St Helena Seabird Monitoring

Past, present and future

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The Past

- Establishing a monitoring programme for seabirds and turtles OTEP project 2004.
    - Colony monitoring
    - Nest monitoring
    - Six month round the island Surveys
    - Sightings Scheme
- Pause and Review 2011
    - Data analysed from 2004-2011
    - Data gaps identified
    - Research priorities highlighted

Colony monitoring

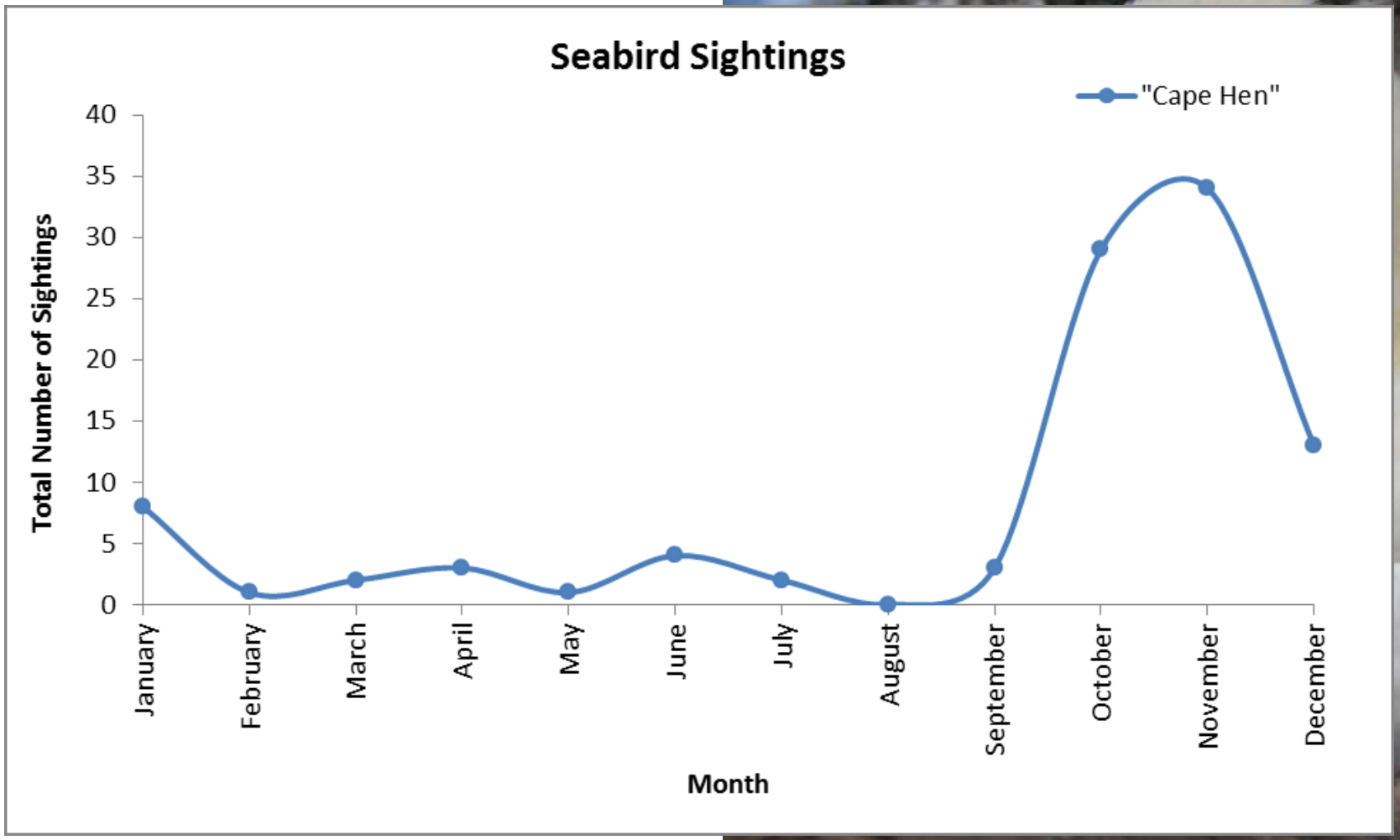
- Total counts of offshore islands, mainland cliffs and ridges
- Use of binoculars and telescope to tally up numbers

