



Australian Government

Department of Infrastructure, Transport,
Regional Development, Communications and the Arts

Utilising GIS Technology to Communicate Drone Legislation Across Australia

Presented by Birgit Kruse and Tim Mollison

8 April 2025



*Presented at the FIG Working Week 2025
Brisbane, Australia 6-10 April 2025*



Collaboration, Innovation and Resilience: Championing a Digital Generation

Brisbane, Australia 6-10 April

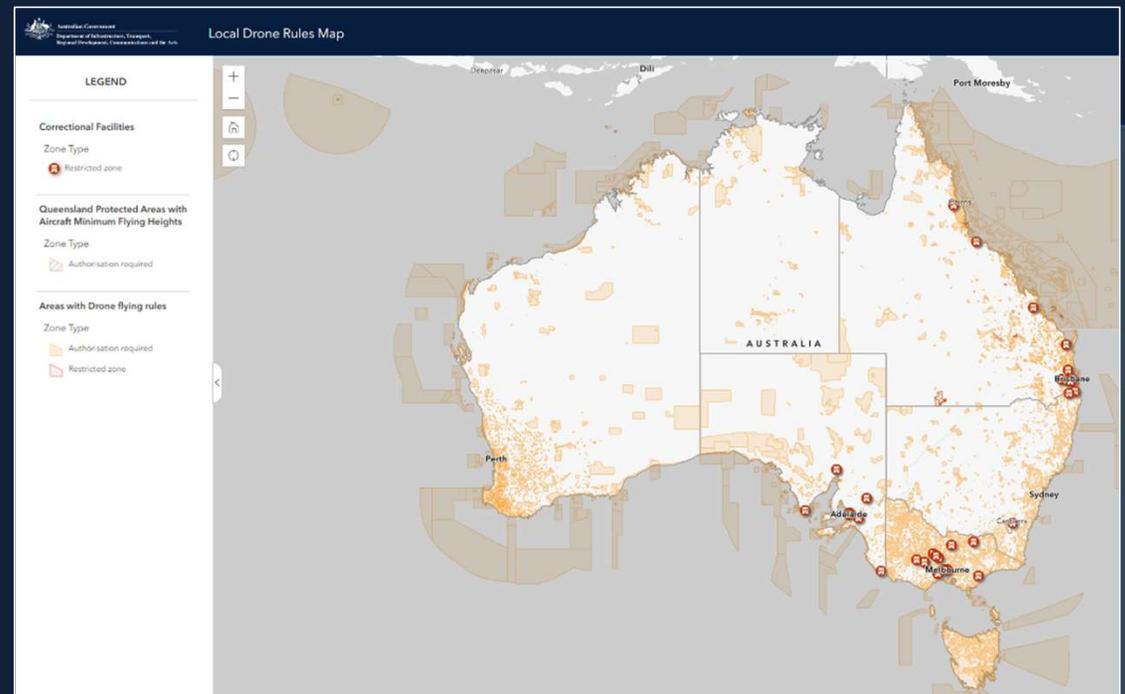
Introduction

- Drone **usage** has grown considerably over the last decade and is expected to grow further rapidly.
- **Legislation** and rules concerning drone usage vary across State and Territories and portfolios in Australia.
- A need to establish a **centralised platform** for non-safety (i.e. security and environmental) drone rules for both recreational and commercial users.
- Improve **awareness** and encourage **compliance** by communicating clear and concise drone usage rules through GIS technology.



Why use GIS to communicate drone usage rules?

- No consistent Australia-wide information on drone usage in a geospatial format.
- No easy tool to identify and interpret drone rules.
- **Idea:** Develop an easy-to-use, interactive map, where users can click on an area to see what drone usage rules occur in that area and help understand any drone rules and plan their flight path.



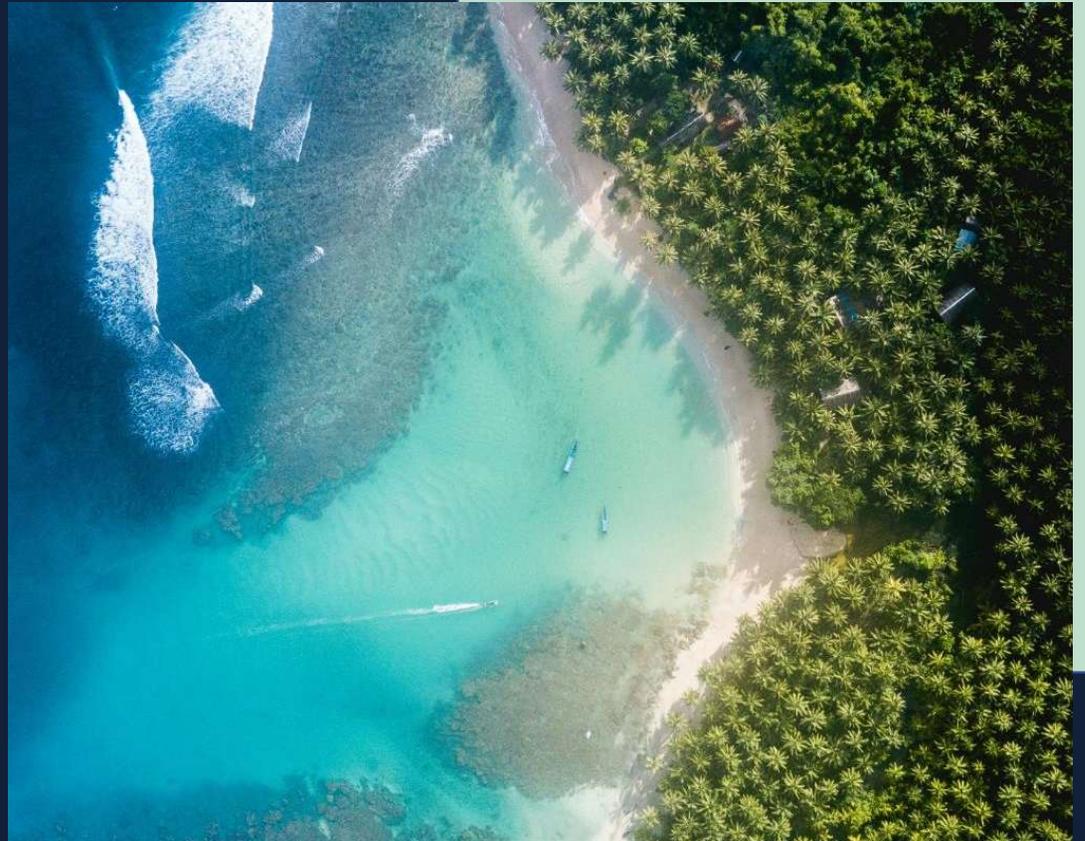
Methodology

- **Collaboration** between Emerging Aviation Technology Policy team, CASA, State and Territory agencies and other stakeholders to collate drone usage rules across jurisdictions and portfolios.
- It combines Australia-wide **spatial data** and associated **non-safety drone usage rules**.
- **Goal:** Make legislation easier to find, access and understand
- **Expected Outcome:** Increased awareness and compliance

