



COLLABORATIVE
NETWORK

CLIMATE AND THE COAST SONOMA



Sonoma Marine Protected Area Collaborative

Perspectives on climate change, the coast, and
California's Marine Protected Area Network

*A summary of the greatest concerns, needs, and
priorities from a survey and focus group of Sonoma
County residents on climate change, the coast, and
marine protected areas (MPAs).*

www.mpacollaborative.org

Photo Credit:
Stewards of the Coast
and Redwoods



EXECUTIVE SUMMARY

This report is a summary of 9 survey respondents and 14 focus group attendees in Sonoma County.

Participants discussed climate resiliency and benefits of MPAs, climate change-related risks to MPAs, and avenues for ensuring MPAs continue to promote a healthy ocean.

Recommendations for decision makers can be found on page 3.

Key Takeaways

The following key takeaways are highlighted in further detail throughout the report.

Respondents believe....

- **climate change is negatively impacting MPA effectiveness**, coastal ecosystems, and coastal communities
- **MPAs are helping address climate change** impacts on local coastal ecosystems (page 6) and communities
- **marine management is a priority** for addressing climate change
- **climate action is a high priority** for their community

Some take-aways **specific to Sonoma County** include:

- Concerns about sea level rise impacts to **infrastructure** (docks, roads, etc.). This also impacts **access** (loss of parking lots, beaches, inability to fish)
- Importance of considering entire **ecosystems and interconnection** of ecosystem, rather than focus on individual species or habitats
- Concern about **marine heatwave impacts** on kelp ecosystems, birds, and marine mammals (pinnipeds), as well as declines in important fisheries such as salmon and rockfish

Recommendations

The following recommendations represent the perspectives of respondents and do not necessarily represent the perspectives of the MPA Collaborative Network, which represents many diverse viewpoints.

Develop....

- **outreach and education materials** (messaging) that clearly and succinctly communicates the intersections of climate change and MPAs
- **positions** within each organization/agency/department dedicated to climate change
- **co-management agreements** for MPAs between Tribes and state governing agencies
- **funding streams** towards projects focused explicitly on climate change and MPAs
- **learning opportunities** for partners and the public to learn about the intersections of MPAs and climate change
- **clear communication** to partners and the public about how **adaptive management** will address climate change

Prioritize.....

- **Traditional Ecological Knowledge (TEK)** in management and research practices
- **Protection of blue carbon ecosystems**
- **Research and monitoring** projects focused on MPAs and climate change to inform management decisions

Assess potential positive climate impacts of....

- **allowing for restoration** activities within MPAs
- **expanding protected areas** and **implementing stronger protections**
- additions of **dynamic MPAs** that address changing conditions

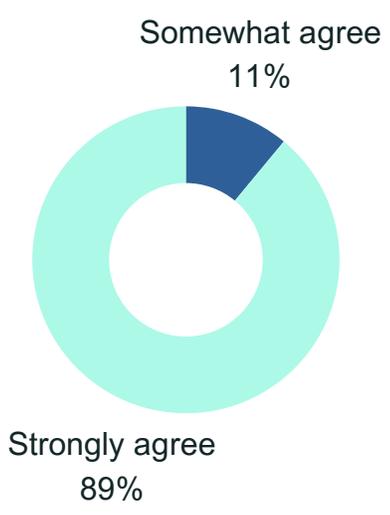
Conduct....

- a **blue carbon inventory** for California's MPAs (either as a whole or individually) that estimates how much blue carbon they sequester, as well as how much greenhouse gases are created through the management program
- **A climate change vulnerability assessment** for California's MPAs (either as a whole or individually)

TAKEAWAY #1

Respondents believe climate change is highly impacting MPA effectiveness and coastal ecosystems

1.1 Indicate how strongly you agree or disagree with the following statement:
Climate change is impacting MPA effectiveness.



1.2 Rank your **biggest concerns about how climate change impacts** your local coastal ecosystems and marine protected areas (MPAs).

