Presentation to the SCCWRP Commission

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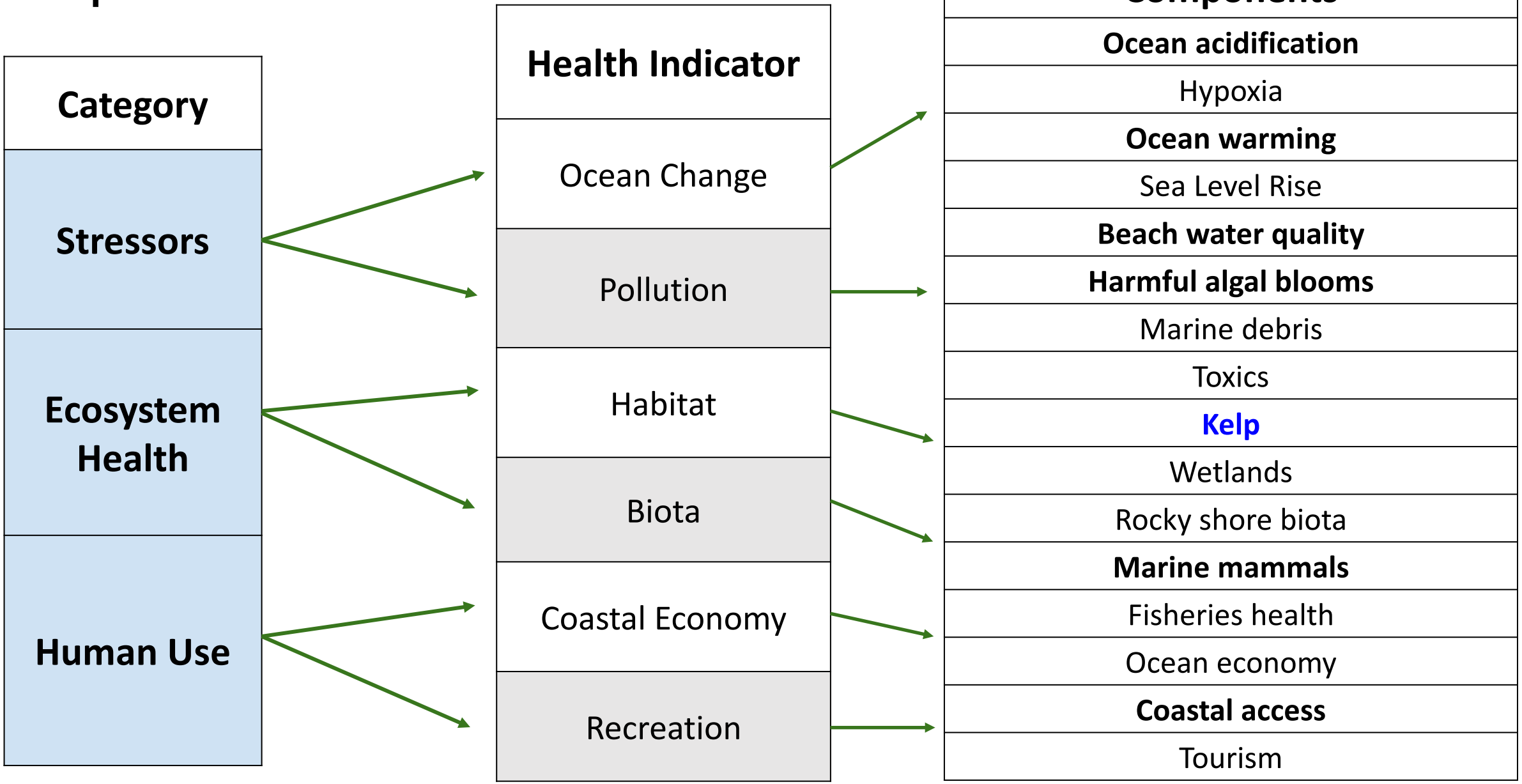
Background

- West Coast Ocean Alliance is a regional planning body
  - States, tribes, and Feds unifying their approach to coastal management
  - Present focal areas are wind energy, ocean acidification, and aquaculture
- WCOA has agreed to create a west coast ocean health report card
- States are leveraging this effort by releasing their own report cards
  - California's OPC Council Meeting (on Monday) strongly endorsed these efforts

Why does WCOA want a Report Card?

