

Commission's Technical Advisory Group (CTAG)

Nov 2024 Meeting Summary

CTAG Management Team

Vice Chair

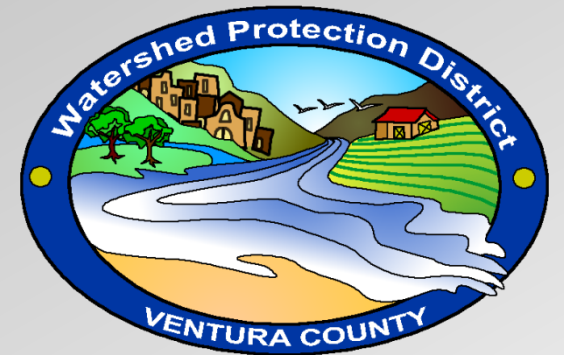
Lauren Briggs

Chair

Ryan Kempster

Past Chair

David Laak



Procedure For Late Contract Review

- Commissioners asked for a process to account for late contracts and ensure review by CTAG
- SCCWRP agreed to send new contracts to CTAG at least 1-week before Commission meeting
- CTAG agreed to review and meet the day before Commission meeting to discuss any concerns
- CTAG met yesterday (12/5) to discuss 3 new contracts (all <\$250K) and amendments to contract #1. No concerns were raised by CTAG members that attended.

Two (2) Contracts Requiring Commission Approval

1. Contract Title: SWAMP Special Studies

Funding Agency & Amount: SWRCB - \$2,562,870 [*Funding reduced \$270,600*]

Relationship to CTAG-approved research plan: Touches multiple thematic research plans including Eutrophication, Microbial Water Quality, and Bioassessment.

Project Description: Includes 14 (previously 18) separate semi-independent tasks: Four valued above \$250,000.



2. Contract Title: Growing a Resilient and Equitable Southern California Coastal Ocean Observing System

Funding Agency & Amount: NOAA/UC San Diego - \$312,219

Relationship to CTAG-approved research plan: Eutrophication thematic research plan.

Project Description: This contract provides funding to enhance the California Harmful Algal Bloom Monitoring and Alert Program pier monitoring efforts by increasing the turnaround time and sensitivity of domoic acid.

