


GOVERNMENT OF WESTERN AUSTRALIA

Department of **Biodiversity, Conservation and Attractions**

Science Strategic Plan 2022–2025

Vision

Scientific excellence informing biodiversity conservation.

Purpose

This Strategic Plan describes the key outcomes that science will deliver to support the Strategic Directions of the Department of Biodiversity, Conservation and Attractions.

Values

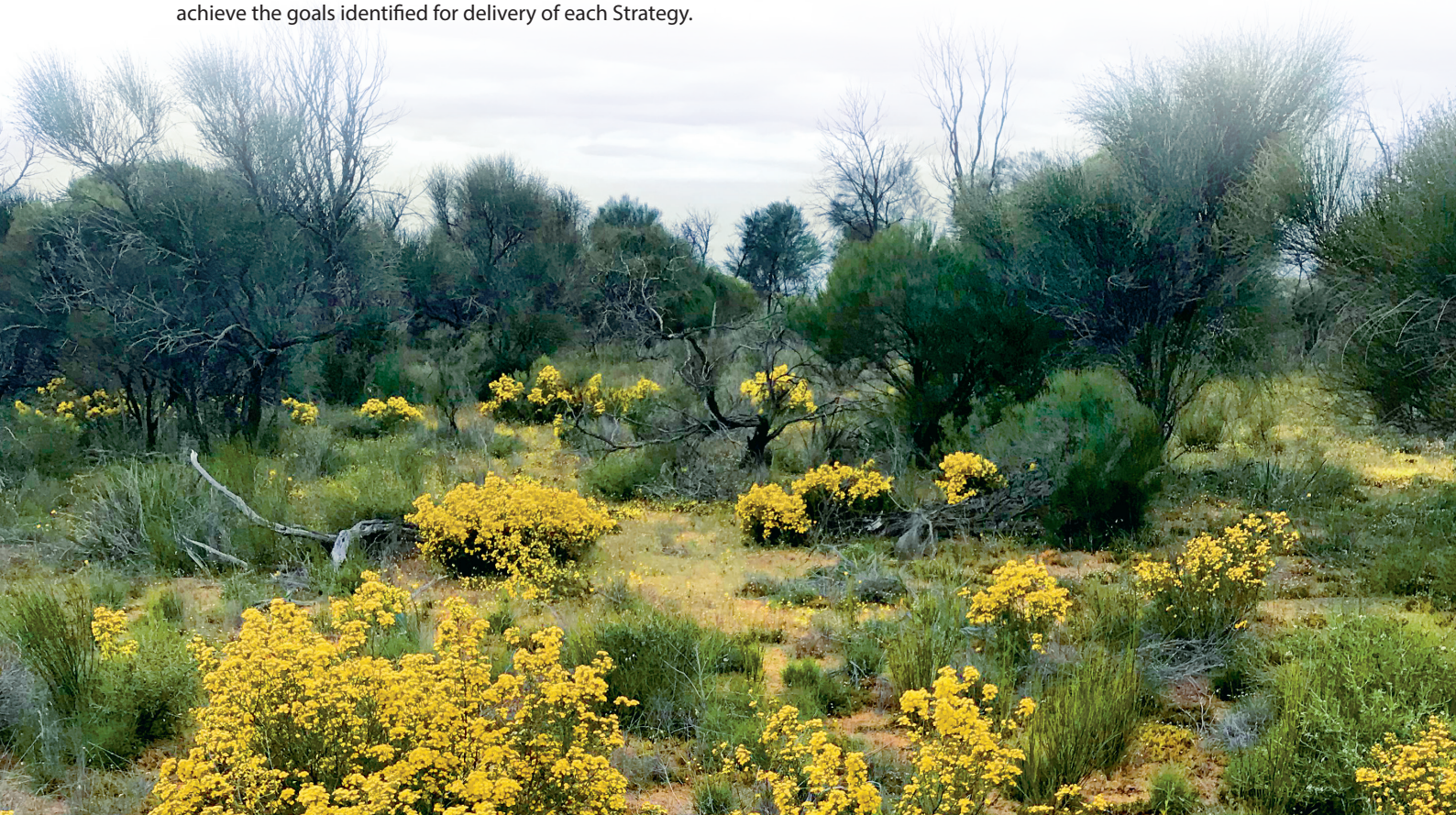
The Department of Biodiversity, Conservation and Attractions has five core Values that drive the way we make decisions, interact with each other and work together to achieve results.

