



Australian Government

Geoscience Australia

Georegulation - standardising the digital representation of maritime boundary data

Abstract: The IHO S-121 data interchange standard enables an open, international, coordinate-based, representation of maritime boundaries and their associated rights, restrictions, and responsibilities (RRRs) that are authoritative and easy to interpret. The standard has been published by the IHO and is currently informing the development of ISO 19152 Land Administration Domain Model (LADM) -- Part 3: Marine Georegulation.

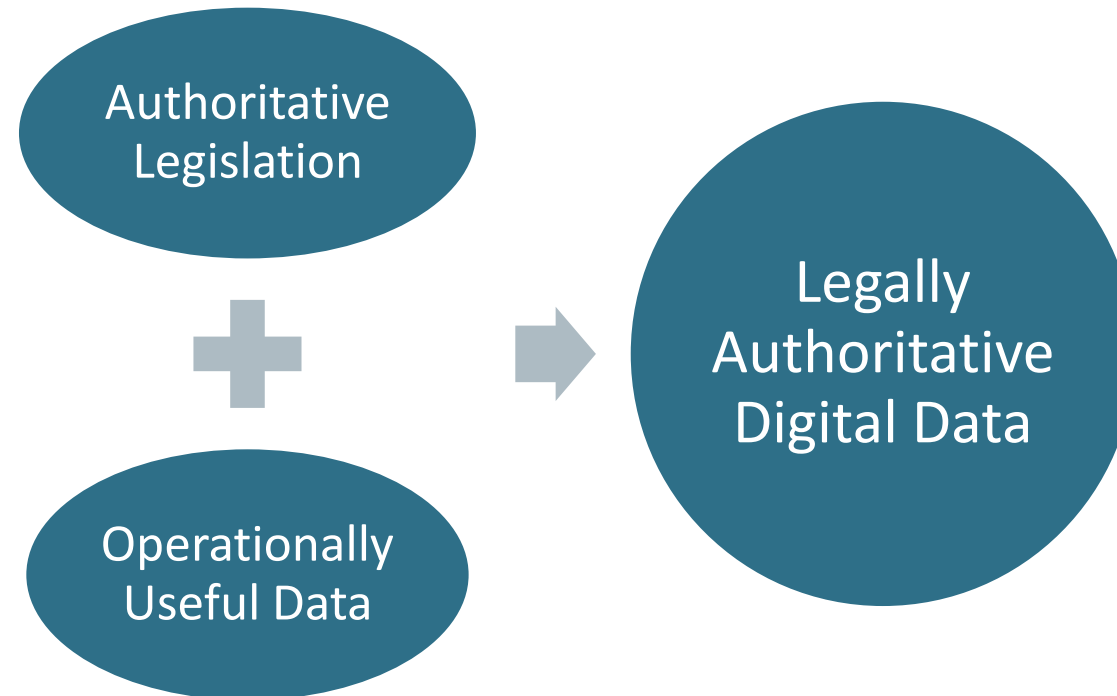
This presentation will provide an overview of how the S-121 and 19152-3 standards have been developed and where Georegulation is going next.

Jonah Sullivan | Geospatial Advisor



Georegulation

- The regulation of space – legal certainty in the spatial administration of jurisdiction
- 1982 – UN Convention on the Law of the Sea (UNCLOS)
- 2004 - UN General Assembly Resolution A/RES/59/24
 - Requests the Secretary-General to improve the existing Geographic Information System for the deposit by States of charts and geographical coordinates concerning maritime zones...



Why Digital Data?

Australia's National Jurisdiction.

Determination of Commonwealth Boundaries, State/Territory Limits, and External Territories.

