



Tracking Number: (2023-29MPA)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission’s authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)

Name of primary contact person: Lisa Suatoni

Address: Natural Resources Defense Council [redacted]

Telephone number: [redacted]

Email address: [redacted]

Co-sponsors: Sam Cohen - Santa Ynez Band of Chumash Indians, Azsha Hudson - Environmental Defense Center

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Authority cited: Sections 200, 205(c), 265, 399, 1590, 1591, 2860, 2861 and 6750, Fish and Game Code; and Sections 36725(a) and 36725(e), Public Resources Code.

3. Overview (Required) – The attached document describes a proposal for an additional California-Chumash co-management SMCA in the south coast region to be named Mishopshno, following the ancestral Chumash village located in the area. The proposed MPA would prohibit the injury, damage, take, or possession of all living, geological, or cultural marine resources; and allow for enhanced access to the shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for the federally recognized tribe of the Santa Ynez Band of Chumash Indians, who will work to extend access to other non-federally recognized Chumash people.

The proposed area aligns with state MPA design and feasibility guidelines provided by CDFW, and is bounded by the mean high tide line, the 3 nm state waters boundary, and straight lines connecting the following points in the order listed:

- 34.365392908 N lat. 119.6000000 W long. (SW corner)
- 34.419698650 N lat. 119.6000000 W long. (NW corner)
- 34.393513965 N lat. 119.525777354 W long. (NE corner)
- 34.336952256 N lat. 119.525777354 W long. (SE corner)



4. **Rationale (Required)** - Describe the problem and the reason for the proposed change: The intent of the SMCA is to 1) help meet the science guidelines for spacing between protected habitats, promoting connectivity in the network and representation of habitat types, 2) protect habitat attractive to marine wildlife, such as juvenile white sharks, and 3) allow enhanced access to the shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for the federally recognized tribe of the Santa Ynez Band of Chumash Indians, who will work to extend access to other non-federally recognized Chumash people. See attached documentation for further details.

SECTION II: Optional Information

5. **Date of Petition:** 11/30/2023
6. **Category of Proposed Change**
- Sport Fishing
 - Commercial Fishing
 - Hunting
 - Other, please specify: MPAs, Section 632
7. **The proposal is to:** *(To determine section number(s), see current year regulation booklet or <https://govt.westlaw.com/calregs>)*
- Amend Title 14 Section(s): [Westlaw Regulations](#)
 - Add New Title 14 Section(s): [Click here to enter text.](#)
 - Repeal Title 14 Section(s): [Click here to enter text.](#)
8. **If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition**
- Not applicable.
9. **Effective date:** If applicable, identify the desired effective date of the regulation. If the proposed change requires immediate implementation, explain the nature of the emergency: At the discretion of the Commission.
10. **Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents: See attached.
- a. Proposed Mishopshno SMCA petition narrative
 - b. Appendix A – Expanded synthesis of juvenile white shark aggregation at proposed Mishopshno SMCA
 - c. Appendix B – Proposed Mishopshno SMCA letter of support
11. **Economic or Fiscal Impacts:** Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: Unknown. However, this region is a popular fishing spot for spiny lobster and preventing take in the region may not be welcomed by recreational fishers in the area. Yet, research has shown an increase in lobster populations within MPAs and a resulting increase in lobster catch in neighboring zones. Recent work found that a 35% reduction in fishing area was compensated for by a 225% increase in total catch after 6-years, demonstrating local scale trade-offs provided benefits to fisheries.



12. **Forms:** If applicable, list any forms to be created, amended or repealed:

[Click here to enter text.](#)

SECTION 3: FGC Staff Only

Date received: 11/30/2023

FGC staff action:

- Accept - complete
- Reject - incomplete
- Reject - outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action: _____

Meeting date for FGC consideration: _____

FGC action:

- Denied by FGC
- Denied - same as petition _____
- Granted for consideration of regulation change

Tracking Number

Overview

The intent of this MPA is to 1) help meet the science guidelines for spacing between protected habitats, promoting connectivity in the network and representation of habitat types, 2) protect habitat attractive to marine wildlife, such as juvenile white sharks, and 3) allow enhanced access to the shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for the federally recognized tribe of the Santa Ynez Band of Chumash Indians, who will work to extend access to other non-federally recognized Chumash people.

