

# Post-fledging observations of Ospreys in Western Australia

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Juveniles from three pairs of Ospreys *Pandion haliaetus* in Western Australia were monitored during the post-fledging period (2022-2024). The study focussed on the time the juvenile birds remained in the vicinity of the nest, when they became proficient in catching fish and their departure time from the nesting area. These details were compared with findings made in New South Wales and South Australia. Observations indicated that some immature birds from the previous breeding season remain in the natal area for up to 14 months and their presence is largely tolerated by the breeding adult birds. They were even present when the next season's chicks hatched and fledged. In the process details were recorded about behaviour, foraging, roosting and plumage. Juvenile Ospreys were observed practising their hunting skills on schools of small inedible fish.

**Keywords:** Osprey; post-fledging; roosting; foraging

## INTRODUCTION

The post-fledging dependence period between migratory and non-migratory Ospreys differs in a number of aspects, such as time taken to become independent, to gain proficiency in fishing and departure time from the natal area. Australian Ospreys are non-migratory and are slow to fledge and becoming independent. On Kangaroo Island, South Australia, young Ospreys continued to be fed at or near the nest for several weeks after fledging. Begging and attempted piracy behaviours were recorded 10 and 11 weeks after fledging (Dennis 2007). The fledged Ospreys in this study showed a strong attachment to the nesting area with the earliest departure at 68 days while others were still present at 163 days.

Northern Hemisphere Ospreys are migratory and there is likely more urgency to fledge and become independent so the migratory journey south can be undertaken. In migratory populations, fledged young continue to depend on their parents for food for at least 10-20 days, although some catch their own fish only 2-3 days after leaving the nest (Poole 1989).

Studies of migratory Ospreys have shown that the duration of the post-fledging dependence period in Scotland is 30.4 days (Bustamante 1995) and is very similar to that estimated for North American Ospreys (32.5 days) (Stinson 1977). Juvenile Ospreys started their fishing trials on average 16.6 days after their first flight. Scottish Ospreys migrate to West Africa and North American Ospreys migrate to South America (Poole 2019).

This comparative study conducted in Western Australia looked at the post-fledging period and the variation in time juvenile birds remain in the natal area. Site fidelity to roost and feeding locations was investigated.

## METHODS

Three Osprey nesting sites were closely monitored over a two year period, although little during the non-breeding season. These were at Geraldton, Point Moore (2022, 2023, 2024), South Perth, Royal Perth Golf Course (2022, 2023, 2024) and at Leschenault Peninsula Conservation Park (2022, 2023) (Fig.1). The South

Perth site was monitored by two observers and the Leschenault site by one observer, both on a near daily basis. The Geraldton site was monitored by five regular observers on a weekly basis. A fourth site at Hillarys Beach site was monitored intermittently.

Each site was located close to water. The artificial nesting platform at Geraldton was free standing and close to the beach and off shore reefs. The South Perth nest was located in the top of a mobile phone tower, overlooking a freeway, trainline and the Swan River. The Leschenault nest was located in a large paperbark tree within a National Park and close to the Leschenault Estuary. The sites were checked during the breeding season and post-fledging period. Observations were often supported by field notes and with photographic evidence. The fish brought back by the Ospreys to feed the chicks were photographed for identification. Camera and optical equipment used were Canon EOS R5 lens RF 100-500mm; Canon 1D X Mark III & EF100-400mm and Canon R7 with Canon 100-500 zoom lens. Nikon Coolpix P900, 83x optical zoom. Leica scope, TeleviD 77 with 60x zoom, Vortex Diamond Back 8x42 binoculars and Leica binoculars Trinovid 10x42.

## RESULTS

A short history of the breeding sites (Fig. 1) is provided as background information.

### *Geraldton 2022* (3 chicks)

The nearest Osprey nest to Point Moore is 2km away at the Geraldton Port. The first Osprey chicks were sighted on 26 August 2022. Based on plumage characteristics, incubation commenced around the first week in July and chicks hatched around the middle of August. The incubation period was based on 36 days (Dennis 2007, Johnstone and Storr 1998, Rose 2000).

