

13th October 2007 Charter Day

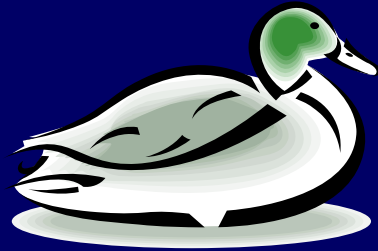
Conflict and cooperation: a really short guide to the family life of birds



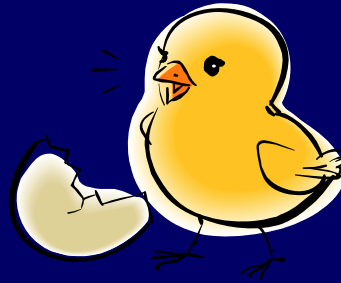
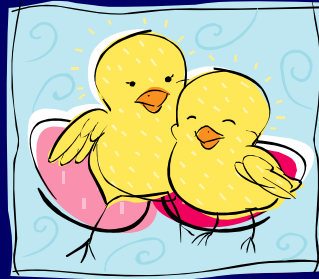
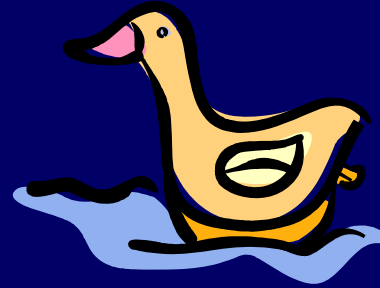
Tamás Székely
Professor of Biodiversity



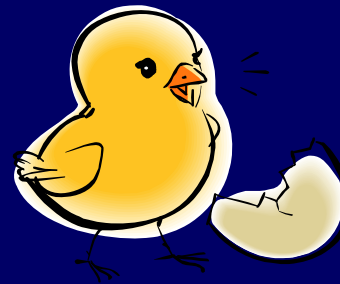
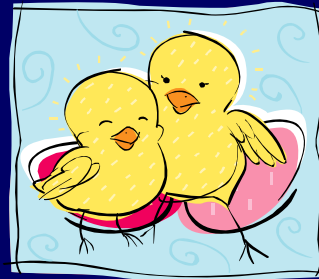
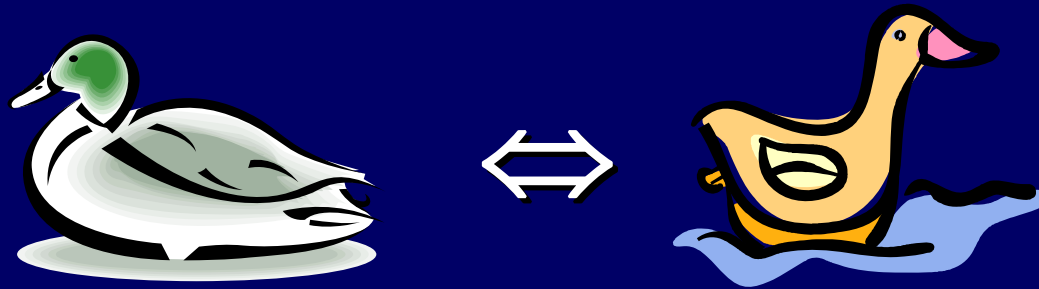
“The ideal family”