Fact Sheet Review

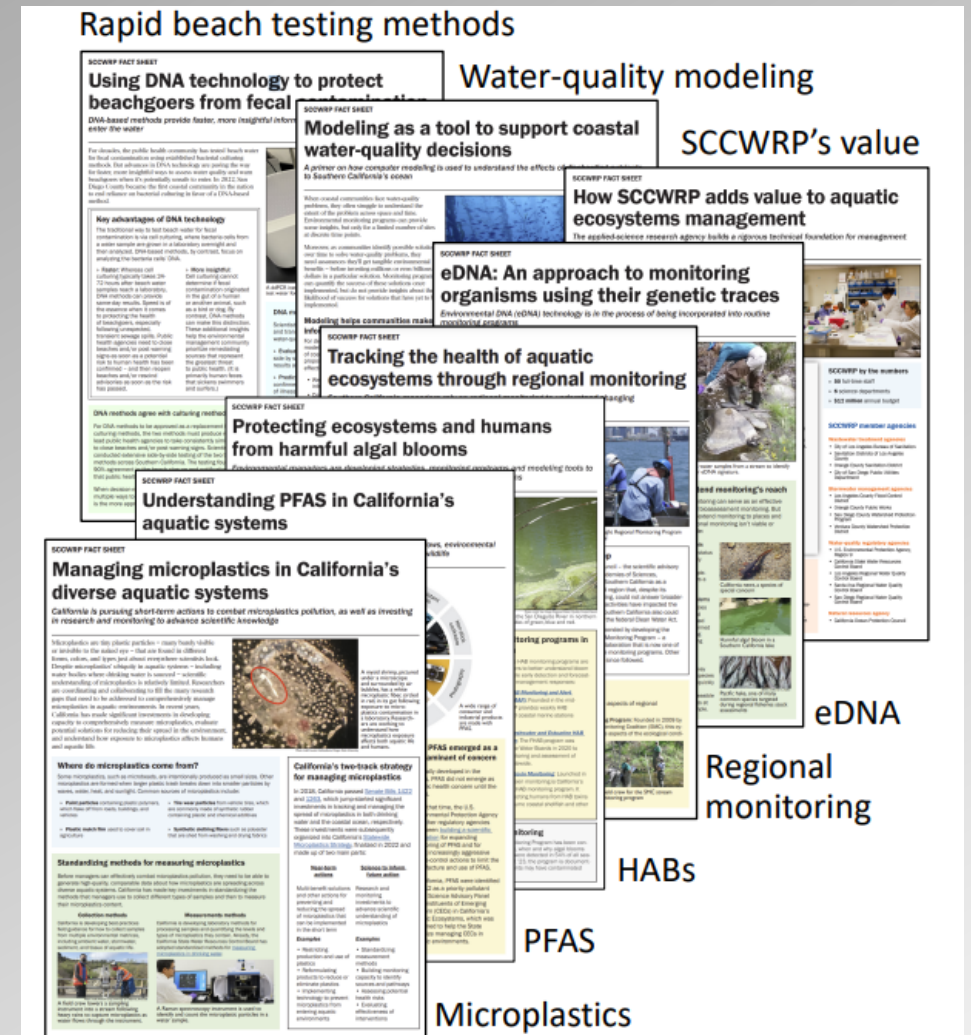
Eight (8) Fact Sheets published

- Water Quality
- Modeling
- SCCWRP's Management Values
- eDNA
- Regional Monitoring
- HABs
- PFAs
- Microplastics

Two (2) Fact Sheets under review

- HF183
- OAH

<https://www.sccwrp.org/publications/fact-sheets/>



Fact Sheet Review

(1) HF183; (2) Ocean Acidification

- Both Fact Sheets are still under CTAG review and will be returned to CTAG for final approval at the February meeting.
- Nothing for Commission Approval today.

SECOND FACT SHEET

Investigating the trajectory of coastal ocean acidification

As ocean acidification (OA) intensifies in California's coastal ocean, researchers are gaining foundational insights about where ecological effects will be greatest and how to reduce them

March 2025

Above: 30% of carbon dioxide released into the atmosphere is being absorbed by the ocean, which is gradually shifting seawater toward a more acidic, corrosive state—a change known as ocean acidification (OA). The North American West Coast is especially vulnerable to OA because of ocean circulation patterns. OA is making the coastal ocean less habitable for a range of organisms, including fish and shell-forming organisms such as crabs and sea urchins. Researchers are working on three main fronts to help managers combat OA's ecological effects:

- Developing coordinated OA monitoring across the West Coast
- Conducting exposure experiments to understand how certain changes to ocean chemistry can trigger disproportionately adverse effects
- Using computer models to predict OA's trajectory and evaluate potential solutions for mitigating effects

Global problem, local effects

Although OA is a global challenge driven by atmospheric carbon dioxide emissions, OA's ecological effects are manifesting at local and regional scales. OA's two main local drivers are:

- Natural upwelling events: seasonal phenomena in which deep, cold water rises to the surface, bringing with it carbon dioxide-rich water from deep waters into shallow waters closer to shore.
- Land-based nutrient discharges: nutrients from land-based sources like wastewater discharges and runoff can trigger complex ocean biogeochemical cycling processes that lower oxygen levels and raise carbon dioxide levels.

OA vs. OAH

OA is typically accompanied by a closely related phenomenon known as hypoxia, or low dissolved oxygen levels. West Coast management programs are built around investigating OA and hypoxia (OAH) together.

Tracking the effects of changing seawater chemistry on Southern California marine life

Via the Southern California Light Regional Monitoring Program, researchers are tracking how seasonally variable seawater conditions affect vulnerable shell-forming organisms. The light program's 2023 cycle (right) found that early signs of shell dissolution are pervasive across the coastal ocean, but the dissolution is mild, uneven among species, and confined mostly to colder, deeper waters.

During spring, Southern California's deep coastal waters approach conditions considered corrosive to shell-forming organisms. Corrosiveness is measured by a property of seawater chemistry known as aragonite saturation state.

DRAFT – INFORMATIONAL

A photograph, or sea urchin dissection, in response to dissolution, which is a salt pit marks on its shell. It and Atmospheric Index

California's OA map

California has long been developing robust, data-managing OA in coastal management programs are built around investigating OA and hypoxia (OAH) together.

Nearly a decade ago, the West Coast Ocean Acidification Task Force to guide the state's implementation of the strategy. Then, California's Ocean Acidification Task Force to guide the state's implementation of the strategy. Then, California's Ocean Acidification Task Force to guide the state's implementation of the strategy.

