

Marine Species ID for the *Portland* and the *Frank A. Palmer-Louise B. Crary* Shipwrecks

2019

Phylum Chordata -- Fishes



**Atlantic Cod – *Gadus morhua***  
Curved white lateral line, well-developed barbel on chin, three dorsal fins, speckled body, tail straight edged



**Cusk – *Brosme brosme***  
Tail small, one dorsal fin and one anal fin (partly joins tail), fins white edged with dark stripe below, long chin barbel



**Haddock – *Melanogrammus aeglefinus***  
Gently sloping black lateral line, three dorsal fins, dark spot behind gills, small barbel, gray/purplish color, tail slightly forked



**Pollock – *Pollachius virens***  
Lateral line pale and straighter than cod's, barbel tiny to absent, first dorsal fin low and rounded, darker above and silvery below



**Acadian Redfish – *Sebastes fasciatus***  
Red to rose coloring, sharp rays along dorsal fin, large black eyes, fan-shaped tail, up to 12 inches long



**Wolffish – *Anarhichas lupus***  
Eel-like body, slate blue to olive green color, vertical dark bars along body, large head, prominent tusk-like teeth

Phylum Chordata -- Tunicates



**Stalked Tunicate – *Boltenia ovifera***  
Sea squirt stalk 2 to 4 times longer than body; color varies from red to yellow to brown



**Sea Vase – *Ciona intestinalis***  
Elegant sea squirt, color varies from white to yellow, siphons different sizes



**Sea Squirt – *Ciona sp.***  
Various colors (dirt may cover it); grows singly or in groups. (FYI: brittle star arms extend out from between plates - probably *Ophiopholis aculeata*.)

## Phylum Chordata – Tunicates (*continued*)



**Sea Grape – *Molgula* spp.**  
Small sea squirt; often covered in debris and hard to distinguish; pictured here with delicate branch-like bryozoan colonies (*Bugula* sp.)



**White Crust – *Didemnum* spp.**  
Large, dense colonies common; usually white, but can be pink or yellow; hard, brittle and opaque; native and invasive species

## Phylum Bryozoa



**Moss Animals -- Bryozoans**  
Common colonial animals; resemble seaweeds (above), corals (see white branching animals in far left photo), or hydroids

## Phylum Porifera -- Sponges



**Finger Sponge – *Haliclona oculata***  
Branching from narrow base; grows to 18" high; colors range from light brown, gray to purplish; rounded branches; numbers can vary



**Breadcrumb Sponge – *Halichondria panicea***  
Encrusting sponge attaches to hard surfaces; shape irregular; cones/projections with visible osculum (opening); yellow to greenish



**Boring Sponge – *Cliona celata***  
Encrusting sponge; can cover large areas, including other marine life; wart-like protrusions; secretes acid to dissolve host



**Encrusting Sponge – *Aplysilla sulfurea***  
Thin encrusting sponge with low bump-like forms (conules); color bright sulphur yellow to pale yellow; smooth between conules



**Branching Sponge – *Iophon nigricans***  
Variably-shaped branches from broad base; color off-white to gray, but some yellow or orange; soft and crumbly consistency



**Cup Sponge – *Axinella infundibuliformis***  
Cup-shaped (inverted cone); color buff, creamy white or yellow; sizes up to 4 inches/10 cm across.



**Glass Sponge – *Vazella* sp.**  
This beautiful example of a cylinder-shaped glass sponge was photographed on the starboard side forward deck during an earlier exploration and documentation of the wreck of the steamship *Portland*. New expeditions to the wreck site may determine the fate of this specimen, with possible changes due to natural deterioration and/or human intervention.