+



... **BUT** in reality conflicts can dominate



Biodiversity Lab, University of Bath



**Bath – World
Heritage City**



Andras Kosztolanyi

Alejandro Serrano
Mexico

Hungary

Peter Long
UK

T Szekely
UK

Gabriel Pena
Mexico

Alex Cordoba
Mexico

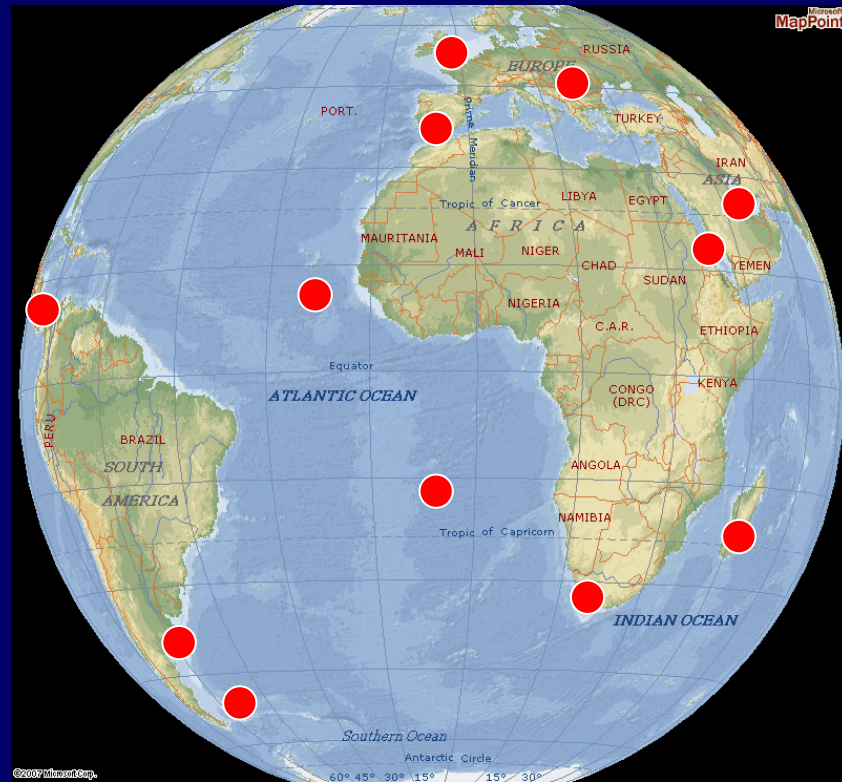
Ron Jenner
Netherlands

Akif Erdogan
Turkey

Val Olson
Canada

Rene v Dijk
Netherlands

Family life of birds: study sites



Family life in penduline tits

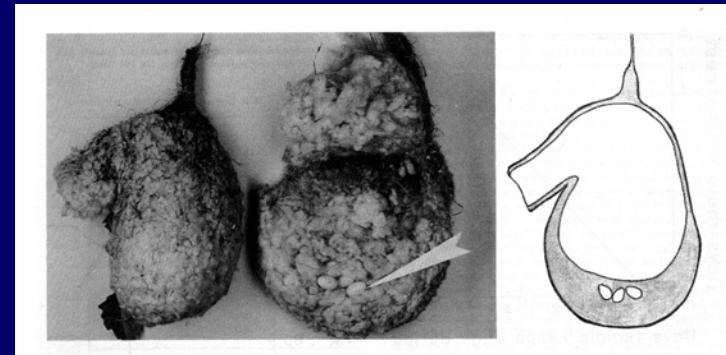


- Small passerine bird, about 9 g
- Lives in Europe and Asia
- Nests on trees along rivers and fish ponds



Family life in penduline tits...

- Male builds a nest for 2 weeks AND sings to attract a female
- If he is lucky, she will come around...
- The female helps him to finish the nest, and then she lays her eggs in the nest chamber
- Meanwhile.....



Family life in penduline tits...

- Whilst the female lays her eggs,
 - the male starts to build a new nest nearby and he tries to attract a new female
 - whereas 'his' female visits several unmated males, and copulates with them
- Many MALES have 4-6 mates in a single season; many FEMALES have up to 6 mates
- At the end of this race for new mates, about 1/3 of all clutches are abandoned by both the male and the female (**i.e. wasted**)

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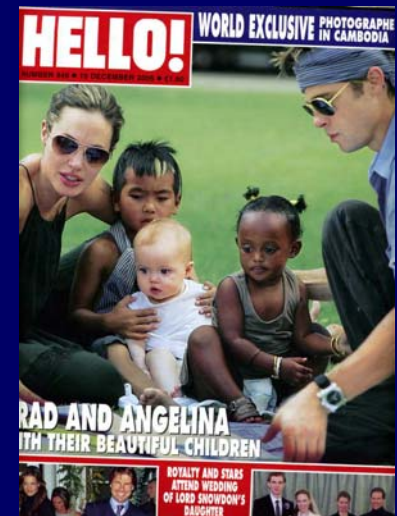
- Drivers of these strange behaviours:
 - males gain by mating with many females
 - females also gain by mating with many males
- **Both sexes gain by finding new mates, but both sexes lose if their mate does so**