Actions that have no include:

- Developing biology that defines the upper aquatic organisms in adverse effects from foundational present water-quality regional
- Drafting plans to fit wastewater treatment nuclear levels in the changing into the

SECOND FACT SHEET

Using HF183 to detect human fecal contamination

The genetic marker HF183 can distinguish human vs. non-human fecal sources, making it a key management tool for investigating increases of fecal pollution in Southern California's highly urbanized aquatic environments

December 2025

Fecal contamination in Southern California's aquatic environments can cause harm to a range of animals, but not all of the pollution carries the same public health risks. Human sources of fecal contamination are significantly more likely to sicken humans, who can be exposed by swimming at contaminated beaches and by eating contaminated shellfish. That's why the genetic marker HF183 has become so valuable for the region's water-quality management community. HF183 can reliably distinguish human from non-human sources of fecal pollution, enabling managers to prioritize addressing the biggest public health risks first.

What is HF183?

HF183 refers to a specific fragment of genetic material found in a ubiquitous type of human gut bacteria known as *Enterococcus*. When water-quality managers detect HF183 in waterways, it reliably indicates that a human source of fecal contamination is present.

Although HF183 is a powerful fecal detection tool, it cannot distinguish between viable and nonviable sources of fecal contamination. What this means is it is possible for HF183 to detect fecal contamination when the underlying pathogen content has already degraded or been destroyed.

From experimental to an approved method

For more than two decades, scientists have been working to develop and vet an effective, human-specific indicator of fecal contamination.

In the early 2000s, scientists began comparing the performance of their experimental genetic methods for identifying fecal contamination to other types of candidate methods, including carbon utilization and antibiotic resistance. A landmark 2002 study centered in Southern California found that the genetic methods were effective, while the other methods were not. Subsequent work proved in on HF183 as the most consistently reliable genetic tool for detecting human fecal sources.

Following two decades of work to rigorously vet HF183's performance, the U.S. Environmental Protection Agency (EPA) in 2023 formally approved an HF183-based method for detecting human fecal contamination at beaches and similar recreational environments.

The EPA's published HF183-based method for detecting human fecal sources

Key management use cases for HF183

Over the past decade, HF183 has increasingly influenced how fecal contamination gets identified and managed at beaches and other coastal environments in Southern California and beyond. HF183 helps water-quality managers to:

- Practice coastal sites for remediation: Because HF183 can reliably identify human fecal contamination and track it to upstream sources, managers use these insights to prioritize sites where they direct attention and resources to support remediation actions.
- Determine if human vs. other animal sources predominate: Multiple genetic markers have been developed for detecting multiple types of animal fecal matter. Thus, when HF183 is used in conjunction with these other animal-specific markers, managers can determine which specific animal source(s) is most responsible for fecal contamination.

Why are human fecal sources so pathogenic?

Humans are much more likely to get sick from exposure to human fecal contamination than almost any other animal's feces.

Scientists estimate that human fecal contamination is at least 100 times more pathogenic than the feces of other animals commonly found in urban settings, including wildlife, birds and household pets.

One factor is the second most pathogenic animal source for humans, but the paucity of livestock operations in urban settings means that fecal contamination from cows rarely poses a major public health threat.

Fact Sheet Topics

- Original List complete
- SCCWRP has proposed new options
- CTAG and Commissioners encouraged to propose new topics of interest

Original list (completed)

1. Coastal ocean modeling
2. Rapid beach testing methods
3. SCCWRP's value
4. eDNA
5. Regional monitoring
6. HABs
7. PFAS
8. Microplastics
9. HF183 (in progress)
10. OA (in progress)

New list (proposed)

1. Wastewater-based disease surveillance
2. Cell bioassays
3. Coastal resiliency
4. Environmental flows
5. Bioassessment tools
6. Sediment quality assessment tools
7. BMP performance optimization