INTEGRITY COLLABORATION ACCOUNTABILITY RESPECT EXCELLENCE

Science functions will be undertaken according to these values and will be innovative, ethical and outcome driven.

Strategic Directions

Science contributes to delivering the department's Strategic Directions to Inspire, Conserve, Discover and Protect, and the Strategies identified to deliver them. This Plan directs the approaches to be undertaken through scientific endeavour to achieve the goals identified for delivery of each Strategy.



Discover

Science delivers Strategies in the **Discover** pillar by creating biodiversity knowledge

Strategy

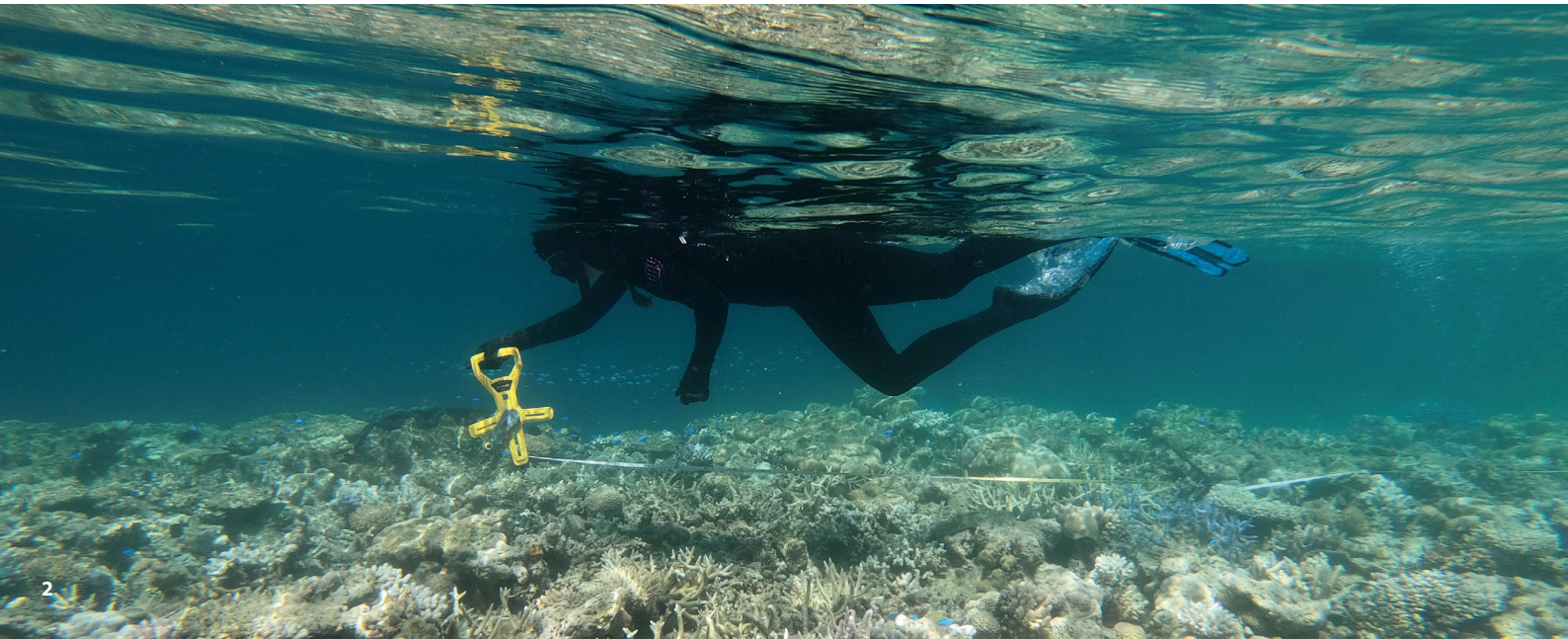
Use world-recognised science to build and share biodiversity knowledge to support evidence-based management