Nest Monitoring

- Use of quadrates for high density areas
- Per species;
  - Identification of Breeding seasons
  - Hatching success rates
  - Fledging success rates

Six Month Round the island surveys

Sightings Scheme



Pause and review

- What questions have we answered from the research?
- What information is still lacking?
- Which species and monitoring areas should be a priority for future research?
- Provision of evidence based advice from results

Data management

- No system is full proof
- Regular training, maintenance and updates
- Ask questions
- Don't be afraid to ask for help
- Double check for errors
- Adapt systems if they are not fit for the purpose
- Review regularly
- Save backups of backups

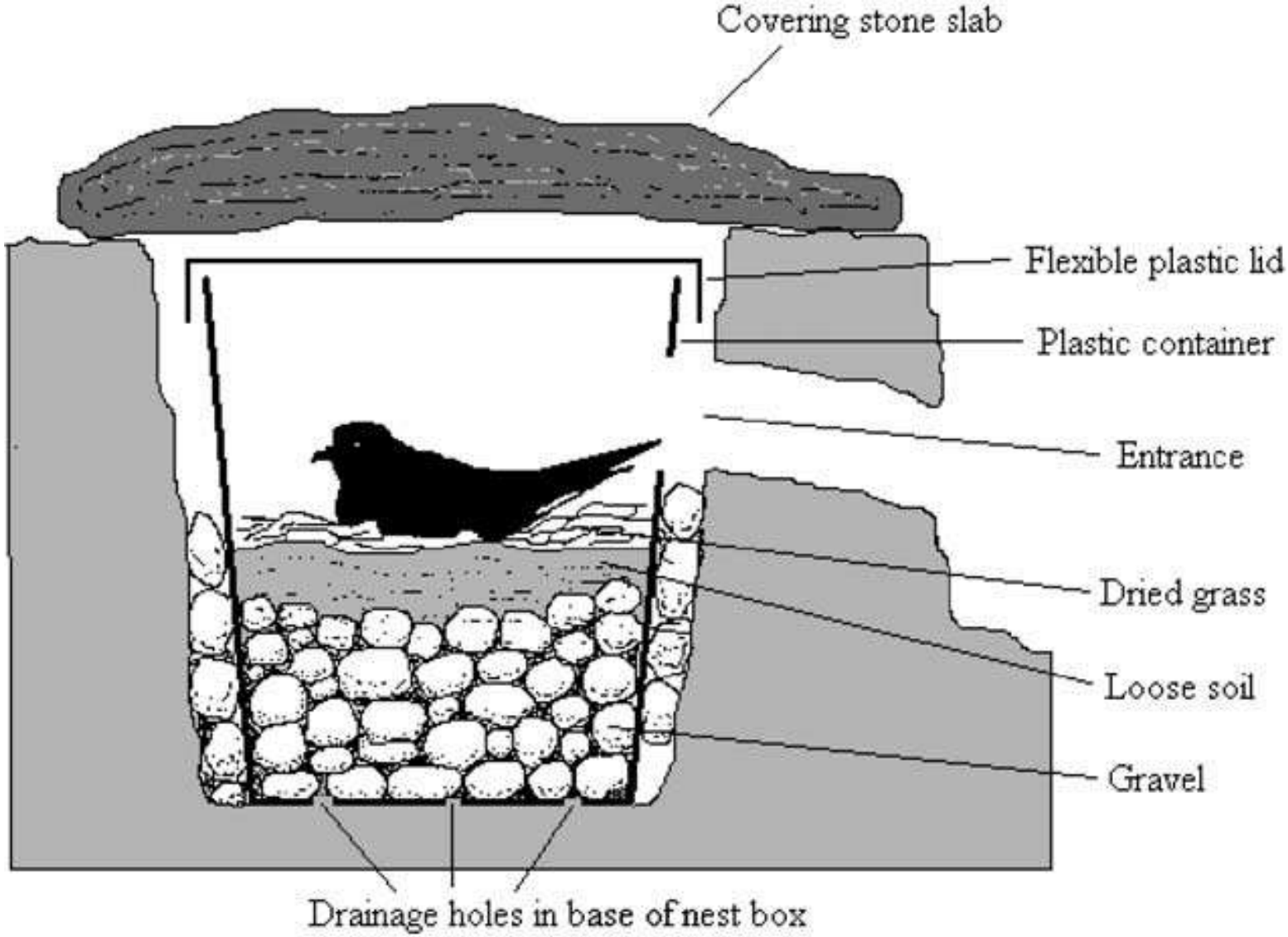
The Present

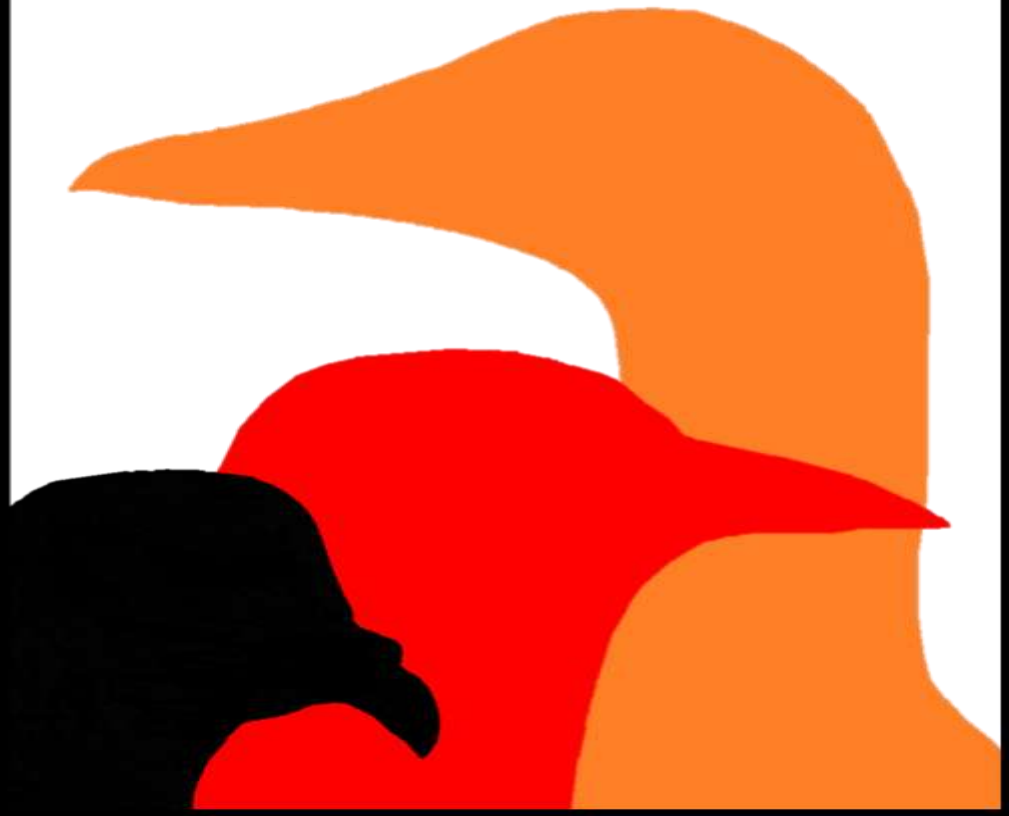
- Colony Monitoring
- Nest monitoring
- St Helena Ringing Scheme
- Tracking
- Mapping
- Madeiran Storm Petrels

Colony monitoring

- Priority areas
- 3 key species:
  - Red-billed tropicbird
  - Masked booby
  - Maderian storm-petrel
- Species specific techniques to address data gaps
- Internationally significant populations?
- Global interest to seabird ecology
- Conservation priorities?

Nest monitoring

- 



St Helena
Ringing Scheme

What is ringing?

- Each bird is individually identified by the fitting of a uniquely numbered metal ring on their right leg.

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- Masked boobies also have a orange plastic colour ring with a black two alpha-numeric code fitted to their left leg.

- This allows birds to be easily identified visually from a distance.

Key aims of the scheme

To increase our understanding of the lives of seabirds on St Helena

To highlight the importance of National Conservation Areas used by seabirds

To increase our knowledge of seabird movements between areas in which they occur

Through colour ringing masked boobies we hope to answer these questions

How large is the masked booby population on St Helena?

How successful are they at breeding on the mainland?

Do the same masked boobies visit the mainland at the same time each year?

Are they faithful to the same breeding areas within and between years?

How long does the average masked booby live and are the survival rates different between juveniles and adults?

