THE KELP GULL (*LARUS DOMINICANUS*) PREYS UPON CHICKS OF PERUVIAN DIVING-PETRELS (*PELECANOIDES GARNOTII*) IN CHOROS ISLAND, NORTHERN CHILE

La gaviota dominicana (*Larus dominicanus*) depreda sobre los polluelos del yunco (*Pelecanoides garnotii*) en la isla Choros, norte de Chile

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RESUMEN.- Documentamos el primer registro de depredación de la gaviota dominicana (*Larus dominicanus*) sobre los polluelos del yunco (*Pelecanoides garnotii*) en la colonia reproductiva de isla Choros, Chile. El 21 de noviembre de 2019, entre las 12:00 y 15:00 h, observamos a la gaviota dominicana capturar exitosamente dos polluelos de yunco. Cada captura ocurrió en la entrada de nidos distintos. En ambos casos, la gaviota caminó en medio de la colonia inspeccionando las entradas de los nidos. Después de la segunda captura, un jote de cabeza colorada (*Cathartes aura*) robó la presa a la gaviota. Esto podría aumentar la presión de depredación sobre los polluelos de yunco ya que la gaviota dominicana podría intentar obtener un nuevo polluelo. Junto con el pequén (*Athene cunicularia*) y el chungungo (*Lontra felina*), la gaviota dominicana pasa a conformar el grupo de depredadores de los polluelos del yunco en isla Choros. Más observaciones de campo son necesarias para determinar tanto la frecuencia de depredación como su posible efecto sobre la tasa de sobrevivencia de los polluelos de yunco.

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Colonial nesting and extended brood care contribute to the vulnerability of burrowing petrels to predation (Borrelle *et al*. 2018). The burrowing petrel chicks are much more exposed to predation when parents leave them unattended during feeding trips (Warham 1996).

The Peruvian Diving-petrel (*Pelecanoides garnotii*) is endemic to the Humboldt Current System (Luna-Jorquera *et al*. 2003). Currently, IUCN (2020) considers this species as near threatened. Nowadays, only three breeding colonies are known for the coasts of Peru (Corcovado, San Gallán and La Vieja islands; Figueroa *et al*. 2011), and five for the coasts of Chile (Fernández Vial, Pan de Azúcar, Choros, Chañaral and Pájaros II Islands; Fernández *et al*. 2019). Knowledge about predators that feed on the Peruvian Diving-petrel in these colonies is scarce. At San Gallán and La Vieja islands colonies, Murphy (1925) observed the Peregrine Falcon (*Falco peregrinus*) preying upon Peruvian Diving-petrel chicks. Moreover, Turkey Vulture (*Cathartes aura*) footprints found by Coker (1919) close to petrel burrows on San Gallán Island, and petrel carcasses found by Hays (1989) in Kelp Gull nests, suggest that these species may predate Peruvian Diving-petrels. In the Choros Island colony, Peruvian Diving-petrels are part of the prey of Burrowing Owls (*Athene cunicularia*) and Marine Otters (*Lontra felina*) (Meichßner 2001, Mattern *et al*. 2002, Cruz-Jofré & Vilina 2014). Even though Hays (1989) found gull nests lined with petrel skulls and bodies, at present, there is no direct evidence of Kelp Gulls feeding on Peruvian Diving-petrels. Herein, we provide the first evidence of adult Kelp Gulls preying upon Peruvian Diving-petrel chicks in northern Chile.

Figure 1. Kelp Gull (*Larus dominicanus*) preying upon Peruvian Diving-petrel (*Pelecanoides garnotii*) chicks on 21 November 2019 in Choros Island (29°S), northern Chile. **A**. An adult Kelp Gull walking through petrel burrow entrances. **B**. An adult Kelp Gull captures a petrel chick at the burrow entrance at 12:12 h. **C**. An adult Kelp Gull captures a petrel chick at the burrow entrance at 15:06 h while two Turkey Vultures (*Cathartes aura*) approach her, and **D**. one of the Turkey Vultures steals the gull's prey and flies away.

