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Waterbirds around the world

A global overview of the conservation,
management and research of the
world's waterbird flyways

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Conservation biology of an endemic waterbird of Madagascar, the Madagascar Plover *Charadrius thoracicus*: distribution, surveys and photographs

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The Madagascar Plover *Charadrius thoracicus* is an endemic shorebird classified as Near Threatened by the International Union for the Conservation of Nature (IUCN), but is close to being classified as Vulnerable, with little known of its biology. We present the results of surveys in 2002 and 2003 of the distribution and ecology of the Madagascar Plover.

Major wetlands were surveyed in the west coast of Madagascar both during the wet and dry seasons. The surveys showed that the Madagascar Plover has wider geographic distribution than previously thought, the breeding sites are scattered, and the number of plovers appears to fluctuate at most sites. The Madagascar Plover coexists with two other plover species, Kittlitz's Plover *Charadrius pecuarius* and the White-fronted Plover *Charadrius marginatus*, with which it appears to compete for nest sites. We designated areas for a population study, ringed adults and chicks and took morphological measurements. We anticipate that the surveys and population monitoring will enable us to estimate the total number of individuals of this endemic plover, and we will then be able to project its future population changes.



Madagascar Plover *Charadrius thoracicus* adult at Mahavavy delta (Andolomikopaka), August 2003.

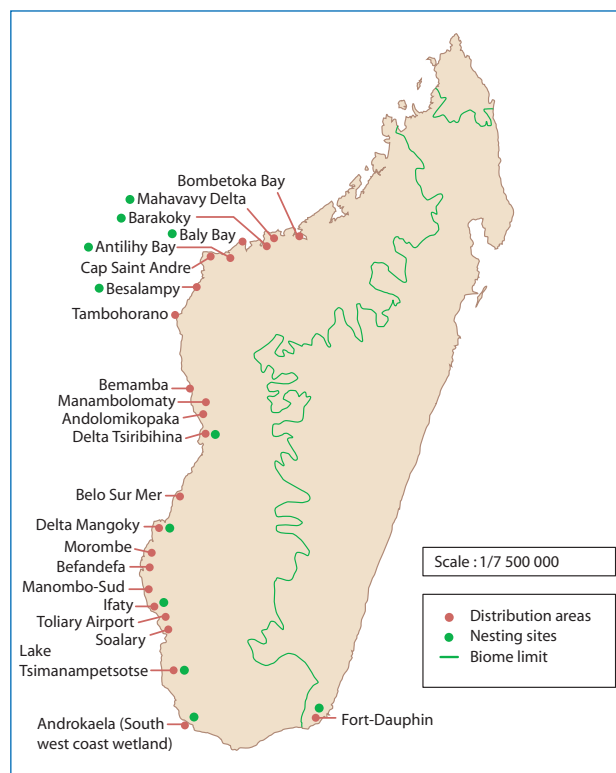


Fig. 1. Wetlands (24) surveyed during dry and wet seasons 2002 and 2004 in the west coast of Madagascar; 11 are nesting areas of Madagascar Plover *Charadrius thoracicus* in which we found nests with eggs, chicks and juveniles.

The status and the distribution of the Madagascar Plover have been changing from year to year. Previous records and the new survey results from the west coast during the dry and wet seasons of 2002, 2003 and 2004 show a wider geographic distribution with a scattered breeding sites (see Fig. 1); the analysis identified some competitor species and an alarmingly small population (see Table 1). The species occupied mainly wetland in the west coast of Madagascar between Mahajanga (north) and Fort Dauphin (south). The size of the population is very low and fluctuates each year - 370 individuals in the dry season of 2003 and 262 in the wet season of 2003-2004. An accurate estimate of population numbers is urgently required.

The competition of this species with the White-fronted Plover and Kittlitz's Plover in both their nesting and feeding areas is more than previously known. The Three-banded Plover *Charadrius tricollaris* is rarely seen with the Madagascar Plover.

Table 1. Variation in population size of Madagascar Plover *Charadrius thoracicus* according to census season and surveyed sites.

| POPULATION ESTIMATES SITES | Recent surveys | | | Previous data | | | | | | | | |
|---------------------------------|----------------------------------|------------------------------|---------------------------|---------------|-----------|-----------------|--------------|-------------------|-----------|-----------|----------|-----------|
| | December 2003 - March 2004 | August - November 2003 | January - July 2003 | 2002 | 2001 | January 2000 | July 2000 | September 2000 | 1999 | 1998 | 1993 | 1990 |
| Mahavavy delta and around | 3 | 3 | | | | | | | 5 | | | |
| Bombetoka bay | 3 | 4 | | | | | | | 3 | | | |
| Marambitsy bay or Barakoky | 44 | 86 | 64 | 32 | | | | | 1 | | | |
| PN Baly bay | 21 | 92 | 7 | 24 | 23 | 2 | 14 | 7 | 19 | | 1 | |
| East of Antilihy bay | 0 | 14 | | | | | | | | | | |
| Antilihy bay | 0 | 8 | | | | | | | | | | |
| Cap Sainte André | 0 | 6 | | | | | | | | | | |
| Tambohorano | 6 | 4 | | | | | | | 2 | 61 | | |
| Besalampy | 0 | 19 | | | | | | | | | | |
| Tsiribihina delta | 15 | 21 | | | | | | | | 47 | 14 | |
| Belo sur mer | 24 | 40 | | | | | | | | | | |
| Morombe | 10 | 20 | | | 6 | | | | | | | |
| South of Mangoky delta | 4 | 6 | | | | | | | 15 | | | |
| Mangoky delta | 17 | 27 | | | | | | | | 50 | | |
| Toliary Airport | 8 | 10 | | 11 | | | | | | | | |
| Mangily / Ifaty | 9 | 9 | | 9 | | | | | | | | |
| Soalary | 0 | 1 | | | | | | | | | | |
| Bemamba | 0 | | | | | | | | | | 2 | |
| Ampatifaty (Manambolomaty) | 0 | | | 1 | 5 | | | | | | | |
| Antsotsa/Besara (Manambolomaty) | 0 | | | 12 | | | | | | | | |
| Bevango (Manambolomaty) | 0 | | | 5 | | | | | | | | |
| PN Tsimanampetsotsa | 63 | | | 14 | | | | | | 55 | | |
| Befandefa | 0 | | | | 11 | | | | | | | |
| Manombo South | 0 | | | | 7 | | | | | | | |
| Andrikaela (ZH South west cost) | 33 | | | | | | | | | 25 | | |
| Fort-Dauphin | 0 | | 11 | | | | | | | | | 16 |
| Andolomikopaka (Manambolo) | 2 | | | | | | | | | | | |
| Total | 262 | 370 | 11 | 32 | 18 | 2 | 14 | 7 | 15 | 25 | 2 | 16 |



A Madagascar Plover adult at Ifaty in its preferred habitat, ringed December 2002 (Yellow on left leg), seen again February 2004.



A nest with two eggs of Madagascar Plover at Lake Tsimanampetsotse, February 2004.



Madagascar Plover juvenile captured at Andrikaela, February 2004.