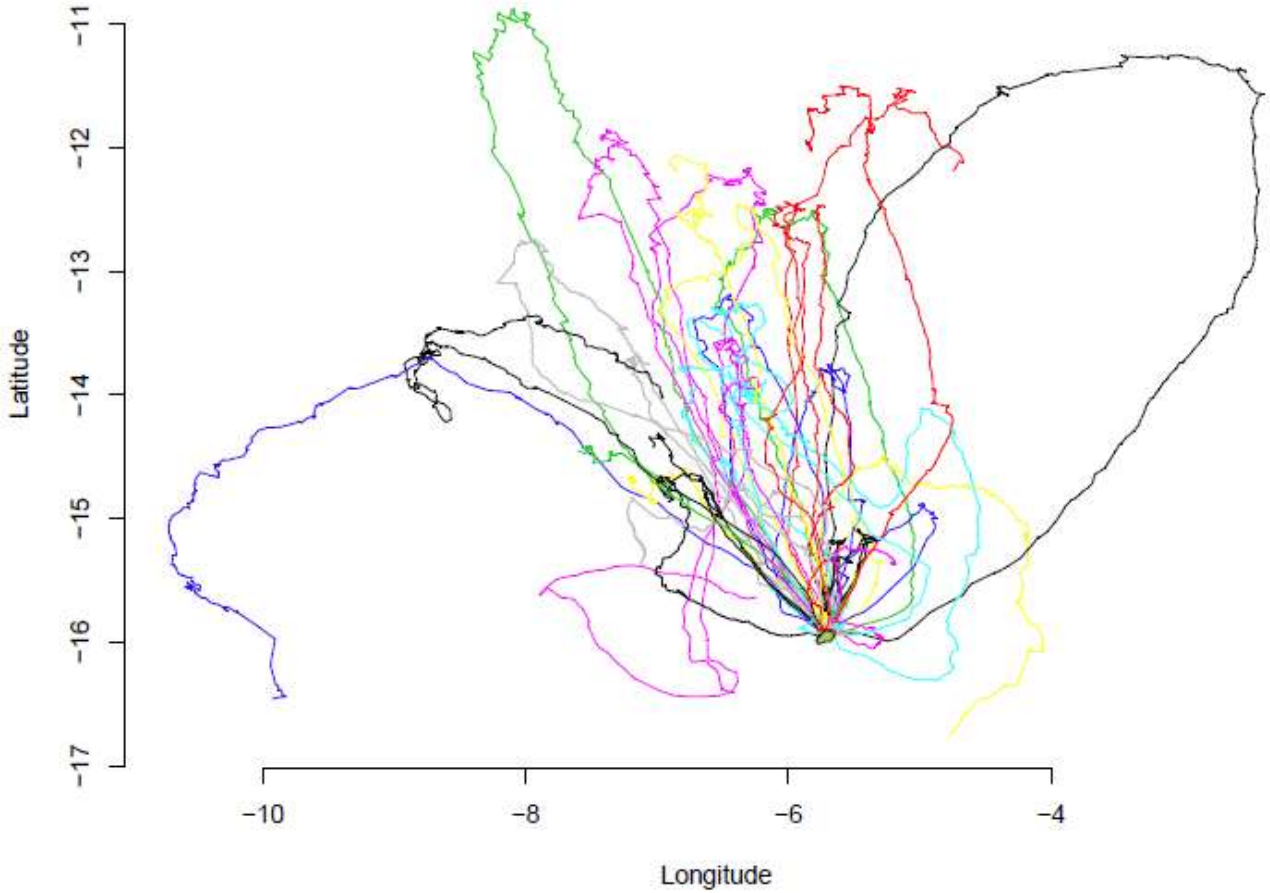
Supporting Sustainable Fisheries Management Through Tracking of St. Helena Seabirds

Cavity Monitoring

Tracking Tropics

- 42 loggers deployed.
- 35 retrieved, 2 failed.
- 15 foraging trips from incubating birds.
- 32 foraging trips from adults rearing chicks.
- Regurgitate analysis showed a preference for fish and squid.

Foraging Ranges



- Each colour represents a different individual.
- 2 degrees of longitude are approximately 240km.

