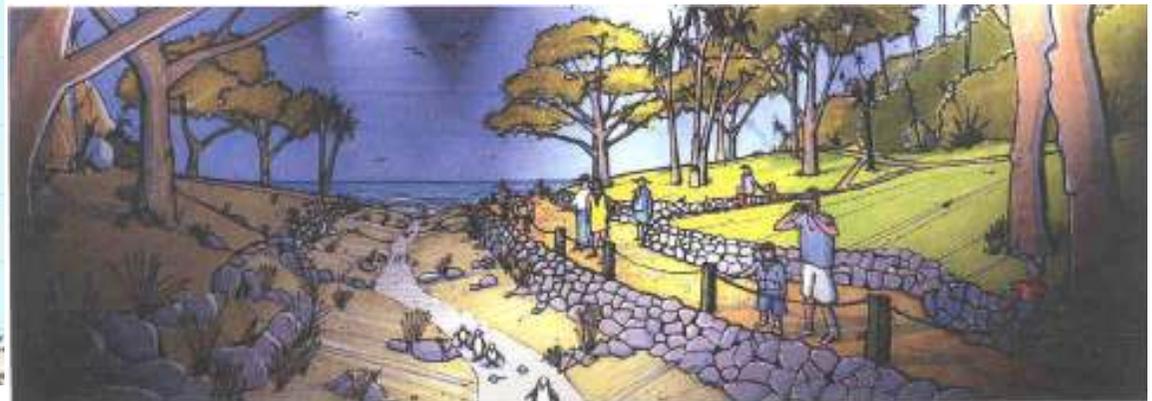


Establishment and Development of Penguin Colony at Boulder Bay



Introduction

- To the present, proponents of a penguin colony at Boulder Bay (Godley Head) have only presented their plans at an overall concept level.
- This presentation is designed to elaborate the temporal and spatial development of a penguin colony using the chick-transfer method.
- As Boulder Bay has no contemporary penguin colony, considerable care will be required in retaining, and supporting young birds as a 'mature /self sustaining' colony develops.
- It is planned to have around 300 chicks fledge from Boulder Bay each year for the duration of the development phase (i.e. Project Years 1 – 13). This will include chicks bred in the Bay.



Objective

The objective is to develop a large **self-sustaining colony** of white-flippered penguins at Boulder Bay as a **community supported bio-diversity, ecotourism and educational initiative.**



