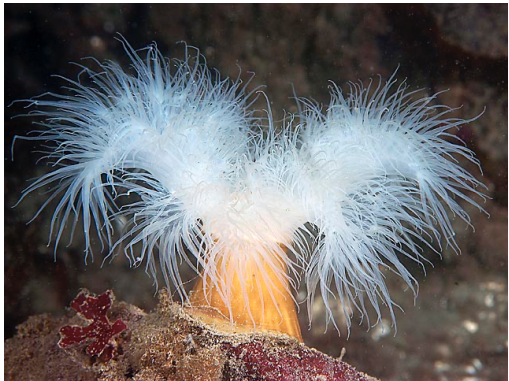


# Intertidal Organism Guide



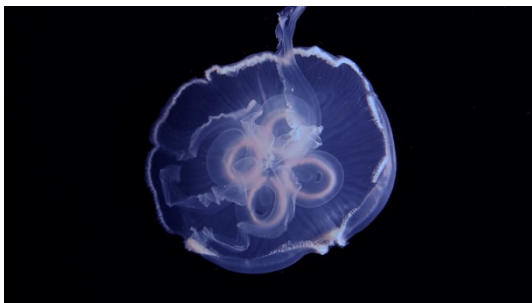
## Northern Frilled Anemone

- **Genus species:** *Metridium senile*
  - **Phylum:** Cnidaria
  - **Habitat:** Low intertidal and subtidal
  - **Food:** Plankton
  - **Relative:** Jellies, coral
- Description:** Tall, smooth body column up to 10 cm high ranging from olive-green to orange-brown in color. Oral disk up to 7.5 cm wide with thin cream colored tentacles.



## Orange-striped Green Sea Anemone

- **Genus species:** *Diadumene lineata*
  - **Phylum:** Cnidaria
  - **Habitat:** Low intertidal and subtidal, high tolerance to inter-tidal exposure, invasive (from Pacific coast of Asia)
  - **Food:** Plankton
  - **Relative:** Jellies, coral
- Description:** Maximum height of 3 cm, smooth, greenish-brown or olive-green column typically with 25-50 tentacles, tentacle crown up to 3.5 cm



## Moon Jelly

- **Genus species:** *Aurelia aurita*
  - **Phylum:** Cnidaria
  - **Habitat:** Low intertidal and subtidal
  - **Food:** Zooplankton, mollusk larvae, crustaceans, small fishes
  - **Relative:** Corals, sea anemones
- Description:** 25 to 40 cm, translucent umbrella membrane with tentacles attached to the bottom



## Blue Mussel

- **Genus species:** *Mytilus edulis*
  - **Phylum:** Mollusca
  - **Habitat:** Middle and lower zones
  - **Food:** Particles in water (filter feeders)
  - **Relative:** Snail, clam, squid
- Description:** Shell 10 cm long, black-blue outside, white-blue inside, byssal threads, reduced foot.

# Intertidal Organism Guide



## Common Slipper Snail

- **Genus species:** *Crepidula fornicata*
  - **Phylum:** Mollusca
  - **Habitat:** Lower-level rocks, tidepools
  - **Food:** Particles in water (filter feeders)
  - **Relative:** Clam, squid, mussel
- Description:** Shell 6 cm long, cream with grey, tan, or violet tint, begin as males and stack for easier reproduction (bottom: females, top: males)



## Common Periwinkle - Invasive

- **Genus species:** *Littorina littorea*
  - **Phylum:** Mollusca
  - **Habitat:** Middle zone, tidepools
  - **Food:** Algae
  - **Relative:** Squid, mussel, slipper shell, nudibranch
- Description:** Shell 3 cm long, olive-brown to tan with dark bands, cream-colored shell opening, most abundant species in low-middle zone, radula, attaches eggs to rocks, may live 10 years, produces its shell.



