

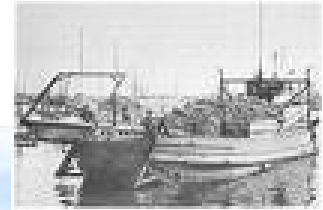
The Ocean Uses Atlas Project: Informing Ocean Management in New England

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New Hampshire – Southern Maine Workshops
Jan. 12-13, 2010

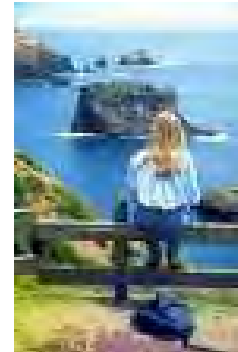
Oceans Are Becoming Crowded Places: *Fishing Uses*



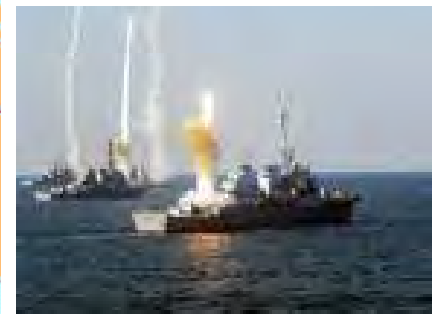
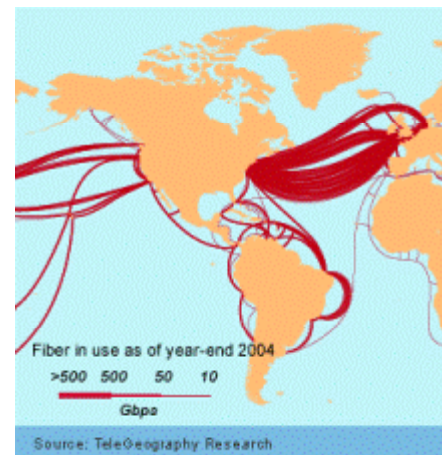
Small 50' fish processing vessel, fishing vessels of Pacific & Indian Oceans, and small gear boats



