



Human Impact on Taiaroa Head

A Biology Programme for
Secondary Students
at the **Royal Albatross Centre**

Student Work Sheet
2011

Residents of Taiaroa Head

Pilot's Beach

Species	Status	Taiaroa Head Population	Site Features <i>Why breed at Taiaroa Head?</i>	Human Impacts – NEGATIVE <i>What have we done that negatively impacts the species?</i>	Human Impacts – POSITIVE <i>What have we done that benefits the species?</i>
Blue Penguin <i>Native</i>	At Risk (declining)				
Fur seal <i>Native</i>	Not Threatened				
Variable Oystercatcher <i>Endemic</i>	Not Threatened		Close to food – feed on shellfish on rocky shores	Introduced predators Human disturbance	Provide food through agriculture – birds forage on cultivated fields for grubs, insects & worms

Observatory

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Stewart Island Shag <i>Endemic</i>	Threatened (nationally vulnerable)				
Northern Royal Albatross <i>Endemic</i>	At Risk (naturally uncommon)				
Sooty Shearwater <i>Native</i>	At Risk (declining)		Bare hillside for building burrows, close to continental shelf	<ul style="list-style-type: none"> - Introduced predators, - Long line fishing. - Customary harvest on muttonbird islands - Rabbits – compete for nesting space - Lighthouse/security lights – birds become disorientated when coming back from the sea 	<ul style="list-style-type: none"> - Predator control - Reduced human disturbance within reserve - Weed control (spraying) increases area available for burrowing - Rabbit control – burrows become available for nesting

Signposts

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Spotted Shag <i>Native</i>	Not Threatened				
Little Shag <i>Native</i>	Not Threatened		Close to food Trees to nest in	- Fishing net entanglement - Noise disturbance – restricted to trees away from water	Reduced human disturbance in reserve
Royal Spoonbill <i>Native</i>	At Risk (naturally uncommon)		- Trees for nesting - Red-billed gull colony gives early warning of threats. - Close to feeding grounds in harbour	- Vegetation clearance has reduced nesting habitat - Noise and visual disturbance from tourists boats	- Enhanced red-billed gull colony through predator trapping (gulls alert spoonbills of threats) - Tourist boats asked to keep their distance from nesting area to reduce disturbance.
Red-billed Gull <i>Native</i>	Threatened (nationally vulnerable)				
Black-Backed Gull <i>Native</i>	Not Threatened		Close to food – farmland & other wildlife (predates on smaller birds)	Could be affected by pollution (contaminants, chemicals) when scavenging in rubbish	Provide food – urbanization and agriculture (livestock eyeballs, cultivated fields); reduced human disturbance in reserve area

What would happen if?

Protection = aspects that minimise detrimental human impacts

Method:

1. In groups of 2 or 3 people review the “What would happen if...” scenarios you have been given. Record them in the first column of the table below and the complete.
2. Report you ideas to the class during discussion.

What would happen if...	Impact	Management Techniques	How can YOU help prevent it happening or help with the management of the situation?

Enhancement Activity

Enhancement – aspects that improve on nature

1. Use lines to match up the intervention method with the effect of that technique. There maybe more than one answer to each method.

Intervention Methods	<i>Effect of these Methods</i>
1. Dummy Eggs	A. Used to reduce disturbance during courtship and egg laying
2. Revegetation	B. Used as a training tool for those pairs who consistently break eggs
3. Incubator	C. Hand removal of maggots before they enter the body cavities
4. Hand Rearing	D. Birds that do not succeed in their first flight and are unhurt are returned to the colony for a second try
5. Fostering	E. Mint added to the nest is effective in repelling flies about the hatching period - preventing fly strike on young
6. Flight Rescue	F. Fog spraying of water over sitting birds and surrounding vegetation to raise humidity and reduce temperature through evaporation to prevent heat stress.
7. Supplementing Nesting Material	G. Used to hold pairs at nest, after something has happened to their egg, to provide natural foster parents when needed
8. Trapping	H. Introduction of hay bales around the nest to protect very young chicks from foul weather and introduction of large screens to provide sun shade for young chicks in hot weather.
9. Security Fence	I. Used to control bronchial infections, treat fungal and bacterial infections and wounds from bites.
10. Restricted Viewing	J. Deserted eggs or chicks are placed in the nest of pairs who have lost their offspring or are better parents
11. Window tinting	K. Chicks are hatched in an environment where the membranes are kept moist and there is no fear of fly strike
12. Banding	L. Used to control or eradicate introduced pests (blowflies) and predators (cats, mustelids) that affect the survival of the eggs and young
13. Drug Treatment	M. Removal of introduced plants like thistles, possibly decreases blowfly numbers. Introduction of native plants could increase the moisture in soil and areas of shade as well as increase the nesting material available.
14. Manual Treatment	N. Chicks feed by wildlife rangers when one or both parents do not return to the nest
15. Microhabitat Manipulation	O. Used to reduce visual disturbance to nesting birds
	P. Used to keep a reliable record of bird presence, breeding attempts, family history and immigrants to the population
	Q. Used to control access of humans and canines to the nesting area

2. Outline any negative aspects to these management techniques?

3. How can the rangers tell if the birds are stressed?

4. Do you think these enhancement techniques should be used to increase the fledging rate of Royal Albatross at Taiaroa Head?

Management has increased the fledging rate by ~20%.

*Survival rate of offspring to 5 yrs = 75% non managed offspring
= 60% of managed offspring*