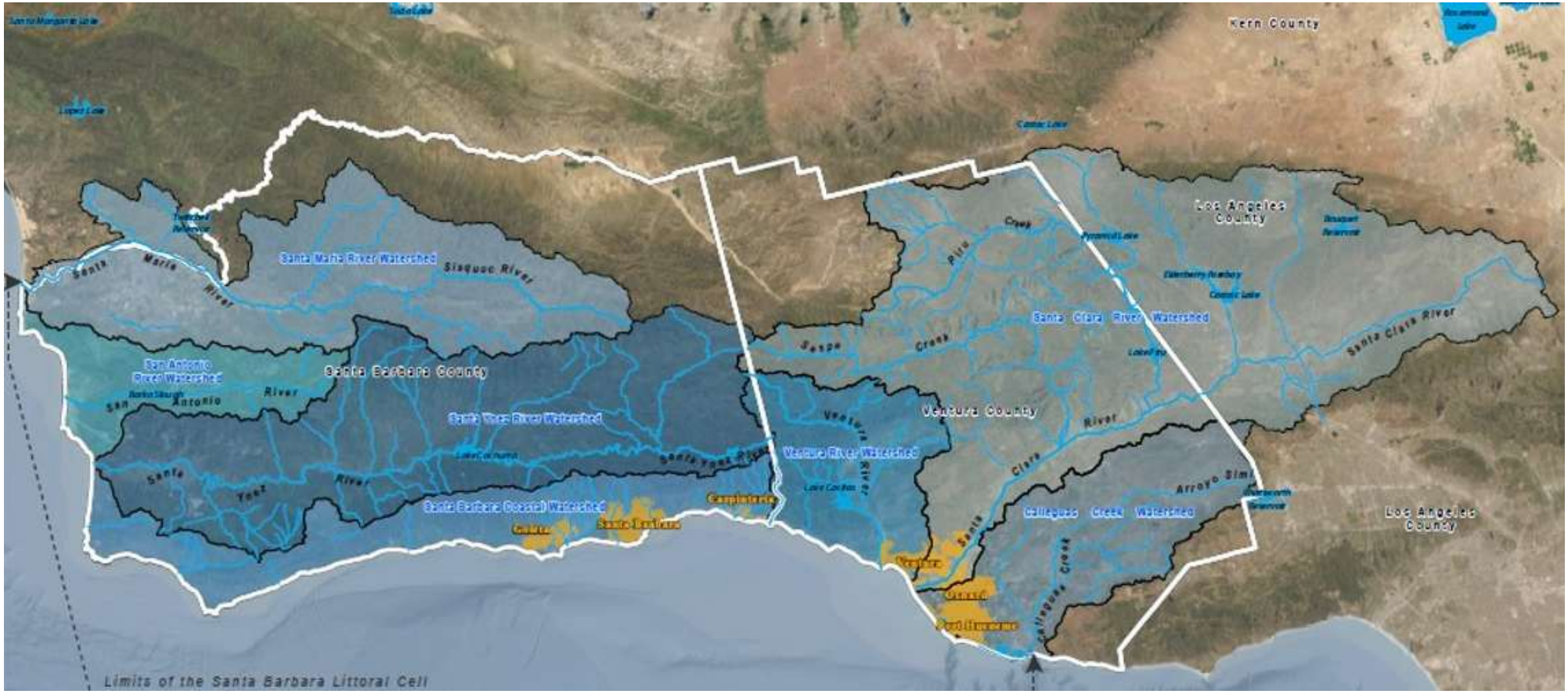
BEACON (Beach Erosion Authority for Clean Oceans and Nourishment)

