Marine Life Protection Act Initiative

Update on Habitat Data for the MLPA South Coast Study Region

Presentation to the MLPA Master Plan Science Advisory Team

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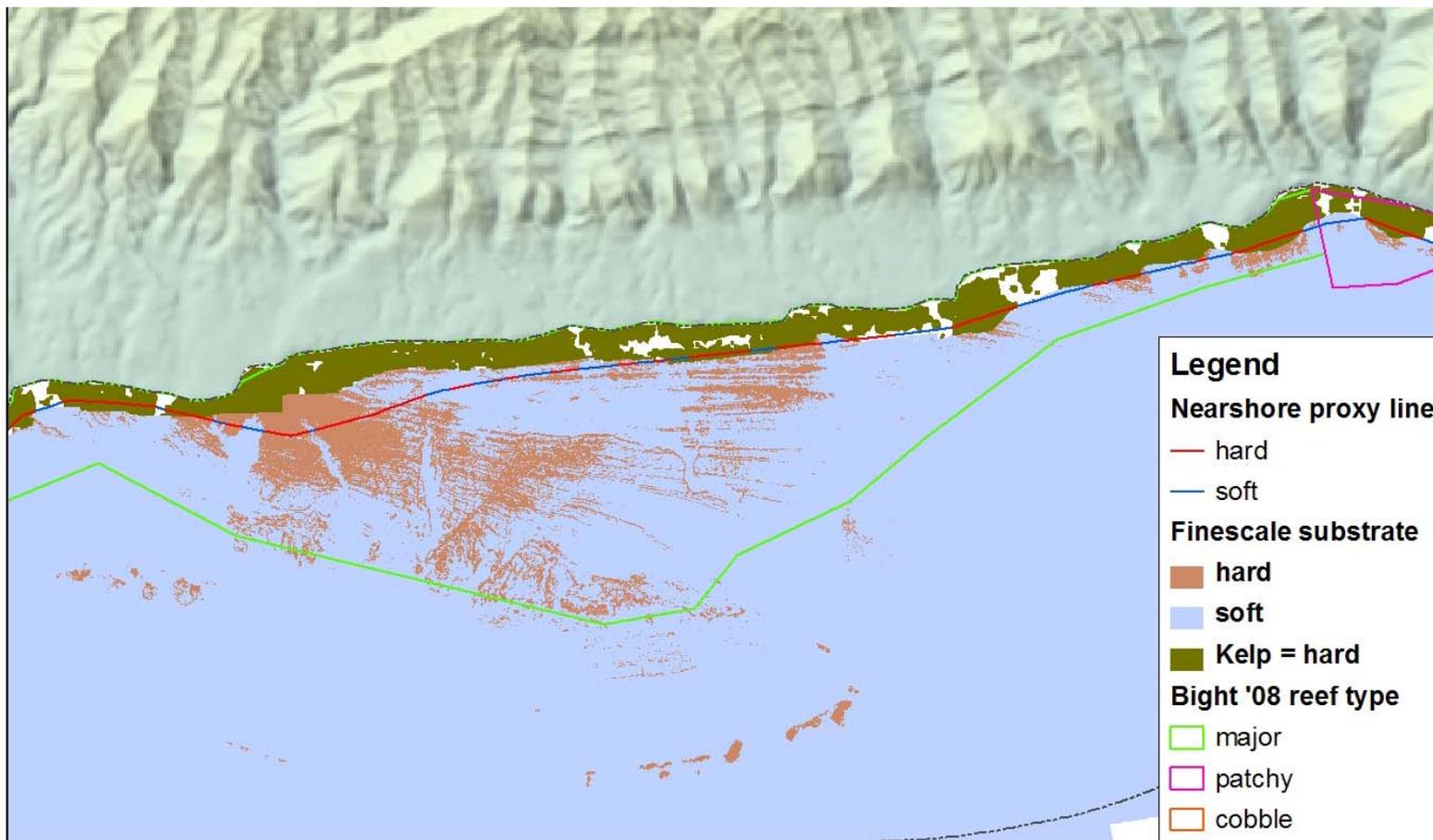
Nearshore Substrate Data Gap

