

Section 2

Little Penguin Ecology

What's in a name?

Little Penguins (*Eudyptula minor*) are flightless seabirds. Their name is derived from the Greek word 'Eudyptula' meaning 'good little diver'. They are highly adapted to life in the sea and have streamlined bodies and wings (flippers) that are adapted for swimming. Little Penguins have dense feathers all over their bodies, with a distinct blue colour around their heads and backs, and white underbellies.

Little Penguins spend time on both the land and in the sea. They grow to a height of around 30 centimetres and adult birds weigh about 1 kilogram, with males weighing slightly more than females. The Little Penguin is the smallest of 18 species of penguins in the world and, with the exception of the Galapagos Penguin, all are confined to the southern hemisphere. They live for an average of 6 years but can live longer than 20 years.

Little Penguin feeding

Little Penguins spend the majority of their time (around 80%) out at sea feeding. The length of time at sea depends on the season, ranging from one day to one month. Generally, Little Penguins spend more time at sea during the winter, only returning to renovate their burrows.

They usually eat small fish such as anchovies, pilchards, sardines, and squid. They will occasionally eat crabs, fish larvae, octopus, seahorses, and jelly-fish. When they hunt, they take short dives in water ranging from 10 to 30 metres, often chasing schools of fish. They can dive 200-1300 times per day and have been recorded diving up to 72 metres deep. They swim at average speeds of around 2-4 kilometres per hour but are known to swim as fast as 6.4 kilometres per hour.

Little Penguins return to land

About an hour or so after dark, Little Penguins return to their burrows. In larger colonies, the birds often gather offshore in groups called 'rafts' and come ashore in small groups. The return of the penguin groups to nest sites can be swift and silent until they reach their burrows.

Little Penguin nests

Nests vary in their type and design. Some are burrows with a tunnel of around 60 to 80 centimeters long leading into a 'bowl' shape nesting chamber. Burrows may connect to others through additional tunnels. Some Little Penguins dig burrows under clumps of vegetation or nest among rocks. Some penguins are known to nest under houses, next to railway lines, in stormwater drains and even amongst building materials or machinery.

Breeding

Little Penguins reach sexual maturity at 2-3 years and have been known to continue breeding up to 21 years, however there is generally a decline in breeding success from around 8 years. They show high site fidelity, usually returning to their original colonies on land to breed and raise their young. Generally, males return to the colony before the females to prepare the nest. They will either renovate an old burrow or make a new one. When the females arrive, males greet them with noisy courtship displays. Little Penguins do not mate for life and, particularly if breeding has been unsuccessful, may choose another partner the following season. After mating, the female lays two eggs the size, shape and colour of a chicken's egg. Sometimes, two clutches of chicks might be raised in one season, with a second clutch of eggs laid after the first chicks have gone to sea.

Little Penguin chicks

Parents take turns of about a week to incubate eggs. After about 35 days, the eggs hatch. About 80% of the eggs successfully hatch, although this varies between locations and seasons. During the next three weeks, one parent stays with the chick while the other is at sea during the day. The 'at-sea' parent returns at night to feed the chick and swaps over with the other parent. This period is known as the 'guard' stage. Chicks are very vulnerable to attack from natural predators and domestic animals at this stage.

After the guard stage, both parents go to sea during the day and return to the burrow every few nights to feed the chick. This is known as the 'post-guard' stage, during which chicks will start to emerge from the burrow at night. At around six weeks, chicks will start to grow waterproof adult feathers replacing their fluffy down. At around eight weeks of age, chicks are fully feathered and are close to adult size. They then head out to sea to fend for themselves, instinctively knowing how to swim and catch fish.

Moulting

All Little Penguins need to replace their old and worn feathers (moult) so that they can maintain a plumage that is waterproof. Moulting takes around two weeks but during this time, they can't fish because their feathers are not waterproof, and they would drown. Leading up to moulting, Little Penguins must go to sea to feed to almost double their body mass to get them through the time on land. The whole process takes a couple of weeks and occurs every year, sometime between February and April.

Little Penguin populations in Tasmania

Definitive population estimates of Little Penguins in Tasmania are not known, but it is thought there may be up to 400,000 breeding pairs in Tasmania. Up to 95% of the Tasmanian Little Penguin population is located on offshore islands. Those that reside on the main island of Tasmania are under severe pressure from humans.

Threats to Little Penguins

The greatest threats that Little Penguins face are:

- Attack and harassment by dogs
- Attack by cats
- Disruption to normal routine by inquisitive tourists
- Human habitation and development near or displacing colonies
- Vegetation removal (including weeds) and trampling burrows
- Storm surges and coastal erosion causing damage to nest sites
- Drowning from gillnetting near colonies
- Oil spills causing death or reduced breeding
- Marine debris causing harm because penguins mistake plastic for food or get entangled in plastics
- Introduced flora (habitat degradation) and fauna (predation and competition for resources)
- Invasive animal species (e.g. Introduced rats and rabbits)
- Seasonal changes to natural food supplies

Human impacts

Human visitors sometimes disrupt the natural behaviour of penguins including their daily movement between land and sea to feed young. If the birds are frightened, their heart rates and energy demands can increase, which can also compromise their immune system.

People walking through colonies to view penguins can trample plants used for nesting or cover, can crush nesting burrows, and can stop penguins from feeding their chicks. Even low levels of disturbance can affect breeding birds. Penguins are particularly vulnerable during breeding or moulting and this can be testing in times of limited energy reserves.

Little Penguin viewing

Penguin viewing can cause undue stress to Little Penguins. To minimise any negative impacts and to improve the conservation of Little Penguins in the wild, it is recommended to only view penguins at areas with established penguin viewing infrastructure with guides present or take a penguin tour. Uncontrolled viewing of penguins in the wild can have a detrimental effect on the birds.

There are eight recommended Little Penguin viewing areas around Tasmania at the following locations:

- Burnie Little Penguin Observation Centre
- Lilloco Penguin Viewing Platform
- Stanley Penguin Viewing Platform
- Strahan - Bonnet Island tour
- Low Head Penguin tour
- Bruny Island - The Neck viewing platform
- Bicheno Penguin tour
- Grassy, King Island viewing area

Want to learn more about Little Penguins?

Here is the link to Cradle Coast Authority's Little Penguin online education module
<https://www.cradlecoast.com/online-learning-packages/>