

# A Face Only A Mother Could Love

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Wolf eels - despite their name, are not true eels at all. Instead, they are a long, skinny fish! A key distinction is that wolf eels have pectoral fins behind their head, a characteristic of fish but not true eels. Belonging to the family Anarchichadidae (wolf fishes), wolf eels can be found along the Pacific coast of North America, from California to Alaska, along the east coast of Russia, and south to the Sea of Japan. They inhabit rocky crevices to make their dens, often competing with Giant Pacific octopuses. Here at the Ucluelet Aquarium, we have two juvenile wolf eels that the staff have come to love.

Young wolf eels have a beautiful red colouration, with bright orange and purple highlights. However, as they age, the bright colours dull. When males reach sexual maturity around five years old, they tend to turn a dark gray-blue and develop sagging, wrinkly faces. When females reach sexual maturity, they are typically a brown or deep red colour, and their faces don't become as wrinkly. Like leopards, killer whales, and other patterned animals, each individual has a unique pattern of dark spots and rings on their body. These spots allow us to identify different individuals. Wolf eels do not have scales like most other fish, as their scales are very small and embedded in their skin, giving them a leathery feel and appearance. They also have a gooey slime coating on their skin which has multiple benefits. It helps to protect them as they slip through narrow rocky passages and acts as part of their immune system. It suffocates pathogens and parasites when they try to enter through the fish's scales and protects any open wounds.

Wolf eels, on average, grow to be 6-7 feet long but can reach up to over 8 feet! Many of these creatures are as heavy as 88 pounds and can live up to 25 years. The wolf eel has one large dorsal fin that runs down the length of its body, supported by 250 small bones. Since wolf eels are vertebrates, they have a long spine extending from their skull to their tale. Wolf eels have cartilaginous skeletons, meaning that their skeletons are made of cartilage instead of bone tissue. This cartilage is sturdy but flexible, which allows them to maneuver their long bodies and squeeze through narrow crevices. If you have seen a wolf eel swim, you might have noticed that they cannot hover in the water. This is because they lack a swim bladder. A swim bladder is an internal organ that fills with gas to manage the fish's buoyancy. You might already know about swim bladders if you've ever caught rockfish. Instead of a swim bladder, they swim by making a big S-shape with their bodies, just like a snake moving along the ground. That is one big snake-like animal!

For many people, wolf eels appear 'scary' with their large square heads, big eyes, sharp teeth, and powerful jaws. The jaws have three rows of molars across the roof of their mouth and two rows of molars on the bottom jaw. They use their jaws to crush hard foods such as urchins, shellfish, and crabs and soft foods such as squid and fish. Adults usually hide their bodies in their dens, stick their heads out, and lunge at prey that swims by. Witnessing the wolf eels feed here at the aquarium, especially on sea urchins, is impressive. However, it is hard to watch as it looks like it would be super painful. The wolf eel grabs the urchin, bites it in half, and then consumes all of it, spines included! Thank goodness they have molars that run across the roof of their mouth!

Despite their fearsome appearance, wolf eels make great parents! Around the age of seven, the female will lay approximately 10,000 eggs at a time in her den. The eggs take between 13-16 weeks to mature and hatch. The female will coil around the eggs to protect them, and the male will curl around her as an added layer of protection. The female will occasionally massage the eggs as they develop, helping to circulate the water and supply them with oxygen. They are protective parents and take turns outside the den to feed, leaving one to stay on guard.

When the eggs hatch, the little 40 mm larvae float away in the currents, eating tiny animals, including copepods and other zooplankton. When the wolf eels are around four months old, they enter a free-swimming "pelagic" phase in the ocean's middle depths. As the juvenile wolf eels mature into young adults, they move to shallower water. Once they find a mate and a suitable den, they settle down, mate for life, and typically keep the same den as their home base.

What could eat an animal that is 8 feet long that lives inside rocks with a powerful jaw? Surprisingly, wolf eels have several natural predators in the wild. These predators include sharks, larger fish, and harbour seals. Like most organisms, young individuals are the most at risk for predation. Various predators will go after young wolf eels, and rockfish and kelp greenlings will eat unguarded eggs.

If threatened or provoked, wolf eels have been reported to inflict painful bites on humans. However, despite their looks, wolf eels are known to be gentle, slow-moving creatures that are often very curious and friendly to scuba divers. It is not uncommon for a wolf eel to approach divers and even get the occasional head scratch. Even though the two wolf eels here at the aquarium mainly stay in their den, they are extremely curious about their surroundings and occasionally come out to say hello. They are always captivating visitors with their unique looks and personalities. Visitors always love it when the wolf eels 'yawn'. Although it looks like they are very sleepy creatures, they are opening and closing their mouths to breathe by pumping water through their gills; the two openings behind their head.

Thankfully, the wolf eel populations are currently stable, as they aren't a very heavily targeted species. They are not considered commercially valuable; however, they can get caught in crab and fish traps. Like many other marine species, we need to keep their rocky habitat in good condition. We can help protect this habitat by limiting polluted runoff into the ocean, reducing construction on the water's edge, and trying to limit bycatch in fishing gear. Want to learn more about wolf eels? Stop by the Ucluelet Aquarium! We're open every day until November 30th, from 10am - 4pm.