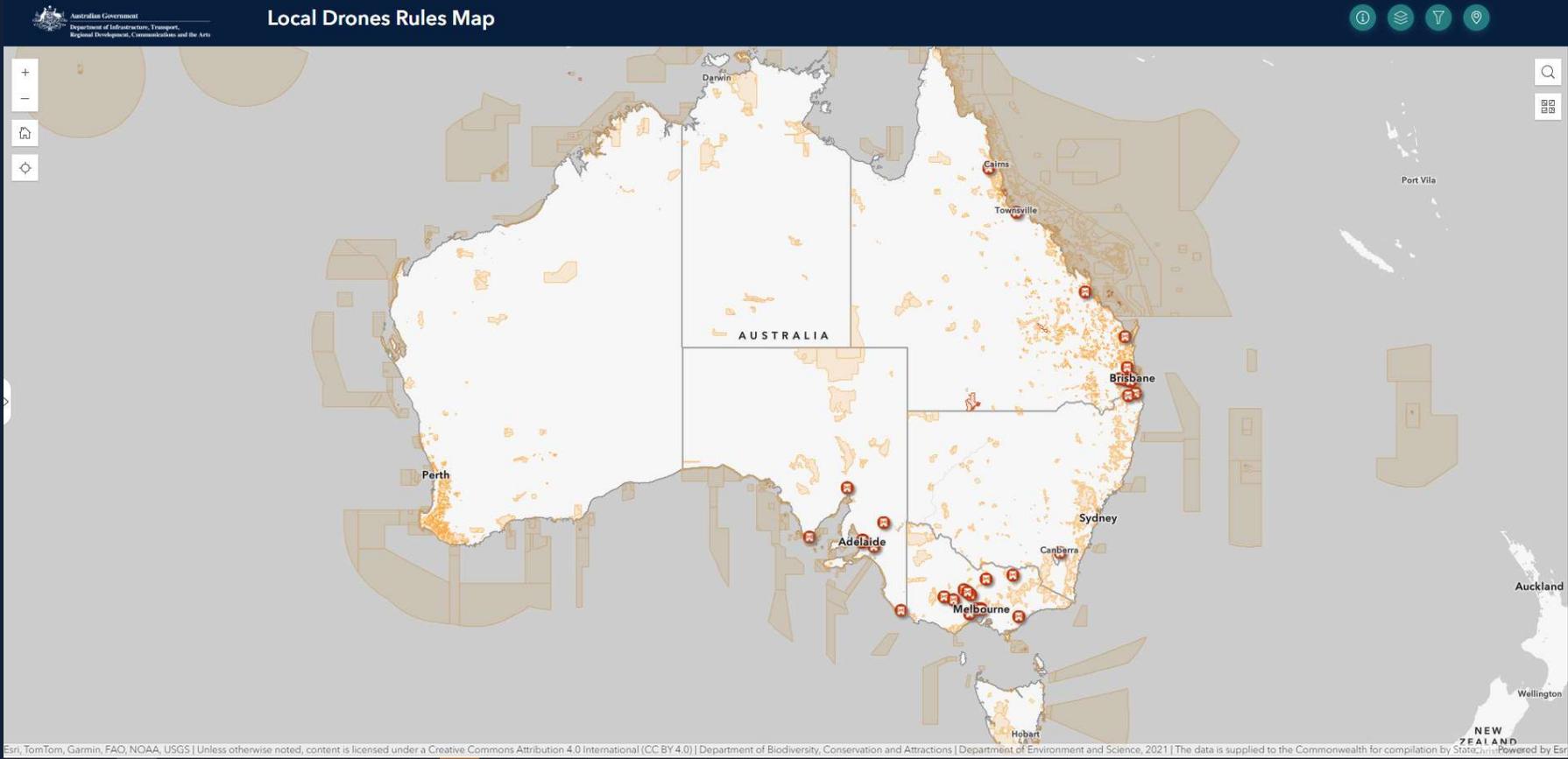


Data Sources

- Spatial data sources so far:
 - Marine and terrestrial CAPAD protected areas;
 - State forests and timber reserves;
 - Correctional facilities.
- Potential future data sources:
 - Other reserves;
 - Other authorities (e.g. local government);
 - Ports;
 - Electricity networks.



