

APPENDIX B

LEGISLATIVE COUNCIL STANDING COMMITTEE ON ESTIMATES AND FINANCIAL OPERATIONS

QUESTIONS PRIOR TO HEARING

Department of Biodiversity, Conservation and Attractions

The Committee asked:

1. For each matter that had an impact in 2017-18, how much was spent on
- (a) each spending change identified in the 2017-18 Budget and the 2018-19 Budget

Answer:

Spending Change	2017-18 Actuals \$'000	2018-19 Budget \$'000	Variance \$'000
Aboriginal Ranger Program	2,727	4,000	1,273
Murujuga Joint Management	9,000	1,000	-8,000
Regional Workers Incentive Allowance	862	811	-51
Wanjarri Nature Reserve	200	200	0
Yawuru Joint Management	650	1,100	450
Senior Executive Service Reduction	2,069	1,717	-350
State Fleet Policy and Procurement Initiatives	7,731	7,071	-660
Voluntary Targeted Separation Scheme	6,542	0	-6,542

- (b) each capital project listed in the 2018-19 Budget asset investment program?

Answer:

Capital Projects	2017-18 Actuals \$'000	2018-19 Budget \$'000	Variance \$'000
Fire Related Bridge Maintenance	1,729	1,791	62
Firefighting Fleet	2,200	2,200	0
Gnangara Park Development	399	400	1
Kimberley National Park	51	0	-51
Marine Parks of the Kimberley	178	800	622
Land Acquisition	2,956	340	-2,616
Park Improvement	3,650	3,900	250
Plant and Equipment	4,365	4,985	620
Royalties for Regions Kalbarri National Park Skywalk and Infrastructure	4,879	6,000	1,121
Royalties for Regions Lake Kepwari	160	1,000	840
Royalties for Regions Ningaloo Coast	1,072	1,820	748
Royalties for Regions Enhanced Prescribed Burning	73	110	37
Royalties for Regions Roebuck Bay Marine Park	236	270	34
Royalties for Regions Koombana Park Facilities	1,776	3,260	1,484
Tourism Road Improvement Program	1,656	1,750	94
Total	25,381	28,626	3,245



2. How frequently do you review your

(a) key performance indicators

Answer: Annually, as part of the Budget process.

(b) key performance indicator targets?

Answer: Annually, as part of the Budget process.

3. When were your key performance indicators last reviewed?

Answer: 2018-19 Budget process in liaison with the Department of Treasury and Office of the Auditor General.

4. Can you provide any documentation from your last review of your key performance indicators?

Answer: All key performance indicators (KPIs), including those of the statutory authorities, were reviewed to facilitate greater consistency across the consolidated department. See the attached correspondence from the Department of Treasury dated 9 April and 14 May 2018 detailing the approved additional KPI and outcome-based management frameworks respectively.

5. Can you list any new key performance indicators for this year?

Answer: Area of land baited for introduced predators.



Hon Stephen Dawson MLC

MINISTER FOR ENVIRONMENT; DISABILITY SERVICES

Hon Diane Evers MLC asked:

1. I refer to page 33 of the Annual report and the reference to 17 projects and policies identified relating to climate change:

(a) Please provide a list of the projects and policies; and

Answer: The table below provides a list of the projects undertaken by the department that relate to climate change.

(b) Please detail actions and progress on the projects.

Answer: The table below includes information on actions and progress for each project. Further information on the research projects listed below, including management implications and future directions, is published annually in the department's *Annual Research Report*. The progress detailed below for the ongoing projects includes the most recent activities that occurred in 2017 and 2018 (unless noted).

