

Information sheet

Wildlife Management

Osprey nest platform manual

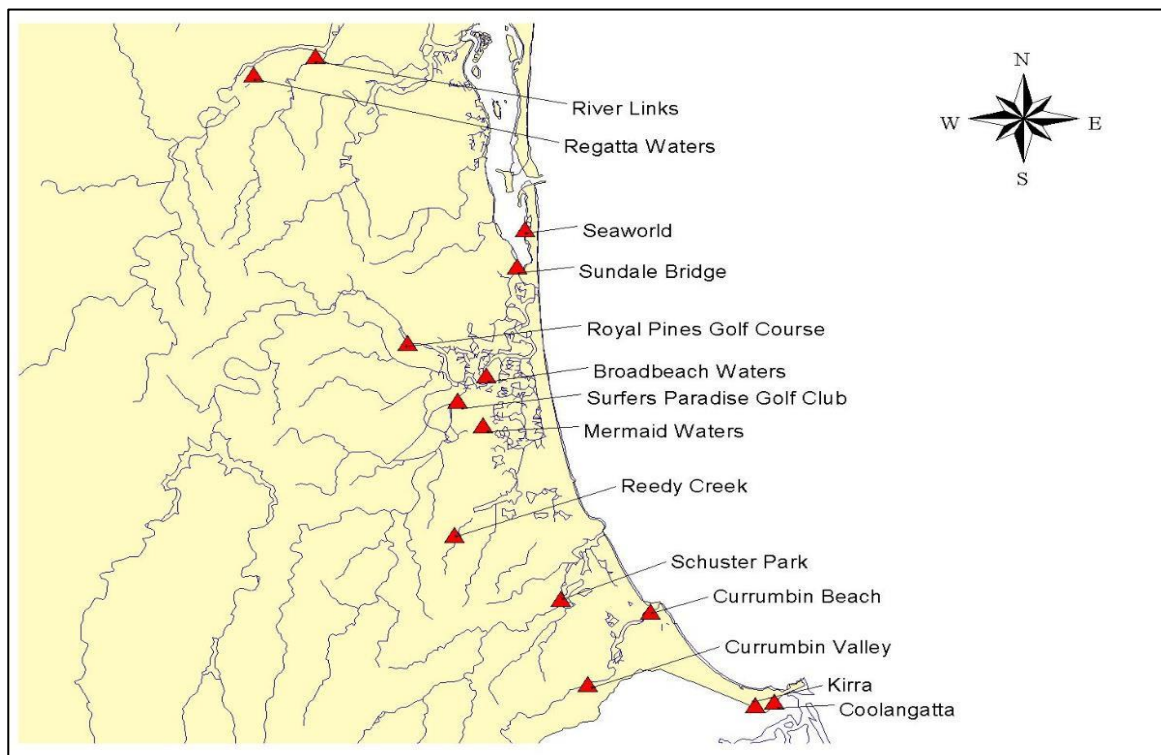
The purpose of this document is to provide information to proponents undertaking nest relocation or surrogate nest construction for Osprey species under an DES permit or authority.

Artificial nesting platforms for Eastern Ospreys

Few birds can compete with the osprey when it comes to attracting attention and affection from the general public. This is largely due to their habit of using the same (often massive) nest year after year, their striking appearance and their hunting prowess – using their talons to snatch fish from the water in spectacular fashion.

Due to the osprey's widespread distribution along the Queensland coastal strip, this information sheet will be applicable to other regions even though it is largely based on information from south-east Queensland.

Around the Gold Coast region, there are 14 historic osprey nest sites (refer to map 1). They often use trees for nesting platforms as well as man-made structures, such as power poles. Due to public safety issues and the safety of the bird and its chicks, the choice of nesting sites is not always appropriate. Old trees with large branches may pose a danger to the public and, in some cases, may need to be removed. Nests built on power poles may be flimsy and not sturdy enough to support the eggs and chicks. These birds also run the risk of being electrocuted and nesting material can even cause power failures.



Map 1: Historical known osprey nest sites in the Gold Coast area.

