

# Common NE Deep-Sea Corals

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*Bouquet of Corallium with deep purple Trachythela gorgonians on the New England Seamount Chain.*

# Deep-Sea Corals



- Why collect the data?
  - NOAA Strategic Plan for Deep-Sea Coral and Sponge Ecosystems – 2010 (authority in MSA)
  - Understanding the biology and ecology of these systems
  - Observer platforms provide unique sampling opportunity...
    - Catchability
    - Occurrence data
    - Fishing interactions



# Deep-Sea Corals-Distribution

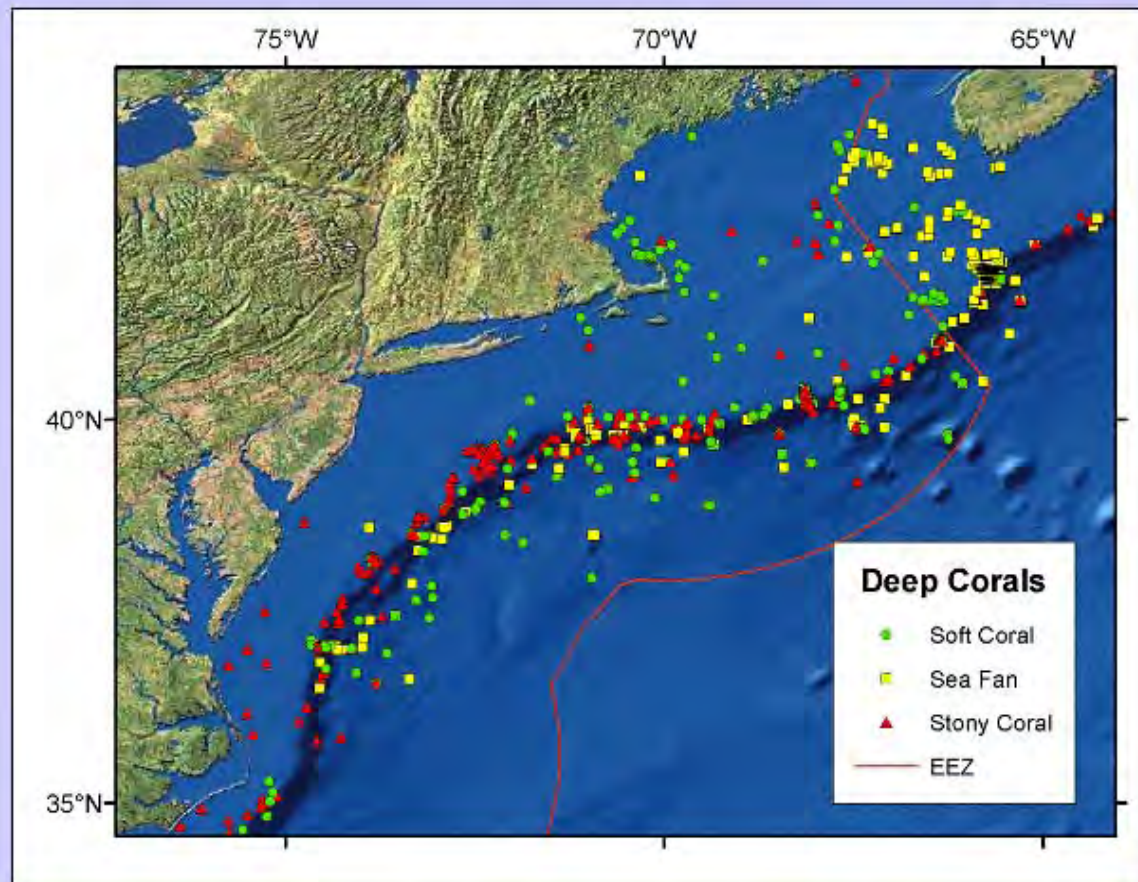


Figure 1. Known distribution of hard corals, soft corals, and sea fans in the northeastern U.S. and adjoining Canadian waters (Gulf of Maine only). Sea pens and black corals are not represented. (Canadian data courtesy of Fisheries and Oceans Canada, Bedford Institute of Oceanography, Dartmouth, Nova Scotia)