Oceans Are Becoming Crowded Places: *Non-Consumptive Uses*



Oceans Are Becoming Crowded Places: *Industrial and Military Uses*



Other Human (?) Uses



Effective Ocean Management Increasingly Requires Planning For All Ocean Uses

Ocean Management Approaches

Emergency Response

Alternative Energy

Aquaculture

Marine Spatial Planning



What We Actually Manage

OCEAN USES:
pattern,
intensity,
effects

*



Desired Ecosystem + Societal Outcomes

Ecosystem Services

Social, Cultural + Economic Benefits

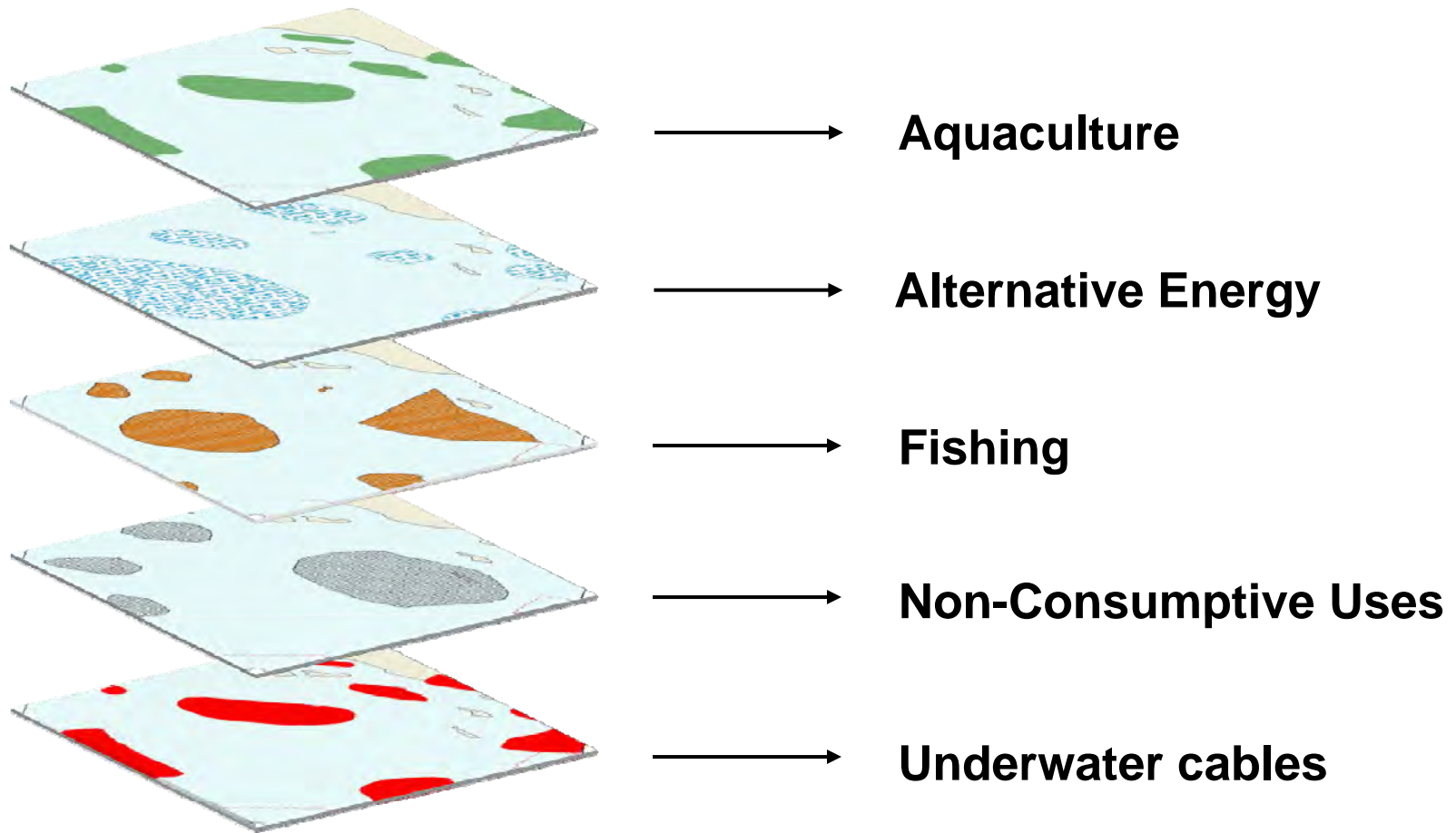
Reduced User Conflicts

Origin of the Atlas Project

- **Purpose** – to inform ocean management off CA
- **Approach** – participatory GIS mapping of 29 ocean uses in 3 sectors by regional experts
- **Partners** –
 - NOAA Marine Protected Areas Center
 - Marine Conservation Biology Institute
 - *Moore and RLF Foundations*
- **Timeline** – Jan 2008 – Jan 2010
- **Status** –
 - Data complete for all 4 regions
 - Reports in prep



The Missing Puzzle Piece: Comprehensive, Continuous and Consistent Spatial Data on Current and Planned Ocean Uses



29 Significant Human Uses Mapped

Industrial + Military (8)

Offshore oil and gas
Offshore alternative energy
Mining + mineral extraction
Underwater cables
Maritime shipping
Cruise ships
Military operations
Aquaculture

Fishing (12)

Recreational pelagic fishing from boats
Recreational benthic fishing from boats
Recreational fishing from shore
Recreational dive fishing
Kayak fishing
Commercial pelagic fishing
Commercial fishing w/ benthic fixed gear
Commercial fishing w/ benthic mobile gear
Commercial dive fishing
Hunting
Commercial algae harvesting
Shore-based recreational harvest

Non-Consumptive (9)

Swimming
Surface water sports
Paddling
SCUBA and snorkeling
Motorized boating
Sailing
Tide pooling
Beach use
Wildlife viewing from charter boats

Scale Matters

- **Study Area** –
 - New Hampshire to Southern Maine
 - Shore to 200nm (EEZ)
- **Mapping Scale** – uses are mapped at a scale that:
 - Is appropriate to the specific use
 - Is coarse enough to avoid time-consuming local details irrelevant to most ocean planning
 - Is fine enough to accurately capture the general locations of the use
- **Map Products** – generated at two scales: (i) full region for broad, multi-use comparisons; and (ii) sub-regions for more detail on indiv. uses

What We Ask of You Today

Aim for a ***broad-brush*** depiction of each use, not precise locations on local scales.