Project 1	<i>Forest Management Plan 2014-2023</i> - Climate change and carbon cycles (knowledge of trends in climate, adaptive response to changing climate, knowledge of carbon storage)
Actions	The <i>Forest Management Plan 2014-2023</i> seeks to ensure that economic and social values derived from the use of the natural areas covered by the plan are provided through a management system that is based on consideration of its impacts on biodiversity, and is precautionary in nature. The plan provides for ecologically sustainable forest management as defined by the Montreal Process criteria and indicators. Climate change is addressed explicitly (Chapter 5) through statement of a goal, a series of management actions, and three key performance indicators.
Progress	Ongoing project. The draft mid-term performance review has been published for public comment and provides detailed progress up to September 2018. In particular KPI12 and KPI13 relate specifically to climate change. A number of the projects listed below have contributed to the mid-term review. The project will also be subject to a final audit in 2023.
Project 2	<i>Fire Management Strategy 2017-2021</i>
Actions	The <i>Fire Management Strategy 2017-2021</i> provides over-arching direction to fire management activities undertaken by the department at a statewide level. The plan identifies ten guiding principles and seven strategic themes for fire management. Climate change is recognised as a driver of vulnerability through longer and more severe bushfire seasons, increased incidence of lightning ignition, and potentially reduced windows of opportunity for planned burning. The strategy acknowledges the need to maintain resilient ecosystems and environmental services, and the potential for fire management to contribute to carbon emissions abatement. Adaptive management is recognised as an important approach in responding to change and uncertainty.
Progress	Ongoing activity. The strategy will be reviewed in 2021.
Project 3	South-west wetlands monitoring program: determining trends in depth and water quality at 100 wetlands across the south-west
Actions	The department has monitored water depth and water chemistry biannually at approximately 100 wetlands. Primary drivers of change are climate change (especially declining rainfall), landuse (including salinisation from land clearing) and water resource development. The data are being used to examine the

	significance of contemporary change against a 40 year time series and for planning adaptation (e.g. maintenance or restoration of hydrological regimes).
Progress	Analysis of 40 years of data is currently underway and a scientific paper is in preparation. Aquatic invertebrate samples collected during the first Toolibin Lake fill event in more than 20 years were processed in 2017-18 and a report is in preparation.
Project 4	Understanding peat wetland resilience: evaluating the impact of climate and landuse change on the hydrodynamics and hydrogeochemistry of peat wetlands in the Warren (Muir-Byenup) District
Actions	Wetlands in the Muir-Byenup System Ramsar site wetland suite are being impacted by changes to average annual and seasonal rainfall, with some lakes previously affected by waterlogging and salinisation now experiencing desiccation, vegetation stress and acidification. This project is undertaking water balance investigations to understand the complex distribution of groundwater and soil water storages within peat lake systems and how climate driven changes to this water balance influences the storage and release of both acid and carbon. Determining the water balance drying and acidification tipping point provides the critical information required to design management actions to ameliorate the affects.
Progress	Areas of high risk are now understood and data is currently being analysed in preparation for publication. Additional resources are being sought to further understand the climate change drivers for these wetlands, particularly in light of recent seismic events.
Project 5	Responses of aquatic invertebrate communities to changing hydrology and water quality in streams and significant wetlands of the south-west forests of Western Australia
Actions	The department monitors the composition of aquatic invertebrate communities in select streams and significant wetlands across south-west Western Australia's forests. The monitoring provides information on the responses of aquatic invertebrate communities to forest management practices and climate changes and addresses KPI1 and KPI3 of the <i>Forest Management Plan 2014-23</i> .
Progress	Ongoing project. Aquatic invertebrate samples have been processed and specimens identified. Data has been analysed and a scientific paper is in preparation.
Project 6	The Western Australian Marine Monitoring Program
Actions	The department undertakes a marine monitoring program which measures the condition of key marine reserve ecological values relative to natural and anthropogenic pressures, including those from climate change. The monitoring data contributes to evidence-based adaptive management of Western Australia's marine parks and reserves, and threatened and specially protected marine fauna.
Progress	Ongoing project. Updated data was collected for fish, coral, seagrass, macroalgae, mangroves, macro-invertebrates, little penguins, Australian sea lions and water quality across 11 marine reserves. Four scientific papers were published in 2017-18 and one further paper is in review.
Project 7	Regional scale coral bleaching on Western Australian reefs
Actions	Assessing the extent and impact of the 2010/11 heat wave on WA corals.
Progress	Knowledge of the impacts of heatwaves on Western Australian coral reefs is enabling understanding of interactions with other pressures. Two scientific papers were published.