Concerns ranked from highest to lowest

- 1 Increased ocean temperatures and marine heatwaves
- 2 Ocean acidification
- 3 Coastal storms
- 4 Sea level rise
- 5 Invasive species
- 6 Climate driven shift in human impacts
- 7 Wildfire runoff
- 8 Other *

“Climate change is the highest priority we face. Period.”
- Respondent



Photo Credit: Stewards of the Coast and Redwoods

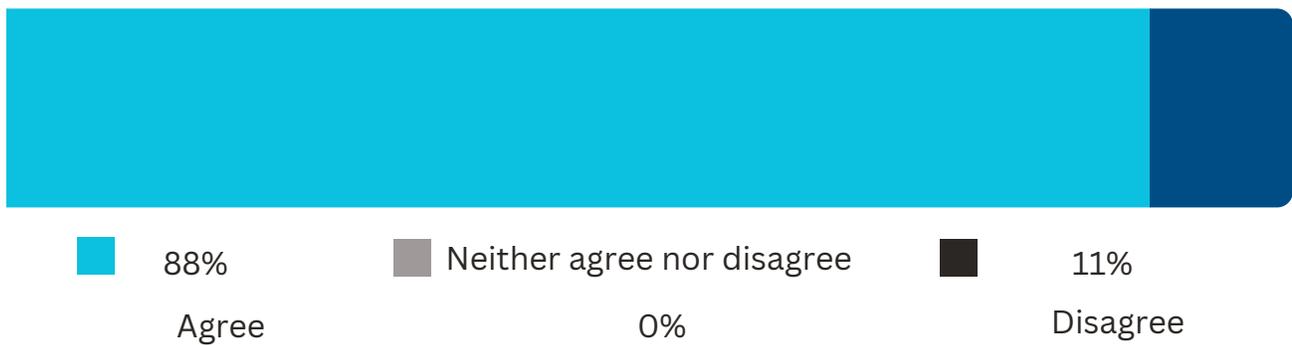
TAKEAWAY #2

Respondents believe MPAs are helping address climate change impacts on local coastal ecosystems

2. Indicate how strongly you agree or disagree with the following statement:

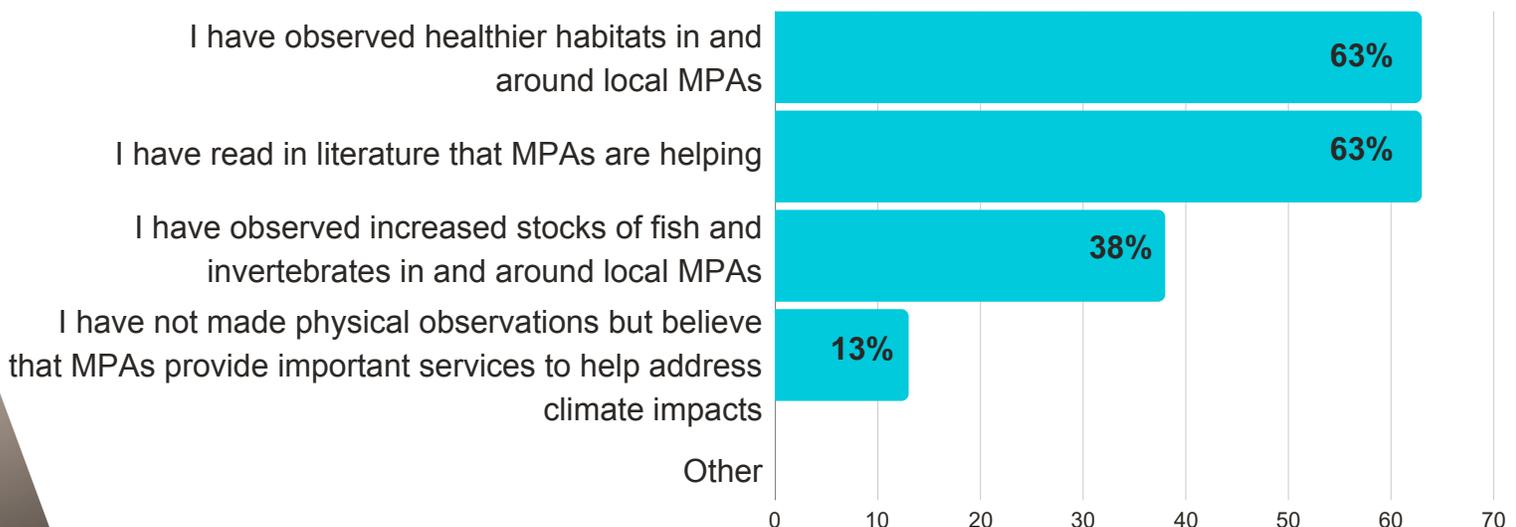
My local MPAs are offsetting/helping address these impacts to my local coastal ecosystems.

A majority of respondents felt that their local MPAs are offsetting/ helping address impacts to local coastal ecosystems. In particular, 88% agreed that MPAs are strongly (44%) or somewhat (44%) offsetting climate impacts.



“Biodiversity and protected habitat increase resilience.” - Respondent

Respondents who **agreed** local MPAs are offsetting/helping address impacts to your local coastal ecosystems were asked why.