Keep moving! Large region requires quick brush strokes!

Contribute to the mapping of as **many uses** as you are familiar with. You probably know more than you think.

Respect and encourage the input of **others**.

Remember, these maps are the ***beginning*** not the *end* of the discussion over ocean uses

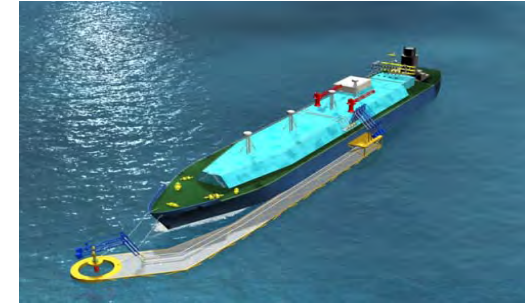
What We Will Do With Your Information

- Post-processing to aggregate use patterns from multiple breakout groups into a single view
- Provide data to UNH/CRRC for incorporation into ERMA
- Disseminate raw data, metadata and derived map products via web sites and direct mailings
- Analyze data for use patterns and trends

Atlas Products and Applications

Products

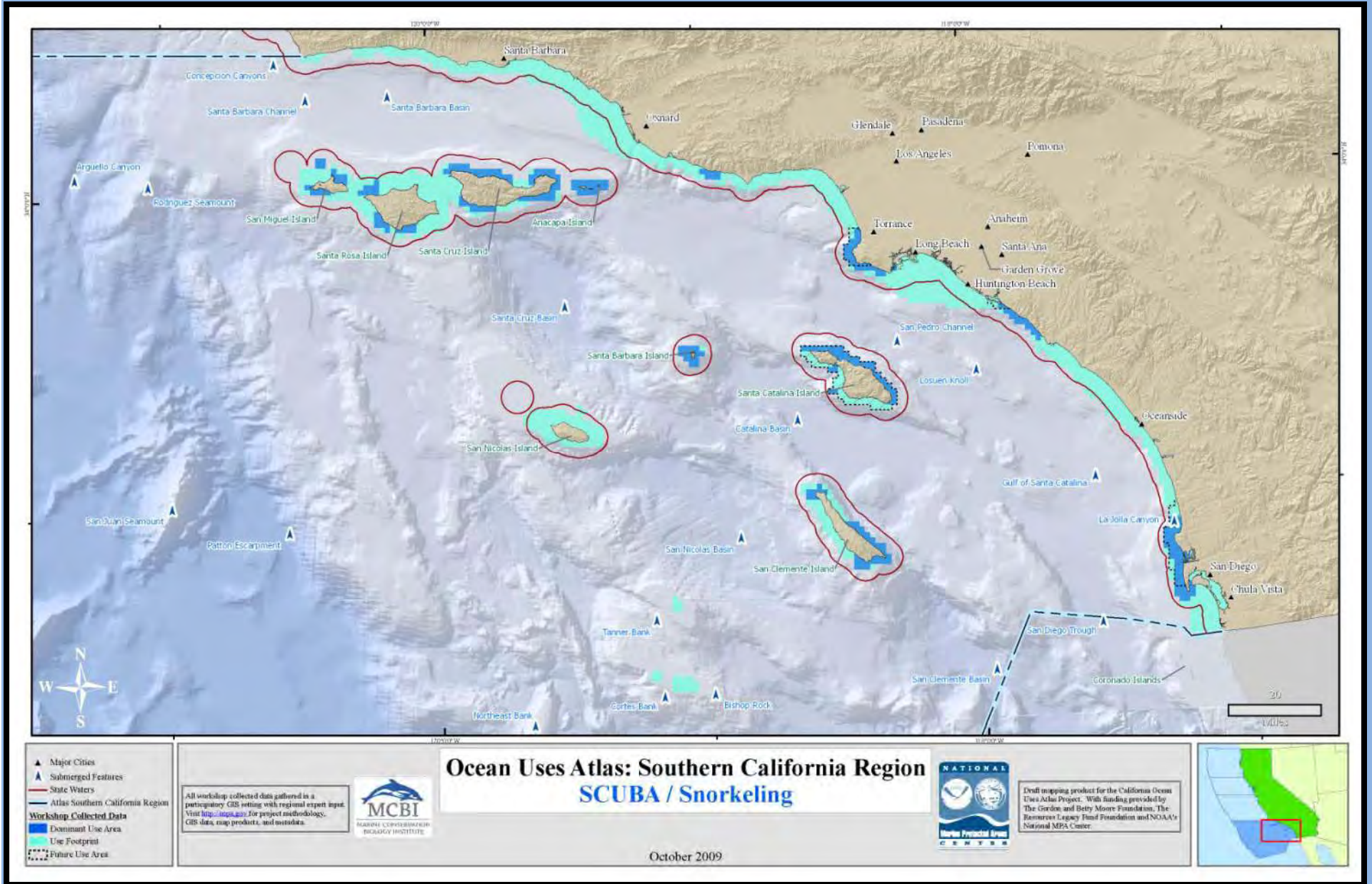
- Digital data
- Maps
- Synthesis + analysis
- Web based mapping tools