# REGIONAL COASTAL ADAPTATION MONITORING PROGRAM (RCAMP) – Community Briefing on Public Draft Monitoring Plan

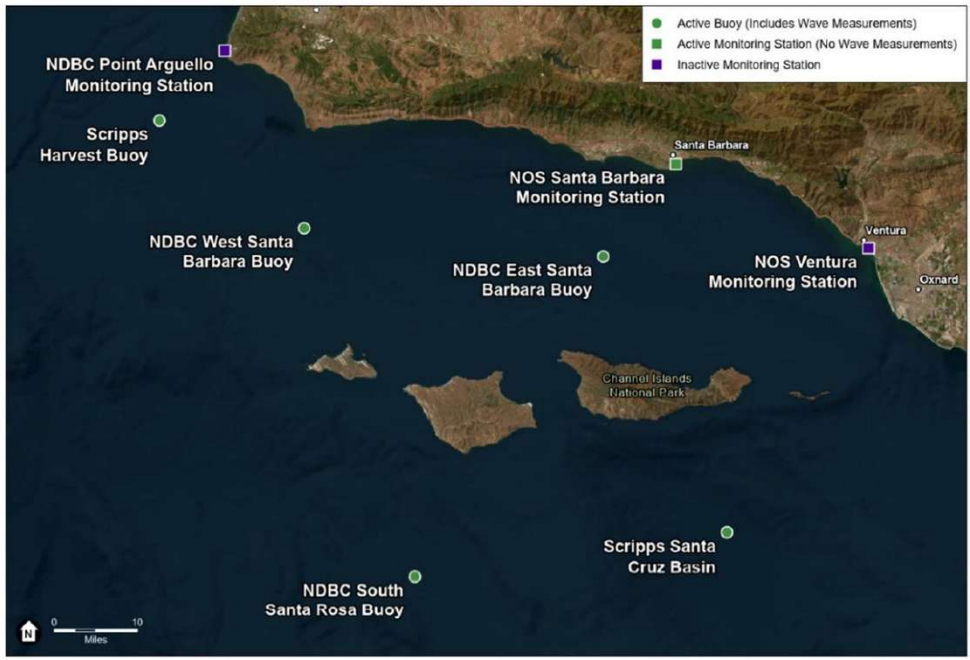


# Acknowledgements


- Funding Support:
  - California Coastal Commission
- Project Partners:
  - BEACON and the City of Santa Barbara
- Collaborators, Reviewers & Engagement:
  - BEACON members, stakeholders, and representatives of the Chumash tribes
  - BEACON Science Advisory Committee (SAC) led by Dr. Kiki Patsch and Dr. Doug George
  - Manager-Scientist Summit (Nov 2023)
  - Coastal Access Workshop – CSU Channel Islands
  - Sea Level Rise Subcommittee – Santa Barbara County Climate Collaborative

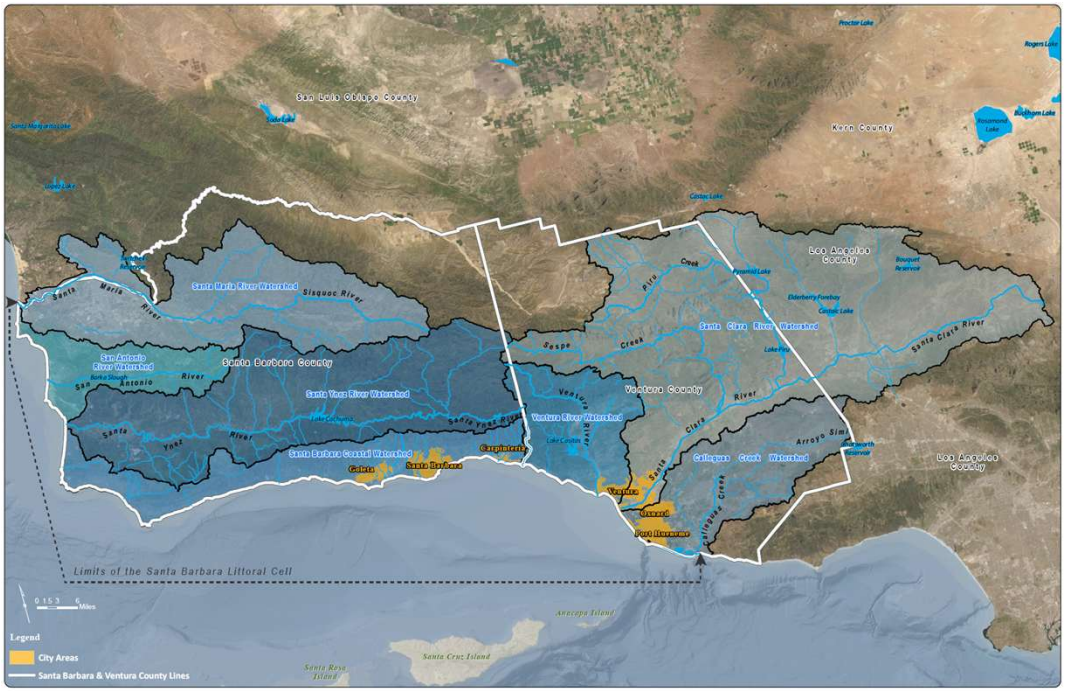
# Agenda

- Purpose and Scope
- Key Objectives
- Development Process Overview
- Monitoring Plan Overview
- Recommended Priority Components
- Pilot Studies
- Next Steps
- Proposed Future Studies
- Public Draft Release & Comment Period
- Questions & Discussion



# Purpose and Scope

- Goal:
  - Provide consistent data and analysis to support coastal resilience planning in the BEACON region (Santa Barbara & Ventura Counties)
- Area of Interest:
  - Santa Barbara Littoral Cell from Santa Maria River to Point Mugu
  - Including the Santa Barbara Channel and Chumash Heritage National Marine Sanctuary
- Stakeholders:
  - BEACON member agencies (counties, coastal cities), Science Advisory Committee, and public stakeholders.



# Key Objectives

RCAMP's objectives are to provide local management agencies with the information needed to:

- Assess if changing coastal conditions require new adaptation strategies.
- Evaluate the effectiveness of adaptation projects.
- Promote regional collaboration for enhancing coastal resilience.