# CORAL CODES

<u>Common Name</u>	<u>Scientific Name (order)</u>	<u>Code</u>
• CORAL, STONY, NK	SCLERACTINIA	6880
• SEA PEN, NK	PENNATULACEA	6884
• CORAL, SOFT, NK	ALCYONACEA	6885

# Sampling

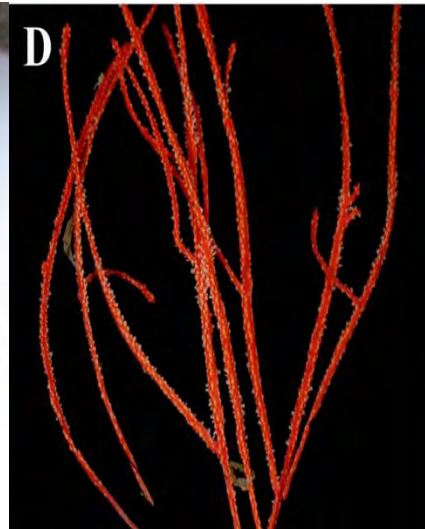
- Photograph – **ALL** corals and sea pens
- Handling Samples –
  - Stony corals – send in via SVP process
  - Soft corals – freeze/send in *only if* possible
- Verification process – current/future (SVP)



# CORAL, SOFT NK- 6885



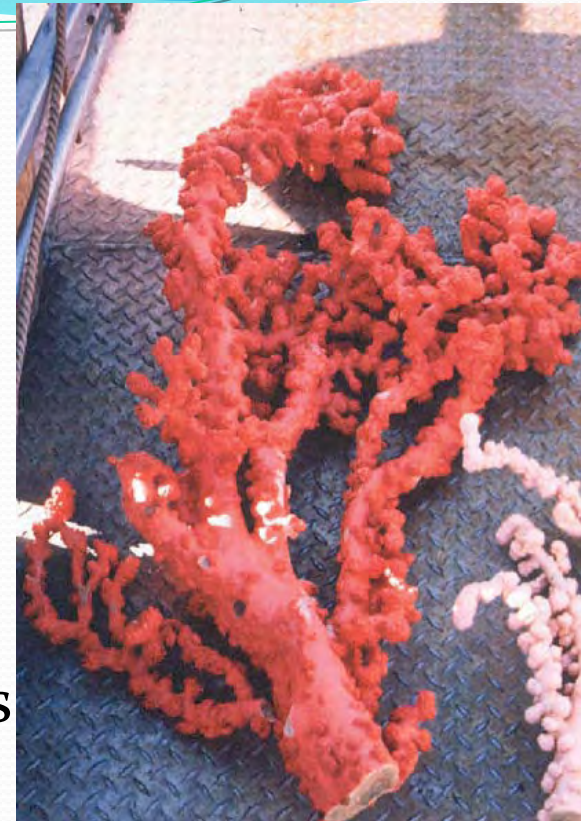
Bluhm/UAF/NOAA/CoML



# Soft Corals

## Bubble Gum Coral *Paragorgia arborea*

- Tree-like. Large colonies commonly tan-shaped. Thick main stem with branches, tips usually  $> 5$  mm. Brittle, broken pieces typically collected. Spongy skeleton. Polyps white to tan, orange, pink and red, dark purple. Height up to at least 3 m.
- Attached to hard substrates, usually at depths  $> 200$ -300 m.

