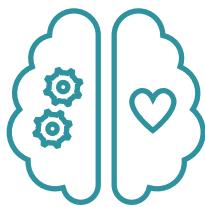


# Animals that live in Eelgrass meadows

Set of Infographics

# Brooding Sea Anemone

*Epiactis prolifera*



## Interesting Facts

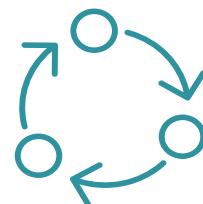
Predators include the common grey nudibranch, *Aeolidia papillosa* and leather star, *Dermasterias imbricata*.

The brooding sea anemone can also move freely, unlike some other sea anemones which stay attached in one place for the rest of their adult life.



## Identification

This sea anemone is known to have young brooding sea anemones attached to its column. Their column is striped, smooth, and is usually wider across than it is tall. The brooding sea anemone gets up to 5cm in diameter. Their oral disc has white radiating lines from the mouth.



## Reproduction

Cross-fertilization and some self-fertilization also occurs. Eggs are fertilized inside, then expelled as a mass of eggs and mucus from the mouth onto the oral disk. Eggs are moved down to the column where they attach and develop, bypassing the free-swimming planula stage that facilitates dispersal in other sea anemones. The young live on mother's column digesting yolk, then catching prey until at least 3 months old and 4 mm diameter, then crawl off.



## Habitat

On and under rocks, algae, and eelgrass from outer rocky coasts and in bays



## Diet

Small crustaceans

## References:

<https://www.eopugetsound.org/species/epiactis-prolifera#Reproduction>

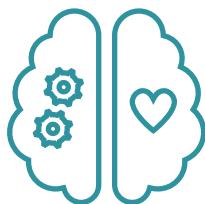
<http://marinespecies.org/aphia.php?p=taxdetails&id=283435#links>

[https://inverts.wallawalla.edu/Cnidaria/Class-Anthozoa/Subclass\\_Zoantharia/OrderActiniaria/Epiactis\\_prolifera.html](https://inverts.wallawalla.edu/Cnidaria/Class-Anthozoa/Subclass_Zoantharia/OrderActiniaria/Epiactis_prolifera.html)

Photo credit: Brocken Inaglory

# Clinging Jellyfish

*Gonionemus vertens*



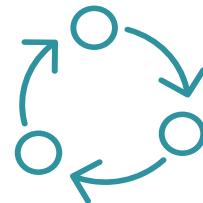
## Interesting Facts

The clinging jellyfish has adhesive pads on its tentacles to stick onto eelgrass.



## Identification

They are a small (1inch) jellyfish that is bell-shaped (usually just slightly broader than tall) and has about 60-80 unbranched tentacles evenly spaced around the margin of the bell. It is mostly transparent except for ruffled orange, red, violet (in females), or yellow brown (in males) gonads in a clearly visible X shape. The tentacles have large rings of nematocysts around them.



## Reproduction

Clinging jellyfish male and female reproductive organs are in separate individuals (dioecious). Once an egg is fertilized, the next life stage is called planula and attaches onto substrate. It grows into a polyp which has tentacles and feeds. The polyp buds off and the final stage is called a medusa, which grows into a mature jellyfish.



## Habitat

Dense eelgrass beds and seaweeds in sheltered shallow bays and estuaries



## Diet

Zooplankton, small crustaceans, copepods

## References:

[https://inverts.wallawalla.edu/Cnidaria/Classifications-Hydrozoa/Hydromedusae/Gonionemus\\_verdens.html](https://inverts.wallawalla.edu/Cnidaria/Classifications-Hydrozoa/Hydromedusae/Gonionemus_verdens.html)

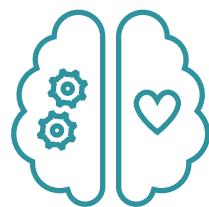
<https://www.nj.gov/dep/docs/clinging-jellyfish-factsheet.pdf>

<https://www.cabi.org/isc/datasheet/109138#tosummaryOfInvasiveness>

Photo credit: vichigh marine

# Stalked Jellyfish

*Haliclystus sp.*



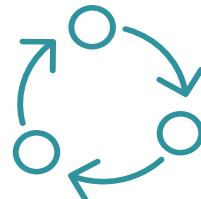
## Interesting Facts

If one becomes detached it clings to the substrate with their tentacles until the disk can reattach. It is not a good swimmer.



