

Project Plan CF 2023-013

Wetland Mapping

BCS Species and Communities

Project Core Team

X X Supervising Scientist Ruth Harvey

Data Custodian Fiona Felton

Project status as of Aug. 30, 2023, 10:41 a.m.

X X Approved and active

Document endorsements and approvals as of Aug. 30, 2023, 10:41 a.m.

X X

Project Team granted

Program Leader granted

Directorate granted

Biometrician granted

Herbarium Curator granted

Animal Ethics Committee not required

Wetland Mapping

Program

BCS Species and Communities

Departmental Service

Service 6: Conserving Habitats, Species and Communities

Project Staff

X X X **Role Person Time allocation (FTE)**

Research Scientist Fiona Felton 1.0

Supervising Scientist Ruth Harvey 0.0

Supervising Scientist Jessica Donaldson 0.0

Related Science Projects

Species and Communities and Ecosystem Science Branch are working with the DBCA's Midwest Region to undertake wetland monitoring and mapping on and surrounding Badimia Conservation Reserves in the Badimia Determined Area. Species and Communities and Ecosystem Science Branch have undertaken a reconnaissance survey and will return for a full survey when the area has received adequate rain.

Proposed period of the project

May 24, 2023 – June 30, 2025

Relevance and Outcomes

Background

Mapping of wetlands in priority areas, including boundary delineation, classification and evaluation. Ongoing maintenance, development and curation of wetland data layers including Wetland Evaluation of the Swan Coastal Plain, Geomorphic wetlands mapping layers through scientific, on-ground and spatial evaluation methods. The Wetland Mapping project is involved with ongoing collaboration with the Commonwealth and other state governments through the Wetlands and Aquatic Ecosystems Subcommittee (WAESC).

Aims

Mapping of wetlands addresses Biodiversity and Conservation Science service priorities by identifying biodiversity assets for potential inclusion within national and State conservation estates and providing a baseline inventory to guide environmental impact assessment and development decisions. Wetland mapping assists the department in meeting State responsibilities to identify candidate wetlands that meet the criteria for listing under the Ramsar Convention.

Current Aims

- To maintain current datasets and, where opportunities arise, expand the extent of wetland mapping for Western Australia
- Maintain and improve documentation to standardise wetland mapping procedures. These include *A methodology for the evaluation of wetlands on the Swan Coastal Plain* and *Wetland delineation guidelines*
- Ensure that priority policies, supporting the wetlands datasets is contemporary and maintained.

Long-term aims

- convert the current wetland mapping from the current geomorphic wetland classification to Australian National Aquatic Ecosystem (ANAE) Classification system
- expand wetland mapping across the entire state
- to include aboriginal wetland names in the wetland datasets.

Expected outcome

Mapping of wetlands in priority areas, including boundary delineation, classification and evaluation. Ongoing maintenance, development and curation of wetland data layers including Wetland Evaluation of the Swan Coastal Plain, Geomorphic wetlands mapping layers through scientific, on-ground and spatial evaluation methods. Ensure that priority policies, procedures and documentation supporting the wetlands datasets is contemporary and maintained. These include A methodology for the evaluation of wetlands on the Swan Coastal Plain & Wetland delineation guidelines.

Knowledge transfer

Datasets, documentation, and data produced as a result of this project are routinely used by stakeholder including commonwealth, state and local government, mining and development proponents, landholders/land managers and internal staff to consider wetland values for:

- land planning applications, clearing application and Environmental Impact Assessment
- planning and implementing on-ground management actions
- prioritising lands for acquisition and funding opportunities.

Datasets

maintained by this project:

- Australian Ramsar wetlands (DBCA-10)
- Directory of Important wetlands ((DBCA-045)
- Geomorphic Wetlands Swan Coastal Plain (GWSCP) (DBCA-019)
- Geomorphic Wetlands Augusta to Walpole (DBCA-017)
- Geomorphic Wetlands Darkan-Duranillin (DBCA-016)
- Geomorphic Wetlands South West - Unreviewed (DBCA-040)
- Geomorphic Wetlands Leeuwin Naturaliste Ridge and Donnybrook to Nannup - Unreviewed (DBCA-043)
- Wheatbelt Wetlands Stage 1 (DBCA-021)
- Geomorphic Wetlands Manjimup to Northcliffe - Unreviewed (DBCA-044)
- Walpole Wilderness Peat Wetlands (DBCA-042)
- South Coast Significant Wetlands (DBCA-018)
- Geomorphic Wetlands Cervantes Eneabba (DBCA-015)
- Geomorphic Wetlands Cervantes South (DBCA-013)
- Geomorphic Wetlands Cervantes Coastal (DBCA-014)
- Kimberley Springs (not publicly available)