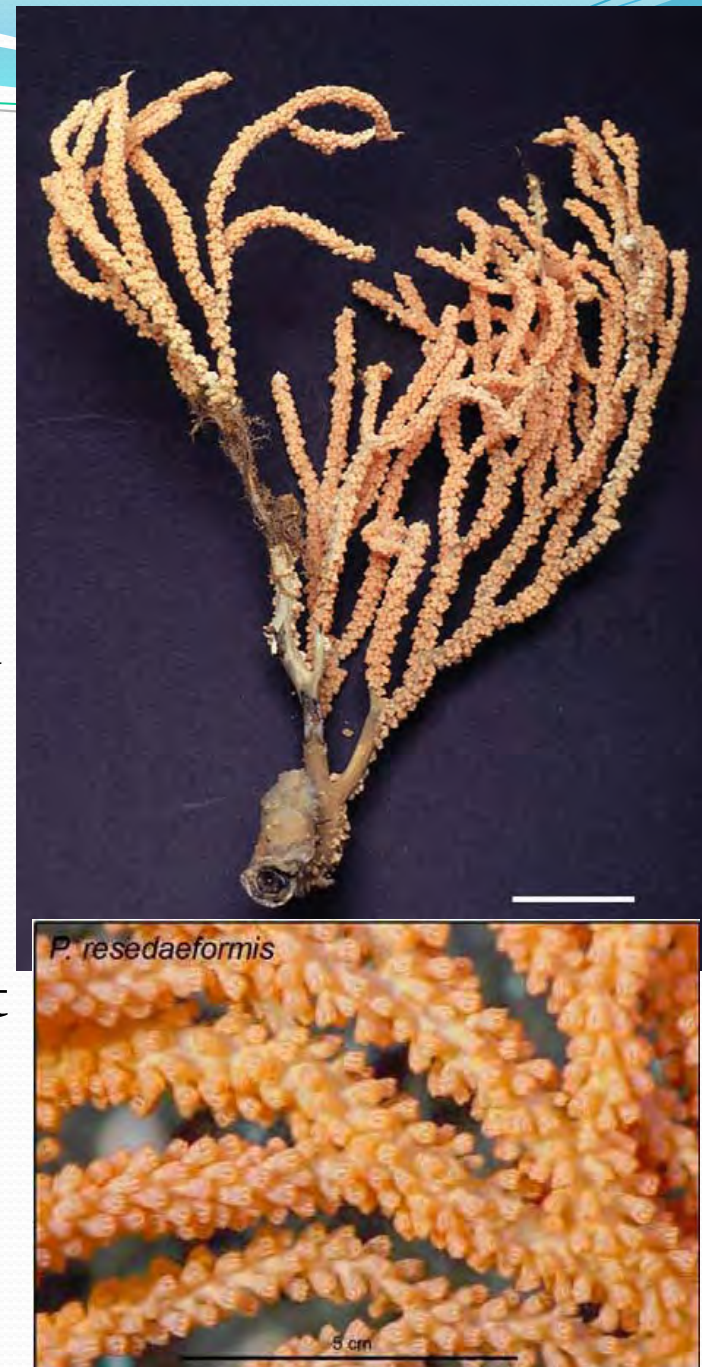


# Soft Corals

## Sea Corn Coral

### *Primnoa resedaeformis*

- Bush or tree-like with densely branched colonies. Stiff but flexible skeleton, hard and rigid at base. Polyps surrounded with small scales. Polyps pink to orange, dead colonies without polyps usually have a pale gray skeleton although sometimes gold, brown, or black. Height up to 120 cm.
- Attached to hard substrates at depths > 150-200 m.





