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NORTHWEST WILDLIFE PRESERVATION SOCIETY

Horned Puffin

Fratercula corniculata



Photo Credit: Doug Sonerholm

By Kathryn MacDonald

Horned puffins (*Fratercula corniculata*) are a type of sea bird that are sometimes referred to as a sea parrots, due to their bright bill. The bird's feather plumage acts as a type of camouflage to hide it from predators. The bird commits to its mate and takes a parenting style that allows its chick to succeed or fail on its own, once it is capable to do so. Living in coastal and marine areas, the bird preys on seafood. A multi-talented bird, it can manoeuvre on land, in water, and in the air. Although the bird lives in fairly inaccessible areas to humans, there are many ways that humans put the species at risk through our impact on marine and coastal areas. But, there are also many things that we as humans can do to protect this species.

Characteristics

The horned puffin is a black and white bird with orange accents. It is black on its top feathers and at its throat, but has a white chest and underside. The horned puffin's black and white colouring provides counter shading for the bird, which allows it to blend in with darker water to protect it from predators from above, and with sunlit water to protect it from predators from below. It has a large head and is burly in its

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build, and looks similar to a duck. The puffin also has an orange bill with a red tip on the end, and orange legs and webbed feet, which have claws. With a white face and cheeks, a black horn extends out from its eyes (this is where its name originates from) and its face is rimmed with black that circles down to its neck. Its horns allow for the horned puffin to have a distinct appearance from its relative the tufted puffin, which lacks horns and has two tufts of yellow feathers instead.

Horned puffins range in appearance based on gender, age, and the seasons. Males are a bit larger and have slightly larger bills, which are brighter. Offspring have a face that is smoky black in colour, a smaller bill which is grayish-brown, and are blackish-brown on top, and brownish gray underneath. Offspring are also born with horns on top of their eyes. In winter, when the birds are not breeding, their appearance becomes more subdued, with a smaller bill, greyer feathers, and a darker face, and in winter they are not horned.

The horned puffin is fairly small. It is similar in size to a pigeon. It ranges in size from 35.6 - 38cm (14-15in), and weighs between 400-600g (0.9-1.3lbs).

Life Cycle

Mating occurs in monogamous pairs. When the puffins are about 3-5 years old, mating begins. In the summer months, puffins will come to shore from the open sea in order to mate and reproduce. This usually occurs in the morning or in the evening, and when the puffins are ready to mate, they will flick their head. Males will sometimes carry out a swimming routine, and propel themselves out of the water, and then raise their neck up in order to impress their mate. Both members of the pair will bow together or place their bills beside each other to signify each other as mates. Mating then usually occurs in the water, and the pair then mates for life.

Once mating has occurred, the pair works together to successfully reproduce. The pair will make a nest in a protected area in between boulders, or in a rock fracture. Both parents help to incubate the egg by protecting the egg under their wing and covering it with their body. The gestation period takes approximately 40 days. Nesting will then occur for the pair in the same place each year, and 1 egg is usually laid per year between mid-June and early July.

Once the gestation period is over, the chick hatches. Both parents help to care for the young. After 5-6 days after hatching, the chick will be able to moderate its own body temperature, allowing the parents to leave the nest and bring the chick food for the next 35 days. The puffin is able to carry fish in its bill and carry it to its nestlings. Remarkably, one puffin was seen carrying 65 fish in its bill! The chick mainly eats high caloric and fat rich foods, such as sand eels. Once 40 days have passed after hatching, at the end of breeding season, the parents leave the chick behind, and the colony returns to the open ocean. Eventually the chick gets hungry enough that it goes out into the open ocean, and then does not return to land for another 2 years. The lifespan of horned puffins is approximately 20 years or more.

Habitat

Horned puffins live in both marine and coastal environments. When they are not in breeding season, they are out at sea where there are larger amounts of the fish that they can feed on. But, during breeding season, they return to shore and live on marine islands, in sheltered waters, and on rock and cliff areas. They build their nests in these rocky coastal areas in rock crevices.

The puffins are found in the North Pacific. When breeding, they are mostly found on the coasts of Alaska, BC, and Siberia. When they are not breeding, they can also be found further south in their range in Japan, Hawaii, and California. Unfortunately there is insufficient information on changes to the bird's range over history due to the difficulty of studying and monitoring the bird in the terrain that it inhabits.

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Behaviour

The puffin's food source comes from the ocean. They eat mostly small fish, crustaceans, cephalopods, and polychaetes. It feeds by diving into the ocean to find food underwater. It can dive up to 24m (80ft) to catch food! The puffin catches food in its bill by hooking its prey between the spines on its tongue and the roof of its mouth.

Horned puffins are able to manoeuvre in the water, on land, and in the air. The bird is able to fly by either running on top of the water until it is able to get airborne, or by diving off a cliff to get airborne. However, the puffin is a much more accomplished swimmer. The bird "flies" under water by using its wings to propel itself, and its legs to move.