Demonstration



LEGEND

Correctional Facilities

Zone Type

Restricted zone

Queensland Protected Areas with Aircraft Minimum Flying Heights

Zone Type

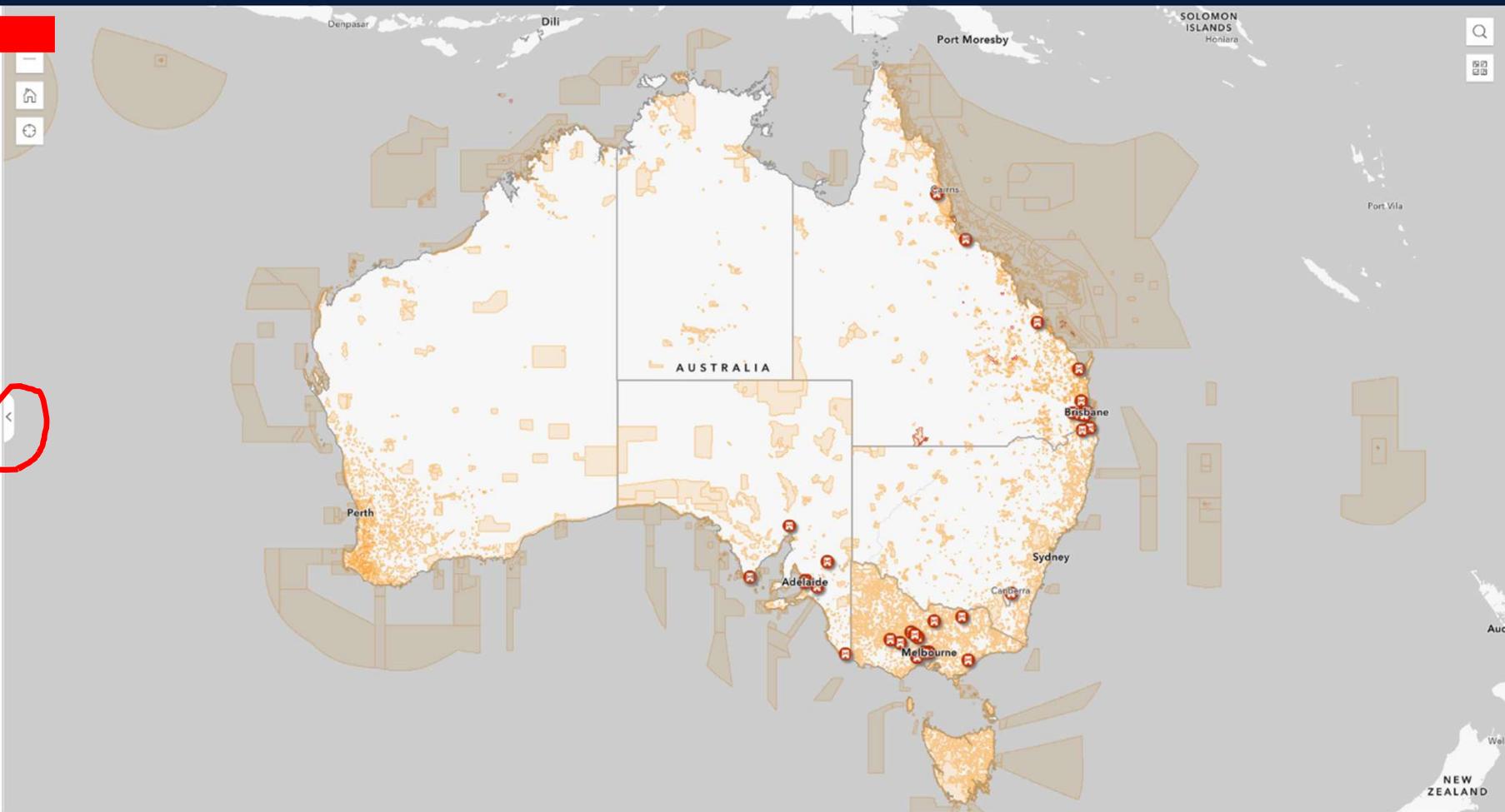
Authorisation required

Areas with Drone flying rules

Zone Type

Authorisation required

Restricted zone





LEGEND

Correctional Facilities

Zone Type

 Restricted zone

Queensland Protected Areas with Aircraft Minimum Flying Heights

Zone Type

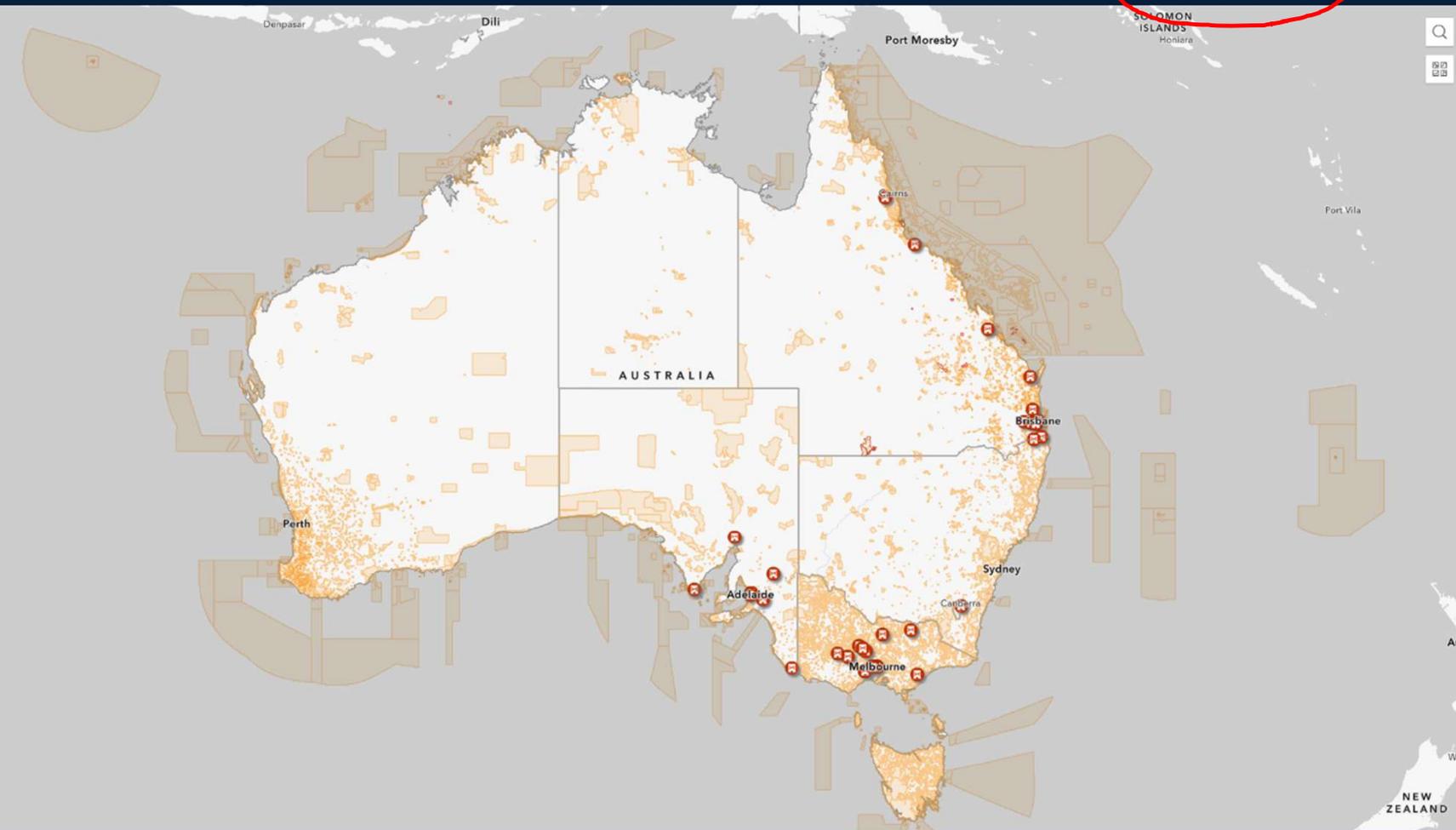
 Authorisation required

Areas with Drone flying rules

Zone Type

 Authorisation required

 Restricted zone



NEW ZEALAND

LEGEND

Correctional Facilities

Zone Type

Restricted zone

Queensland Protected Areas with Aircraft Minimum Flying Heights

Zone Type

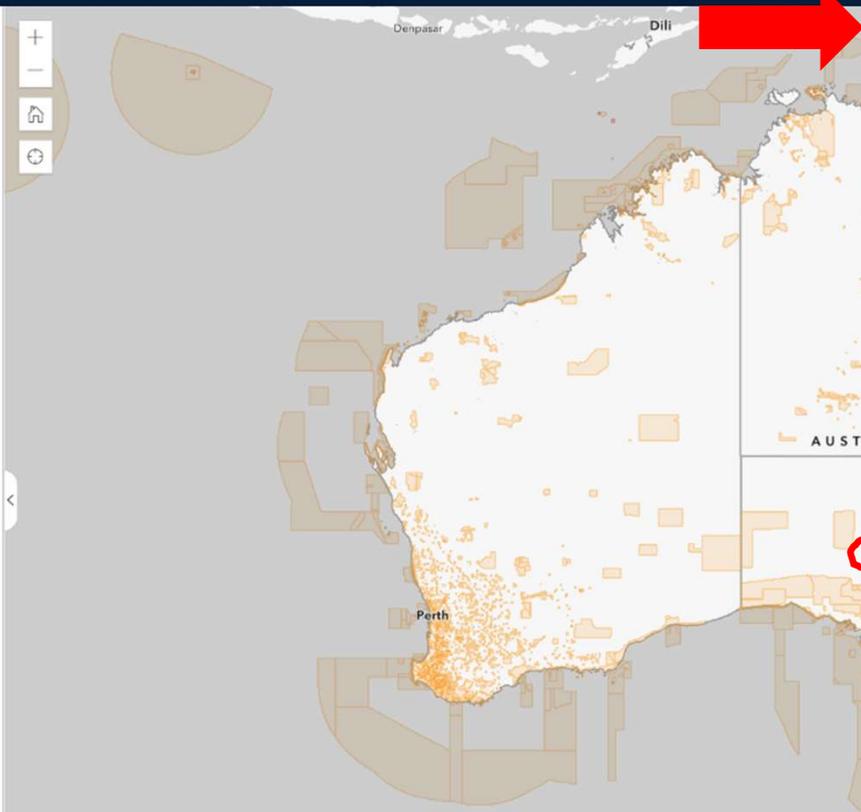
Authorisation required

Areas with Drone flying rules

Zone Type

Authorisation required

Restricted zone



Map Information

Local Drone Rules Map

The Local Drone Rules Map provides geospatial information relating to various non-safety laws relating to drone use in place across Australia. Such rules may be in place in addition to national CASA safety rules.