# RCAMP Development Process Overview

## Stakeholder Input

- BEACON members
- Chumash Tribal representatives
- BEACON SAC
- Public stakehoders workshop (May 2023)
- BEACON Manager-Scientist Summit (November 2024)
- CA Coastal Commission
- USGS, SCOOS, CSUCI, UCSB

## Monitoring Plan Development

- Goals & Objectives
- Background
- Data Review & Gaps Assessment
- Monitoring Plan Components: Physical, Ecological, Social, Cultural Resources & Chumash
- Prioritization & Recommendations
- Recommended Pilot Studies
- Next Steps

## Public Review

- Public Review Draft for BEACON members, Board of Directors, stakeholders, CCC, and public review and comment
- Chumash Tribal consultation
- Public Stakeholder Workshop
- Revised Final Draft Report and Recommendations in response to comments

## Pilot Study

- Pilot Study Plan
- Pilot Study
- Pilot Study Report for BEACON members, stakeholders, CCC, and public review and comment

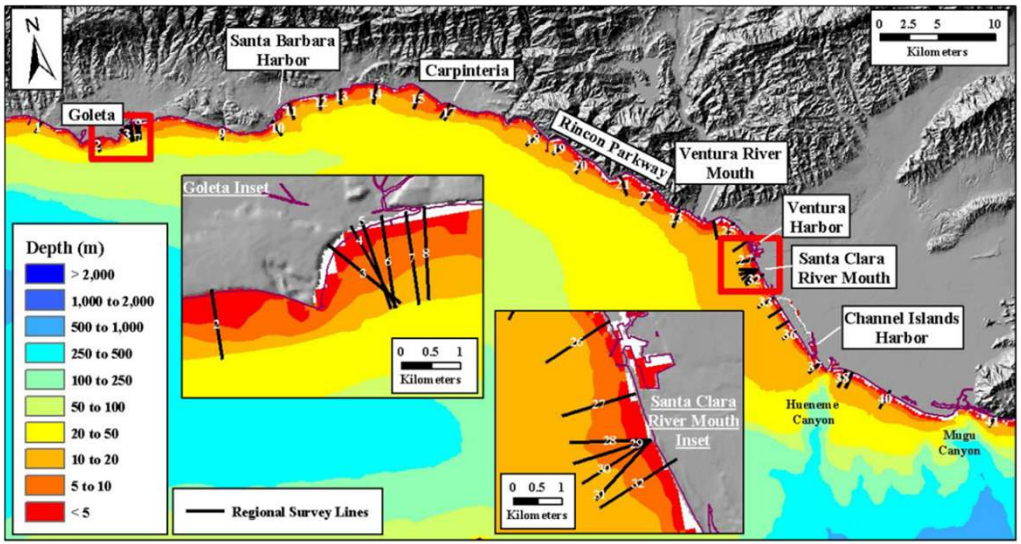
## Revised Final Monitoring Plan & LCP Amendment

- Public Review Draft of Revised/Updated Final Plan for BEACON members, stakeholders, CCC, and public review and comment
- Revised Final Plan
- LCP Amendment

# Monitoring Plan Overview

Provides a framework and roadmap for BEACON to implement the RCAMP:

- Recommends monitoring strategies and priorities
- Identifies pilot studies and subsequent phases
- Considered monitoring plan components for:
  - Physical coastal processes
  - Ecology
  - Social use, values & equity
  - Chumash cultural resources & values