Interesting Trips

- Longest foraging trip recorded was for 11 days (266.6hrs)
- Longest trip recorded was 1455.4 km (904 miles) from a chick rearing adult
- Maximum distance from nest was 616.7 km (383 miles)

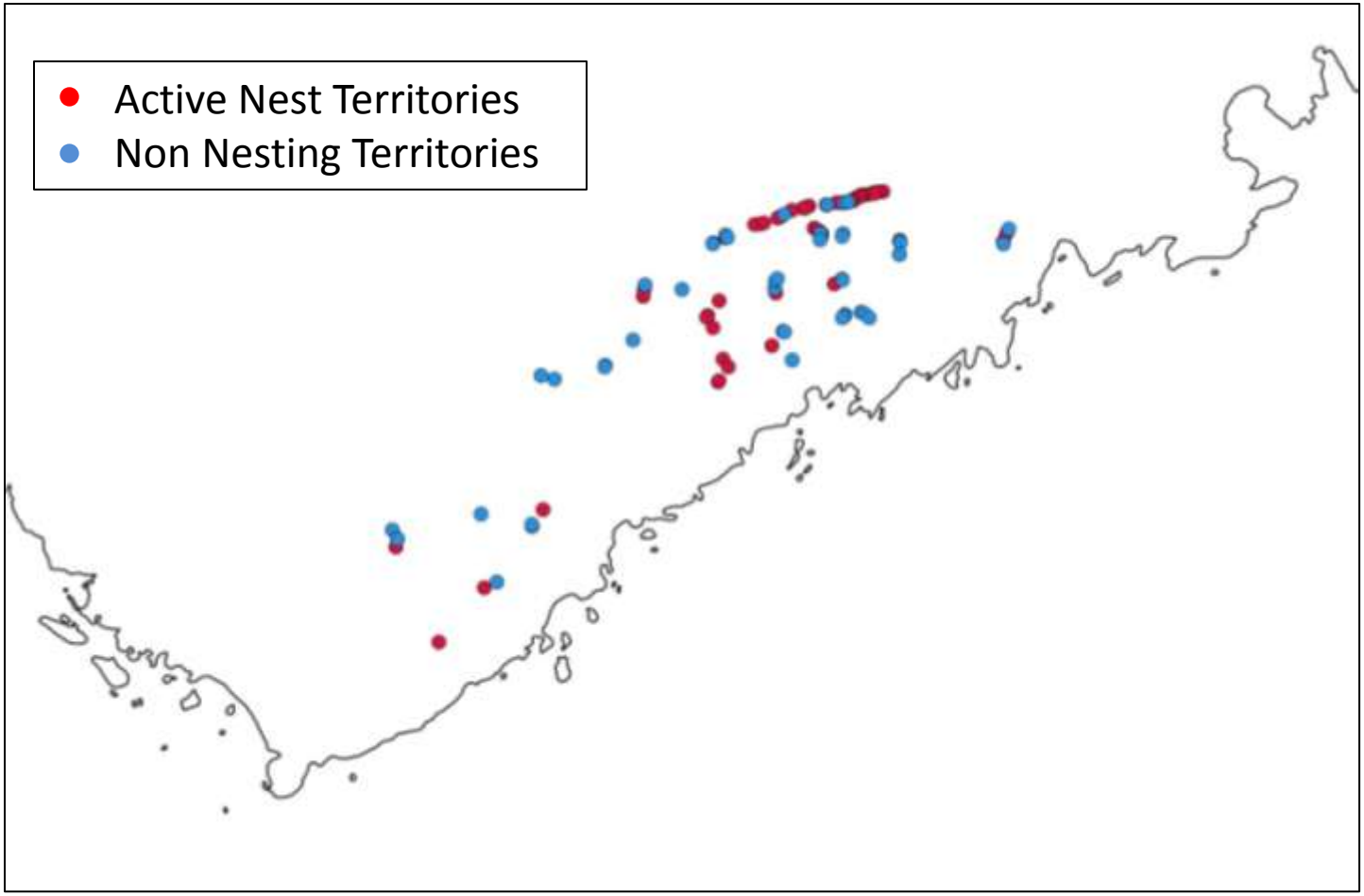
The population size, distribution and movement of Masked Boobies on mainland St Helena

- One year project
- Partly funded by the Seabird Group
- No research on the distribution after July 2009
- how much the populations distribution is changing?
- which areas of the mainland are important for breeding and non-breeding birds?
- The research will feed into National Conservation Area designation, protection and management plans.

Objectives

- Provide a detailed baseline of the population size, bird movements, nesting success against which future changes can be compared.
- Monitor the progress of the colony compared with the less detailed 2009 surveys.
- Use mark-recapture techniques to individually identify birds using the colony, obtain an estimate of nest site faithfulness and individual breeding cycles, thus provide the first accurate estimate of the overall mainland population.
- Obtain detailed information about seasonal nesting patterns and spatial movements which will be used to evaluate a national conservation strategy for the masked booby.

