SFBRA Performance Metrics
Sept 15, 2023

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WRMP

SFBRA and WRMP

- WRMP is a robust, science-driven, and collaborative regional monitoring program
- Current work includes:
  - Monitoring site network
  - Open data sharing platform
  - Comprehensive science framework to guide monitoring
- SFBRA is funding WRMP implementation

SFBRA and WRMP

- SFBRA recognizes the importance of coordinating with the WRMP to develop performance metrics
- Ad Hoc Subcommittee on Performance Measures recommended an initial set of performance measures
- Interest in additional metrics to evaluate the progress of wetland habitat restoration projects and contribution toward the larger ecosystem goals
- Near-term and longer-term opportunities to coordinate with WRMP

Proposed Additional Metrics

- Baylands Change Basemap (BCB) metrics
  - Vegetated Tidal Marsh Extent
  - Marsh Patch Configuration
- California Rapid Assesment Method (CRAM)
- *Future Metrics (TBD)*

Baylands Change Basemap (BCB)

- Updated map of the Baylands, in progress
  - Will be completed this winter
  - Last Baywide mapping effort was BAARI in 2009
- Using machine learning, making future updates more affordable and repeatable
- WRMP is developing map-based metrics to analyze the BCB

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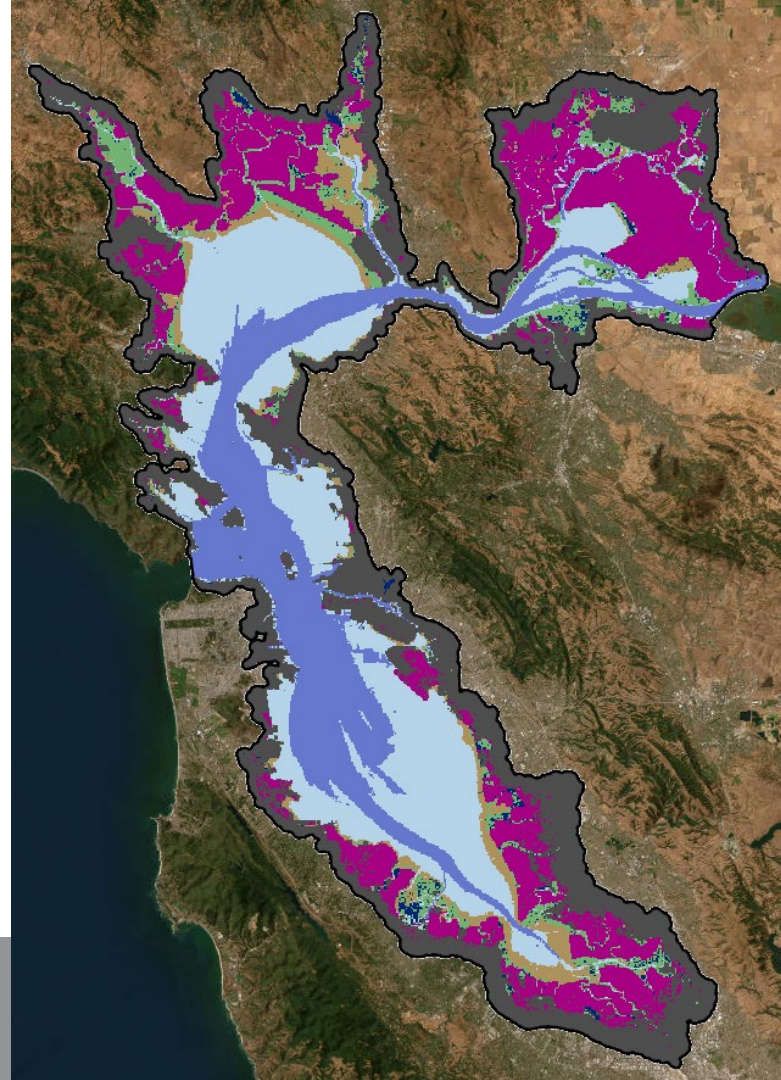
BCB: Tidal marsh extent

Metric would show:

- **SFBRA Projects are increasing the amount of tidal marsh (and other desired habitat types) in the Bay**

Cost effectiveness:

- If the BCB is funded in an ongoing way, the WRMP can regularly update these metrics at the regional scale
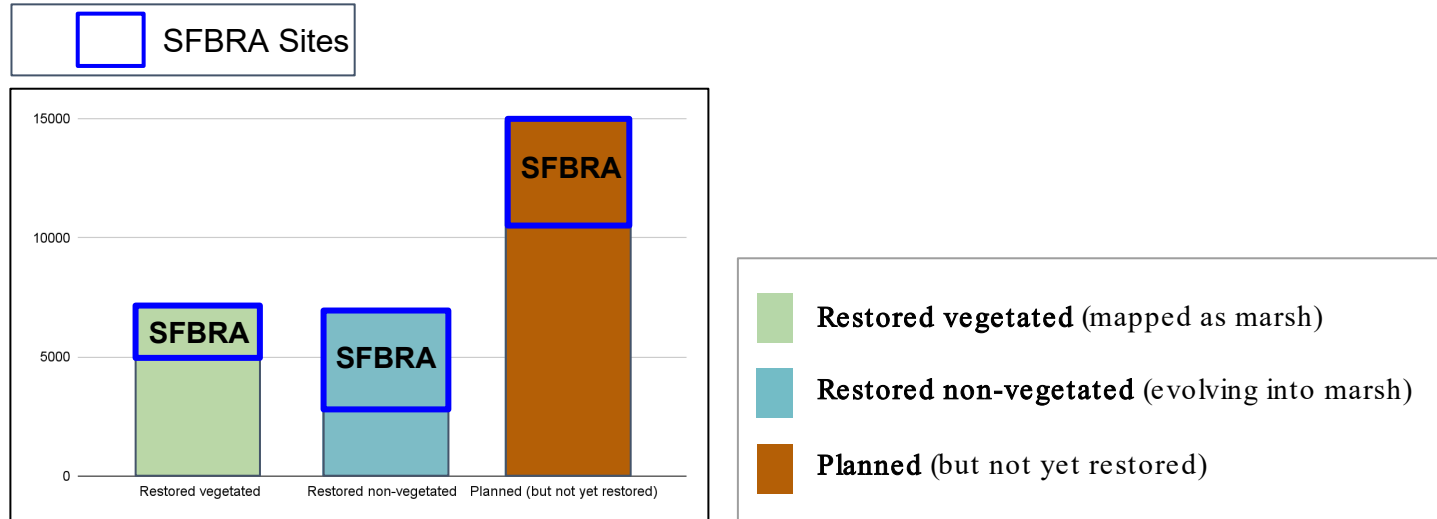
BCB: Tidal marsh extent tracked by WRMP

Legend:
- **Tidal marsh** (not including restoration)
- **Restored vegetated** (mapped as marsh)
- **Restored non-vegetated** (evolving into marsh)
- **Planned** (but not yet restored)

Chart axis: 200,000 ACRES / 100,000 / 0

RESTORATION GOAL: 100,000 acres

X-axis: ca. 1800, 1998, 2009, 2015, 2023

Mocked up numbers for demonstration purposes only

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BCB: Tidal marsh extent tracked by WRMP

Legend:

- **Tidal marsh** (not including restoration)
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Chart labels: 200,000 ACRES; 100,000; 0; RESTORATION GOAL: 100,000 acres; ca. 1800; 1998; 2009; 2015; 2023

Mocked up numbers for demonstration purposes only

BCB: Tidal marsh extent in SFBRA Projects

Mocked up numbers for demonstration purposes only

BCB: Marsh Patch Configuration

Metric would show:

- **SFBRA projects increase support for wildlife by creating larger, more complex, more connected marsh habitat**

Cost effectiveness:

- Planned analysis by Shoreline Resilience Framework project, being considered by WRMP
- Could be easily repeatable with BCB and Project Tracker updates

BCB: Marsh Patch Configuration

From "A Delta Transformed", 2014

- Define marsh patches based on expected wildlife movement
- Apply marsh patch definitions to BCB
- Analyze patch size, shape and connectivity for SFBRA projects