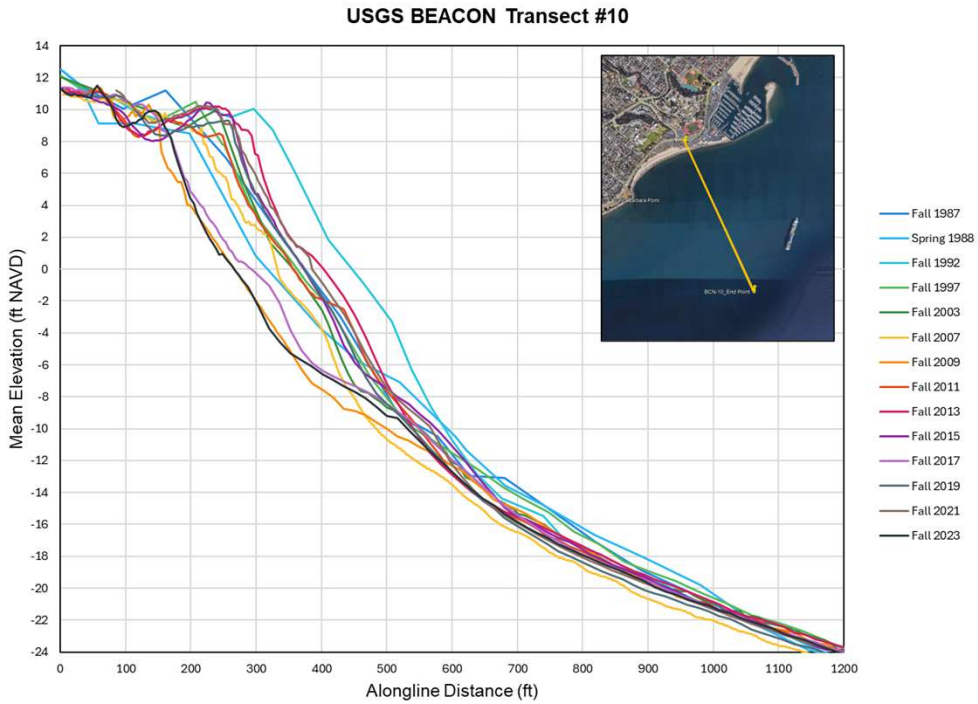



Source: USGS, 2019

# Monitoring Plan Overview

## Two parallel paths for the RCAMP to pursue:

- Utilize existing data:
  - Use existing data to develop new analyses, syntheses, and products for BEACON members' adaptation planning.
- Collect new data:
  - Fill gaps critical for adaptation planning.



# Monitoring Plan Overview

## Criteria for Prioritization

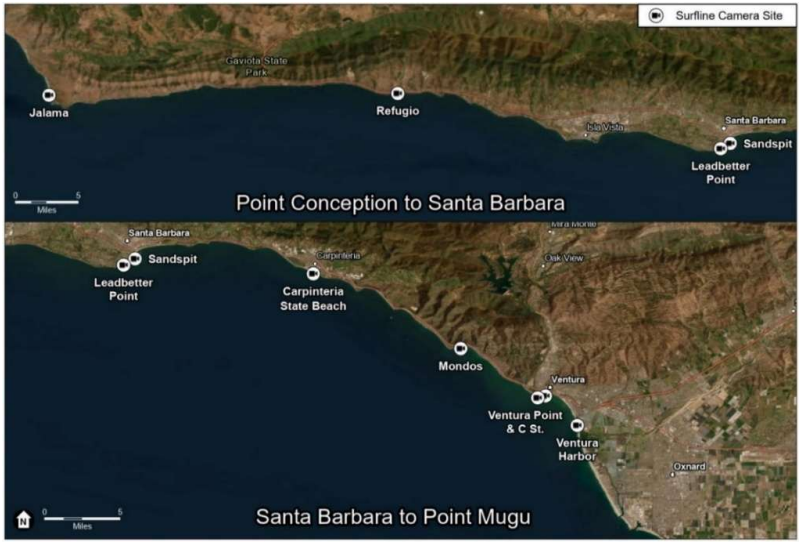
- Degree needed to protect loss of life
- Supports adaptation plan implementation and adaptation pathway decision making
- Supports specific adaptation project needs
- Promotes equitable adaptation planning
- Applicable throughout BEACON region
- Includes Chumash tribes
- Related to specific permitting needs
- Leverages ongoing monitoring efforts
- Reasonable to implement
- Cost-effectiveness
- Ability for other entity to eventually take over monitoring
- Transferability to other jurisdictions in the state

# Monitoring Plan Overview

## Monitoring Components Prioritization

***Priority Level:*** *Assigned based on its importance to decision-making, alignment with RCAMP goals and objectives, and its ability or need to support other components*

- Critical Priority
  - Essential for decision-making, strongly aligned with RCAMP goals, and foundational to completing other Monitoring Plan components
- High Priority
  - Highly important for decision-making and well-aligned with RCAMP goals
- Priority
  - Advances significant scientific understanding and/or depends on the completion of other components to be fully effective



# Critical Priority Components

| Topic | Approach | Monitoring — Frequency | Analysis — Frequency |
|---|---|---|---|
| **Sea Level Rise (SLR)** | • Use Santa Barbara tide gage<br>• Partner with NOAA<br>• Explore Ventura gage re-establishment | Tide levels — continuous | Determine sea level rise amount and rate of change, compare change to sea level rise projections using a baseline year of 2000 — every 3–5 years |
| **Sandy Beach Shoreline Change** | • Use surveys and/or satellite imagery (best practices TBD by USGS in pilot study)<br>• Support continued USGS data collection, analysis & regular release | Shoreline positions & beach widths — annual (spring) or biannual (fall & spring) | Map shoreline position — annual/biannual<br>Assess change — every 3-5 years |
| **Bluff Erosion** | | Bluff top edge & base position — annual | Map bluff position — annual<br>Assess change — every 3-5 years |

