Biodiversity data:
Leading the digital journey

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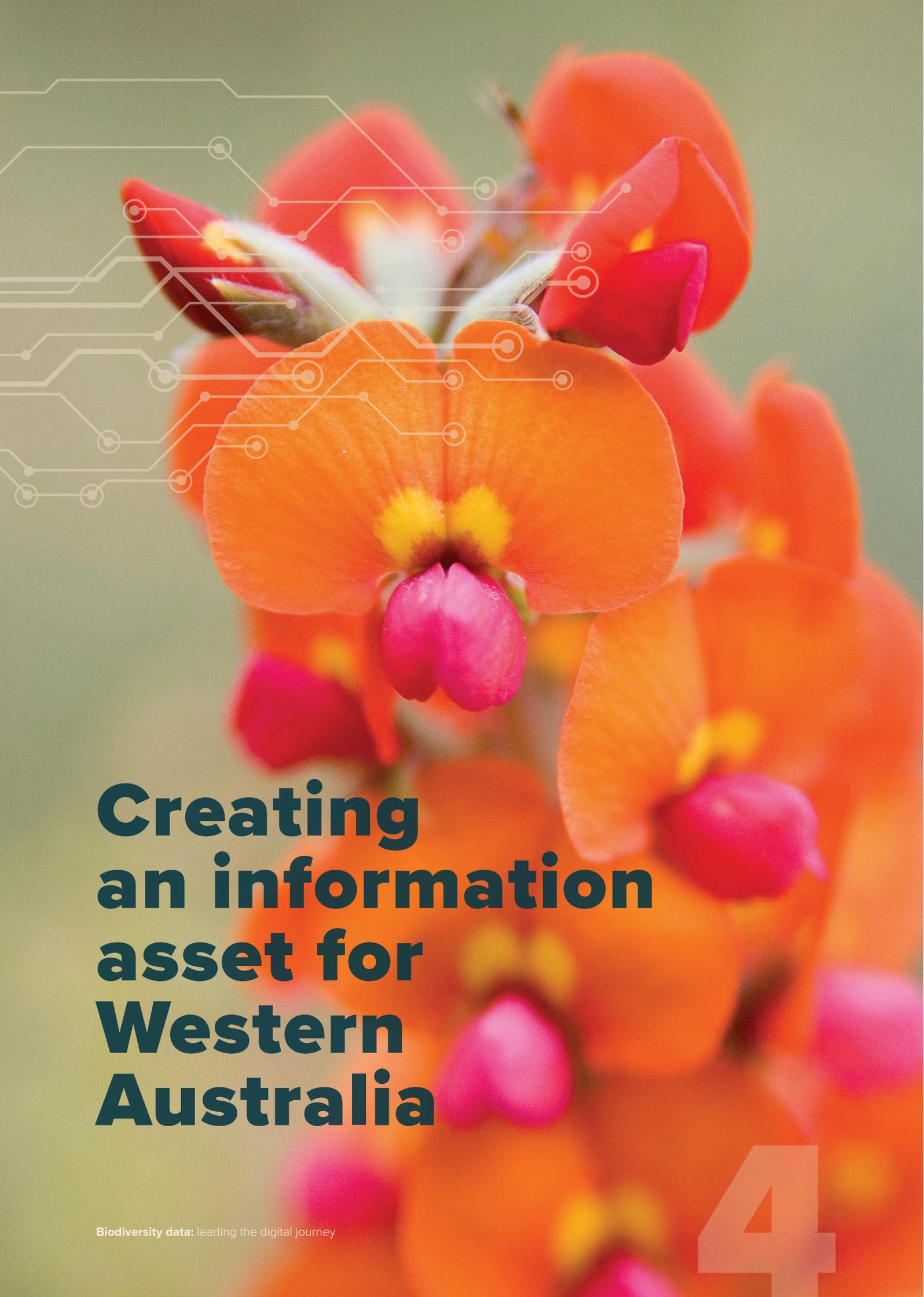
Creating an information asset for Western Australia

4

Since 2016, The Western Australian Biodiversity Science Institute (WABSI) has led a strong collaboration of senior stakeholders from industry, government, regulators and the science community, to build a data sharing and access culture. This document highlights the digital journey and the achievements that are helping to leverage information collected and streamline environmental assessment and approvals through digital transformation. The collective efforts, led by WABSI, are enabling a better understanding of the cumulative environmental impacts of an action, on a region over time. They are also enhancing the access, aggregation, interpretation and management of biodiversity information collected in Western Australia.