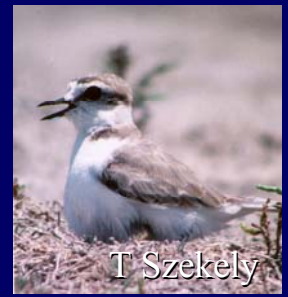
There are situations when animals **MUST** cooperate

- **Lord May, Royal Society Presidential Address, 30 November 2005**

'The most important unanswered question in evolutionary biology, and more generally in the social sciences, is how cooperative behaviour evolved and can be maintained in human and other animal groups and societies.'



Family life in Kentish plovers



- Small ground-nesting shorebird (body mass about 42 g)
- Breed along coastlines and salt marshes
- Both parents incubate the eggs

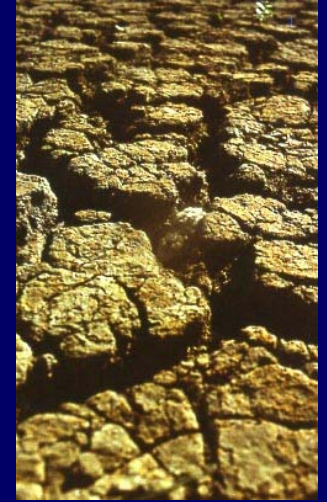
Abu Dhabi, United Arab Emirates



Life of Kentish plovers

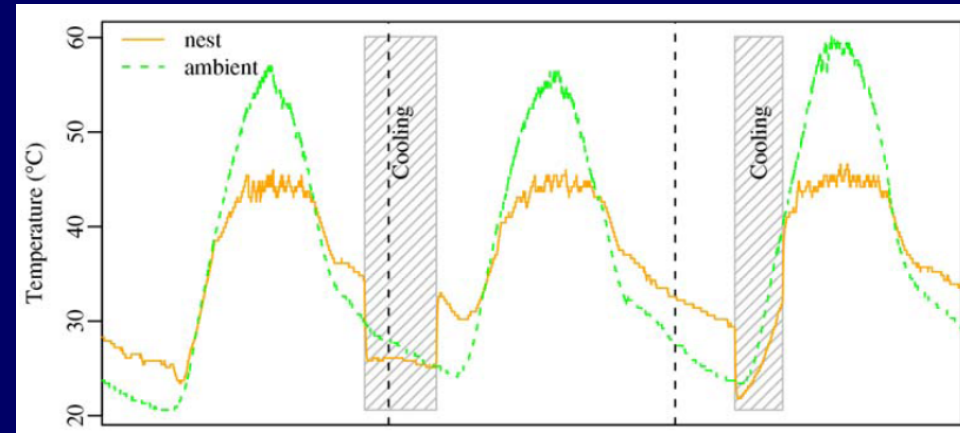
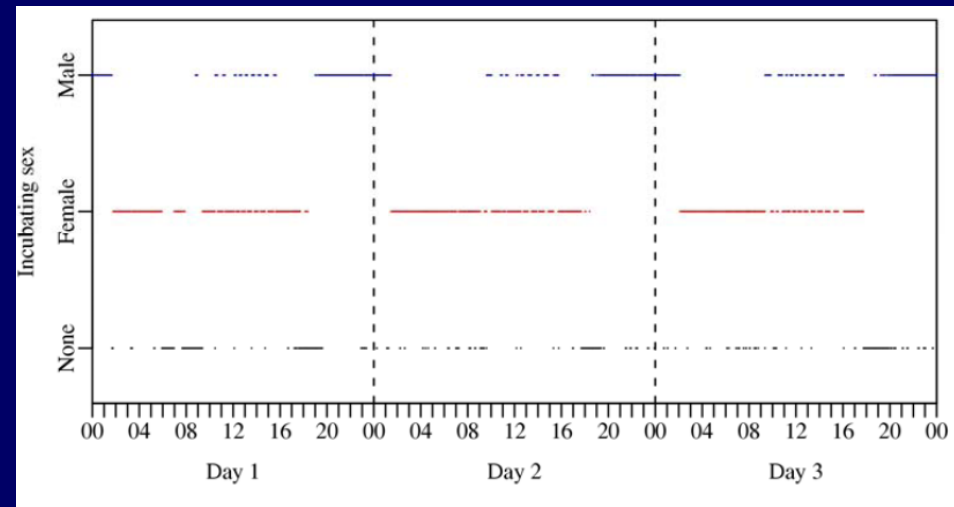