# Soft Corals

## *Paramuricea spp.*

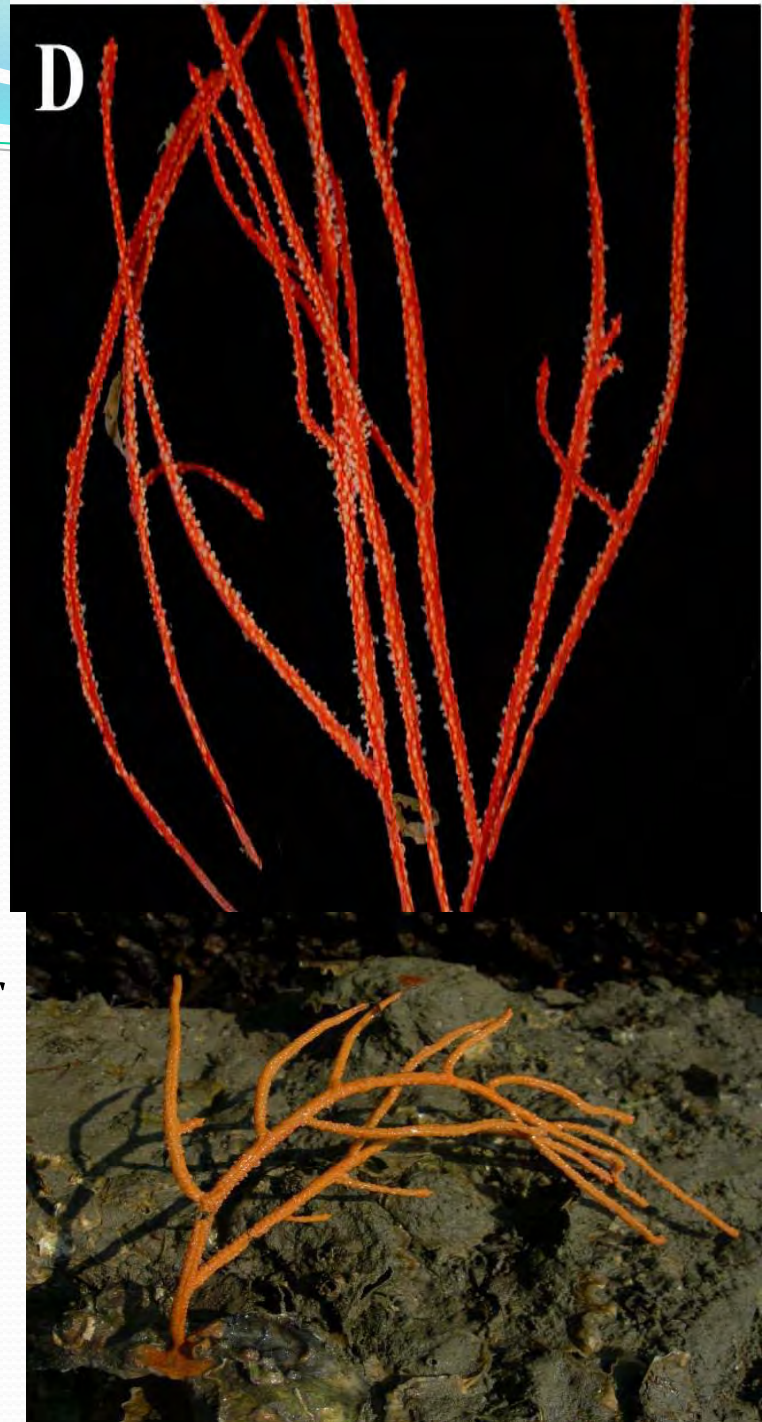
- Fan-like with curving branches arranged in loose and irregular pattern in one plane. Flexible skeleton, rough to touch. Polyps yellow, orange, or pink; skeleton green to brown, gray, or black. Height up to 80 cm.
- Attached to hard substrates at depths > 150 m but more common deeper.



# Soft Corals

Sea Whip, Colorful Sea Whip  
*Leptogorgia virgulata*

- Colony form whip-like branches, moderately branched close to attached base. Colonies may be uniform orange, yellow, purple, white, or various shades in-between; polyps translucent to white. Typical size from 15-60 cm; up to 1 m.
- Occurs from New York south at depths of 3-20 m; very common/abundant in the South Atlantic Bight. Found on hard substrate including shallow hardbottom reefs, shell bottoms, wrecks, artificial reefs, bays, tidal creeks.