We propose a new SMCA named for a prominent Chumash coastal village that was historically proximate to the marine area to be protected – Mishopshno. This village was an important coastal site in the ancestral lands of the diverse Chumash people. It was the site of boatbuilding and a close connection to the marine environment. It was described by members of the Portolá expedition who encountered the town on August 17, 1769 as “...at the very edge of the sea a large village or very regular town here at this point, appearing at a distance as though it were a shipyard, because at the moment they were building a canoe that still had its topmost plank lacking from it (dubbed by soldiers La Carpinteria, the Carpenter Shop).”¹ The canoes described here were Tomol, Chumash watercraft built using sophisticated techniques for production of wooden planks and waterproofing with specialized local clay.²

Designation of a new Tribal MPA supports recent California and federal initiatives. To ensure 30% of state waters are fully protected by 2030 and to foster Tribal co-management, this petition proposes this additional Tribal co-management SMCA for the South Coast Region.³ *This petition is co-sponsored by the federally recognized Santa Ynez Band of Chumash Indians, the Natural Resources Defense Council, and Environmental Defense Center.*

Rationale

1. Habitat, Spacing, & Connectivity

The MPA Network was designed to function as an ecological network to ensure the protection of California’s diverse coastal ecosystems.⁴ During the design and planning phase, a science advisory team identified the key metrics needed to achieve this connectivity, including MPA size, spacing, and key habitat representation and replication.^{5 6} Currently, mainland coastal MPAs in the Santa Barbara region, Campus Point and Point Dume, are approximately 64 nautical miles (nm) apart, 10 nm further than the recommended maximum MPA spacing distance of 54 nm to ensure ecological connectivity (Figure 1). This proposal aims to address that gap by adding a protected area around what is now called Carpinteria, CA and is the ancestral home of the Santa Ynez band of the Chumash Indians.

¹ “Chapter 4: Historic Chumash Settlements on the Mainland Coast,” in *The Chumash World at European Contact: Power, Trade, and Feasting Among Complex Hunter-Gatherers*, by Lynn H. Gamble, 2011.

² John Peabody Harrington et al., *TOMOL: Chumash Watercraft as Described in the Ethnographic Notes of John P. Harrington*, Ballena Press Anthropological Papers ; No. 9 (Socorro, N.M.: Ballena Press, 1978).

³ McGinnis, M.V. and R. Cordero. Tribal Marine Protected Areas: Protecting Maritime Ways and Tribal Practices. A White Paper produced by the Wishtoyo Foundation. 2004.

⁴ California Department of Fish and Wildlife, “California’s Marine Protected Area Network Decadal Management Review,” 2022, <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=209209&inline>.

⁵ California Department of Fish & Wildlife, Master Plan for MPAs. 2008, 2016

⁶ Emily Saarman et al., “The Role of Science in Supporting Marine Protected Area Network Planning and Design in California,” *Ocean & Coastal Management* 74 (March 1, 2013): 45–56, <https://doi.org/10.1016/j.ocecoaman.2012.08.021>.

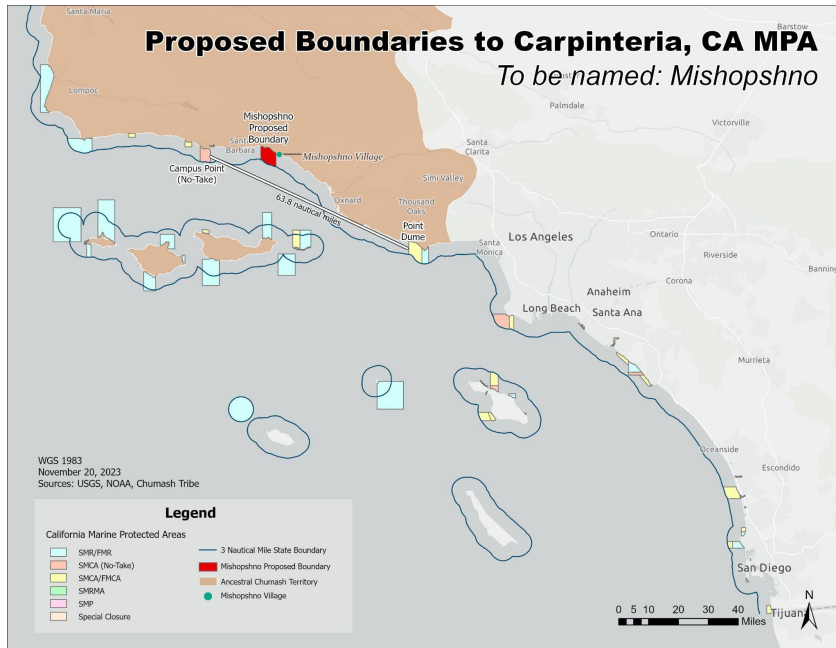


Figure 1: Map of southern California MPAs with the proposed SMCA near Carpinteria (to be called Mishopshno) shown in red. Distance between two existing MPAs at Campus Point and Point Dume (64nm) is indicated. This distance is greater than the maximum suggested spacing to ensure ecological connectivity. Mishopshno was one of the many Chumash villages in the region at the time of European colonization.