Goal	Approach
Adequate knowledge is available to assess biodiversity values in terrestrial and marine environments.	Conduct biological and genetic survey in priority areas, and for key species and ecological communities. Undertake taxonomic research to support biodiversity knowledge.
Scientific knowledge is available to support implementation of biodiversity conservation and recovery programs, and ecosystem management.	Undertake research and monitoring to address gaps in biodiversity knowledge to support conservation and recovery of key species and ecological communities, and inform management of ecosystems.
Scientific knowledge is available to inform evidence-based management of threats.	Undertake research to identify and understand threats and assess risks to species and ecosystems from invasive species and other threatening processes.
Restoration of degraded and disturbed ecosystems is based on scientific knowledge.	Undertake research to inform approaches to ecological restoration and fauna reconstruction.
Best available scientific information is used for integrated fire management to protect communities and natural values.	Undertake research to guide and inform evidence-based decision making and develop approaches to integrated fire management for fire risk and biodiversity conservation.
Science is innovative and agile in identifying, assessing and adopting new technologies and methodologies.	Develop, identify and realise opportunities for adoption of technical advances and innovative approaches that inform conservation and management.

Strategy

Collate, manage and share data to support effective decision making and conservation

Goal	Approach
Data is effectively captured, curated and accessible to support decision making and conservation management.	Continue development of up-to-date, integrated and accessible databases, data catalogues, and data management systems, with appropriate data standards.
Data is effectively used in decision making and conservation management.	Develop and implement best practice techniques for translation of data into information for management and decision making.
Corporate science knowledge is retained, shared and accessible.	Actively contribute research data into corporate data systems and publish scientific information to facilitate knowledge sharing.



Strategy

Develop adaptive management tools to promote ecosystem resilience to the impacts of climate change and other threats

Goal	Approach
Management of feral predators, weeds, other invasive species and pathogens is evidence-based and effective.	Identify and assess advances in effective management of feral predators, weeds, other invasive species and pathogens, and interactions with other threats, to develop integrated approaches to management and support implementation in an adaptive management framework.
Mitigation of process-based pressures and threats to ecosystems and associated values is evidence-based and effective.	Undertake research and monitoring to understand and inform mitigation of the pressures and threats acting on ecological processes in terrestrial, aquatic, estuarine and marine ecosystems.
Impacts of climate change on biodiversity are better understood and this knowledge informs conservation management and planning.	Undertake research and monitoring to advance knowledge of the vulnerability of species and ecosystems to climate change to inform adaptation strategies.
Climate adaptation strategies are based on scientific knowledge and incorporated into conservation management and planning.	Develop and evaluate effectiveness of adaptation strategies for incorporation into management planning, management programs, and sustainable use of natural resources.
Management for ecosystem resilience incorporates complexity of interactions between climate change and other threats.	Undertake research to understand the interactions of climate change with other threats and stressors and their impact on key species, ecological communities, and ecosystem values.
Knowledge of interactions between fire and other threats informs integrated fire and threat management to protect communities and natural values.	Undertake research to understand effects of variation in fire regimes on species, ecosystems and landscapes, and interactions with other threats.
Scientific information is available for development of a carbon economy.	Undertake research and provide information to respond to and support opportunities in the carbon economy.

Strategy

Deliver contemporary services through digital transformation of our business processes

Goal	Approach
Improved access to data and information.	Develop digital products for effective synthesis, display and use of data and information.
Improved efficiency of service delivery through digital processes.	Maintain and develop digital processes for legislative and regulatory functions.