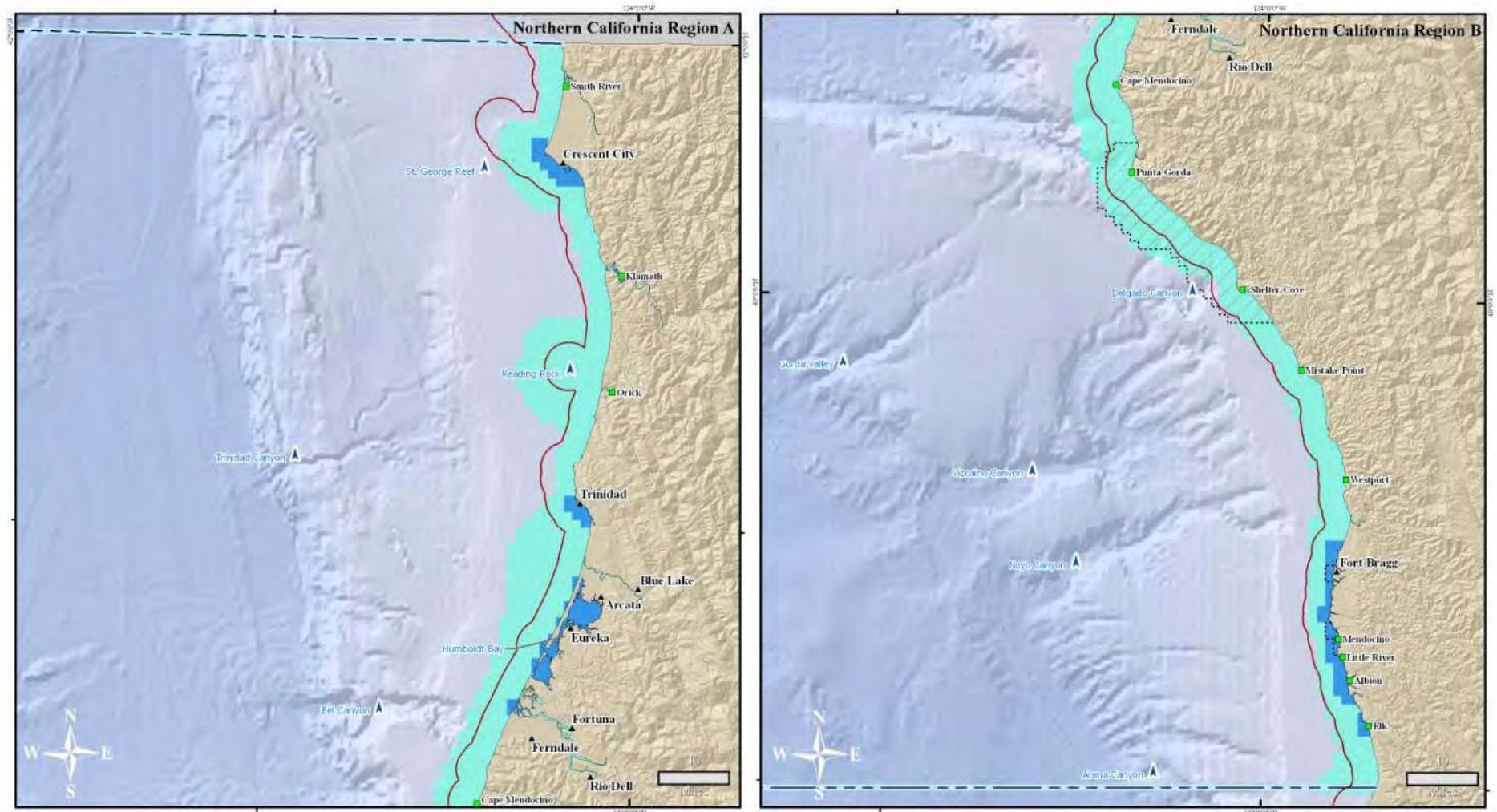
Applications

- inform emergency response
- inform Coastal + Marine Spatial Planning
- Resolving user conflicts
- MPA planning and adaptive mgmnt
- Alternative energy / aquaculture siting
- Military operations and planning
- Fisheries managment
- Guide socioeconomic studies

Sample Product: Single Use, SoCal Region



Sample Product: Single Use, Zoomed In



- Other Landmarks
- ▲ Cities
- ▲ Submerged Features
- State Waters
- Atlas Northern California Region
- Workshop Collected Data**
- Dominant Use Area
- Use Footprint
- Future Use Area

All workshop collected data gathered in a participatory GIS setting with regional expert input. Visit <http://ingapac.org> for project methodology, GIS data, map products, and materials.