- Foundation for prioritizing issues on which to focus management attention
  - Report Card yields a shared understanding about the condition of the coast
- Communication tool
  - Tell legislators how their management teams are doing
- Improves monitoring systems
  - States invest heavily in monitoring
  - Report Card allows evaluation of whether monitoring yields the proper information

Proposed Indicators



Our Primary Products

- Two-pager: Targeted to legislative staff with limited technical knowledge
  - Front page has simple status/trend graphics and a key takeaways box
  - Back page elaborates on main messages, using no more than two additional graphics
- Web site: Targeted to people who want a deeper dive
  - More extensive graphics and assessments
  - Methods for how we calculated status and trends
  - An interactive mapping tool so you can look at data for your specific locale
  - Description and links for all west coast programs that collect or present data on that topic
- Monitoring recommendations
  - What are the monitoring shortcomings that limit our ability to prepare a report card?

Our Progress

- Two indicators have a two-pager and supporting web site that are almost done
  - Kelp and Harmful Algal Blooms
- Eight indicators have active working groups
  - Marine mammals, Ocean acidification, Coastal access, Ocean warming, Rocky intertidal
  - Coastal economy, Fish, Birds (State of California is leading these)
- Each indicator is supported by expert working group, starts with subregional proof of concept, and expands to west-coast wide application

KELP 2023

What are kelp? Kelp are marine algae that support vibrant ecosystems. There are two kelp species along the West Coast that form a canopy at the surface. The Kelp Indicator assesses these two canopy-forming species.

Why are kelp important? Kelp create underwater forests that are important for fish and invertebrates. Kelp are also significant for West Coastal Tribal nations.

2023 STATUS

HISTORICAL TRENDS

KEY TAKEAWAYS

Kelp status along the U.S. West Coast is **Below Expectation**, 72% of kelp beds have canopies below their historic norms. This is the third lowest year on record since 1984.

Kelp canopy is **declining coast-wide**. Over the past 40 years, kelp canopies decreased at a rate of 10% per decade. However, there has been no coast-wide decline or recovery in the last five years.

Kelp is most impacted in **northern California** and **central California.** Marine heatwaves and Sea Star Wasting Syndrome contributed to declines.

WHERE THIS INFORMATION COMES FROM

A team of kelp scientists reviewed decades of data to identify status and trends using overhead imagery that measures the amount of kelp canopy on the ocean's surface for California, Oregon, and outer Washington.
Current Status was calculated as the percent of the coastline with kelp canopy below historical amounts.
Historical Trends were determined by examining changes over 40 years.
Recent Trends examined changes over the most recent 5 years.

KELP 2023

DIVE DEEPER INTO THE DATA

Kelp numbers have not been this low for more than two decades. A marine heat wave in 2014-2016 led to massive kelp die-offs across the West Coast, and recovery has not yet occurred along large portions of the coast.

While kelp on **Washington**'s outer coast is relatively stable, the Kelp Forest Monitoring Alliance of Washington State has identified kelp declines of approximately 80% in portions of Puget Sound, an area not included in calculations for this assessment.

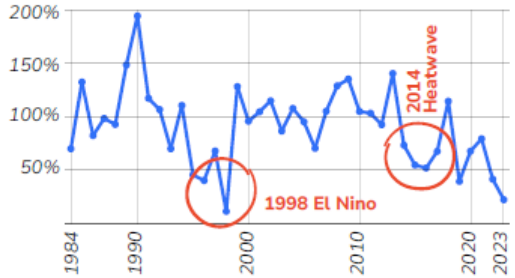
Oregon kelp canopies have declined substantially, particularly along the southern coast. Overgrazing by purple urchins is a key driver of this loss.