You may search to find a specific location or navigate your cursor and click to see what laws apply in the selected area. Where available, hyperlinks direct you to the responsible authority for more information, including around applications for exemption where possible. The map and data is reviewed and updated regularly by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts, in cooperation with other government agencies across Australia's states and territories.

Further information about the Local Drone Rules Map can be found at drones.gov.au.

Contact drones@infrastructure.gov.au to provide feedback and/or report any issues. All feedback is appreciated.

How to use the Local Drone Rules Map

1. Click the Search icon and type an address.
2. The map will zoom to the address location.
3. Click on the feature of interest on the map. For example, click a protected area's polygon to view a pop-up box that contains drone usage rules for that feature.
4. **Important:** some protected areas contain more than one set of authoritative drone usage rules. To view all rules, click the arrow located in the bottom right corner of the feature's pop-up box.

Features of the Local Drone Rules Map

Widgets

- **Map Layers widget** allows the user to toggle selected layers on or off;
- **Layer Filter widget** enables the user to filter and display specific results;
- **State Selector widget** allows the user to zoom to a selected state;
- **Basemap widget** offers users a selection of basemaps from a gallery and allows them to change the app's basemap; and

Data Sources

The CAPAD Terrestrial and Marine datasets are sourced from Department of Climate Change, Energy, the Environment and Water. The datasets are available for download publicly under Creative Commons Attribution 4.0 International License.

The National Correctional Facilities is sourced from Geoscience Australia. The web service is available under the Creative Commons Attribution 4.0 International License from [here](#).

The WA Legislated State Forest and Timber Reserves dataset is sourced from the Department of Biodiversity, Conservation and Attractions. The dataset is available publicly under Creative Commons Attribution Non-Commercial 4.0 License from [here](#).

The State and Territories dataset is sourced from the Australian Bureau of Statistics. The dataset is available publicly under Creative Commons Attribution 4.0 International Licence from [here](#).

QPWS - State Forest and Timber Reserve © State of Queensland (Department of the Environment and Science), 2021.

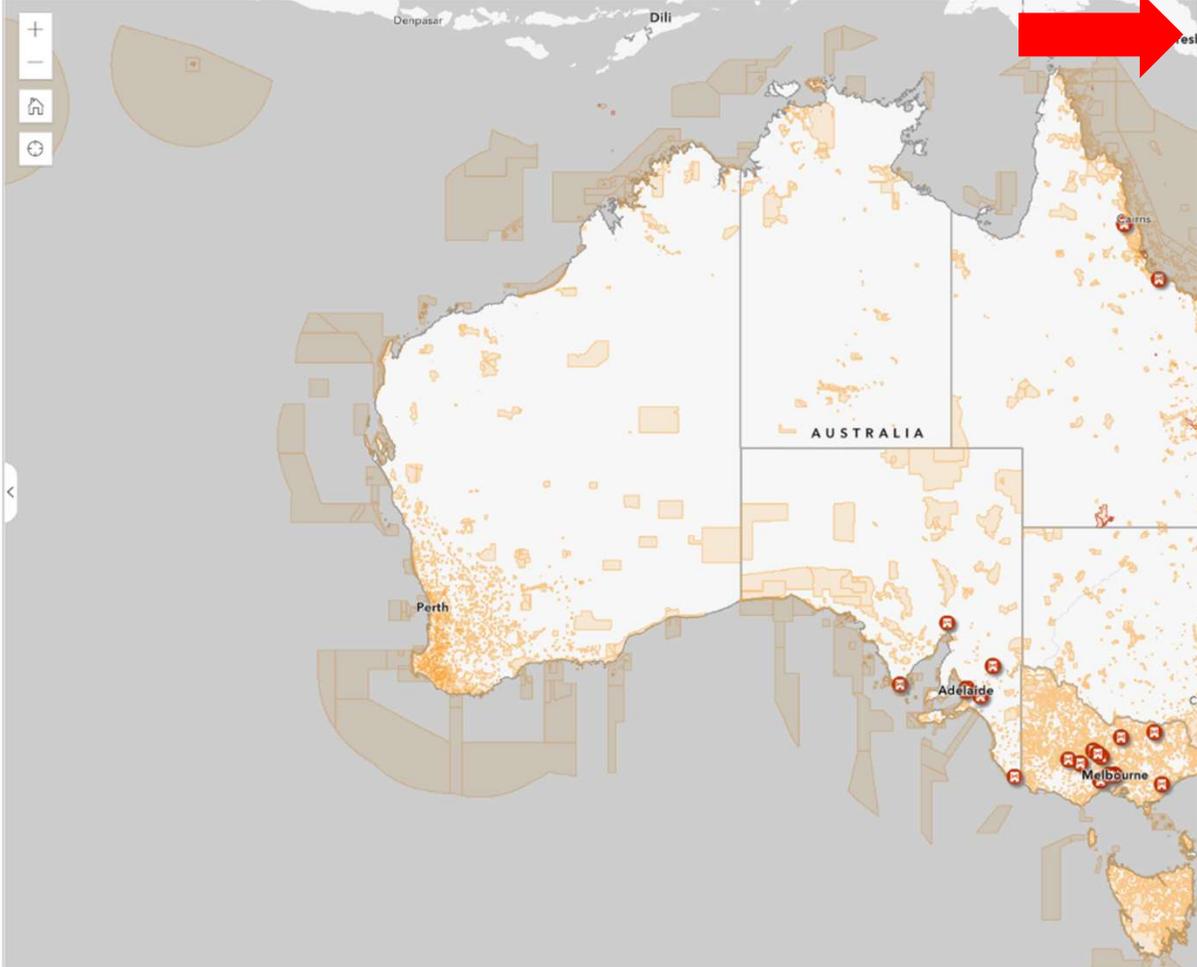
QDES Fly Heights © State of Queensland (Department of the Environment and Science).

LEGEND

Correctional Facilities
Zone Type
Restricted zone

Queensland Protected Areas with Aircraft Minimum Flying Heights
Zone Type
Authorisation required

Areas with Drone flying rules
Zone Type
Authorisation required
Restricted zone



Map Layers

- Correctional Facilities
- Queensland Protected Areas with Aircraft Minimum Flying Heights
- Collaborative Australian Protected Areas Database (CAPAD) - Marine
- Collaborative Australian Protected Areas Database (CAPAD) - Terrestrial
- Queensland Protected State Forests and Timber Reserves
- Western Australia Legislated State Forest and Timber Reserves
- State Boundary

Visibility

LEGEND

Correctional Facilities
Zone Type
 Restricted zone

Queensland Protected Areas with Aircraft Minimum Flying Heights
Zone Type
 Authorisation required

Areas with Drone flying rules
Zone Type
 Authorisation required
 Restricted zone

+
-
Home
Location

Adelaide Dolphin Sanctuary

Zoom to

Commercial rules: An authorisation is required for commercial operations. Permits are considered for scientific research and commercial filming only.

