Department of **Biodiversity, Conservation and Attractions**
[Rivers and Estuaries Division]

GOVERNMENT OF WESTERN AUSTRALIA

PARKS AND WILDLIFE SERVICE

RESEARCH STRATEGY 2013-2018

PROJECT PROGRESS AND FINANCIAL REPORT
DUE: 19 JANUARY

Please ensure that all sections are completed.

Note: It is requested that the format of this template is not changed as this is a standard Rivers and Estuaries Division report.

1. PROJECT DETAILS

Project name	Understanding and predicting riparian decline: ecohydrology and hydro-climatological change		
DBCA project number	**RSP16UWA02**		
Funding recipient	University of Western Australia		
Project contact	Dr Matt Hipsey		
Project partners	Department Parks and Wildlife		
Project objectives	1. Use remote sensing to identify and map historic vegetation condition change 2. Combining field survey and model development, determine to what extent hydrodynamic changes (inundation extent, period and salinity) have contributed to the vegetation decline at agreed locations in the Swan-Canning. 3. Based on knowledge of vegetation type and ecohydrological tolerances, predict where future change is likely to create heightened risk of tree decline, and make recommendations for remediation and revegetation approaches, and future research		
Scheduled start date	1 July 2017	**Actual start date**:	
Scheduled completion date	18 September 2018		
Funding allocated (Ex GST)	$30,000 (DPaW); in-kind $25,545 (UWA)		
Name of person completing this report	Dr Matt Hipsey		

2. BUDGET DETAILS AND DELIVERABLES

2a. Summary of Project Funding

Please report on expenditure for this project.

Total funding allocated (Ex GST)	$30,000
Total funding spent to 31/12/2017 (Ex GST)	$5
Remaining Funds 31/12/2017 (Ex GST)	$29995

2b. Project variation across budget and/or milestones

Please check the milestones in your collaborative arrangement. Do you need to seek a variation of milestones? Yes ☒ TICK

If yes, please provide details and reason for the request below:

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Current milestone – Milestone 3 **Varied milestone** – Milestone 3 **Reason and implications**: *Delay in field instrumentation purchase and installation -* The MSc student allocated to the project in 2017 unfortunately left the project to follow a new job offer. The student had progressed sampling design, and equipment preparation, but has only undertaken basic site measurements to date. Therefore, it is proposed a UWA technical staff will install the proposed 6 monitoring bores and instrument them. Given it is essential we collect data over the summer period we r**equest the 3rd and 4th milestones in the above table are extended to May 2019**. If this extension is not possible, we can process and analyse the available data up to Winter 2018, but continue to collect data from the site post-reporting

2c. Project Milestones (please refer to the Contract Letter / Collaborative Arrangement for your project)

Milestones	Activity	Due date	Progress towards milestones (inc. details on key achievements, dot points acceptable)	Behind	On- track	Completed	Not completed
Project initiation	Project start-up meeting; Develop program of study	1 July 2017 30 September 2017	A project meeting was held at Murdoch University in July 2017. A field visit was then undertaken in Aug 2017. Based on these meetings, a program of study was developed and supplied to the Department on December 2017.				
Prepare foreshore vegetation condition and extent maps (format available for upload to GIS)	Investigate available remote sensing platforms to develop condition maps showing the spatial extent of changes in riparian vegetation at agreed sites within the Riverpark over time (2007-2016)	1 March 2018	A preliminary analysis of remote sensing options was undertaken by Huntley and van Dongen (2017) from DBCA. This identified the long-term trend in the region of interest based on regular LANDSAT passes, and compared tree density change between the high-resolution urban monitor imagery. At UWA we have now collated Urban Monitor imagery from CSIRO and will compare this information in the context of the hydrological dynamics.				
Deliver a report, that describes and explains observed vegetation change and predicts vegetation risk based on projected (20 year) hydrodynamic change and vegetation type. The report should also make recommendations for adaptation, remediation and revegetation, based on risk maps.	At agreed locations where vegetation decline has been significant, identify ecohydrological changes that explain vegetation changes using: • Hydrodynamic modelling (inundation extent / period; salinity); • Riparian condition assessment in the context of plant water requirements / salinity / water logging tolerance, including field surveys. Use model and understandings of ecohydrological change to predict	30 June 2018	The model has progressed well, with LiDAR data being used to develop ultra-high resolution flood inundation maps. It is anticipated an inundation extent and salinity dynamics assessment will be completed for different hydrologic years will be completed on track by Jun 2018. The riparian condition assessment aspect has progressed, but is now behind. The MSc student has scoped the monitoring strategy and ordered equipment but unfortunately has decided to leave the project. We are currently planning an alternate strategy to manage the site instrumentation using UWA technical staff. Given the delay we plan to instrument over the period from April 2018-March 2019, and therefore request an extension to this milestone below. The model simulations to forecast risk are to be completed following information from the field samples, to ensure the				

	vegetation change in the future.		predictions are consistent with the findings from the site.				
Communicating results.	Prepare a summary document outlining the major findings of this work in format for delivery to a wide range of audiences; Give one 30 – 45 minute PowerPoint presentation, including project results and conclusions, at forum to be confirmed Parks and Wildlife; Provide the Department with copies (hardcopy and electronic versions) of any other publications, reports, posters or presentations that arise from the project	30 June 2018 Before 15 September 2018 Following publication or presentation	This milestone is still pending following completion of the model and field sampling work.				
Data delivery	Provide the Department with any data used or referred to in the Project Reports submitted to the Department	Upon request	This milestone is still pending following completion of the model and field sampling work.				

3. ADDITIONAL INFORMATION

If you have any additional information or comments that you wish to include in this report please include it in the box below (please feel free to include a summary of results-to-date; attachments welcome):

4. REPORT VERIFICATION

Please complete the section below to verify the details contained in this report.

The information provided in this report and attachment (if applicable) is a true and accurate record:

Dr Matt Hipsey		10/3/2018
Project Manager (Name)	**Project Manager (Signature)**	**Date**
Christine Casey		13 March 2018
Deputy Vice Chancellor of Research or representative (Name / Title)	**Deputy Vice Chancellor of Research or representative (Signature)**	**Date**

Thank you for completing this report

Please contact Dr Kerry Trayler on 9278 0955 if you would like more information regarding this report.

Please return the completed signed report and any attachments to:

Department Biodiversity, Conservation and Attractions
Rivers and Estuaries Division
Locked Bag 104
BENTLEY DELIVERY CENTRE WA 6983
or
kerry.trayler@dbca.wa.gov.au (cc: jeff.cosgrove@dbca.wa.gov.au)

Rivers and Estuaries Division internal use only
Comments and recommendations: Project manager name and signature: _____ Date:_____