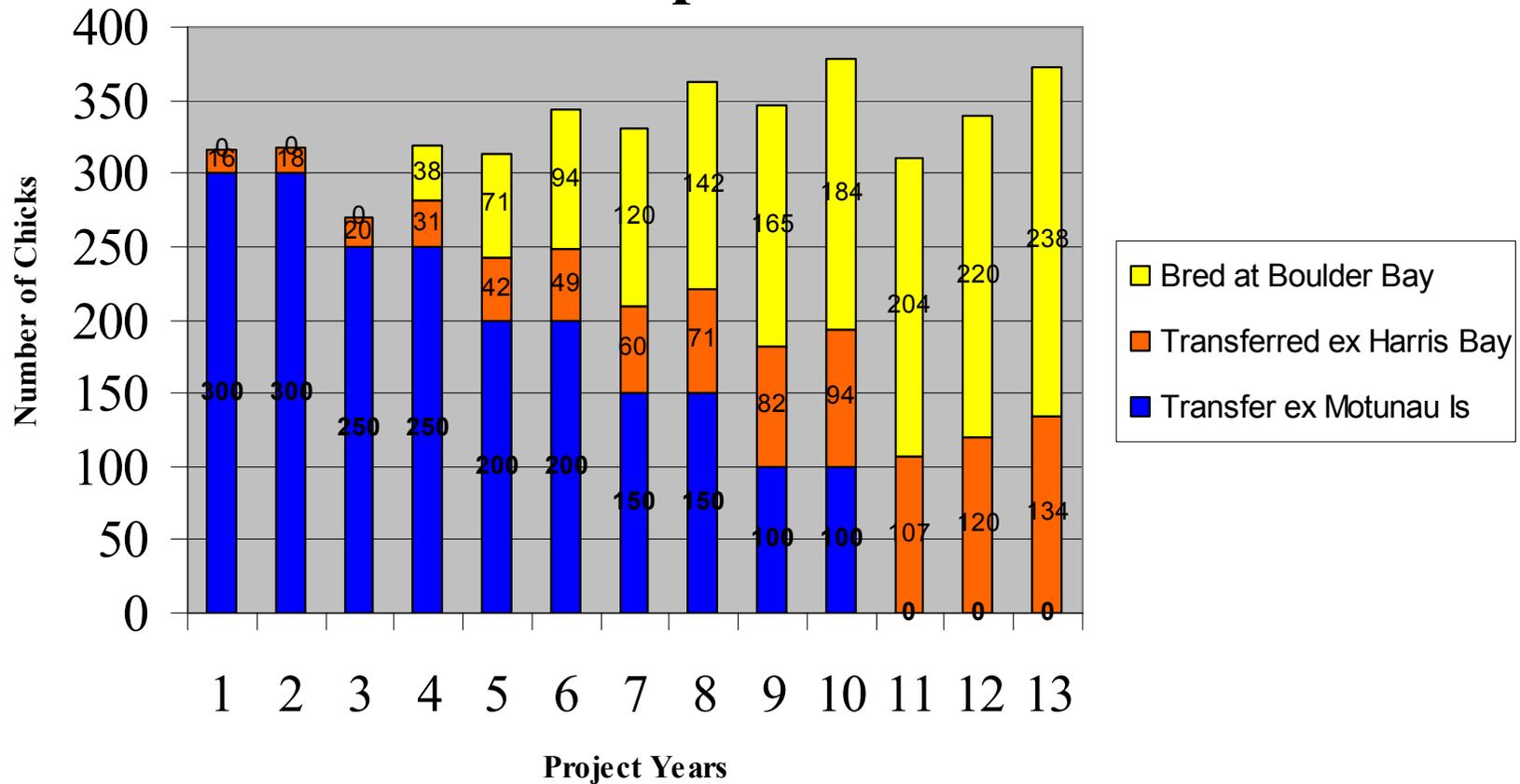
Process

- To date we have focussed on the end concept.
- The development of a viable (self supporting) penguin colony requires more than a decade of transfers and strict environmental controls, and with
- Regular monitoring of progress, and considerable community support

