

Distraction behaviour of breeding Javan Plover *Charadrius javanicus*

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Ringkasan: Tulisan ini mendeskripsikan bentuk-bentuk perilaku Cerek Jawa *Charadrius javanicus* dalam mengalihkan perhatian. Perilaku pengalihan perhatian ini diperlihatkan oleh indukan dari pasangan berbiak yang tengah mengasuh anakan dan yang sedang mengerami telur di Muara Gembong, Bekasi, Jawa Barat, serta beberapa lokasi lain di Jawa. Tulisan ini juga melaporkan kemampuan anakan Cerek Jawa untuk berenang sebagai upaya menghindari bahaya, serta mendiskusikan indikasi adanya bentuk perilaku sosial Cerek Jawa dalam menghadapi gangguan dari manusia.

Introduction

The Javan Plover *Charadrius javanicus* is one of the most poorly known plovers in the world (Piersma *et al.* 1997). Its taxonomic status is unclear and various authors treat it as a race of Kentish Plover *C. alexandrinus*, Red-capped Plover *C. ruficapillus* or Malaysian Plover *C. peronii* (Piersma & Wiersma 1996). Andrew (1992) treated the Javan Plover as a full species and this was followed by MacKinnon & Phillipps (1993). It is currently recognised by the International Ornithologists' Union (Gill & Donker 2013).

Little is known of the breeding biology of Javan Plover (Piersma & Wiersma 1996). Breeding is believed to take place year-round, during both wet and dry seasons. Displaying and territorial birds have been observed from May to August in Alas Purwo National Park, East Java (Grantham 2000), and nest building and mating birds have been recorded in October in Ujung Pandang, South Sulawesi (Tebb *et al.* 2008). Egg laying in Java has been recorded from May to September (Grantham 2000; Hellebrekers & Hoogerwerf 1967), however nests containing eggs were found in January and March (wet season), as well as May, June and July (dry season), during an intensive survey at Pantai Trisik, Yogyakarta, central Java (A. M. Tampubolon *in litt.* 2009).

While our knowledge of the basic biology of Javan Plover remains limited, our knowledge of its distribution and status has at least increased. New records have revealed a distribution wider than formerly assumed (Iqbal *et al.* 2013). Beyond Java, the Kangean Islands and Bali (MacKinnon & Phillipps 1993; Piersma & Wiersma 1996), recent records have included East Lampung, Sumatra (Iqbal *et al.* 2011), Ujung Pandang, South Sulawesi (Tebb *et al.* 2008), Lombok (S. Amin *pers. obs.*), Sumbawa (Coates & Bishop 2000), Sumba (Robson 2009), Flores (Simay *et al.* 2009), Semau (O. Hidayat & C. R. Trainor *in litt.*) and Timor-Leste (Trainor 2011).

In this paper, we report observations of apparent distraction behaviour by Javan Plover recorded during surveys at Muara Gembong, West Java. We also

collate similar observations made by others, and discuss the threat response behaviour of Javan Plover and associated calls generally.

Observations

On 27 and 28 April 2010, we visited fishponds near Pantai Bakti village, Muara Gembong, Bekasi, West Java (05°55'53.5"S, 107°03'36.7"E). During birds surveys over the two days we recorded at least 94 Javan Plover in an area of c.18 km². At around 14:30 hrs on 27 April we observed a pair of Javan Plovers with two chicks. The birds foraged along an inner dike bank of a small fishpond, separated from the main bank by a 3m expanse of water. As we moved closer to obtain a better view both parents flew to the main bank and landed around 3m from us, while the chicks hid among cracks on the inner bank. As we photographed the chicks one of the parents started to perform apparent distraction behaviour, bobbing its head, moving away from us, while repeatedly calling with a single, soft rising note "tu-wit". Based on the bird's plumage, including black on the fore-crown, thick dark stripe in front of the eyes and reddish nape, we assumed the displaying bird to be a male.

Soon afterwards the male flew closer to us and sat for a few seconds before making a short "rodent-run", holding its wings stiff and angled down, its tail fanned and making similar repeated "tu-wit" calls (Plate 1). At the end of the run it stopped and performed a "broken-wing display" with its wings held stiffly open and angled down (Plate 2). During c.20 minutes of observations, the male performed this display twice, which also seemed to attract four previously unseen individuals of the species to the vicinity. In order to minimise disturbance we decided to leave the area. As we moved away we were surprised to see the chicks come out from hiding and swim across to the main bank to join their parents.