Being developed by Species and Communities, in conjunction with Department of Water and Environmental Regulations:

- Wetland Evaluation Swan Coastal Plain (WESCP - complete but not released)
- Wetland Evaluation Moora-West Dandaragan (WEMWD - MCE complete but results not reviewed)
- Wetland Evaluation South-West (WESW - MCE complete but results not reviewed)

Historic datasets available if required:

- *Strategic Assessment of the Perth and Peel Regions (SAPPR) 2017 wetland mapping review (to my knowledge not publicly available except maybe on the GGP tool which was released)*

Tasks and Milestones

References

Department of Biodiversity, Conservation and Attractions 2017, *A methodology for the evaluation of wetlands on the Swan Coastal Plain, Western Australia*.

Department of Biodiversity, Conservation and Attractions (2017) *Wetland identification and delineation: information for mapping and land use planning on the Swan Coastal Plain*, information sheet Reports, methodology and metadata statement for each dataset.

DBCA and DWER (2020) DRAFT Wetland Evaluation Swan Coastal Plain Report.

Various reports relating to wetland mapping authored by Semeniuk CA and Semeniuk V including:

- Semeniuk CA 1987, *Wetlands of the Darling System - A geomorphic approach to habitat classification*. Journal of the Royal Society of Western Australia 69(3):95-112.
- Semeniuk CA and Semeniuk V 1995, *A geomorphic approach to global classification for inland wetlands*. Vegetation 118:103-124.

Ramsar Documentation [Boundary Description and Mapping Guidelines \(second edition\)](#) - DCCEEW including:

- Module 1 - [Boundary Description and Mapping Guidelines \(second edition\)](#) (PDF 6.5MB)

[Directory of Important Wetlands in Australia](#) - DCCEEW documentation including:

- Australian National Conservation Agency (1996) *A Directory of Important Wetlands in Australia*, Second Edition, ANCA, Canberra

[Aquatic ecosystems toolkit](#) - DCCEEW, particularly modules 2-4:

- [Module 2: Interim Australian National Aquatic Ecosystems \(ANAE\) Classification Framework](#)
- [Module 3: Guidelines for Identifying High Ecological Value Aquatic Ecosystems \(HEVAE\)](#)
- [Module 4: Aquatic Ecosystem Delineation and Description Guidelines](#)

Hill, AL, Semeniuk, CA, Semeniuk, V and Del Marco A (1996), *Wetlands of the Swan Coastal Plain - Volume 2a and Volume 2b*, Main Report, Water and Rivers Commission and Department of Environmental Protection, Perth.

Study design

Methodology

To achieve these outcomes Species and Communities use various spatial technologies including digital elevation models, current and historic imagery, water observations from space, and utilisation of remote sensing for purposes such as calculation of Normalised Difference Vegetation Index (NDVI).

Species and Communities collaborates with other sections of the department such as Remote Sensing & Spatial Analysis Program, Ecosystem Science Branch, and Fire and Regional Management Services and other government agencies such as the state Department of Water and Environmental Regulation and federal Department of Climate Change, Energy, the Environment and Water.

Biometrician's Endorsement

granted

Data management

No. specimens

Plant specimens are collected as required during field visits to confirm plant identification. Generally, specimens are disposed of once they are no longer required or held in local herbariums to assist with future identification.

When new populations of threatened or priority species are identified they are forwarded to the herbarium as voucher specimens. All collection is undertaken with appropriate collection licenses.

Herbarium Curator's Endorsement

granted

Animal Ethics Committee's Endorsement

not required

Data management

Data and documentation is stored on Species and Communities DBCA's SharePoint
GIS Modernisation - Kaartidjin Boodja

Budget

Consolidated Funds

to | X | X | X | X |

Source Year 1 Year 2 Year 3

FTE Scientist

FTE Technical

Equipment

Vehicle

Travel

Other

Total

External Funds

to | X | X | X | X |

Source Year 1 Year 2 Year 3

Salaries, Wages, Overtime

Overheads

Equipment

Vehicle

Travel

Other

Total