Carpinteria, initially proposed to be the site for an MPA in the original planning stages for the network, lies on the mainland coast north of the Channel Islands.⁷ Within a relatively small area, the

proposed region includes rocky reef, rocky intertidal, sandy habitats, sandy beaches, kelp forests, and surfgrass beds.⁶ Associated with these habitat features are higher trophic level species including halibut, lobster, grunion, nearshore sharks and rays, and multiple harbor seal haulouts.⁶ Research shows that MPAs with diversity of habitat types and depths facilitate increased connectivity among habitats.⁸

The proposed SMCA would include Carpinteria Salt Marsh Reserve, which protects a critically important Southern California estuary. The marsh lies adjacent to a sandy beach, subtidal rocky reef, and kelp beds enabling exchange of nutrients and a regional nursery for halibut and other marine and estuarine fish, which supports a productive nearshore marine ecosystem.⁹ Carpinteria Reef, which would also be within the SMCA's boundaries, is a large area of rocky reef and kelp bed. The reef supports one of the more abundant marine life communities and persistent kelp beds in Santa Barbara County.¹⁰

Ecological connectivity modeling has advanced since the initial Network design process and has confirmed that the system is generally functioning as a network with high MPA to MPA connectivity that varies by habitat type.¹¹ Model outputs show that rocky intertidal, kelp forest,

⁷ California MLPA South Coast Study Region, Description of Marine Protected Areas (MPAs) in Revised External MPA Proposal C (Round 2) Created May 14, 2009.

⁸ Mark H. Carr et al., "The Central Importance of Ecological Spatial Connectivity to Effective Coastal Marine Protected Areas and to Meeting the Challenges of Climate Change in the Marine Environment," *Aquatic Conservation: Marine and Freshwater Ecosystems* 27, no. S1 (2017): 6–29, <https://doi.org/10.1002/aqc.2800>; Charlotte R. Hopkins et al., "Evaluating Whether MPA Management Measures Meet Ecological Principles for Effective Biodiversity Protection," *Acta Oecologica* 108 (October 1, 2020): 103625, <https://doi.org/10.1016/j.actao.2020.103625>.

⁹ "Carpinteria Salt Marsh Reserve," July 9, 2015, <https://ucnrs.org/reserves/carpinteria-salt-marsh-reserve/>.

¹⁰ Levenbach, Stuart. "Community-wide ramifications of an associational refuge on shallow rocky reefs." *Ecology* 89.10 (2008): 2819-2828.

¹¹ California Department of Fish and Wildlife, "California's Marine Protected Area Network Decadal Management Review."

and mid-depth rocky reef habitats inside MPAs provide more larvae to each other, as well as to areas outside MPAs, compared to non-MPA sites.¹² The habitat within the proposed Mishopshno site includes these representative habitat types and would thus contribute an additional node to the network thereby further increasing MPA-MPA connectivity. The south coast MPAs protect a lower proportion of rocky intertidal habitat than other regions.¹³ Incorporation of the Mishopshno SMCA would expand the representation of rocky intertidal and rocky reef habitat in the region.

MPAs are particularly important as sources for kelp forests, which are a foundational species and present in the Mishopshno proposed boundaries.¹⁴ The demographic connectivity of kelp patches is highly influenced by oceanography. In the region of Carpinteria and the Santa Barbara Channel, high resolution data on circulation and current patterns show that 1) there is rapid transport of water and associated larvae and propagules nearshore (within 1km of shore) which moves from east to west¹⁵ and 2) the dominant current structure does not create strong connectivity from the Channel Island MPAs to the mainland.¹⁶ Thus, proper spacing of mainland MPAs is needed to support connectivity for kelp and associated species.

Southern coast MPAs are likely to experience many warming events in the coming years. Inclusion of a diversity of upwelling regimes and habitat types in the network, such as those in the mainland and Channel Island MPAs, is thought to offer additional insurance against changing conditions.^{13,16} As a general matter, ensuring proper spacing, placement, and consequently connectivity of southern mainland MPAs is increasingly important in light of climate change.

2. Habitat attractive to White Sharks (see Appendix A for further detail)

The habitat distribution for the northeast Pacific population of white sharks is broad, spanning from Baja California to a point northwest in the Bering Sea off the Aleutian Islands.¹⁷ However, research suggests that juveniles of this population are utilizing a more narrow band of coastal waters for nursery habitat, stretching from the Southern California Bight to Baja.¹⁸ Spatial data of white shark movements show that in areas off Carpinteria, CA, juvenile white sharks (JWS) form aggregations for periods of weeks to months.¹⁹ These spatial patterns suggest that this habitat attracts JWS, frequently serving as an important white shark nursery, and thus warrants additional protections given the iconic status and vulnerability of the species.

¹² California Department of Fish and Wildlife, "Decadal Management Review Appendix B: Science Guidance," January 2023, <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=207752&inline>.

¹³ Jennifer E. Caselle et al., "A Synthesis of Ecological and Social Outcomes from the California MPA Network (NCEAS Working Group Final Report)," text/xml (California Ocean Protection Council Data Repository, 2022), <https://doi.org/10.25494/P6430V.c>

¹⁴ California Department of Fish and Wildlife, "DMR Appendix B," 8.