TAKEAWAY #3

Respondents are concerned about the impacts of climate change on coastal communities

3. Rank your biggest concerns about how the following **climate impacts affect the health** (ability to function and thrive) **of your community or your community's resilience** (ability to bounce back).

Concerns ranked from biggest to smallest:

- 1 Warming and changing oceans further accelerating and exacerbating climate change on a larger scale
- 2 Loss of economic resources or opportunities
- 3 Impacts to infrastructure
- 4 Loss of aesthetically, culturally, and/or spiritually important sites
- 5 Impacts to species used for sustenance
- 6 Widening of existing social inequalities
- 7 Impacts to culturally important species
- 8 Diversion of resources that could be used for other community programs/priorities

“The climate affects all of us in our entire community so will hopefully be addressed in a thoughtful, community-oriented way - quickly!” - Respondent

“Species are disappearing before our eyes without us noticing” - Participant

“ [due to] big storms with lots of surge and king tides, the docks [at the marina] are actually coming up above the pilings that hold them in place” - Participant

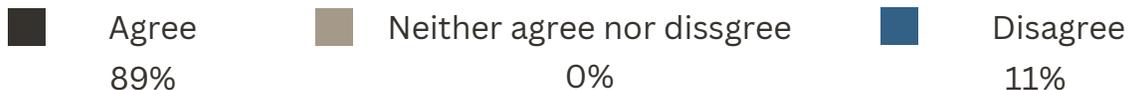


TAKEAWAY #4

Respondents believe MPAs are helping address climate impacts on communities

4. Indicate how strongly you agree or disagree with the following statement:

My local MPAs are offsetting/helping address climate impacts that affect the health (ability to function and thrive) of my community or my community's resilience (ability to bounce back)



Respondents that **agreed were asked to explain their answer**. A thematic analysis of responses revealed the most frequently mentioned topics:

- MPAs provide sanctuary for species
- Biodiversity increases resilience
- General Community Awareness
- MPAs are allowing whole ecosystems to function and support each other
- Protected ecosystems increase resilience
- Spillover
- The ocean is healthier near MPAs
- Resilient ecosystems are a cornerstone of community resilience

Respondents that disagreed were also given a chance to explain their answer. Only one response was submitted, stating 'MPAs not designed to offset climate change impacts'



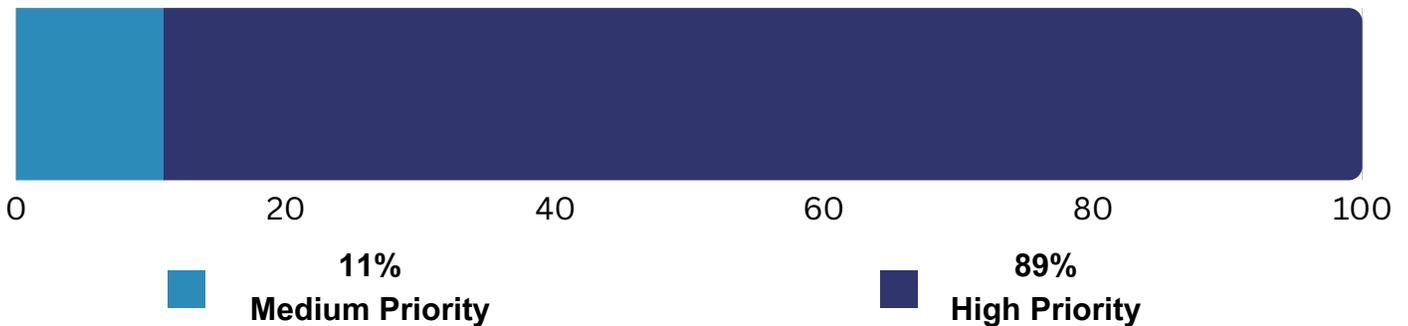
“When the nature that surrounds us is in better shape, human communities within that ecosystem are more resilient.” - Respondent



TAKEAWAY #5

Respondents believe marine management is a priority for addressing climate change

5.1 How would you **prioritize marine management alongside other climate change solutions** (such as renewable energy and carbon sequestration)?



5.2 Rank what you believe are the **most important priorities for adaptively managing MPAs** specifically in the face of climate change.

