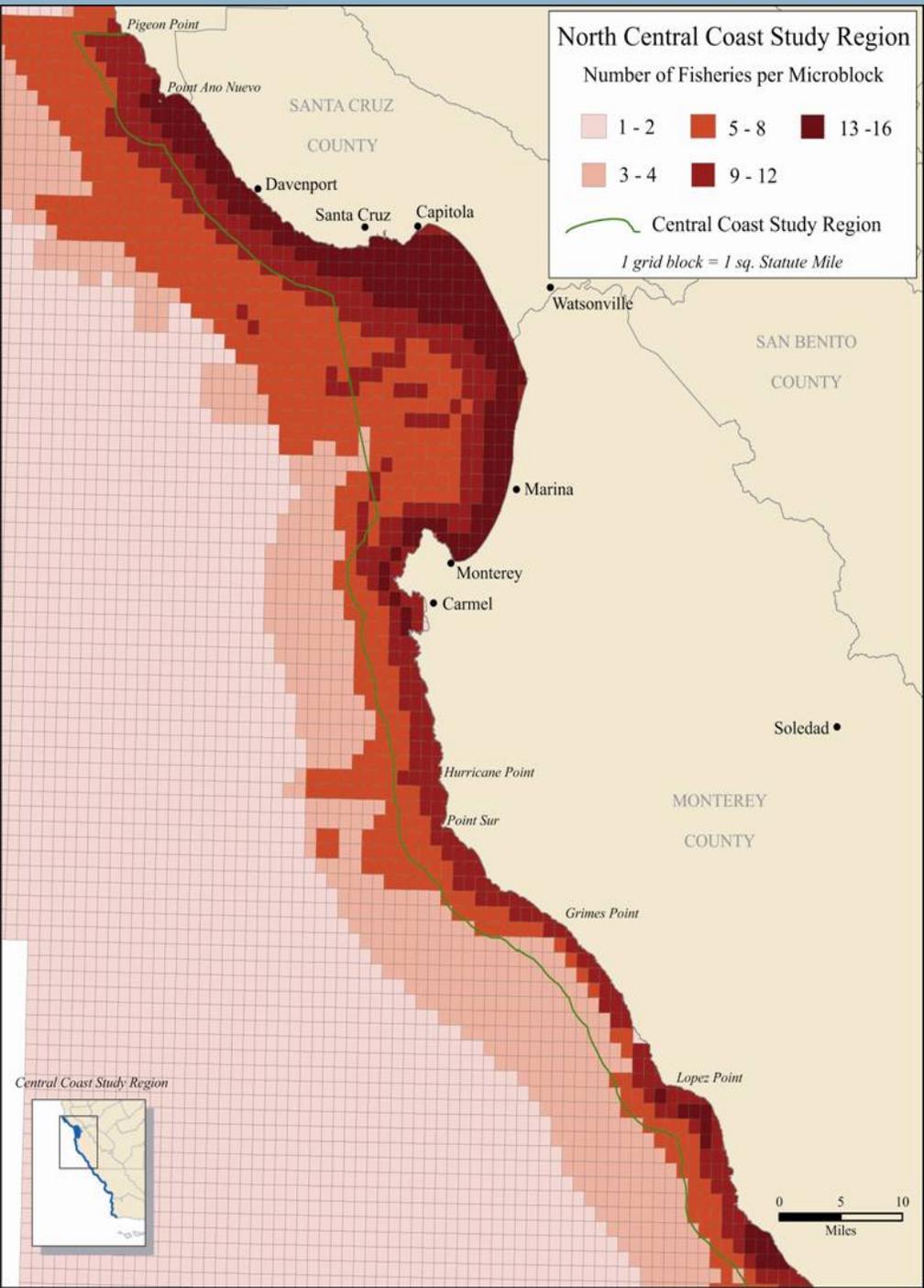 - Especially those not adequately described, spatially, by logbooks

- **Based on previous work**

  – Pilot study with Pacific Coast Federation of Fishing Associations and Environmental Defense in 2001;

  – Port Orford Ocean Resources Team in 2003 and 2005;