On 2 October 2022, the largest nestling was rising slightly above the nest, flapping the wings vigorously. Fledging took place on 8 October 2022 when the young Osprey made the first short flight. Within days the first two juveniles had flown from the nest and were doing short circuits before landing back. The third chick fledged a week or so later.



**Figure 1.** Map of Osprey nesting sites monitored in Western Australia.

On 27 October 2022, a juvenile did a dry run where it plunged down to the beach with legs out front, touched the water and sand briefly with the talons and flew off again (20 days after fledging). At the time the beach was covered by a thin layer of receding seawater. Two of the juveniles were catching their own fish from 15 November 2022.

On 14 December 2022, the adult Ospreys had cut back their food supply and were now bringing the nestlings remnants of fish, not full fish as was previously the case. These remnants were being dropped into the nest. The juveniles were still exhibiting begging behaviour when seeing the adult birds (Beswick *et al.* 2023).

#### *Post-fledging overview 2022*

Two juveniles fledged on 8 October 2022 and the youngest fledged a week later. They were observed catching their own fish on 15 November 2022, 40 days after fledging. On 1 December 2022, the juveniles were still begging for food when an adult flew over. Juveniles had departed nest site by the third week of January 2023, 105 days after fledging. The female appeared to have lost a lot of mass raising three chicks.

#### *Geraldton 2023 (2 chicks)*

The Osprey pair engaged in nest building and mating throughout April, May and June. The first mating was observed on 19 April 2023. Chirping was heard from the nest on 21 July 2023 and the first sighting of two small chicks was made on 9 August 2023. Both nestlings were stretching wings and hovering above the nest on 25 September 2023. The first flight was observed on that day. On 1 October 2023 both juveniles were practising their diving and hunting skills over the ocean (7 days after fledging).

#### *Post-fledging overview 2023*

Nestlings of the 2023 season fledged on 25 September 2023, two weeks earlier than the ones of the previous season. A week after fledging, the juveniles were seen practising their diving and hunting skills. They would initially practise their skills on the beach scooping up seaweed and later move to the deep water on the west side of Point Moore. The juveniles from previous seasons always practised in the same location. On a few occasions the juveniles would submerge in the ocean and use their wings to lift themselves out. At other times they would drag their talons over the water surface as if running the water through their talons.

#### *Geraldton 2024*

The two juveniles were still present in the natal nesting area on 19 February 2024 (147 days after fledging). They were catching fish themselves and hunting in same area as the adults.

At Point Moore mating started in early April, which is weeks earlier than last season. On 21 April 2024, an adult Osprey was on the feeding pole with a fish and presumably a juvenile from the recent breeding season was standing nearby. The juvenile displayed begging behaviour by constantly calling, which was exhibited 30 weeks after fledging. When the adult flew off, the immature moved over and started picking off bits of discarded fish. The adult birds were seen chasing the immature away during April with little success. The female sat on the nest from early June 2024. Since mid-June the male Osprey caught fish, eating half, then flying back to the nest and giving the female the other half. When she got the fish, she flew to the feeding pole of the nest, ate and then returned to the nest and continued sitting.

#### *South Perth 2022 (site abandoned)*

In January 2022, two Ospreys were roosting in a pine tree at Royal Perth Golf Course. They were carrying sticks to the nest in May and June 2022. In July lots of sticks were found at the base of the nest. A Common Blowfish was found on the Golf Course in September. Ospreys at the South Perth nest were subject to months of harassment by Australian Ravens and Australian Magpies. The nest was abandoned in late November 2022. They were observed at their roosting site in November and December.

#### *South Perth 2023 (2 chicks)*

The nearest Osprey nest to South Perth is 5 km away at Salter Point. In February, an Osprey was seen breaking off a stick from the top of a tree on the nearby golf course and carry it back to the nest. The Osprey nestlings had been practising their wing exercises and hovering above the nest for a week prior to fledging. Nestlings fledged within the week after mastering rapid wing exercises and the ability to hover a few metres above the nest.

