

Oyster Drill

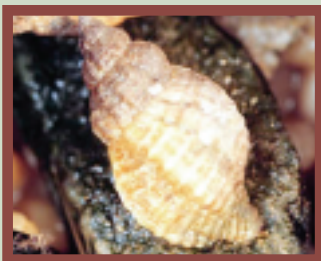
Urosalpinx cinerea

Habitat: Intertidal to subtidal depths of 50', amongst rocks or shells, often on the undersides of structures

Typical Prey: Feed primarily on barnacles and oysters but also prey on other bivalves (mussels, quahogs, etc.).

Forensic Clues: Straight, small hole drilled into the prey's shell. Lay small, vase-shaped egg cases.

Notes: Though native to our region, oyster drills have been accidentally introduced around the world, including west coast U.S. and Europe.



Bowdoin College

Starfish, a.k.a., Sea star

Asterias forbesi and *Asterias vulgaris*

Habitat: Intertidal to subtidal depths of 2,000', common on rocks or pilings but also found on soft bottom

Typical Prey: Feed primarily on barnacles, oysters and other bivalve shellfish

Forensic Clues: Leave gaped open shells with no signs of forced entry

Notes: Starfish force open their prey, insert their stomach into the shellfish, and eat them in their shell.



eNature.com

Oyster Flatworm

Stylochus ellipticus

Habitat: Common amongst oysters or barnacles; also found under rocks in shallow water

Typical Prey: Feed primarily on oysters and barnacles

Forensic Clues: Leave gaped open shells with no signs of forced entry

Notes: This worm slides into the open shell of its prey and eats the animal in its own shell. Very difficult to detect.



www.stlusa

Milky Ribbon Worm

Cerebratulus lacteus

Habitat: Intertidal, typically found under stones or buried in sandy or muddy bottom

Typical Prey: Known to prey on soft-shell clams and razor clams; may also consume quahogs

Forensic Clues: Leave gaped, open shells with no signs of forced entry, but often leave meat in the shell

Notes: This worm injects its tooth-like proboscis into its prey and digests the animal in its shell.



eNature.com

Vertebrates

Cownose Ray

Rhinoptera bonasus

Habitat: Often observed in areas with sandy or soft bottom

Typical Prey: Known to prey on variety of shellfish, especially quahogs

Forensic Clues: Leave 2-3' wide feeding depressions with shell fragments

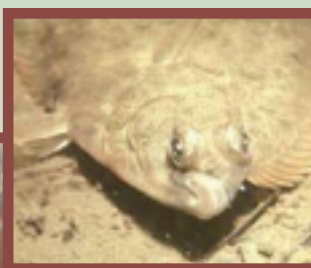


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Flounder, Drum, Northern Puffer, Tautog

Typical Prey: Feed on all shellfish

Forensic Clues: Do not usually consume the entire animal; more typically nip at siphons, reducing growth

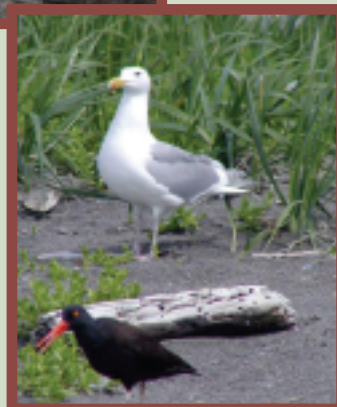
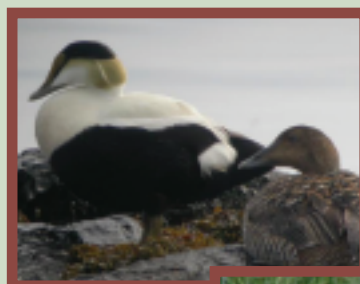


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Eider Ducks, Gulls, Oyster Catchers

Typical Prey: Eiders prey on small shellfish, while gulls gather larger shellfish which they open by dropping them on hard surfaces; oyster catchers break open shellfish with their beaks.

Forensic Clues: Waterfowl hunt for shellfish by 'puddling': tamping their webbed feet on intertidal beds and bringing shellfish to the surface. Look for small, irregular depressions. Birds also leave droppings.



Predators ... Not!

Mud Shrimp: The adult shrimp resemble juvenile lobsters but do not eat shellfish



Mud snail: These snails, also called Mud Dog Whelks, are usually found on soft, muddy bottoms and are scavengers, not predators



Periwinkle: These rounded snails are usually found grazing algae off hard surfaces and do not pose a threat to shellfish



www.theseashore.org



PREDATORS of Concern to New England Shellfish Growers



Woods Hole Sea Grant
Woods Hole Oceanographic Institution
MS #2, 193 Oyster Pond Rd.
Woods Hole, MA 02543-1525
Ph. (508) 289-2398
www.whoi.edu/seagrant



Cape Cod Cooperative Extension
P.O. Box 367
Barnstable, MA 02630-0367
Ph. (508) 375-6849
www.capecodextension.org

Shellfish Predators

If you are a shellfish grower, harvester, or resource manager, you are well aware that shellfish predators are more than just a nuisance—they are competition! The Woods Hole Sea Grant Program and the Cape Cod Cooperative Extension Service have teamed up to provide you with information about common shellfish predators. This guide provides predator names and identification tips—including forensic clues that will help you identify the culprit, even if you can't catch it in the act—and describes which predators prey on our local shellfish species. It also includes information about organisms that are often mistaken for predators but are, in fact, innocent!