Plate 1: Photos of male Javan Plover performing "rodent run" at Muara Gembong.



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Plate 2: Male (right) Javan Plover at Muara Gembong, pausing to perform the “broken-wing display”, while another bird stands nearby



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Plate 3: Female Javan Plover at Muara Gembong, returning to nest to incubate eggs.

On the following day we returned to the Pantai Bakti area and at a different location, discovered a Javan Plover incubating three eggs. Based on the lack of black on its fore-crown and broad stripe in front of the eyes, we assumed this to be a female. As we approached to around 10-15m the bird left the nest, and as we got closer it began to walk around calling in a similar way to the male bird observed the previous day. As before, this appeared to attract other Javan Plovers to the vicinity, with at least seven birds becoming visible. As we sat 3m from the nest the female ceased calling and after a few minutes returned to incubate the eggs (Plate 3). Meanwhile, the other Javan Plovers apparently attracted by the calls remained in the vicinity without showing any particular response.

Discussion

Distraction behaviour is the general term for parental anti-predator strategies which aim to deflect a predator or to divert its attention from eggs or young (Campbell 1985). The behaviour is often well developed in ground-nesting bird species, especially in plovers (Piersma & Wiersma 1996), including the Kentish Plover (Simmons 1951; Tye *et al.* 2012), a close relative of Javan Plover. Hoogerwerf & Siccama (1937) reported that Javan Plover behaved similarly to Kentish Plover in all respects.

Several other observers have observed distraction behaviour by nesting Javan Plovers. The “rodent-run” was observed in August 2011 and August 2012 at Marina Beach, Ancol, Jakarta (B. Emmanuel *in litt.* 2013), in July 2012 at Pacitan, East Java (W. K. Wibowo *in litt.* 2013) and at Wonorejo, East Java (I. Febrianto *in litt.* 2013). A less dramatic display, involving the adult bird walking around the nest calling, was observed in August 2012 at Sawah Luhur fishpond, Banten (F. Hasudungan *in litt.* 2013) and in September 2012 at Pantai Trisik (A. Alfauzi & A. Z. Abdullah *pers. obs.*). All observers reported that the adult birds made repeated “tu-wit” calls during their displays, but the apparent effect of these calls in attracting additional birds was only reported from Pacitan, where about 24 Javan Plovers were involved.

In studies of both the Piping Plover *C. melodus* (Busby *et al.* 1997; Cairns 1982; Ristau 1991) and Lesser Golden Plover *Pluvialis dominica dominica* (Byrkjedal 1989), authors noted that the distraction behaviour of nesting adults

attracted additional conspecifics to the area. Cairns (1982) reported that as many as a dozen adult Piping Plovers may converge on a single intruder. It is possible that our observation of this attraction effect in Javan Plovers was a consequence of their high density in Muara Gembong. The species also breeds at a high density in Pacitan (W. K. Wibowo *pers. obs.*), where additional birds were attracted to a displaying adult. It is possible that the calls of displaying birds attract additional birds to the area, and that this serves to provide further distraction to an approaching predator. The calls of the male and female heard on 27 and 28 April, respectively, were typical calls of the Javan Plover, as previously recorded by Karyadi Baskoro (www.xeno-canto.org/122283,122285), and possibly similar to calls of nesting Javan Plovers at Penet, East Lampung, Sumatra, reported by Iqbal *et al.* (2011).

Swimming of Javan Plover chicks has previously been witnessed by van Balen (*in litt.* 2013) on 3 June 1988 at Pegagan Lor, Cirebon, West Java. Swimming, and even diving, to escape danger has been recorded in other shorebirds, such as Eurasian Oystercatcher *Haematopus ostralegus*, Pied Oystercatcher *H. longirostris*, Black-winged Stilt *Himantopus himantopus* (Minton 2001), Common Sandpiper *Actitis hypoleucos* (Dougall 2002; Yalden 2002) and the chicks of African Black Oystercatcher *H. moquini* (Calf 2002).

Further observations of the responses of nesting Javan Plover to various threats would be useful to gain a better understanding of their social behaviour and breeding biology. We encourage other field workers to make careful observations of this poorly known shorebird when encountered, and compare them with other closely related *Charadrius* species.

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References

- Andrew, P. 1992. *The Birds of Indonesia, a Checklist (Peter's sequence)*. Indonesian Ornithological Society, Jakarta.
- Busby, W.H., D.W. Mulhern, P.G. Kramos, D.A. Rintoul & W.C. Tuttle. 1997. Nesting Piping Plover and Least Tern on the Kansas River. *The Prairie Naturalist* 29: 257-262.
- Byrkjedal, I. 1989. Nest defence behavior of Lesser Golden-Plovers. *Wilson Bulletin* 101: 579-590.