Native Title Determinations

Migration Zone

Sea Dumping

Crimes at Sea

**Assertion of
Rights to
Jurisdiction**

**Distribution of
Rights, Restrictions,
and Responsibilities**

**Implementation of Domestic
Rights, Restrictions, and
Responsibilities**

Environmental Regulations

Fisheries Regulations

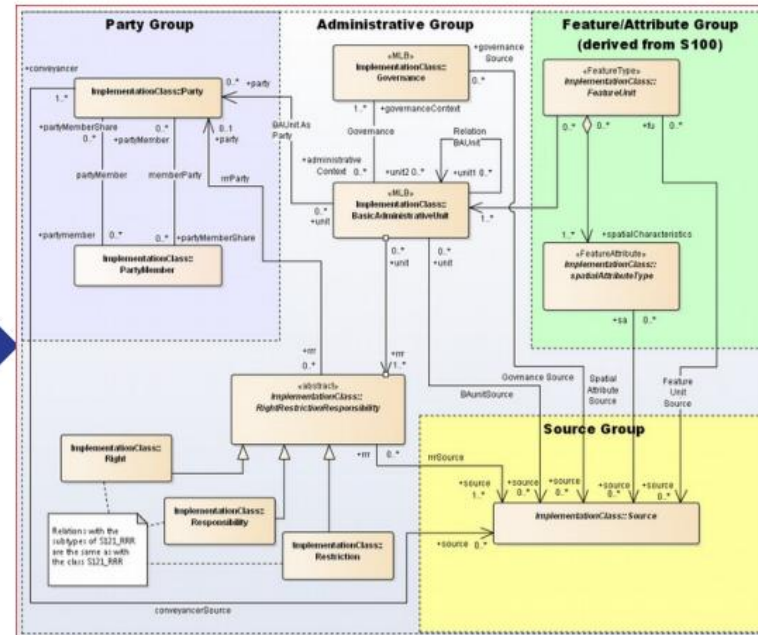
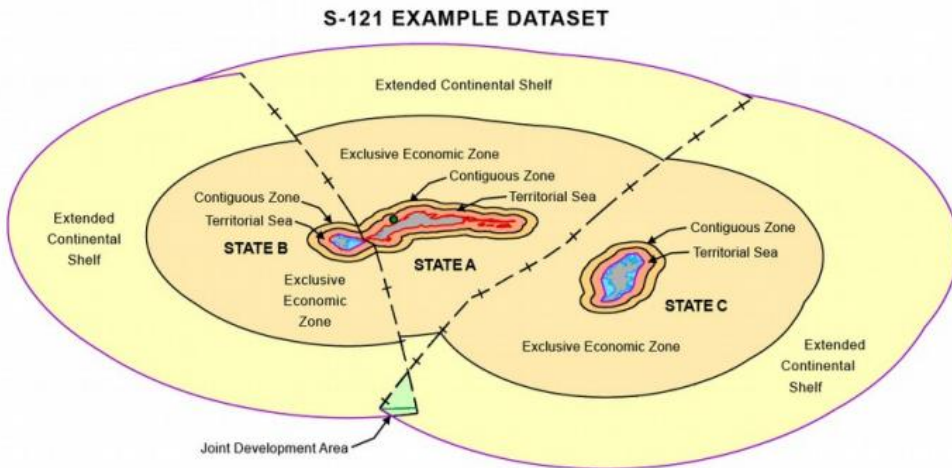
Petroleum Titling

Offshore Mining

S-121 Maritime Limits and Boundaries

Support the management, description and exchange of a State's Maritime Sovereignty, Sovereign rights extents and associated juridical zones.

The management of legal information is very different from the management of other types of GIS data.