#### *Post-fledging overview 2023*

Chicks were estimated to have hatched in the last week of August 2023. The first juvenile fledged on 5 November 2023 when it flew over the golf course and back to the mobile phone tower.



**Figure 2.** Juvenile Osprey, still wet from catching a Blue Swimmer Crab, January 2024.

Photo: David Wrigglesworth

#### South Perth 2024

During January all four birds were in the roosting tree on the golf course closest to the nest. They moved between the two roost sites and in February the furthest roosting tree became the preferred site. In mid-February a Common Blowfish was found under the nesting tower. In March and April there were three Ospreys in the furthest roosting tree and in May and June there were generally 1-2 Ospreys. Presumably at least one juvenile was roosting near the nest in mid-April 2024, 163 days after fledging. Ospreys have used the same roosting site on the Royal Perth Golf Course for at least two and a half years.

#### Leschenault 2022 (2 chicks)

The nearest Osprey nest to Leschenault Peninsula Conservation Park is 6km away at the Balmoral Boulevard site. Incubation took 41 days in 2022 and started 19 days later than in 2023. The first chick hatched on 27 October 2022. In late December the temperatures went up to 32°C and the female Osprey spread her wings to provide shade for the two nestlings that were hunched up against her. An Osprey was seen bringing a stick to nest on 23 December 2022.

Wing exercises such as stretching and flapping of wings was observed frequently during the two weeks prior to fledging. The first nestling (a male based on size) fledged on 1 January 2023 and landed on a tree stump at the base of the nesting tree. The second nestling fledged on 9 January 2023, eight days later. The hatching to fledging period was 67 days.

The adult Ospreys frequented the shallow pools of water between the samphire beds next to the inlet for washing and drinking.

On 21 February 2023, the juvenile male was begging for food from the nest and was eventually fed by the adult. On the same day it practiced several dives without entering the water though on the final dive did go into the water. The Ospreys closed their feet to cover their talons when landing on the nest when it had eggs or chicks presumably as a safety precaution.

#### Post-fledging overview 2022

Monitoring at this site ceased on 28 February 2023. At this time one male juvenile was still around the nest site. The

juvenile female Osprey had been absent for over a week and it was not known if she would be unable to fend for herself.

#### Leschenault 2023 (3 chicks)

Incubation commenced during the last week of August. The male Osprey relieved the female for short periods from incubation duties. A clear indication that chicks have hatched is when a female Osprey does not leave the nest to feed on a perch when supplied with fish by the male. Instead she remains at the nest and starts pulling the fish apart and lowers her head with bits of fish in her beak. The first nestling hatched on 5 October 2023, 38 days after incubation started.

On 20 October 2023, the female was seen gathering more nesting material while the chicks were in the nest. On 7 December 2023, both adults were delivering fish to the nest and leaving the nestlings to try and feed themselves, although they did step in and feed them when necessary. On 11 December 2023, the first nestling fledged. This was the last and smallest nestling to hatch, though the first to take flight. The hatching to fledging period was 67 days. On 14 February 2024, an adult took remnant of fish to the nest where two juvenile birds were calling.

#### Post-fledging overview 2023

On 21 December 2023, the last nestling fledged ten days after the first one fledged. When the nestlings took flight, they pointed their heads into the wind. On 13 January 2024, one of the juveniles made a catch which turned out to be a large Blue Swimmer Crab *Portunus armatus*. The crab was later disgarded (Fig. 2). Two of the juveniles were calling for food mid-February 2024.

By mid-February the three juveniles had left the nesting area (57-68 days after fledging). No juveniles were seen near the nest area after 17 February 2024.

#### Hillarys Beach Park 2022 (3 chicks)

Since at least 2015, a pair of Ospreys have nested each year on the mobile phone tower at Hillarys Beach Park. Some data was collected over the 2022 breeding season. The first chicks were sighted on 13 October 2022 and estimated to be a couple of weeks old.



