

FORTHCOMING REPORT

## Toward More Equitable Nature-based Coastal Adaptation in California

*Recommendations for Improving Social Equity in Funding, Policy, and Research*

### Nature-based Coastal Adaptation

Nature-based management approaches are increasingly being recognized as climate adaptation options that offer co-benefits beyond the original goal of shoreline protection in response to rising seas and other shoreline hazards. In coastal regions, these include **living shorelines**, which are composed of natural or mostly natural elements and are designed to address shoreline change and vulnerabilities through the preservation, restoration, or enhancement of biodiversity, habitat, and other environmental and shoreline processes.

**Examples of co-occurring benefits:**

- Reduced erosion risk**
- Habitat enhancement and biodiversity**
- Increased coastal access**
- Greater cultural connections to place**
- Reduced flood insurance premiums**



**COASTAL SALT MARSH**  
*Elkhorn Slough*



**EELGRASS HABITAT REEF**  
*San Francisco Bay*



**HORIZONTAL HABITAT LEVEE**  
*Oro Loma Sanitary District*



**COASTAL DUNE**  
*Cardiff Beach*

### Advancing Social Equity

- Increasing interest in nature-based climate solutions in California presents an opportunity to emphasize ecological and physical outcomes and also advance social equity<sup>1</sup> for frontline communities<sup>2</sup> and California Native American tribes who face numerous social, economic, and environmental inequalities resulting from a legacy of discrimination and are and will continue to be disproportionately impacted by climate change (Roos, 2018).
- Many coastal frontline communities were historically restricted to low-lying flood-prone areas which were also targeted for pollution from industry, leaving these communities at higher risk of health and safety impacts from sea level rise and other climate stressors.
- Equitable coastal adaptation is needed in California to reverse and offset a legacy of forced displacement, environmental racism, disinvestment and unjust land use.

<sup>1</sup> *Social equity* is "concerned with fairness and justice in how people are treated or public policies are formulated and implemented" (Bennett et al., 2021). Equity is the intended outcome of justice, which necessitates the reckoning, remedying, and prevention of systemic injustices.

<sup>2</sup> *Frontline communities* are defined to include "lower-income communities, communities of color, Indigenous peoples and Tribal nations, and immigrant communities who are especially vulnerable to the impacts of climate change because of decades-long, pervasive socioeconomic conditions that are perpetuated by systems of inequitable power and resource distribution." (Mohnot, Bishop and Sanchez, 2019)

This report was funded by the Honda USA Foundation. Images courtesy of Kerstin Wasson (salt marsh), Jak Wonderling (eelgrass), Joia Fishman (habitat levee), GHD Group (dune)

# Summary of Report Findings

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The following are highlighted from Ocean Science Trust's forthcoming report "Toward More Equitable Nature-based Coastal Adaptation in California" (June 2022).

## RECOMMENDATIONS

- **Prioritize projects that improve use, access, and stewardship** by historically excluded frontline communities and tribes in California
- **Invest in coastal adaptation approaches that elevate community values and needs** while maximizing social and environmental outcomes
- **Address broader structural inequities in California** coastal policy and management
- **Plan for meaningful engagement and collaboration** with communities at project outset
- **Define equity goals at the local scale** for each project
- **Evaluate potential gentrification outcomes** and incorporate anti-displacement approaches where appropriate
- **Incorporate inclusive education and workforce development** opportunities into project implementation
- **Scale up investment in pilot projects** and explore avenues for reducing programmatic barriers for implementing living shorelines

## RESEARCH NEEDS

- **Social equity outcomes across the spectrum of coastal adaptation approaches**
- **Shoreline management challenges, perceptions, and barriers** to pursuing nature-based adaptation strategies within frontline and tribal communities
- **Conditions under which nature-based approaches are feasible (and not) in California** and where they can be used to improve frontline and tribal community resilience.
- **Distribution of current and historic coastal adaptation investments** in frontline communities and tribes
- **Opportunities to incorporate traditional knowledge systems** in restoration techniques and outcomes
- **Avenues for reducing programmatic barriers** for implementing nature-based coastal adaptation projects.
- **Potential for incorporating workforce development and education opportunities** within nature-based adaptation and restoration

## References

Bennett, N. J., Katz, L., Yadao-Evans, W., Ahmadi, G. N., Atkinson, S., Ban, N. C., Dawson, N. M., de Vos, A., Fitzpatrick, J., Gill, D., Imirizaldu, M., Lewis, N., Mangubhai, S., Meth, L., Muhl, E.-K., Obura, D., Spalding, A. K., Villagomez, A., Wagner, D., Wilhelm, A. (2021). Advancing Social Equity in and Through Marine Conservation. *Frontiers in Marine Science*, 8, 994.

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Michelle Roos. (2018). Climate Justice Summary Report (SUM-CCCA4-2018-012; California's Fourth Climate Change Assessment). E4 Strategic Solutions.

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For more information about the report and process, visit:  
[oceansciencetrust.org/projects/equitylivingshorelines/](https://oceansciencetrust.org/projects/equitylivingshorelines/)



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