July 2013
Masked Boobies on the Colony



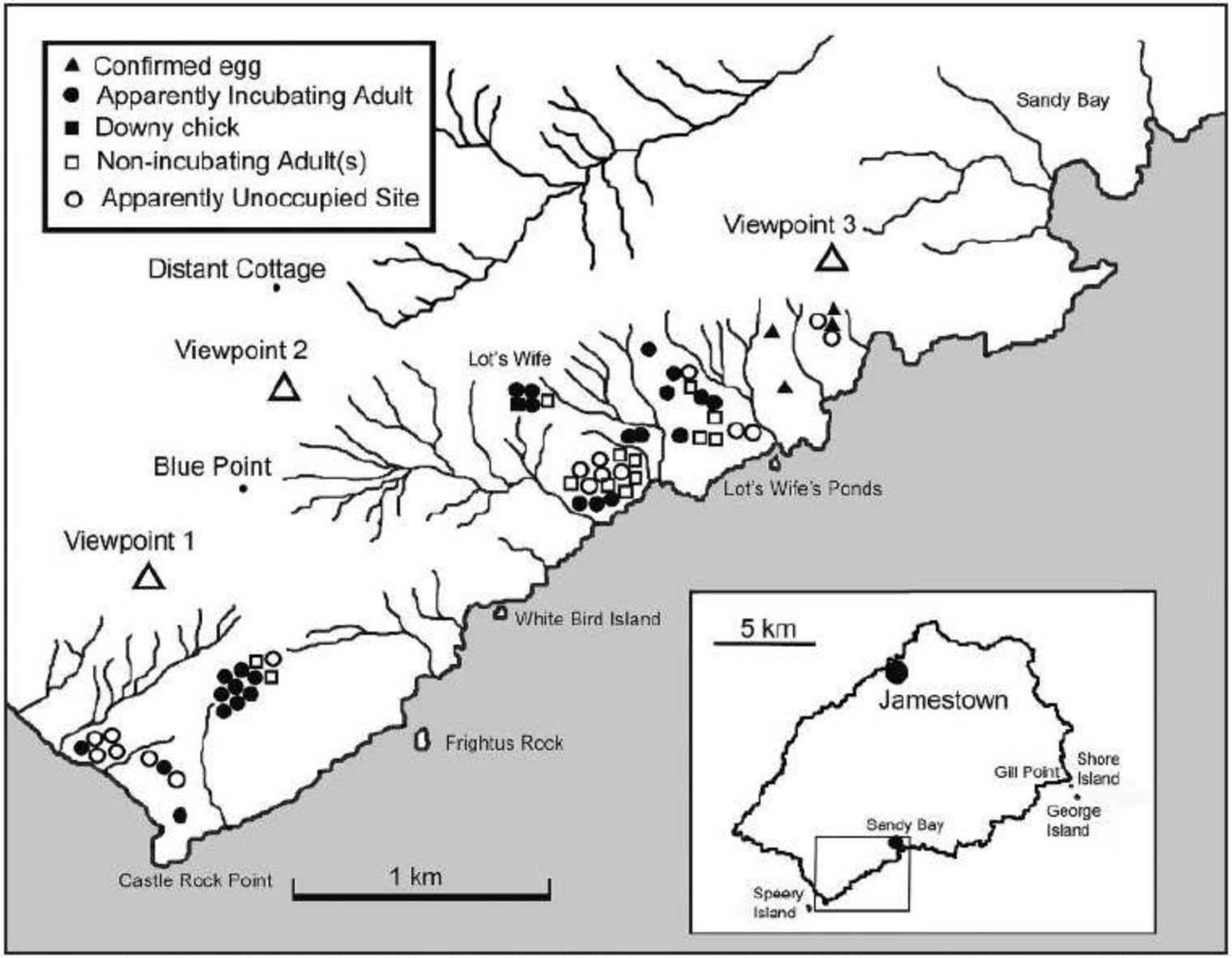