Table 1

Key events in the post-fledging life of juvenile Ospreys in Western Australia.

| Location                   | Year<br>(No. Juv.) | Hatching<br>to Fledging | Fledged on    | Observed diving,<br>hunting | First fish caught         | Departed nesting area        |
|----------------------------|--------------------|-------------------------|---------------|-----------------------------|---------------------------|------------------------------|
| Geraldton                  | 2022 (3)           |                         | 8 Oct. 2022   | 27 Oct. 2022 (20 days AF)   | 15 Nov. 2022 (40 days AF) | 105 days after fledging      |
| Geraldton                  | 2023 (2)           |                         | 25 Sept. 2023 | 1 Oct. 2023 (7 days AF)     |                           | Still present at 147 days AF |
| Leschenault Peninsula C.P. | 2022 (2)           | 67 days                 | 1 Jan. 2023   | 21 Feb. 2023 (21 days AF)   |                           | Still present at 59 days AF  |
| Leschenault Peninsula C.P. | 2023 (3)           | 67 days                 | 11 Dec. 2023  |                             | 13 Jan 2024 (34 days AF)  | 68 days after fledging       |
| South Perth                | 2022               | abandoned               |               |                             |                           |                              |
| South Perth                | 2023 (2)           |                         | 5 Nov. 2023   |                             |                           | Still present at 163 days AF |
| Hillarys                   | 2022 (3)           |                         | 28 Nov. 2022  | 6 Dec. 2022 (9 days AF)     | 28 days AF                | Still present at 60 days AF  |

AF = After fledging

*Post-fledging overview 2022*

Nestlings fledged on 28 November 2022. The first practise dive was observed on 6 December 2022, nine days after fledging. The first observation of fish being caught was at 28 days after fledging (25 December 2022). Juveniles were still present at Hillarys 60 days after fledging.

**DISCUSSION**

Information on the movement and dispersal patterns of Ospreys has largely been obtained from field observations and later through the attachment of colour and metal leg bands (Clancy 2006, Dennis 2007). Research conducted in South Australia through satellite tracking is shedding light on local movements and dispersal patterns of juvenile Ospreys (Falkenberg 2022).

One pair of Ospreys were observed in New South Wales over a seven-year period (Rose 2000). In 1984 the young remained in the nest area for a month after fledging. Similarly, in 1985 the young remained in the nest area for about five weeks after fledging (Rose 2000). Compared with other studies these juveniles remained in the nest area for a very short period.

A study conducted on aspects of the breeding biology of Osprey on Kangaroo Island, South Australia collected data over 18 breeding seasons between 1985 and 2004 (Dennis 2007). Here young Ospreys continued to be fed at or near the nest for several weeks after fledging. Begging and attempted piracy behaviours were recorded 10 and 11 weeks after fledging (Dennis 2007). Although some early dispersal was recorded among marked Osprey young, there was a strong tendency of survivors (22%) either to return to or remain on the Island, and at maturity join the breeding population (Dennis 2007).

The satellite tagging program in South Australia followed the post-fledging movements of seven young Ospreys, which revealed fledging to independence periods for three individuals of 68, 77 and 105 days in 2020-2022 (Falkenberg 2022); however, one young male Osprey fledged in November 2021, remained with its parents for over 192 days and continued in the vicinity of its natal area for 12 months (Falkenberg 2022). It found that some juvenile Ospreys moved to productive marine environments and remained there for periods of up to nine months. This indicates that sheltered shallow bays and estuaries are vitally important feeding and foraging habitats for juvenile Ospreys (Falkenberg 2022).

A number of trends appear to be emerging from the satellite tagging program: at independence, juvenile female Ospreys

travel considerable distances in search of productive habitats; in contrast juvenile males appear to remain in the vicinity of the natal nests for some considerable time following independence (Falkenberg 2022). The observations made during this study in Western Australia were similar to the findings made in the eastern states. The key events in the post-fledging life of juvenile Ospreys in Western Australia are summarised in Table 1.