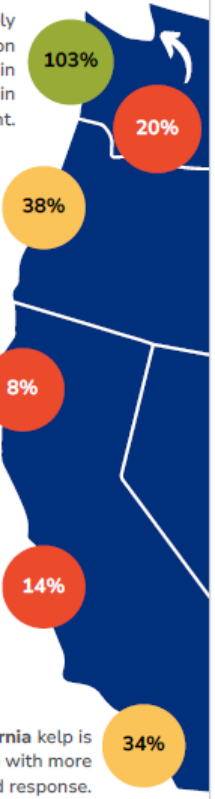
In **northern California**, substantial declines started in 2016 when a marine heat wave coincided with loss of sea stars and an explosion in kelp-eating purple sea urchin populations. This area has yet to recover.

Central California kelp had a particularly poor year in 2023. Extreme waves early in the year likely contributed to this poor performance.

Southern California kelp is also low, although with more varied response.

Percent of Coastwide Historical Kelp Canopy





In the map above, bubbles indicate regional average canopy coverage as a percent of the historical baseline.

LOOKING AHEAD

Marine heat waves are expected to become more frequent and more severe with climate change, which impacts kelp. Early investments in restoration, protection, and mitigation show promise for improving kelp status.

Scan to learn more about this project and access related maps, data, tools, and indicator reports.

West Coast OCEAN ALLIANCE

WEST COAST OCEAN HEALTH DASHBOARD

This report is part of the West Coast Ocean Health Dashboard, a project of the West Coast Ocean Alliance, a regional ocean partnership of state, Tribal, and federal government members.
Learn more at www.westcoastoceanalliance.org

KELP CALIFORNIA OCEAN & COAST REPORT CARD

WHAT ARE KELP? Kelp are large marine algae that grow on temperate rocky reefs, creating kelp forests that shape coastal ecosystems. California has two canopy-forming kelp species: giant kelp in southern and central California and bull kelp in central and northern California.

WHY ARE KELP IMPORTANT? Kelp forests are home to many species that are economically, ecologically, and culturally important. They are world-renowned for their biodiversity and are incredibly significant to California Native American tribes.

2024 STATUS

How is kelp doing?

Below Expectation

relative to reference condition

TREND

How is kelp changing?

Getting Worse

over the past 40 years

KEY TAKEAWAYS

Kelp cover canopy is **below average**. Coast-wide, average canopy cover is less than 50% of historical cover, and 3/4 of kelp beds are below historic norms. This is the third lowest year on record since 1984.

Kelp canopy is **declining coast-wide**. Kelp canopy varies from year to year, and it is currently at near an all-time low compared to the last 40 years.

Kelp is most impacted in **northern California**. Kelp in **central and southern California** have rebounded slightly from 2023, and some of the **Channel Islands** are doing well.

WHERE THIS INFORMATION COMES FROM

A team of kelp scientists reviewed decades of satellite imagery that measures the amount of kelp canopy on the ocean's surface.

2024 Status is the percent of the coastline with kelp canopy below historical amounts.

Trend is the change over the most recent 40 years (1984-2024).

KELP CALIFORNIA OCEAN & COAST REPORT CARD

DIVE DEEPER INTO THE DATA

Kelp numbers have not been this low for more than two decades. An unprecedented marine heat wave in 2014-2016 led to massive kelp die-offs across the West Coast, and kelp canopies have not rebounded along large portions of California. The State is investing in kelp research, recovery, and restoration.

In **northern California**, substantial declines started in 2016 2014 when a marine heat wave coincided with the loss of sea stars and an explosion in the population of kelp-eating purple sea urchins. This area has yet to recover.

Numbers in bubbles indicate regional average canopy coverage relative to the historical baseline.

-97%

Central California rebounded from a particularly poor year in 2023 but is still below historical canopy area.