Project 8	Interactive effects of fishing and climate change on coral reef fish populations
Actions	The project is investigating how climate change and fishing are affecting the habitats and composition of coral reef fish communities.
Progress	Ongoing project. Knowledge of the interactions of fishing and climate change are providing information for coral reef management. Over the last two years, 11 scientific papers (including in <i>Nature</i> and <i>Science</i>) and one book chapter have been published on the climate change impacts on coral reefs and fish assemblages.
Project 9	Understanding the changing fire environment of south-west Western Australia
Actions	The project is providing an objective basis to review and revise management guidelines and practices based on past research during wetter climate phases and providing contextual information for investigations of the role and effects of fire in the south-west Western Australian environment. The project is informing the management of fire in a drier more fire prone landscape.
Progress	A scientific paper examining the meteorological drivers of extreme fire behaviour during the 2016 Waroona bushfire was published. Forty years of fire report data from the Warren region were analysed to examine trends in relation to lightning ignition and a scientific paper is in review. Surveys to quantify post-fire response of tree species were undertaken at a number of sites.
Project 10	FORESTCHECK: Integrated site-based monitoring of the effects of timber harvesting and silviculture in the jarrah forest
Actions	The department maintains a network of monitoring sites across south-west Western Australian forests which quantify the effects of current timber harvesting and silvicultural practices on forest structure, environment and composition of major biodiversity groups. The FORESTCHECK sites also provide a network of sites for monitoring responses to disturbance events such as bush fires and extreme droughts, and for examining the impacts of a changing climate over the longer term. The monitoring data provide a sound basis for adaptive management of south-west Western Australian forests informing a variety of forest management policies and practices, and have been incorporated into revision of silvicultural guidelines.
Progress	Ongoing project. Information on weeds and vegetation cover were collated and included within the mid-term performance report for the <i>Forest Management Plan 2014-23</i> . Post-burn assessments were undertaken and a scientific paper is being prepared. A scientific paper that synthesises changes in species assemblages between the first and second rounds of monitoring in relation to climatic factors and changes in forest structure, has been prepared.
Project 11	Hydrological response to timber harvesting and associated silviculture in the intermediate rainfall zone of the northern jarrah forest
Actions	The department monitors groundwater levels, streamflow, stream salinity and stream turbidity in select water catchments across the intermediate rainfall zone of the northern jarrah forest. The monitoring data provides a unique long-term record of the hydrological response of the jarrah forest to climate change and forest management practices, and contributes to reporting on KPI10 for the <i>Forest Management Plan 2014-23</i> .
Progress	Ongoing project. A scientific paper has documented the long-term hydrological response to thinning in an experimental catchment. Preparations are underway for a second thinning in an experimental catchment to inform silviculture for water production and ecosystem health.