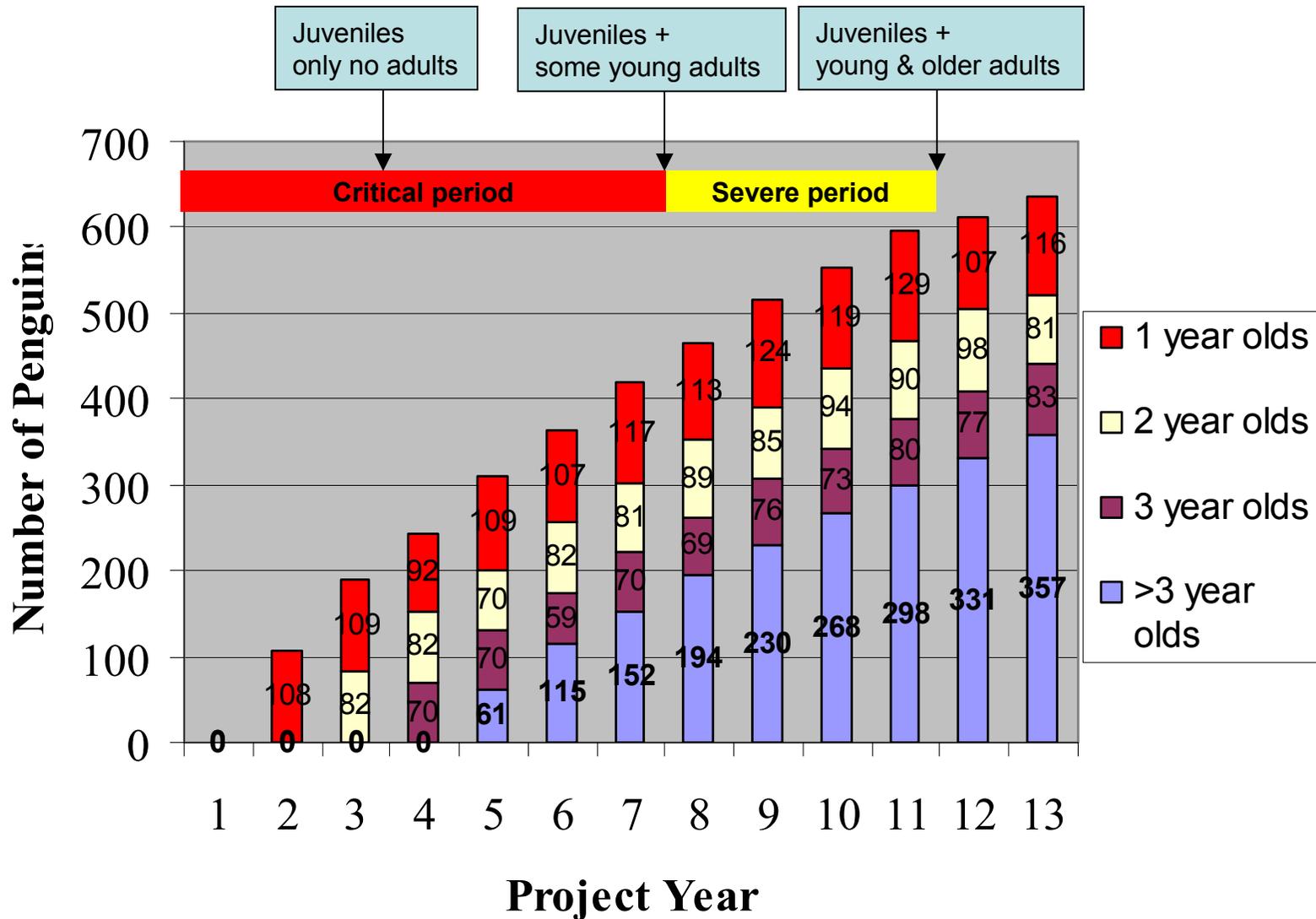


Chick transfers decline
as locally bred birds increase in number

Chicks Fledged from Boulder Bay - Development Phase



Age Composition of Boulder Bay Population



BOULDER BAY CONCEPT PLAN



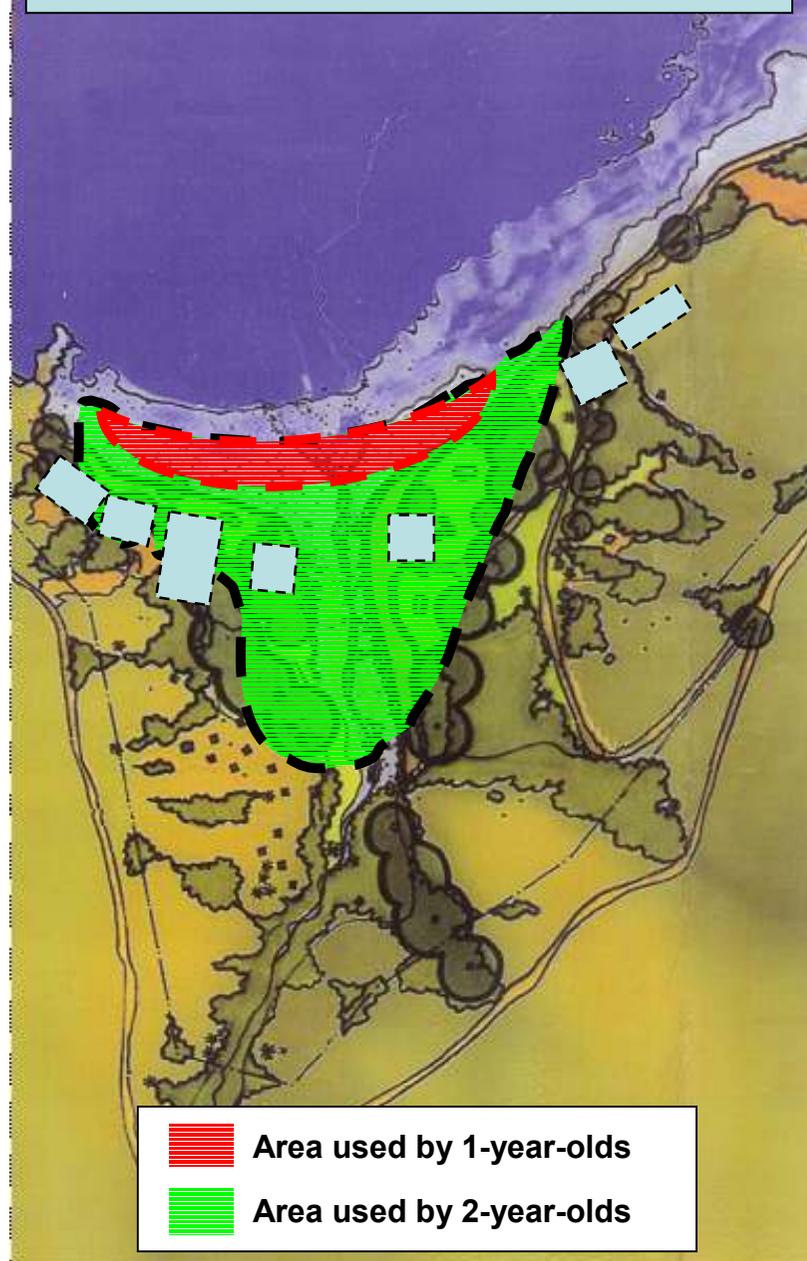
Project Year 2

Critical period

- The chicks transferred in project year 1 would return as 1-year-olds in year 2
- Yearlings would come ashore just after sunset, remain on or near the beach for **a few hours** and return to sea again the same night
- On favourable nights during **October – December, 20-30 1-year-olds penguins** would be ashore in the Bay (ie. 10-15 % of the surviving transferred chicks)
- A few of the 1-year-olds would return to the Bay to moult in **January – February**; this would take about **15 – 20 days**