¹⁵ Daniel P. Dauhajre, James C. McWilliams, and Lionel Renault, "Nearshore Lagrangian Connectivity: Submesoscale Influence and Resolution Sensitivity," *Journal of Geophysical Research: Oceans* 124, no. 7 (July 2019): 5180–5204, <https://doi.org/10.1029/2019JC014943>; S. Mitarai et al., "Quantifying Connectivity in the Coastal Ocean with Application to the Southern California Bight," *Journal of Geophysical Research: Oceans* 114, no. C10 (2009), <https://doi.org/10.1029/2008JC005166>.

¹⁶ Shelby L. Ziegler et al., "Marine Protected Areas, Marine Heatwaves, and the Resilience of Nearshore Fish Communities," *Scientific Reports* 13, no. 1 (January 25, 2023): 1405, <https://doi.org/10.1038/s41598-023-28507-1>.

¹⁷ Office of National Marine Sanctuary, "White Shark Conservation, White Shark Stewardship Project," Government Website, Greater Farallones National Marine Sanctuary, accessed November 17, 2023, https://farallones.noaa.gov/eco/sharks/sharks_conservation.html.

¹⁸ <https://www.frontiersin.org/articles/10.3389/fmars.2021.645142/full>

¹⁹ James M. Anderson et al., "Interannual nearshore habitat use of young of the year white sharks off Southern California." *Frontiers in Marine Science* 8 (2021): 238.; Emily Spurgeon et al., "Quantifying Thermal Cues That Initiate Mass Emigrations in Juvenile White Sharks," *Scientific Reports* 12, no. 1 (November 18, 2022): 19874, <https://doi.org/10.1038/s41598-022-24377-1>.

White sharks are listed under Appendix II of the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES).²⁰ The species is slow to reach reproductive maturity and produces only a small number of young each year, making it vulnerable to human stressors.²¹ Research conducted in the Southern California Bight has found that fisheries bycatch is likely the main source of mortality for JWS.²² Another factor threatening white sharks is a warming climate and ocean that has led to many species' historic distribution changing. Changes in aggregation spots could place JWS young of the year in areas with greater threats from predation and human interactions.

Juvenile white sharks inhabit a narrow habitat range, choosing shallow habitats (< 1000 m deep) close to land (< 30 km of the shoreline) in waters ranging from 14 to 24°C.²³ They can form aggregations at these ideal locations and display a high degree of residency.²⁴ Historically, Southern California was a suitable habitat eight months of the year, while coastal habitats in Baja California were suitable year-round.²⁵ Recent research shows that the average observed white shark density in Carpinteria increased significantly across three years beginning in 2019.²⁶ Utilizing detection data, a study found a JWS hot spot at Padaro Beach in Carpinteria in the months from May to December in 2020.²⁷ In this study, the tagged individuals were observed across a stretch of coastline from Loon Point south to Carpinteria State Beach.²⁸ Padaro Beach was classified as an ideal JWS aggregation spot due to its sandy beach with a rocky reef adjacent to an estuary inlet and low wave energy compared to many of the other nursery habitats available.²⁹ Although it was previously believed that JWS do not show site fidelity, there is growing evidence that the Southern California Bight is a region of primary nursery habitat, with specific “hotspots” like Carpinteria beach attracting fairly stable aggregations, and that the suitability of the habitat has been increasing relative to areas further south as a result of climate change.

Conclusion

Recent research emphasizes that 1) mainland MPAs are unlikely to be well connected to Channel Island MPAs, 2) habitat types represented in the proposed Mishopshno MPA would contribute to connectivity and representation in the Network, and 3) decreasing spacing between mainland MPAs would increase ecological connectivity with direct impact on conservation success. Research focused on JWS has shown the waters off Carpinteria are a frequent hotspot for juvenile white sharks, offering specific habitat features that support this critical life stage. Finally, designation of the proposed MPA would add a Tribal MPA in the

²⁰ Office of National Marine Sanctuary, “White Shark Conservation, White Shark Stewardship Project,” Government Website, Greater Farallones National Marine Sanctuary, accessed November 17, 2023, https://farallones.noaa.gov/eco/sharks/sharks_conservation.html.

²¹ Ibid.

²² John F. Benson et al., “Juvenile Survival, Competing Risks, and Spatial Variation in Mortality Risk of a Marine Apex Predator,” ed. Andre Punt, *Journal of Applied Ecology* 55, no. 6 (November 2018): 2888–97, <https://doi.org/10.1111/1365-2664.13158>.

²³ White, et al. Quantifying habitat selection and variability in habitat suitability for juvenile white sharks.

²⁴ Lyons, et al. The degree and result of gillnet fishery interactions with juvenile white sharks in southern California.

²⁵ Ibid.