Ocean Uses Atlas: Northern California Region Paddling

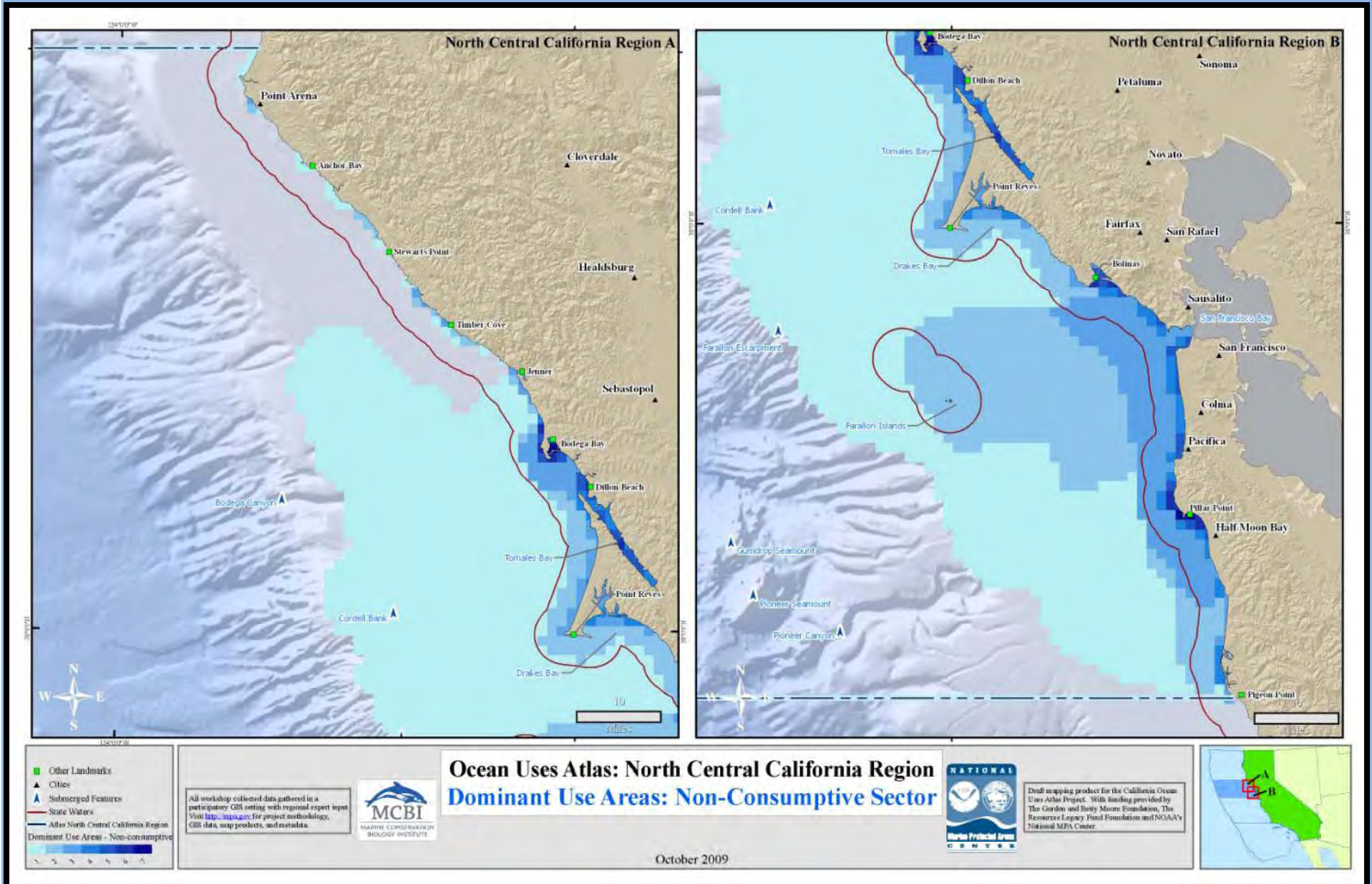
October 2009



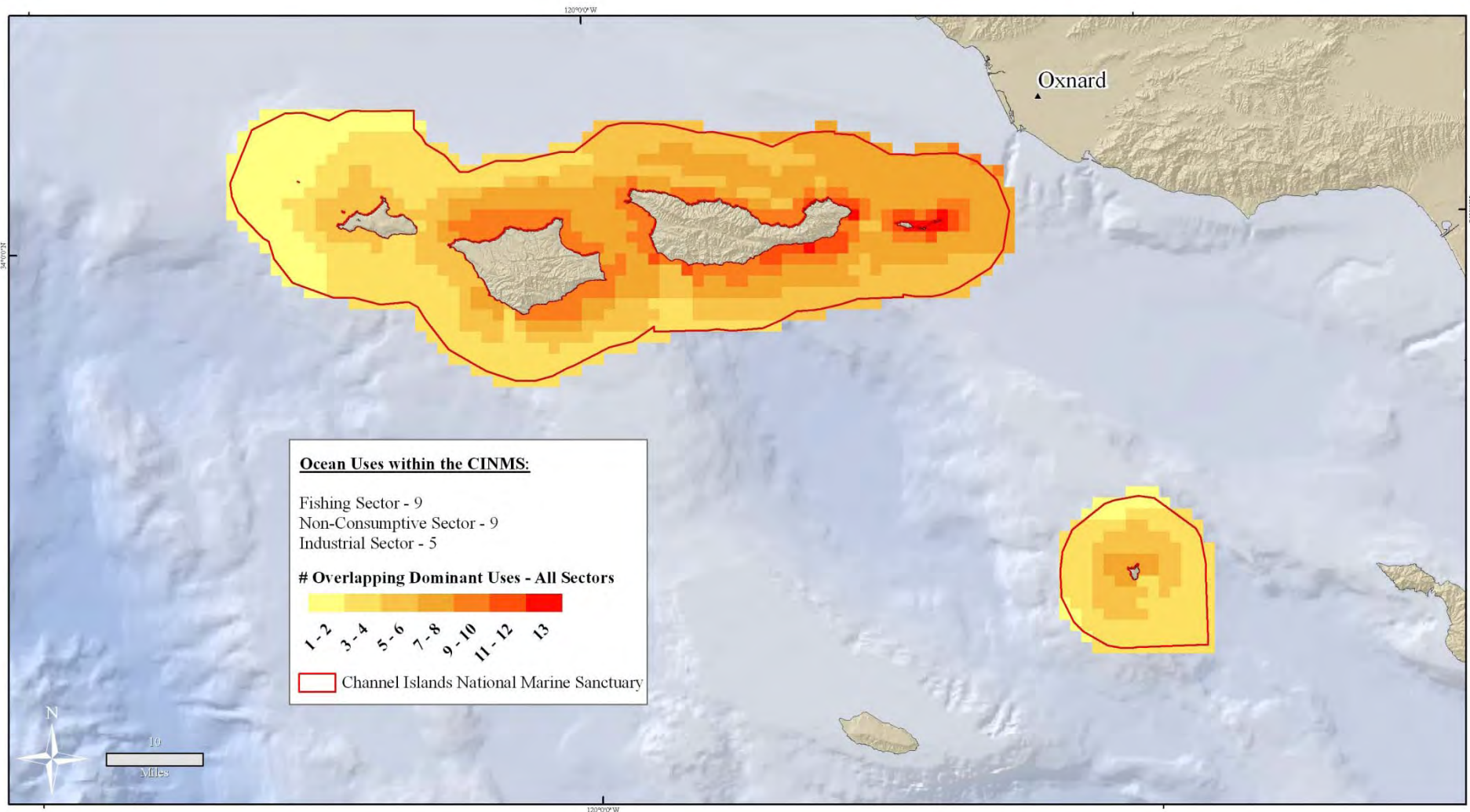
Draft mapping product for the California Ocean Uses Atlas Project. With funding provided by The Gordon and Betty Moore Foundation, The Resource Legacy Fund Foundation and NOAA's National MPA Center.