## Smooth Periwinkle - Invasive

- **Genus species:** *Littorina obtusata*
  - **Phylum:** Mollusca
  - **Habitat:** Moisture and even temperatures of rockweed in middle and lower zones
  - **Food:** Brown algae: rockweed and bladder wrack
  - **Relative:** Squid, mussel, slipper shell, nudibranch
- Description:** Shell 1.3 cm long, bright yellow-orange, to olive-green, least stress-tolerant, mimics bladders of algae



## Rough Periwinkle - Invasive

- **Genus species:** *Littorina saxatilis*
  - **Phylum:** Mollusca
  - **Habitat:** Tidepools
  - **Food:** Algae
  - **Relative:** Cuttlefish, limpet
- Description:** Shell 1.5 cm long, grey-brown with darker bands, spiral cords and sutures, most stress-tolerant periwinkle, brood eggs in mantle cavity, no larvae.



# Intertidal Organism Guide



## Atlantic Dog Whelk

- **Genus species:** *Nucella lapillus*
- **Phylum:** Mollusca
- **Habitat:** Lower, Middle zone
- **Food:** Mussels, barnacles, periwinkles
- **Relative:** Squid, mussel, slipper shell, nudibranch
- **Description:** 4 cm long, rough-textured shell, color varies with diet, uses chemicals and drills hole for feeding, proboscis with radula, no larval stage, bottom of shell has a pointed, rounded edge.



## Northern Moon Snail

- **Genus species:** *Lunatia heros*
- **Phylum:** Mollusca
- **Habitat:** Bury in the sand
- **Food:** Mussels, dead fish, clams
- **Relative:** Squid, mussel, slipper shell, nudibranch
- **Description:** 10 cm, gray colored snail, large and looks bigger than its shell, powerful foot, drills a hole with radula, very slimy.



## Atlantic Plate Limpet

- **Genus species:** *Tectura testudinalis*
- **Phylum:** Mollusca
- **Habitat:** Low and mid intertidal
- **Food:** Crusting algae (scrapes)
- **Relative:** Periwinkle, nudibranch
- **Description:** Cap-like shell, 1-3cm wide, black/brown/tan in color. Use muscular foot to create suction to attach to rocks for protection and to maintain position in intertidal.



## Shaggy Mouse Nudibranch

- **Genus species:** *Aeolidia papillosa*
- **Phylum:** Mollusca
- **Habitat:** Low intertidal and subtidal
- **Food:** Anemones
- **Relative:** Periwinkle, limpet
- **Description:** Soft body with many extensions known as cerata. Able to engulf and use both stinging cells and endosymbiotic algae of anemones and use them for defense and nutrition, respectively.

# Intertidal Organism Guide



## Northern Rock Barnacle

- **Genus species:** *Semibalanus balanoides*
  - **Phylum:** Arthropoda
  - **Habitat:** Any hard surface in all intertidal zone
  - **Food:** Plankton (filter feeder)
  - **Relative:** Crab, lobster
- Description:** shell to 2 cm wide, use bristle covered leg to scoop in plankton, shed parts of exoskeleton and always add on minerals, hermaphroditic, most common species on exposed rocks.



## American Lobster

- **Genus species:** *Homarus americanus*
  - **Phylum:** Arthropoda
  - **Habitat:** Low intertidal to subtidal
  - **Food:** Scavenger (mussels, snails, organic debris)
  - **Relative:** Shrimp, barnacle, crab
- Description:** Juveniles range from 3-10cm long and often seek shelter in tidepools until reaching maturity. Shell reddish-brown, genetic mutation can lead to a variety of shell colors including blue.



## Long-Clawed Hermit Crab

- **Genus species:** *Pagurus longicarpus*
  - **Phylum:** Arthropoda
  - **Habitat:** Low tidepools
  - **Food:** Scavenger (mussels, snails, organic debris)
  - **Relative:** Isopod, barnacle, lobster
- Description:** Carapace 1cm long, body/legs cream to grey-green, front claws have tan stripe, inhabit periwinkle or dog whelk shell, scavengers, find their shells.



## Amphipod

- **Genus species:** *Various*
  - **Phylum:** Arthropoda
  - **Habitat:** Tidepools
  - **Food:** Seaweed
  - **Relative:** Shrimp, barnacle, lobster
- Description:** >1 cm long, tan to brown. Quick swimmers and jumpers, often attached to filamentous seaweed. Resemble roly-poly bugs.