Priorities ranked from most to least important

- 1 Protection of blue carbon ecosystems (kelp, seagrasses)
- 2 Expansion of protected areas and stronger protections
- 3 Research and monitoring projects to collect more data to inform decisions
- 4 Take necessary management action to allow for landward migration of submerged aquatic habitats
- 5 Integration of Traditional Ecological Knowledge (TEK) into MPA management and research
- 6 Allow for restoration activities within MPAs
- 7 Co-management of MPAs between tribes and state governing agencies
- 8 Consider addition of dynamic MPAs that address conditions impacting California currents

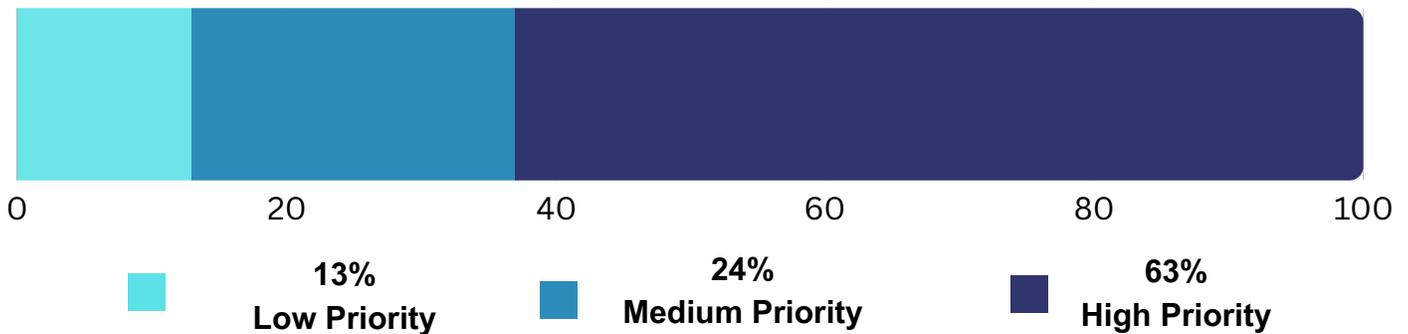


TAKEAWAY #6

Credit: Ethan Arutanian

Respondents believe climate action is a high priority for their community

6. How would you prioritize climate change alongside other drivers of political, demographic, and/or socioeconomic change impacting your community?



Respondents had the option to mention the **most important general climate change solution along the coast** (i.e. offshore wind, managed retreat, return of coastal land to tribal management, etc.)?



TAKEAWAY #7

Highest needs of respondents

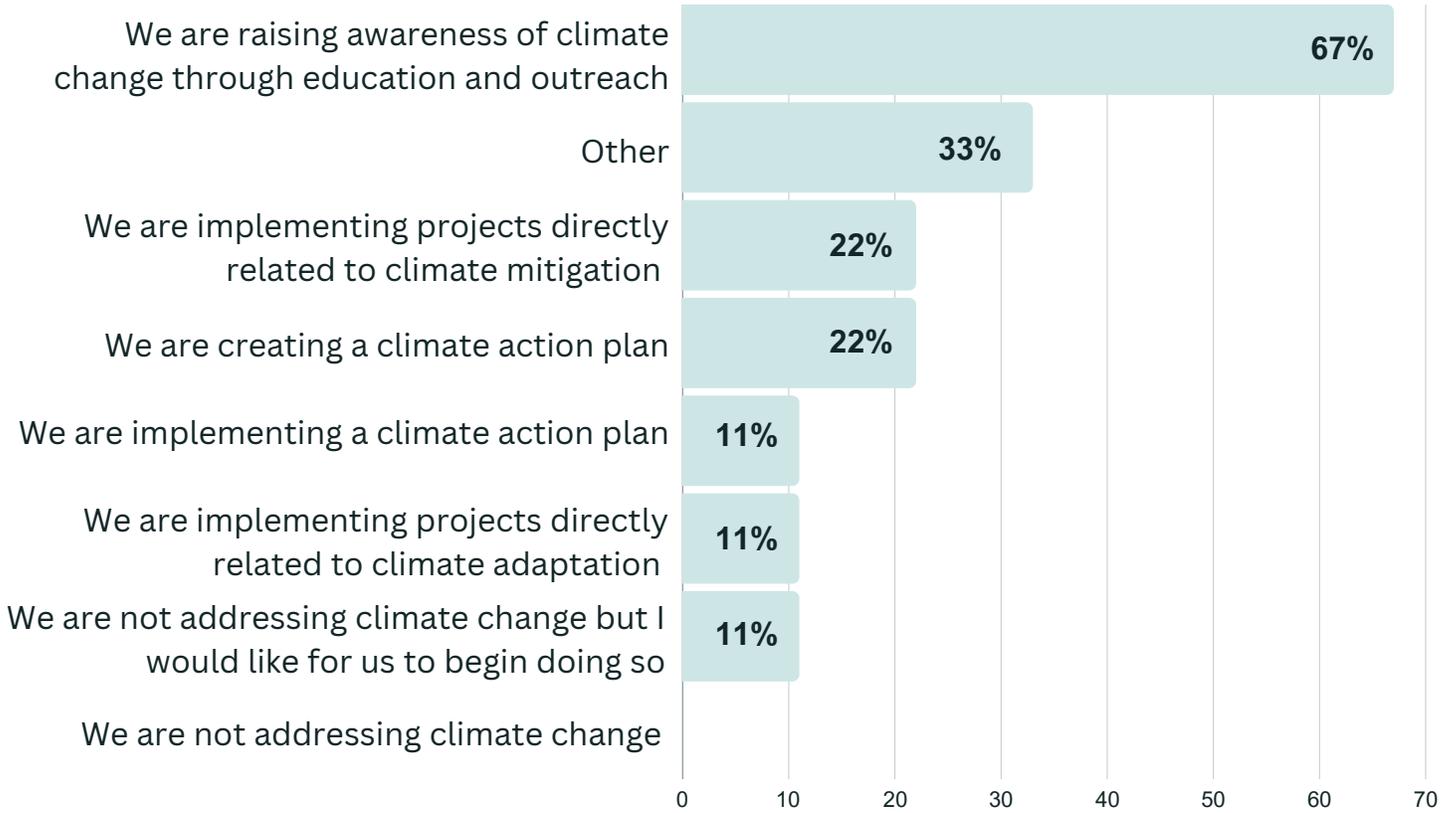
7. What are the **needs of your organization/agency/tribe/business/community** in relation to MPAs and climate change?