From BEHGU, 2015
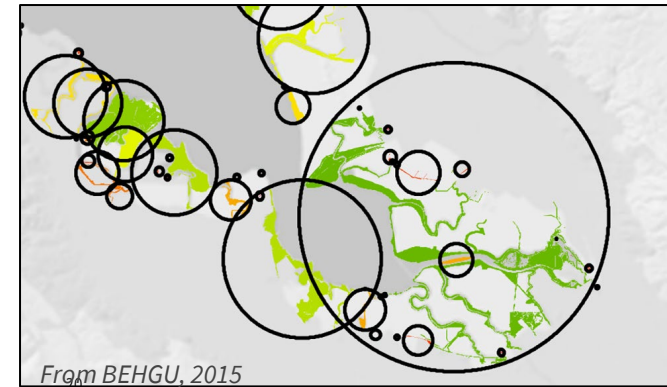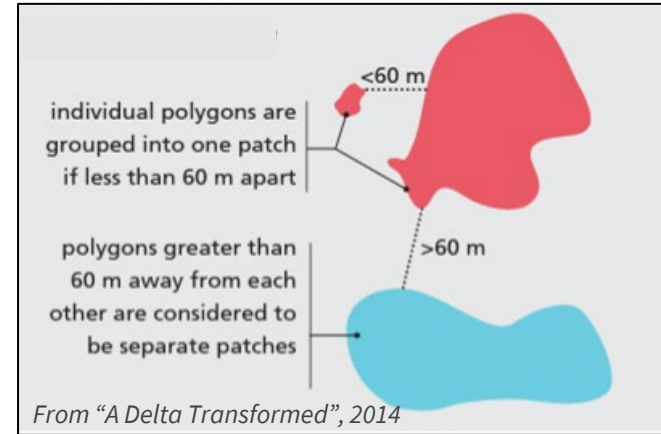
California Rapid Assessment Method (CRAM)

Metric would show:

- **SFBRA Projects support high quality habitat and are also likely to support a wide range of functions**
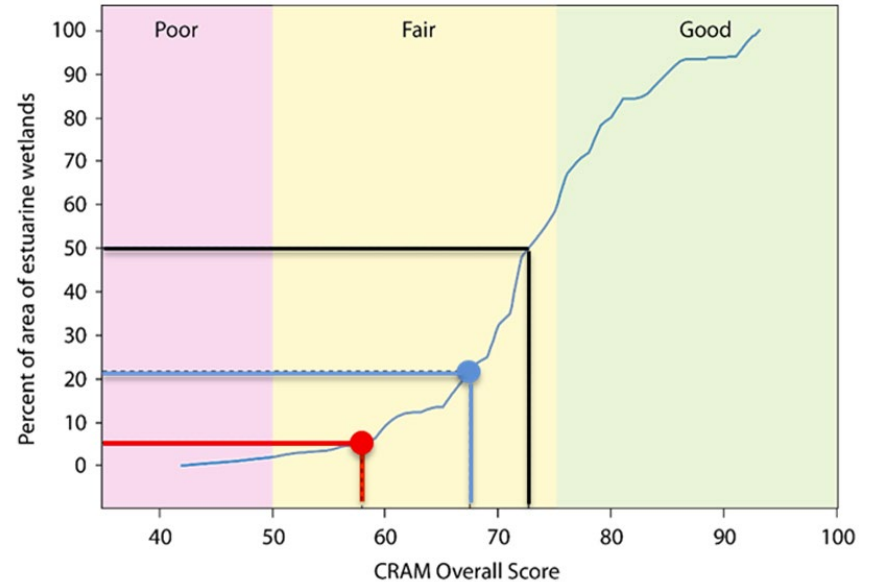
Cost effectiveness:

- Rapid field-based assessments
- Standardized method to facilitate condition comparisons across the entire Bay region
- CRAM is a near-term WRMP monitoring priority

