

Office of National Marine Sanctuaries
National Oceanic and Atmospheric Administration



NATIONAL MARINE
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Briefing on Deep-Sea Coral Research and Restoration Scoping

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Greater Farallones and Monterey Bay National Marine Sanctuaries

August 24, 2023

Purpose of Briefing



The purpose of this briefing is to provide a high-level overview of the scoping document and a geospatial tool for a potential public process for the Pacific Fishery Management Council to consider designating areas within Greater Farallones and Monterey Bay National Marine Sanctuaries that allow for both for deep-sea coral (DSC) research and restoration.



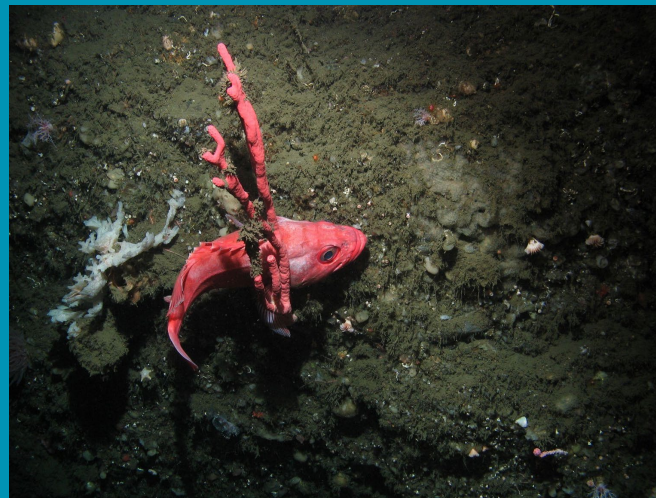
Bamboo and Bubblegum corals

credit: NOAA

Purpose of the Scoping Document



The scoping document represents Greater Farallones and Monterey Bay National Marine Sanctuaries long-term need for DSC research and restoration areas so that research and restoration may occur without intentional impacts to the seafloor from bottom-contact fishing gear.



Bubblegum Coral and
Rockfish
credit: NOAA

Blackgill

Context



- DSC habitats in the Greater Farallones and Monterey Bay National Sanctuaries have been damaged or destroyed through benthic impacts by sunken vehicles, vessels or other large objects and marine debris.
 - The sinking of the YFD-70 Dry Dock was the most recent large-scale incident that caused significant long-term adverse impacts.

Context



- Sanctuaries need to conduct long-term DSC research and restoration to:
 - Restore and enhance DSC communities and the ecosystem services they provide;
 - Enhance our understanding of the role and importance of DSC communities, including their role as groundfish Essential Fish Habitat (EFH);
 - Understand how the impacts of climate change, such as ocean acidification, affect DSC communities;
 - Respond to future research and restoration needs; and
 - Meet our respective mandates and obligations.

Location and Area Criteria



- Appropriate range of depths (27 - 853 fathoms)
- Appropriate substrate (hard or hard-mixed)
- Known coral locations
- Proximity to source corals for outplanting
- Sufficient in size for research and restoration

Locations and Areas



- Five potential locations
- 10 potential areas within the five locations



Potential Locations



- Offshore South Point Area (OSPA)



Potential Locations



- Offshore South Point Arena (OSPA)
- The Football (F)



Potential Locations



- Offshore South Point Arena (OSPA)
- The Football (F)
- Cochrane Bank/Fanny Shoals (CBFS)



Potential Locations



- Offshore South Point Arena (OSPA)
- The Football (F)
- Cochrane Bank/Fanny Shoals (CBFS)
- Año Nuevo (ANC)-
Ascension (AC) Canyon
Complex



Potential Locations



- Offshore South Point Arena (OSPA)
- The Football (F)
- Cochrane Bank/Fanny Shoals (CBFS)
- Año Nuevo (ANC)-Ascension (AC) Canyon Complex
- Sur Ridge (SR)



Potential Locations



- Offshore South Point Arena (OSPA)
- The Football (F)
- Cochrane Bank/Fanny Shoals (CBFS)
- Año Nuevo (ANC)-Ascension (AC) Canyon Complex
- Sur Ridge (SR)

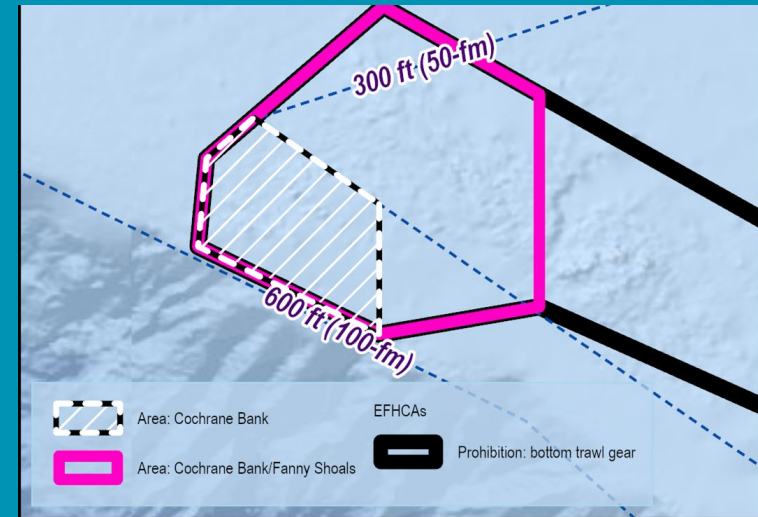
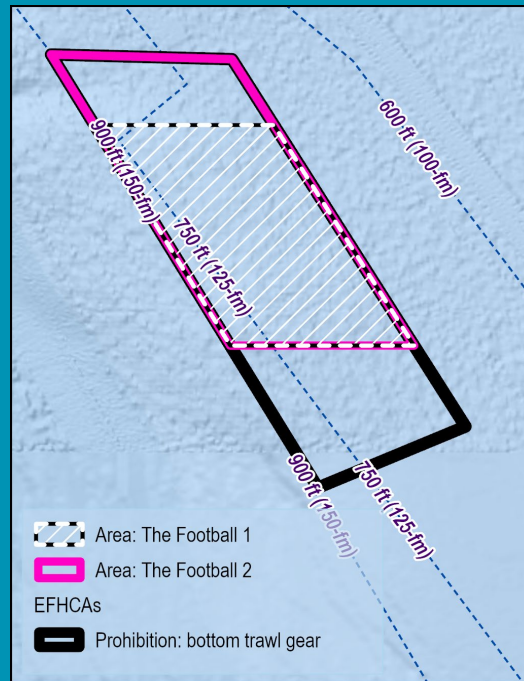
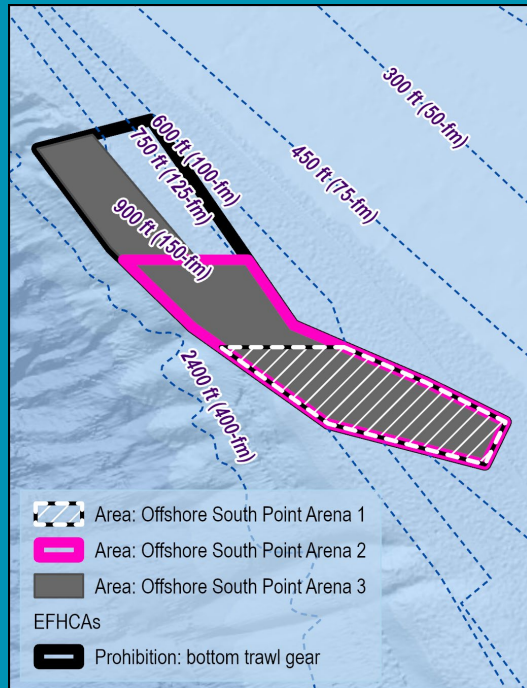