Key risks: Noise , Dogs, Movement, Light

BOULDER BAY CONCEPT PLAN

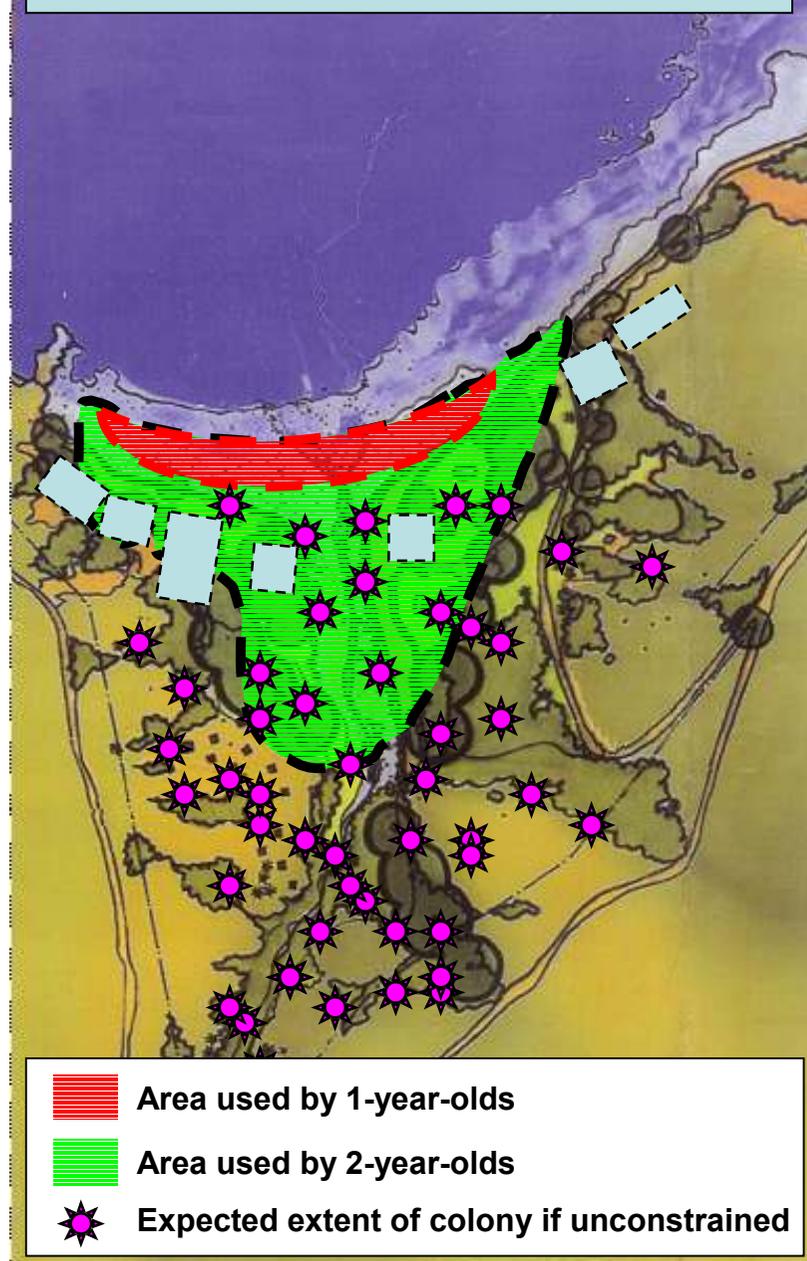


Project Year 3

- On favourable nights during **August – December, 20-30 1-year-olds** would be ashore in the bay either as night visitors or having spent the day there
- The 2-year-olds would explore inland from the beach familiarising themselves with the area and commonly spending some days ashore
- As in the previous year some **20-30 yearlings** will visit the beach area
- A few of the more precocious 2-year-olds may attempt to breed, but most will nest for the first time as 3-year-olds