CRAM: Comparisons over time and by region
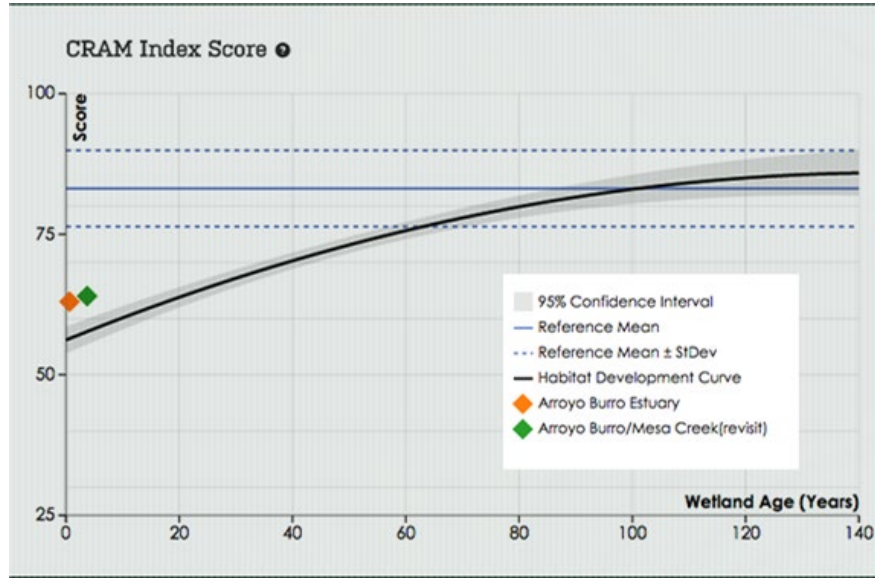
Habitat Development Curves show how CRAM scores are expected to change as projects evolve
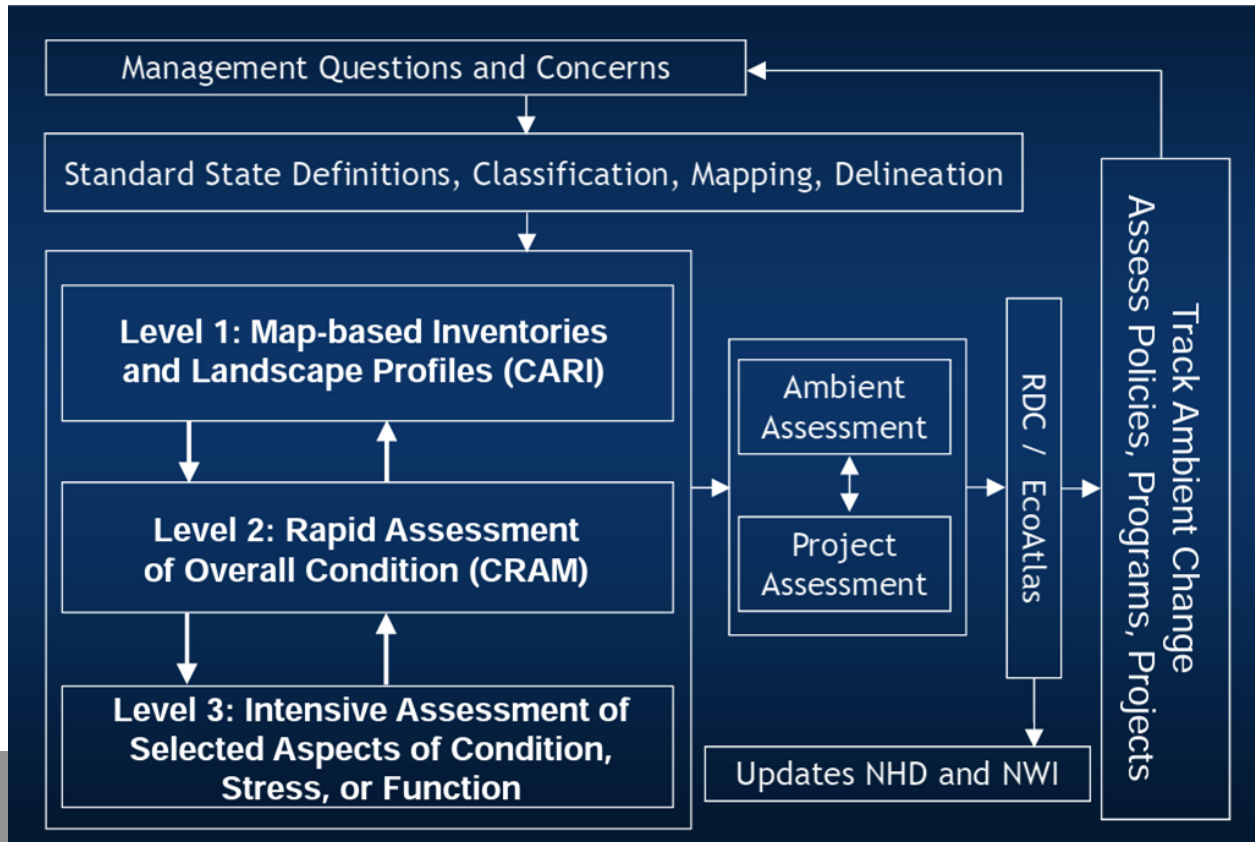