## Phylum Porifera – Sponges (continued)



**Common Palmate** – *Isodictya palmata*  
Branches more flat than round; smaller than *Halichona oculata*; up to 12" tall; colors yellow, orange or light brown



**Bulbous Sponge** – *Polymastia sp.*  
Globose (globe-like) form; about 4" (10 cm) in diameter; color: yellow or white; *P. infrapylosa* most common species of several in region



**Cup Sponge** – *Phakellia ventilabrum*  
Erect, solitary individuals; bowl- or cup-shaped, often with short slender stalk; color: pale yellow to brown

## Phylum Cnidaria – Anemones, Hydroids (also corals, jellies)



**Tubularian Hydroid**– *Ectopleura crocea*  
Commonly called pink-hearted hydroid; flower-like in appearance; can form dense, intertwined growths on lines and buoys



**Northern Red Anemone** – *Urticina felina*  
Heavy bodied anemone; strongly adherent; thick tentacles contract entirely for protection; bright colors: red, orange, yellow, white or combinations [note sea grape tunicates nearby]



**Frilled Anemone** – *Metridium senile*  
Tall, smooth column with many tentacles, often over 1,000; color: usually white or orange but brown, gray, yellow and red varieties; some bicolor with tan column/white tentacles.



**Northern Cerianthid**– *Pachycerianthus borealis*  
Burrows in sand or mud; 2 rows of tentacles around mouth; outer row longer; color: brown column, tentacles pale yellowish or pinkish



**Pink Anemone** – *Bolocera tuediae*  
Smooth column, often taller than wide; lightly adherent; tentacles slightly transparent, long and graceful; color: uniform, pink, whitish, tan



**Pom Pom Anemone** – *Lionema multicornis*  
Rare anemone observed in area closed to groundfishing east of the *Portland* wreck; unattached; color: pinkish-orange

Other cnidarian species that may be observed in the sanctuary include the pink, long-stemmed octocoral called the sea pen (*Pennatula aculeata*), the solitary hydroid (*Hybocodon pendula*), masses of wine-glass hydroids (*Campanularia sp.*), and the red soft coral (*Gersemia rubiformis*). Hydromedusae, moon jellies, and lion's mane jellies may be drifting through the sanctuary, too.

## Phylum Arthropoda – Crustaceans



**Northern Lobster – *Homarus americanus***  
Iconic New England crustacean; 2 claws – a catcher and a crusher; color: greenish- or orangish-brown but also blue, white, or red



**Jonah Crab – *Cancer borealis***  
Oval-shaped shell (carapace); short legs; color: reddish-orange upper surface, yellowish under. Related rock crab (*Cancer irroratus*) has sharp points at widest part of carapace



**Stone Crab – *Lithodes maja***  
Also called king crab; spiderish appearance; carapace nearly round; body and legs brown or orange with large spikes; 3 large walking legs, claw and small hidden 5<sup>th</sup> leg each side.



**Shrimp – *Dichelopandalus leptocerus***  
Similar in size and color to northern pink shrimp (*Pandalus borealis*) but slight anatomical differences; common in sanctuary



**Krill – *Meganyctiphanes norvegica***  
Shrimp-like in appearance but smaller; large stalked black eyes; nearly transparent but red spots on legs and body; stomach visible [note swarming chaetognaths around krill]

An array of arthropods may be inhabiting sanctuary shipwrecks, including the steamship *Portland*. Many of these animals are very small, and difficult to observe with underwater cameras. These species include the "pods" (amphipods, isopods, etc.), sea spiders, barnacles, skeleton shrimp, and the Acadian hermit crab (*Pagurus acadianus*). The water column is home to many types of copepods, important zooplankters that support the entire food web.

## Phylum Brachiopoda



**Lamp Shell -- *Terebratulina septentrionalis***  
Resembles bivalve mollusks but shells are hinged top and bottom, not along a side; color: white, pale yellow, gray, or brown

## Phylum Mollusca



**Scallop – *Placopecten magellanicus* (deep sea) and *Chlamys islandica* (Iceland)**  
Oval shape; color: reddish-brown, purple, pink, yellow; shell wings at hinge are unequal in *C. islandica*

## Phylum Chaetognatha



**Arrow Worm – *Sagitta elegans***  
Important zooplankton species; almost transparent; found at depth in summer months; predator on copepods and larval fish [see swarming arrow worms in krill photo]

The phylum Mollusca includes numerous species that live in the sanctuary and may be residing in, on, or near sanctuary shipwrecks. The types of animals that might be viewed include squid, octopus, chitons, shelled gastropods (whelks, moon snail), sea butterflies, nudibranchs, mussels, and clams.