- Cairns, W. E. 1982. Biology and behavior of breeding Piping Plovers. *Wilson Bulletin* 94: 531-545.
- Calf, K. M. 2002. African Black Oystercatcher chicks dive to escape danger. *Wader Study Group Bulletin* 98: 46.
- Campbell, B. & E. Lack. 1985. *A Dictionary of Birds*. British Ornithologists' Union, London.
- Coates, B. J. & K.D. Bishop. 2000. *Panduan lapangan burung-burung di kawasan Wallacea*. BirdLife International Indonesia Programme & Dove Publications, Bogor.
- Dougall, T. 2002. Common Sandpipers also dive to escape danger: in Scotland. *Wader Study Group Bulletin* 97: 51-52.
- Gill, F. & D. Donsker (Eds). 2013. *IOC World Bird List (v 3.3)*. Available at <http://www.worldbirdnames.org> [Accessed 10 June 2013].
- Grantham, J. 2000. Birds of Alas Purwo National Park, East Java. *Kukila* 11: 97-121.
- Hellebrekers, W. Ph. J. & A. Hoogerwerf. 1967. A further contribution to our oological knowledge of the island of Java (Indonesia). *Zoologische Verhandelingen* 88: 3-164.
- Hoogerwerf, A. & G.F.H.W.R.H. Siccama. 1937. De avifauna van Batavia en omstreken. *Ardea* 26: 1-159.
- Iqbal, M., I. Febrianto & H. Zulkifli. 2011. The occurrence of the Javan Plover *Charadrius javanicus* in Sumatra, Indonesia. *Wader Study Group Bulletin* 118: 49-51.
- Iqbal, M., I. Taufiqurrahman, K. Yordan & B. van Balen. 2013. The distribution, abundance and conservation status of the Javan Plover *Charadrius javanicus*. *Wader Study Group Bulletin*. 120(1): 1-5.
- MacKinnon, J. & K. Phillipps. 1993. *A Field Guide to the Birds of Borneo, Sumatra, Java and Bali*. Oxford University Press, Oxford.
- Minton, C. 2001. Waders diving and swimming underwater as a means of escape. *Wader Study Group Bulletin* 96: 86.
- Piersma, T. & P. Wiersma. 1996. Charadriidae (Plovers). Pp. 384-442 in: del Hoyo, J., A. Elliot & J. Sargatal (eds). 1996. *Handbook of the Birds of the World*. Vol. 3. Hoatzin to Auks. Lynx Edicions, Barcelona.
- Piersma, T., P. Wiersma & J. van Gils. 1997. The many unknowns about plovers and sandpipers of the world: introduction to a wealth of research opportunities highly relevant for shorebird conservation. *Wader Study Group Bulletin* 82: 23-33.
- Ristau, C.A. 1991. Aspects of the cognitive ethology of an injury-feigning bird, the Piping Plover. p. 91-126 in Ristau, C. A. & D. R. Griffin, *Cognitive Ethology: The Minds of Other Animals: Essays in Honor of Donald R. Griffin*. Lawrence Erlbaum Associates, Hillsdale.
- Robson, C. 2009. From the field. *BirdingASIA* 11: 120-125.
- Simay, A., T. Zalai & Z. Ecsedi. 2009. Flores and Komodo: two islands of Northern Nusa Tenggara. *BirdingASIA* 11: 59-63.
- Simmons, K.E.L. 1951. Distraction-display in the Kentish Plover. *British Birds* 44: 181-187.
- Tebb, G., P. Morris & P. Los. 2008. New and interesting bird records from Sulawesi and Halmahera, Indonesia. *BirdingASIA* 10: 67-76.
- Trainor, C.R. 2011. The waterbirds and coastal seabirds of Timor-Leste: new site records clarifying residence status, distribution and taxonomy. *Forktail* 27: 63-72.
- Tye, A., J. Stylianou, V. Anastasi & C. Papazoglou. 2012. *A survey of the distribution, habitat use, populations and breeding of the Kentish Plover Charadrius alexandrinus and Black-winged Stilt Himantopus himantopus at the Akrotiri Wetlands, September 2011 to August 2012*. BirdLife Cyprus Final report, Cyprus.
- Yalden, D.W. 2002. Common Sandpipers also dive to escape danger: in England. *Wader Study Group Bulletin* 97: 52.