ENC



GML



Text

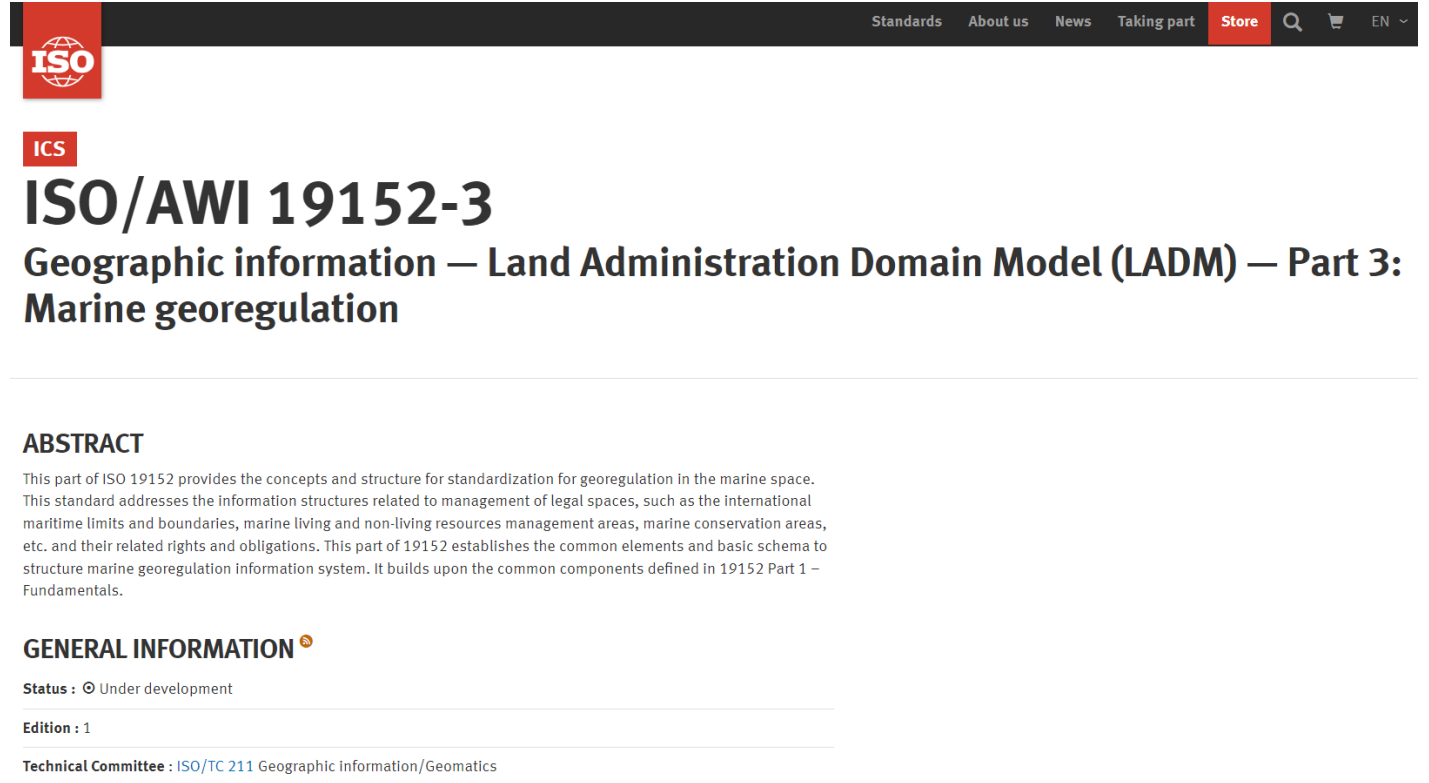
ISO 19152-3 Land Administration Domain Model (LADM)

Split into thematic parts

- Part 1: Fundamentals
- Part 2: Land registration
- **Part 3: Marine georegulation**
- Part 4: Valuation information
- Part 5: Spatial plan information
- Part 6: Implementation aspects

Approved Work Item

Stage 20 – preparatory – draft not yet tabled at ISO/TC211 committee



The screenshot shows the ISO website interface. At the top, there is a navigation bar with links for 'Standards', 'About us', 'News', 'Taking part', and 'Store'. The ISO logo is prominently displayed on the left. Below the logo, the text 'ICS' is visible. The main title of the page is 'ISO/AWI 19152-3 Geographic information — Land Administration Domain Model (LADM) — Part 3: Marine georegulation'. Underneath the title, there is an 'ABSTRACT' section followed by a paragraph of text describing the standard's scope and its relationship to other parts of the ISO 19152 series. Below the abstract is a 'GENERAL INFORMATION' section with a small icon, containing details about the status (Under development), edition (1), and the technical committee (ISO/TC 211 Geographic information/Geomatics).