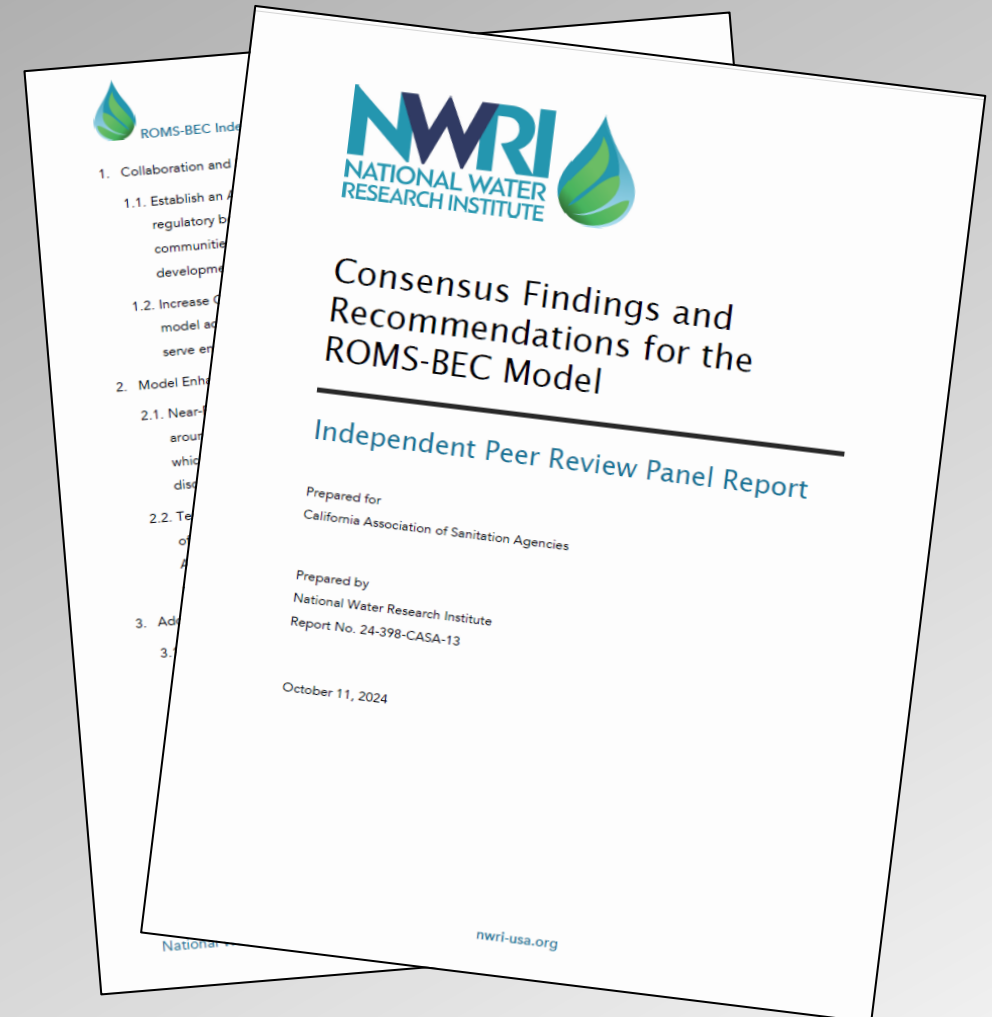
NWRI Final Report

The ROMS-BEC model “...captures the fundamental physical and biogeochemical processes in the Southern California Bight that are associated with ocean acidification and hypoxia”.

However, the model “...has limitations and does not capture all details of the physical and biogeochemical processes related to treated wastewater discharges”.