Key risks: Noise , Dogs, Movement, Light

BOULDER BAY CONCEPT PLAN

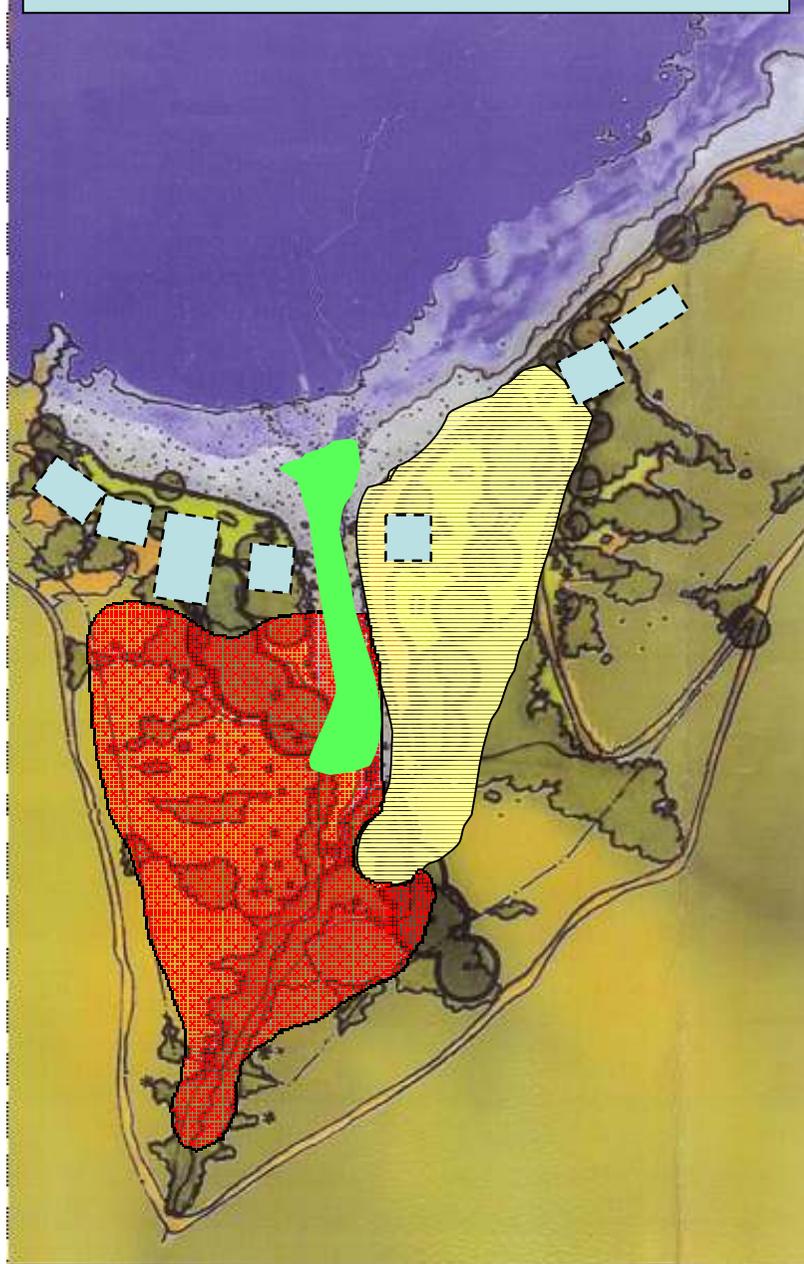


Project Year 5

- From project year 5 the colony would include **3-year-olds** (first breeders) and some young experienced adults
- Adults would return to Boulder Bay periodically during winter; lay from mid **September to early November**, and rear their chicks during **November to early January**
- Young adults search widely for suitable nest sites and if not actively managed the initial colony would be haphazard
- Most adults would return to **moult** during **January to February**, usually at or near where they nested