# High Priority Components

| Topic | Approach | Monitoring — Frequency | Analysis — Frequency |
|---|---|---|---|
| **Sandy Beach Shoreline Change** | • Coordinate with USGS on regular satellite imagery analysis and products.<br>• Consider on-call arrangements or contracts with universities, surveyors, or consultants | Monitor shoreline position and beach width — annually and after storm events | Determine maximum winter erosion extent — annually |
| **Storm Events & Combined Coastal/Creek Flooding** | • Coordinate with county flood control districts and BEACON member cities, USGS, and California DWR to develop and plan for new stream flow and estuary water level gages<br>• Consider on-call arrangements or contracts with universities or consultants<br>• Continue to support and coordinate with CDIP and SCCOOS to deploy a roving CDIP buoy in the Santa Barbara Channel<br>• Consider video cameras at flood- and erosion-prone sites, PlaneCam, Surfline, and CoastSnap at high public use sites.<br>• Consult and coordinate with county and city emergency services/management departments | Monitor and analyze rainfall, stream flow rates, wave heights and periods, and lagoon water levels – continuously<br><br>Document the physical extent of storm events, costs to resource managers, and a storm event narrative — annually and after storm events | -Determine storm event intensities (rainfall, flood levels, wave heights) — annually<br>-Estimate storm recurrence frequency using historical frequencies and climate model projections — annually<br>-Summarize standardized documentation of storm event extents duration, and impacts of flooding and erosion — annually<br>-Update vulnerability modeling and mapping of combined coastal and fluvial flooding, including 10- and 20-year events — every 3–5+ years. |

# High Priority Components

| Topic | Approach | Monitoring — Frequency | Analysis — Frequency |
|---|---|---|---|
| **Sediment Movement** | • Consider supplemental surveys at placement sites within USGS shoreline change data collection<br>• Explore data repository options | Gather/monitor dredging and sediment/debris basin removal volumes and grain size data — in conjunction with sediment management actions<br><br>Conduct topographic/bathymetric surveys of sediment placements – before and after placement<br><br>Survey beach topography and width before and after placement — biannually (fall and spring)<br><br>Gather/collect sediment management data within the littoral cell — annually | Determine sediment movement through the littoral cell — every 3–5+ years<br><br>Project future sediment movement patterns — every 3–5+ years<br><br>Evaluate effectiveness of nourishment placement — every 3–5+ years |

# High Priority Components

| Topic | Approach | Monitoring — Frequency | Analysis — Frequency |
|---|---|---|---|
| **Chumash Cultural Resources** | • Collaborate with Chumash tribal representatives to develop and implement a cultural resource sites erosion monitoring plan<br>• Consider utilizing current hazard maps and confidential cultural site locations to identify potential erosion impacts | Sites erosion monitoring per collaboratively developed plan -- frequency to be defined in the plan | Compare cultural resource locations with existing hazard maps to identify potential future impacts — every 3–5+ years |
| **Social Vulnerability** | • Utilize current hazard maps, census data, and storm damage documentation | Prioritize new Storm Events monitoring and updated flood hazard mapping in disadvantaged communities | Determine which communities, including disadvantaged communities, are being impacted — every 3–5+ years. |

# Priority Components

| Topic | Approach | Monitoring — Frequency | Analysis — Frequency |
|---|---|---|---|
| **Sediment Movement (Additional to High Priority)** | Review prior sediment-load studies for potential improvements | River/Creek sediment loads — TBD | Apply to littoral cell sediment budget analysis and projections — TBD |
| | Coordinate repeated bathymetry with Navy (NBVC) | Mugu Submarine Canyon/Point Mugu bathy surveys (littoral cell boundary) — TBD | |
| | Scale SandSnap with field calibration | Beach grain size (SandSnap and/or sampling) — TBD | |
| | Pilot ocean turbidity study | Ocean turbidity (e.g., satellite imagery + sensors) -- TBD | |
| **Chumash Cultural Resources (Additional to High Priority)** | Collaborate with Chumash tribal representatives to develop and implement a monitoring plan | Surveys of species and habitats – TBD | Changes and impacts to culturally significant species, habitats, and landscapes – every 5 years |
| **Vegetation, Habitat & Species Baseline and Change** | • Further assess current monitoring and seek funding for new monitoring where needed<br>• Align with permitting and nature-based adaptation needs<br>• Coordinate with shoreline/topo monitoring | Habitat location & extent; sensitive species (habitat/types/locations/numbers); beach widths — every 2 years | Shoreline and estuary wetland habitats, sensitive species — every 3–5+ years |

# Priority Components

| Topic | Approach | Monitoring — Frequency | Analysis — Frequency |
|---|---|---|---|
| **Beach Attendance and Access** | • Standardize visitation and facilities impact tracking<br>• Integrate with storm-damage and physical-change datasets<br>• Apply equity lens | Beach use numbers; beach width; facilities impacts incl. parking; economic metrics (TOT, sales tax) — annual | Changes & disruption of visitation, beach use, and economics — every 5 years |
| **Shallow Groundwater Rise** | • Regional program<br>• Coordinate with water/groundwater agencies<br>• Install shallow monitoring wells/ loggers | Shallow groundwater levels — annual | Change in shallow groundwater elevations — every 3–5+ years |
| **Effectiveness of Nature-Based Adaptation at Surfers' Point** | • Continue and expand BEACON's supplemental monitoring<br>• Compare project vs. non-project baseline<br>• Co-schedule with shoreline surveys<br>• Track assets impacted | • Shoreline position and topo – annual or biannual (Fall and Spring)<br>• Storm wave runup and storm-driven sand deposition — annual (Winter)<br>• Plant community (location/type/density) — annual | • Annual shore change<br>• Storm runup/sand deposition<br>• Assets impacted<br>• Habitat restoration performance<br>— every 3–5+ years |

