

Project Plan SP 2020-018

Assessing the effectiveness of the community engagement activities of the Dirk Hartog Island National Park Ecological Restoration Project.

Animal Science

Project Core Team

| | |
|-----------------------|-----------------|
| Supervising Scientist | Andrew T Knight |
| Data Custodian | Andrew T Knight |
| Site Custodian | |

Project status as of July 14, 2020, 2:30 p.m.

Approved and active

Document endorsements and approvals as of July 14, 2020, 2:30 p.m.

| | |
|-------------------------|--------------|
| Project Team | granted |
| Program Leader | granted |
| Directorate | granted |
| Biometrician | granted |
| Herbarium Curator | not required |
| Animal Ethics Committee | not required |

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Biodiversity and Conservation Science Program

Animal Science

Departmental Service

Service 7: Research and Conservation Partnerships

Project Staff

| Role | Person | Time allocation (FTE) |
|-----------------------|-----------------|-----------------------|
| Supervising Scientist | Andrew T Knight | 0.3 |

Related Science Projects

There are no explicitly social science-focussed research projects that have been conducted as part of the DHINPERP. However, the DHINPERP community engagement activities are underpinned by the following projects which are focused upon the ecological restoration of DHI:

- 2019-030 – Ecological restoration of Dirk Hartog Island National Park through fauna reintroductions
- 2018-106 – Disease risk analysis in support of the translocation of dibblers from the Jurien Bay Islands to Dirk Hartog Island National Park
- 2018-009 – Dirk Hartog Island vegetation monitoring
- 2016-030 – Dirk Hartog Island National Park Ecological restoration Project – fauna reconstruction
- 2014-003 – Cat eradication on Dirk Hartog Island
- 2013-021 – Monitoring of threatened birds on Dirk Hartog Island
- 2012-440 – Cat eradication on Dirk Hartog Island
- 2012-202 – Parasites and diet of feral cats and rodents on mainland Western Australia and offshore Islands (Christmas Island and Dirk Hartog Island)

I have had a number of formal and informal meetings with people relevant to this work including Dr Saul Cowan, Dr Lesley Gibson, Steve Nicholson, Gavan Mullan, Karl Brennan and Wendy Payne.

Proposed period of the project

March 2, 2020 – July 31, 2020

Relevance and Outcomes

Background

Dirk Hartog Island (DHI) is Western Australia's largest island and predominantly comprises 620 km² of sand dunes occupied by open heath and low closed/open heath. Historically, it had a diverse fauna and rich flora (over 250 species recorded, including several local endemics). Sheep and goat pastoralism degraded the island's vegetation and eight invasive weed species are present on the island. Invasive alien fauna, notably cats, decimated the native mammal fauna.

DHI is located within the traditional lands of the Malgana Aboriginal People and the Shark Bay World Heritage Area. It was gazetted as a National Park in 2009. Funding for a 20-year ecological restoration initiative through the Net Conservation Benefits Fund (NCBF) in 2008 allowed restoration of the island's vegetation communities and mammal and avian fauna. Thousands of sheep and goats were eradicated by 2017. Cat eradication began intensively in 2012 with DHI declared cat-free in October 2018. These activities prepared the island for fauna reintroductions which began in 2017 with translocation of two hare-wallaby species, with 11 more species planned for reintroduction over the next 10 years.

A community engagement project has comprised one element of the ecological restoration project. Its primary objective is to communicate the project to stakeholder groups and gain community understanding and support for the project. Stakeholders include neighbouring landholders on Dirk Hartog Island, Shire of Shark Bay, Shark Bay Community, all DHI visitors including DHI Lodge visitors and national park visitors, key contributors including NCBF, volunteers, special interest groups including Birdlife Australia, the tourism community, as well as WA visitors to Shark Bay.

Community engagement activities have included: signage on the island and the nearby mainland, biosecurity signage at Edel Land, information on the DBCA Explore Parks and the Sharkbay.org website, ongoing biannual newsletter (Wirruwana News), ongoing updates in the town's "Inscription Post" four times annually, social media via DBCA Facebook page including all Denham groups, a permanent interpretive display at Monkey Mia, community artwork projects, children's activities in local schools and school holiday activity programs, DHI visitor and biosecurity brochures, stalls at key events including the Bush Heritage Science Fair, Denham markets, and biosecurity welcome packs for island visitors.