Key risks: Noise , Dogs

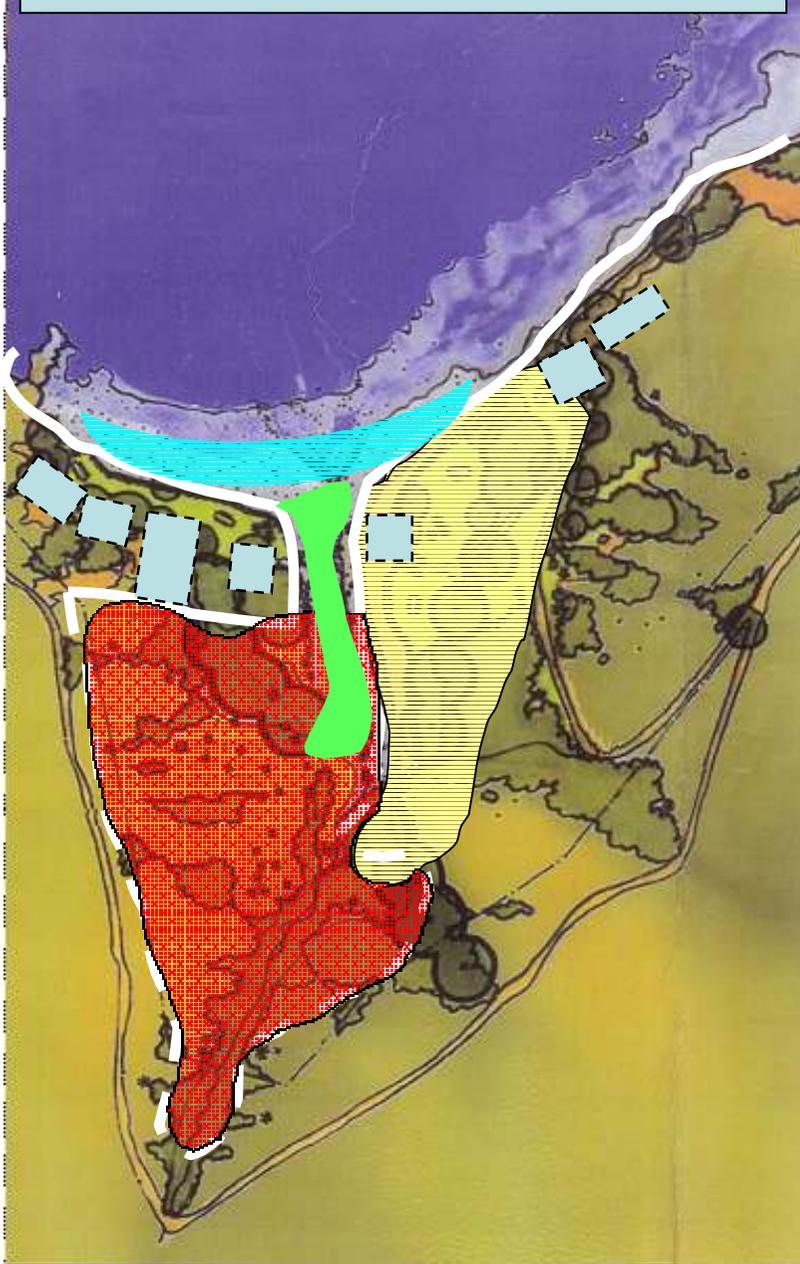
BOULDER BAY CONCEPT PLAN



From Project Year 6 and on

- It is expected that the colony would comprise at least **50 breeding pairs** by project year 6
- Once this threshold is reached the colony would be progressively limited to a discrete area on the west side of the valley behind the Bay
- Attracting pairs to the area with tracking and nest boxes; removing alternative nest sites, and the judicious use of temporary fences
- As the adult component of the population increases the development of the colony will shift from its critical phase to severe