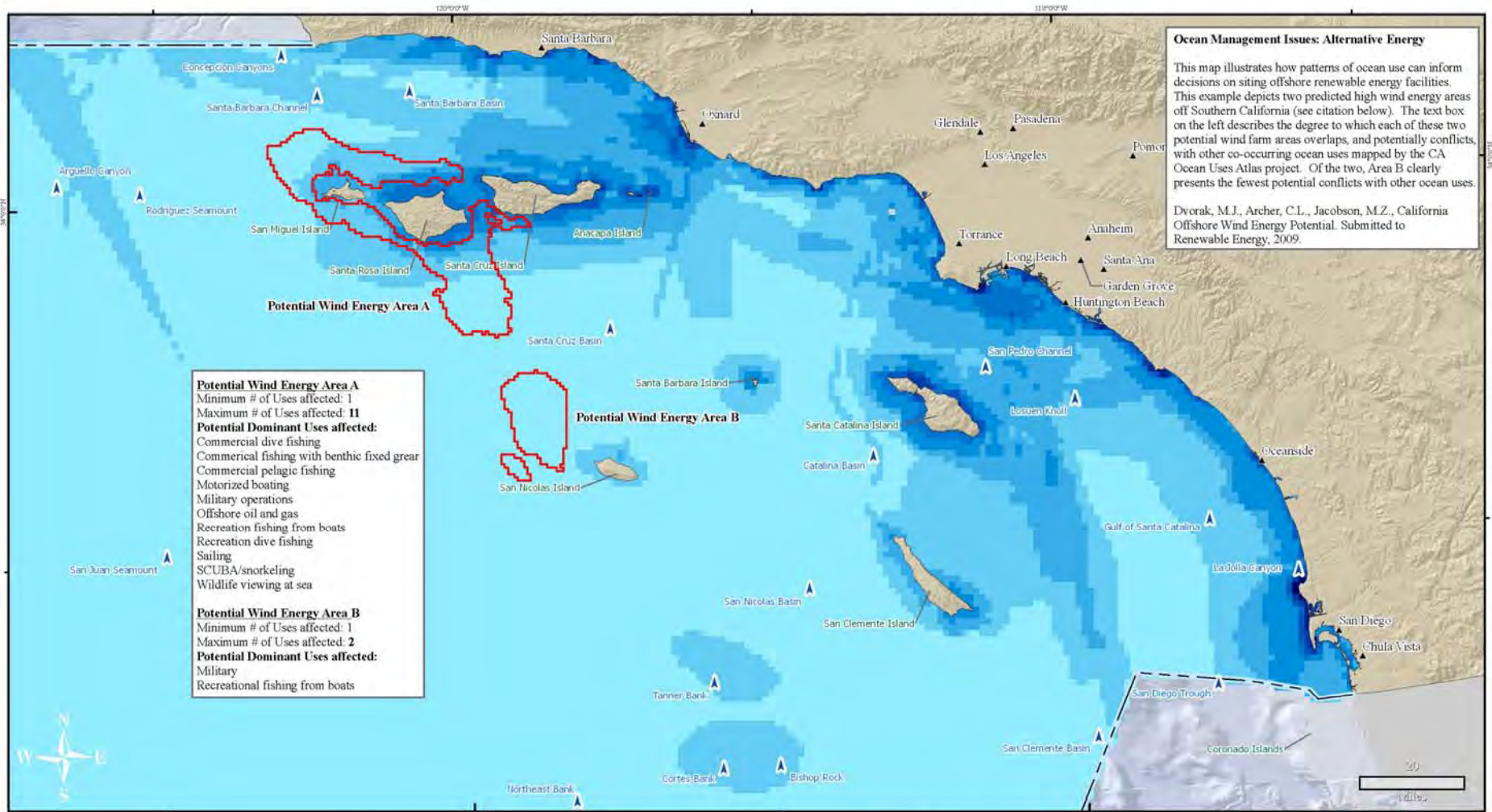
Sample Product: Aggregated Sector, Zoomed In