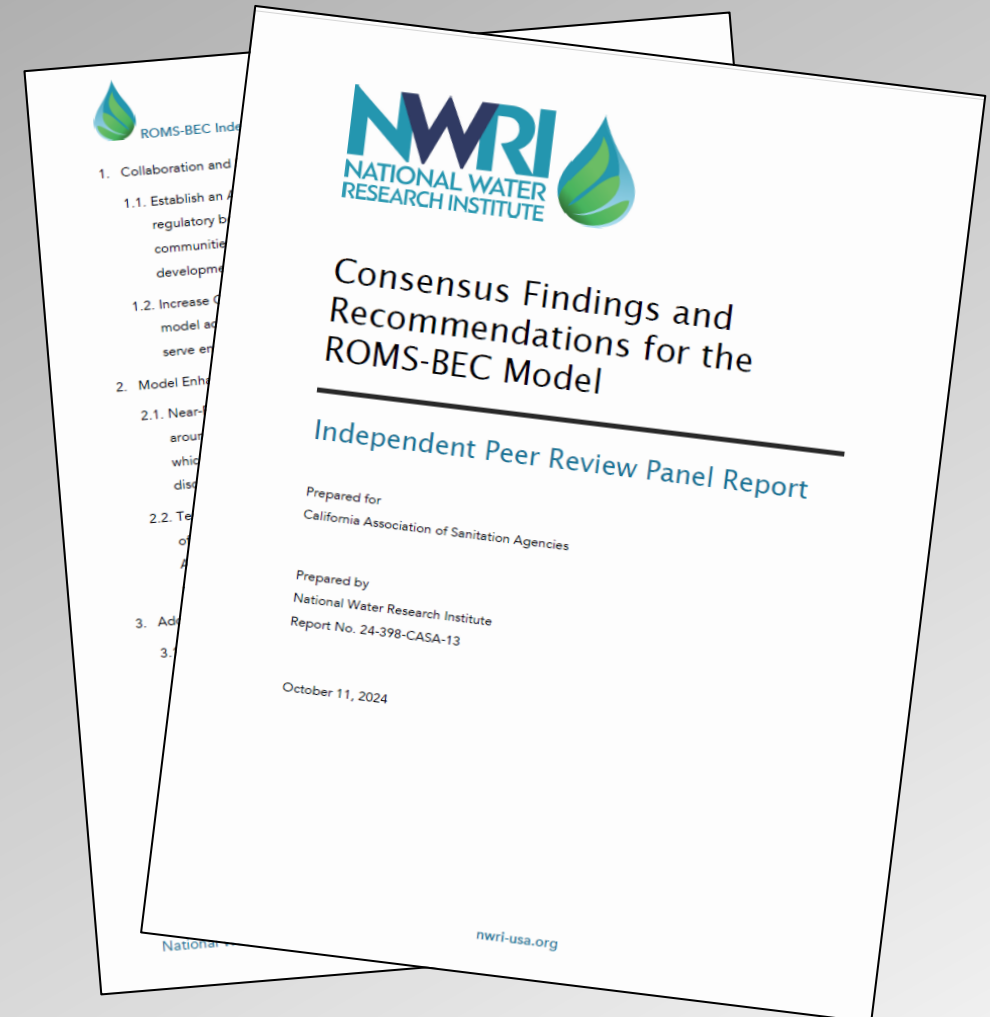
We should pursue “...approaches to understanding and improving processes that may hinder the ROMS-BEC Model from accurately predicting the effects of treated wastewater outfalls on the marine ecosystem”.

To that end, the panel made 40 recommendations for improvements to the model, but they did not provide direction on how these recommendations should be prioritized.



ROMS-BEC Subcommittee

- CTAG agreed to form a subcommittee to prioritize panel recommendations.
- The subcommittee would be made up of 21 individuals, 7 from the regulatory, wastewater, and stormwater agencies.
- However, since the CTAG meeting – concerns have been raised regarding the roles and responsibilities of the subcommittee, the Steering Committee and the IRP expert panel. Clarity is needed to define objectives and expectations.



CTAG/SCCWRP Collaborative Project(s)

Two (2) projects were selected.

1. Cost of Monitoring Study

2. Mass Emissions Study

- The Project committee met on Oct 28th to kick off the cost of monitoring study.
- To ensure successful completion by the end of the next fiscal year, the mass emissions project will proceed after completion of cost of monitoring study.
- Key objectives have been identified and a monthly meeting series established.

Subcommittee on Scientific Readiness (progress report)

- Commissioners requested that CTAG produce a 'Scientific Readiness scale' to help Commissioners understand project progress and better highlight any CTAG concerns.
- A CTAG subcommittee was formed to evaluate and report back.
- It was quickly determined that 'Scientific Readiness' was just one part of a bigger picture, which also needed to encompass 'Management Readiness' and 'Resource Implications' for member agencies.