Strategy

Enhance our knowledge programs through partnerships with education, science and conservation organisations

Goal	Approach
Leverage scale and scope of science programs through effective partnerships.	Collaborate with academia and other science providers, to undertake science where it is aligned with the department's strategic directions.
Expand impact of science programs through effective partnerships with end-users.	Collaborate with industry, government, non-government organisations and Traditional Owners to undertake science where it is aligned with the department's strategic directions.

Conserve

Science contributes to delivery of Strategies in the **Conserve** pillar by providing scientific information and biodiversity knowledge for conservation and management and undertaking ecological monitoring, restoration and collections management

Strategy

Expand Western Australia's protected area system to conserve significant landscapes and values

Goal	Approach
Protected area acquisition and zoning is based on knowledge of conservation values.	Provide biodiversity knowledge and advice to identify conservation significant landscapes and values.

Strategy

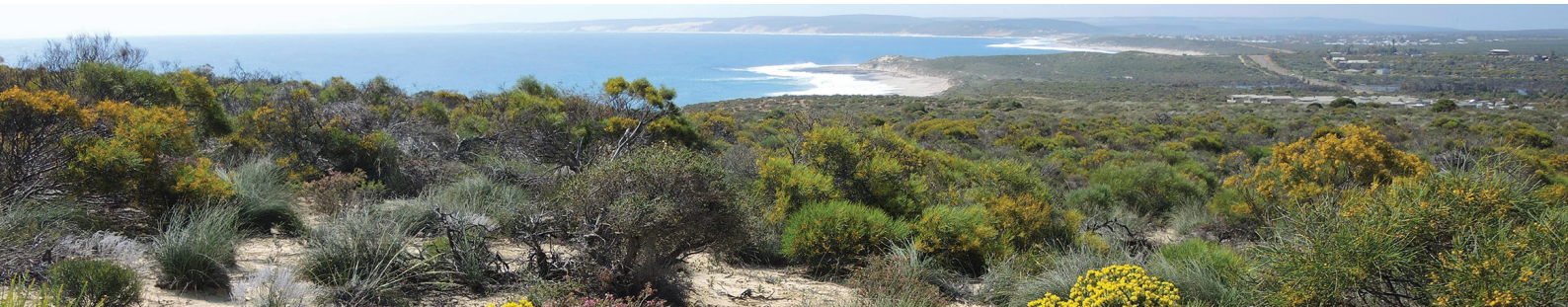
Conserve, restore and manage plants and animals, ecosystems and landscapes using world-recognised science and best practice management

Goal	Approach
Biodiversity knowledge and scientific information are available to inform conservation, adaptive management and decision making.	Effectively translate and communicate scientific knowledge and information to policy makers decision makers and managers through appropriate processes.
Biodiversity conservation and recovery programs are informed by scientific knowledge of species and communities, and population trends.	Assess conservation status of species and ecological communities, and provide scientific basis for monitoring threatened species and ecological communities.
Biodiversity conservation is supported by biodiversity collections and ex situ conservation.	Build and maintain collections to support biodiversity knowledge. Undertake ex situ conservation through seed banking, living collections, captive breeding for release and propagation, and develop best practice guidelines.
Best practice scientific evidence and advice is available to inform restoration of degraded and disturbed ecosystems.	Undertake ecological restoration and fauna reconstruction using scientific principles to demonstrate effective practice. Develop best practice guidelines and protocols for use in restoration and rehabilitation.

Strategy

Manage threats to maintain and enhance biodiversity and cultural values

Goal	Approach
Management of threats from feral predators, weeds, other invasive species and pathogens is evidence-based and effective.	Improve effectiveness of monitoring and management of feral predators, weeds, other invasive species and pathogens through demonstration of evidence-based practice.
Ecosystem management and planning to mitigate threats to ecosystems and associated values is evidence-based and effective.	Provide scientific knowledge to guide development of effective mitigation strategies for management of threats acting on terrestrial, aquatic, estuarine and marine ecosystems.
Adaptation strategies for climate change are incorporated into conservation management and planning.	Provide scientific knowledge to guide development of effective climate adaptation strategies for incorporation into planning and management of threatened species and ecological communities, ecosystem function, and sustainable use of natural resources.



