Vanellus chilensis (Southern Lapwing)

Family: Charadriidae (Plovers)
Order: Charadriiformes (Shorebirds and Waders)
Class: Aves (Birds)

Fig. 1. Southern lapwing, *Vanellus chilensis*.
http://www.glennbartley.com/naturephotography/birds/SOUTHERN%20LAPWING.html

TRAITS. *Vanellus chilensis* consists of four subspecies: *V.c. fretensis, V.c. chilensis, V.c. cayennensis and V.c. lampronotus* (Avian Web, 2011). Adults are 35 cm in length with a wingspan of approximately 32-38 cm and an average weight of 250-425g (HBW Alive, 2017). As seen in Fig.1, its head is grey with a thin black crest; its black forehead patch narrowly joins its black throat stripe and upper breast band. Its upper back is brownish-grey, patched at the shoulders with olive-brown. The lower back and rump has greyish feathers with white edges. Its tail is round with a black buff and its wings are pointed with a bronze colour. Its upper wing is white with a black border,that is usually visible in flight. Its lower abdomen and under tail coverts are white and it has red bony spurs located at wings tip (Neotropical Bird Club, 2016). It

has large eyes; long legs and pink feet; the small bill is pink with a black tip. Both sexes have similar colour pattern appearance, however, the females may have short spurs. The young species has brown plumages with black spots and lacks olive-brown shoulder patch whereas juveniles have light plumage and shorter crest (Neotropical Birds, 2017).

ECOLOGY. *V. chilensis* is a neotropical migratory bird (Fig. 2), found in the wetlands and grasslands of South America, northwards to west Panama into Central America and Mexico (Cestari and Costa, 2007). In the Caribbean *V. chilensis* was first recorded in Trinidad and has expanded to Tobago. They have also been records in Aruba, Barbados, Belize; Florida and Maryland (Mlodinow, 2005). During the breeding and non-breeding seasons, *V. chilensis* can be found in open areas near freshwater and floodplains, grassland, farms, and urban landscapes such as parks, airports and in urban gardens (Cestari and Costa, 2007), feeding on earthworms, several insect species such as grasshoppers and small fishes (Gantz et al. 2009). Its range has increased due to widespread deforestation (Fig. 2) (Haseth et al., 2015), therefore the IUCN Red List has categorized *the* species as Least Concern (IUCN Red List, 2017).

SOCIAL ORGANIZATION. Southern lapwings are territorial during the breeding and non-breeding seasons. In the non-breeding season, southern lapwings live in flocks of approximately 100-200 individuals (Neotropical Birds, 2017), foraging and establishing their territories from interspecific competitors (Jahn et al. 2017). During breeding season, southern lapwings leave their groups to form a breeding group of 1 to 2 pairs of adults (Neotropical Birds, 2017). Nests are constructed in shallow holes in grasslands near their foraging sites. Usually, males gather the material while females do the construction of the nest (HBW Alive, 2017). Addition help of juvenile lapwings in colonial is given to the breeding pair such as incubation of eggs, protection or foraging (Santos and Macedo 2017). After hatching of the eggs, females leave the nest and males are then responsible for the nest and leading chicks to foraging sites (Neotropical Birds, 2017).

ACTIVITY. During the breeding season *V. chilensis* individuals invest more time into parental care and protecting territories (Haseth et al., 2015). High activity of adults during this season is energy costly and exposes them to predation, however, some of the daily foraging activity is carried out by non-breeding individuals (Jahn et al. 2017). During the non-breeding season, *V. chilensis* are more sedentary because after the breeding season flock size increases allowing adults to conserve more energy. During the diurnal hours, *V. chilensis* can be seen foraging in small groups or individually. As the temperature rises towards midday, they may be seen grooming each other or sleeping. Also during the nocturnal hours foraging activity occurs. (Jahn et al. 2017).

FORAGING BEHAVIOUR. A study conducted by Gantz et al., (2009) showed that southern lapwings mostly feed on different insect species in their larval and adult stages and earthworms, cutworms, and small fishes. These prey are easy to capture. The southern lapwing's bill is strong, small and sharp also giving an advantage (Jahn et al. 2017). During the day, southern lapwings forage singly or in a small flock (Fig. 3), they are patient foragers and stand for a long time gleaning the ground for insects. However, in the night where predation is high and limited light; they forage in larger flocks using the lockout method (Saracura et al. 2008).

COMMUNICATION. The Southern lapwing produces series of high pitch notes of "*tew-tew-tew*" (Neotropical Birds Club, 2016). Vocal activity in the non-breeding season is often low to average. Its vocal activity decreases during the rainy season due to destruction of their homes and lapwings having to migrate to other locations. However, when territories are re-established during the breeding season, adults are most vocally active, reaching its highest due to the aggression of other lapwings for a mate, parental defence of chicks from predators (Jahn et al. 2017).

