Research request: Feasibility of eradicating European rabbits from Dassen Island in favour of the reintroduction of rock hyrax

Background

Dassen Island (33°25' S, 18°05' E), is approximately 55 km northwest of Cape Town and 33 km southwest of Saldanha Bay. It is situated 11 km offshore of the town of Yzerfontein on the West Coast. Dassen Island is approximately 212 ha in size, and is about 3.2 km long and 1.6 km wide. The island is flat and low-lying, and the highest point is only at 19 m.a.s.l. The reserve boundary extends 500 m seawards and thus includes a marine environment of approximately 525 ha.

The rock hyrax, *Procavia capensis,* originally occurred on Dassen Island and their presence has been recorded by European seafarers that landed on the island as early as 1601. The European rabbit, *Oryctolagus cuniculus*, was first introduced to Dassen Island around 1665 as a food source after the rock hyrax population was hunted to extinction. Today European rabbits are regarded as being one of the world's five worst alien invasive species. Feral populations of rabbits have a devastating impact on any natural environment in that they compete with indigenous wildlife, damage vegetation and degrade the land is particularly severe on islands (e.g. Saunders et al. 2014, Schweizer et al. 2016). At Dassen Island, however, the rabbit population is kept in check during the hot summer months when water and food are limited and a large number die off during these months. Rabbits are also preyed on by kelp gull, *Larus dominicanus vetula* and great white pelican, *Pelecanus onocrolatus*, possibly relieving predation pressure on other avifauna. The degree of impact on the habitat by rabbits is not quantified, and requires further investigation. The impact of rabbits on island ecology can be devastating if rabbit populations are allowed to grow unchecked, as evidenced at Robben Island during the early 2000s (CapeNature 2019).

To this end CapeNature requests that research be undertaken to formally assess the feasibility of eradicating European rabbits from Dassen Island in favour of the reintroduction

of rock hyrax which originally occurred on the island and provide an ecological evaluation of the effects of European rabbits and rock hyraxes.

Research questions

Will the eradication of European rabbits from Dassen Island be feasible and what would be the best eradication method(s)?

Given that the rabbits have become a food source for some species how will the eradication of European rabbits affect other species on Dassen Island?

What is the best way to reintroduce rock hyrax to Dassen Island? A practical plan for reintroduction should include a schedule for reintroduction with numbers and age and sex structure, a source population of hyraxes and a monitoring protocol with indicators to track the success of the eradication and reintroduction.

Equipment and support

The following equipment and services will be supplied by CapeNature:

CapeNature will assist with transport to and from Dassen Island to conduct field work.

Collaboration from Scientists, Technicians, Regional Ecologists, Conservation Manager and Ecological Coordinators. Access to relevant data curated by CapeNature.

Funding

There is no dedicated funding available for this project as yet but CN undertakes to source funding to cover operational aspects of this research.

Sample sites

Sample sites should be located throughout the island to ensure that all vegetation types and habitats are covered.

Time lines

Ideally this research will be completed in two to three years after initiation.

References

CapeNature. 2019. Dassen Coastal Complex Protected Area Management Plan: 2019-2029. Western Cape Nature Conservation Board, Cape Town

Schweizer, D., Jones, H.P. and Holmes, N.D. 2016. Literature review and meta-analysis of vegetation responses to goat and European rabbit eradications on islands. Pacific Science, vol. 70, no. 1

Saunders, K.M, Harrison, J.J., Hodgson, D.A. de Jong, R., Mauchle, F. & McMinn, A. 2014. Ecosystem impacts of feral rabbits on World Heritage sub-Antarctic Macquarie Island: a palaeoecological perspective. http://dx.doi.org/10.1016/j.ancene.2014.01.001

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