Strategy Develop local, national and international partnerships to deliver conservation programs

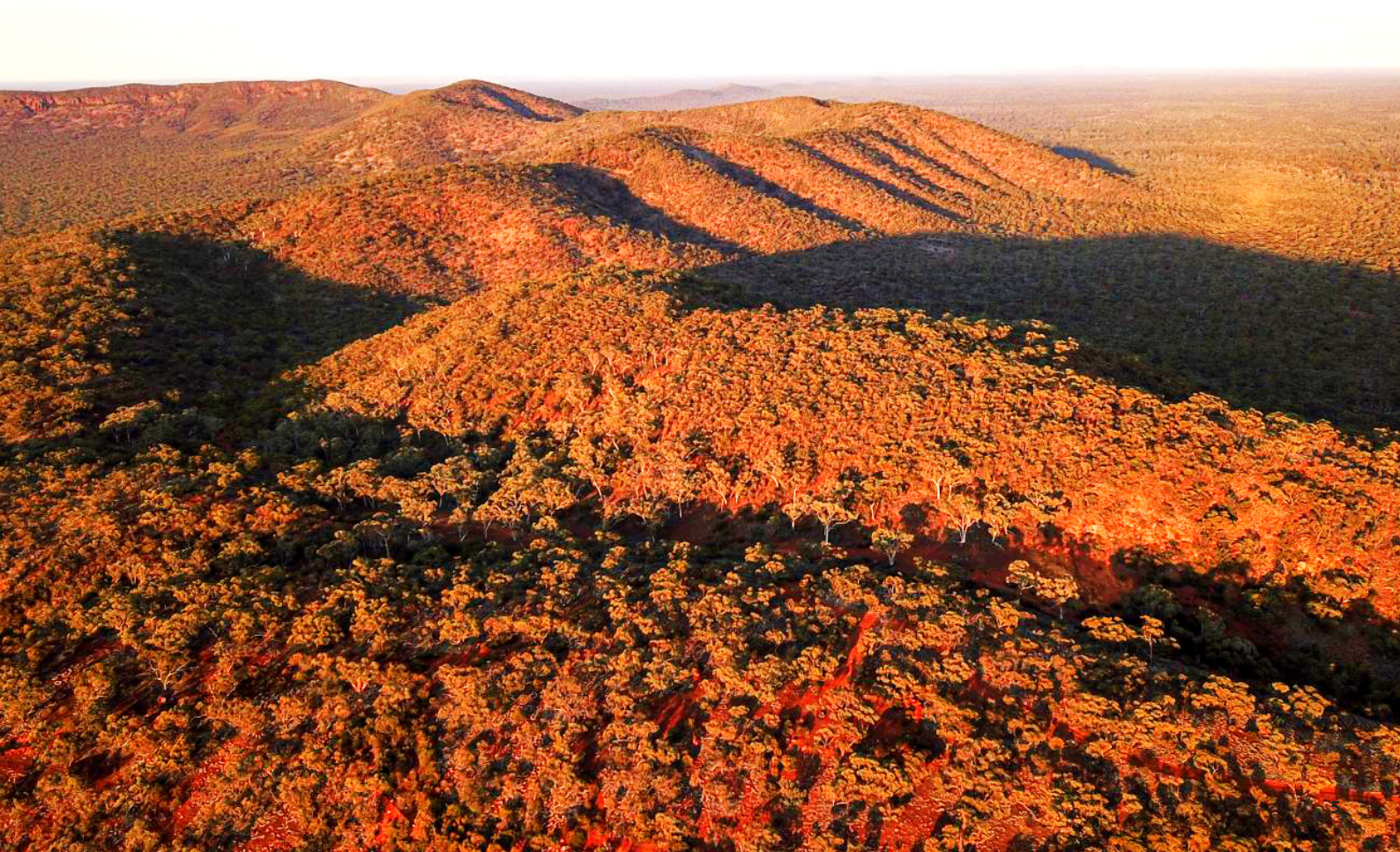
Goal	Approach
Effective partnerships enhance provision of biodiversity and conservation science to inform conservation programs.	Maintain and develop partnerships with conservation organisations to contribute science and biodiversity knowledge to conservation programs.
Private landholders are engaged in conservation on private land.	Support opportunities for private landholders to engage in conservation.