Hybrid Approach

Estimated nearshore substrate using a proxy line drawn roughly along the 10 meter contour and classified using:

- All available fine-scale data
- Where fine-scale data was unavailable, used maximum kelp extent ('89, '99, '02-'06) as a proxy for rocky substrate
- Considered Bight '08 reef classifications (major, patchy, cobble, offshore, artificial)
- Binary classification; each length of coast is either hard or soft, but not both

Nearshore Substrate Proxy

Offshore Substrate Data Gap

San Nicolas and San Clemente

- Evaluated different sources of coarse scale substrate data

- Determined that data from San Nicolas originated from a different data source (U.S. Minerals Management Service report from 1987)

- Explored creating a "correction factor" for Gary Greene's data at San Clemente but abandoned this based on information from Guy Cochrane (U.S. Geological Survey)
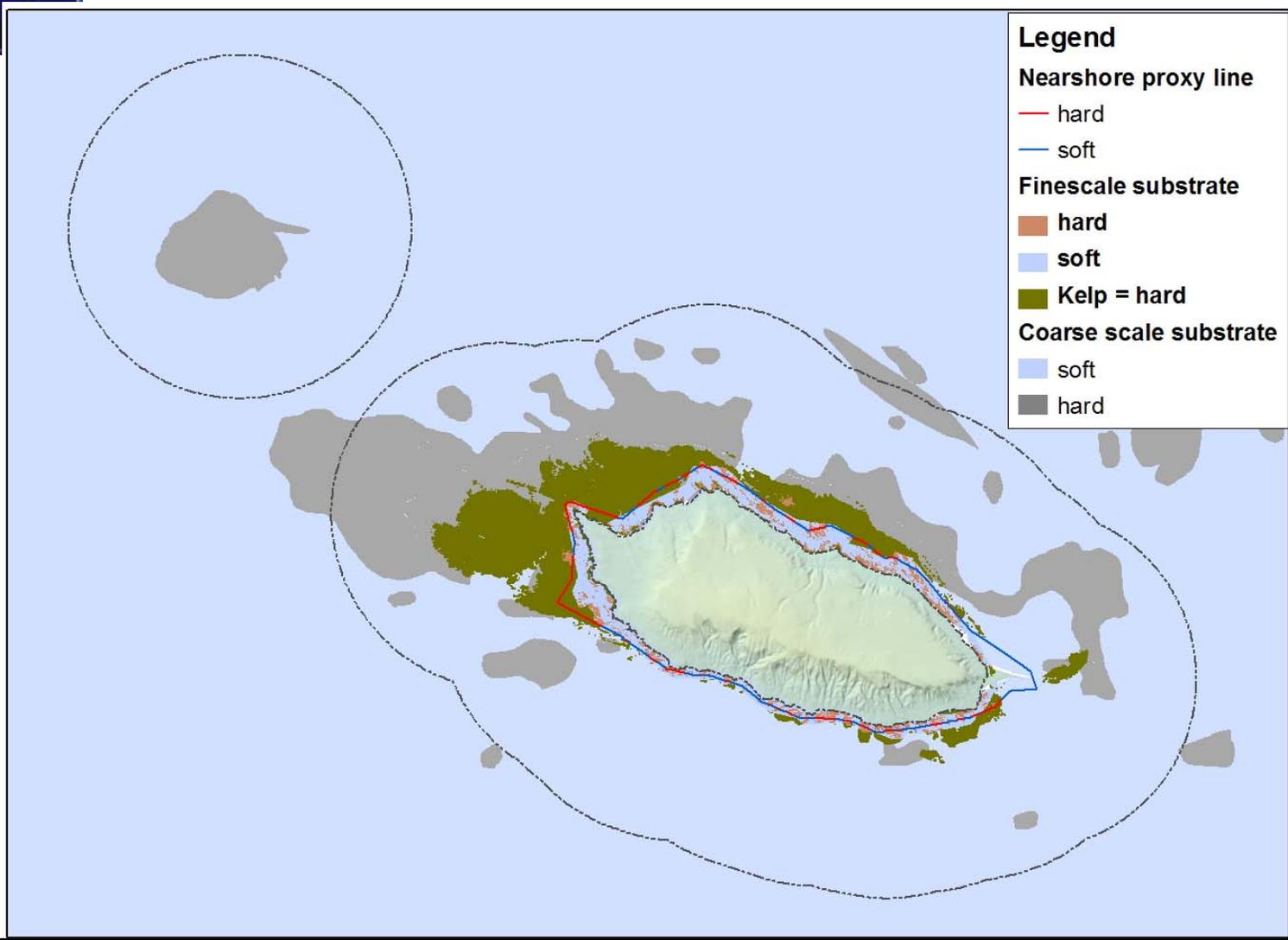
Offshore Substrate Data Gap