On 21 November 2019, while we were monitoring a colony of Peruvian Diving-petrels on Choros Island (29°16'S, 71°32'W), located within the Humboldt Penguin National Reserve, we observed an adult Kelp Gull inspecting Peruvian Diving-petrel nesting burrows (Fig. 1 A). After searching for several nests, at 10:26 h, the Kelp Gull tried to grab a Peruvian Diving-petrel chick from a burrow entrance. This chick managed to escape and sheltered inside the burrow.

Later, we recorded two successful captures at 12:12 h and 15:06 h in different burrows, but we could not determine if the same gull captured both chicks. In the first one, the Kelp Gull caught a downy chick alive at the burrow entrance and carried it out to a nearby rock (Fig. 1 B). Before swallowing it, the Kelp Gull pecked the chick multiple times. During the second predation event, two Turkey Vultures approached the gull while it was feeding on the chick (Fig. 1 C). After a few minutes, one Turkey Vulture took the gull's prey and flew away (Fig. 1 D). Although we did not record Turkey Vultures capturing petrel chicks, we observed them prowling around the burrow entrances. Chick captures by the Kelp Gull occurred in two patches with a nest density of 1.15 and 1.34 nests/m^2 and an area of 2347 m^2 and 2419 m^2, respectively (see Fernández *et al.* 2019).

The Kelp Gull is widely distributed in South America and is a common resident along the northern coast of Chile (23-29ºS; Simeone *et al*. 2003, Yorio *et al*. 2016). Kelp Gulls are generalist-opportunistic predators with broad trophic plasticity (Silva-Rodríguez *et al*. 2000), benefiting even from fishing discards and urban waste, which has allowed them to expand in several locations (Yorio *et al*. 1998, Lisnizer *et al*. 2011). Some authors have suggested that Kelp Gulls are visual aerial

predators locating their prey by aerial searching (Gandini *et al*. 1999, Simeone & Luna-Jorquera 2012). Our observations revealed that Kelp Gulls might also conduct "terrestrial searching" to locate and capture petrel chicks. To do so, they walked across the Peruvian Diving-petrel colony, searching for chicks and inspecting the burrow entrances, making several attempts before successfully getting a chick out of a burrow. Kelp Gulls conduct a similar searching strategy in the colonies of seabirds that build their nests exposed on the ground, such as the Royal Tern (*Thalasseus maximus*), Cayenne Tern (*Thalasseus sandvicensis eurygnatha*; Yorio & Quintana 1997), and Imperial Cormorant (*Phalacrocorax atriceps*; Quintana & Yorio 1998).

Kelp Gulls opportunistically feed on eggs and chicks of several seabird species such as Magellanic Penguins (*Spheniscus magellanicus*), Imperial Cormorants, and Cape Cormorants (*Phalacrocorax capensis*) (Frere *et al*. 1992, Quintana & Yorio 1998, Voorbergen *et al*. 2012). In Chile, the diet of the Kelp Gull comprises marine invertebrates (Bahamondes *et al*. 1986), fish (Ludynia *et al*. 2005), rodents (Ruiz & Simeone 2001), and eggs and chicks of other seabirds, including the Humboldt Penguin (*Spheniscus humboldti*) and the Peruvian Booby (*Sula variegata*; Simeone & Luna-Jorquera 2012). Thus, considering the available evidence, it is not unexpected that the Kelp Gull also preyed upon the Peruvian Diving-petrel chicks.

Further field observations may reveal whether the Kelp Gull regularly predates Peruvian Diving-petrel chicks and how this could affect the survival rates of the Peruvian Diving-petrel chicks. Our observations also revealed that the Turkey Vulture steals prey of Kelp Gulls, showing a kleptoparasitic behaviour which could increase predation pressure on the Peruvian Diving-petrel chicks.

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