There is quite a variation in post-fledging behaviour recorded. The time difference between the first nestling fledging and the last one fledging was between seven and 10 days. The earliest observations made of fledged juveniles practising diving and hunting for fish was seven days after fledging, although mostly much later, up to 20 days after fledging. This involved trial dives just above the water surface, in shallow water and scooping up pieces of seaweed from the water surface. The first sighting of juveniles actually catching fish was at 28 to 40 days.

The time the juveniles remained in the nesting area varied. The earliest juveniles left the nesting area at 68 days with some still present at 163 days. Monitoring at some of the nesting sites ceased before the juveniles had dispersed.

In this study juveniles from the previous breeding season were sighted around the nesting site for up to 14 months.

An Osprey nest on Whale Rock at Shoalwater Bay is being monitored by volunteers. On 28 August 2023, while the male was taking over incubation of a clutch of three eggs, a third juvenile was standing on the edge of the nest. It was likely to be the one surviving chick that fledged early December 2022 and was still in the natal area nine months later. It was last seen on a rock close to the nest on 11 September 2023. The tolerance shown by the adult Ospreys to the visiting juvenile bird suggests that the juvenile bird was one from the previous season.

At Geraldton on 19 May 2023, a juvenile hatched in August 2022, was still hanging around but being chased off by an adult. This juvenile exhibited begging behaviour when the adults approached. On 26 August 2023, the juvenile was present and adults were chasing it aggressively in an apparent attempt to drive it away from the area. Sightings were still made of this juvenile into September and intermittently in October. This juvenile was in the natal area for 14 months.

In contrast, the three juveniles that fledged at the Leschenault Peninsula Conservation Park nest on 11 December 2023 had all left the natal area by 17 February 2024, 68 days later. After fledging, two of the juvenile Ospreys moved to a location 3 km south of the nesting site and remained there for four weeks.



**Figure 3.** Juvenile Osprey with a Common Blowfish at Leschenault Estuary, February 2023.

Photo: David Wrigglesworth

#### *Dispersal post-fledging*

Juvenile Australian Ospreys are known to move considerable distances post-fledging. A study conducted in the Clarence Valley, on the north coast of New South Wales, found that some young birds remained in the natal area at least until the next breeding season while others dispersed early and widely (Clancy 2006). One colour-banded Osprey was observed at Lake Tabourie on the New South Wales coast, 714 km from the banding site near Maclean. Other locally banded Ospreys remained in Clarence Valley and some are now breeding at local nests, although not at their natal nests (Clancy 2006).

Out of 85 young Ospreys banded on Kangaroo Island, three were known to have dispersed to the mainland with one found around 400 km ENE from the natal site. Sightings of the other banded Ospreys from Kangaroo Island were all within 70 km from their natal site. In Western Australia, Ospreys banded on Rottnest Island dispersed around 400 km to the south-east from their natal territory (Dennis 2007, Holsworth 1965).

The satellite tagging program in South Australia followed the post-fledging movements of seven young Ospreys which revealed that one bird travelled 520 km in five days and another 380 km in three days (Falkenberg 2022).

#### *Foraging*

Observations of foraging were made while monitoring and photographing the Osprey families. At Geraldton, Ospreys were seen to catch fish on the reef close to shore, to the west of the nest or further out to the outer edge of the reef. The Ospreys preyed most on tropical/sub-tropical reef fish and showed that they were very capable at catching them. The most common species caught were Seven-banded Wrasse *Thalassoma septemfasciatum*, Gold-spotted Sweetlips *Plectorhinchus flavomaculatus* and Black Rabbitfish *Siganus fuscescens*, followed by other wrasse species, Silverbelly *Gerres subfasciatus*, Red-lipped Morwong *Cheilodactylus rubrolabiatus* and Sea Mullet *Mugil cephalus*.

At Leschenault Estuary, Ospreys were seen to catch mainly Sea Mullet, similar to birds in northern New South Wales

(Clancy 2005a), and to a lesser extent Yellowfin Whiting *Sillago schomburgkii*, Flounder *Pseudorhombus* spp. and sometimes Tarwhine *Rhabdosargus sarba*.