# Priority Chumash Monitoring

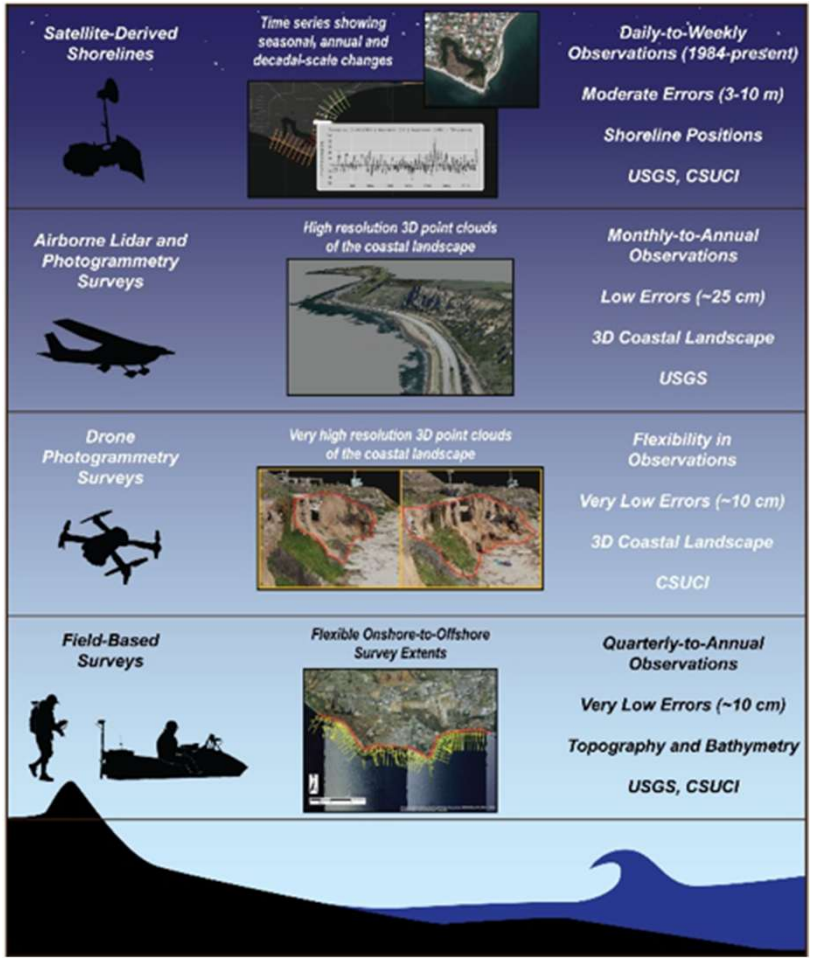
In addition to the priorities above, monitoring could incorporate the following recommendations provided by Chumash tribal representatives, which apply to all coastal adaptation monitoring included in the Monitoring Plan:

- Involve indigenous people and knowledge in the monitoring planning process,
- Include monitors who spend time on the coast through the seasons,
- Recognize natural resources as significant for indigenous people, and
- Propose a Chumash youth monitoring program location on the coast

# Pilot Studies

## To be conducted in the next 1 to 2 years

- Develop Demonstration RCAMP Monitoring Report:
  - Template for future reports
  - Includes baseline data and priority monitoring components
  - Recommendations of additional data and analysis
  - Assessment of needs, priorities, and utilities
- Develop a New Shoreline Data Analysis and Monitoring Framework:
  - Partner with USGS
  - Finalize and analyze existing data (e.g., USGS shore profile surveys & PlaneCam topo, CoastSat)
  - Provide shoreline data
  - Recommend future shoreline monitoring approach