Cumulative Distribution Function curves show how CRAM scores are distributed across a region
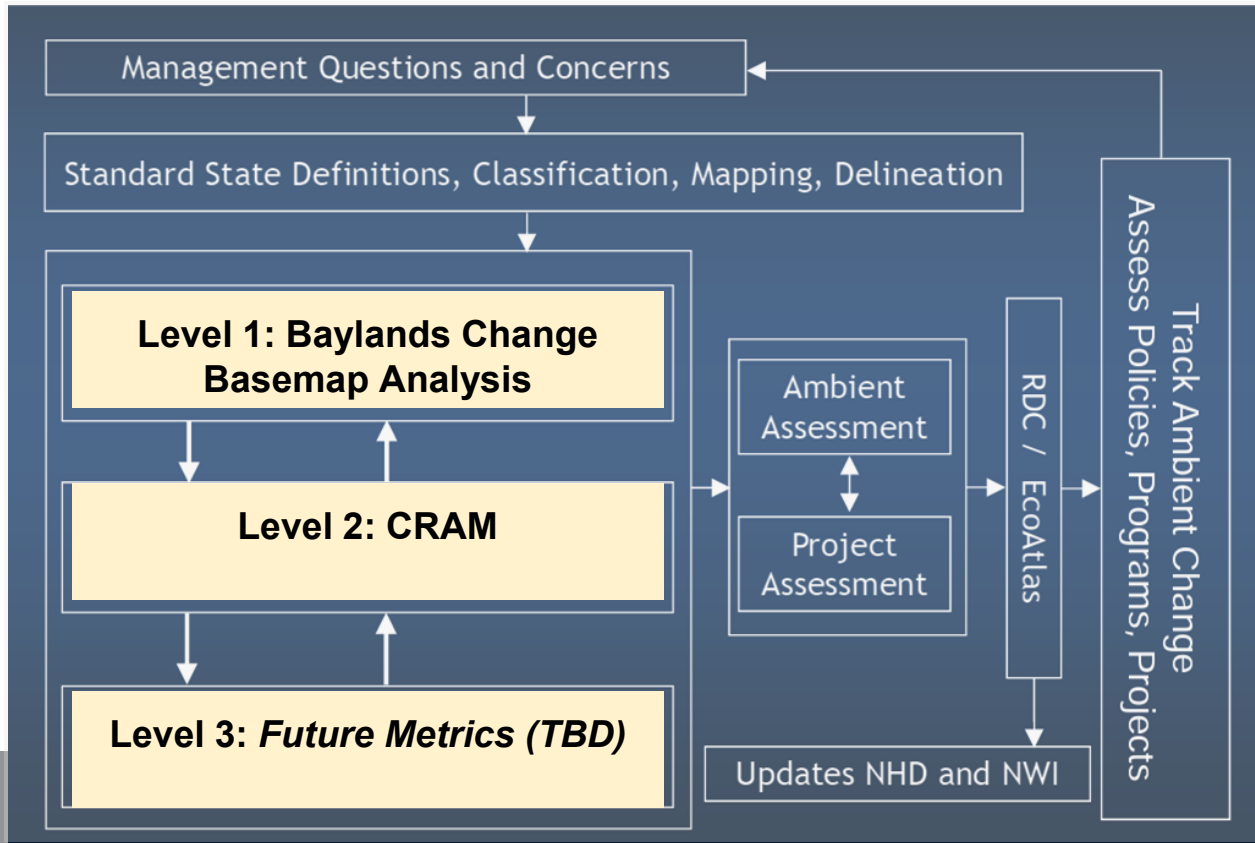
Future Metrics (TBD)