## Identification

The stalked jellyfish is a small (up to 2.5 cm), sessile and solitary jellyfish in the cup-like polyp form as an adult. It has a stalk which attaches to kelp or eelgrass usually, and 8 arms branch out that each have a cluster of about 50 tentacles. Each of the tentacles have a knob at the tip.



## Reproduction

Stalked jellyfish male and female reproductive organs are in separate individuals (dioecious). Spawning takes place in the summer in the San Juans, producing tiny 35 micron eggs. Fertilized eggs develop into creeping, non-ciliated, worm like larva which settle after a few days and develop their first nematocysts within a week.



## Habitat

Blades of kelp or eelgrass



## Diet

Small crustaceans



## References:

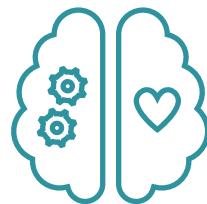
[https://inverts.wallawalla.edu/Cnidaria/Class-Scyphozoa/Order-Stauromedusae/Haliclystus\\_stegnegeri.html](https://inverts.wallawalla.edu/Cnidaria/Class-Scyphozoa/Order-Stauromedusae/Haliclystus_stegnegeri.html)

[https://inverts.wallawalla.edu/Cnidaria/Class-Scyphozoa/Order-Stauromedusae/Scyphozoa\\_Stauromedusae\\_Key.html](https://inverts.wallawalla.edu/Cnidaria/Class-Scyphozoa/Order-Stauromedusae/Scyphozoa_Stauromedusae_Key.html)

[Photo credit: HE Westlake](#)

# Bubble Snail

*Haminoea vesicular*



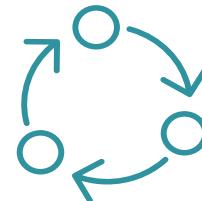
## Interesting Facts

Bubble snails can live in high densities and can create masses of clear, viscous, slimy mucus.



## Identification

The Bubble snail has a delicate and smooth, oval shell (<15mm long) which is too small for its entire body to retract inside. The shell is partially covered by its foot.



## Reproduction

Bubble snails lay numerous tiny eggs which look like yellow ribbons covered in mucus, which are 10 mm wide and up to 20 cm long.



## Habitat

On eelgrass and algae in mud flats and sandy-mud areas of bays



## Diet

Epiphytes such as diatoms on eelgrass



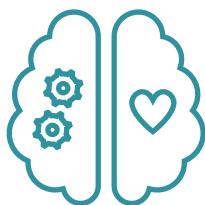
## References:

[https://inverts.wallawalla.edu/Mollusca/Gastropoda/Opisthobranchia/Order\\_Cephalaspidea/Haminoea\\_%20vesicula.html](https://inverts.wallawalla.edu/Mollusca/Gastropoda/Opisthobranchia/Order_Cephalaspidea/Haminoea_%20vesicula.html)

Photo credit: Ken-ichi Ueda

# Opalescent Nudibranch

*Hermissenda crassicornis*



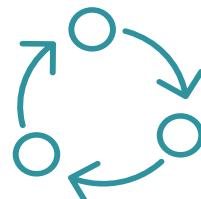
## Interesting Facts

They are not harmed by sea anemone stings. In fact, they can absorb an anemone's stinging cells to be used for their own defenses against predation.



## Identification

The body is covered with soft, feathery projections called cerrata which are bright orange with white tips. Down the back are blueish white lines.



## Reproduction

An opalescent nudibranch is monoeious, possessing both male and female organs. Most mate and lay up to a million eggs. The egg develops into a larval stage called a veliger that floats around on the ocean floor until environmental conditions cause the veliger to settle and develop into adult form.