Recreational rules: Recreational flying is not permitted.

Link to policy: Drones and... - National Parks and Wildlife Service South Australia

Apply for a permit: Scientific research application



Layer Filter

Correctional Facilities

Name is any of
0 Selected

Queensland Protected Areas with Aircraft Minimum Flying Heights

Name is any of
0 Selected

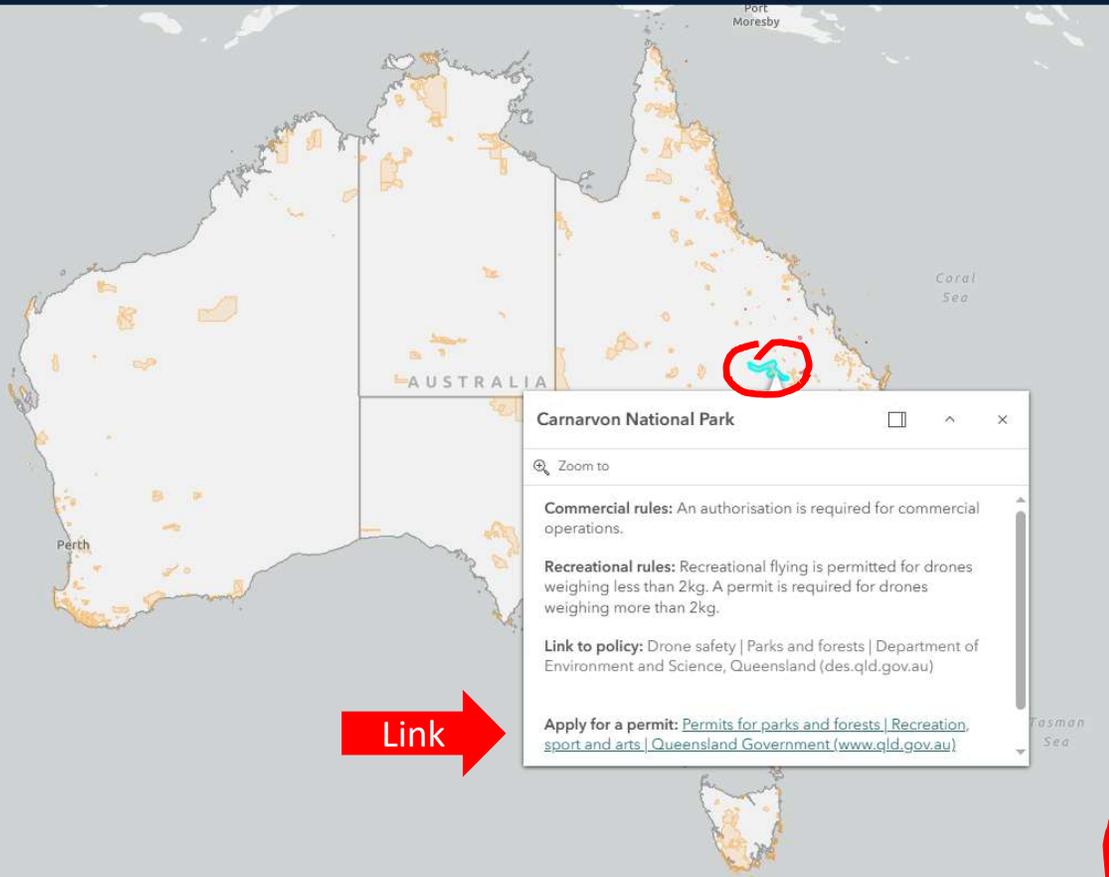
Collaborative Australian Protected Areas Database (CAPAD) - Marine

Type is any of
1 Selected

Search

- Aquatic Reserve
- Australian Marine Park
- Commonwealth Marine Reserve
- Conservation Area
- Conservation Park
- Dolphin Sanctuary
- Game Reserve

Local Drones Rules Map



Carnarvon National Park

Zoom to

Commercial rules: An authorisation is required for commercial operations.

Recreational rules: Recreational flying is permitted for drones weighing less than 2kg. A permit is required for drones weighing more than 2kg.

Link to policy: Drone safety | Parks and forests | Department of Environment and Science, Queensland (des.qld.gov.au)

Apply for a permit: [Permits for parks and forests](#) | [Recreation, sport and arts](#) | [Queensland Government \(www.qld.gov.au\)](#)

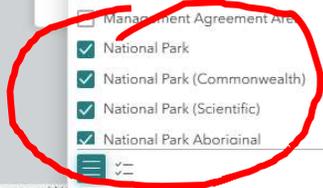


Layer Filter

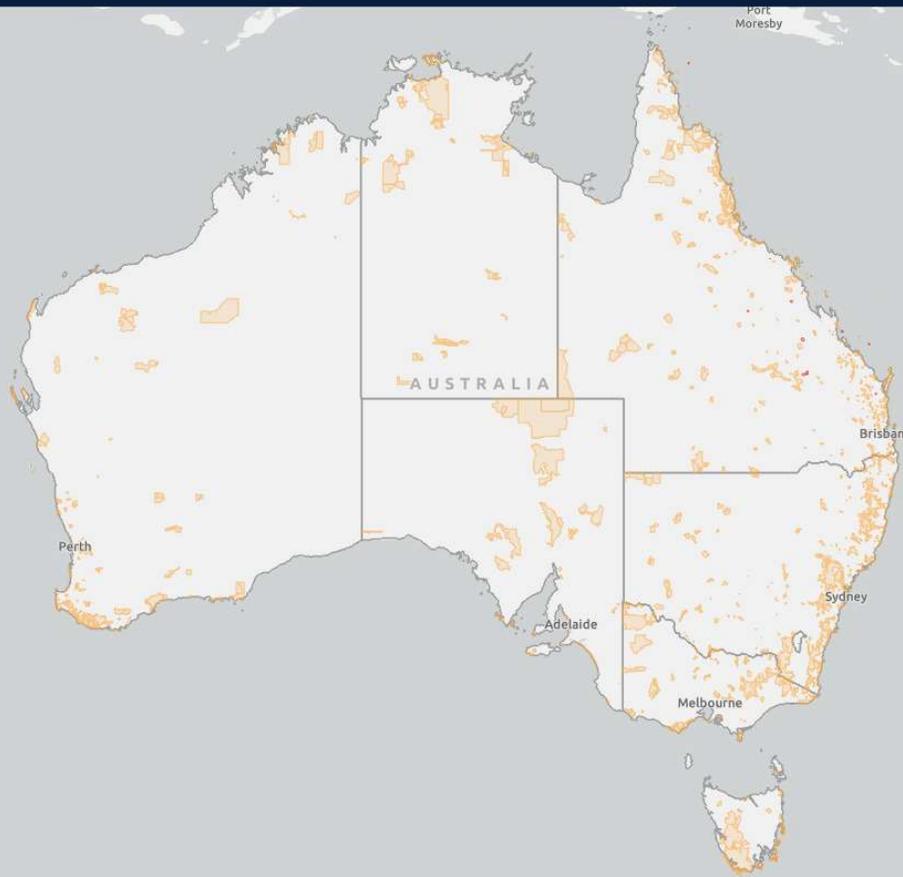
- Correctional Facilities
Name is any of
0 Selected
- Queensland Protected Areas with Aircraft Minimum Flying Heights
Name is any of
0 Selected
- Collaborative Australian Protected Areas Database (CAPAD) - Marine
Type is any of
0 Selected
- Collaborative Australian Protected Areas Database (CAPAD) - Terrestrial
Type is any of
4 Selected