Biodiversity is a natural capital asset with immense economic and cultural significance for Western Australia. The need to balance economic activities that provide societal wealth, with community expectations and an increasing public focus on environmental sustainability, presents an opportunity to lift understanding and confidence in the ability to forecast the future state of our environment and the biodiversity within it.

Each year, a substantial amount of information on the State's biodiversity is collected by industry and government. The Environmental Protection Agency recognises the importance of biodiversity information and accurate data in assessing environmental change, and its importance to effective decision-making processes at all levels. It also recognises that the key ongoing challenges are to:

- Improve the **efficiency** for environmental assessments from project inception to final decision, for both the proponent and regulator.

- Improve the **confidence** of the regulator that they have made an informed decision at both the project level and at a landscape (cumulative impact) scale.

- Improve public **trust** in Environmental Impact Assessment decisions through transparency and visibility of data and methods underpinning decisions.

- Provide **assurance** that compliance with Ministerial conditions are proceeding as planned through continuous monitoring, assessment and reporting.

5

Biodiversity data: leading the digital journey

The journey to transforming digital environmental assessments

WABSI priorities:

1. **Create and lead a culture** of shared expertise, common data standards, policies and incentives for data sharing and support a system for persistent storage and archiving of data.

2. **Mobilise biodiversity data from all available sources** (Environmental Impact Assessment, government agencies, Natural Resource Management groups, the research community, community groups etc.) to make the data promptly and routinely available to the entire biodiversity community.

3. **Curate and manage surveys into data layers** that give individual surveys context and meaning, enabling this data to be used as evidence.

4. **Deliver (or enable) informed, trusted analytical and assurance outcomes** using shared solutions and technologies.

5. **Support optimised policy and decision making**, transparent, efficient assessment and assurance processes as well as informed environmental adaptive management frameworks to provide investment confidence and an informed community.

WWW   **WABSI *Research Priorities Plan***

6

Timeline

May 2018 — **2020** — **2021** — **2026**

IBSA
Index for Biodiversity Survey Assessments

- WABSI initiated and oversaw the process of developing IBSA
- A framework and IT platform for capturing all past and ongoing assessments under Part IV and Part V of the EP Act
- Searchable interface
- Hosted by Department of Water and Environmental Regulations

BIO
Biodiversity Information Office

- WABSI guided the initial development of BIO
- Department of Biodiversity, Conservation and Attractions announced as the host for a whole of-state biodiversity platform
- Goal is to mobilise biodiversity data from multiple sources, including IBSA

SAFE
Shared Analytics Framework for the Environment

- WABSI, together with partners and stakeholders, developed SAFE and published a guidance report
- SAFE enables us to better understand the cumulative environmental impacts of an action, on a region, over time. It will accelerate the move to devolved robust, repeatable and transparent decision making for environmental assessments

SEAF
Shared Environmental Analytics Facility

- WABSI leads a proposal for a government-owned, independent facility to develop analytical capabilities and products
- Develop authoritative baseline forecasts for use in cumulative impact assessment
- Adopt a 'hub and spoke' model, operating from a central hub and three focus regions

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Data capture and sharing → **Data integration and curation** → **Analytics and modelling to inform digital environmental impact assessment**

7

2018:
New index makes biodiversity data accessible – IBSA

A new system, the *Index of Biodiversity Surveys for Assessments* (IBSA) was developed as a collaborative effort between WABSI and the Department of Water, Environmental Regulation. It was officially launched on 28 May 2018 by the Minister for Science, Innovation and ICT.

The Index captures and consolidates data contained in more than 500 biodiversity surveys that are conducted each year. The information is publicly accessible.

IBSA helps regulators and industry better understand Western Australia's biodiversity values and enable more informed decisions about how to best protect Western Australia's unique environment, while still allowing the economy to prosper.

WWW   **The Index of Biodiversity Surveys for Assessments (IBSA)**

WABSI worked with the Western Australian Marine Science Institution to launch a similar index in 2020, the Index of Marine Surveys for Assessments (IMSA).