²⁶ John K. Parsons, “Using Unoccupied Aerial Vehicles to Uncover Patterns of Density, Size Structure, and Distribution of White Sharks (Carcharodon Carcharias) at a Southern California Coastal Aggregation Site” (UC Santa Barbara, 2022), <https://escholarship.org/uc/item/2f74m5fz>.

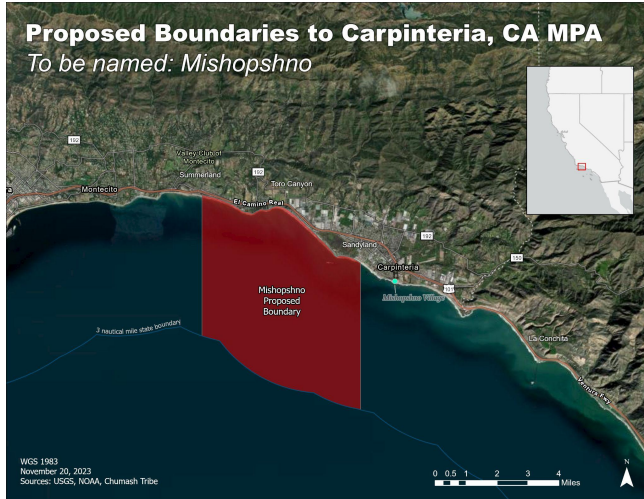
²⁷ Spurgeon, E., Anderson, J.M., Liu, Y. et al. Quantifying thermal cues that initiate mass emigrations in juvenile white sharks. *Sci Rep* 12, 19874 (2022). <https://doi.org/10.1038/s41598-022-24377-1>

²⁸ Ibid.

²⁹ Ibid.

region, strengthening the role of the Tribes in co-management, monitoring, and marine education activities.

Boundary Description



Northern boundary is located at the 119.60 W longitudinal line extending from the shore at Summerland, north of Loon Point out to the 3 nm state boundary. The southern boundary of the proposed MPA lies at the northern end of Carpinteria State Beach.

Area: 67.85 km²

Shore adjacent distance: 9.75km

MPA coordinates:

1. 34.365392908 N lat. 119.6000000 W long. (SW corner)
2. 34.419698650 N lat. 119.6000000 W long. (NW corner)
3. 34.393513965 N lat. 119.525777354 W long. (NE corner)
4. 34.336952256 N lat. 119.525777354 W long. (SE corner)

Suggested Regulations

This petition proposes an SMCA for the region north of Carpinteria State Beach outlined above. Take of all living, geological, or cultural marine resources is prohibited except:

1. The following federally recognized tribe is exempt from the area and take regulations found in subsection 632(b)(9) of these regulations and shall comply with all other existing regulations and statutes:

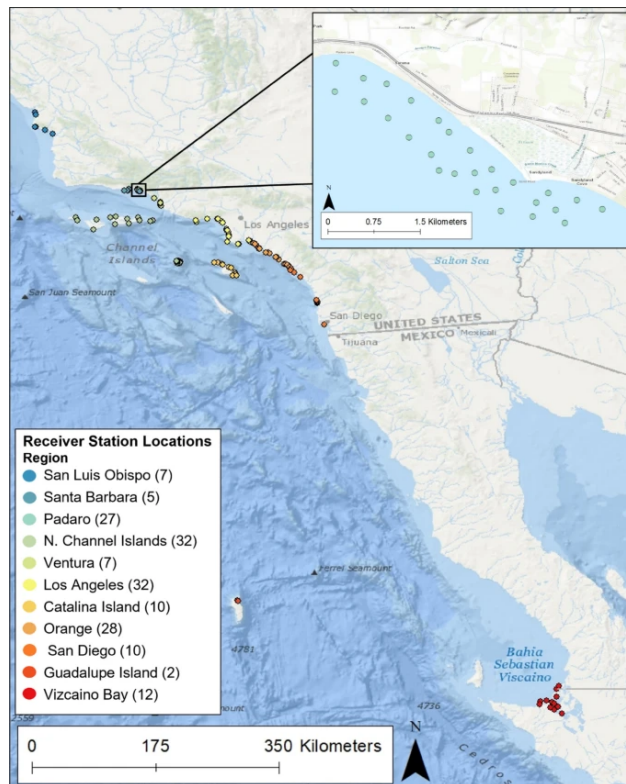
The federally recognized tribe of the Santa Ynez Band of Chumash Indians.

Within the proposed SMCA, the Chumash would be allowed to fish with the use of hand-based equipment. The proposed exemptions would be consistent with allowing tribal take exemptions as currently defined in Title 14, §632(a)(11), which identify how a member of a federally recognized tribe may be authorized to take living marine resources from an MPA with site-specific take restrictions. Members taking living marine resources under this provision are subject to current seasonal, bag, possession, gear and size limits in existing Fish and Game Code statutes and regulations of the Commission, except otherwise provided for in Title 14, §632(b).