# Soft Corals

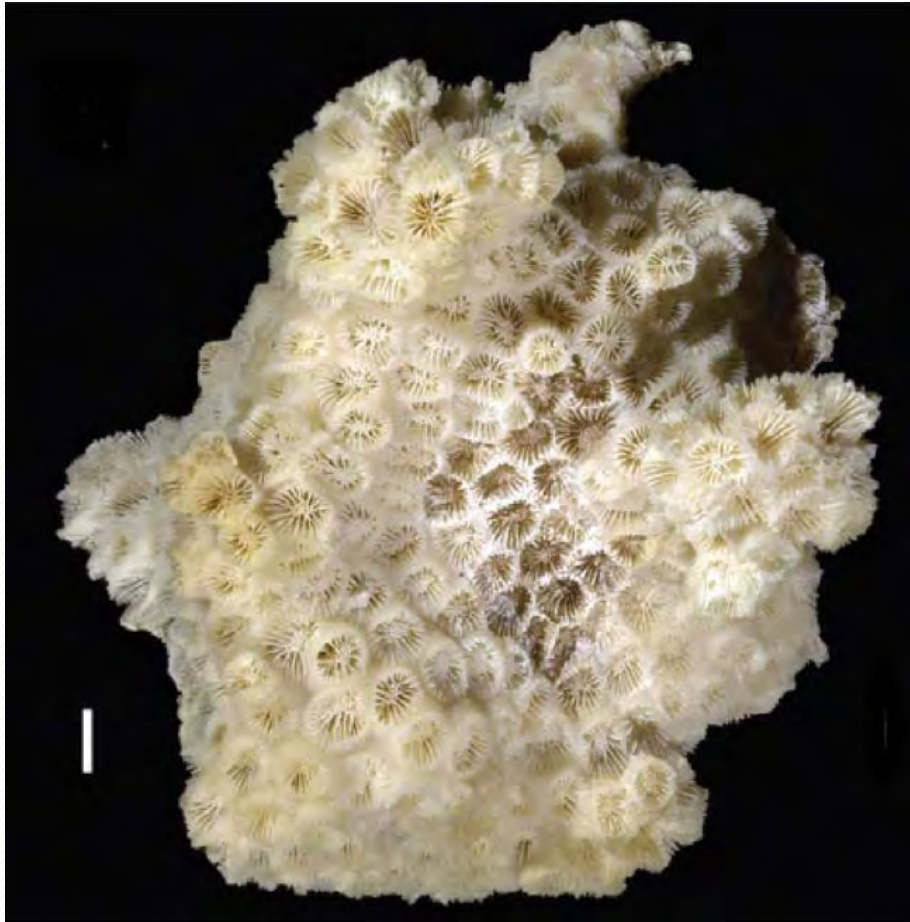
Red Soft Coral, Sea Strawberry or  
Sea Cauliflower

*Gersemia rubiformis*

- Soft but firm, branching with polyps in tight clusters, soft tissue with no skeleton. Shaped like broccoli when open, cauliflower shape when retracted. Color red, pink, orange, yellow, tan. Height usually 5-15cm.
- Attached to both hard substrates and suitable hard substrates (e.g., shells, gravel) on soft (e.g., sandy) bottoms. Sublittoral to depths > 200 m; in Canada can be found in shallow water on fishing banks.



# CORAL, STONY, NK - 6880



# Stony Corals

## *Dasmosmilia lymani*

- Hard, small, tissue pale-orange, mostly solitary cup coral, skeleton has many blade-like plates.
- Found on soft substrates from ~50 m depth. Common on shelf; e.g., head of Hudson Canyon). Always attached to a fragment (sector) of a parent coral skeleton from which it asexually fragmented, or has broken base.



# Stony Corals

## *Desmophyllum dianthus*

- Large pale pink, yellow, or orange solitary coral, light brown, grey, or white skeleton with many blade-like plates. Top is circular, elliptical, or scalloped.
- Often occurs in clusters and is attached to the substrate. Restricted to hard substrates from ~80 m depth.



# Stony Corals

## *Flabellum alabastrum*

- Solitary, conical or cup-like, no stalk, with blade-like plates. Cup “pinched” in center. Height usually < 7-8 cm. Tissue is transparent to yellow, orange, pink, or red; skeleton is white.
- Unattached on muddy or sandy mud substrates at depths > 200-300 m along continental slope.