## Habitat

Tidepools, on rocks, pier pilings, and mudflats



## Diet

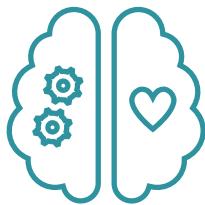
Mollusk eggs, detritus, anemones, hydroids, sponges, corals, other invertebrates, and sometimes cannibalistic

## References:

- <https://inverts.wallawalla.edu/Mollusca/Gastropoda/Opisthobranchia/Nudibranchia/Aeolidacea/Hermissenda%20crassicornis.htm>
- <https://www.eopugetsound.org/species/hermissenda-crassicornis>

# Weathervane Scallop

*Patinopecten caurinus*



## Interesting Facts

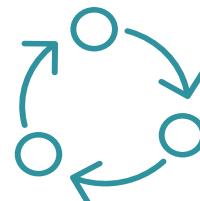
Scallops are aged by counting the rings on their shell which are formed by alternating periods of slow and fast growth associated with seasonal changes in temperature and food availability.

The two scallop shells are not identical; scallops lie on the rounder bottom shell, while the top shell is relatively flat.



## Identification

The Weathervane scallop is the largest of all scallops (10 cm at maturity). It has two shells with ridges on them that radiate from the hinge. When slightly opened, their eyes line the inside.



## Habitat

Mud, sand, or gravel substrate

## Diet



Small particles of algae and plankton



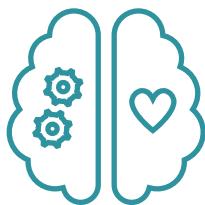
## References:

<https://www.adfg.alaska.gov/index.cfm?adff=weathervanescallop.main>

Photo credit: Hansmuller

# Long Rayed Brittle Star

*Amphiodia occidentalis*



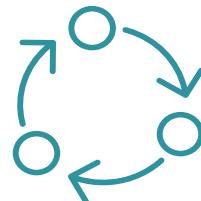
## Interesting Facts

Like all sea stars, the arms can regenerate if it's broken off.



## Identification

The Long Rayed Brittle Star has five long, thin arms that extend from a central disk. On the arms are blunt, flattened spines. The arms are articulate and flexible. They are used to move, rather than tube feet like other sea stars.



## Reproduction

Eggs and sperm are released into the water to fertilize. The larva is immobile until it metamorphizes into a young brittle star with arms. Their lifespan is ~ 5 years.



## Habitat

Intertidal and subtidal muddy areas



## Diet

Zooplankton



## References:

<http://californiatidepools.com/sea-stars/>  
[https://inverts.wallawalla.edu/Echinoderma ta/Class%20Ophiuroidea/Amphiodia\\_urta.html](https://inverts.wallawalla.edu/Echinoderma ta/Class%20Ophiuroidea/Amphiodia_urta.html)

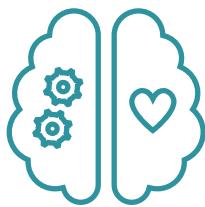
<https://sci-hub.tw/10.1111/j.1744-7410.2006.00049.x>

<http://nathistoc.bio.uci.edu/Echinos/Amphiodia.htm>

Photo credit: kueda

# Dungeness Crab

*Metacarcinus magister*



## Interesting Facts

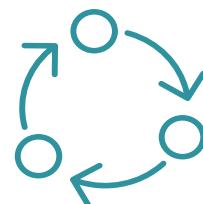
On average, males will move and cover more ground in an hour than females.

Older crabs will have more epibionts living on them such as barnacles, algae, bryozoans, hydrozoans, sponges, tunicates, and tube-dwelling polychaete worms.



## Identification

The carapace is oval shaped with 10 spines or “teeth” along the anterior (front) edges. The 10th tooth is at the widest point of the carapace. The claws have white tips and spiny ridges.