-60%

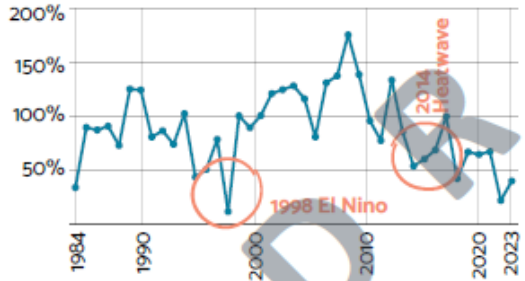
Southern California kelp canopy is lower than historical canopy area and has remained low since 2023. Scientists are actively studying this area.

-77%

+7%

The southern **Channel Islands**, such as San Clemente and Catalina, have abundant kelp canopies. The northern islands, such as San Miguel and Santa Rosa, are experiencing variable declines in kelp canopy.

Percent of Coastwide Historical Kelp Canopy



LOOKING AHEAD

Marine heat waves, which negatively impact kelp, are expected to become more frequent and more severe with climate change. Early investments in restoration, protection, and mitigation show promise for improving kelp forest ecosystem resilience status.

ADD QR CODE

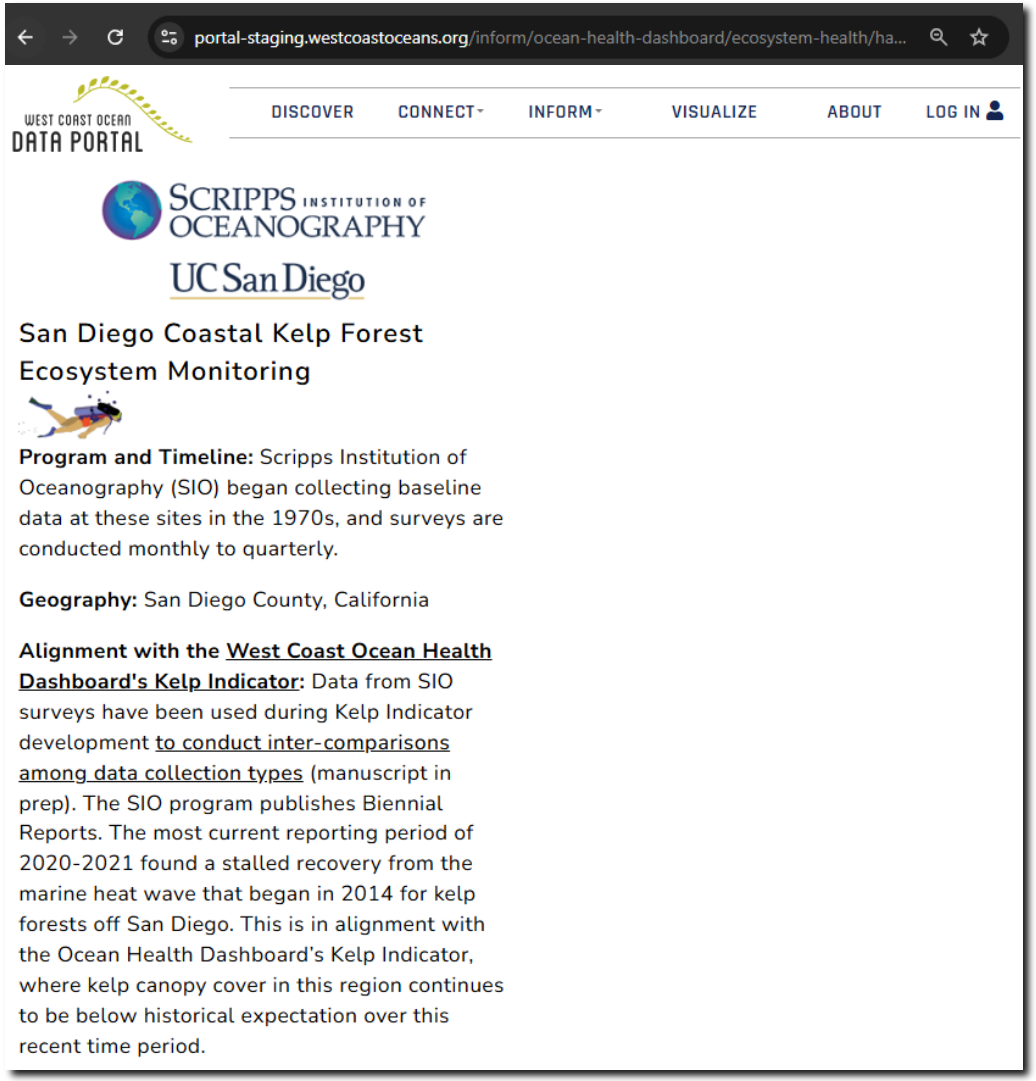
Scan to learn more about this project and access related maps, data, tools, and indicator reports.