Understanding stakeholder's values, attitudes and behaviours is fundamental to ensuring an effective project and for adapting future communication and engagement activities, as required. An evaluation of the community engagement activities provides the opportunity to determine the effectiveness of the project.

Aims

The aim of this research is to assess the effectiveness of the Community Engagement Program of the DHINPERP by determining the level of experience with, and understanding of, DHINPERP outreach activities with the residents of the Shire of Shark Bay. This will be achieved by securing the following objectives, specifically understanding: 1) the experiences residents have had with the DHINPERP; 2) residents have of the goals, past and future activities and anticipated outcomes of DHINPERP; 3) what residents value about the DHINPERP; and 4) how residents would prefer to engage with the DHINPERP in the future.

Expected outcome

This research provides an evaluation of the DHINPERP community engagement program. This activity provides:

1. Information on Shire of Shark Bay resident's attitudes towards, behaviours as regards, and levels of understanding of, the DHINPERP which provides insights that can inform future DHINPERP activities and the post-2022 community engagement strategy;
2. A benchmark for future evaluations;
3. A mechanism for connecting DHINPERP to important stakeholders;
4. Demonstrable interest by DBCA, and the DHINPERP specifically, in the residents of the Shire of Shark Bay which has the potential to foster goodwill and partnerships;
5. An improved understanding by DHINPERP staff and Management Committee of the utility of social science; The first formal activity between the BCS Social Scientist and staff from DHINPERP and the Denham District office.

These expected outcomes are aligned directly with several of the 'DBCA Strategic Directions 2018-21', notably 'Natural and cultural values', 'Our community and partners' and 'Our people'.

These expected outcomes are also aligned directly with several of the Strategic Themes identified in the 'BCS Science Strategic Plan 2018-21', notably 'Availability of scientific information for evidence-based decision-making', 'Community engagement in science', 'Social science' 'Collaboration with science providers, science users and other stakeholders' and 'Science operates with a collaborative culture'.

Knowledge transfer

The outputs and outcomes generated by the project will be directly used by DBCA staff, including staff from the DHINPERP, the Denham District office, and Parks and Visitor Services. Research findings from the project can be integrated into future iterations of the DHINPERP Community Engagement Strategy, the DHINPERP Biosecurity Strategy, the DHINPERP Strategic Plan, the Midwest Region Regional Conservation Plan, as well as future research in the area on topics such as tourism and biosecurity. Knowledge gained through this research will be delivered to relevant staff in the form of a formal debrief with project and District staff, short informal discussions with project and District staff, a short technical report, and if required a formal presentation to the DHINPERP Management Committee. Close liaison between the Research Scientist and the Regional

Interpretation Officer, and more generally the Project Manager, will ensure knowledge transfer from this research into practical applications. If appropriate, research findings will also be communicated to a wide range of stakeholders through seminars, and local print and social media. Findings could form part of future grant applications.

Tasks and Milestones

1. Literature review; Reading completed on the context and specific situation in which the survey is to be conducted; Understanding of the context and specific situation; March 2020 /
2. Stakeholder analysis; Stakeholder groups identified and defined for an appropriate spatially- and demographically definable study area; List of stakeholder groups; March 2020 /
3. Assessment of community engagement events; Community engagement events identified that could be reasonably considered activities that transfer information to participants; List of community engagement events; March 2020 /
4. Collation of participant contact details; Contacts for stakeholder groups identified to whom the questionnaire can be circulated, methods could include email addresses, Facebook and Twitter accounts, and telephone numbers; List of contacts for stakeholder groups; March 2020 /
5. Designing scoping interview protocol; Scoping interview protocol drafted; Scoping interview protocol; April 2020 /
6. Conducting scoping interviews; Process of interviewing a minimum of five key informants completed; Notes from key informant scoping interviews; April 2020 /
7. Designing questionnaire; Completion of a Microsoft Word version of a questionnaire that meets robust social research criteria; Microsoft Word document of a questionnaire; May 2020 /
8. Undertake peer-review of the questionnaire; Consultation completed with DHINPERP and DBCA staff, including staff from the Denham District office, that secures revisions to the questionnaire to the mutual satisfaction of all parties; Final draft version of the questionnaire; May 2020 /
9. Design and build online survey; Process for producing the questionnaire is complete to the point it is ready for distribution to pilot participants; Questionnaire available in Qualtrics for circulating; June 2020 /
10. Complete pilot interviews; Process for refining the questionnaire ready for distribution is complete; Refined version of the questionnaire ready for circulation; June 2020 /
11. Advertise and distribute the survey; URL and Q-code to the questionnaire on the Qualtrics platform received and circulated by Shire and community groups AND flyers present in store-front windows of local businesses; Acknowledgement by distributing organisations that the URL, Q-code and flyers have been distributed as agreed; July 2020 /
12. Collate and 'clean' the data; The process for preparing the raw survey data for analysis is completed; Microsoft Excel workbook of questionnaire data ready for analysis; July 2020 /
13. Analyse the data; Summary statistics completed for questionnaire data; Written summary of results; July 2020 /
14. Assess the findings; Results have been examined and findings identified; Written summary of findings; July 2020.

