



Falkland Islands Wading Bird Project

James St Clair; supervisors: T. Székely & R. W. Woods

What's the project about?

As part of my PhD at the University of Bath in the U.K, I am studying some of the wading birds of the Falklands, in particular the Rufous-Chested Dotterel and Two-Banded Plover. I am studying wading birds because they are a very diverse group, with different species being very different in behaviour, habit and breeding system¹. I have come to the Falklands because the birds have evolved in the absence of man, and are relatively tame and easy to study at close quarters.

The project has several aims:

- to learn about the breeding process and basic ecology in these species – where and when do they breed, how many eggs they lay, and how the male and female share the care of eggs and chicks. In conjunction with another project in Argentina, we will learn whether there are any differences between island and continental populations;
- to learn about the effects that introduced land predators have on Falklands birds. Many islands in the archipelago have had rats, cats and even Patagonian silver foxes introduced by man, but it is not known what effect these new threats have had on the behaviour and life-histories of the native birds. I will compare various birds here on Sea Lion Island, where there are no introduced predators, with birds on other islands which do have populations of rats;
- to monitor the populations of land birds on Sea Lion Island. Many island populations are in danger of extinction, because they are often small and vulnerable to threats; knowing which species are present, and in what numbers, means we will have an 'early warning system' should problems arise, whether by disease, accidental introductions, or climate change.

Methods used:

- It is important that I can identify individuals in the field, so I am using leg-rings to mark some birds. This is a standard method used by conservation biologists and ecologists all over the world².
- At some nests, I will use a transponder system³ to record the amount of time that the male and female parent spend incubating their eggs.
- I will capture birds from some families in order to measure them and put rings on their legs, and to take a single drop of blood. I will also record their nest locations using GPS, and count and measure their eggs.
- I will be showing some birds dummy cats and rats, and recording how they respond. This will tell me how Falklands birds have adapted to the introduction of these predators, and which groups are most at risk from accidental introductions.
- Monitoring of populations is by walking transects of the island, and recording how many birds I see and of which species, which will allow an estimate of population levels.



Rufous-Chested Dotterel *Charadrius modestus*

Why are some birds wearing rings?

Some Two-Banded Plovers and Rufous-Chested Dotterels are wearing rings on their legs (above). The plastic coloured rings help me to identify individual birds from a distance, without having to catch them again. The metal rings each have a unique number, which means that if we find a ringed bird in Stanley – or Patagonia – in ten years' time, we will know where it came from.

What is the transponder system?

The transponder system consists of a tiny microchip, smaller than a pea, which is worn by the bird, and a receiver, which is buried near the nest. The receiver then digitally records when the bird arrives at or leaves the nest.

Why take blood?

From some birds I will take a drop of blood to be analysed later in the laboratory⁴. This drop of blood can tell us which birds are related to which, what sex the chicks are, whether the island population has a healthy level of genetic diversity, and might also tell us whether the Falklands' Two-banded plover deserves to be a new subspecies, separate from the populations on mainland South America!



F.I.G.



Falklands Conservation

References

- 1 Székely, T., Thomas, G.H. and Cuthill, I.C. (2006) Sexual conflict, ecology, and breeding systems in shorebirds. *Bioscience* 56(10): 801-808
- 2 http://www.euring.org/about_euring/newsletter1/wsg_register_report.htm
- 3 Kosztolanyi, A. and Székely, T. (2002) Using a transponder system to monitor incubation routines of Snowy Plovers. *Journal of field ornithology* 73(2): 199-205
- 4 Kupper, C., Horsburgh, G.J., Dawson, D.A., French-Constant, R., Székely, T. and Burke, T. (In press) Characterisation of 36 polymorphic microsatellite loci in the Kentish Plover (*Charadrius alexandrinus*) including two sex-linked loci and their amplification in four other *Charadrius* species. *Molecular Ecology*.