BOULDER BAY CONCEPT PLAN



Outline of “Parade” Component of Project

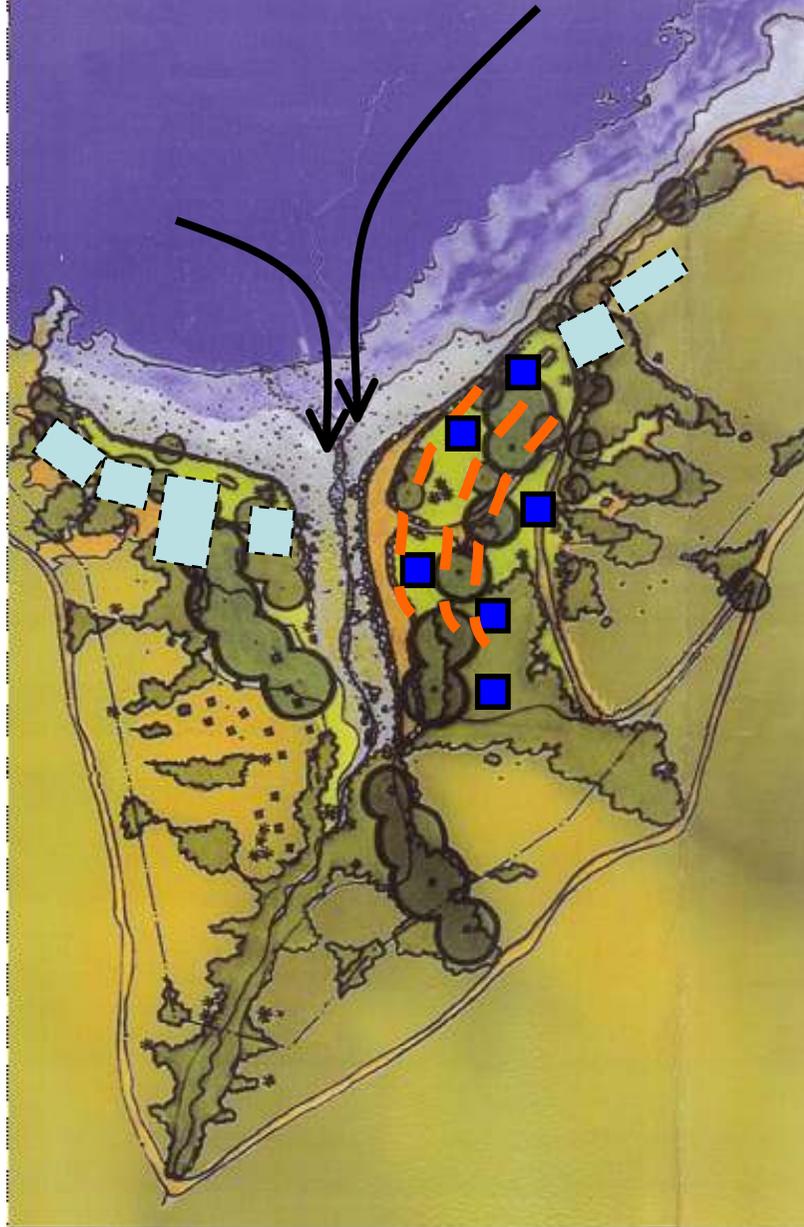
Key criteria

-  Suitable landing beach
-  Site for penguin colony inland from beach
-  An obvious route between the two
-  An adjacent area from which the parade can be viewed
-  Stone wall to channel penguins up valley
-  Penguin proof fence

Envisaged penguins will congregate in the middle of the bay, walk up valley middle to colony on western side

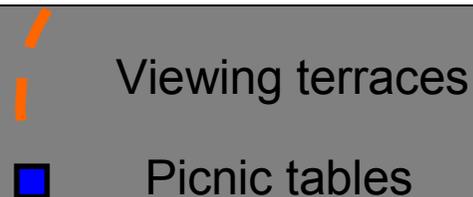
The public would view the ‘nightly’ parade from the gentle sloping area on the east side of the valley