With information about your problem predator(s), you can begin to find a solution, such as exclusion devices, alternative growing techniques, siting and planting techniques, and control measures. If you have any questions about the information provided in *Predators of Concern to New England Shellfish Growers*, or if you would like more information about solutions, contact your local extension agent.

Invertebrates

Green Crab

Carcinus maenas
Habitat: Intertidal to shallow subtidal, soft bottom and rocky substrates
Typical Prey: Very broad diet, but preys heavily on shellfish, especially hard clams (quahogs) and soft shell clams; while hard clams over 20 mm in shell length are relatively safe from most green crabs, even adult soft shell clams are vulnerable to green crabs.
Forensic Clues: Typically green crabs chip away at the edges of the shellfish; hard clams are often crushed entirely or broken on one valve; soft shell clams are often chipped open on both valves or crushed entirely.
Notes: Native to Europe, green crabs were first recorded on the U.S. east coast in the early 1800s



Lady Crab (a.k.a., Calico Crab)

Ovalipes ocellatus
Habitat: Intertidal to ~30', primarily on sandy bottom
Typical Prey: Preys heavily on shellfish
Forensic Clues: Chipped edges or crushed shells
Notes: These very aggressive swimming crabs do not typically appear in traps.



E.R. Deglinger, Color-Pic, Inc.

Blue Crab

Callinectes sapidus
Habitat: Intertidal to shallow subtidal, soft bottom and rocky substrates
Typical Prey: Preys heavily on shellfish, including oysters, hard clams and soft shell clams
Forensic Clues: Chipped edges or crushed shells
Notes: These crabs can swim and are very aggressive. They do respond to traps and are a major commercial species in many parts of the country.



Spider Crab

Libinia dubia and *L. emarginata*
Habitat: Shallow subtidal to depths of 160'
Typical Prey: Typically eat very small fouling organisms and small bivalves. Larger individuals have been observed eating oysters by inserting a leg into the open shell.
Forensic Clues: Chipped shells
Notes: Can be extremely abundant



Rock Crab

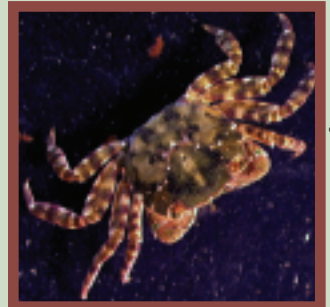
Cancer irroratus
Habitat: Shallow subtidal to over 2,500' deep, on all bottom types
Typical Prey: Very broad diet, including shellfish
Forensic Clues: Chipped edges or crushed shells
Notes: Typically juveniles are found closer to shore.



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Asian Shore Crab

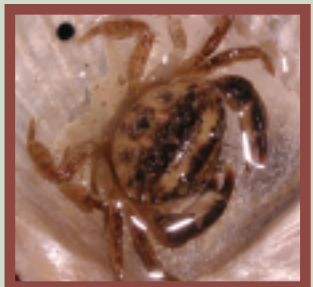
Hemigrapsus sanguineus
Habitat: Intertidal to shallow subtidal, most often found amongst rocks or other structures
Typical Prey: A voracious omnivore, this crab's diet consists largely of seaweed. These crabs eat a variety of intertidal organisms (mussels, barnacles, juvenile crabs, etc.)
Forensic Clues: Chipped shells
Notes: Native to southeast Asia, this crab can be extremely abundant and is displacing green crabs from some rocky intertidal shores.



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Mud Crab

Rhithropanopeus harrisi and various *Panopeus* spp.
Habitat: Intertidal to subtidal depths of 20'+, commonly found living in and around rocks, oyster beds, and other structures
Typical Prey: Typically eat very small fouling organisms and small bivalves. Can be important predators of young clams and oysters.
Forensic Clues: Chipped or crushed shells
Notes: These small crabs (approx. 1 in.) have powerful claws and can crush small (to 1/2-inch) hard clams.



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Horseshoe Crab

Limulus polyphemus
Habitat: Intertidal to subtidal depths of 75'
Typical Prey: Typically eat very small bivalves, and can be important predators of very young soft-shell clams.
Forensic Clues: Leave distinctive feeding pits



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Whelk

Busycon carica and *Busycon canaliculatum*
Habitat: Lower intertidal to subtidal depths of 60'
Typical Prey: Feed mainly on bivalve shellfish, such as quahogs. Unlike most crabs, can prey on adult clams.
Forensic Clues: Heavy chipping along a shell edge, often with little to no damage to the other shell. Lay distinctive leafy egg cases.
Notes: Whelks use the hard part of their foot to hammer away at the edge of the clam shell, until they break in and devour the clam. They are often buried at low tide.



www.andrewhartz.com



Moon Snail

Euspira heros
Habitat: Lower intertidal to shallow subtidal, on muddy bottom
Typical Prey: Feed mainly on bivalve shellfish, such as quahogs and soft-shell clams, but can also prey on other gastropods. Like whelks, can prey on adult clams.
Forensic Clues: Beveled hole drilled into the prey's shell, often near the hinge. Lay distinctive sand collar egg cases.
Notes: They are often buried at low tide.



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