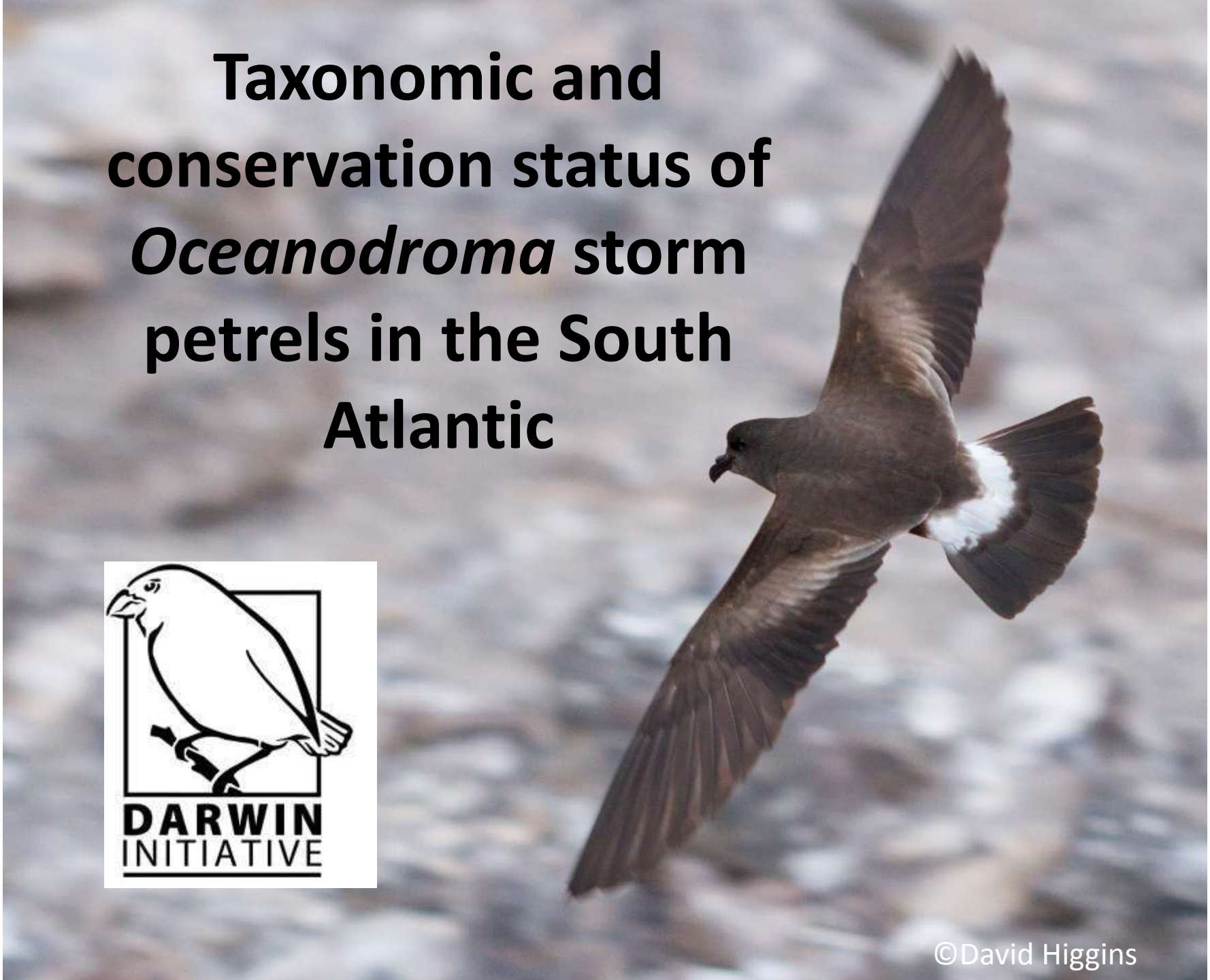