Sample Product: Overlapping Uses in Channel Islands NMS



Sample Product: Alternative Energy Siting



Ocean Management Issues: Alternative Energy

This map illustrates how patterns of ocean use can inform decisions on siting offshore renewable energy facilities. This example depicts two predicted high wind energy areas off Southern California (see citation below). The text box on the left describes the degree to which each of these two potential wind farm areas overlaps, and potentially conflicts, with other co-occurring ocean uses mapped by the CA Ocean Uses Atlas project. Of the two, Area B clearly presents the fewest potential conflicts with other ocean uses.

Dvorak, M.J., Archer, C.L., Jacobson, M.Z., California Offshore Wind Energy Potential. Submitted to Renewable Energy, 2009.

Potential Wind Energy Area A
 Minimum # of Uses affected: 1
 Maximum # of Uses affected: 11
Potential Dominant Uses affected:
 Commercial dive fishing
 Commercial fishing with benthic fixed gear
 Commercial pelagic fishing
 Motorized boating
 Military operations
 Offshore oil and gas
 Recreation fishing from boats
 Recreation dive fishing
 Sailing
 SCUBA/snorkeling
 Wildlife viewing at sea

Potential Wind Energy Area B
 Minimum # of Uses affected: 1
 Maximum # of Uses affected: 2
Potential Dominant Uses affected:
 Military
 Recreational fishing from boats

- ▲ Major Cities
- ▲ Submerged Features
- Atlas Southern California Region
- # Overlapping Dominant Uses

All workshop collected data gathered in a participatory GIS setting with regional expert input. Visit <http://mpa.gov> for project methodology, GIS data, map products, and metadata.



Ocean Uses Atlas: Southern California Region Ocean Management Issues: Alt. Energy Siting

DRAFT
 August 2009



Draft mapping product for the California Ocean Uses Atlas Project. With funding provided by The Gordon and Betty Moore Foundation, The Resource Legacy Fund Foundation and NOAA's National MPA Center.



Next Steps for the Ocean Uses Atals

- CA maps and products disseminated
- Expand to other regions:
 - NH and Southern Maine
 - American Samoa
 - Others as resources allow
- Web site
- Web-based mapping tools
- Syntheses of existing ocean uses data



**The Oceans Are Getting
Crowded**



**Ocean Uses Atlas Informs
Integrated Ocean Planning**

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