Project 12	Management of invertebrate pests in forest of south-west Western Australia
Actions	The decline in mean annual rainfall in south-west Western Australia since the 1970s and global climate model projections of a future warmer and drier environment, mean conditions for forest invertebrate pests will alter significantly in coming decades. Warmer drier conditions may favour some pests. This project investigates the biology of recognised and emerging/potential invertebrate forest pests and the environmental conditions (including climate) which lead to outbreaks. The findings of the research will contribute to predicting the likelihood of invertebrate pests in south-west Western Australian forests as the region's climate changes.
Progress	Ongoing project. A scientific paper on the effects of understorey removal by fire on pheromone trap catch was prepared. A Jarrah leafminer outbreak in Yelverton Nature Reserve was investigated. An analysis of an historical invertebrate pest outbreak and potential recurrence in relation to rainfall conditions has been undertaken.
Project 13	Restoring natural riparian vegetation systems along the Warren and Donnelly Rivers
Actions	This project is developing a climate change framework for restoration of the Warren and Donnelly Rivers by determining the scale of adaptation to climate along the river system and determining the best seed source strategies to maximize resilience to future changes in climate in the revegetated populations.
Progress	Information on adaptation to climate in a riparian system has been used to guide restoration of river sites. One scientific paper has been accepted for publication and an additional paper has been prepared.
Project 14	Climate-resilient vegetation of multi-use landscapes: exploiting genetic variability in widespread species
Actions	This project is investigating genetic adaptation to climate in widespread plant species in south-west Western Australia. The results of the research will inform strategies for selecting seed sources which confer greater resilience to climate change in ecological restoration plantings.
Progress	Analysis identified genetic adaptation and led to the development of a strategy for seed sources that incorporates response to climate change. Three papers were published on the climate adaptation traits of various <i>Eucalyptus</i> species, and a seed sourcing strategy.
Project 15	Protecting the safe havens: will granite outcrop environments serve as refugia for flora threatened by climate change?
Actions	The identification of areas that can act as refugia under projected climate change enables adaptation and conservation activities to be focused where they will provide greatest benefit in facilitating species persistence and continued ecosystem function. This project is investigating the potential of the numerous granite inselbergs in south-west Western Australia, and their associated environments to act as climate change refugia.
Progress	A scientific paper has been prepared on the patterns of floristic composition in granite outcrop plant communities and their relationships with climate, topographic and microhabitat features on outcrops.
Project 16	Fire regimes and impacts in transitional woodlands and shrublands
Actions	This project is investigating the ecological impacts of the recent fire regime on ecological values and carbon pools in the Great Western Woodlands, the world's largest and most intact area of contiguous temperate woodland. The research

	will inform strategies for fire management in these internationally significant woodlands.
Progress	Ongoing project. A conceptual model of vegetation dynamics was developed and a scientific paper was published. A book chapter was published in <i>Australian Vegetation</i> and a scientific paper is in preparation on the effect of time since fire on the abundance and composition of woodland bird communities.
Project 17	Long term stand dynamics of regrowth forest in relation to site productivity and climate
Actions	There are a number of well-designed experiments that investigate the dynamics of naturally regenerated stands of native eucalypt forest managed at a range of stand densities. These experiments span a range of site productivity and climatic gradients and have been measured repeatedly over several decades, providing important information to support and improve management practices. This project addresses emerging issues for the next decade of forest management including climate change and declining groundwater levels, interactions with pests and pathogens, and increased recognition of the role of forests in maintaining global carbon cycles.
Progress	Ongoing project. A collaboration with UWA used data from a long-term thinning experiment to verify predictions from a process-based forest growth simulator. Analysis of recent data is underway and a second thinning commenced at an experimental site near Pemberton.

2. I refer to page 54 of the 2017-18 Annual report and the reference to the Department undertaking a review to better understand the factors involved in prescribed burn escapes:

(a) When will the review be completed; and

Answer: The internal review into three escapes from departmental prescribed burns in May 2018 was completed in August 2018 and sent to the Office of Bushfire Risk Management (OBRM) to inform its independent review of all the burn escapes that occurred during the late May weather event across all tenures.

(b) Will the results be publicly available?

Answer: Yes, the department understands that OBRM will release the independent review, inclusive of the internal review, in due course.

3. I refer to page 89, note 4.2 of the 2017/18 Annual report:

(a) Why has the fees revenue decreased by \$4.9 million since 2016/17?

Answer: The fees revenue decreased by \$4.9 million mainly due to the following two reasons;

1. Due to MoG changes, from 01 July 2017 the department ceased providing bureau services to the Department of Environment Regulation, the Office of Environment Protection Authority, the Keep Australia Beautiful Council and the Waste Authority. As a result of this, the department lost approximately \$2.1 million in bureau services revenue. Also, the recoup revenue for works done for the Forest Product Commission was lower by \$0.9 million in 2017-18 compared to 2016-17.
2. The recoup agreement between the department and the Department of Fire and Emergency Services (DFES) relating to fixed wing water bomber standing charges changed in 2017-18. Prior to 2017-18, DFES contributed 50% towards the costs associated with water bomber standing charges. From 2017-18 onwards DFES was no longer required to pay for these costs and the full cost was borne by the department. In 2017-18

the department incurred \$3.8 million on standby water bombers costs. Had the agreement not changed the department would have received approximately \$1.9 million in revenue, which would have been consistent with 2016-17.