2. Scientific research pursuant to the MLPA regulations for SMCAs. (14 C.F.R. section 632(a)(1)(C).

Appendix A – Expanded synthesis of juvenile white shark aggregation at proposed Mishopshno SMCA

The habitat distribution for the northeast Pacific population of white sharks is broad, spanning from Baja California to a point northwest in the Bering Sea off the Aleutian Islands.¹ However, research suggests that juveniles of this population are utilizing a more narrow band of coastal waters for nursery habitat, stretching from the Southern California Bight to Baja.² In particular, spatial data of white shark movement show that in areas off Carpinteria, California, juvenile white sharks (JWS) form aggregations for periods of weeks to months.³ These spatial patterns suggest that this region is serving as an important white shark nursery and thus warrants additional protections for this iconic and vulnerable species.



The locations of acoustic receivers along the California and Mexican coastline. Each color represents a region where (n) receivers are located. The inset map shows the higher density receiver array at Padaro Beach, CA. Map was produced using ArcMap™ version 10.8.1 with the “Ocean” basemap.

<https://www.arcgis.com/home/item.html?id=5ae9e138a17842688b0b79283a4353f6>.⁴

¹“White Shark Conservation, White Shark Stewardship Project | Greater Farallones National Marine Sanctuary,” accessed November 30, 2023, https://farallones.noaa.gov/eco/sharks/sharks_conservation.html.

²James M. Anderson et al., “Interannual Nearshore Habitat Use of Young of the Year White Sharks Off Southern California,” *Frontiers in Marine Science* 8 (2021), <https://www.frontiersin.org/articles/10.3389/fmars.2021.645142>.

³Emily Spurgeon et al., “Quantifying Thermal Cues That Initiate Mass Emigrations in Juvenile White Sharks,” *Scientific Reports* 12, no. 1 (November 18, 2022): 19874, <https://doi.org/10.1038/s41598-022-24377-1>.

⁴Spurgeon, E., Anderson, J.M., Liu, Y. et al. Quantifying thermal cues that initiate mass emigrations in juvenile white sharks. *Sci Rep* 12, 19874 (2022). <https://doi.org/10.1038/s41598-022-24377-1>

White Sharks are listed under Appendix II of the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES).⁵ The species is slow to reach reproductive maturity and produces only a small number of young each year, making it vulnerable to human stressors.⁶ One of the largest threats to white shark survival rates is the impact from fisheries as bycatch. Many studies have indicated white sharks are caught as bycatch from fisheries in the northeastern Pacific.⁷ Research conducted in the Southern California Bight has shown that fisheries bycatch is the main source of mortality for JWS in this region.⁸ Juvenile survival rate is critical to the growth of white shark populations.⁹ Another factor threatening white sharks is a warming climate and ocean that has led to many species' historic distribution changing. Juvenile white sharks have a narrow temperature range that they inhabit, and known aggregation spots are no longer viable or preferred due to changing oceans.¹⁰ Changes in aggregation spots could place JWS and young of the year (YOY) in areas with greater threats from predation and human interactions.

Habitat selection differs greatly between adult and juvenile white sharks, which can be explained by differences in diet, size, and temperature preferences. Young white sharks can be classified into three classes: neonate, YOY, and juvenile. Newborn white sharks are about 4-5 feet in size and JWS range from 6-9 feet. Compared to an adult white shark, whose size ranges from 10-20 feet, YOY and JWS likely lack sufficient body mass and thermal inertia required to maintain a warmer body temperature.¹¹ This may indicate a sensitivity to temperature lending some explanation for YOY and JWS near-shore habitat preference. Adult white sharks travel further from coastal areas and make deeper dives compared to JWS.¹² Juvenile white sharks (JWS) choose shallow habitats (< 1000 m deep) close to land (< 30 km of the shoreline) in waters ranging from 14 to 24°C.¹³ They can form aggregations at these ideal locations and display a high degree of residency.¹⁴

⁵ "White Shark Conservation, White Shark Stewardship Project | Greater Farallones National Marine Sanctuary."

⁶ Ibid.

⁷ Kady Lyons et al., "The Degree and Result of Gillnet Fishery Interactions with Juvenile White Sharks in Southern California Assessed by Fishery-Independent and -Dependent Methods," *Fisheries Research* 147 (October 1, 2013): 370–80, <https://doi.org/10.1016/j.fishres.2013.07.009>; "Status Review of the Northeastern Pacific Population of White Sharks (*Carcharodon Carcharias*) under the Endangered Species Act," accessed November 30, 2023, <https://repository.library.noaa.gov/view/noaa/17705>.

⁸ John F. Benson et al., "Juvenile Survival, Competing Risks, and Spatial Variation in Mortality Risk of a Marine Apex Predator," *Journal of Applied Ecology* 55, no. 6 (2018): 2888–97, <https://doi.org/10.1111/1365-2664.13158>.