# Intertidal Organism Guide



## European Rock Shrimp - Invasive

- **Genus species:** *Palaemon elegans*
  - **Phylum:** Arthropoda
  - **Habitat:** Tidepools
  - **Food:** Scavenger (phytoplankton, detritus)
  - **Relative:** Crab, barnacle, lobster
- Description:** Carapace 2-3 cm long, clear body and legs. Often hard to spot, swimming in tidepools.



## Spider Crab

- **Genus species:** *Libinia emarginata*
  - **Phylum:** Arthropoda
  - **Habitat:** Low intertidal to subtidal
  - **Food:** Scavenger (mussels, snails, organic debris)
  - **Relative:** Shrimp, barnacle, lobster
- Description:** Carapace 3-5 cm long, body and legs covered with seaweed and fouling organisms for camouflage.



## Jonah Crab - Native

- **Genus species:** *Cancer borealis*
  - **Phylum:** Arthropoda
  - **Habitat:** Subtidal
  - **Food:** Scavenger (mussels, snails, organic debris)
  - **Relative:** Shrimp, lobster, isopod, barnacle
- Description:** 15 cm wide. Rough, red to pinkish-purple on top, cream colored below. Black-tipped claws, submissive.



## Rock Crab - Native

- **Genus species:** *Cancer irroratus*
  - **Phylum:** Arthropoda
  - **Habitat:** Tidepools, bury in sand, under rocks
  - **Food:** Scavenger (mussels, snails, organic debris)
  - **Relative:** Shrimp, lobster, isopod, barnacle
- Description:** 12.5 cm wide. Smooth, yellow to brown with red-brown blotches on top, pale yellow on bottom. Nine defined points on carapace (unlike Jonah).

# Intertidal Organism Guide



## Green Crab - Invasive

- **Genus species:** *Carcinus maenas*
  - **Phylum:** Arthropoda
  - **Habitat:** Native to Europe. Tidepools, bury in the sand
  - **Food:** Scavenger (mussels, snails, organic debris)
  - **Relative:** Shrimp, lobster, isopod, barnacle
- Description:** 7.5 cm wide. Green on top and yellow underneath. Reddish-orange for females. Fierce. 5 points on carapace.



## Asian Shore Crab - Invasive

- **Genus species:** *Hemigrapsus sanguineus*
  - **Phylum:** Arthropoda
  - **Habitat:** Native from southern Russia to Hong Kong. Tidepools: bury in sand, under rocks
  - **Food:** Scavenger (mussels, snails, organic debris)
  - **Relative:** Shrimp, lobster, isopod, barnacle
- Description:** 3.5-4.2 cm carapace, small, feisty, brown and black mostly. Distinct striped pattern on legs.



## Blue Crab

- **Genus species:** *Callinectes sapidus*
  - **Phylum:** Arthropoda
  - **Habitat:** Low intertidal to subtidal, Atlantic Coast from Cape Cod to Argentina, and Gulf of Mexico
  - **Food:** Scavenger (mussels, snails, organic debris)
  - **Relative:** Shrimp, lobster, isopod, barnacle
- Description:** Blueish to olive green carapace, up to 9 inches wide, blue claws (females have red tips), points on either side of carapace, back swimming legs.



## Lady Crab

- **Genus species:** *Ovalipes ocellatus*
  - **Phylum:** Arthropoda
  - **Habitat:** Sandy bottom, low intertidal to subtidal
  - **Food:** Scavenger (mussels, snails, organic debris)
  - **Relative:** Shrimp, lobster, isopod, barnacle
- Description:** 2-4 in wide, white to yellowish grey, reddish-purple spots on body and claws, aggressive, back swimming legs.



# Intertidal Organism Guide



## Springtails

- **Genus species:** *Anurida maritima*
  - **Phylum:** Arthropoda
  - **Habitat:** Tidepools
  - **Food:** Scavenger (decaying organic matter)
  - **Relative:** Shrimp, lobster, isopod, barnacle
- Description:** 3-5 mm long, blue bugs. Congregate in groups on the surface water of tidepools.



## Common (Forbe's) Sea Star

- **Genus species:** *Asterias forbesi*
  - **Phylum:** Echinodermata
  - **Habitat:** Crevices, low zone, under rocks, tidepools
  - **Food:** Mussels
  - **Relative:** Sea urchin, sea cucumber, sand dollar
- Description:** 25 cm wide, olive-brown on top, orange sieve plate, regrows arms, eye at the end of each arm (red dot) to see light/dark, water vascular system, tube feet, feeds by everting stomach.