Biodiversity data: leading the digital journey

2019:
Western Australia recognised as a leader in the transformation of biodiversity data management

WABSI led a strong collaboration of senior stakeholders from industry, government, regulators and the science community, in the form of the Digital Environmental Working Group and the Biodiversity Data Sharing Advisory Committee. It is an ongoing, collective effort to enhance the access, aggregation, interpretation and management of biodiversity information collected in Western Australia.

The collaboration led to a report, *Digitally Transforming Environmental Assessment* which recommended more efficient information flows and tools to aid environmental assessment and to support the Western Australian Government's Environment Online initiative for developing new, shared tools for assessment officers and proponents that would reduce time and cost.

With these initiatives, Western Australia was recognised as leading the way nationally, in managing biodiversity information. In late 2019, Environment Ministers across Australia agreed to progress the digital transformation of environmental assessment, based on recommendations in WABSI's report. In addition, the Prime Minister announced progression towards a nationally consistent digital environmental assessment and approvals regime, in partnership with Western Australia.

WWW **Working Group Report: Digitally Transforming Environmental Assessment**

10

11

2020:
Biodiversity Information Office of Western Australia established

In May 2020, the WA Government announced an initiative to establish Environment Online and the Biodiversity Information Office of Western Australia to enhance the timeliness and efficiency of environmental assessment processes and approvals.

Following the success of IBSA, WABSI helped develop a business case to establish a whole-of-state biodiversity data platform. The proposal was successful, with the WA Government announcing funding to establish the Biodiversity Information Office (BIO). The platform, to be hosted by the Department of Biodiversity, Conservation and Attractions, will make all data collected in the State to be more discoverable, accessible, and useable.

Since then, WABSI has assisted with efforts to mobilise data from all sectors, including government, industry, research, and the community. The central platform, known as the Western Australian Biodiversity Data Repository, will provide decision-makers with access to high-volume, high-quality biodiversity data through seamless integration with the Department of Water and Environmental Regulation's Environment Online platform. It will also work in partnership with the Commonwealth Department of Agriculture, Water and the Environment as part of the Digital Environmental Assessment Program.
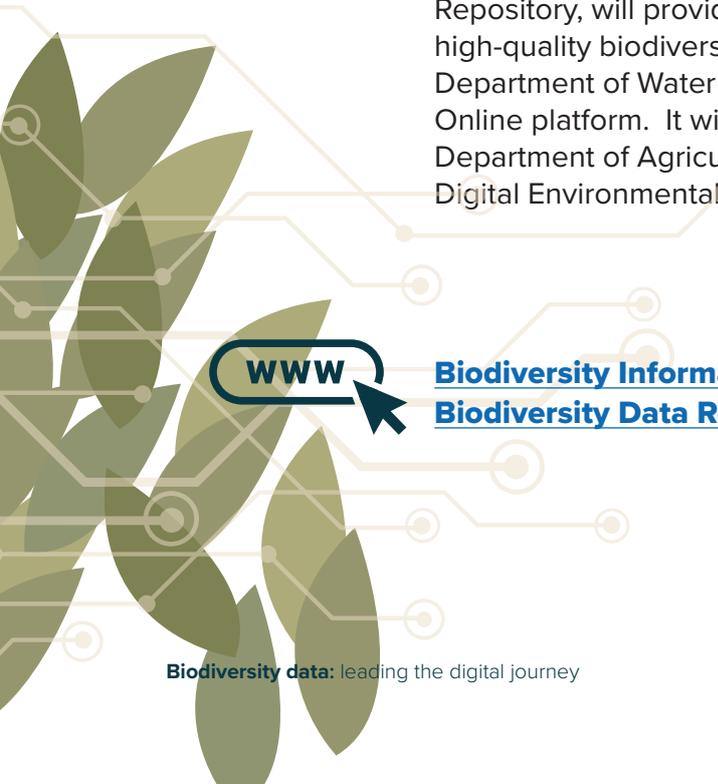
WWW **Biodiversity Information Office: The Western Australian Biodiversity Data Repository**

2021:
A Shared Analytic Framework for the Environment developed

WABSI, together with partners and stakeholders, developed a Shared Analytic Framework for the Environment (SAFE) and published a guidance report.

SAFE depicts the capabilities – the building blocks – which work together across the information and analytic supply chain to provide input decision-support and reporting tools for environmental assessments. It is a management tool, providing a framework and language to:

- Facilitate a consistent view of the capabilities and their interdependencies; and

- Help align effort and prioritise investment across these capabilities.