## Reproduction

Dungeness crab male and female reproductive organs are in separate individuals (dioecious). A male's abdomen is lighthouse shaped and a female's abdomen is wider. A Dungeness crab males deposit sperm into the female when her shell is soft, which is only after a molt. The eggs hatch into planktonic larvae. There are six stages of development, including four Zoea stages, one Megalopa, and then juvenile, before they turn into an adult.



## Habitat

Muddy-sand subtidal area & eelgrass beds



## Diet

Small clams, oysters, fish, shrimp, and worms



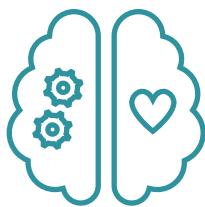
## References:

[https://inverts.wallawalla.edu/Arthropoda/Crustacea/Malacostraca/Eumalacostraca/Eucarida/Decapoda/Brachyura/Family Cancridae/Cancer magister.html#Cheliped color and ridges](https://inverts.wallawalla.edu/Arthropoda/Crustacea/Malacostraca/Eumalacostraca/Eucarida/Decapoda/Brachyura/Family_Cancridae/Cancer_magister.html#Cheliped_color_and_ridges)

<https://www.eopugetsound.org/species/cancer-magister#Reproduction>

# Eelgrass Isopod

*Pentidotea resecata*



## Interesting Facts

It is thought that the green and the brown eelgrass isopods are different subspecies or races.



## Identification

The body is flattened dorso-ventrally, has segments, is up to 4-5 cm and its tail is concave. Depending on the habitat the isopod is living on, its color will match its surrounding. Those that live on eelgrass are green and those that live on kelp are brown.



## Reproduction

Eelgrass isopod male and female reproductive organs are in separate individuals (dioecious). Males internally fertilize females and females lay eggs. Eggs hatch into smaller versions of adults and molt until adult size.



## Habitat

Eelgrass blades and macroalgae (such as *Macrocystis* and *Pelagophycus*)



## Diet

Brown algae and eelgrass

## References:

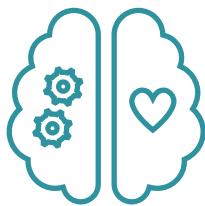
[https://inverts.wallawalla.edu/Arthropoda/Crustacea/Malacostraca/Eumalacostraca/Percarida/Isopoda/Valvifera/Family-Idoteidae/Idotea\\_resecata.html](https://inverts.wallawalla.edu/Arthropoda/Crustacea/Malacostraca/Eumalacostraca/Percarida/Isopoda/Valvifera/Family-Idoteidae/Idotea_resecata.html)

<https://www.centralcoastbiodiversity.org/eelgrass-isopod-bull-idotea-resecata.html>

Photo credit: NaturaScape

# Bay Pipefish

*Syngnathus leptorhynchus*



## Interesting Facts

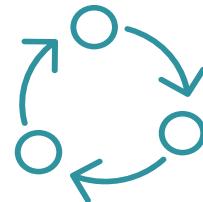
The male carries the eggs in a pouch beneath its tail.

The Bay Pipefish is closely related to the Seahorse.



## Identification

The body is long, narrow and green-blue. It mimics a swaying blade of eelgrass. In place of scales, jointed, bonelike rings encircle its body. It steers by moving its head from side to side.



## Reproduction

A female wraps herself around a male in a rigid vertical S position. Eggs are fertilized and kept in the brood pouch of the male. Eggs are hatched within the male.



## Habitat

Eelgrass of bays and estuaries, shallow offshore waters



Tiny crustaceans

## Diet



## References:

<https://www.eopugetsound.org/species/syngnathus-leptorhynchus>

<https://www.montereybayaquarium.org/animals/animals-a-to-z/bay-pipefish>

Photo credit: Tewy

# Coho Salmon

*Oncorhynchus kisutch*



Juvenile Coho



## Interesting Facts

For tribes in the Pacific Northwest, salmon play an integral part of their religion, culture, and food. Celebrations by the tribes during the annual salmon return assure the renewal and continuation of humans and all other life.

Salmon are indicator species. As water becomes degraded and fish populations decline, so too will the elk, deer, roots, berries and medicines that sustain the tribes.