SEXUAL BEHAVIOUR. Breeding season occurs during the months of May to August when the availability of food is not an issue (Jahn et al. 2017). Breeding may occur two to three times per season. The southern lapwings breed in monogamous pairs and cooperative groups – polyandry, polygamy. Once a male's territory has been chosen by a female, he guards his mate to decrease her chance of copulating with other males (Saracura et al., 2008). A series of slow wing flapping by males is used to court females; females reply also by wing flapping. After successful copulation, females lay a clutch of 2-4 eggs over a period of 7 days (Fig. 4). Both sexes contribute to incubation of eggs for the next 26-27 days. Within 5days the entire clutch hatches. After the egg has been hatch the chicks take up to 16 days to complete its hatching and retain its plumage in 3 to 4 weeks (Jahn et al. 2017).

JUVENILE BEHAVIOUR. Southern lapwings are precocial, so that they are born mature and mobile and can leave the nest within a few hours of hatching. After an egg has hatched males leads his young to forage sites where they feed on small insect larvae (Saracura et al., 2008). Chicks are fully developed within 4-8 weeks after hatching. Chicks begin to molt plumage for 3-4 weeks and fledging occurs at 6-8 weeks old. Juvenile lapwings can then join parents 4-8 weeks after fledging (Jahn et al. 2017). Some juveniles flee the nest and begin their first breeding at 2-3 years old while others remain as helpers. Helpers increase the reproductive success of the breeding group during incubation by guarding territories against predators, foraging and it times even incubating the eggs (Santos and Macedo 2017).

ANTIPREDATOR BEHAVIOUR. *Vanellus chilensis* inhabit open grasslands and wetlands, exposing themselves to the predation of burrowing owls, foxes and snakes (Fig. 5) (Neotropical Bird Club, 2016). These predators prey upon the eggs, chicks and adult lapwings, therefore *V. chilensis* have evolved different antipredator mechanisms. During incubation of eggs, females may have to leave the nest thus, they cover their eggs to camouflage from predators and keep them warm. *Vanellus chilensis* also have a threat display by running towards intruder with its wings open and head down posture. (Neotropical Birds, 2017). However, if more danger is perceived mobbing is then displayed, which is the cooperative attack of predators. Mobbing behaviour is high risk as it increases the visibility of the birds to predators (Saracura et al., 2008). The adult also uses call signals that are a series of high pitched "*tew-tew-tew*", repeated when chicks or eggs are under attack. This vocalization alerts other birds of potential predators and allows them to gather their chicks and eggs to safer grounds (Jahn et al. 2017). Other mechanisms include feigning injury, i.e, faking a broken wing to distract predators from its chicks.

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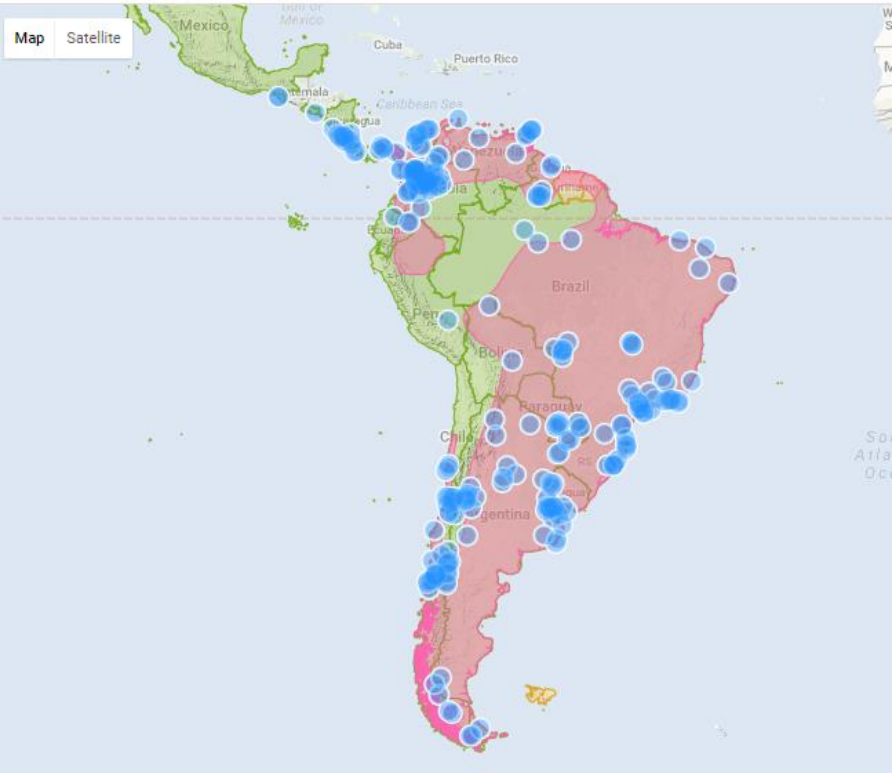

Fig. 2. Southern Lapwing geographic distribution.

https://www.inaturalist.org/taxa/4867-Vanellus-chilensis

Fig. 3. Southern lapwing foraging in a small flock

https://www.inaturalist.org/observations/21507]

Fig. 4. Female Southern lapwing incubating clutch of eggs.
https://www.beautyofbirds.com/southernlapwings.html

Fig. 5. Southern lapwing defensive threat display.
https://daos1964.blogspot.com/2015/05/tero-national-bird-of-uruguay.html