

threat displays every time we looked in. Believe me, the sight of Painted Snipes with wings and tail spread is a picture to behold at close quarters.

Modern communications can be a pain when you don't want to be contacted, but right now a satellite-phone was perfect. We rang John Curran, he dropped everything (Kandy was pretty annoyed as he was holding an antique vase at the time), and rushed out to join us and take blood samples.

All birds were banded, flagged, measured and weighed; then photographed and photographed and photographed etc., etc., etc., etc.

We released all six birds at the same time and they flew strongly for 200 m before dropping into tall grass.

We packed up the muddy gear and our muddy selves and smiled all the way home.

This missive would not have been possible without:

- Dan Blunt, Broome Bird Observatory (BBO) warden: photography, pipit-spotting and hopping;
- Wendy Blunt, BBO warden: all measurements;
- John Curran, BBO committee: ridiculously fast driving, blood samples;
- Jan Lewis, BBO committee: banding and nerves of steel at the firing box;
- Liz Rosenberg, BBO Volunteer: meticulous scribing;
- George Swann: for putting me on to the spot in the first place, twinkling, photography.

My sincere thanks to the above and Danny Rogers agrees. *Rostratula australis* here we come!

### Postscript by Allan Baker

The sequel to Chris Hassell's story is that mtDNA sequences obtained from these birds are very divergent from samples of the nominate subspecies collected in Malaysia and South Africa. So divergent in fact that some careful checking had to be done to confirm they were real, and not from pseudogenes transferred to the nuclear genome! Phylogenetic studies are in progress to determine the relationships and appropriate taxonomic rank of the birds captured in my favourite 'wetland' in Roebuck Plains.

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## New website: Models to predict the effect of human activities on the coast on passage and wintering shorebirds: [www.dorset.ceh.ac.uk/shorebirds/](http://www.dorset.ceh.ac.uk/shorebirds/)

The Centre for Ecology and Hydrology (CEH) in Dorset, England has set up a website that describes their models for predicting the effect on shorebirds (waders and wildfowl) of the many human activities that occur on the coast. The effect on the birds is measured in terms of bird fitness. That is, for any particular human activity, the models predict how many birds will starve over winter, and how many will be in poor body condition at the start of spring migration. In many cases, the predictions for fitness can be converted into demographic rates so that the impact on population size can also be explored.

The models can predict the effect on fitness of the most common human influences on the coast such as sea-level rise and coastal re-alignment, habitat loss due to commercial development (including salt pan loss), shellfishing and shellfish culture, disturbance and hunting. The models can also be used to design and test the effectiveness of proposed mitigating measures and to formulate management policies for expert decision systems of the coastal zone. The models are currently being used for several of these purposes in a number of European countries.

The models are individual behaviour-based models (IBBMs) in which, through well-established decision rules, individual birds in the model respond to environmental change, such as habitat loss, as real birds are believed to do; i.e. in ways that maximise their fitness. Multi-site models can also be built when it is believed that birds are likely to respond to environmental change in one site (e.g. estuary) by moving to another. Many model predictions have been successfully tested in several estuaries and on several species of birds.

Most of the behavioural and physiological parameters in the models are 'in-built'. Thus, the models themselves calculate the birds' energy requirements, food intake rates, intensity of interference, prey assimilation efficiencies, etc at each stage of the non-breeding season. In most cases, the only data required to apply the model to a new situation are:

1. the food supply, and the time for which it is exposed over low water;
2. the ambient temperature,
3. bird numbers and
4. some natural history details, such as whether waders also feed over high tide in salt pans or fields.

The models only require the data that are routinely collected during Environmental Impact Assessments (EIAs) or are already known from previous studies or ongoing monitoring schemes. In every other respect, the models are 'off-the-shelf' and can usually be applied very rapidly, and generally well within the duration of most EIAs.

At the moment, it is necessary to collaborate with CEH scientists to apply the models to new sites and assemblages of bird and prey species. The contacts are Richard Stillman (e-mail: [RAST@ceh.ac.uk](mailto:RAST@ceh.ac.uk)) and Richard Caldow (e-mail: [RWGC@ceh.ac.uk](mailto:RWGC@ceh.ac.uk)), CEH Dorset, Winfrith Technology Centre, Dorchester DT2 8ZD, UK, from whom brochures that summarise the models and their uses can also be obtained.

*John Goss-Custard*