Source: USGS

# RCAMP Next Steps

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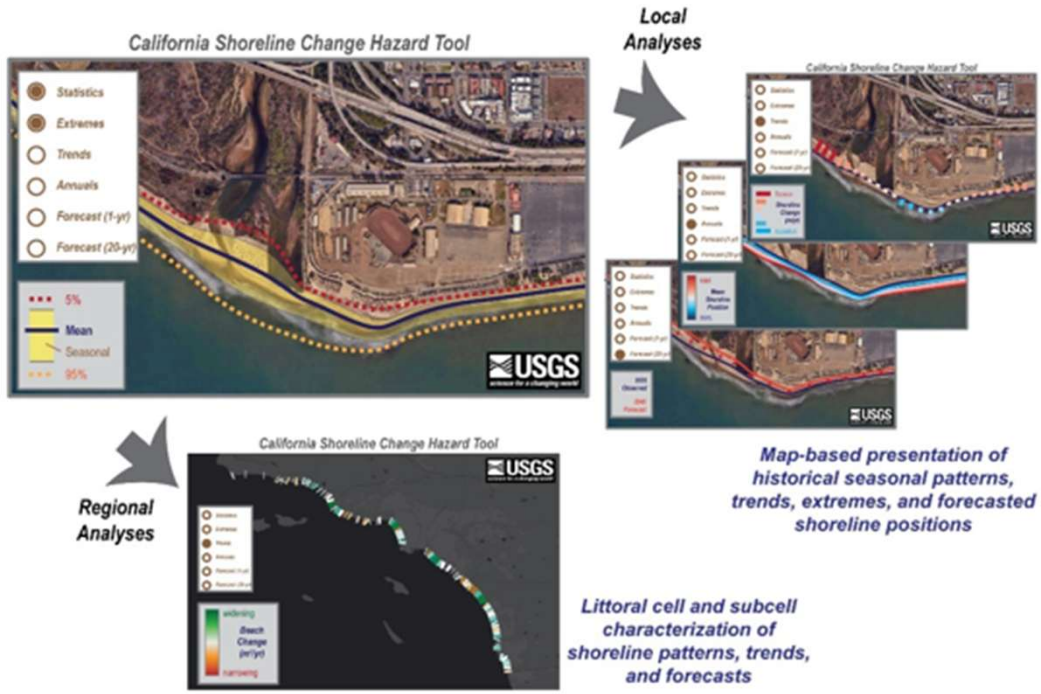
# RCAMP Next Steps

- Review Public Draft Monitoring Plan with stakeholders
- Launch pilot studies (Oct 2025 – Dec 2026)
- Prepare and present pilot study report (Jan 2027)
  - Present to the BEACON Science Advisory Committee and stakeholders
  - Share lessons learned and identify needed Monitoring Plan revisions
- Finalize Monitoring Plan (Jun – Aug 2027)
- City of Santa Barbara to prepare an amendment to the City's fully certified Local Coastal Program
- Incorporate Final Monitoring Plan into City of Santa Barbara's Coastal Land Use Plan

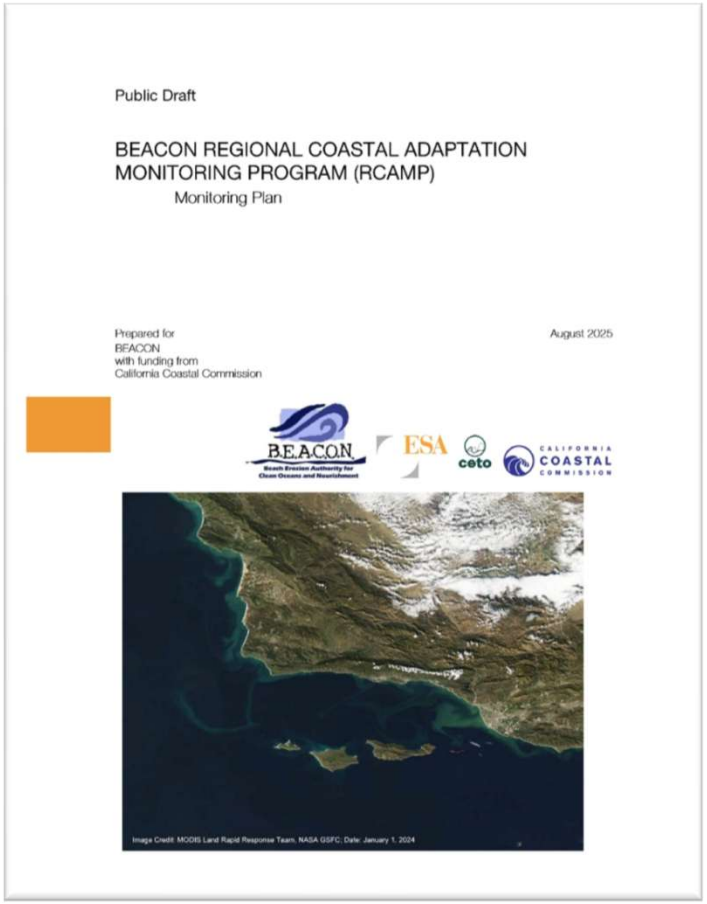
# Proposed Future Studies (2026-2028+)

- Coastal Shoreline Hazards Tool (ShoreCHaT)
  - Map-based tool focused on coastal shoreline adaptation
  - Provide coastal change measurements and forecasts
- Prepare a Regular RCAMP Monitoring Report
  - Update and summarize available data, shoreline positions, and baseline conditions, building on Demonstration Report