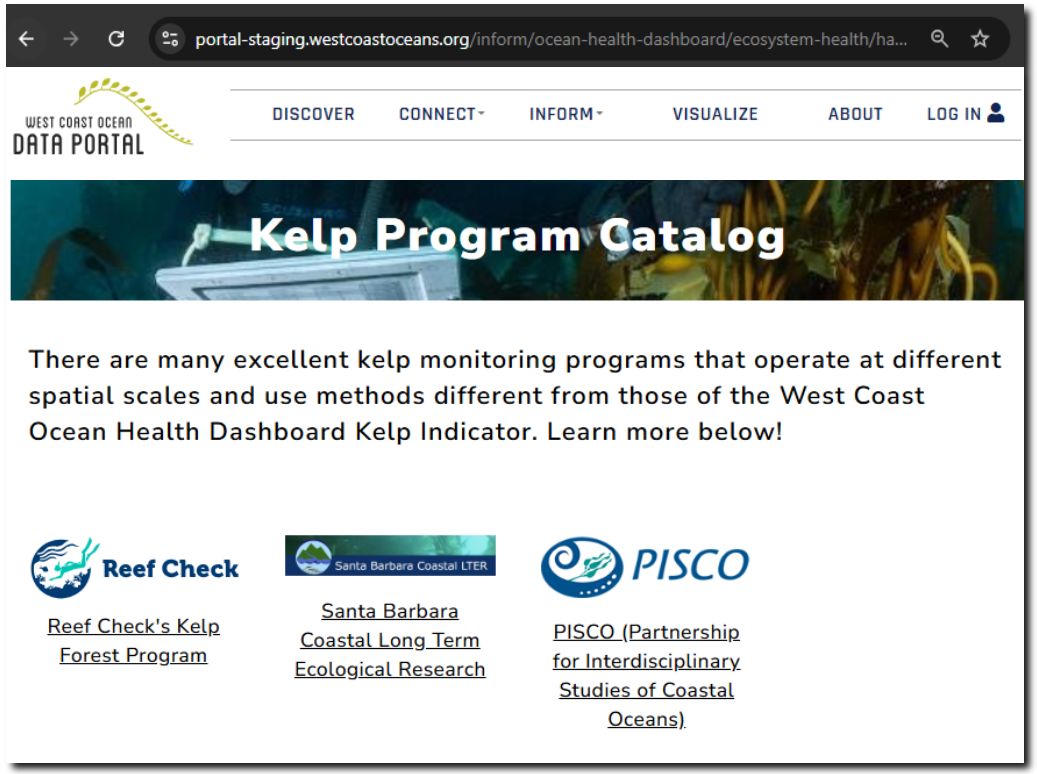
This report is part of the California Coast and Ocean Report Card, developed through a partnership between the Ocean Protection Council, the Ocean Science Trust, and the West Coast Ocean Alliance.

Learn more at URL

DRAFT

Supporting website includes comparison with other assessments and a Program Catalogue





CTAG has requested ongoing engagement

- They saw the Kelp products during their last meeting and want to provide feedback on one indicator per CTAG meeting for the next year
  - Ocean Acidification up next
- CTAG recognized opportunity to re-evaluate monitoring efforts
  - An example, Kelp Indicator relies on satellite data (not aerial overflights)
  - However, Southern California Kelp Consortiums continue to invest in aerial overflights