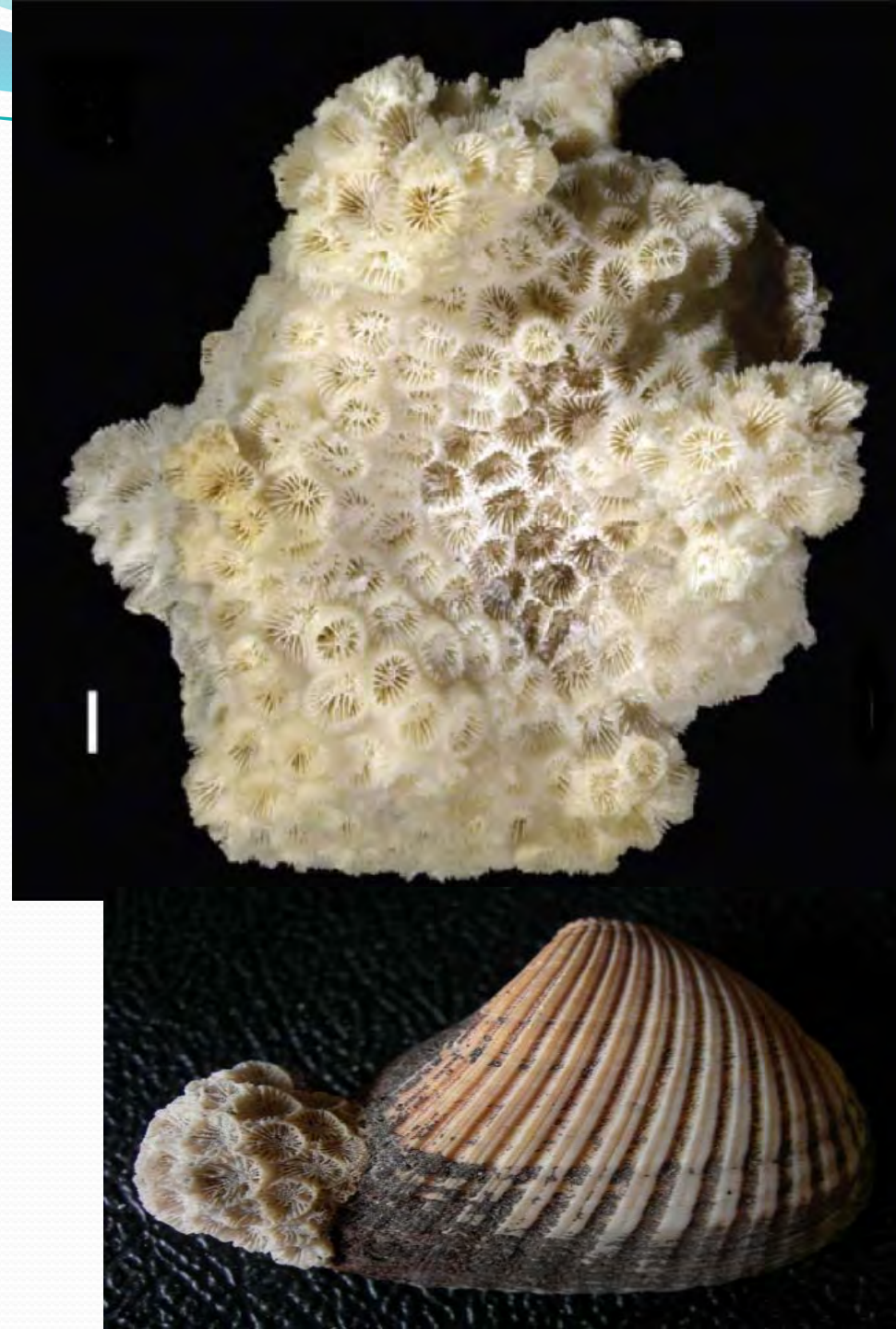


# Stony Corals

## Northern Star Coral

### *Astrangia poculata*

- Colonies are small and encrusting, mounding, or branching. The individual coral skeletons are tightly compacted, mostly circular. Polyps can be brown if they contain symbiotic algae (zooxanthellae) or white/translucent if they do not.
- Common from very shallow waters to depths of about 263 m on a wide variety of hard substrates: rocky bottoms, ledges, jetty pilings, shells, shipwrecks.