Life of Kentish plovers & the ploverologists



Incubation in Kentish plover

- Females incubate mostly during the day, and the male at night
- Substantial fluctuation in nest temperature
- **WHY DO PARENTS COOPERATE?**
→ we manipulated the workload of male or female by cooling the eggs



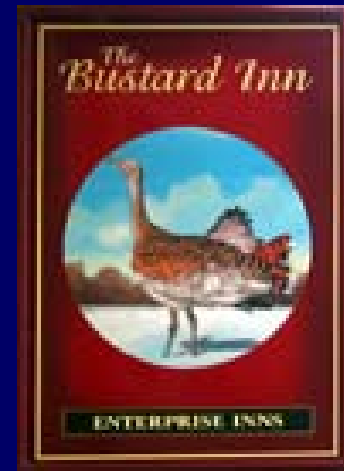
Family life in Kentish plover: brood care

- Chicks are precocial (ie they find food for themselves) although the parents brood them and defend them from predators
- As the demand for cooperation relaxes, one parent (♀ or ♂) abandons the family, and re-nests with a new mate
- The chicks are reared by the parent that is left behind



Great Bustards: life on the run

- The heaviest flying birds
males can weight up to 22 kg
- Great Bustards inhabited grasslands from UK throughout Europe to Eastern China
- Today only remnant populations remained
 - hunting
 - habitat loss
 - nest loss due to agricultural practice