Potential Areas: Table 2



Location	Area Name	Size (sq. nautical miles)	Depth Range feet (fathoms and meters)	Target Coral Species Suitable for Outplanting	Potential Source Coral Locations
Offshore South Point Arena	Offshore South Point Arena 1 (OSPA-1)	10.06	524–1,541 (87–256 fm; 160–470 m)	<i>Swiftia</i> sp. (stalk and fan morphology), <i>Paragorgia arborea</i>	Within and adjacent to the Point Arena South Biogenic Area EFHCA
	Offshore South Point Arena 2 (OSPA-2)	16.52	524–1,935 (87–322 fm; 160–590 m)	<i>Swiftia</i> sp. (stalk and fan morphology), <i>Paragorgia</i> spp. (e.g., bubblegum, peppermint), <i>Plumarella longispina</i>	
	Offshore South Point Arena 3 (OSPA-3)	22.01	524–1,935 (87–322 fm; 160–590 m)	<i>Swiftia</i> sp. (stalk and fan morphology), <i>Paragorgia</i> spp. (e.g., bubblegum, peppermint), <i>Plumarella longispina</i>	
The Football	The Football (F-1)	5.04	623–787 (103–131 fm; 190–240 m)	<i>Swiftia farallonesica</i>	Within and adjacent to the Football and Point Arena South Biogenic Area EFHCA
	The Football (F-2)	6.57	623–918 (103–153 fm; 190–280 m)	<i>Swiftia farallonesica</i>	
Cochrane Bank/Fanny Shoals	Cochrane Bank (CB)	4.58	295–524 (49–87 fm; 90–160 m)	<i>Chromoplexaura marki</i>	Cordell Bank, Farallon Escarpment at shelf break
	Cochrane Bank/Fanny Shoals (CBFS)	15.11	196–524 (32–87 fm; 60–160 m)	<i>Chromoplexaura marki</i>	
Año Nuevo-Ascension Canyon Complex	Ascension Canyon (AC)	2.96	1,640–4,790 (273–798 fm; 500–1,460 m)	<i>Keratoisis</i> sp.	Sur Ridge
	Año Nuevo (ANC)	6.5	1,574–4,658 (262–776 fm; 480–1,420 m)	<i>Paragorgia</i> sp., <i>Keratoisis</i> sp., <i>Swiftia</i> sp.	
Sur Ridge	Sur Ride (SR)	36.64	2,690–5,118 (448–853 fm; 820–1560 m)	<i>Trisopathes</i> sp., <i>Lillipathes</i> sp., <i>Isidella tentaculum</i> , <i>Keratoisis</i> sp., <i>Parastenella</i> sp., <i>Acanthogorgia</i> sp., <i>Swiftia kofoidi</i> , <i>Paragorgia arborea</i> , <i>Sibogorgia cauliflora</i> , <i>Corallium</i> sp.	Sur Ridge

Greater Farallones National Marine Sanctuary Locations

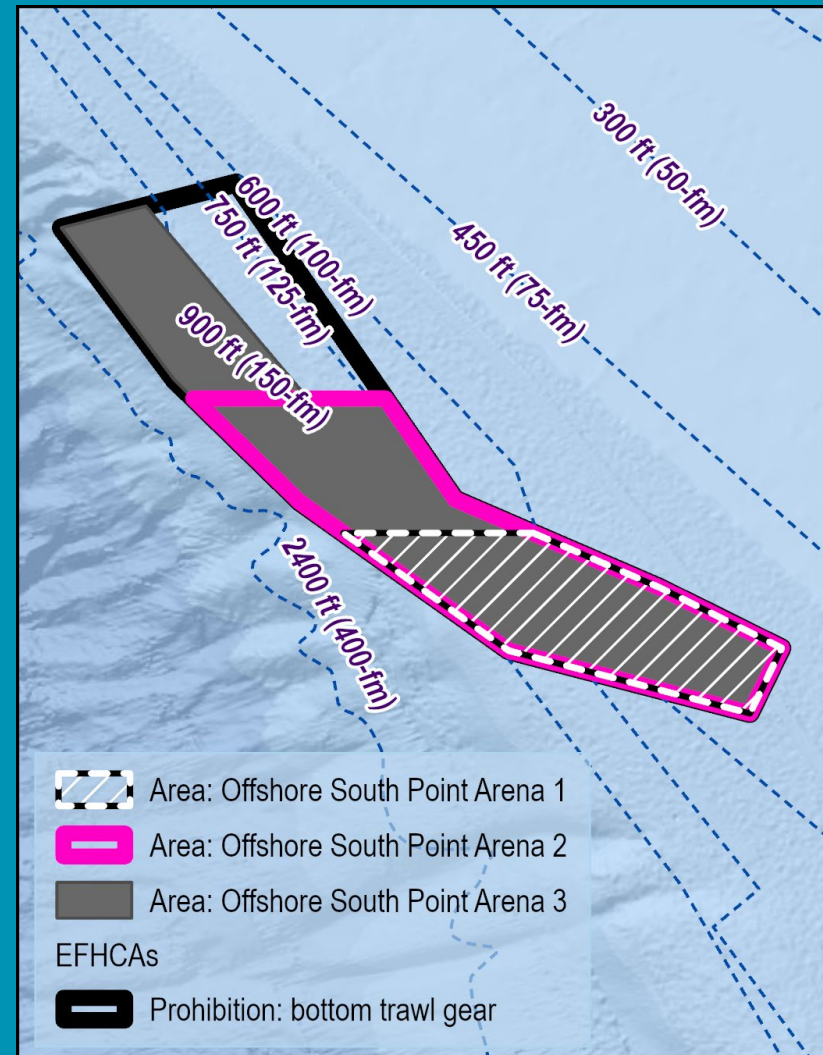


- Three locations identified.
- Mutually exclusive, nested areas that offer alternatively-sized configurations.

Offshore South Point Arena (OSPA)



Three potential areas at Offshore South Point Arena (OSPA) that range in size from 10.06 nm² to 22.01 nm².



OSPA Areas



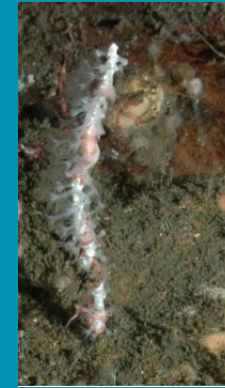
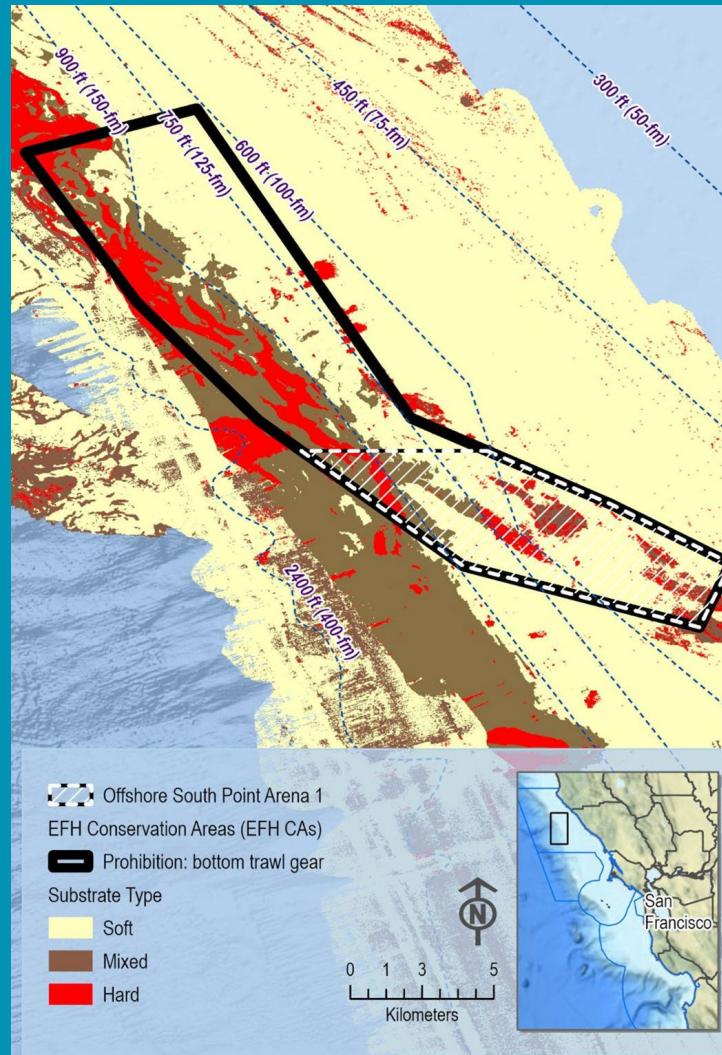
OSPA-1