In these situations, there is the option of constructing an artificial alternative nesting platform for the birds. Due to their preference for nesting in exposed situations, ospreys provide a unique opportunity to relocate the nest to elevated platforms where they can successfully breed and raise their young.

This information sheet contains general information on ospreys, as well as specific information on the requirements for building an artificial platform to ensure that the ospreys have a suitable nesting site. Construction diagrams and the materials required are also included.

Identification

Ospreys are raptors (birds of prey) with a body length of 50–63 cm and a wingspan of up to 170 cm. They have dark brown upperparts, with a white head and underparts. They also have a brown streak through the eye, down the sides of the neck and a brown “necklace” across its chest. This “necklace” is darker and more pronounced in the female. Juveniles have a darker face and heavier bands across the chest than adults, and a more mottled appearance. Adult females are slightly larger than the males³. In flight, ospreys soar on long, arched wings which have a characteristic bend at the “wrist” joint¹. The tail is short and square with a white edge on the tip³.

Habitat

Eastern ospreys are commonly found in estuarine and marine areas, keeping to the coast and large river inlets. They have been recorded in habitats ranging from mangroves, inshore seas, coastal islands, estuaries and rivers⁵.

Diet

Ospreys feed almost exclusively on fish of up to 2 kg in size. They are also known to occasionally take sea snakes. The birds usually feed singly or in dispersed pairs within their breeding and feeding territory, which generally consists of 5–20 km of coastline⁴. The osprey hovers above the water, then dives from a height of 10–40 m and plunges feet first into the water¹. Gripping fish with their talons, the catch is then carried headfirst to reduce wind resistance, back to a roost or perch before being ripped apart and eaten. To assist in holding on to the slippery fish, the feet have spiny footpads called spicules. Osprey are very effective and efficient hunters, with approximately 90% of their dives successfully resulting in a catch⁴.



Osprey (*Pandion* spp.) feeding, Moreton Bay, EPA 2000.

Breeding

Breeding occurs from June to September. Nesting pairs of osprey perform courtship aerial dives and swoops at a height of 100–300m above the nest site. Copulation usually occurs on the nest or close to it. Calls are made during displays but are infrequent at other times⁴. Ospreys typically mate for life, returning to the same nest over and over again.

Nesting

In south-east Queensland, ospreys start nesting around April. Large nests are built from sticks and lined with seaweed and grass. The nests may be constructed on cliff faces, headlands, rocky foreshores and islands and in the forks of large trees up to 30 m above the ground⁴. The nests are generally located within 3 km of a water body and frequently within sight of water¹. Ospreys are also known to nest on man-made structures, such as communication towers, power poles, channel markers and artificial nest platforms. Studies indicate that ospreys are successful in raising young on such structures¹.

Nests may be used for consecutive years, with the pair adding material to the nest year after year. Both the female and male help to build and repair the nest, with the male collecting most of the material and the female working it into the nest structure. Usually 2–3 matt white to buff-brown speckled eggs are laid once a year. Generally the female incubates the eggs for about 5 weeks while the male brings her fish. The young develop feathers at about 30 days of age. The male collects fish for the brood with the female tearing up the fish into small pieces to feed to the young. The young are fed until they leave the nest, approximately 8 weeks after hatching⁴.

The young continue to use the nest for roosting for about a week after fledging. Within this time they are taught or learn how to fish. For several weeks after this time, the young birds continue to use the nest as a feeding platform⁴. The young are sexually mature at approximately 3 years. The chance of survival between each year does vary, however, juvenile ospreys have an average survival rate of approximately 60% and adult ospreys 80 to 90%. The oldest known osprey in the wild was 25 years old, however, very few individuals reach this age¹.



Osprey (Pandion spp.) nest, in fork of tree, Coomera, Gold Coast, EPA 2000.

Nesting platforms

Construction

When creating an artificial nesting platform, special consideration must be given to the suitability of the location. As the main dietary component of the osprey is fish, platforms must be located close to water. Ideally the site should be 50 m from the water body with a maximum distance of 3 km². As predation is a concern for the ospreys, the platform should also be erected in an open area to allow for an unobstructed view of the sky. The height of the platform should also be greater than any nearby trees. If several nesting platforms are to be built in the one location, they should be placed at no less than 300 m apart².