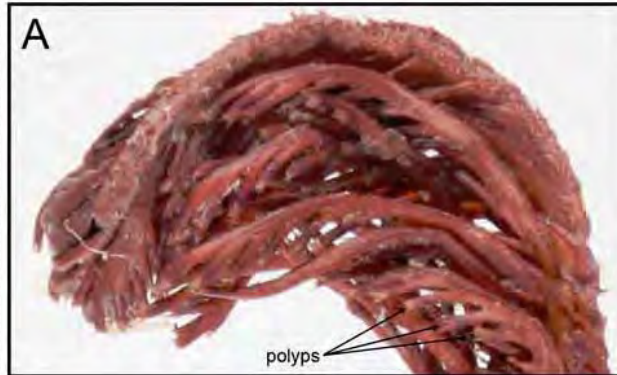
# SEA PEN, NK - 6884



# Sea Pens

## Common Sea Pen *Pennatula aculeata*

- Elongated fleshy stalk supported by a calcium carbonate rod. Upper part feather like with polyps; lower part is an enlarged fleshy peduncle without polyps. Deep red/purplish, becoming lighter and more orange on stalk and yellowish-white at the base. Up to 40 cm in length.
- Most common and abundant in Gulf of Maine in soft sediments (mud) though often seen farther south; depth range ~80 m to beyond 500 m.