## Phylum Echinodermata – Sea Stars (also sea cucumbers, sea urchins, sand dollars)



**Smooth Sunstar – *Solaster endeca***  
Has 7 to 14 arms, but usually 9 to 10; upper surface has very short spines (smooth); color: red, pink, yellow, or purple with yellow margins



**Spiny Sunstar – *Crossaster papposus***  
Has 8 to 14 arms, but usually 10 to 12; bristles on upper surface; color: red with concentric bands in white or red; a voracious predator



**Blood Sea Star – *Henricia sanguinolenta***  
Small central disk and 5 slender legs; about 4" radius; color: red, orange, yellow, white, purple or mottled; feeds on sponges



**Northern Sea Star – *Asterias vulgaris***  
Covered with blunt, short spines; usually 5 arms, with a row of spines down the middle of each arm's surface; madreporite (eyespot) is pale yellow; color: brown, red, orange, purple, or green

**Forbes' Sea Star – *Asterias forbesi*** has similar appearance, but no arm midline spines and madreporite is orange



**Badge Star – *Porania insignis***  
Has 5 blunt arms and a thick skin; color: red upper surface with white markings, whitish on underside



**Horse Star – *Hippasteria phrygiana***  
Has 5 arms, with rounded edges with a beaded look; large rounded spines on the surface; color: red above and white below; feeds on bivalves, echinoderms, and worms



**Daisy Brittle Star – *Ophiopholis aculeata***  
Long, thin arms; color: tan, brown, red, black, green with stripes, mottling, and or spots (see brittle star arms extending between *Portland* plates in rough tunicate photo); other brittle star species likely (*Ophura sarsi*)

## Phylum Annelida



**Fan Worm – *Myxicola infundibulum***  
Segmented filter-feeding worm; mucus tube built into sediment; webbed tentacles form a delicate fan at the surface; when disturbed, fan pulls inside tube quickly

## NOTES and CREDITS

Photos in this identification guide are all in the public domain. Credit goes to the following organizations: NOAA Stellwagen Bank National Marine Sanctuary; National Undersea Research, Technology and Education Center; NOAA Fisheries; U.S. Geological Survey; and SBNMS/WHOI *Portland* Expedition Project

This is a work in progress. Photo identifications, scientific and common names, and species descriptions may change as further information is collected, but extensive efforts have been made to fact check this document. Submit comments to the ID Editor at [stellwagen@noaa.gov](mailto:stellwagen@noaa.gov)

This education document is intended for use with live and taped imagery from Stellwagen Bank National Marine Sanctuary. All of the species included in this identification guide have been observed in, on, or near the wrecks of the passenger steamship *Portland* and the coal schooners *Frank A. Palmer* and *Louise B. Cray* (all located within the sanctuary). All photos were taken in the sanctuary except for the daisy brittle star and the single chaetognath.

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## Observations of species not included in this identification guide

If you cannot identify any species on, in or near Stellwagen Bank National Marine Sanctuary's shipwrecks or natural habitat areas using this identification guide, try being a Sealife Detective. Study the animal and draw a sketch below, collect pertinent data about the subject, and then search for answers. There are many resources online, including the Encyclopedia of Life, WoRMS (World Register of Marine Species), Wildscreen Arkive, and more. [Listings here do not constitute an endorsement by NOAA, but are provided as a service to educators.]

Sketch your unknown species

To which phylum do you think this animal belongs?

What species does it most closely resemble?

What are its distinguishing characteristics, such as shape, size, appendages, color, attached (sessile) or mobile, etc.

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