Figure 1. Location of nest sites of Masked Boobies *Sula dactylatra* on St Helena mainland, July 2009.

Bolton *et al*. 2011

Taxonomic and conservation status of *Oceanodroma* storm petrels in the South Atlantic



DARWIN INITIATIVE

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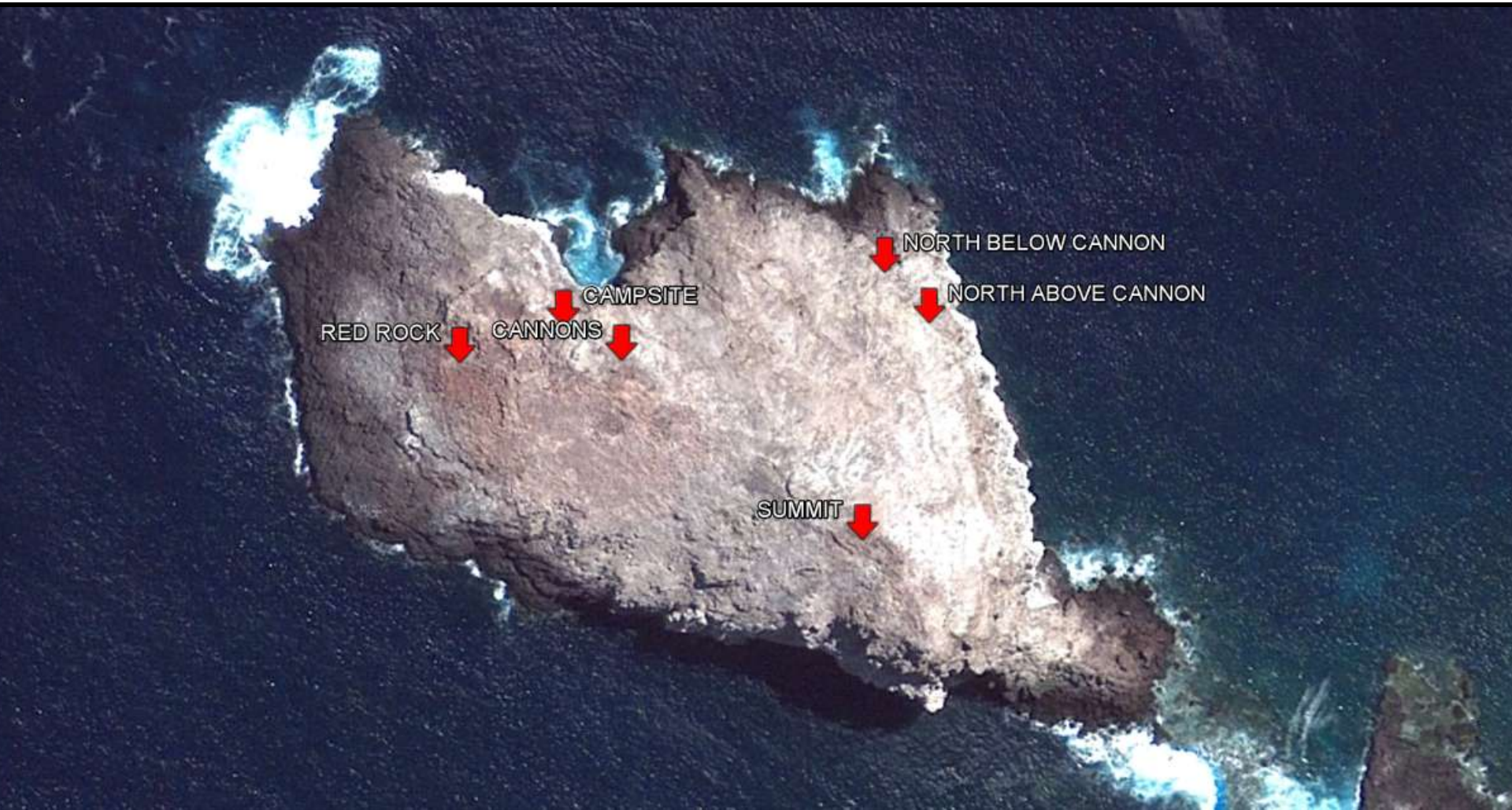
Egg Island

Egg Island mist net locations



1- the Summit

2013 Trial Run

- In June 2013 (cool season) 734 stormies were caught and ringed
- In December 2013 (hot season) 996 stormies were caught and ringed
- Playback experiments were conducted in both hot and cool season to assess response rate of storm petrels to burrow calls from St Helena, Ascension, Cape Verde, Galapagos and the Azores

2013 Trial Run

- No bird captured in the cool season was re-captured in the hot season
- Cool season birds had marginally longer wings and shorter tarsi (Table 1), and both populations had shorter wings than storm petrels in the Azores.
- Birds had a much higher vocal response to playbacks of their own population than to playbacks of other storm petrel populations
- **Hot season population size: 7145** (95% CI: 6085 - 8466) individuals
- **Cool season population size: 4512** (95% CI: 3686 – 5595) individuals

The Future