Size: 10.06 nm²

Depth Range: 87-256
fm (524-1,541ft)

Target Coral Species
Suitable for Outplanting:

- *Swiftia* sp. (stalk and fan morphology)
- *Paragorgia arborea*



Swiftia farallonesica
credit: NOAA



Paragorgia arborea
credit: NOAA

OSPA Areas



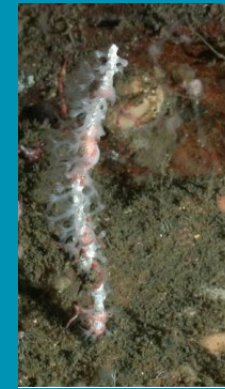
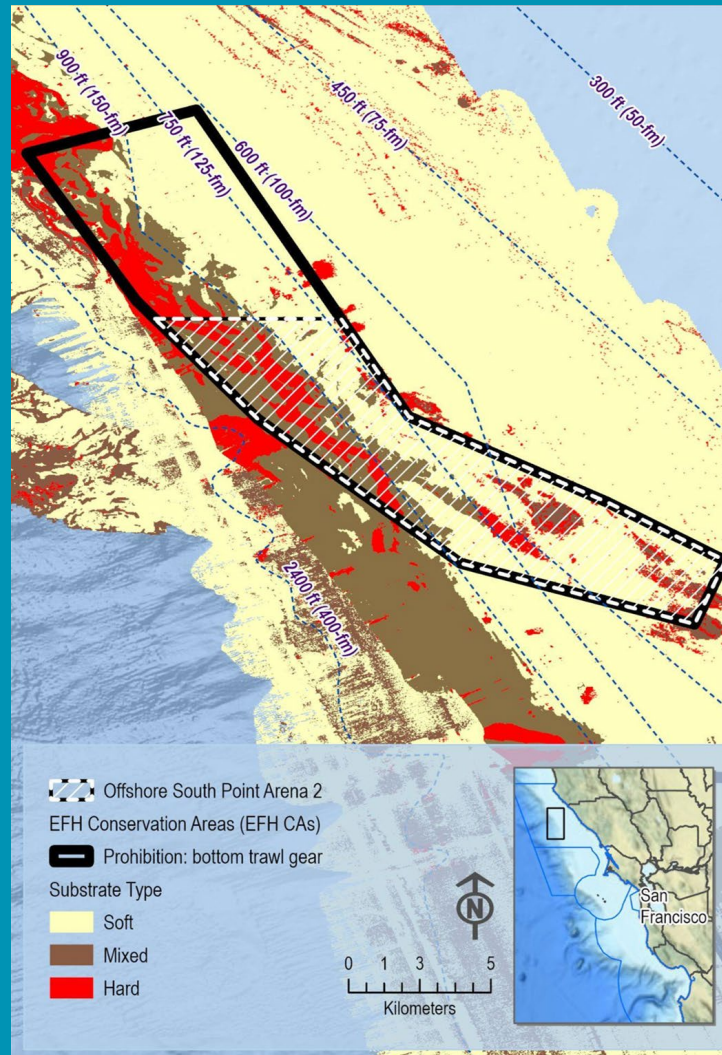
OSPA-2

Size: 16.52 nm²

Depth Range: 87-322
fm (524-1,935 ft)

Target Coral Species
Suitable for Outplanting:

- *Swiftia* sp. (stalk and fan morphology)
- *Paragorgia* sp. (e.g., bubblegum, peppermint)
- *Plumarella longispina*



Swiftia farallonesica
credit: NOAA



Plumarella longispina
credit: NOAA

OSPA Areas



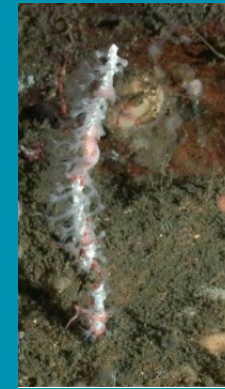
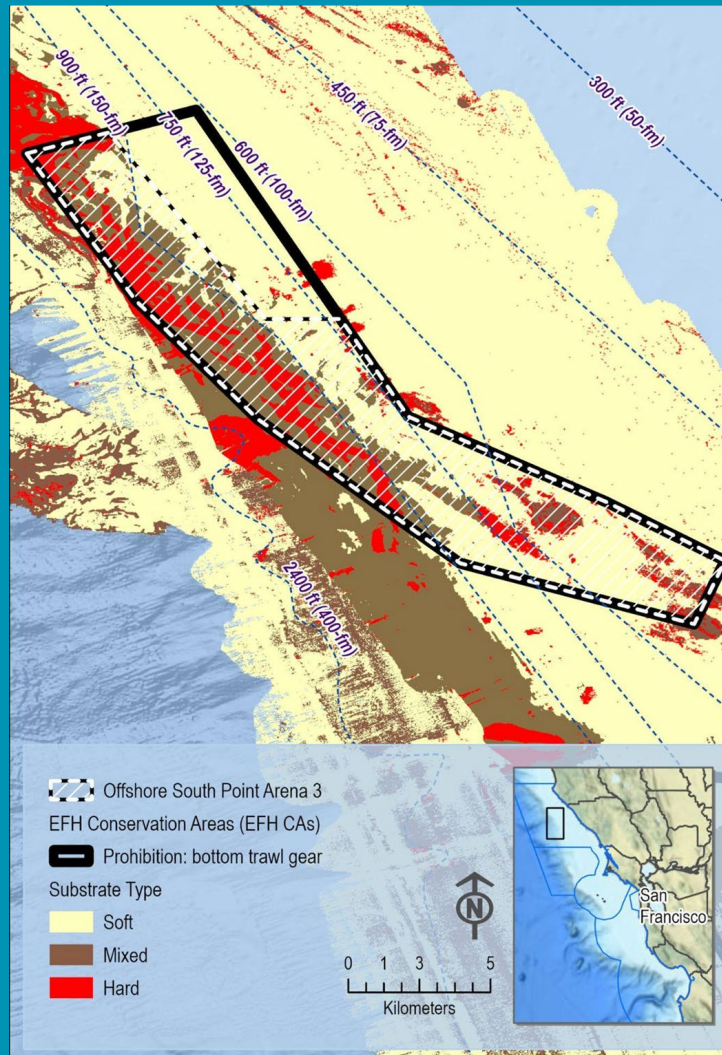
OSPA-3

Size: 22.01 nm²

Depth Range: 87-322
fm (524-1,935 ft)

Target Coral Species
Suitable for Outplanting:

- *Swiftia* sp. (stalk and fan morphology)
- *Paragorgia* sp. (e.g., bubblegum, peppermint)
- *Plumarella longispina*