- Resilience Metrics
- People and Wetlands
- Wildlife
- Others?

Statewide WRAMP Monitoring Framework

Statewide WRAMP Monitoring Framework

People & Wetlands Workgroup: Objectives & Timeline

Develop indicators, metrics, and monitoring protocols/standards for human connections to wetlands that:

- Emphasize community and Tribal values

- Align with information needs of decision-makers

- Enable evaluation of equity questions, and

- Incorporate diverse ways of understanding wetland health

Timeline: Fall 2022 – Spring 2024

People and Wetlands Management Questions

• How are the benefits of wetlands distributed regionally and among different demographic groups?

• How does the provision of benefits progress over time at existing and restored wetland sites?

• What monitoring data and/or analyses are needed to improve the relationships between tidal marsh restoration, fish and wildlife support, mosquito and vector control, and public access?

Images: NOAA, SFEP photo library

People & Wetlands Workgroup

Expertise in:

- Social science/human dimensions,

- Environmental justice & community priorities,

- Wetland adaptive management,

- Regulatory agencies,

- Tribal engagement/traditional knowledge integration

⭐ SFBRA Advisory Committee members and staff

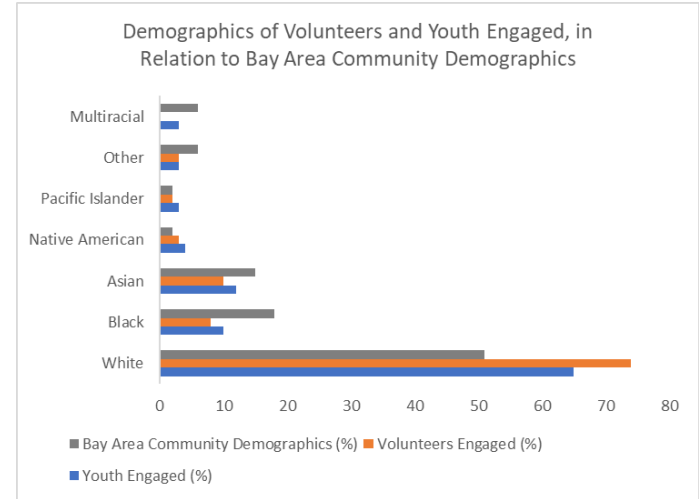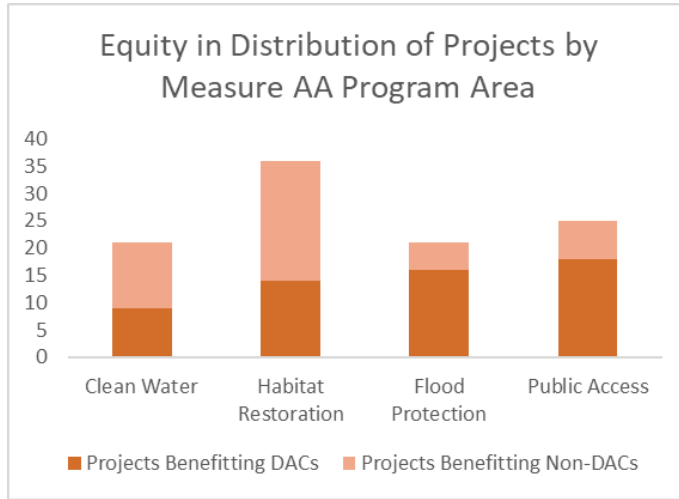|	Name	Affiliation
WRMP staff / science coordination	Alex Thomsen (WRMP staff lead), Sasha Harris-Lovett, Taylor Pantiga, Karen Verpeet	WRMP staff, SFEP and SFEI
	Caitlin Crain, Donna Ball, Christina Toms	WRMP science leads, SFEI and SF Bay Regional Water Quality Control Board
	Tony Hale, Cristina Grosso	WRMP data management leads, SFEI
Workgroup members	Keta Price (co-facilitator) ⭐	Hood Planning Group
	Denise Walker (co-facilitator)	SFEI
	Camille Antinori	SF State University
	Cory Copeland	Bay Conservation & Development Commission
	Devani Santos	Shoreline Leadership Academy
	Erica Johnson ⭐	State Coastal Conservancy/SF Bay Restoration Authority
	Erika Castillo ⭐	Alameda County Mosquito Abatement District
	Jessie Olson	Save the Bay
	Lita Brydie	Bay Conservation & Development Commission
	Maria Katticaran ⭐	Shoreline Leadership Academy
	Matt Ferner	SF Bay NERR
	Morgan Chow	Delta Science Program
	Nadine Heck	East Carolina University
	Selena Pang	SFEI
	Shalini Kannan	State Coastal Conservancy/South Bay Salt Pond Restoration Project
	Shy Walker	Shoreline Leadership Academy; Ninth Root
	Sid Narayan	East Carolina University
	Stephanie Bergman	US Army Corps of Engineers
	Xoco Shinbrot	Delta Science Program