4. I refer to pg 121, Service 6.1 and note that the average cost per hectare of wildlife habitat for 2017-18 was lower than the target for 2017-18 and the actual for 2016-17 due to a 10.7% reduction in expenditure and an increase in the area managed and I ask:

- (a) What expenses have been reduced;

Answer: The reduction in 2017-18 was mainly on overhead expenditure (\$2.4 million) such as workers compensation premium, depreciation and superannuation. Expenditure on services and contracts were also down by \$3.7 million mainly due to cessation of the Parks and Wildlife Bunbury Headquarters project, re-prioritisation of expenditure to Government commitments in the Kimberley and reduction in other miscellaneous expenditure (\$1.64 million) such as lease and rental costs, repairs and maintenance, consultants and contracts and accommodation charges.

- (b) Has there been a reduction in FTE resources for this service; and

Answer: There has been a reduction of 22 FTEs from the 2017-18 budget statements to the 2017-18 estimated actual (as reported in the 2018-19 budget statements).

- (c) Does the agency consider it has sufficient resources to ensure the ongoing conservation of biodiversity habitats, species and the sustainability of ecological communities?

Answer: The department is focussing resources on core functions and is prioritising management activities to achieve optimal outcomes for biodiversity conservation, consistent with the strategic direction of the State Government.

5. I refer to page 134 and the 2018-19 Annual estimates:

- (a) Please advise why service appropriations from government in the Income Statement are estimated to reduce by \$30.2 million (from \$240.6 million in 2017-18 on pg 79) to an estimated \$210.4 million in 2018-19 (page 134)), particularly given the 2018-19 budget has a budgeted appropriation of \$239.7 million?

- (a) Answer: As a result of MoG changes, from 28 December 2017 onwards the appropriations for Zoological Park Authority (ZPA), Rottnest Island Authority (RIA) and Botanic Gardens and Parks Authority (BGPA) have been channelled through the department's bank account and accounted for in the department's financial statements. Drawdowns from Treasury for statutory authorities is treated as income from government and payment of appropriations to statutory authorities is treated as grants to statutory authorities.

The service appropriations of \$240.6 million from government in the Income Statement on pg 76 includes \$20.5 million appropriations for statutory authorities. The actual appropriation for the department is only \$220.083 million (\$240.6 million - \$20.5 million).

The reduction of \$30.2 million (\$240.6 million - \$210.4 million) does not represent the real reduction, as \$20.5 million appropriations for statutory authorities are not included in the estimated service appropriation from government of \$210.4 million on pg 137. The estimates reported on pg 137 are only for the department and the estimates for statutory authorities are reported in their respective annual reports. Hence the real reduction in appropriation for the department is \$9.7 million (\$30.2 million - \$20.5 million), breakdown for which is provided in table below.

	Amount \$'000
Appropriation Escalation (Cost) for Salaries	3,213
Depreciation	1,500
Swan and Canning Rivercare	300
Voluntary Targeted Separation Scheme T1 and T2	- 8,847
Other - Public Liability Insurance Premiums, Salaries and Allowances Act 1975, GROH reform and reconciliation, Efficiency Dividend, AER, Cost escalation for non-salaries	- 1,717
Workforce Renewal Policy	- 1,286
Revised Wages Policy 1.5%	- 1,125
2017-18 Budget Corrective Measure - Revised Public Sector Wages Policy	- 765
State Fleet Initiatives Savings Measures	- 660
SES 20% Reductions	- 350
Total	- 9,737

The 2018-19 budgeted appropriation of \$239.7 million is the total appropriation for four entities. The department (\$210.4 million – as reported in the estimates, pg 137), ZPA (\$11.1 million), BGPA (\$13.5 million) and RIA (\$4.7 million)



Hon Stephen Dawson MLC
MINISTER FOR ENVIRONMENT; DISABILITY SERVICES