Swiftia farallonesica
credit: NOAA

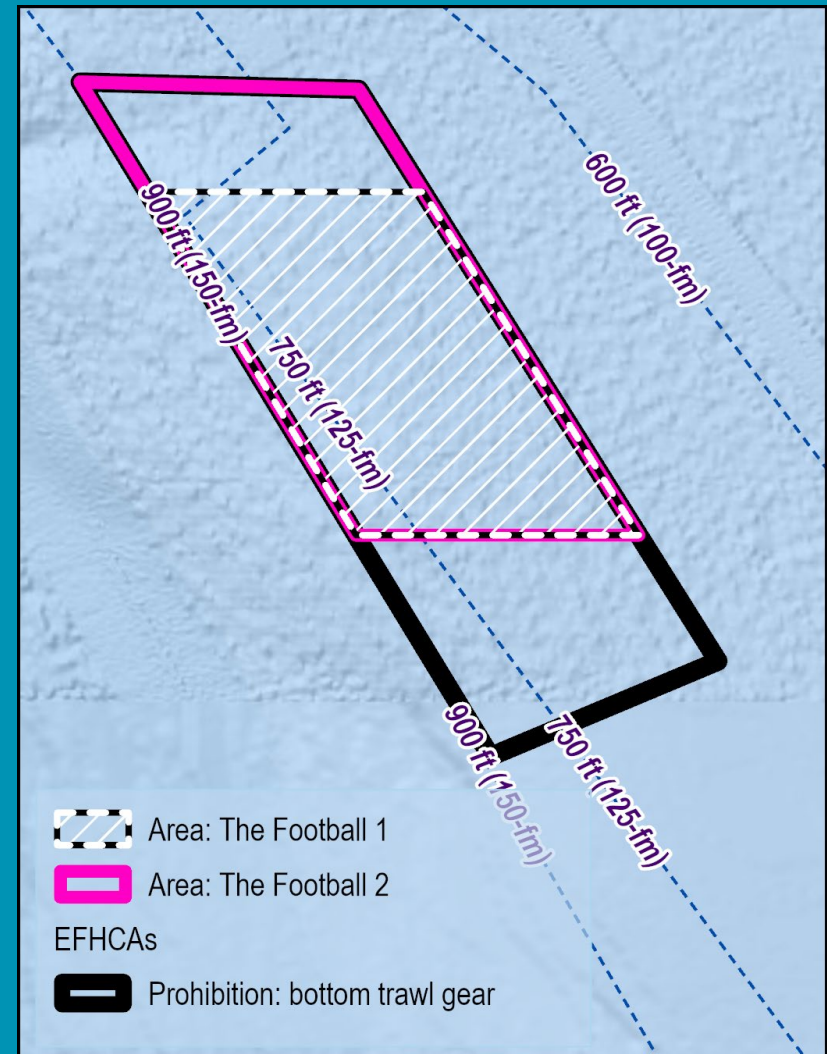
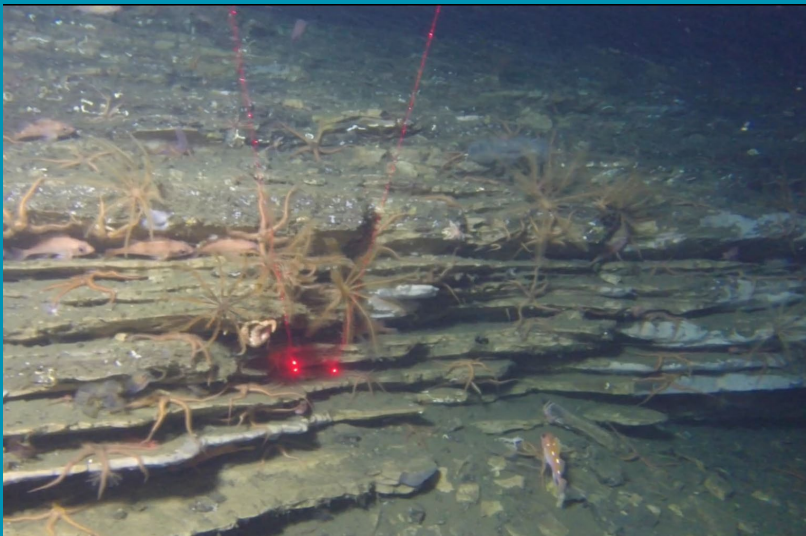


Plumarella longispina
credit: NOAA

The Football (F)



Two potential areas at The Football (F) that range in size from 5.04 nm^2 to 6.57 nm^2 .



F Areas



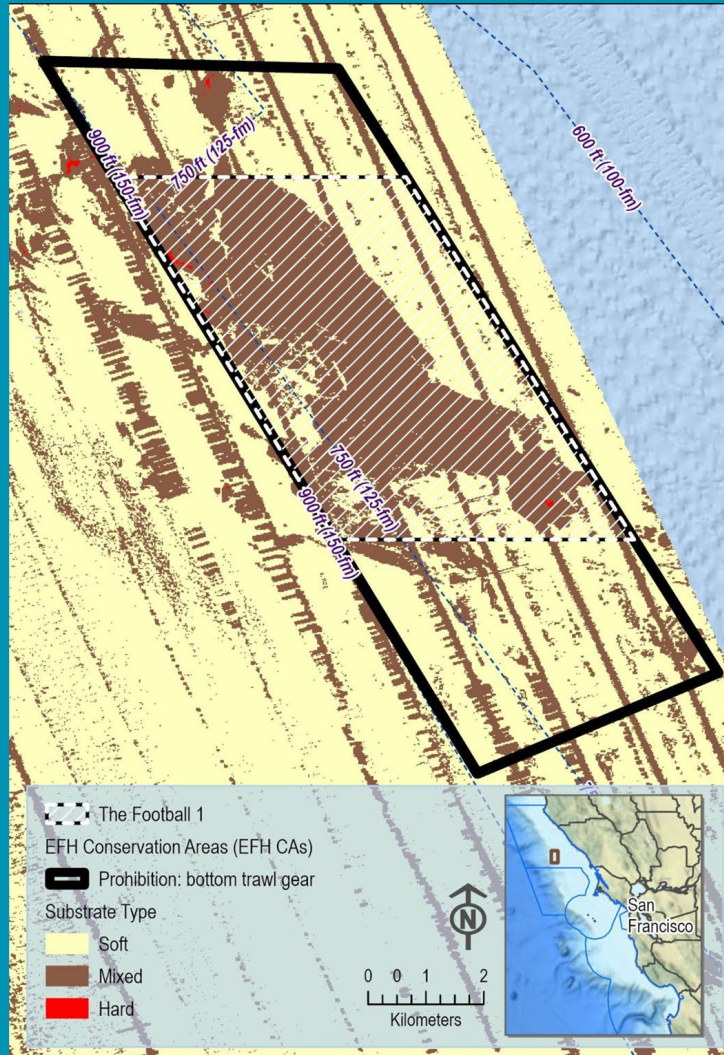
F-1

Size: 5.04 nm²

Depth Range: 103-131
fm (623-787 ft)

Target Coral Species
Suitable for Outplanting:

- *Swiftia farallonesica*



Swiftia farallonesica
credit: NOAA

F Areas



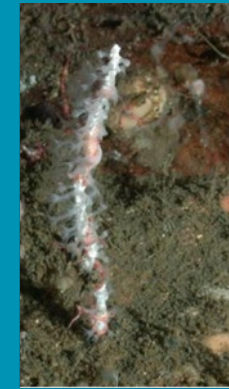
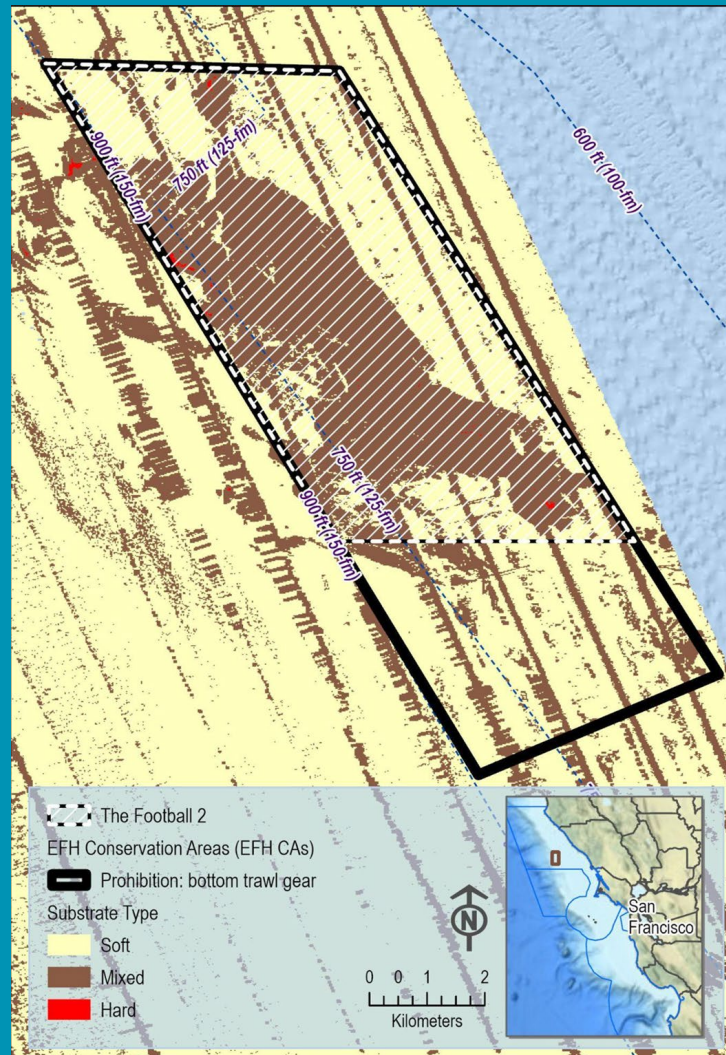
F-2