BOULDER BAY CONCEPT PLAN

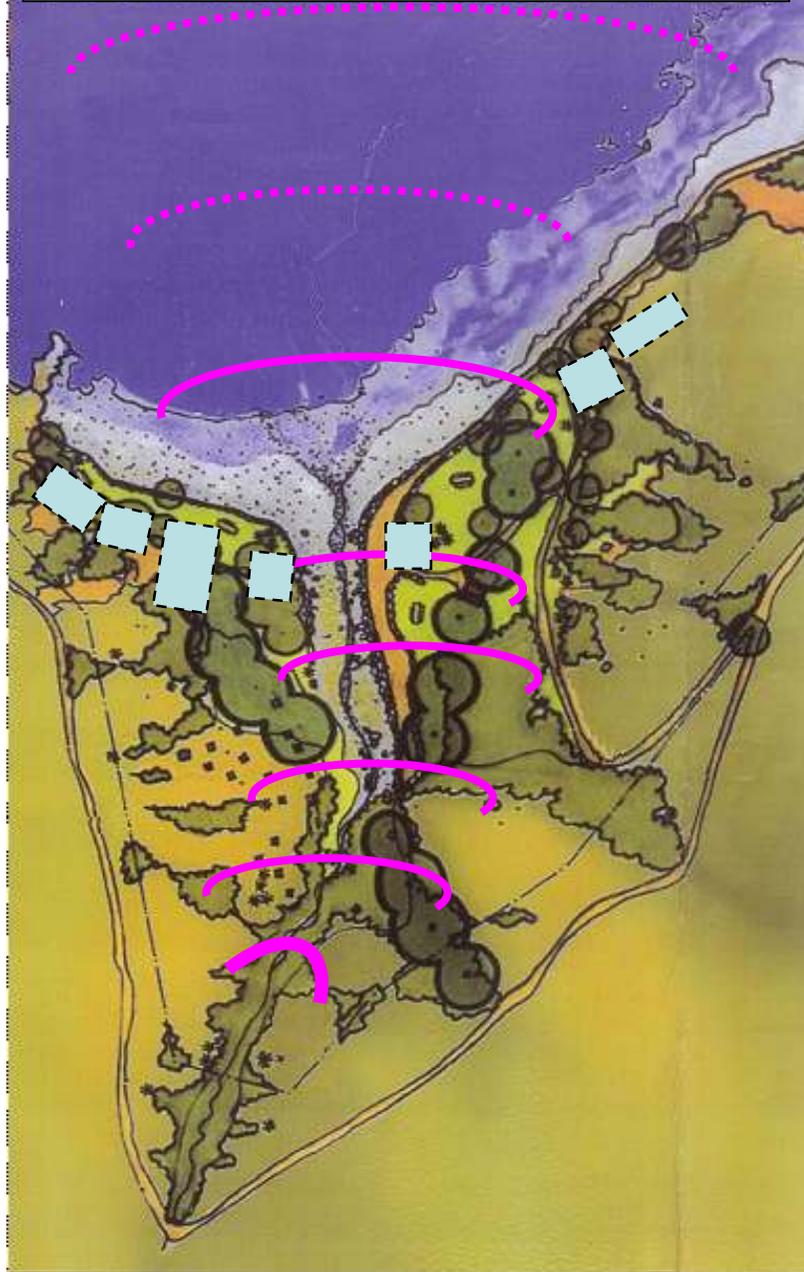


Facilities for the Public and Visitors

- The 'public' area on the east side of the valley would be landscaped and equipped for use by both day visitors and those viewing the nightly 'parade'.
[Initial landscaping can commence at any time]
- As the penguin parade would be an evening attraction it would not affect day visitors' enjoyment of the Bay.
- Visitation to the parade has been designed to be at a low level, and is estimated to peak at 200 persons per night.
- Over time visitors will be asked to keep away from the penguin nesting area.



BOULDER BAY CONCEPT PLAN



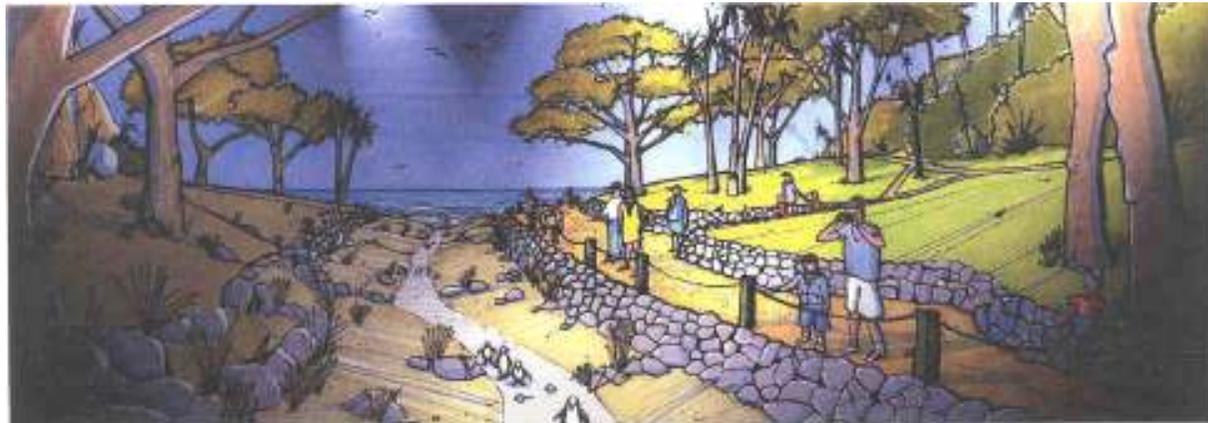
Use of Acoustics

- Planned periodic use throughout the development phase (**Project years 1 to 7**) to attract penguins to the bay and help retain those visiting.
- The use of calls to attract birds to new sites has worked well with several species of seabirds. It will increase the number of transferred birds returning to the bay (rather than them going to Harris Bay) and attract uncommitted non-area birds.
- It is also planned to play recordings made on Motunau Island when fledglings are being held at the Bay overnight prior to release.

Estimated Duration : dusk until 2 hours after dark, during the new moon period in July and Aug, and from Sep to Dec.

Some conclusions

- The development of a Penguin Colony (and parade from project year 6) provides a significant opportunity for the development of amenity and visitation at Boulder Bay
- The chick-transfer method has a proven record of success, and in conjunction with acoustic attraction would result in a large colony (200+ breeding pairs and chicks) establishing at Boulder Bay
- The existing breeding of chicks at Harris Bay will now have inevitable consequences for Boulder Bay as chicks increasingly disperse to settle in adjacent Bays



Some conclusions - continued -

- Any licensing of baches will require recognition of the critical period for colony establishment (Project Years 2 to 7).
- Any bach licences and conditions will need to be (independently) reviewed annually.
- The removal of fences and curtilages and subsequent growth of public visitation and penguin breeding indicates that to ignore the changing conditions for bach retention would be naïve and less than honest.

Age Composition Boulder Bay Penguins