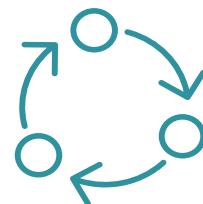
## Identification

As a juvenile, Coho have vertical parr marks along their body. As an adult, the dorsal (top) surface is a metallic blue and the sides are silver. Black spots appear on the back and upper lobe of the tail fin. While spawning, males' sides turn bright red and their jaws become hooked.



## Habitat

Eggs are laid in forested freshwater rivers. Smolts live in estuaries and seek refuge in eelgrass beds. Adults spend most of their life at sea.



## Reproduction

Females clear a nest of gravel to deposit her eggs, then the male will fertilize the eggs. The salmon hatches out of an egg as a fry with a yolk sac for nutrients. The next stage is a parr which begins to feed on insects and cannot tolerate saltwater. The next life stage is a smolt and it transitions from freshwater to salt water in estuaries before finally spending its adult life in the ocean. Coho come back to their natal rivers to spawn.



As a young smolt living in freshwater and estuaries, a Coho Salmon eats insects and smaller fish. As an adult in the ocean, a Coho Salmon eats fish, such as herring, and squid

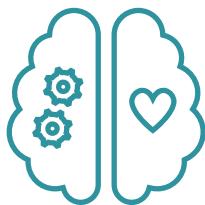
## References

<https://www.eopugetsound.org/species/oncorhynchus-kisutch>

<https://www.critfc.org/salmon-culture/tribal-salmon-culture/>

# Crescent Gunnel

*Pholis laeta*



## Interesting Facts

The Crescent Gunnel breathes air when they're out of water.



## Identification

Their bodies are eel-like and resemble ribbon-like blades of eelgrass or kelp. Their top fin is long and spiny. Max size is 25 cm.



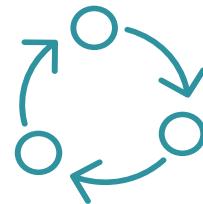
## Habitat

Intertidal areas, in tide pools or under rocks protected by seaweeds



## Diet

Crustaceans & marine worms



## Reproduction

Crescent gunnel male and female reproductive organs are in separate individuals (dioecious). Females lay eggs and males fertilize the eggs externally.

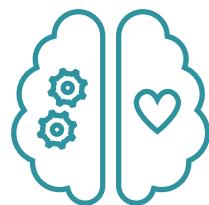
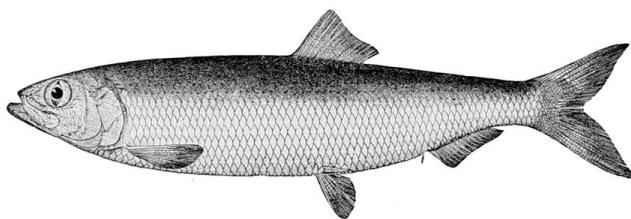
## References:

<https://www.eopugetsound.org/species/pholis-laeta>

Photo credit: [kathleenreed](#)

# Pacific Herring

*Clupea pallasii pallasii*



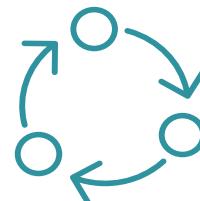
## Interesting Facts

There is a population of Pacific Herring that is genetically distinct from others at Cherry Point, WA. The herring population at Cherry Point have been in decline since 1973. Conservation efforts by the Washington Department of Natural Resources through the Aquatic Reserves Program are being made to study, protect, and recover the species to a viable population.



## Identification

They have dark blue to olive backs and silver sides and belly. There's one short dorsal fin in the middle of the back, a deeply forked tail, and no adipose fin. In the Puget Sound, they grow up to 26 cm long.



## Reproduction

Adult Pacific Herring migrate into estuaries to breed once per year. Pacific Herring spawn along shorelines in intertidal and shallow subtidal zones. They deposit their eggs on kelp, eelgrass, and other available structures. After spawning, herring return to their summer feeding areas. Larvae remain in nearshore waters to feed and grow. After two to three months, the larvae metamorphose into juveniles. They reach maturity after 2-3 years.