Major Areas of Interest

- Shoreline protection
- Water quality
- Inclusive access
- Stewardship
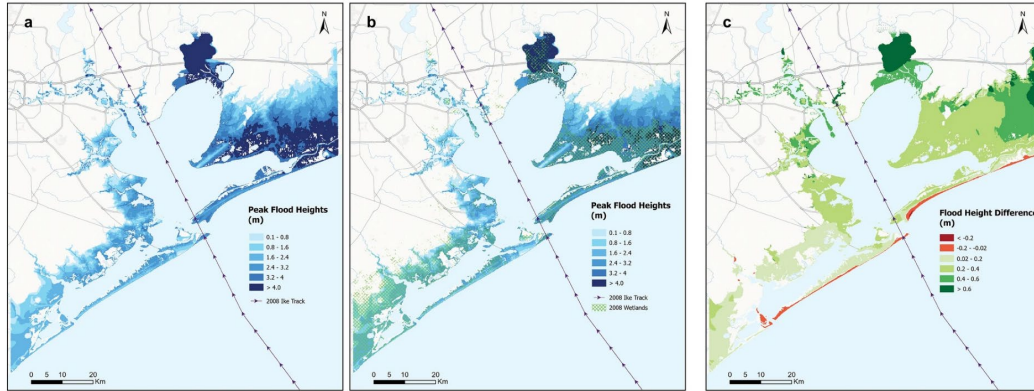- Knowledge production & transmission
- Governance & representation

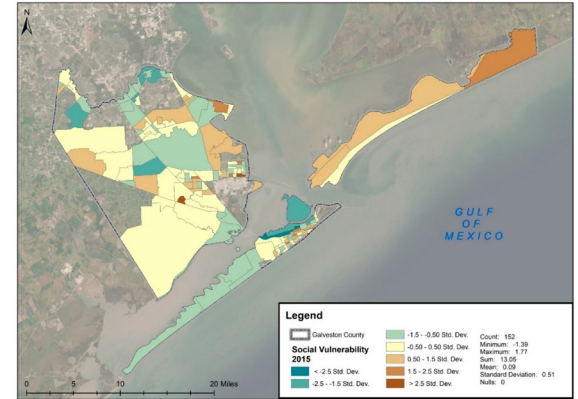*Images: Shira Bezalel (top), SFEP photo library (right, bottom)*

Example Products & Metrics (not real data)

Equity in Distribution of Projects by Measure AA Program Area

Demographics of Volunteers and Youth Engaged, in Relation to Bay Area Community Demographics

Example Products & Metrics

Al-Attabi et al. 2023

Fucile-Sanchez & Davlasheridze 2020

Thank you!

Questions?

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