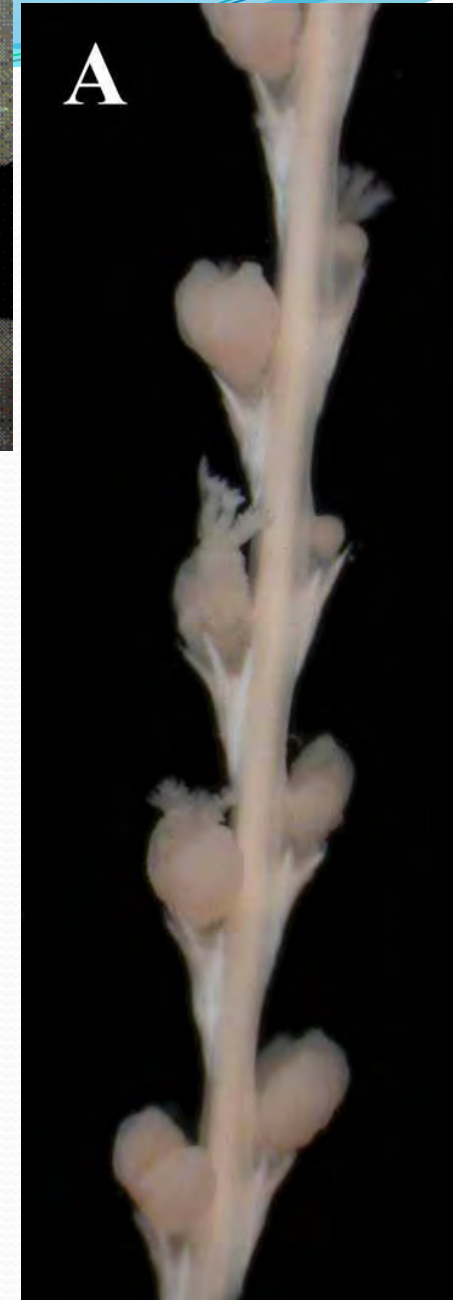


# Sea Pens

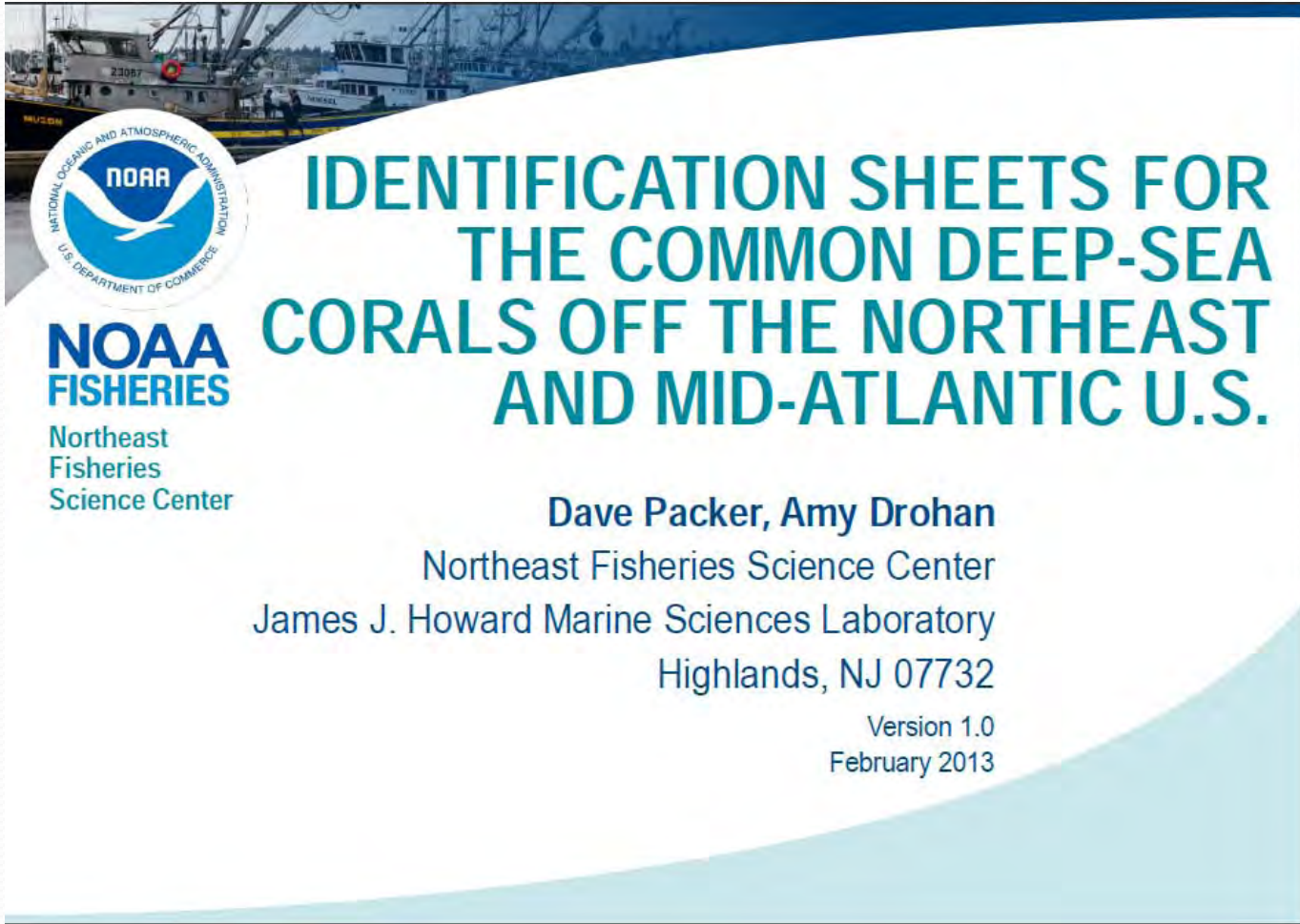
## White Sea Pen

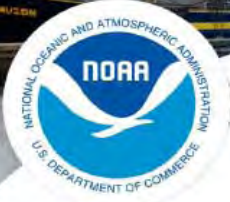
*Stylatula elegans*

- White axis and light brown polyps arranged in leaves, giving the colonies a bilaterally symmetrical form. Calcareous structures form large needles making fan-like structures beneath leaves. Approximately 10 large needles in each fan, reaching 1 mm in length, with smaller needles interspersed.
- Most common and abundant from New Jersey south in soft sediments; depth range ~50 m to beyond 500 m.



# ID GUIDE for FSB-on FSB website



  
**NOAA**  
**FISHERIES**  
Northeast  
Fisheries  
Science Center

## IDENTIFICATION SHEETS FOR THE COMMON DEEP-SEA CORALS OFF THE NORTHEAST AND MID-ATLANTIC U.S.

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