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Study design

Methodology

Research relationships that underpin the effectiveness of this methodology include: Dr Andrew Knight (BCS), Dr Karl Brennan (Project Manager, DHINPERP), Ms Wendy Payne (Regional Interpretation Officer, Midwest Region/DHINPERP), John Asher (Manager, Ecosystem Health Branch, CEM), Steve Nicholson (District Manager, Shark Bay), Sue Hancock (Regional Leader Parks and Visitor Services, Midwest Region), stakeholders including mainland local residents, island residents such as those from DHI Lodge, and visitors to the island.

The methodology to be applied for this research comprises eight stages:

1) Strategic review of relevant literature

A sound understanding of the i) history and operations of the DHINPERP; ii) its community engagement activities; iii) the study population (i.e., the Shire of Shark Bay community); and the broader context in which the DHINPERP

is situated (e.g., operations of the Denham District office) is essential to ensure that the questionnaire and the survey platform are appropriate. The strategic review will include, in the first instance, the Community engagement Strategy documents for 2015-2017 and 2019-2022, as well as various DHINPERP and Denham District strategic planning documents.

2) Scoping interviews with key DBCA staff linked to the DHINPERP

Understanding the context in which research, and subsequent conservation activity (and in this case community engagement activity) is to be undertaken is essential for effectively, equitably and cost-efficiently designing and implementing a social science research project (Babbie and Mouton 2007; Knight et al. 2019). Whilst a literature review can provide a broad understanding of context, an accurate, precise and nuanced understanding of a human community requires carefully targeted research (Babbie and Mouton 2007). In the absence of such research, of even if it is present, but it was conducted some while before the present, scoping interviews can be used to sample a subset of participants. Semi-structured scoping interviews are to be conducted via Teams and/or telephone with individuals closely associated with the DHINPERP, specifically project and Denham District office staff. Ethics approval will be secured from the Social Science Coordinator of PVS to ensure the interview, and subsequent piloting and online questionnaire are appropriate.

3) Identification of potential participants using a stakeholder analysis

Stakeholder analysis is an essential prerequisite of any survey to ensure that it is reliably targeted towards an appropriate sample of individuals (Babbie and Mouton 2007). Appropriate criteria for identifying potential participants are to be sourced from an unstructured content analysis of DHINPERP community engagement literature and informal discussions with key DHINPERP staff (see Stage 2 above). In the first instance, these would ideally be individuals known to have participated in DHINPERP community engagement activities. No record is known of that can provide this information, as no log identifying individuals who have participated in DHINPERP community engagement activities appears to exist. In this instance, a blanket survey of all Shire of Shark Bay permanent and temporary residents will be implemented. Participants will remain anonymous throughout the survey.