To build a nesting platform the materials listed on page 5 are required. Plans for the construction of the platform are also attached. Please note that all timber must be treated and all the fixings must be galvanised.

These plans are for the construction of a timber platform, however there is the option of creating a steel platform instead.



Osprey nesting platform – This design has since been revised to remove the vertical perch as crows were found to use the roost to harass the osprey for food, EPA 2000.



Osprey nesting platform – Nesting platform at Currumbin Creek, EPA 2000.

Maintenance

The nesting platforms require an inspection at least once a year². During this inspection, any foreign, potentially harmful material – such as fishing line, plastic bags and fishing hooks – should be removed. A layer of sticks can also be removed if the material in the nest is greater than half a metre deep. As the ospreys continually add material to their nest each year, nests that become too large may be blown off the platform by strong winds².

Osprey nest platform material requirements

Hardwood treated timber requirements

All timber to be treated

Item	Size (mm)	Quantity
Main Pole Floor	75 x 75 x 1400	2
Main Floor Supports	75 x 75 x 1800	2
Floor End Supports	75 x 75 x 1000	2
Flooring	100 x 50 x 1000	7
Horizontal Perch	65 x 100 x 1800	2
Angle Brace	100 x 50 x 670	1

Metal work requirements

All metal work to be hot dip galvanised

Item	Size	Quantity
Galv Ring Shanked Nails	75 mm	As required
Galv Ring Shanked Nails	25 mm	As required
Triple Grip Timber Braces	As required	40
Bracing Strap	25 mm x 0.5 x 1400	2
Cup Head Bolts, Washers & Nuts	M10 x 235	4
Cup Head Bolts, Washers & Nuts	M10 x 160	8
Cup Head Bolts, Washers & Nuts	M10 x 125	2
Cup Head Bolts, Washers & Nuts	M10 x 110	4
Cup Head Bolts, Washers & Nuts	M10 x 130	4
Main Support King Bolt	M20 x 430 Check Pole Head on Site	1

Pole requirements

- 20/8KN CCA Treated Hardwood Timber Pole
- Sink Pole 3.0 m
- Install Maximum Depth Concrete Foundation
- Require 20 Bags of Premix, Easymix 20 Kg Bag
- Pole Steps Galv Steel 16 mm Dia Require 18
- Aluminium Pole Cap Approx. 355 x 0.4 mm

Please Note: The vertical perch was removed from the materials list as crows were found to be using this upper roost.

Osprey camera information

The installation of osprey cams allow for the remote monitoring of nest sites and chick development. A camera that has motion sensors, is waterproof and has infrared capabilities for night-time observations is ideal. A variety of cameras exist that are suitable for observing the ospreys. At the higher end of the market is the camera such as that which was used for the "Frodacam", which monitors Peregrine Falcons in Brisbane. This site creates worldwide interest, and provides an excellent educational opportunity regarding the conservation of raptors.

The costs of setting up an osprey webcam vary greatly, depending on the features of the camera.

References

1. Kirschbaum, K., 2000, *Pandion haliaetus* (Online) World Wide Web. Accessed 21st Sept 2016: http://animaldiversity.ummz.umich.edu/site/accounts/information/Pandion_haliaetus.html.
2. Land Owner Resource Centre, 1999, *Building Nesting Platforms for Ospreys*. (Online) World Wide Web. Accessed 21st Sept 2016: http://lrconline.com/Extension_Notes_English/pdf/osprey.pdf.
3. Queensland Museum, 1995, *Wildlife of Greater Brisbane*. Queensland Museum, Brisbane.
4. Reader's Digest, 1986, *Complete Book of Australian Birds, 2nd Edition*. Reader's Digest, Sydney.
5. Simpson, K. and Day, N., 1999, *Field Guide to the Birds of Australia, 6th Edition*. Penguin Books, Victoria.

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Approved:

RD Williams
A/Executive Director, NCS
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Enquiries:

Wildlife Management
Wildlife.management@DES.qld.gov.au

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