Ospreys went through a fixed feeding routine. After having fed, they cleaned their beaks on a branch on both sides six to eight times. Then they fluffed themselves up and preened, after which they defecated and flew off to bathe. Birds bathed most times after feeding. The bathing routine could be very vigorous and varied from 10-15 minutes. Ospreys dipped themselves in the ocean with water going over their heads, spread their wings, walked to the water's edge and then went back in. The bathing area was close to the nest site. Eventually they flew to the power pole north-east of the nest to preen and dry themselves out (Beswick *et al.* 2023).

At Hillarys Beach, young Ospreys were observed honing their diving and fish catching skills by practising in the shallow waters just off shore. They retrieved pieces of seaweed and the Common Blowfish *Torquigener pleurogramma*. During the last week in December 2022, juvenile Ospreys were seen on separate days with a Common Blowfish in their talons. Similar behaviour was observed in 2009 when a juvenile Osprey brought a Common Blowfish to the nest at Peppermint Grove, Devil's Elbow along the Swan River.

Juvenile Ospreys have been observed catching Common Blowfish at other locations, such as Leschenault Estuary, Swan River Estuary and along the coast at Hillarys. The fact that Common Blowfish move slowly, in dense schools and in shallow water might explain the capture of multiple fish by juvenile birds.

Mature Blowfish migrate out of the Swan Estuary to spawn in shallow coastal waters along Perth's coastline between October and January, with the peak spawning period being November to December (Department of Fisheries 2011). This coincides with the post-fledging period for Ospreys. Finding a Common Blowfish on the Royal Perth Golf Course, near the nest and one beneath the Osprey's nest before the young had fledged indicates that even adult birds occasionally catch this species. The Common Blowfish, which will inflate itself when caught (Fig. 3), is not an edible fish species for Ospreys.





Figure 4a, b. Osprey family on mobile phone tower disposing of Yellowtail Grunter.

Photos: Marcus Singor

Yellowtail Grunter or Yellowtail Trumpeter *Amniataba caudavittata* were caught by the Swan River Ospreys. Like the Common Blowfish, the Yellowtail Grunter is a schooling fish making them attractive as prey. Many untouched Grunter were found beneath the Osprey nesting pole during the months March, November, December. Yellowtail Grunter is a fish full of bones and was rejected by the female Osprey when brought back to the nest (see photo sequence) (Fig. 4a,b).

Ospreys have been sighted with multiple fish in their talons, which is the likely result of plunging into a school of fish and catching more than one. This involved the smaller species of fish like Yellowtail Grunter, Common Blowfish and Mullet.

At the Leschenault Estuary, Australian Pelicans *Pelecanus conspicillatus* and Indo-Pacific Bottlenose Dolphins *Tursiops aduncus* were observed herding a school of small fish into the shallow, foreshore waters. The commotion attracted Great Cormorants *Phalacrocorax carbo* and an Osprey. The Osprey hovered and made six unsuccessful dives into the confined school. The same day at a nearby Great Cormorant colony, fresh Western Striped Grunter *Helotes octolineatus* were found in the nests and these were thought to be the same fish species as in the schools (S. Elson pers. comm.).

At the South Perth site, Ospreys often fed on top of the mobile phone tower antennas, where discarded remnants of fish attracted Australia Ravens *Corvus coronoides*. Ospreys were observed feeding on top of the mobile phone tower during February, March, April, June, July, August, September and October. Australian Ravens were well conditioned to visit this location as a source for food and this in all likelihood increased the threat to eggs and chicks during the breeding season.

These observations add to the knowledge of foraging and feeding behaviour recorded previously in Eastern Australia (Clancy 2005b.)

#### Plumage

Four months after fledging, the juvenile Ospreys are still readily identified by their plumage as described in the literature (Marchant & Higgins 1993). The beige to whitish edges on the dark feathers of the upper parts give the juvenile Osprey the appearance of a scaly plumage (Fig 5.) (Johnstone & Storr 1998).