  – Extended study with Cordell Bank and Gulf of the Farallones national marine sanctuaries joint fishing working group, 2004-05.
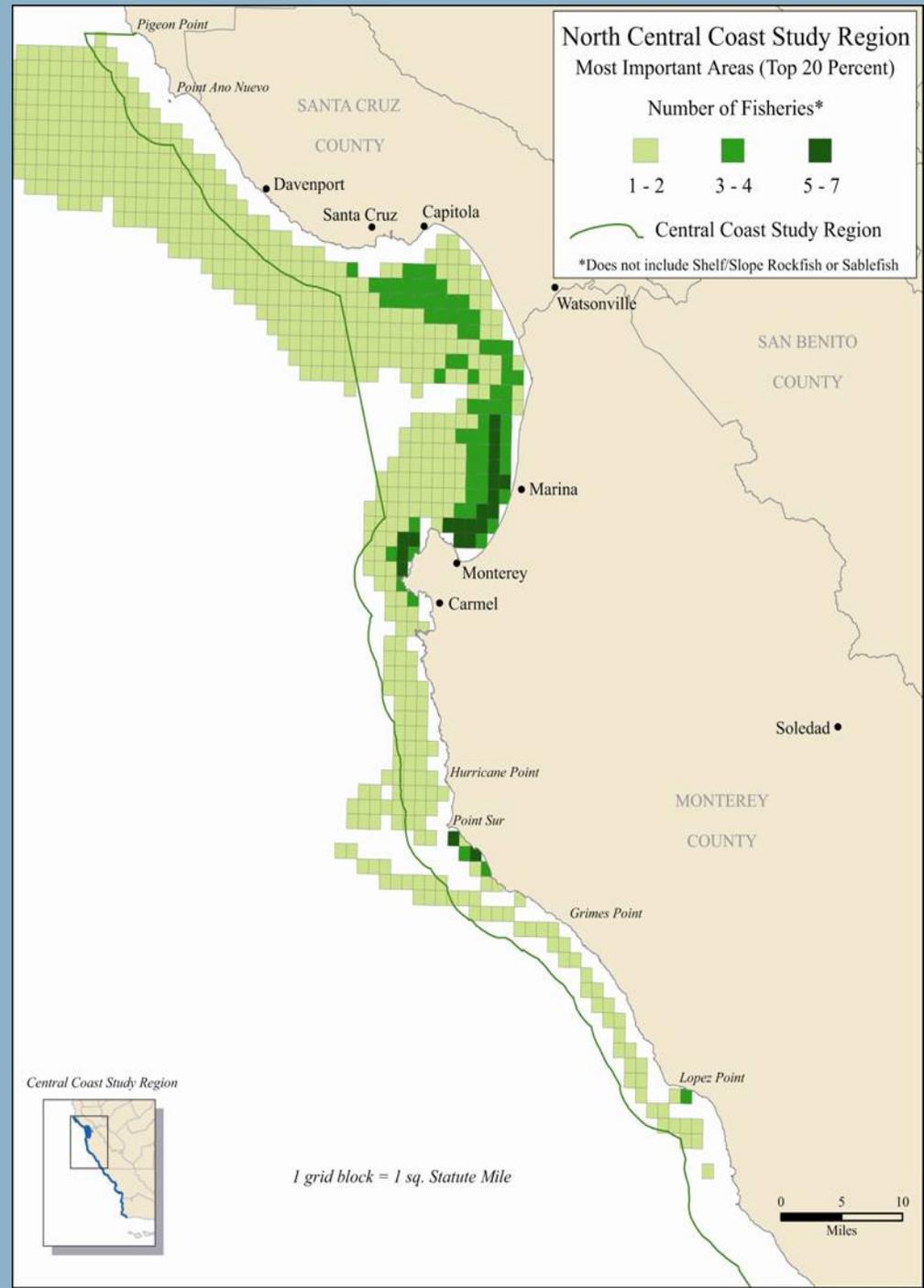
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What We Did in the Central Coast

- **Used computer based map interface to administer survey and collect data – Oceanmap**

- **Mapped extent and stated importance of fishing grounds off central coast for 19 fisheries**
  - Summary map of the areas identified by fishermen as their most important areas;
  - Number of fisheries/fishermen present in a given area - presence and absence irrespective of the stated importance.

Number of Fisheries by area (e.g., microblocks)

Areas of Stated Importance

- **Data and maps were used**
    - To assess proposed MPA packages' effect on available fishing grounds and fishing areas of stated importance
    - To provide UC Davis Economist Jim Wilen with materials to estimate the maximum potential economic impact to the commercial fishery sector

Outreach & Education

- **Describe the specific purpose and intent of the project**
  - What is it we are doing and not doing?
- **Solicit and incorporate what the regional fishing communities think would be most useful**
- **Have members of the fishing community function as port liaisons between Ecotrust and the fishing community**
- **Distribute documents that clearly describe the purpose of the project**

Survey Design - Central Coast

- **Identified 22 species/species groups targeted in the region**

- **Stratified study area into 2 geographic regions rather than by port area**

- **Goal to survey a sample population that represented at least 50% of the total landings (pounds) for each target species/species group, based on 2003-04 landing receipts**

- **At least 5 fishermen per target species/species group, except in cases where the sample population is fewer then 5**