⁹ Enric Cortés, "Incorporating Uncertainty into Demographic Modeling: Application to Shark Populations and Their Conservation," *Conservation Biology* 16, no. 4 (2002): 1048–62, <https://doi.org/10.1046/j.1523-1739.2002.00423.x>.

¹⁰ Bowlby, H. D., Dicken, M. L., Towner, A. V., Waries, S., Rogers, T., & Kock, A. (2023). Decline or shifting distribution? A first regional trend assessment for white sharks (*Carcharodon carcharias*) in South Africa. *Ecological Indicators*, 154, 110720.

¹¹ Dewar, H., Domeier, M. & Nasby-Lucas, N. Insights into young of the year white shark, *Carcharodon carcharias*, behavior in the Southern California Bight. *Environ. Biol. Fishes* <https://doi.org/10.1023/B:EBFI.0000029343.54027.6a.pdf> (2004).

¹² Hoyos-Padilla, E.M., Klimley, A.P., Galván-Magaña, F. et al. Contrasts in the movements and habitat use of juvenile and adult white sharks (*Carcharodon carcharias*) at Guadalupe Island, Mexico. *Anim Biotelemetry* 4, 14 (2016). <https://doi.org/10.1186/s40317-016-0106-7>

¹³ White, et al. Quantifying habitat selection and variability in habitat suitability for juvenile white sharks.

¹⁴ Lyons, et al. The degree and result of gillnet fishery interactions with juvenile white sharks in southern California.

Young of year and juvenile white sharks have been observed to reside in California waters during the summer months and migrate south to Baja during the winter months.¹⁵ However, anecdotal evidence suggests that the distribution and/or migratory patterns of JWSs may be shifting northward – with more individuals staying in southern California throughout the entire year.¹⁶

Recent research shows that the average observed white shark density in the Carpinteria area increased significantly across three years beginning in 2019.¹⁷ Utilizing detection data, a study found a JWS hot spot at Padaro Beach off Carpinteria in the months from May to December in 2020.¹⁸ In this study, the tagged individuals were observed across approximately a 5.5 km stretch of coastline from the area of Loon Point south to Carpinteria State Beach.¹⁹ Padaro Beach was classified as an ideal JWS aggregation spot due to its sandy beach with a rocky reef adjacent to an estuary inlet and is considered to have low wave energy compared to many of the other nursery habitats available.²⁰

Historically, Southern California was a suitable habitat eight months of the year, while coastal habitats in Baja California were suitable year-round.²¹ A warming climate and ocean has redefined the oceanographic conditions of the Southern California Bight. Point Conception is defined as a terrestrial headland that sharply separates the warmer waters of the southern California Bight from the northern remnant of the California Current Ecosystem. From 2014 to 2020, the mean position of this oceanographic demarcation moved 240 km north of Point Conception to 36.3° N.²² Current climate projections for the future indicate this shift will likely become stable.²³ This area is known to have different species assemblages due to the significant temperature difference between the two currents, with habitat composition also reflecting this. Scientists anticipate that a shift in the boundary of current temperatures will lead to a shift in distribution and presence of adult and juvenile white sharks, potentially making the Southern California Bight even more important to successful white shark recruitment.

Juvenile aggregation spots generally provide an appropriate food supply, ideal physical conditions, and reduced predation for immature individuals, thereby increasing survival rates compared to other habitats.²⁴ There is growing evidence that the Southern California Bight is

¹⁵ Weng, K., O'Sullivan, J., Lowe, C., Winkler, C., Blasius, M., Loke-Smith, K., et al. (2012). "Back to the wild," in *Global Perspectives on the Biology and Life History of the White Shark*, ed. M. Domeier (Boca Raton, FL: CRC Press), 419–446. doi: 10.1201/b11532-32

¹⁶ Spurgeon, E., Anderson, J.M., Liu, Y. et al. Quantifying thermal cues that initiate mass emigrations in juvenile white sharks. *Sci Rep* 12, 19874 (2022). <https://doi.org/10.1038/s41598-022-24377-1>

¹⁷ John K. Parsons, "Using Unoccupied Aerial Vehicles to Uncover Patterns of Density, Size Structure, and Distribution of White Sharks (*Carcharodon Carcharias*) at a Southern California Coastal Aggregation Site" (UC Santa Barbara, 2022), <https://escholarship.org/uc/item/2f74m5fz>.

¹⁸ Spurgeon, E., Anderson, J.M., Liu, Y. et al. Quantifying thermal cues that initiate mass emigrations in juvenile white sharks. *Sci Rep* 12, 19874 (2022). <https://doi.org/10.1038/s41598-022-24377-1>

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² Kisei R. Tanaka et al., "North Pacific Warming Shifts the Juvenile Range of a Marine Apex Predator," *Scientific Reports* 11, no. 1 (February 9, 2021): 3373, <https://doi.org/10.1038/s41598-021-82424-9>.