## Habitat

Coastal waters, bays, and estuaries



## Diet

Phytoplankton, zooplankton, crustaceans, and small fishes

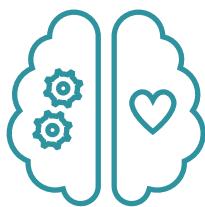
## References:

<https://www.fisheries.noaa.gov/species/pacific-herring>

[https://www.dnr.wa.gov/publications/aqr\\_r ESV\\_cp\\_boundary\\_proposal\\_final.pdf](https://www.dnr.wa.gov/publications/aqr_r ESV_cp_boundary_proposal_final.pdf)

# Pacific Spiny Lumpsuckers

*Eumicrotremus orbis*



## Interesting Facts

Pacific Spiny Lumpsuckers are solitary by nature and are usually found alone.

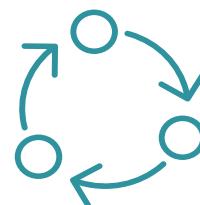
They are inefficient swimmers because of their spherical body, small fins, and lack of gas bladder.

They rely on camouflage to go undetected from predators.



## Identification

The body (Max length 127 mm) is spherical, covered with spikes, and has a sucking disk beneath. The body color can indicate gender; brownish orange (males) or green (females).



## Reproduction

The females lay large, spherical, orange colored eggs in sheltered, deep depressions in rocks and are fertilized by the males. The male is the caregiver of the eggs until they hatch. He attaches himself to the rocky surface surrounding the eggs where he aerates the eggs by waving water over them with his fins to supply them with oxygen. He also protects them from predators such as crabs, sea stars and small fishes.



## Habitat

Kelp & eelgrass beds



## Diet

Crustaceans, polychaete worms, and mollusks



## References:

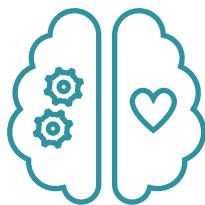
<https://repository.library.noaa.gov/view/noaa/4898>

[http://www.aquariumofpacific.org/onlinelearningcenter/species/pacific\\_spiny\\_lumpsucker](http://www.aquariumofpacific.org/onlinelearningcenter/species/pacific_spiny_lumpsucker)

[Photo credit: Nirupam Nigam](#)

# Tubesnout

*Aulorhynchus flavidus*



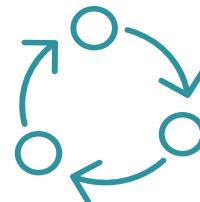
## Interesting Facts

Breeding males have a bright red and phosphorescent snout.



## Identification

The Tubesnout is a skinny and long fish that measures up to 18 cm. It has small dorsal spines, the dorsal and anal fin is set well towards the back, the tail fin is forked, and its snout is long.



## Reproduction

Adult Pacific Herring migrate into estuaries to breed once per year. Pacific Herring spawn along shorelines in intertidal and shallow subtidal zones. They deposit their eggs on kelp, eelgrass, and other available structures. After spawning, herring return to their summer feeding areas. Larvae remain in nearshore waters to feed and grow. After two to three months, the larvae metamorphose into juveniles. They reach maturity after 2-3 years.



## Habitat

Kelp beds, eelgrass, rocky areas, and sandy bottoms



## Diet

Phytoplankton, zooplankton, crustaceans, and small fishes

## References:

<https://www.fishbase.de/summary/3270>

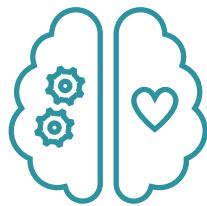
<https://www.britannica.com/animal/tubesnout>

<https://www.centralcoastbiodiversity.org/tubesnout-bull-aulorhynchus-flavidus.html>

[Photo credit: Steve Lonhart](#)

# Shiner Perch

*Cymatogaster aggregata*



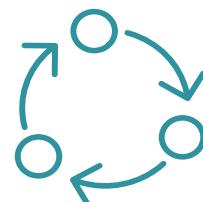
## Interesting Facts

Shiner perches can tolerate low salinity water.