	Fishermen interviewed	% of total study region landings represented by fishermen sampled (2003-05)	Performance in terms of sampling criteria: ++ = both, + =one, - = neither, 0 = no interviews	
			North	South
Anchovy	8	50%	++	Not fished here
Butterfish	0	---	0	0
Cabezon	24	46%	+	++
California Halibut	32	32%	+	+
Chinook Salmon	56	22%	+	+
Dungeness Crab	14	22%	+	++
Jacksmelt	0	---	0	0
Kelp Greenling	17	35%	+	+
Lingcod	28	33%	+	+
Mackerel	7	39%	-	Not fished here
Market Squid	16	35%	+	++
Rock Crab	7	54%	-	+
Rockfish Nearshore	32	42%	+	+
Rockfish Deeper Nearshore	19	31%	+	+
Rockfish Shelf \Slope	6	6%	-	-
Sablefish	7	7%	-	-
Sardines	8	46%	+	Not fished here
Spot Prawn	6	92%	++	++
Surfperch	3	6%	Not fished here	-
Thornyheads	0	---	0	0
White Seabass	6	0%	-	-

Proposed Survey Design – North Central Coast

- **Stratify by fishery not species:**
  - Work with California Department of Fish and Game staff to define the region's fisheries in terms of how they are managed
- **Differentiate in terms of practices (target strategy) and/or gear configurations**
- **Use geographic groups or subgroups (i.e., port complexes or ports)**
- **At least 50% of the total landings and/or ex-vessel revenue from 2003-2006 by fishery, gear type, and port complex**
- **At least 5 fishermen, except in cases where the sample population is fewer than 5**

- **Clearly document and describe how the sample is defined and what the final classifications represent in terms of:**

    - Total number of fishermen

    - How much do they need to land to be associated with fishery

    - How many fishermen engage in multiple fisheries

    - Are there fishermen that are not captured because they are missing from the landing receipts or have inadequate contact information

    - What is their association with the ports in the region (landing vs. home)

Data Collection

- **All interviews will follow a shared protocol for each fishery the interviewee participates in**

    – Fishermen are asked to identify all fishing areas/locations that are of economic importance over their cumulative fishing experience, and to rank these using a weighted percentage—an imaginary "bag of 100 pennies" that they distribute over the fishing grounds

    – Non-spatial information pertaining to demographics and basic operations will also be collected

Data Collection

- **Additional indicators will help further define how the participants interpret the question of ranking areas that are of economic importance to them**

  - Demographics

  - Basic operational costs

  - How far they travel to an area to fish

  - Vessel and gear type

  - Percentage of household income derived from fishing, and the proportion attributed to each fishery in which they participate

Data Collection

- **To address concerns regarding the protection of a participant's confidentiality during and after the interview**

    - Individual's responses remain that person's property!

        - Consent form deals explicitly with what can be done with it

    - Train field staff on confidentiality protocols

        - Consistent with DFG's policies not to share information

    - New security features incorporated into Oceanmap

        - Password protected zip file
        - Users will not be allowed to add existing or previously created data to Oceanmap interface

Quality Assurance/Quality Control

- **Data usually need to be "cleaned" after the interview has been completed**
  - During the central coast process didn't have a procedure that allowed fishermen to review their shapes after they had been cleaned
- **Secure web-based application that will allow fishermen to log-in and verify their shapes' accuracy**
  - Those without access can schedule a time to do so at a California Department of Fish and Game field office or be sent paper maps

QA/QC – 2

- **Follow-up meetings with participants and fishing community in each of the ports to verify results**
- **Work with fleet to ensure confidentiality of any publicly displayed information**

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Analyzing the Fishing Grounds

- **Same method of analysis developed in the central coast process—creating a weighted surface that represents the stated importance of different areas for each fishery**

- **Test measures of weighting:**

  - multiply the values by the proportion of in-sample landings recorded by that vessel (a crude revenue based measure) or

  - by the proportion of trips made by that vessel in a particular fishery (an effort-based measure).

- **Everyone's shapes were given equal weight in the central coast process**

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Socioeconomic Analysis

- **Use methods developed in the central coast process to estimate the maximum potential economic impact to the commercial fishery sector (Wilen et al., 2006)**

- **Compute and compare net economic values for the various MPA package alternatives using stated importance indices from the fishing grounds**

- **Difference: This will be done so that it can assist stakeholders when designing MPA packages *rather then after packages have already been developed***

When will data be ready for stakeholders?

- **Draft data products: July 2007**

- **Final data products: August 2007**

Customize Outputs for Users

- **Multiple formats based on the previous needs outlined by the different user groups:**
  - Stated importance *of fishing areas* in terms of value, effort, and area
  - Maximum potential economic impact *of draft MPA packages*
  - Number of fisheries
  - Number of fishermen
  - Number of ports
  - Notable "outliers", e.g. individual or subsets of fishermen disproportionately affected by particular MPA alternatives

Your Feedback, please!

Recommendations or feedback on this proposal?
(your input here)