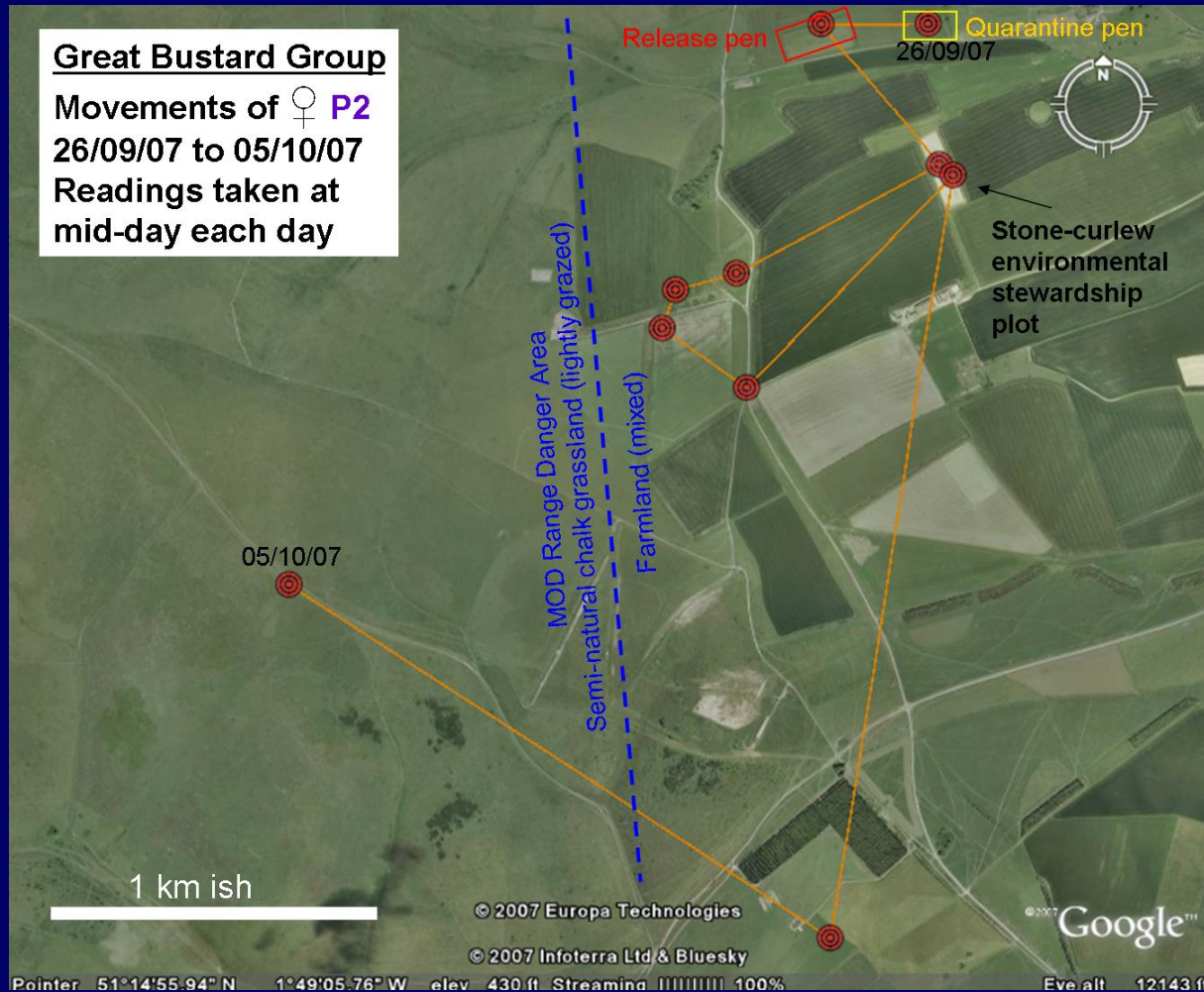


Great Bustard UK reintroduction

- In 1997 a group of dedicated ornithologists & conservationists established a programme to bring back bustards to UK
- Since 2003 over 50 chicks were imported from Russia under DEFRA permit
- Privately funded, and it depends on the generosity of donors
- The birds doing well: latest headline was in July 2007 when a nest was found in Salisbury – AFTER a 175 year of gap!



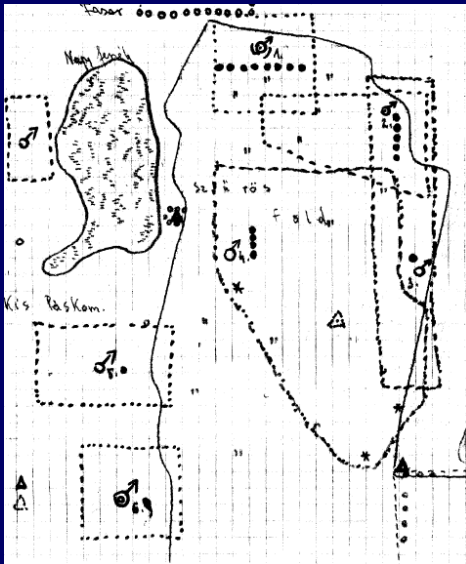
HOT FROM THE PRESS: movements of released bustards using satellite telemetry – Oct 2007



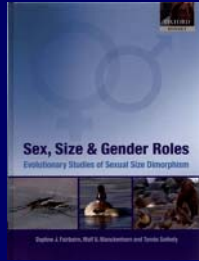
Family life in bustards: conservation & evolutionary biology



- Lek: males display in spring, and females shop around
- Leks are traditional sites where males congregate year after year
- Only females provide care
- How will lek behaviour 'evolve' in Salisbury?



Biodiversity Lab @



Discovering biodiversity



Training & capacity building



Conservation actions



Thank you for your attention!

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*Large number of excellent collaborators and students
.....and of course, thanks to the birds themselves!!*