

SHORT NOTE

Underwater swimming by chicks of the variable oystercatcher (*Haematopus unicolor*) and the Chatham Island oystercatcher (*H. chathamensis*)

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Chicks of a number of shorebird species worldwide have been reported to dive and ‘fly’ (i.e. use their wings for propulsion) underwater to avoid avian predators or to escape capture by people. They include oystercatchers (e.g. Tarr 1952; Morgan 1994; Minton 2001), stilts and avocet (Sordahl 1982; Minton 2001), several sandpiper species (e.g. Dougall 2002; Norman 2002; Blokhin 2004), and *Pluvianus* (Fry 1966). Many New Zealand shorebird chicks readily take to nearby water and swim away on the surface when in danger (see various species accounts in Marchant & Higgins 1993), but there appear to be no descriptions of underwater swimming. I report here the use of the wings for underwater swimming by chicks of the variable oystercatcher (*Haematopus unicolor*, VOC) and Chatham Island oystercatcher (*H. chathamensis*, CIO).

The VOC is a coastal species endemic to New Zealand with a population of 5,000–6,000 individuals (Dowding 2017). VOC chicks were reported to “dive and swim well” (Marchant & Higgins 1993) but no details are given and there is no citation. While catching chicks of this species for

banding, I have observed underwater swimming on a number of occasions.

On 23 December 1993, I visited the mouth of the Wade River, Auckland (36°39’S, 174°44’E) to band a brood of three VOC chicks 35–40 days old and not yet capable of flying. The chicks and their parents were on a sandbar surrounded by water; as I approached, all three chicks ran to the water and swam out, remaining on the surface and propelling themselves with their feet. The water was shallow (c. 0.6–0.7 m), so I waded after one of the chicks. When I was within about 1 m of it, it suddenly dived to a depth of about 0.4–0.5 m, extending its wings as it did so, and ‘flew’ away underwater. The water was calm and clear and I was able to follow and observe the chick easily at a distance of 1–2 m. The wings were not fully extended and the synchronous wingbeats were shallow, the action being very similar to that described by Morgan (1994) for *H. bachmani* chicks. The feet were stretched out behind the body and were not used for propulsion. About 10 m from where it dived, the chick surfaced; I reached to catch it and it dived and ‘flew’ away underwater again. When it surfaced again I caught it. Its two siblings both attempted to escape using the same behaviour.

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At Home Bay, Motuora Island (36°30'S, 174°47'E) on 16 February 1998, I banded a brood of two VOC chicks aged 27–28 days. As I approached, both ran immediately to the water and paddled out on the surface; when I followed, both dived and swam underwater in the same manner described above. Other examples of underwater swimming by large VOC chicks have been seen during subsequent banding operations, and in certain circumstances the behaviour appears to be not uncommon.

The CIO is a threatened species endemic to the Chatham Islands and numbering 300–350 individuals (Moore & Dowding 2017). While banding chicks of this species, I have observed underwater swimming on three occasions.

At Tioriori, Chatham Island (43°45'S, 176°41'W) on 17 January 2002, a brood of three chicks aged 35 days all ran to the water when approached. They paddled away on the surface until approached closely, when they dived and swam underwater, surfacing every 5–8 m. The action appeared identical to that of VOC chicks, with the wings not fully extended, shallow wingbeats, and the feet stretched out behind the bird. On 27 January 2002, also at Tioriori, another brood of three chicks aged 40 days (and close to fledging) were banded. When chased, two of them took to the water, dived and swam underwater in the same manner. On 22 January 2007 at Tupuangi Beach, Pitt Island (44°15'S, 176°10'W), two large chicks took to the water to avoid capture, and dived and swam underwater when approached.

Sordahl (1982) and Morgan (1994) considered that underwater swimming was primarily a technique for chicks (and occasionally compromised or flightless adults) to avoid avian predators. An observation at Wade River on 16 February 1996 is consistent with that suggestion. About 500 shorebirds were feeding on exposed sand flats at low tide when a swamp harrier (*Circus approximans*) flew over. A large VOC chick, aged 42 days and not yet flying, ran quickly to the river channel nearby and swam out on the surface. Shortly afterwards the harrier stooped on the chick, which dived. The chick's parents immediately chased off the harrier and the chick re-surfaced 6–8 m from where it had dived.

Minton (2001) suggested that escape-diving and underwater swimming are a 'last-resort' escape measure, used only when capture appears imminent. My observations support that suggestion—when catching chicks for banding, diving occurred only once I was very close to them.

It seems likely that only older chicks, with wings that are developed to the point where they can provide adequate propulsion under water, will show this behaviour (see Sordahl 1982). Two chicks of *H. bachmani* observed by Morgan (1994) were

33–36 and 45–48 days old, although Calf (2002) noted that chicks of *H. moquini* dive from about two weeks (about 200 g). All the VOC and CIO chicks noted above were four weeks old or more. At Wade River on 25 November 1995, I banded a VOC chick 12 days old; its primaries had not yet emerged and the standard wing measurement was 37 mm. Although close to water, the chick made no attempt to escape by swimming on that occasion, or when aged 15 days (wing 44 mm), or at 19 days (wing 65 mm). On 6 December, when it was 23 days old and weighed 294 g, the chick took to the water, dived when pursued and swam 8–9 m underwater. At that time the primaries were growing rapidly and the wing measured 95 mm.

These observations extend the list of shorebird species whose chicks try to avoid capture by escape-diving and swimming underwater, and document the occurrence of the behaviour in endemic New Zealand species. Underwater swimming occurs in a range of shorebird families, and is geographically widespread, having been recorded in Europe, Africa, North and South America, and Australasia at least (see references). It may therefore be recorded in other New Zealand shorebirds. However, given the need for a body of water nearby, a chick with at least partly-developed wings, and (most importantly) its capture imminent, it is perhaps not surprising that underwater swimming has apparently not been described here.

Interestingly, I have not seen the behaviour in the course of banding many hundreds of northern New Zealand dotterel (*Charadrius obscurus aquilonius*) chicks; they regularly attempt to escape by paddling away on the surface, but do not dive when approached. I have so far found no records of underwater swimming by any *Charadrius* species.

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