Size: 6.57 nm²

Depth Range: 103-153
fm (623-918 ft)

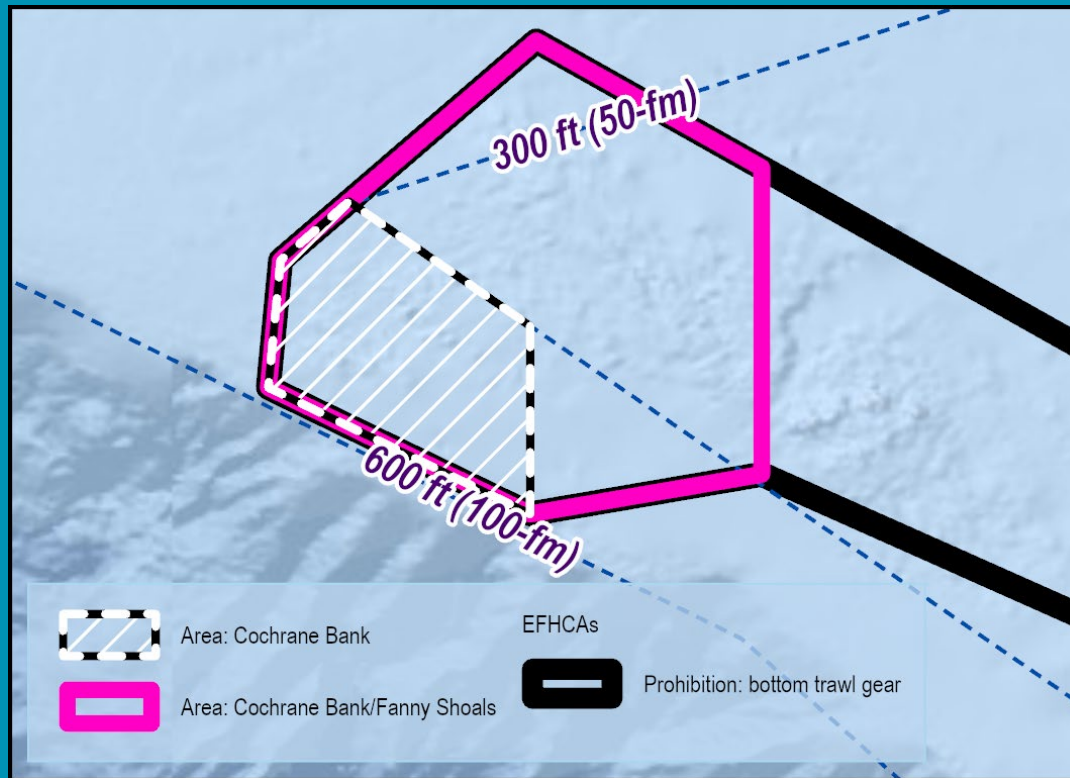
Target Coral Species
Suitable for Outplanting:

- *Swiftia farallonesica*



Swiftia farallonesica
credit: NOAA

Cochrane Bank/Fanny Shoals (CBFS)



Two potential areas at Cochrane Bank/Fanny Shoals (CB/CBFS) that range in size from 4.58 nm² to 15.11 nm².

CB/CBFS Areas



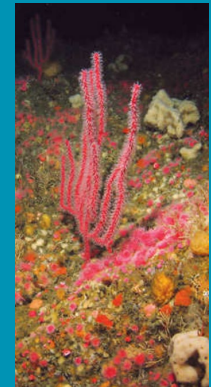
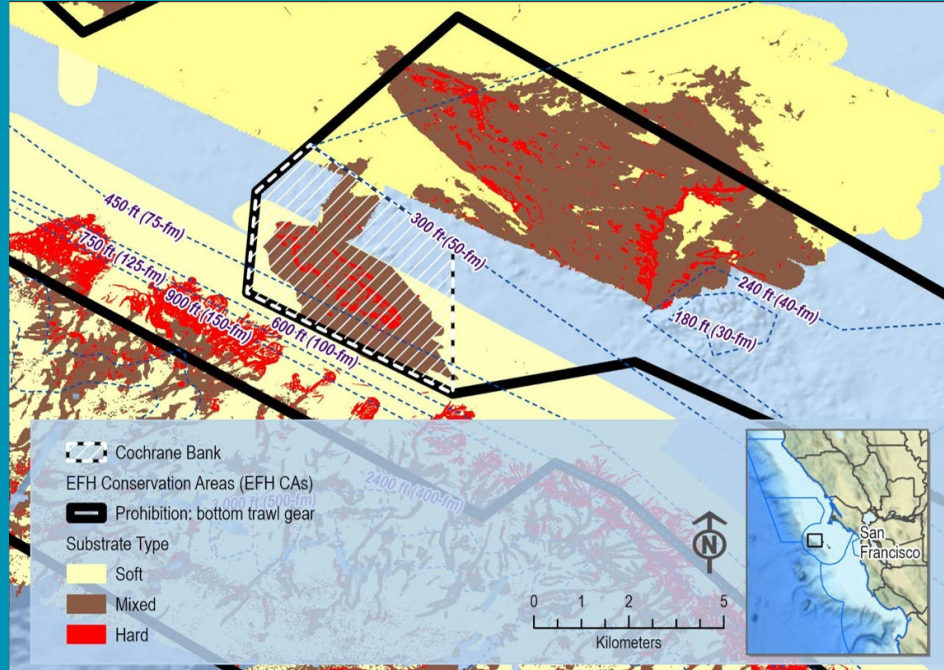
CB

Size: 4.58 nm²

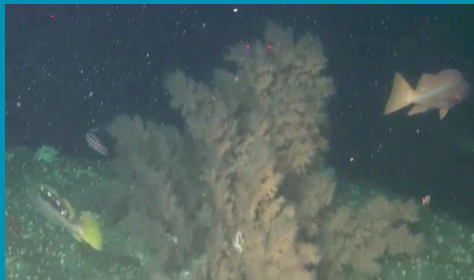
Depth Range: 49-87 fm
(295-524 ft)

Target Coral Species
Suitable for Outplanting:

- *Chromoplexaura marki*



Chromoplexaura marki
credit: CA Academy of Sciences



Christmas Tree Coral with
Yellowtail and Yelloweye Rockfish
credit: NOAA

CB/CBFS Areas



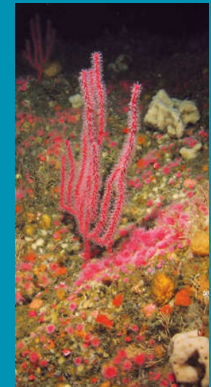
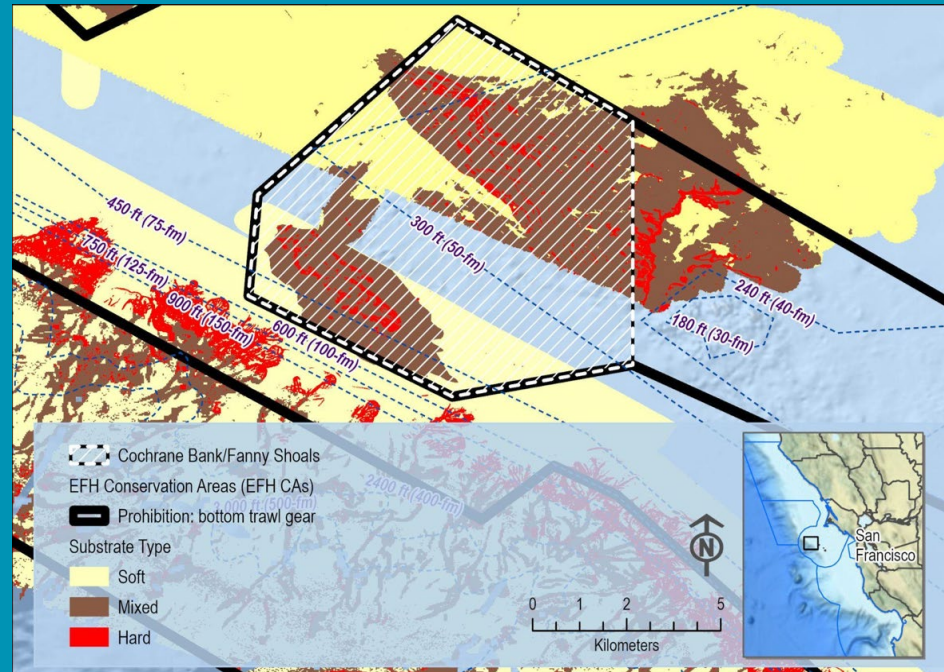
CBFS

Size: 15.11 nm²

Depth Range: 32-87 fm
(196-524 ft)

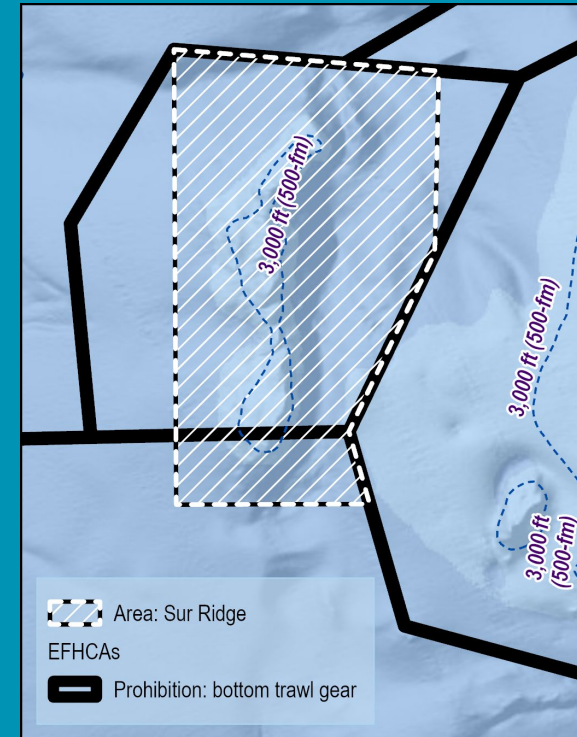
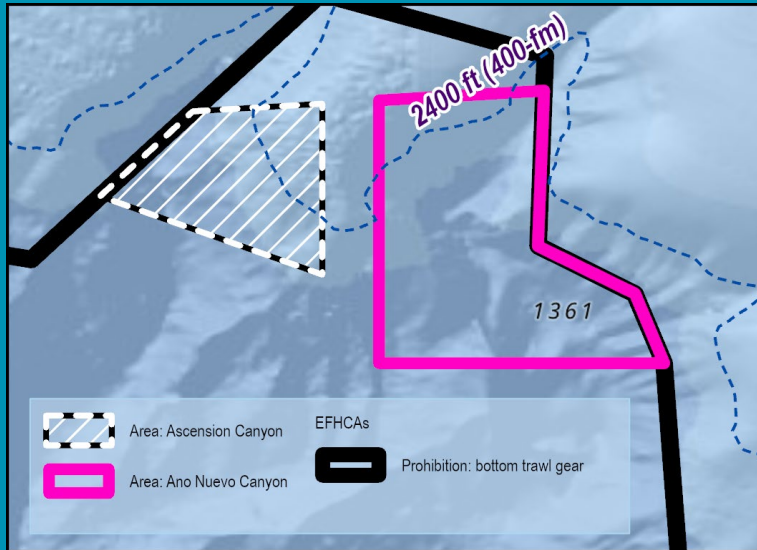
Target Coral Species
Suitable for Outplanting:

- *Chromoplexaura marki*



Chromoplexaura marki
credit: CA Academy of Sciences

Monterey Bay National Marine Sanctuary Locations



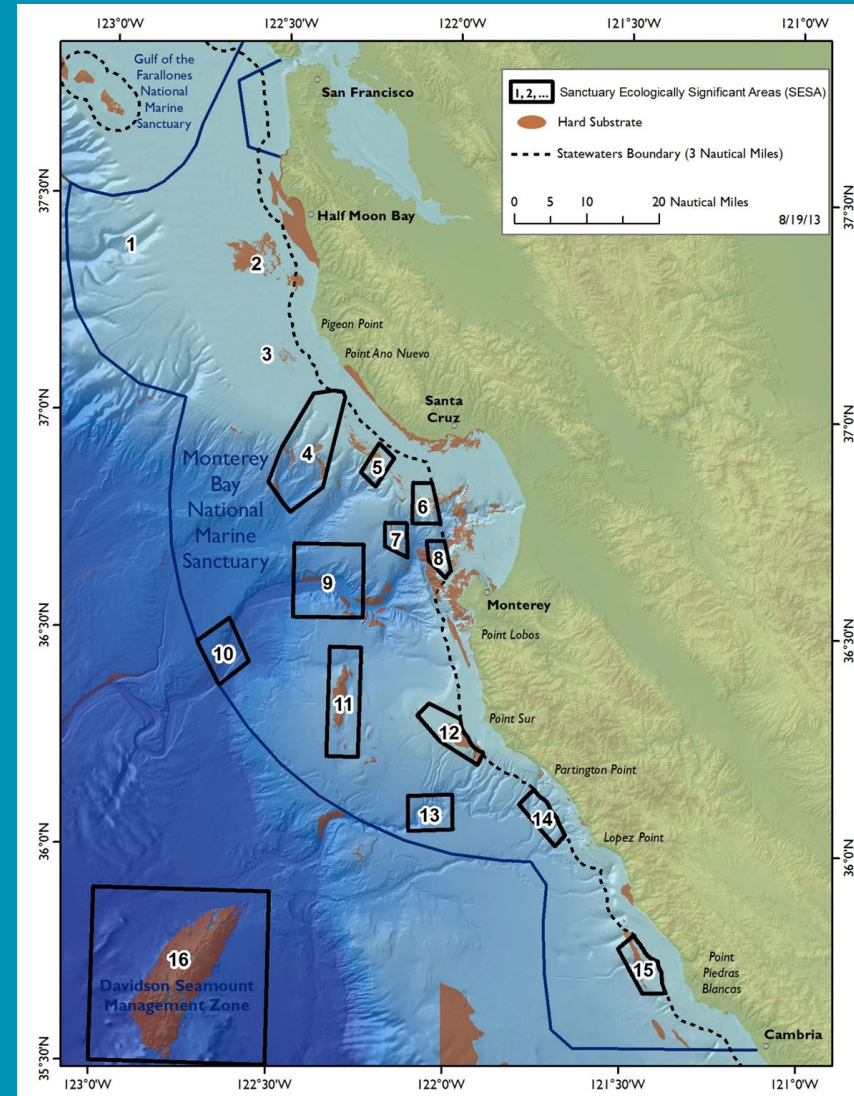
- Overview of Sanctuary Ecologically Significant Areas (SESAs)
- Two locations with depths ranging from 262 fm to 853 fm (the deepest of all locations)
- 3 separate areas