# Public Draft RCAMP Monitoring Plan – Available for Review

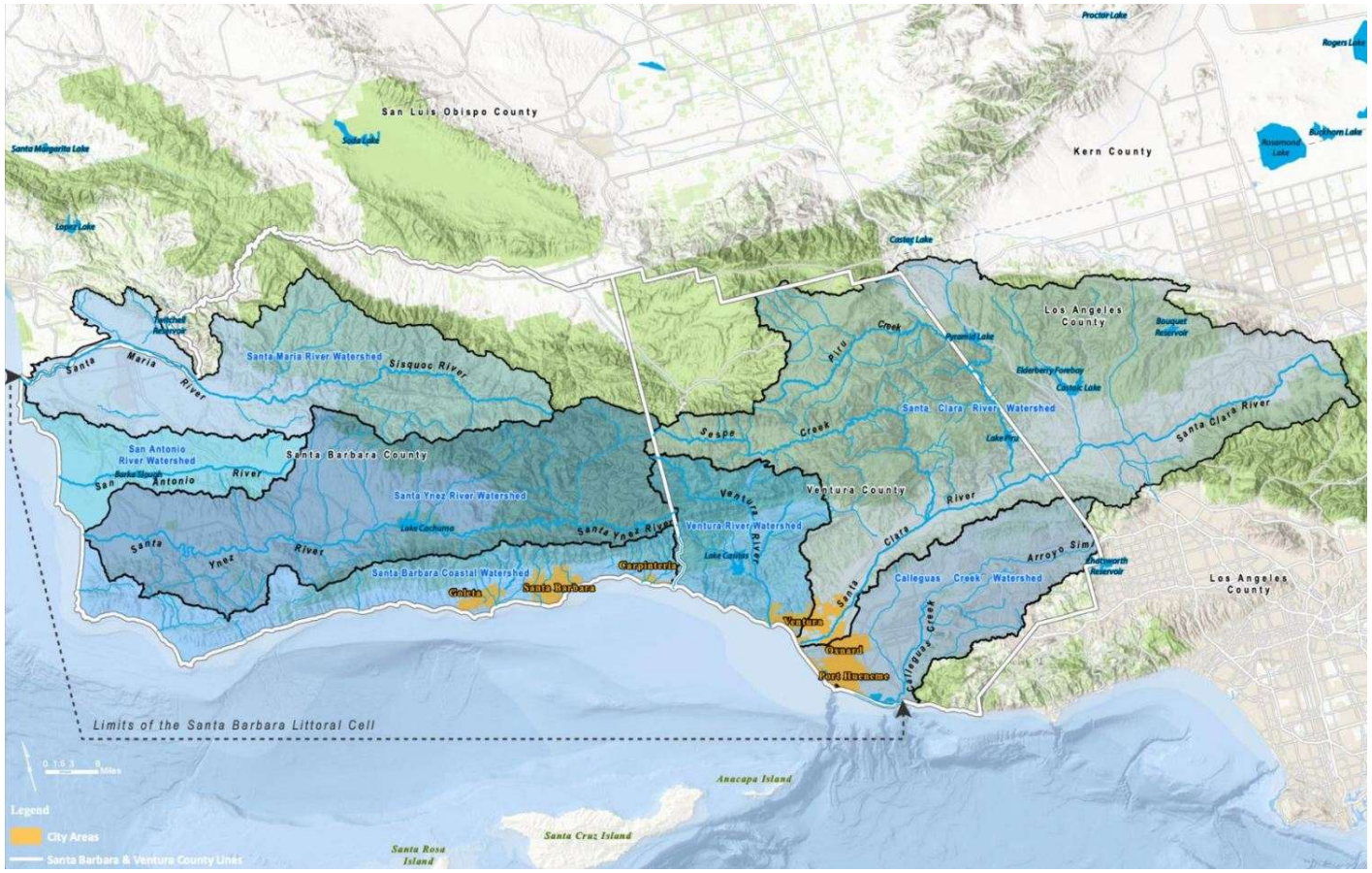
- Notice of Availability emailed by Jenna Wisniewski, BEACON, Friday, Aug. 15
- Public Draft posted on web – see link in chat
- Please email any **comments** to Jenna Wisniewski by **Friday, Sept. 12**



# Questions & Discussion

Image Credit: MODIS Land Rapid Response Team, NASA GSFC; Date: January 1, 2024

# Thank you


San Luis Obispo County
Kern County
Los Angeles County
Santa Barbara County
Ventura County
Santa Maria River Watershed
Sisquoc River
Santa Maria River
San Antonio River Watershed
San Antonio River
Santa Ynez River Watershed
Santa Ynez River
Santa Barbara Coastal Watershed
Ventura River Watershed
Ventura River
Santa Clara River Watershed
Santa Clara River
Calleguas Creek Watershed
Sespe Creek
Piru Creek
Arroyo Simi
Limits of the Santa Barbara Littoral Cell
Anacapa Island
Santa Cruz Island
Santa Rosa Island
Legend
City Areas
Santa Barbara & Ventura County Lines