Strategy Partner with Aboriginal people to care for the natural, cultural and heritage values of country

Goal	Approach
Aboriginal people are involved in knowledge sharing and delivering science projects.	Engage with Aboriginal people in understanding traditional ecological knowledge and collaborating in science projects.
Partnerships with Aboriginal people include opportunities for science.	Provide scientific input to the Department's Aboriginal engagement processes and delivery of the Reconciliation Action Plan.

Strategy Maintain and enhance sense of place and associated natural, cultural, heritage and landscape values

Goal	Approach
Management of natural places is based on knowledge of natural and landscape values.	Contribute biodiversity knowledge and scientific information on interacting ecosystem functions to inform management of national parks, protected areas and natural attractions.
Knowledge of how people respond to, and interact with, the natural environment informs management of natural and landscape values.	Engage with the community to understand community values, attitudes, and perceptions about biodiversity and conservation, and people's interactions with the natural environment.



Protect

Science contributes to delivery of Strategies in the **Protect** pillar through providing expertise and scientific information for ecosystem management, effective decision making and delivery of legislative functions

Strategy

Respond to pressures to maintain and enhance ecosystem function

Goal	Approach
Management of ecosystem function is informed by scientific knowledge.	Contribute scientific expertise and knowledge of ecosystem function to development of management plans and environmental programs.
Decision making in the face of uncertainty is based on sound principles.	Provide expertise in structured decision making and complex thinking to facilitate effective decision making in situations of uncertainty.

Strategy

Protect communities and natural values from bushfires through a commitment to prescribed burning

Goal	Approach
Integrated fire management to protect and enhance natural values is based on scientific knowledge.	Provide advice on effects of fire on natural values, including threatened species and ecological communities, and other ecosystem values.
Integrated fire management to protect communities and natural values is informed by knowledge of fire dynamics.	Develop predictive tools and resources to inform and equip fire management in priority ecosystems.
Integrated fire management to protect communities and natural values is enhanced through continuous improvement.	Review prescribed burning and bushfire incidents to measure the effectiveness of fire suppression and management practices, and to inform future decision making through scenario modelling.

Strategy

Share responsibility for bushfire management, mitigation and response with fire and emergency service organisations, volunteer bushfire brigades and private landholders

Goal	Approach
Best available scientific information is available for integrated fire management to protect communities and natural values.	Share scientific information and provide advice with other fire management agencies and private landholders to guide evidence-based decision making in integrated fire management.

Strategy

Collaborate and partner across government and with community, industry and other stakeholders

Goal	Approach
Adaptive management and decision making is based on scientific knowledge.	Provide advice and share scientific knowledge and biodiversity information with community, industry and stakeholders to inform decision making.
Policy development and decision making is evidence-based.	Provide advice based on scientific knowledge and biodiversity information to other government agencies to inform decision making and policy development.

Strategy

Support education and compliance activities in relation to administered legislation

Goal	Approach
Education and compliance functions are enhanced by scientific knowledge.	Share scientific knowledge and biodiversity information, and provide advice, to inform education and compliance with legislation.