Information based on migratory Ospreys states that moult stops during migration to the breeding grounds between April and June. Moult of the tail feathers starts at 5-7 months and is complete by 14 months. The speckled plumage of juveniles is quickly lost by abrasion, but the uniform wear of the outer primaries permits identification up to 12 months of age. Ospreys undergo serial moult, known as *Staffelmauser* (Prevost 1983). This type of moult appears to apply to Australian non-migratory birds as well (Marchant & Higgins (1993). Moult of primary and secondary feathers was noticed in January 2023 at Leschenault Estuary.

On 9 January 2023 at Leschenault Estuary one Osprey was missing P6 and S3 and another Osprey was missing P8 and S3. Moult occurred in both wings though in different places.

#### Roosts

Outside the breeding season, Ospreys may roost on the nest and are known to have roosted in the same tree in which they built a nest (Marchant & Higgins 1993). They have their preferred feeding and roosting sites and remain loyal to these. The Osprey pair at South Perth has a favourite pine tree on the golf course where they settle in for the night. They have used this roosting site for at least two and a half years and were on the roost site by dusk. Sometimes the adults roost together and sometimes in separate trees. This is the closest roost from the South Perth nesting site at 46 m. The adults and the juveniles were initially using the same roost tree. Later a second pine tree on the golf course was used as a roost by both the adults and the juveniles. The second roost tree was located 300 m from the nest site.

As the season progressed the adults used the closest roost site less. The juveniles did not roost near each other; they were often on different sides of the tree. On 26 March 2024, there were three Ospreys roosting at the second tree site and each had a separate branch. A few days earlier they were seen locally, gliding high in the sky with one, presumably the juvenile, vocalising. The roosting, resting and fish feeding site at the Royal Perth Golf Club was used most months of the year. There were no observations from July and August.

At Point Moore, Ospreys usually feed on the pole to the southern side of the nest. Juveniles use the same location. There



**Figure 5.** Juvenile Osprey at Leschenault Peninsula Conservation Park, February 2024.

Photo: David Wrigglesworth

is another pole north of the nesting site but it is rarely used as a feeding station. Ospreys seem to feed consistently on the same poles and those near the nest did not appear to be used for roosting.

The Osprey pair at Point Moore, Geraldton, roosted on the power poles and a local resident said they could be heard throughout the night. They arrived at dusk (half an hour before sunset), being very vocal, before settling in for the night. This involved the whole Osprey family and was not far from their nesting site. The two adults were roosting on the power poles in early February 2023 and these were still in use the following year in February 2024 when there were four Ospreys roosting together. Adults and juveniles were seen roosting on a power pole on the edge of Coxswains Crescent Park. This roost site is 260 m from the Point Moore nesting platform.

At the Leschenault Peninsula Conservation Park nest site, a juvenile bird, presumed to be from the 2021/22 season, turned up and remained in the vicinity of the nest. This juvenile Osprey used to roost in a tree about 500 m from the nest despite being chased by the adults.

#### *Interspecific and intraspecific interactions*

Ospreys defend the core area around the nest from other Ospreys, intruders and potential predators (Marchant & Higgins 1993). Other species noted harassing Ospreys, while feeding, roosting or on the nest were Australian Raven, Australian Magpie *Gymnorhina tibicen*, Magpie-lark *Grallina cyanoleuca*, Whistling Kite *Haliastur sphenurus*, White-bellied Sea-Eagle *Haliaeetus leucogaster* and Willie Wagtail *Rhipidura leucophrys*. Whistling Kites and White-bellied Sea-Eagles will pursue an Osprey till it drops the fish it has caught. Ospreys have been dive bombed by a Peregrine Falcon *Falco peregrinus*. The Ospreys have expelled Wedge-tailed Eagle *Aquila audax*, White-bellied Sea-Eagle, Whistling Kite, Black-shouldered Kite *Elanus axillaris*, Swamp Harrier *Circus approximans*,

Nankeen Kestrel *Falco cenchroides*, Australian Raven, Australian Magpie and Galah *Eolophus roseicapilla* who came into their territory or close to the nest (Clancy 2006, Dennis 2007, Marchant & Higgins 1993).

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