Monterey Bay National Marine Sanctuary Locations

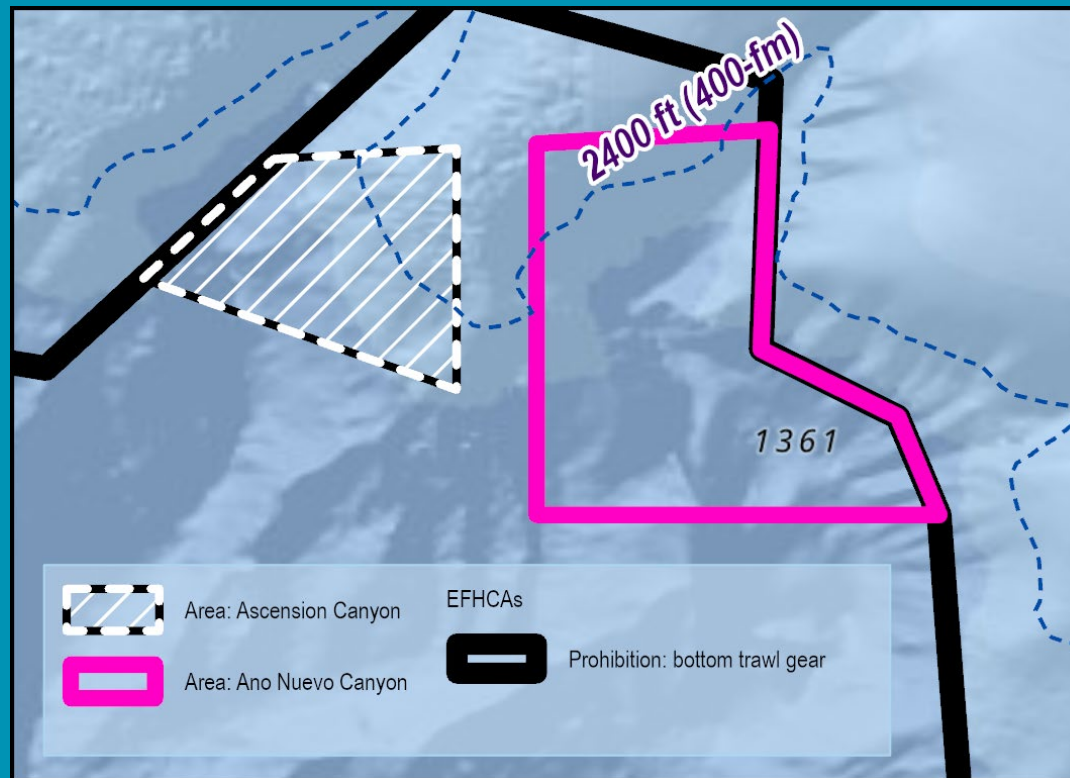


Sanctuary Ecologically Significant Areas (SESAs)

- Areas that encompass remarkable, representative and/or sensitive marine habitats, communities and ecological processes
- focal areas for facilitating research to better understand natural and human-caused variation
- Informed by scientists, fishermen, conservation NGOs, and other agencies
- Over 150 layers of Geographic Information System (GIS) data to establish areas
- Data fed into process for selection of Año Nuevo/Ascension Canyon and Sur Ridge deep sea coral R&R areas



Año Nuevo - Ascension Canyons Complex (ANC - AC)



Two potential areas at the Año Nuevo - Ascension Canyons Complex (ANC - AC) that range in size from 2.96 nm² to 6.5 nm².

ANC Area



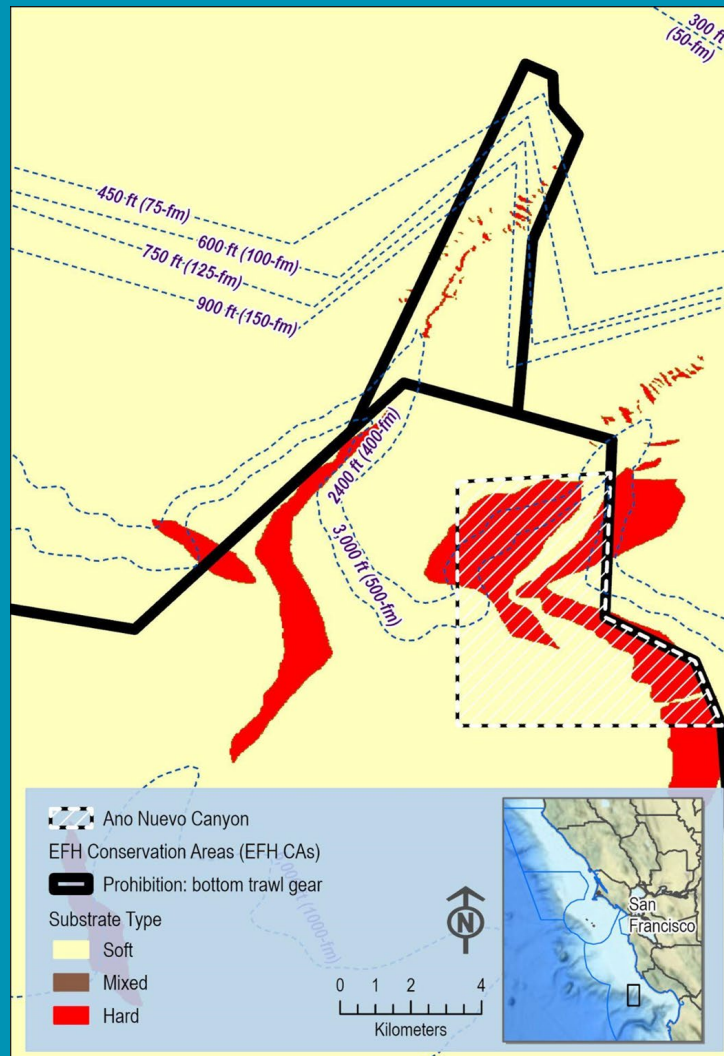
ANC

Size: 6.5 sm²

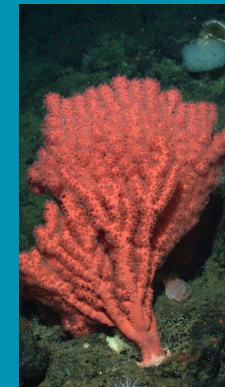
Depth Range: 262–
776 fm (1,574–4,658ft)

Target Coral Species:

- *Paragorgia* sp.
- *Keratoisis* sp.
- *Swiftia* sp.



Keratoisis sp.
credit: MBARI



Paragorgia sp.
credit: MBARI

AC Area



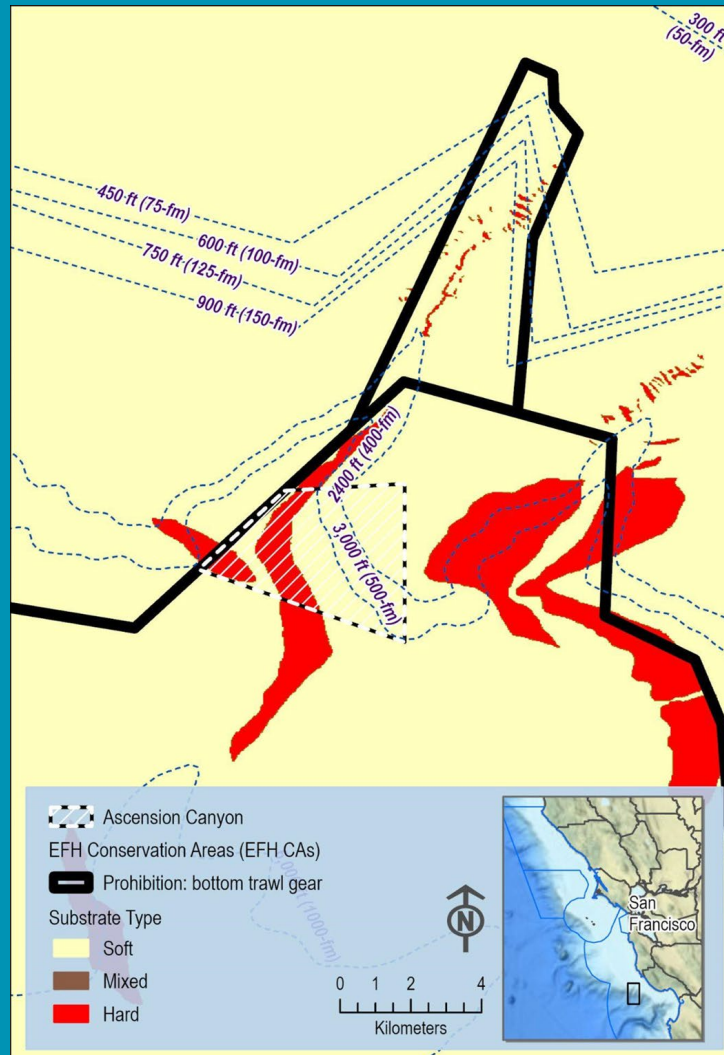
AC

Size: 2.96 nm²

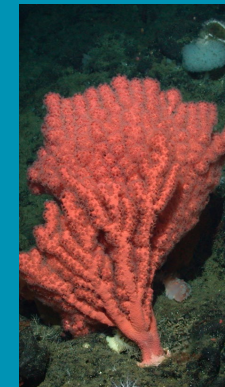
Depth Range:
73–798 fm (1,640–
4,790 ft)

Target Coral Species
for Outplanting:

- *Keratoisis* sp.
- *Paragorgia* sp.



