



OUTCOME:

Supporting TRANSPORT & LOGISTICS



Saving our island biodiversity from introduced pests

The Auckland Islands (57,000 ha), in the New Zealand Subantarctic Islands, are a Nature Reserve, World Heritage site, and home to some of the world's most extraordinary natural heritage. There are over 400 plant and animal species here that are restricted to the New Zealand subantarctic region and more than 100 species of endemic flora and fauna.

Auckland Island (46,000 ha) has populations of feral pigs, cats and mice that have inflicted severe ecological damage over the past 150–200 years. After more than 25 years of conservation effort, it is the last island in the New Zealand subantarctic region where mammalian pests remain.



Unloading cargo from vessel via helicopter *Photo: Jack Abbott*



Te Rūnanga o NGĀI TAHU

Project Lead | James Ware | jware@doc.govt.nz

What's the problem?

A remote location with a limited number of suitable vessels operating in NZ.

- ▶ Major shipping operations will be infrequent and located a long way from the home ports of most vessels.
- ▶ Regular resupplies required during operational periods.
- ▶ Passenger transfer is currently limited to a 36-hour trip, in good weather, by boat or flight with a twin-engine helicopter. Seasickness versus small payload.
- ▶ The Southern Ocean is a challenging place to work.

Work already completed

				
1 cargo voyage.	8 voyages by the charter vessel <i>Evohe</i> .	2 helicopter passenger transfer flights.	Team is working with the industry to develop solutions.	Estimated to be largest cost component of programme ~30% of total.

Key findings

- ▶ Significant loss of time in travel and recovery from seasickness, for both people and dogs.
- ▶ Extremely limited NZ-based passenger shipping options.
- ▶ Limited and expensive, NZ-based cargo shipping options.
- ▶ Limited helicopter operators. Current options wouldn't support regular rotation of staff.



Where to from here?

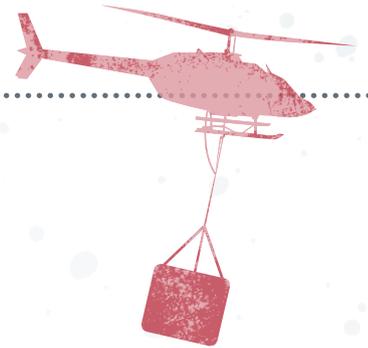
Infrastructure Set up		Maintenance				Demobilisation	
Pig Eradication		Mice		Cat Eradication			
Native species monitoring							

T o / from island	Passenger Transfers	Infrequent, teams of 6-12	Monthly rostered, teams <30 with dogs	1 Year Gap	Monthly rostered, teams <30		Infrequent, teams of 6-12				
	Cargo	Several hundred tonnes of building equipment supplies and aviation fuel	Several hundred tonnes of aviation fuel		500 tonnes bait	Several hundred tonnes of aviation fuel	Several hundred tonnes of building equipment supplies and aviation fuel				
	Freight/Resupply		Quarterly resupply of field operational supplies and waste removal		Quarterly resupply of field operational supplies and waste removal						
Years		1	2	3	4	5	6	7	8	9	10

Intra island	Staff Movements	Helicopter and small boat movements		1 Year Gap	Helicopter and small boat movements		
	Helicopter operations	Cargo Unload	Aerial pig hunting		Mice Baiting	Cat Baiting Operations	Cargo Load
		Cargo Unload/Load			Cargo Unload/Load		

Challenges and risks

- ▶ A large vessel is required at times but the workload, in terms of offshore shipping operations, is on a relatively small scale, bespoke and at times infrequent.
- ▶ Shipping biosecurity is expensive and logistically difficult to coordinate for large vessels. High-risk organisms exist in some major ports in New Zealand and resource consent may be required to remove organisms from a vessel in port.
- ▶ All transport operations would be held up by poor weather but aviation options are more susceptible to delays.
- ▶ Emergency response capacity onsite.
- ▶ Most impact on budget of all components of programme.
- ▶ The variation in charter rates and running costs is large depending on the vessel.



Remaining uncertainties

- ▶ Whether the project should own, lease or charter transport.
- ▶ Whether there are opportunities with the navy.
- ▶ What opportunities may be available through partnership or philanthropy.

PASSENGER transfer options:

OPTION 1 – MARITIME

- Limited operators.
- Trip time 36 hours.
- Sea sickness.
- MSY Evohe takes 12 people max + cargo, \$31,000.

OPTION 2 – FIXED WING AIRCRAFT

- Not currently available.
- Great payload.
- Reliable.
- Airstrip feasibility not fully explored.
- Twin Otter \$3m to purchase.

OPTION 3 – HELICOPTER

- Only current aviation option.
- Limited BK payload (4 people, 500 kg) \$25k/trip.
- NH90 would require infrastructure (hard helipad).
- Availability of NH-90 not fully understood.



SHIPPING options:

REQUIREMENTS

- Host helicopter operations.
- Transport significant cargo (e.g., 500t bait).
- Bulk storage of fuel (not essential but would provide significant benefits).

CONSIDERATIONS

- Significant biosecurity requirements.
- Restricted to vessels running diesel (no heavy fuel oil).
- No deep water harbours.
- Large national and international positioning costs.
- Need certainty of scheduling and availability to enable planning.

OPTIONS

- Purchase or partnership lease option (potential for other opportunities such as tourism).
- Charter as needed to fill discrete gaps/increase capacity.

Indicative cost range \$k/day:

20 to 100 + fuel



Benefits

Mouse bait loading during summer trials *Photo: Finlay Cox*



Enables all programmes of work.

Pig hunter pickup *Photo: Finlay Cox*



Reliable and efficient passenger transport option could allow effective rostering of staff and allow better teams to be built.

Front Cover Map Supplied by:
Google Earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat/Copernicus
Image U.S. Geological Survey
Image PGC/NASA

Unloading a new hut *Photo: Finlay Cox*