San Nicolas and San Clemente

- Used U.S. Minerals Management Service coarse scale data at San Nicolas

- Left large areas of unknown at San Clemente

- Evaluated the whole study region for representation of depth zones (no substrate classification)

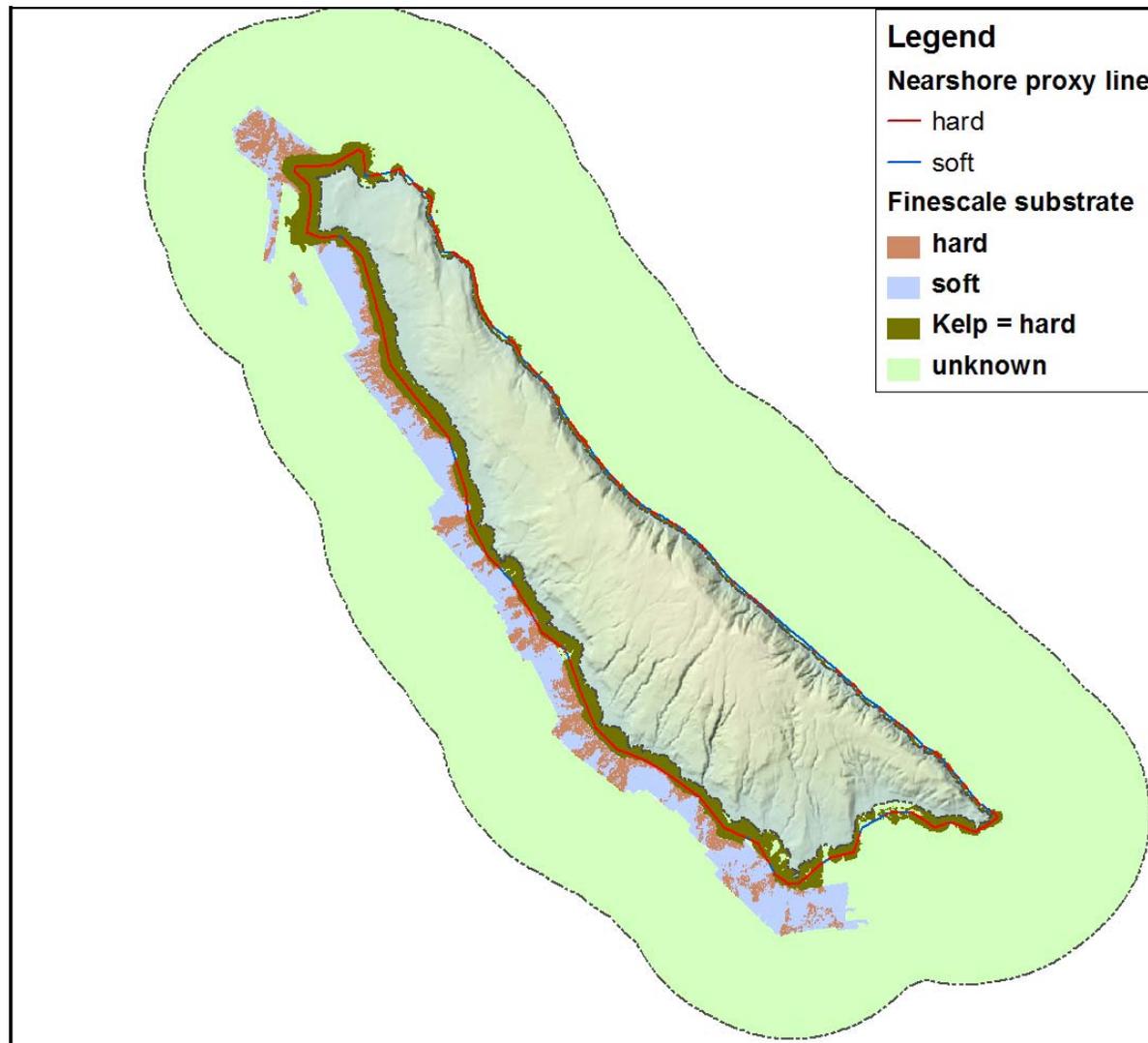- Have not yet developed a way to quantify confidence levels for substrate information