Keratoisis sp.
credit: MBARI



Paragorgia sp.
credit: MBARI

Sur Ridge (SR)



Size: 36.64 nm²

Depth Range:
448–853 fm (2,690–5,118 ft)

Target Coral Species:

- *Trissopathes* sp.
- *Lillipathes* sp.
- *Isidella tentaculum*
- *Keratoisis* sp.
- *Parastenella* sp.
- *Acanthogorgia* sp.
- *Swiftia kofoidi*
- *Paragorgia arborea*
- *Sibogagorgia cauliflora*
- *Corallium* sp.



SR Area



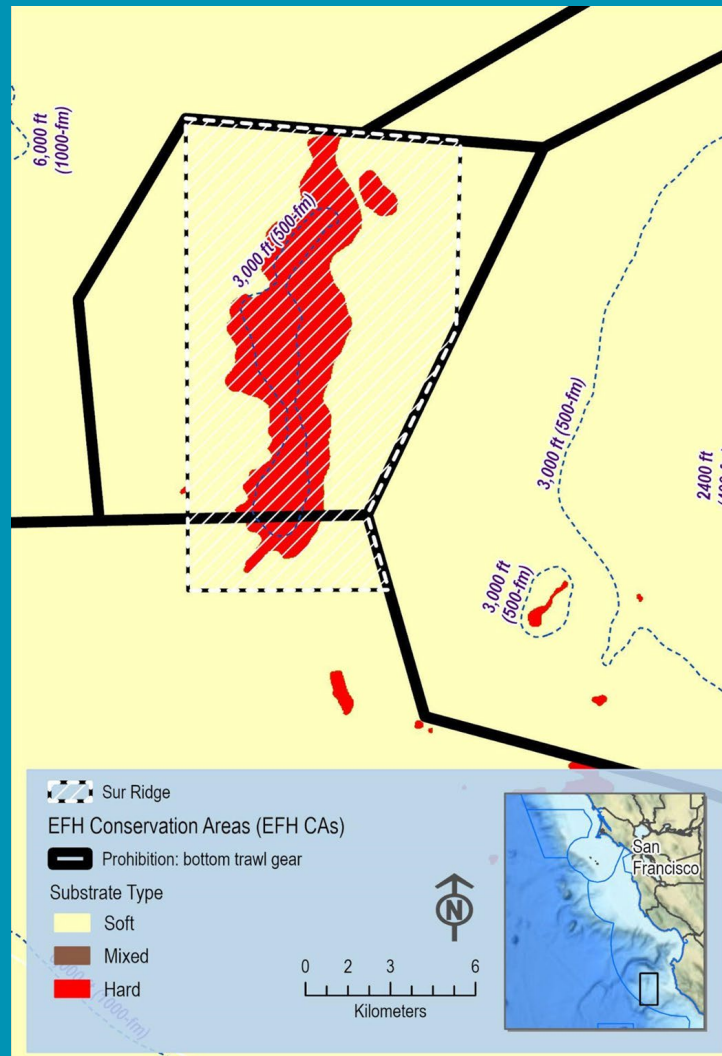
SR

Size: 36.64 nm²

Depth Range:
448-853 fm (2,690-
5,118 ft)

Target Coral Species
for Outplanting:

- *Keratoisis* sp.
- *Paragorgia* sp.



Isidella tentaculum
credit: NOAA

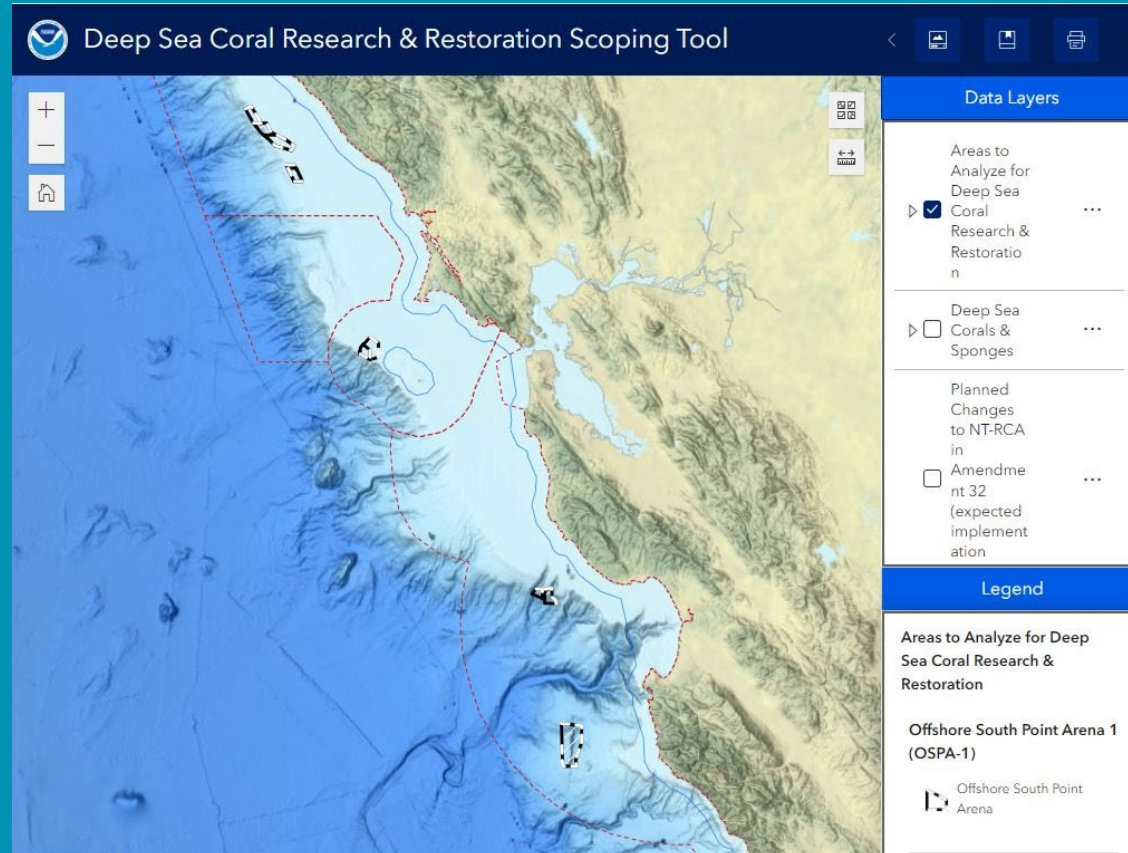


Sibogorgia cauliflora
credit: NOAA

Geospatial Tool



This tool accompanies the Deep Sea Coral Research and Restoration Scoping Document published by the Pacific Fishery Management Council for consideration at the September 2023 meeting.



Questions?



- For general questions or additional information contact Darrell Gregg at darrell.gregg@noaa.gov
- For technical questions related to the Geospatial Scoping Tool contact Sage Tezak at sage.tezak@noaa.gov