## Northern Sea Star

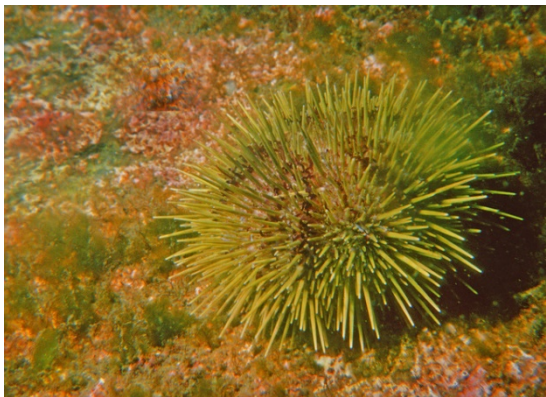
- **Genus species:** *Asterias vulgaris*
  - **Phylum:** Echinodermata
  - **Habitat:** Crevices, low zone, under rocks, tidepools
  - **Food:** Mussels
  - **Relative:** Sand dollar, sea urchin, sea cucumber
- Description:** 40 cm wide, red, pink, purple, to brown on top with a lighter-colored row of spines down the middle of the arms, cream colored sieve plate, regrows arms, eye at the end of each arm (red dot) to see light/dark, water vascular system, tube feet, feeds by everting stomach.

# Intertidal Organism Guide



## Blood Star

- **Genus species:** *Henricia sanguinolenta*
- **Phylum:** Echinodermata
- **Habitat:** Crevices, low zone, under rocks, tidepools
- **Food:** Sponges, organic debris
- **Relative:** Sea cucumber, sand dollar, sea urchin
- **Description:** 20 cm wide, red to purple-red on top, white sieve plate, tips of arms are cream to orange, smooth, delicate, regrows arms, eye at the end of each arm (red dot) to see light/dark, water vascular system, tube feet.



## Green Sea Urchin

- **Genus species:** *Strongylocentrotus droebachiensis*
- **Phylum:** Echinodermata
- **Habitat:** Crevices, under boulders, low zone •
- **Food:** Algae
- **Relative:** Sea star, sea cucumber, sand dollar
- **Description:** Test 8 cm wide, 3 cm high, movable spines all over body, olive-green overall, reddish-purple tube feet on outside, Aristotle's Lantern (mouth).



## Rock Gunnel

- **Genus species:** *Pholis gunnellus*
- **Phylum:** Chordata
- **Habitat:** Low intertidal and subtidal
- **Food:** Small crustaceans, mollusks, polychaete
- **Relative:** Banded gunnel, other
- **Description:** Up to 30 cm, flattened, elongated body resembling an eel, yellow-green, brown, crimson coloring, dark spots along dorsal fin



# Intertidal Organism Guide



## Mummichog

- **Genus species:** *Fundulus heteroclitus*
  - **Phylum:** Chordata
  - **Habitat:** Low intertidal and subtidal
  - **Food:** Algae, plants, insects, larvae, worms, small crustaceans, mollusks, fish eggs, carrion
  - **Relative:** Other killifish, other euryhaline fish
- Description:** 7.5 to 9 cm, round pectoral and tail fins, variable color typically olive-brown or olive-green, males more vibrant



## Cunner

- **Genus species:** *Tautoglabrus adspersus*
  - **Phylum:** Chordata
  - **Habitat:** Subtidal
  - **Food:** Barnacles, mollusks, shrimp, crabs, amphipods
  - **Relative:** Tautog
- Description:** 15 to 25 cm, mottled reddish to bluish brown color range on top, colors fade to paler hues along on the side, single long dorsal fin



## Double-crested Cormorant

- **Genus species:** *Phalacrocorax auritus*
  - **Phylum:** Chordata
  - **Habitat:** Found in almost any aquatic habitat, summer resident in MA, nests in trees, sea cliffs, and island grounds
  - **Food:** Fish, insects, crustaceans, amphibians
  - **Relative:** Pelicans, frigatebirds, gannets, tropicbirds
- Description:** 127 cm wingspan, long neck, hooked bill about the size of its head, brown-black feathers with a patch of yellow-orange skin on face