4) Design and review of an online survey

Internet-based (online) surveys provide a widely-used, cost-efficient method for rapidly sampling large populations of people (Babbie and Mouton 2007). Insights generated through the literature review, scoping interviews and the stakeholder analysis (Stages 1-3) will be used to determine the scope and method of the online survey, noting the method used for previous surveys. The structure and content of questionnaires typically used by PVS will also be considered in an effort to align with existing survey methodologies. A structured questionnaire format will be developed in Microsoft Word and used to facilitate rapid data analysis, and will include single-choice, multiple-choice and Likert statement items. The questionnaire will include items seeking data on the participant's connections with Dirk Hartog Island, their understanding of DHINPERP activities, their perspectives and opinions on the work of the DHINPERP and their demographic information. To mitigate any potential risks perceived with the sample population as regards political and social sensitivity, and to ensure the robustness of the questionnaire, it will be reviewed by the DHINPERP Project Manager and Community Engagement Officer, the Denham District Manager and Senior Operations Officer, PVS Social Science Coordinator and the ED BCS.

5) Development of the online platform

The Qualtrics internet-based survey platform will be used to house the questionnaire. The Microsoft Word version will be used as the template for the online version, and adapted as required to fit the requirements of Qualtrics. The questionnaire will be formatted to facilitate completion on desktop, laptop and smartphone hardware. The use of Qualtrics allows the questionnaire to be accessed anywhere that internet access is possible. The survey will be piloted on five Shire of Shark Bay residents sympathetic to the role and responsibilities of DBCA as identified by the Senior Operations Officer of the Denham District Office. Findings from the pilot interviews will be used to refine the survey prior to distribution.

6) Distribution of the survey to potential participants via email and social media

The DHINPERP Community Engagement Officer will circulate a URL to the questionnaire housed on the Qualtrics internet platform to contacts in the Shire of Shark Bay office and the numerous community groups known throughout the Shire. Websites related to DBCA and the Shire of Shark Bay and Twitter will also be used to circulate the survey. Flyers advertising the survey and presenting the weblink and a Q-code to access it, will be prepared by PICA and distributed by Denham Office staff to local businesses in Shark Bay to present in store-front windows.

7) Analysis of the survey data using appropriate software

Survey data will be exported from Qualtrics in .csv file format, formatted for analysis and 'cleaned' to ensure it is analysable. Simple but appropriate summary statistics, for example, totals, means and modes will be generated from the data using Microsoft Excel. Data will be stored in a password protected file, and accessible only to the

Principal Investigator.

8) Reporting of the findings

Returning information to relevant stakeholders is an essential part of a scientifically robust and ethical social science research project (Babbie and Mouton 2007), as no research project exists in isolation, and the information provided by such research can empower, or not, different stakeholder groups (Midgley 2000). In the first instance, findings of the study will be reported to the DHINPERP Management Committee for their consideration in a short summary report, and verbally in-person or via Teams, if requested. Subsequently, findings will be reported to stakeholders deemed relevant by the DHINPERP Management Committee, which could include the Shire of Shark Bay, community groups who participated in the survey and DBCA PVS staff.

Biometrician's Endorsement

granted

Data management

No. specimens

N/A

Herbarium Curator's Endorsement

not required

Animal Ethics Committee's Endorsement

not required

Data management

Notes and descriptive data will be archived, maintained on the T:\ drive and my computer, and backed up regularly. Data will be placed on Data Catalogue to ensure visibility to all DBCA staff. The PI will be the sole person to have access to data that includes individual participant's personal details and that could compromise these individual's anonymity and confidentiality, as per the information provided to participants via the Qualtrics online survey.

Budget

Consolidated Funds

| Source | Year 1 | Year 2 | Year 3 |
|---------------|--------|--------|--------|
| FTE Scientist | 0.3 | 0 | 0 |
| FTE Technical | 0 | 0 | 0 |
| Equipment | 0 | 0 | 0 |
| Vehicle | 0 | 0 | 0 |
| Travel | 0 | 0 | 0 |
| Other | 0 | 0 | 0 |
| Total | 42,880 | 0 | 0 |

External Funds

| Source | Year 1 | Year 2 | Year 3 |
|---------------------------|----------|--------|--------|
| Salaries, Wages, Overtime | 5,201.08 | 0 | 0 |
| Overheads | 2,340.49 | 0 | 0 |
| Equipment | 0 | 0 | 0 |
| Vehicle | 0 | 0 | 0 |
| Travel | 0 | 0 | 0 |
| Other | 0 | 0 | 0 |
| Total | 7,541.57 | 0 | 0 |