Search

- Hunting Reserve
- Indigenous Protected Area
- Karst Conservation Reserve
- Management Agreement Area
- National Park
- National Park (Commonwealth)
- National Park (Scientific)
- National Park Aboriginal



Local Drones Rules Map

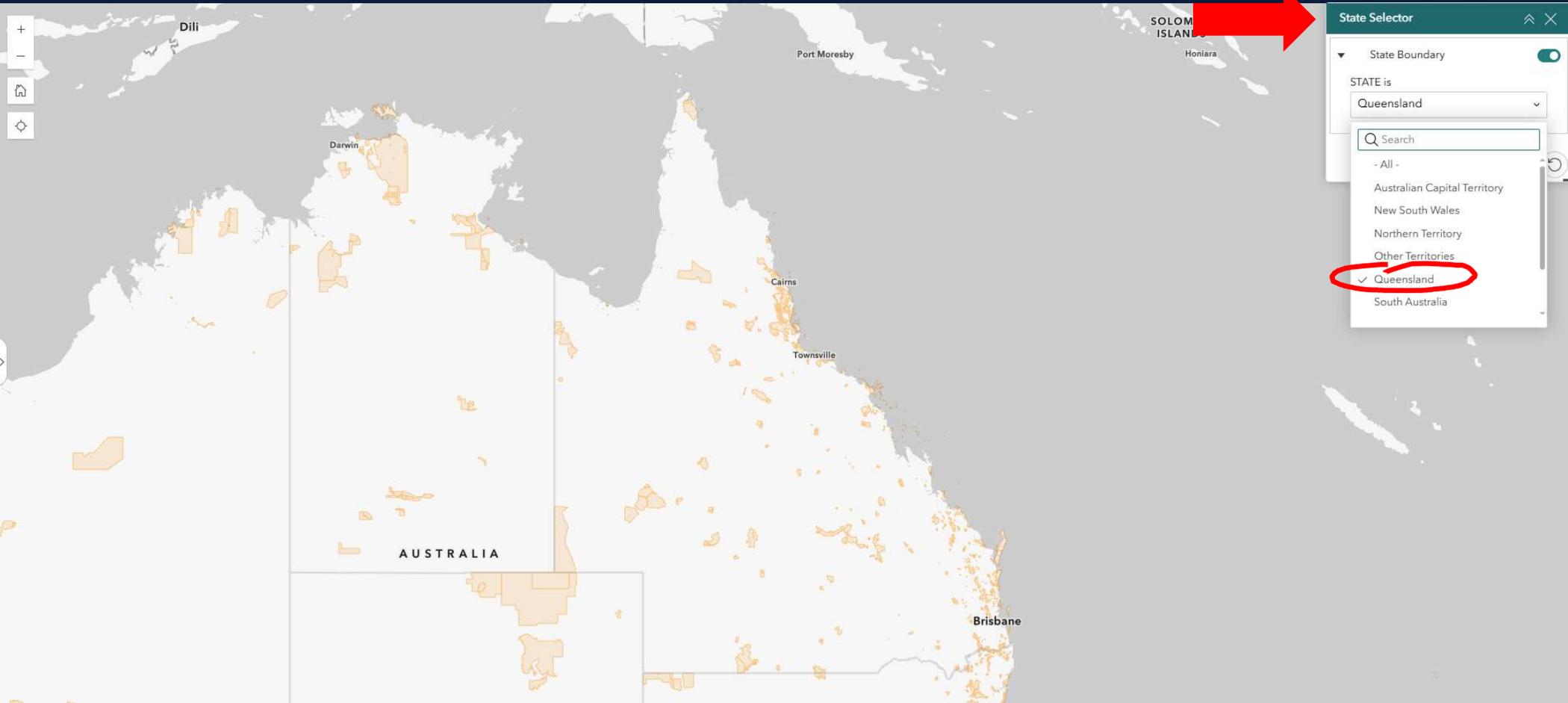


Search

Carnarvon gorge np

- Carnarvon Gorge, Carnarvon Gorge Road, Carnarvon Park, Queensland, 4702, AUS**
- Carnarvon Gorge, Carnarvon Park, Queensland, 4702, AUS**
- Carnarvon Gorge, Queensland, AUS**
- Carnarvon Gorge Wilderness Lodge, 4034 Carnarvon Gorge Road, Carnarvon Park, Queensland, 4702, AUS**
- Carnarvon Gorge Wilderness Lodge, 4043 Carnarvon Gorge Road, Carnarvon Park,**

Local Drones Rules Map



State Selector

State Boundary

STATE is

Queensland

Search

- All -
- Australian Capital Territory
- New South Wales
- Northern Territory
- Other Territories
- Queensland
- South Australia

Local Drones Rules Map



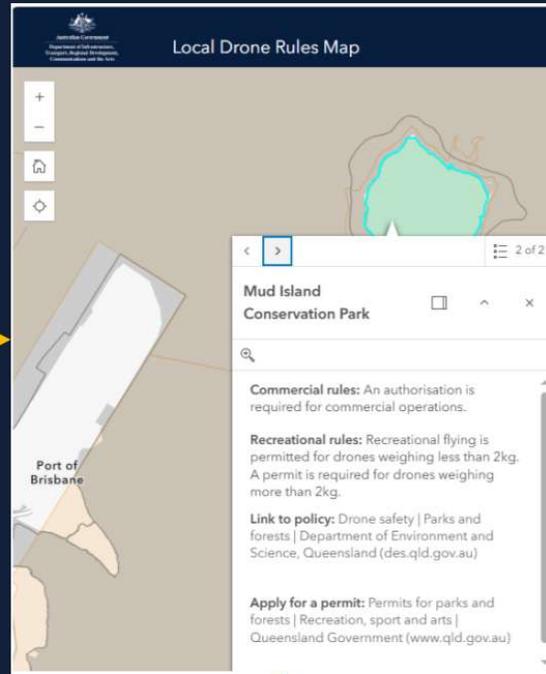
Basemap

- Enhanced Contrast Map
- Firefly Imagery Hybrid
- Human Geography Dark Map
- Human Geography Map
- Imagery
- Imagery Hybrid**
- Light Gray Canvas
- Mid-Century Map
- Modern Antique Map