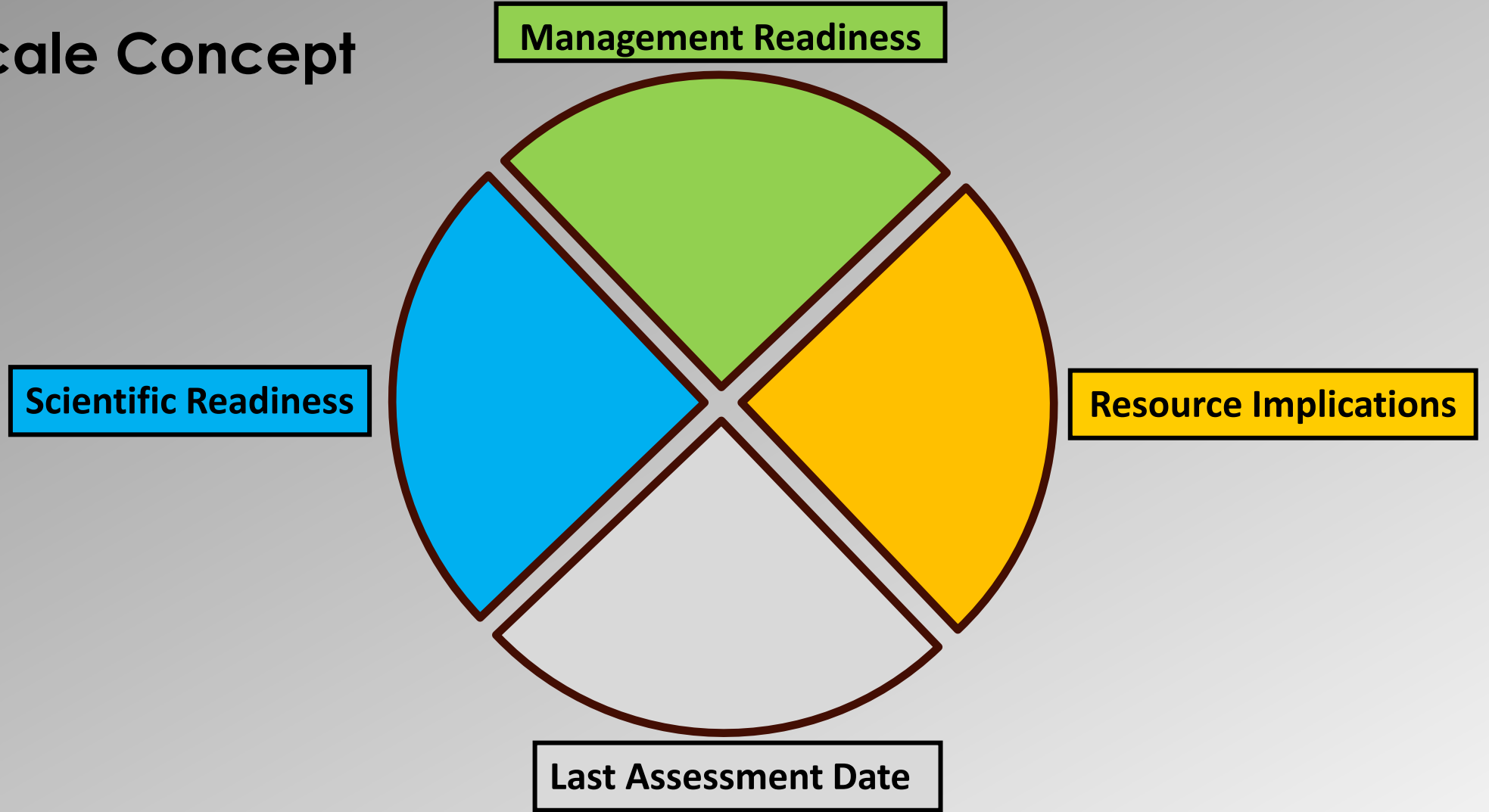
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Contracts

Meeting Items

Future Items

Readiness Scale Concept



Readiness Scale Concept

Scientific Readiness	Management Readiness	Resource Implications
1-Initial presentation 2-In progress 3-Final presentation 4-Manuscript review 5-Published	1-Not ready (no concerns) 2-Not ready (major concerns) 3-Not ready (minor concerns) 4-Ready (minor concerns) 5-Ready (no concerns)	1- None anticipated 2- Yes, but 5yrs+ away 3- Within 3-5 yrs 4- Within 2 yrs 5- Immediate

Example

Scientific Readiness	Project in progress
Management Readiness	Not yet ready for management action (minor concerns)
Resource Implications	No anticipated resource implications



Concept Only - Not reviewed by CTAG yet

Future Agenda Items for Consideration

1. Bight '23 update
2. Microbiology Intersessional report out
3. West Coast Ocean Alliance Report Card
4. Presentation on NOAA Contract #4 – ROMS-BEC Data Visualization
5. Final report on outcome of subcommittee findings on Scientific Readiness
6. Updates on historic DDT dumping in SoCal.