

LONGEVITY RECORDS OF FLIGHTLESS CORMORANTS

PHALACROCORAX HARRISI

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The Flightless Cormorant *Phalacrocorax harrisi* is endemic to the Galápagos Islands, Ecuador (Harris 1973). This species is morphologically and behaviorally unique among extant species of cormorants (Phalacrocoracidae) because of its flightlessness and sequential polyandrous mating system (Valle 1994, Kennedy *et al.* 2009, Valle 2009). The IUCN listed the Flightless Cormorant as endangered (EN) until 2010, but changed its listing in 2011 to vulnerable (VU) “because evidence suggests that the population is stabilizing and the recorded fluctuations during the last three decades have not been extreme” (IUCN 2011). However, its small population size, with numbers fluctuating between 700 and 1 900 individuals during the last three decades (Jiménez-Uzcátegui 2010) as well as its restricted distribution range around Fernandina and the Isabela islands (except the southern and southeastern parts) make the species vulnerable to the impact of recurrent El Niño events (Valle & Coulter 1987, Valle 1995), increases in pathogens (Travis *et al.* 2006, Merkel *et al.* 2007, Deem *et al.* 2010) and introduced predators, such as rats *Rattus* spp. and feral cats *Felis catus*, that prey especially on chicks and juveniles (Valle 1986, 1995).

Of 38 species of cormorants worldwide (Johnsgard 1993), the oldest longevity records for the two species genetically closest to the Flightless Cormorant are 22.6 years for the Double-crested Cormorant *P. auritus*, and 11.9 years for the Neotropic Cormorant *P. brasilianus* (Lutmerding & Love 2011). These two species are considered of least concern (LC) because they have a large

distributional range with large and increasing populations of mature individuals (IUCN 2011).

On 8 April 2006, the monitoring team of one of us (FHV) captured a female Flightless Cormorant *Phalacrocorax harrisi* that was at least 17.2 years old at Zone 4 (0°19'S, 91°23'W) on the northeastern coast of Fernandina Island, Galapagos Archipelago, Ecuador. This cormorant had a metal ring No. 100-029 and had been banded as an adult by one of us (CAV) on 10 July 1990 on South Colony, approximately 3 km southwest of Punta Espinosa, Fernandina Island (Valle 1994); this indicated an actual banded age of 15.9 years. At the time of banding, this bird was sexually mature, therefore at least 17 months old (Valle 1994, 1995, Larrea 2007). This finding establishes the longest life span ever recorded for a Flightless Cormorant. We also provide four additional longevity records for this species based on birds banded by one of us (CAV) between 1989 and 1991 (Table 1).

At present, we are unable to assess whether ages of more than 10 years for Flightless Cormorant are the exception or the norm in their population. As these records were established between 1989 and 2006 (Table 1), we conclude that these individuals are survivors of the last strong El Niño-famine event in 1997–1998. Like many seabird species, Flightless Cormorants have low reproductive levels and depends directly on food availability, which, in turn, depends on oceanographic conditions (Harris 1979, Tindle 1984,

TABLE 1
Longevity records of Flightless Cormorants *Phalacrocorax harrisi*, Galápagos Islands

Identification			Banding					Re-capture				Age (years)	
Pit-tag	Band No.	Sex ^a	Date	Age ^b	Breeding Status	Locality	Coordinates	Date	Breeding Status	Locality	Coordinates	Banded	Estimated
53812301	100029	F	10-Jul-1990	A	Courtship	South Colony	0°17'12.08'S 91°25'5.58'W	08-Apr-2006	Incubation eggs	Zone 4	0°19'45.30'S 91°23'41.64'W	15.9	17.2
53512101	100035	F	26-Jul-1990	A	Nesting chicks	Espinoza	0°15'50.61'S 91°26'40.52'W	02-Oct-2003	Solitary	Serrano	0°17'12.08'S 91°25'5.58'W	13.3	14.8
42023011	100060	F	21-Nov-1991	J	Solitary	Valle	0°15'38.55'S 91°27'34.27'W	08-Apr-2006	Solitary	Valle	0°15'38.55'S 91°27'34.27'W	14.5	14.7
53380633	100043	M	28-Jul-1990	A	Nest building	South Colony	0°17'12.08'S 91°25'5.58'W	26-Aug-2003	Solitary	Serrano	0°17'12.08'S 91°25'5.58'W	13.1	14.6
42045262	100130	M	29-Jun-1989	A	Nesting juvenile	Valle	0°15'38.55'S 91°27'34.27'W	22-Apr-2001	Solitary	Escondida	0°15'45.25'S 91°28'7.21'W	11.1	12.6

^a F: Female, M: Male

^b A: Adult, J: Juvenile

Valle 1994). Hence, the protection of adult cormorants surviving El Niño events should be top priority, as they have the potential to reproduce and restore the diminished populations immediately after such extreme climatic events. These records also reinforce the importance of preventing cumulative increases in adult mortality from disease, predation, entanglement in fishing gear and other anthropogenic threats. Therefore, we recommend maximizing survival of adult cormorants as a protection measure to achieve long-term conservation goals for the species.

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