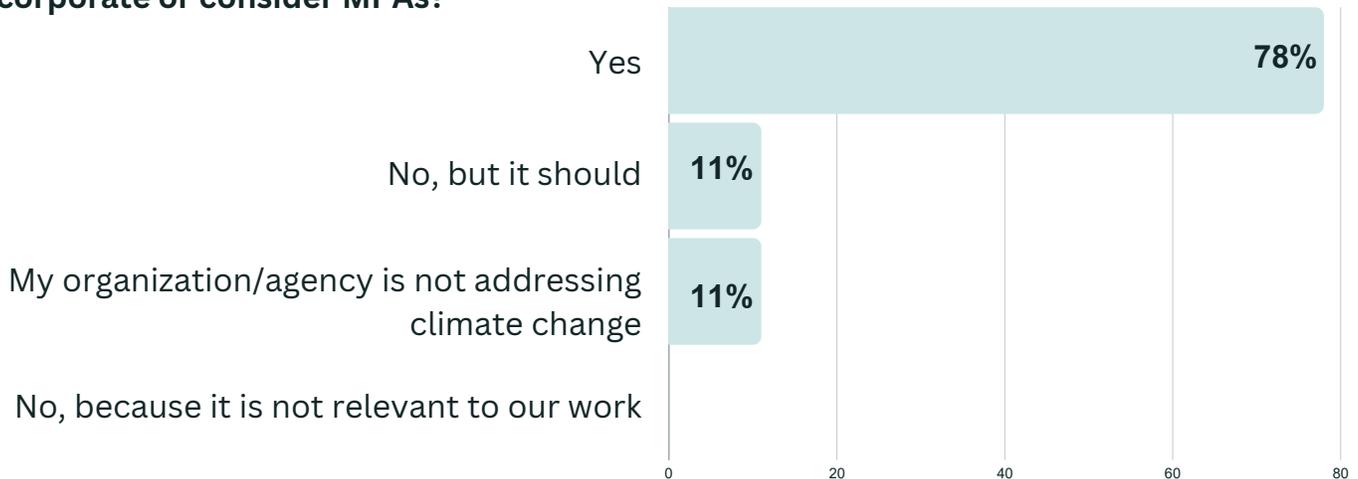
APPENDIX A

Community Work

How is your organization/agency/tribe/business/community addressing climate change?



Do the climate actions of your organization/agency/tribe/business/community incorporate or consider MPAs?



APPENDIX A

Community Work and Resources

The following information/resources were provided by participants in regards to the work that is already occurring within San Diego and relevant community resources.