## Identification

Its body is deep, oval shaped compressed from side-to-side with large scales. They are generally silvery with three vertical pale-yellow stripes. Breeding males turn dark gray to black.



## Reproduction

Males are mature at birth and females are mature shortly after birth. Males pursue females and mate with contact of their anal regions. Female shiner perches can store sperm from multiple males and give live birth to about 20-24 young per year. One female may give birth to multiple young from multiple fathers.



## Habitat

Eelgrass beds, below piers, and shallow water estuaries



## Diet

Copepods, various small crustaceans, mollusks, and algae



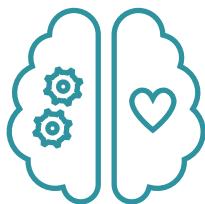
## References:

<https://www.eopugetsound.org/species/cymatogaster-aggregata>

Photo credit: Ross Robertson

# Great Blue Heron

*Ardea Herodias*



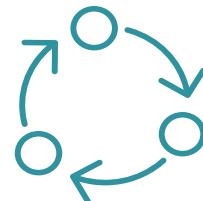
## Interesting Facts

Great blue herons are the largest heron in North America.



## Identification

The body is mostly blue-grey, with chestnut thighs, and a white cap over a black eye stripe that merges into long, black plumes. The neck, legs and wings are characteristically long, the tail is short, and the yellowish bill is thick, elongate and tapered



## Reproduction

Great Blue Herons nest in colonies, called 'rookeries'. They may nest either in trees, in bushes, or on the ground. Great blue herons generally have one mate per breeding season. Both great blue heron parents care for the young. The young herons are born helpless and rely on their parents for warmth, protection, and food.



## Habitat

Lakes, ponds, rivers, marshes, saltwater seacoasts, and swamps



## Diet

Fish, frogs, salamanders, lizards, snakes, young birds, small mammals, shrimp, crabs, crayfish, dragonflies, grasshoppers and many aquatic invertebrates

## References:

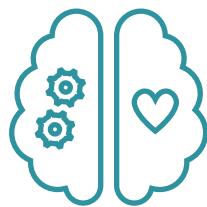
<https://www.eopugetsound.org/species/ardea-herodias>

[http://www.aquariumofpacific.org/onlinelearningcenter/species/great\\_blue\\_heron/](http://www.aquariumofpacific.org/onlinelearningcenter/species/great_blue_heron/)

Photo credit: Mike Baird

# Red-Breasted Merganser

*Mergus serrator*



## Interesting Facts

Most red-breasted merganser hatchlings do not survive through their first year. Up to 50% of hatchlings die because of exposure to cold weather, another 25% are preyed on.

Red-breasted merganser produce alarm calls that sound like "garr" or "grack."



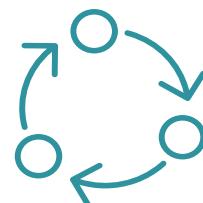
## Identification

Large diving ducks with a thin bright orange bill. They show a large white-wing patch in flight. Males have iridescent dark green heads with a shaggy double crest, a white neck and brown chest, gray and white sides. The female is dull gray on the body, with an orange-brown head with a shaggy crest.



## Habitat

Protected waters along the coasts, large inland lakes and rivers, shallow waters with eelgrass and other vegetation.



## Reproduction

Males display to females to attract them each breeding season in May and June. Females lay an average of 9.5 eggs in a nest and care for them until they leave the nest. The egg is incubated for 30 days before it hatches. A young fledgling leaves the nest after 60 days. Males are reproductively mature after 2-3 years and females are reproductively mature at 3 years.

## Diet

Small fishes (10 to 15 cm), crustaceans, amphibians, fish eggs, worms

## References:

[https://animaldiversity.org/accounts/Mergus\\_serrator/](https://animaldiversity.org/accounts/Mergus_serrator/)

[Photo credit: Keith Williams](#)