Substrate at San Nicolas

Legend

Nearshore proxy line
— hard
— soft

Finescale substrate
■ hard
■ soft
■ Kelp = hard

Coarse scale substrate
■ soft
■ hard

Substrate at San Nicolas

Legend

Nearshore proxy line
— hard
— soft

Finescale substrate
■ hard
■ soft
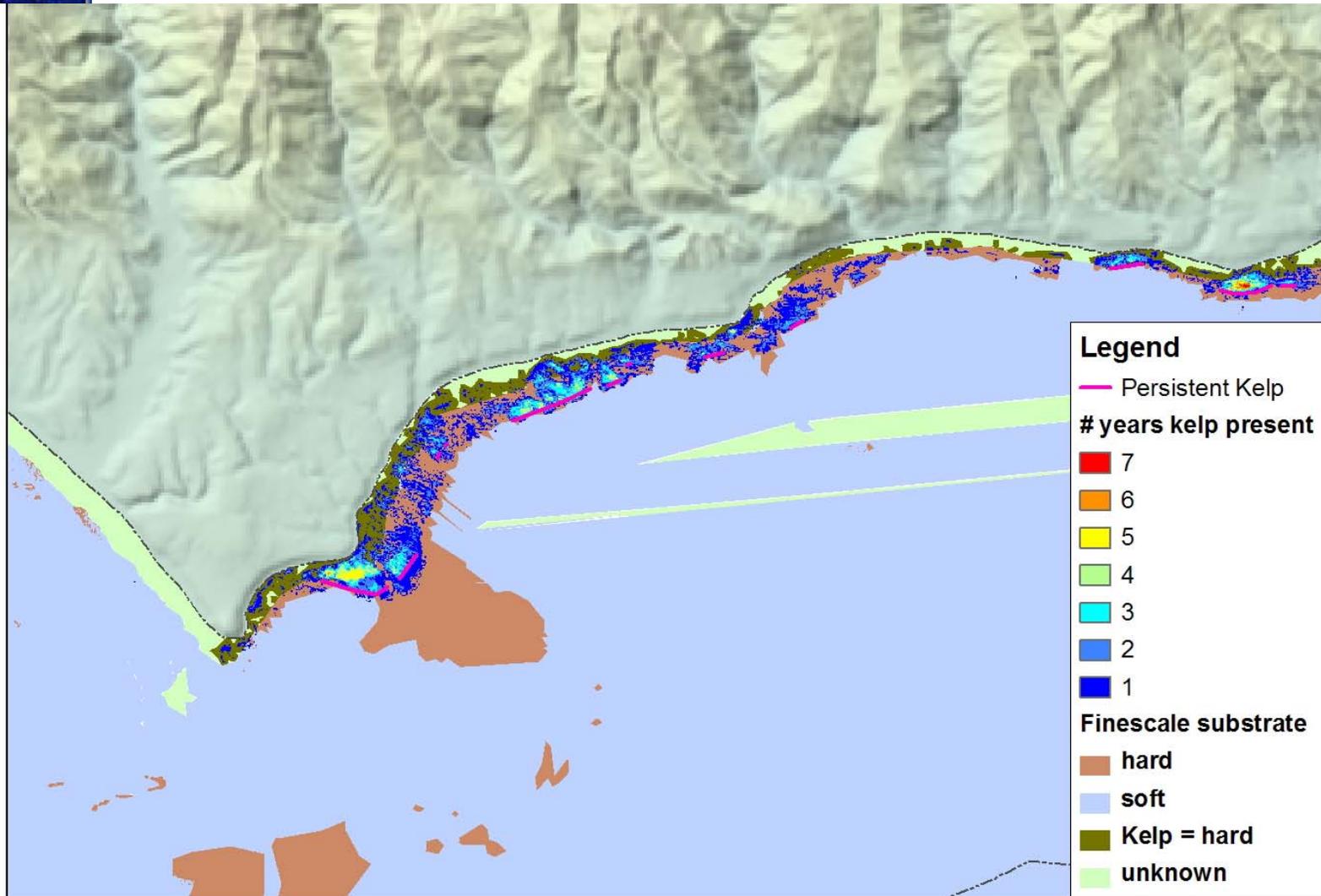■ Kelp = hard
■ unknown