SAFE has five tiers, each of which describes key capabilities that support decision making and reporting for environmental assessments: Culture, Collect, Curate, Integrate and Analyse. Each tier has several core components, and all tiers interconnect and add value to each other.

SAFE is based upon the Global Biodiversity Information (GBIO) Outlook2 (based on the report '*Delivering Biodiversity Knowledge in the Information Age*').

SAFE will accelerate the move to devolved robust, repeatable and transparent decision making for environmental assessments.

This will:

- Reduce risk for investors, as they will be better able to understand the impact of, and to develop mitigation strategies for, activities that they propose to undertake;

- Remove duplication between regulators at different levels of government; and

- Provide public reassurance about the quality of decisions.

SAFE helps individual projects determine the capabilities that they need, and prioritises effort across the information and analytic supply chain that supports national decision making. WABSI published a report outlining the concept of SAFE and sought feedback from stakeholders to further refine the Framework.

WWW   [**A Guide to a Shared Analytic Framework for the Environment**](#)

15

2022:
A Shared Environmental Analytics Facility (SEAF) proposed

WABSI, together with partners and stakeholders, has been working with PwC and Microsoft to develop a feasibility study for SEAF, which will help position Western Australia as a leader in digital environmental assessments. A high-level roadmap has been developed, to establish SEAF as an independent legal entity, as a hub and spoke model.

The leading advances in environmental information streamlining, sharing and curation we have achieved in Western Australia are already serving as a model for other jurisdictions, and are internationally recognised. We now need to put information to its full use and get the greatest value possible for proponents, regulators, traditional owners and the wider community remains. The challenge thus is sharing not just data, but also the crucial analytics that describe, at any point in time, the state of our environment, the pressures and cumulative impacts upon it, the predicted risks associated with future development, and ultimately how we assure protections.

Leveraging successful initiatives in data sharing and curation, and existing services and capabilities across corporate, government and science sectors through a shared framework could deliver more efficient, complete, robust, transparent and assured environmental accounting, risk assessment and Environmental, Social and Governance (ESG) reporting for regulators, private industry, traditional owners and the wider public.

WABSI has continued to engage widely to ensure all relevant stakeholders have a voice in shaping and endorsing a value proposition, informing the design of a shared analytics facility and defining key operational success elements.

There is increasing expectation among industry stakeholders, governments, traditional owners and the wider community that the information used in decision-making needs to be more comprehensive, transparent and assured. Further, that each new decision that might impact on our environment must be better placed in a context of the cumulative impacts of previous and foreseeable developments, and a sound and contemporary characterisation of its current state. The overwhelming feedback from our engagement was that significant value can be realised with a shared facility, if structured correctly.

A high-level roadmap proposes establishing SEAF as an independent legal entity, as a hub and spoke model. This will allow it to be independent, objective and enable delivery of rapid value realisation as well as national scalability. The roadmap offers technical solutions, refers to global best practice examples and outlines the strategic activities that are required to progress SEAF from concept to implementation, with a vision to roll it out nationally.

SEAF would deliver a range of benefits for end users:

- Enable sustainable environmental and community decision making by understanding the potential impacts of development and the proactive identification of rehabilitation activities;

- Reduction of site development delay risk through site optimisation and streamlined Environmental Impact Assessments;

- Reduced friction for mandated and desired ESG reporting via easy access to required data; and

- Independent, assured reporting to help inform State of the Environment and Country and Environmental Economic Accounting.

17

SEAF presents an opportunity to create a shared, robust, repeatable and sustainable environmental information value chain to transform environmental assessment, reporting and assurance for regional development. It will support the development of State of the Environment and reporting on Country, whilst implementing the recommendations from *Independent Review of the EPBC Act – Final Report* which called for the adoption of National Environmental Standards, digitisation of environmental impact assessments and the creation of an efficient environmental information value chain.

WABSI, together with the Western Australian Marine Science Institution, partners and stakeholders, continues to progress a regional approach to shared environmental analytics to accelerate benefits for end users.

- **WABSI Research Priorities Plan**
- **Working Group Report: Digitally Transforming Environmental Assessment**
- **A Guide to a Shared Analytic Framework for the Environment (SAFE)**