²³ Jie Cao et al., "A Novel Spatiotemporal Stock Assessment Framework to Better Address Fine-Scale Species Distributions: Development and Simulation Testing," *Fish and Fisheries* 21, no. 2 (2020): 350–67, <https://doi.org/10.1111/faf.12433>.

²⁴ Michelle R. Heupel, John K. Carlson, and Colin A. Simpfendorfer, "Shark Nursery Areas: Concepts, Definition, Characterization and Assumptions," *Marine Ecology Progress Series* 337 (May 14, 2007):

becoming an increasingly important habitat for juvenile white sharks, with specific locations like the Carpentaria beach being especially suitable, attracting fairly stable aggregations.

Recent research focused on JWS has shown they have site loyalty to the Carpinteria area, and specific habitat needs that are present in the Carpinteria waters. An additional MPA in this area would offer further insurance against the impacts of anthropogenic disturbance, reducing bycatch risk in the face of warming water temperatures and changing habitat suitability.



November 30, 2023

Eric Sklar, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

**Re: Decadal Management Review Marine Protected Areas Petition Process:
Carpinteria, CA**

Dear President Sklar and Honorable Commissioners:

Thank you for the opportunity to submit recommendations for the adaptive management of California's Marine Protected Area (MPA) network as part of the Decadal Management Review (DMR) process. The undersigned organizations submit this letter in strong support of the designation of a new State Marine Conservation Area (SMCA) in Carpinteria beginning at Loon Point to the western end of Carpinteria State Beach.

Proposed as an MPA site in the initial Marine Life Protection Act (MLPA) planning process, Carpinteria, lies on the mainland coast north of the Channel Islands. Carpinteria holds deep cultural significance for the Chumash people, whose territory once spanned from Malibu to Paso Robles. Given the rich cultural ties that the traditional stewards of this land and waters have to this day, we support naming the SMCA after a Chumash coastal village from the region – Mishopshno. In addition, we support regulations that allow access to the shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for the Chumash, within proposed SMCA boundaries.

The Carpinteria area is ecologically rich and diverse. Carpinteria Reef supports one of the more abundant marine life communities and persistent kelp beds in Santa Barbara County. The Carpinteria Reef and Salt Marsh are biologically linked with crucial exchange of nutrients and extensive interaction between marine and estuarine organisms. The Carpinteria Salt Marsh Reserve protects a critically important Southern California estuary and serves as an important

regional nursery for halibut and other marine and estuarine fish. Carpinteria is also an important habitat for the north Pacific population of white sharks. Recent research has shown that juvenile white sharks (JWS) have site loyalty to Carpinteria and specific habitat needs that are present in the Carpinteria waters. Padaro Beach, located within the proposed SMCA boundaries, can be classified as an ideal JWS aggregation spot due to its sandy beach with a rocky reef adjacent to an estuary inlet and low wave energy compared to many of the other nursery habitats available. White sharks are slow to reach reproductive maturity and produce only a small number of young each year, making them highly susceptible to the threats of fishing and other human activities. Designating an SMCA that restricts commercial and recreational fishing in this location will reduce threats faced by this keystone species and help reach California's goal to protect and grow the white shark population.

In addition, the Carpinteria Reef is recognized as one of the most popular recreational diving and kayaking destinations in Santa Barbara County. There are also extensive community outreach efforts in place at both the Salt Marsh and the State Beach, including an on-site interpretative center, teaching amphitheater, and nature trail. As well as extensive ongoing research and educational activities like University courses, monthly bird surveys, habitat restoration and removal of invasive exotic plants, frequent local school visits, weekly docent tours, and field trips by the Santa Barbara Museum of Natural History.

Protecting Carpinteria's waters will not only improve recreational, educational, and research opportunities for the local community but also help ensure the overall MPA network remains a viable and useful tool to ensure coastal ecosystem conservation. Currently, the closest coastal MPAs to the Santa Barbara region are Campus Point SMCA and Point Dume State Marine Reserve (SMR). These are 64 nautical miles apart—10 nautical miles further than the recommended distance (27-54 nautical miles) identified by the science advisory team to ensure network ecological connectivity. Creating this MPA will protect critical nearshore shallow and intertidal habitats and help meet the science guidelines for spacing between protected habitats and representation of habitat types. Furthermore, we believe this petition strongly aligns with the goals set by the California Marine Life Protection Act (MLPA).

Our organizations celebrate the success of the MPA network and the Commission's continued work to protect our state's biodiversity at a time when ocean conservation wins are more important than ever. Thank you for the opportunity to express our strong support for this proposal that aims to fill a current gap in network design to improve ecological connectivity throughout the region, provide additional resilience in the face of climate change, and protect a critical marine habitat.

Sincerely,

Dennis Arguelles
Southern California Director
National Parks Conservation Association

Steve Bardwell
President
Morongo Basin Conservation Association

Joe Connett
Member
Sierra Club Santa Barbara-Ventura Chapter

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