Stakeholders

Public Drone Operator

Can I fly here?
What permits do I need



Rule Maintenance

- Geography
- Restrictions
- Permits

Rule Provider

Rules Consolidation

- Validation
- Processing
- Publication



DITRDCA

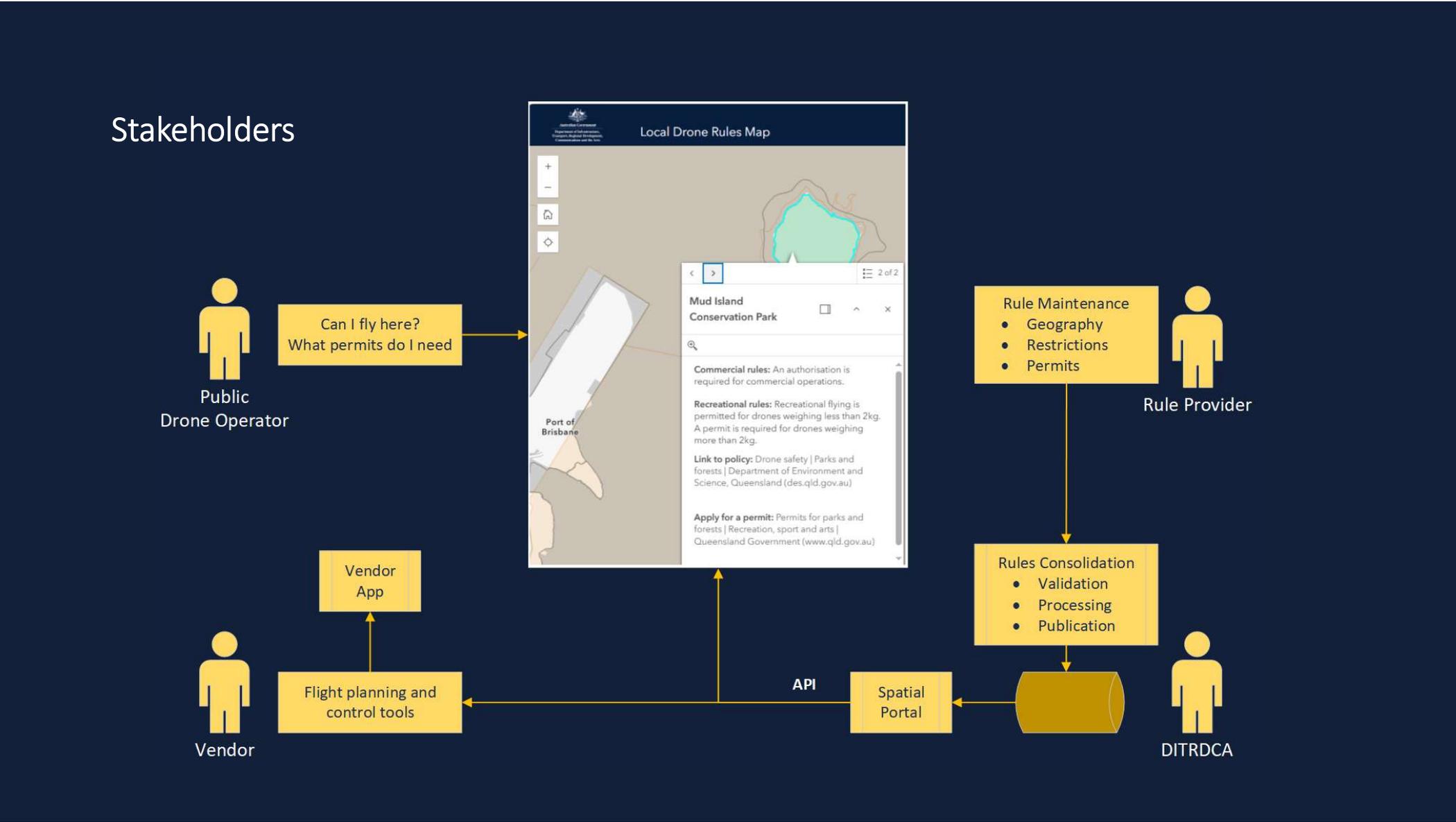
Vendor

Vendor App

Flight planning and control tools

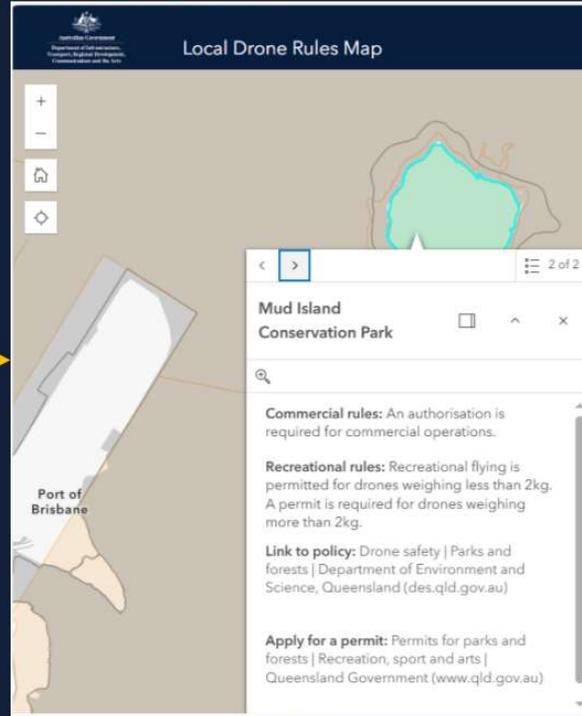
API

Spatial Portal



Proposed Technical implementation

ArcGIS Experience Builder



Public Drone Operator

Browser



Vendor

Vendor App

Vendor choice of tooling for consuming API

REST API

ArcGIS Enterprise

- ArcGIS Online
- Survey123



Rule Provider

- Feature Manipulation Engine
- Custom scripts

Enterprise Geodatabase



DITRDCA

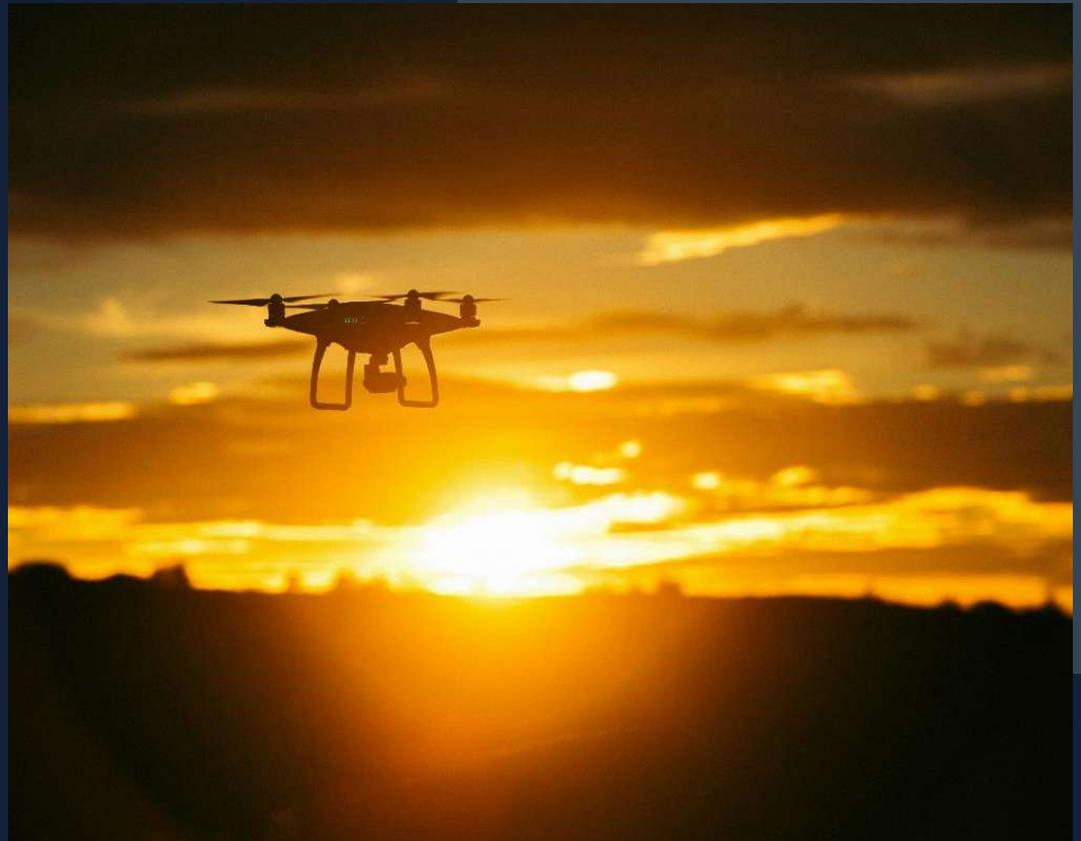
Future Vision

- The department will continue to collaborate with other agencies to obtain drone usage rules and associated spatial data.
- Integration of rules from other drone rule providers, e.g. local governments and exclusion zones for events
- Possibility to add a widget that allows the user to draw a flight path and return all drone usage rules along the path.



Key takeaway points

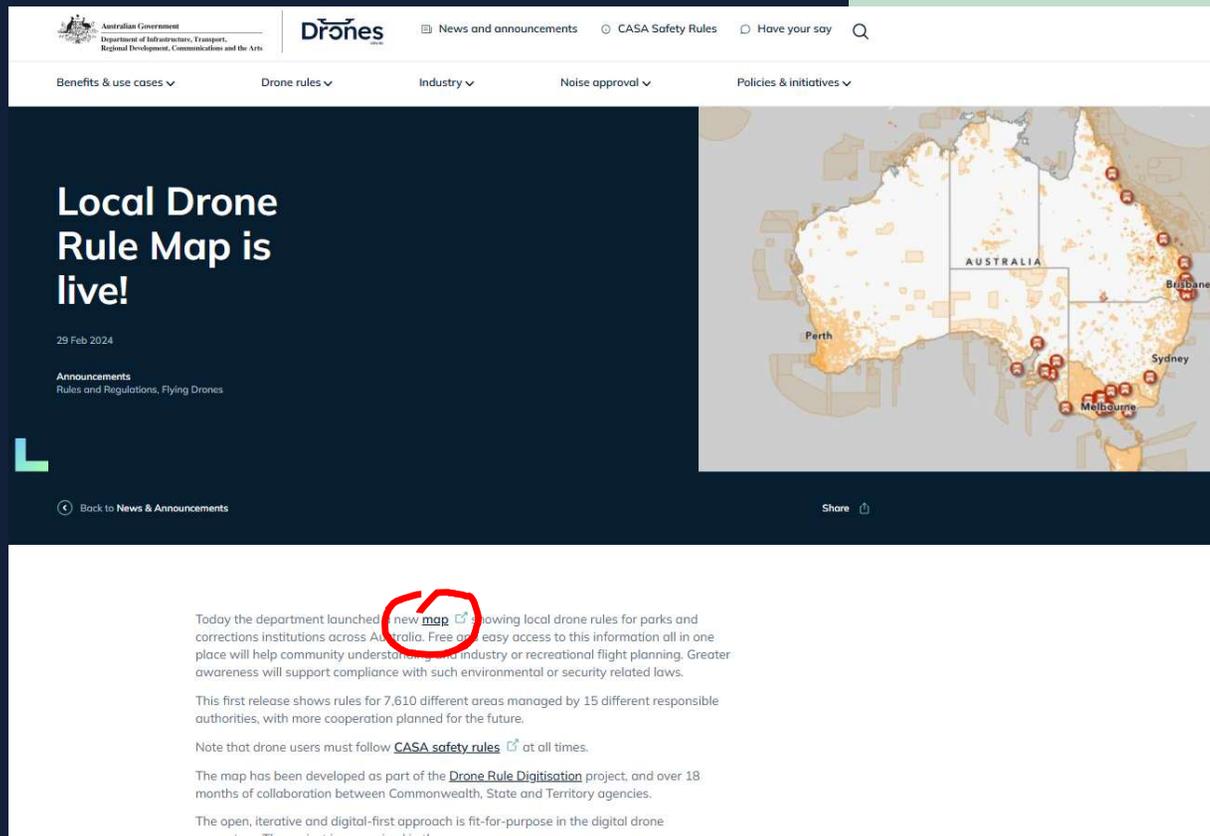
- The Local Drone Rules Map provides a **central platform** for recreational and commercial drone users as well as drone rule makers to access current non-safety drone rules.
- The map is improving **clarity** about non-safety drone usage rules, which in turn enhances **compliance**.
- The project has helped to strengthen agency **partnerships** and ongoing **communication** about rules in an increasingly tighter and more varied airspace across Australia.



Where to find the Local Drones Rules Map:

<https://www.drones.gov.au/>

> Type “Local Drones Rules Map” into the search