# Intertidal Organism Guide



## European Herring Gull

- **Genus species:** *Larus argentatus*
- **Phylum:** Chordata
- **Habitat:** Along the coast, almost any open space near food, opportunistic
- **Food:** Fish, crustaceans, mollusks, sea urchins, marine worms, birds, eggs, insects, trash
- **Relative:** Terns, skimmers

**Description:** 125 to 155 cm wingspan, light gray back and upper wings, white head and underparts, black wingtips with white spots, yellow bill with red spot, ring of bare yellow skin around eye



## Ring-billed Gull

- **Genus species:** *Larus delawarensis*
- **Phylum:** Chordata
- **Habitat:** Near fresh or salt water, opportunistic
- **Food:** Insects, fish, earthworms, grain, rodents, trash
- **Relative:** Terns, skimmers

**Description:** 105 to 117 cm wingspan, pale gray back, breeding adults have black band across short yellow bill, yellow legs



## Sheath Tunicate - Invasive

- **Genus species:** *Botrylloides violaceus*
- **Phylum:** Chordata
- **Habitat:** Low intertidal, fouling on rocks, seaweed, and mollusk shells
- **Food:** Plankton (filter feeder)
- **Relative:** Sea squirts

**Description:** Thick squishy film covering rocks, seaweed etc. Colors include tan, orange, red, purple. The sheath consists of a colony of many individuals with specialized roles such as feeding, defense and reproduction.



# Intertidal Organism Guide



## Dulse

- **Genus species:** *Palmaria palmata*
  - **Phylum:** Rhodophyta (Red algae)
  - **Habitat:** Low intertidal
  - **Food:** Autotrophic
  - **Relative:** Irish moss, *Hindenbrandia*
- Description:** Thin sheet-like blades extend in red, palm shaped fan from a thin stipe and holdfast, which adheres the seaweed to the rocks.



## Irish Moss

- **Genus species:** *Chondrus crispus*
  - **Phylum:** Rhodophyta (Red algae)
  - **Habitat:** Low intertidal to subtidal
  - **Food:** Autotrophic
  - **Relative:** Dulse, Filamentous red algae
- Description:** Thick rubbery blades, branching near the base and branching again at the tips. Color is reddish brown most of the year but becomes sun-beached greenish-yellow in the summer.



## False Irish Moss

- **Genus species:** *Mastocarpus stellatus*
  - **Phylum:** Rhodophyta (Red algae)
  - **Habitat:** Low intertidal to subtidal
  - **Food:** Autotrophic
  - **Relative:** Irish moss, Coralline algae
- Description:** Thick rubbery blades. Similar in color and texture to Irish Moss but differentiated by small bumps on blades near the tips.

# Intertidal Organism Guide



## Coralline Algae

- **Genus species:** *Corallina officinalis*
  - **Phylum:** Rhodophyta (Red algae)
  - **Habitat:** Low intertidal to subtidal
  - **Food:** Autotrophic
  - **Relative:** Irish moss, *Hindenbrandia*
- Description:** Thick, pink branches fortified with calcium carbonate. Distasteful to herbivores due to tough tissue.



## Filamentous Red Algae - Invasive

- **Genus species:** *Various*
  - **Phylum:** Rhodophyta (Red algae)
  - **Habitat:** Low tidepools and subtidal.
  - **Food:** Autotrophic
  - **Relative:** Irish moss, Red Stain Algae
- Description:** Thin, feathery, hair-like branches extending from a thicker mid-rib and holdfast.



## Red Stain Algae

- **Genus species:** *Hildenbrandia rubra*
  - **Phylum:** Rhodophyta (Red algae)
  - **Habitat:** Low intertidal to subtidal
  - **Food:** Autotrophic
  - **Relative:** Irish moss, *Hindenbrandia*
- Description:** Thin, dark red film growing on rocks. Scrape a fingernail on the rock to distinguish bare rock from a crusting alga.