Usually horned puffins do not make noises, but in certain situations, they will. If they are threatened, they will make noise. They can produce a low pitched noise similar to a growl or a groan. When on the defensive, this sounds like "A-gaa-kah-kha-kha." Whereas, during head flicking at mating times, they make a sound like "op-op-op-op."

Living in colonies, they are able to work together to avoid predators. To get away from predators, the puffins can fly in a flight pattern resembling a wheel, so that it is more difficult for predators to narrow in on one individual.

Threats

The horned puffin plays a role as both prey and a predator in its local ecosystem. There are many species that prey on the horned puffin. Its predators include foxes, ravens, gulls, peregrine falcons and bald eagles.. Usually predation is not an extreme threat because their nesting areas are in hard to access locations. As a predator, its food source is becoming more uncertain. Dramatic declines in fish populations have occurred worldwide, affecting the food available to the horned puffin.

Overall, the horned puffin appears to have stable populations. Globally there are estimated to be more than 1,200,000 horned puffins. The IUCN lists the species as of "Least Concern," and in Canada the species is not listed by COSEWIC, or under SARA. But narrowing in on horned puffins in BC, the species is listed under the Red List, which includes species that are extirpated, endangered or threatened in BC.

There are many human threats facing the horned puffin. The birds have been killed for food and clothing, although currently this has a nominal effect on populations. Oil spills pose a threat to the birds when they are in the ocean in their non-breeding season. Coastal fisheries also pose a threat, specifically, Japanese gill-net fisheries in the North Pacific which have killed some of the birds. Habitat destruction also puts the species at risk. Furthermore, although this is more rare, if they are taken into captivity, horned puffins will not live as long as they do in the wild, especially chicks. Plastic waste in the ocean is another threat to the species that is often ignored. When puffins look for fish, they can mistake plastic in the ocean for food, and when plastic builds up in their stomach, this can pose a risk of starvation to the bird. Also, mercury, cadmium, PCBs and organochlorine that have been intentionally or non-intentionally leached into water sources, are a risk to horned puffins, and trace amounts of these substances have been found in their systems.

What We Can Do To Help:

- Buy seafood from sustainable sources.
- Support energy projects that are safe and will not pose risks of oil spills to wildlife.

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- Avoid buying products made from plastic.
- Reuse and recycle whenever possible.
- Don't litter when you are on land or on water. If you want to do more to reduce ocean pollution in particular, sign up for an event in your community that helps to cleanup shorelines.
- Buy products and food that are from organic sources. This reduces the amount of pesticides and other chemicals that can leach into water sources.

Other Interesting Facts

- The fate of horned puffins is not all doom and gloom. A major success story for the species is that driftnet fisheries used to be a lot more devastating to the horned puffins, killing tens of thousands of the birds, until the practice was mostly eradicated by the early 1990s.
- Horned puffins can breed in colonies with tufted puffins.
- Horned puffins have the ability to waterproof their feathers by stroking their bill on their oil gland, and then spreading that oil over their feathers.

Where & When to view the horned puffin:

If you are interested in viewing a horned puffin, look out for a wildlife tour to go on in the coastal areas of its range (during the summer months when they are breeding on land).

Bibliography

Web Resources:

BC Conservation Data Centre – a good introduction to the species' reproduction, habitat, nesting, diet, and status:

<http://a100.gov.bc.ca/pub/eswp/speciesSummary.do;jsessionid=ZWzhJT7KZCHpkvJINj7pBqvdsWYWL1L2vBJBvC2zvV32Xs8t5wK2!-351597226?id=15759>

Nature Serve Explorer – information on habitat, status, and threats:

<http://explorer.natureserve.org/servlet/NatureServe?searchName=Fratercula+corniculata>

BirdLife – information on population, threats, and diet:

<http://www.birdlife.org/datazone/speciesfactsheet.php?id=3322>

Cornell Lab of Ornithology, All About Birds – information on appearance, raising young, conservation history, and threats:

http://www.allaboutbirds.org/guide/Horned_Puffin/id

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NatureWorks – information on appearance, ability to catch food, mating, reproduction, raising young, and behaviour:

<http://www.nhptv.org/natureworks/hornedpuffin.htm>

Alaska Sea Life Centre – information on predators, life span, reproduction, and appearance of young:

<http://www.alaskasealife.org/New/visitors/?page=horned-puffin.php>

Animal Diversity Web – information on mating, raising young, behaviour, communication, predation, importance for humans, and threats:

http://animaldiversity.ummz.umich.edu/accounts/Fratercula_corniculata/

Aquarium of the Pacific – information on appearance, size, feeding, behaviour, and threats:

http://www.aquariumofpacific.org/onlinelearningcenter/species/horned_puffin1

Monterey Bay Aquarium – information on threats to the bird:

<http://www.montereybayaquarium.org/animal-guide/birds/horned-puffin>

National Park Service – information on escaping from predators and differences in appearance to similar birds:

<http://www.nps.gov/kefj/naturescience/puffins.htm>

Alaska Species System Summary Report – information on the status of the range of the species:

http://aknhp.uaa.alaska.edu/species_summary_reports/pdfs/435.pdf

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