Kelp from Multiple Years of Data

Linear Measure of Persistent Kelp

Estimated linear extent of persistent kelp:

- Created an overlay of California Department of Fish and Game kelp aerial surveys from '89, '99, '02-'06
- Identified areas where kelp was present at least three out of the seven survey years
- Drew a line along the offshore edge of persistent kelp beds

Included evaluation of average kelp area in habitat representation analyses
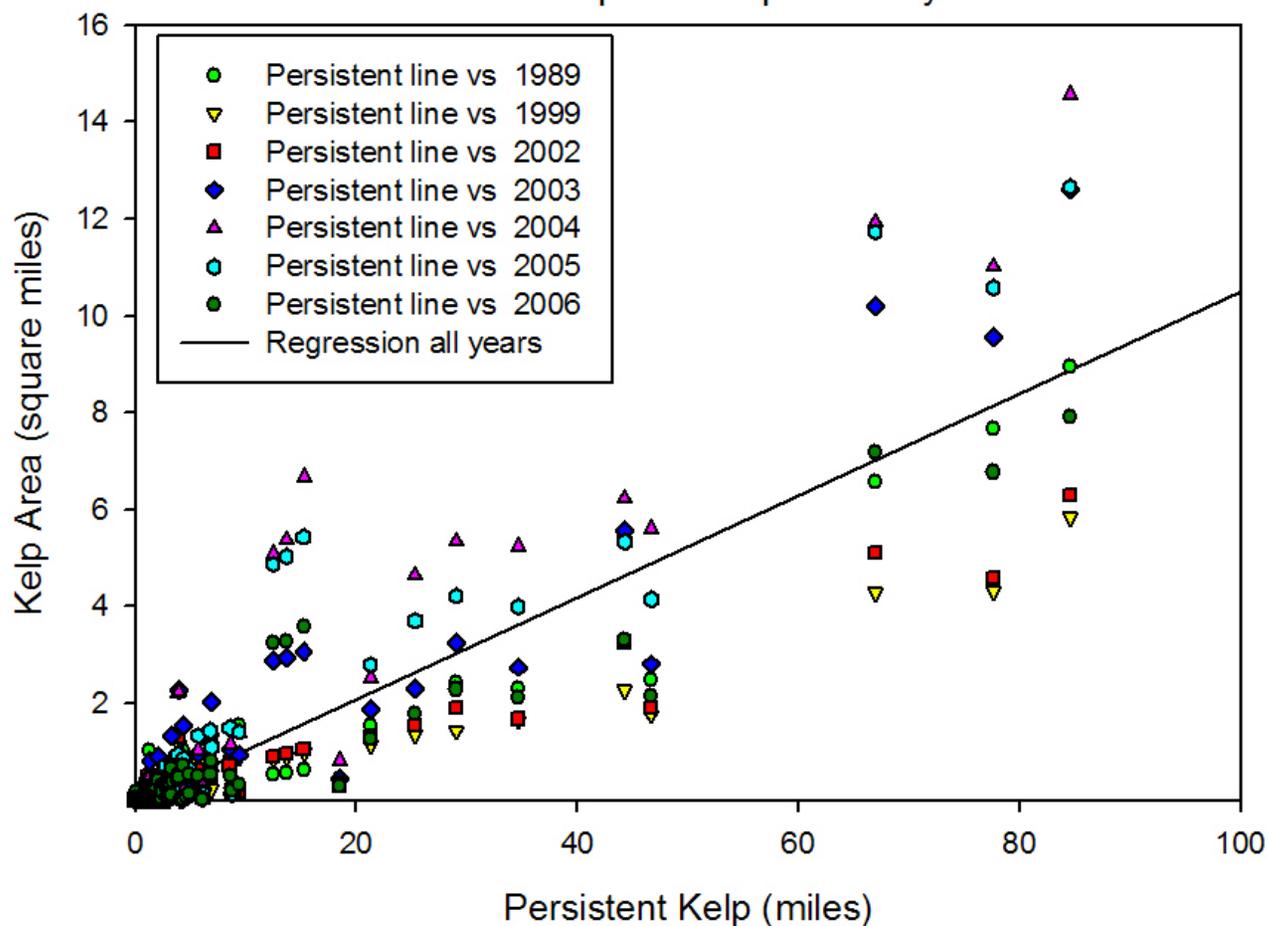
Persistent Kelp Line

Legend

— Persistent Kelp

 # years kelp present

- 🟥 7
- 🟧 6
- 🟨 5
- 🟩 4
- 🟦 3
- 🟦 2
- 🟦 1

Finescale substrate

- hard
- soft
- Kelp = hard
- unknown

Linear versus Aerial Kelp

- Strong correlation between persistent kelp line and kelp area

- Kelp coverage varies across years, but tends to vary in a consistent direction across the study region

- Areas that CAN support kelp are not represented by persistent kelp line – should we also evaluate for maximum kelp to account for these areas?

Correlation between Kelp Measures

Persistent Kelp vs. Kelp Area by Year

Legend:
- Persistent line vs 1989
- Persistent line vs 1999
- Persistent line vs 2002
- Persistent line vs 2003
- Persistent line vs 2004
- Persistent line vs 2005
- Persistent line vs 2006
- Regression all years

X-axis: Persistent Kelp (miles)
Y-axis: Kelp Area (square miles)

Overall $r^2 = 0.801$

Most individual years have a stronger correlation ($r^2 > 0.9$)

Other Habitat Layer Updates

- Estuarine eelgrass well mapped in many estuaries by Merkel & Associates (one notable gap at Mugu Lagoon)

- Open coast eelgrass mapped well in the south mainland, but only scattered point locations in the north – will generalize to point locations and presence/ absence

- Surfgrass mapped with a combination of linear features (in the northern Channel Islands) scattered point locations (north mainland) and detailed areas (south mainland) – will generalize to point locations and presence/ absence

For Round 2 Evaluations

- Will evaluate based on new habitat layers presented above

- Will evaluate for representation of unique and rare habitats (elk kelp, oil seeps, oceanographic habitats)

- Will consider additional data provided by stakeholders and others, but staff time for data processing is limited so must rely to large degree on best, readily available