What is currently being done to address climate change:

- Urchin Removal and Kelp Restoration project in Fort Ross
- [Sonoma County Parks](#): Climate Conscious Parks Team
 - 4 groups who work together. Ideas to locally address climate change and ways to come up with interpretive ideas for educating the public and updating infrastructure to address Sea Level Rise (SLR)
 - Interpretive signs for SLR at the coast, and throughout parks
- [Stewards of the Coast and Redwoods](#) working on climate action plan, resilience, and using an adapted [UC Climate Steward program](#) to enhance climate communications.
 - Climate action plan: beginning stages. Hoping to have a draft by the end of 2023
 - Managing infrastructure
 - Learning and partnering around Traditional Ecological Knowledge (TEK) to avoid fire (trees are a huge carbon sink)
- [City of Napa](#) banned some of the smaller lawn appliances to reduce GHG, planning to go fully electric, hoping to go off the grid. Using cars as energy storage, and much more.
- Removal of pines due to bark beetle at Cookes Beach and planting of new pines
- In Gualala River, [Redwood Coast Land Conservancy](#) has funding from California Coastal Conservancy and CDFW to do restoration in the estuary and is looking at putting in salmonid enhancements
- [The Sea Ranch Association](#) is moving forward with the planning phase of their own microgrid solar array and the Ecology Subcommittee is trying to re-vamp the "monarch glen" by doing some restoration. There is also a bluff erosion study taking place.
- [CalAcademy: Snapshot Cal Coast](#) program to make observations of biodiversity. Build an observatory to see changes over time in response to warming, marine heatwave, etc. Using all that data to build an early warning and forecasting system to help the California Ocean Protection Council (OPC) do proactive management. Considering overlapping stresses (SLR, Sea surface temp). This program gives people a way to engage.
 - Aquarium program is working on best practices on raising larval pycnophodia in a lab to release them back into the coast and is also doing education and outreach.

Resources

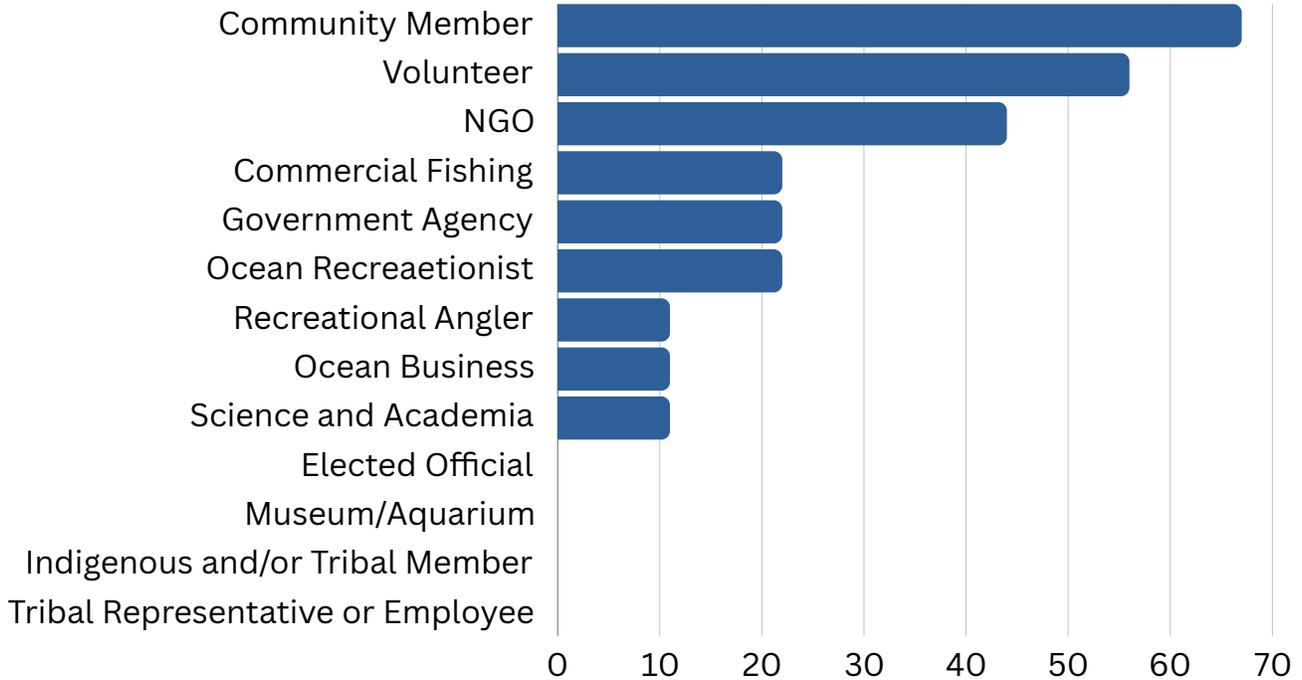
For resources on Climate Change and MPAs, as well as resources specific to your region, [visit our resources document \(click on this link or scan QR code\)](#).