# Intertidal Organism Guide



## Knotted Wrack

- **Genus species:** *Ascophyllum nodosum*
  - **Phylum:** Heterokontophyta (Brown algae) •
  - Habitat:** Low intertidal to subtidal
  - **Food:** Autotrophic
  - **Relative:** Irish moss, *Hindenbrandia*
- Description:** Thick, long, greenish-brown strands with yellow spotted reproductive receptacles and air-bladders in a row down the blade. Known as a “Foundation Species” because it forms a dense canopy in the mid intertidal that provides a habitat for invertebrates and other seaweed.



## Rockweed

- **Genus species:** *Fucus vesiculosus*
  - **Phylum:** Heterokontophyta (Brown algae) •
  - Habitat:** Middle intertidal
  - **Food:** Autotrophic
  - **Relative:** Kelp, Knotted wrack
- Description:** Thick, flat branches with paired, adjacent, circular air bladders. Foundation species similar to Bladder Wrack.



## Common Kelp

- **Genus species:** *Laminaria saccharina*
  - **Phylum:** Heterokontophyta (Brown algae) •
  - Habitat:** Low intertidal to subtidal
  - **Food:** Autotrophic
  - **Relative:** Rockweed, Brown crust
- Description:** Thick, leathery brown sheet. Grows to 10 cm in the intertidal and up to 1 meter subtidally. Reproductive individuals have thick midrib in center of blade.

# Intertidal Organism Guide



## Brown Crust

- **Genus species:** *Ralfsia verrucosa*
  - **Phylum:** Heterokontophyta (Brown algae)
  - **Habitat:** Low intertidal to subtidal
  - **Food:** Autotrophic
  - **Relative:** Rockweed, Knotted wrack
- Description:** Thick, brownish-black crust covering the rock. Forms circular or half-moon disks that overlap resembling roof shingles.



## Sea Lettuce

- **Genus species:** *Ulva lactuca*
  - **Phylum:** Chlorophyta (Green algae)
  - **Habitat:** Tidepools, seasonally
  - **Food:** Autotrophic
  - **Relative:** Dead Man's Fingers, Terrestrial plants
- Description:** Thin, green, sheet-like blades growing in dense clumps in tidepools and associated with mussel beds. Seasonal, appears in the intertidal in spring and fall associated with fluctuations in nutrient availability.



## Dead Man's Fingers - Invasive

- **Genus species:** *Codium fragile subsp. tomentosoides*
  - **Phylum:** Chlorophyta (Green algae)
  - **Habitat:** Tidepools, subtidal
  - **Food:** Autotrophic
  - **Relative:** Gutweed, Terrestrial plants
- Description:** Thick, squishy, dark green branches. Unique unicellular morphology allows seaweed to heal quickly following damage. Sometimes called "Oyster Thief" because it attaches to oysters and carries them away.

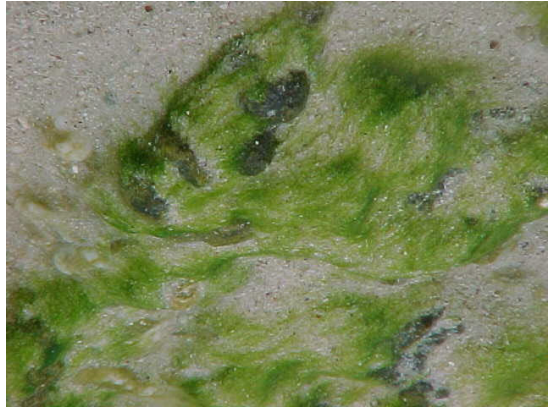


## Gut Weed

- **Genus species:** *Ulva intestinalis*
  - **Phylum:** Chlorophyta (Green algae)
  - **Habitat:** High tidepools
  - **Food:** Autotrophic
  - **Relative:** Filamentous Green Algae, Terrestrial plants
- Description:** Thin, green, tubes growing high tidepools.



# Intertidal Organism Guide



## Filamentous Green Algae

- **Genus species:** *Various*
  - **Phylum:** Chlorophyta (Green algae)
  - **Habitat:** Tidepools
  - **Food:** Autotrophic
  - **Relative:** Sea lettuce, Terrestrial plants
- Description:** Thin, green, hair-like strands growing in dense clumps in tidepools