durrell

Development of Conservation Thought

Has our Concept of Conservation Reached Maturation?

Extinction

'As dead as a Dodo'

First time Man realised that he'd caused the extinction of a species

Origins of conservation thought

- Conservation first developed to protect game stocks for hunting.
- In Europe developed in the 14th and 15th centuries on Royal hunting estates.
- Conservation of wildlife mainly in the 20th century.
- Most conservation techniques derived from game management.

The study of Ethology and Ecology developed in the 1930's and 1940's

- Ethology provided us with a structure to understand animal behaviour.
- Ecology looked at the functioning of systems, much early work by Charles Elton on communities and the effects of introduced species.
- Developed ideas put forward by Darwin that natural selection operates on behaviour and co-evolution between species.

Konrad Lorenz, Ethologist and Natural Philosopher.

Suggested thinking and consciousness in animals.
Continuity of behaviour from animals to man.
To understand animals, need to live with them!
Empathy

Peter Scott

- Pioneer of conservation movement.
- Founder of the World Wide Fund for Nature in the 1960's.
- Initially content with working with species, such as Ne-ne.
- Work became more ecosystem orientated in the 1970's.

Gerald Durrell

- Demonstrated value of captive breeding.
- Made animal behaviour accessible to his readers.
- Showed value of long-term conservation work in developing countries.
- Individuals can make a difference.

Edward O. Wilson, Biologist and Natural Philosopher

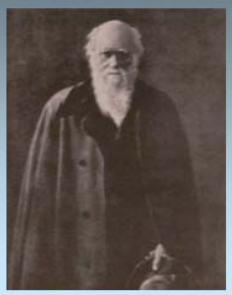
- Development of Sociobiology in the 1970's.
- Evolution operating upon social behaviour.
- Major thinker on bio-diversity.
- Developed the concept of Biophilia, argued that humans have innate need for contact with the natural world for physical and mental well-being.

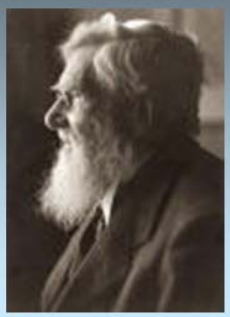
Lessons from Islands

Species Conservation Projects

How has the study of islands influenced biological thought?

Evolution





Island Biogeography

Robert MacArthur

E.O.Wilson

Small Population Biology

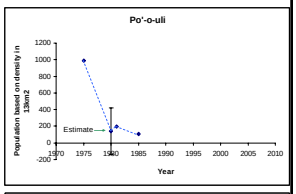
Poouli

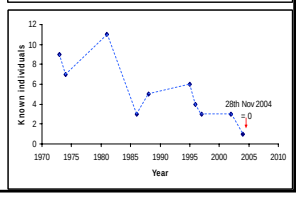
Serpent Island gecko

Lesser fruit bat

Po'-o-uli

- Discovered 1973
- 13km² of habitat
- Density data suggested up to 1000 birds in 1975
- Estimated 1980 at 140 ± 280
- Maximum number birds ever located was 11 in 1981
- Extinct 28th November 2004?





Invasive Species

Black rat

House crow

Brown tree snake

Lantana

Guilty Until Proven Innocent?

- Feral cat
- Feral dog
- Black rat, Brown rat
- Feral pig
- Mongoose
- Crab-eating macaque
- Goats
- Rabbits

Island restoration

1972 **2003**

Captive Breeding and Reintroduction

Hawaiian goose

Galapagos tortoise

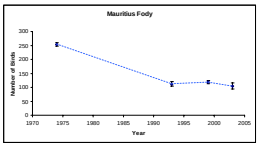
‘Marooning’

Kakapo

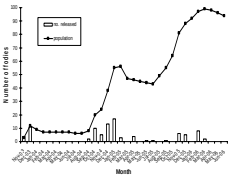
Saddleback wattlebird

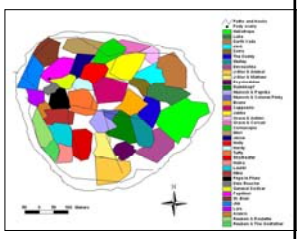
Mauritius Fody

- Long term declining population
- Suffers high rates of nest predation
- Established additional population on Ile aux Aigrettes
- First release in 2003/2004
- Released 59 birds, captive bred and hand-reared harvested young
- First breeding late 2004



Population growth of Mauritius Fody on Ile aux Aigrettes





- 125 birds on Ile aux Aigrettes in March 2007

Intensive Management of Species

Seychelles Magpie-robin

Echo parakeet

Studies on island species have taught us:

- Value of captive studies and reintroductions.
- Manipulations possible to enhance populations.
- Importance of translocations “marooning”.
- Ability to eradicate exotic species and restore habitats and ecosystems.

With all of this information species should be very easy to save?

California Condor, Kakapo and the Ne Ne

These projects all started several decades ago.

Many years trying to find out what the problems were.

All now successful in increasing numbers but all populations still being managed.

Seychelles Magpie Robin

Conservation work started 1960

- **Predator control**
- **Habitat restoration**

Full time warden 1978

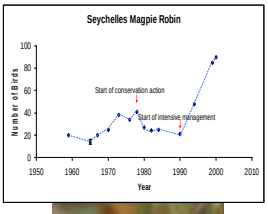
Cats eradicated 1981

Intensive management started1990

- **Habitat restoration**
- **Supplemental feeding**
- **Competitor control**
- **Nest-boxes**

30 years before start of recovery

Needs long term management



Jamaican Hutia

- Re-introduction project failed.
- Inadequate post-release care.
- Inadequate post-release monitoring.
- Inadequate pre-release survey.

- The species did not need a reintroduction and was not endangered.

Some features of species conservation projects

- Many projects not successful.
- Some projects irrelevant
- Long gestation before effective conservation.
- Often not addressing main limiting factors.
- Learn from series of errors.
- No quick fixes?

"One searches in despair for signs that the lessons learned in conservation efforts with one species might commonly be applied to the conservation efforts for any other species."

N. Snyder and H. Snyder (2000), The California Condor.

Recovery plans

- Projects clearly need careful planning and organising so the resources can be wisely used and the staff are working towards clear goals?

Recovery Plans

"Substantial progress often occurs in the absence of an approved plan and, conversely can fail to occur even when an approved plan exists. Recovery plans are at best a minor component of the functioning of an effective recovery effort…."

Snyder (1994).

"The highly complex step-down outlines and multiyear budgets that form the bulk of many traditional recovery plans are rarely useful and should be abandoned for lack of utility."

Snyder (1994).

Are there any answers?

- What do we need to do to save a species?