Inspire

Science contributes to delivery of Strategies in the **Inspire** pillar by communicating scientific information and engaging with the community and our partners

Strategy Engage with the community and connect people with nature to inspire a passion for conservation

Goal	Approach
Science enhances community engagement with nature and passion for conservation.	Communicate science outcomes to the community and key stakeholders/partners to inspire connection with nature and appreciation of the value of science in conservation management.
Community is engaged, understands and supports biodiversity and conservation science.	Provide opportunities for people to connect with nature and biodiversity science through engagement with community groups.
Science knowledge and awareness is enhanced in future generations.	Engage students in conservation and science projects to inspire them in their career choices and as ambassadors for conservation.

Strategy Provide innovative and exciting visitor experiences connecting people to nature and cultural heritage

Goal	Approach
Programs in natural attractions enhance visitor experiences by using biodiversity knowledge and scientific information.	Contribute biodiversity knowledge and science information to interpretive programs in national parks, protected areas and natural attractions.
Biodiversity knowledge and scientific information is available to support provision of sustainable ecotourism opportunities.	Contribute advice based on biodiversity knowledge and science information to inform decisions on sustainable tourism opportunities.

Strategy Promote and support volunteer engagement in the delivery of our vision and purpose

Goal	Approach
Volunteers contribute to the development of biodiversity knowledge.	Maintain and pursue opportunities for community engagement in science through volunteer programs in science projects and at the WA Herbarium.
Community is engaged in science projects.	Maintain and pursue opportunities for community engagement in citizen science projects.

Strategy Progress meaningful and productive joint management arrangements

Goal	Approach
Scientific information and biodiversity knowledge is available to support progress in joint management arrangements.	Provide scientific information and expertise to assist in development of joint management arrangements.

Strategy Foster a valued, collaborative and respectful workforce that is connected and inspired by our work

Goal	Approach
All staff contribute to, and benefit from, a valued, collaborative and respectful workplace.	Engage with departmental staff in collaborative and respectful partnerships to maximise effectiveness of departmental programs.
Delivery of high-quality science is enhanced by skilled staff and continuous learning.	Foster an innovative and agile culture among staff and support them with training to develop skills, and opportunities for mentoring, career development and transfer of knowledge.
Staff are inspired by science and biodiversity knowledge.	Share scientific information and biodiversity knowledge to inspire staff in delivering the vision of the department.




Science in the Department of Biodiversity, Conservation and Attractions is undertaken in accordance with the departmental Science Policy, where science refers to scientific research, scientific monitoring and science communication undertaken in relation to the biological, physical and social environments.

As a science-based organisation, the department maintains scientific expertise and biodiversity knowledge and uses this knowledge to support the functions of the Parks and Wildlife Service, Botanic Gardens and Parks Authority, Zoological Parks Authority and Rottnest Island Authority.

Implementation of this Science Strategic Plan is coordinated by Biodiversity and Conservation Science. Biodiversity and Conservation Science maintains a strong scientific capability and delivers research, monitoring and biodiversity knowledge for the department. Some science activities, particularly monitoring and animal welfare, are undertaken in other business units in the department. Science is undertaken using both Western Australian Government resources and external funding sources.

Science staff have expertise in animal biology, animal breeding, aquatic and terrestrial ecology, biological survey, collections management, conservation biotechnology, conservation genetics, conservation medicine, conservation policy, data science, ecological restoration, ecoinformatics, ecophysiology, fire behaviour, hydrology, marine biology, plant biology, remote sensing, seed biology, social science, structured decision making, spatial analysis, systematics and taxonomy.

Biodiversity and Conservation Science is structured into programs focused on key themes for the delivery of targeted science to support evidence-based decision making and the conservation and land management functions of the Department. Biodiversity and Conservation Science operates from a range of locations, including Kensington, Kings Park, Perth Zoo, Woodvale, Manjimup, Bunbury and Albany, and includes the Western Australian Herbarium.

More information is available at **www.dbca.wa.gov.au/science**

Our key brands

PARKS AND WILDLIFE SERVICE

ROTTNEST IS

Perth Zoo SAVING WILDLIFE

BOTANIC GARDENS & PARKS AUTHORITY

underpinned by

Biodiversity and Conservation Science

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