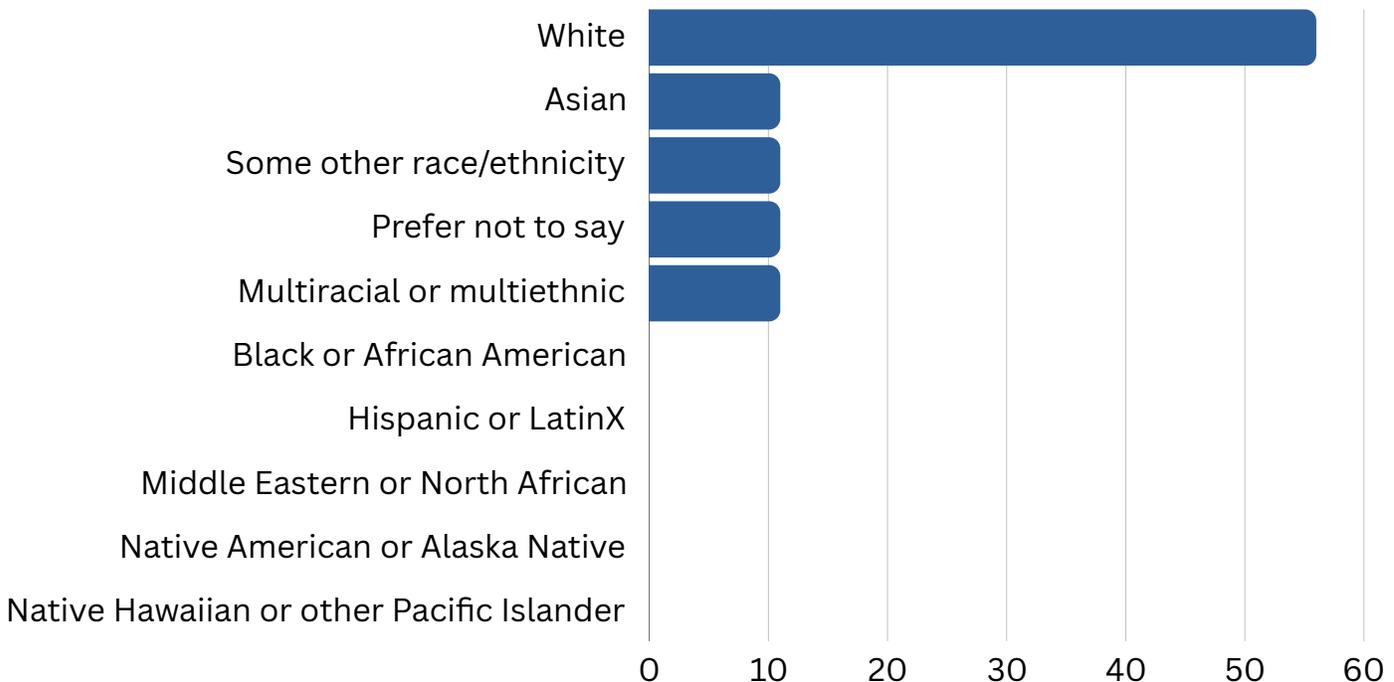
APPENDIX B

Demographics of survey respondents

Sector Affiliation(%)*



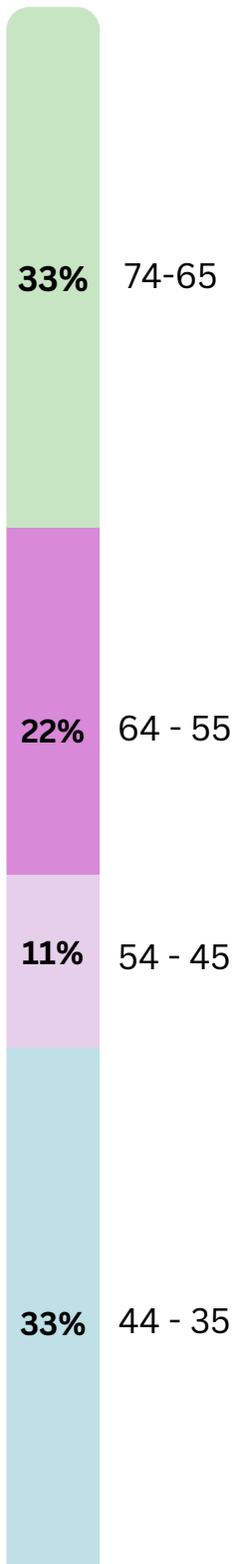
Which race, ethnicity and/or origin categories describe you?(%)*



** For "Some other race/ethnicity" the following was provided, "Gabrielino-Shoshone", "Kumeyaay", "Persian", "USA", and "Half Nicaraguan."