The screenshot shows the Australian Government Drones website. The header includes the Australian Government logo, the Department of Infrastructure, Transport, Regional Development, Communications and the Arts, and the 'Drones' logo. Navigation links include 'News and announcements', 'CASA Safety Rules', and 'Have your say'. A search bar is present. Below the header, there are several menu items: 'Benefits & use cases', 'Drone rules', 'Industry', 'Noise approval', and 'Policies & initiatives'. The main content area features a large heading 'Local Drone Rule Map is live!' dated 29 Feb 2024. To the right of the text is a map of Australia with various colored regions and markers. Below the map, there is a 'Share' button. The text below the map describes the launch of the new map, its purpose, and provides information about the project and the need to follow CASA safety rules.

Today the department launched a [new map](#) showing local drone rules for parks and corrections institutions across Australia. Free and easy access to this information all in one place will help community understand the rules for industry or recreational flight planning. Greater awareness will support compliance with such environmental or security related laws.

This first release shows rules for 7,610 different areas managed by 15 different responsible authorities, with more cooperation planned for the future.

Note that drone users must follow [CASA safety rules](#) at all times.

The map has been developed as part of the [Drone Rule Digitisation](#) project, and over 18 months of collaboration between Commonwealth, State and Territory agencies.

The open, iterative and digital-first approach is fit-for-purpose in the digital drone ecosystem. The project is recognised in the

Questions???

<https://www.infrastructure.gov.au/contact-us>



Glossary

AA	Airservices Australia
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations
EATP	Emerging Aviation Technology Partnerships
eVTOL	electric vertical take-off and landing aircraft
ReOC	Remotely Piloted Aircraft Operator's Certificate
RPAS	Remotely Piloted Aircraft Systems (RPAS)
UAM	Urban Air Mobility
VTOL	Vertical take-off and landing (drone)
UAS	Uncrewed aircraft system
UAV	Uncrewed aerial vehicle