APPENDIX B

Age Groups



0% of respondents selected any of the following age groups: “Under 18,” “18-24,” “25-34,” and “over 85”.

Gender Identity



22% of respondents selected “**male**” as their gender identity.



78% of respondents selected “**female**” as their gender identity.



0% of respondents selected any of the following gender identities: “Non-binary”, “Transgender”, “Not listed/Option to specify”, or “Prefer not to say.”

Highest level of education



Some college, but no degree



Bachelor’s degree

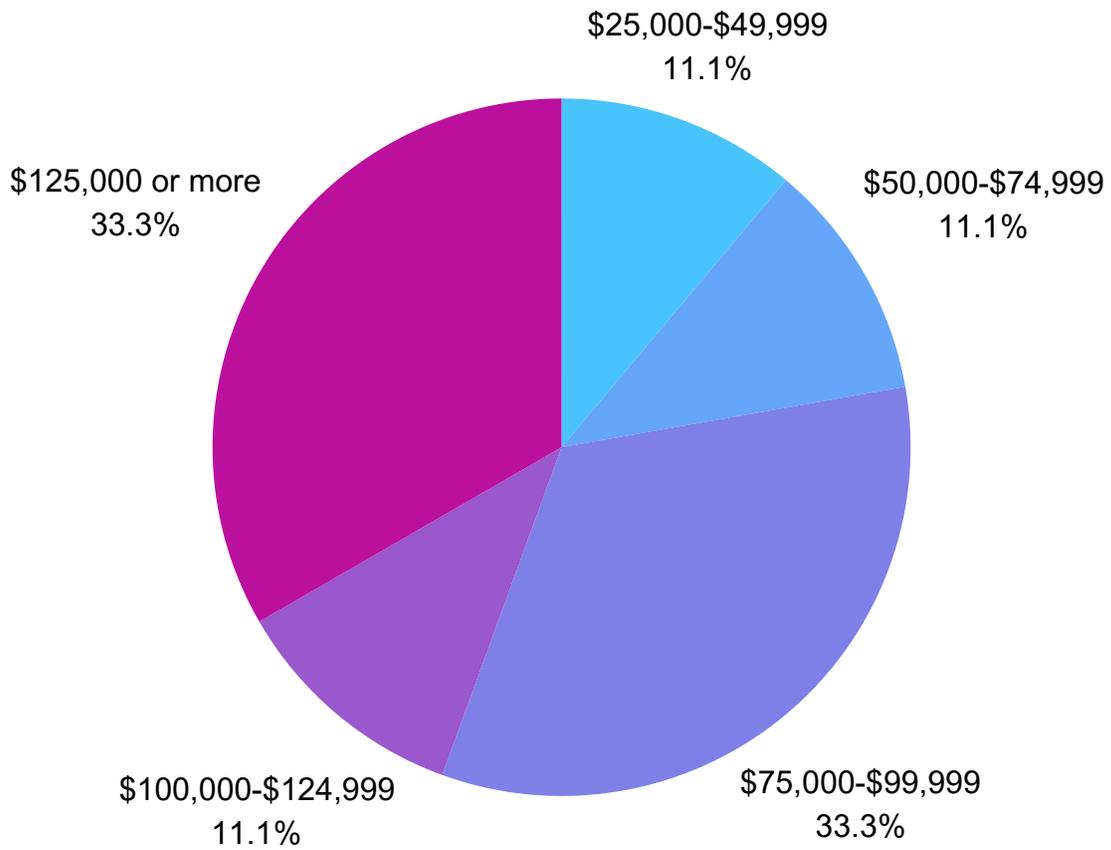


Graduate or professional degree

0% of respondents selected any of the following: some high school or less; high school graduate or GED; Associates or technical degree

APPENDIX B

Annual household income (before taxes) in 2022





ABOUT THE MPA COLLABORATIVE NETWORK

The MPA Collaborative Network (CN) ensures that MPAs are effective by providing a robust structure for civic engagement in MPA management. The CN's 14 county-based volunteer groups (collaboratives) bring together over 1,700 members representing hundreds of distinct and diverse Californian organizations, agencies, Tribes, individuals, interests, and backgrounds for a more comprehensive and localized approach to resource management.

Learn more as well as join your collaborative:

www.mpacollaborative.org

For more information on MPAs, visit

<https://wildlife.ca.gov/Conservation/Marine/MPAs>