Standards About us News Taking part Store Q EN

ISO

ICS


ISO/AWI 19152-3

Geographic information — Land Administration Domain Model (LADM) — Part 3: Marine georegulation

ABSTRACT

This part of ISO 19152 provides the concepts and structure for standardization for georegulation in the marine space. This standard addresses the information structures related to management of legal spaces, such as the international maritime limits and boundaries, marine living and non-living resources management areas, marine conservation areas, etc. and their related rights and obligations. This part of 19152 establishes the common elements and basic schema to structure marine georegulation information system. It builds upon the common components defined in 19152 Part 1 – Fundamentals.

GENERAL INFORMATION

Status :  Under development

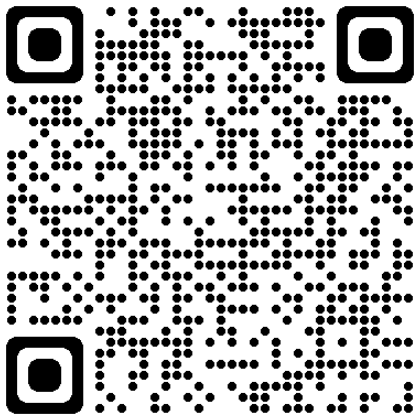
Edition : 1

Technical Committee : [ISO/TC 211](#) Geographic information/Geomatics

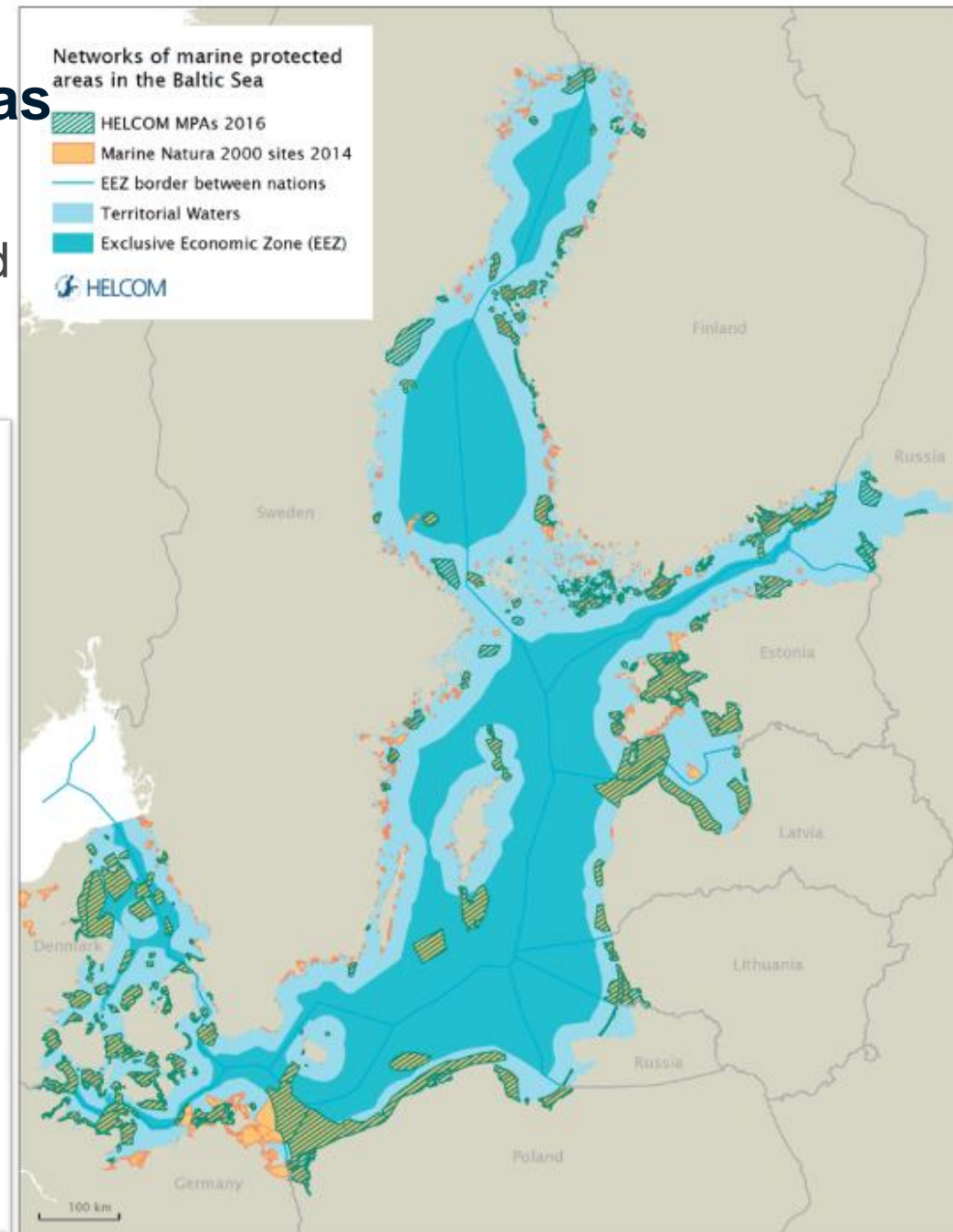
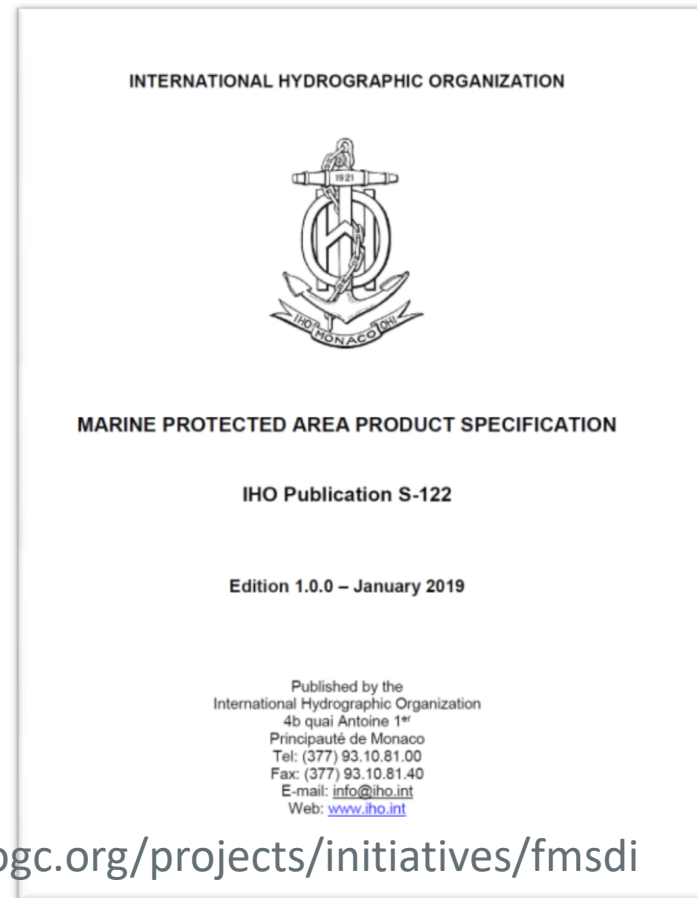
OGC Pilot Project: S-122 Marine Protected Areas

- Regional Marine Spatial Data Infrastructure (MSDI)
 - Based on binding legislation within member states and treaties between them
 - North Sea and Baltic Sea as Testbed

- OGC Initiative
- First phase 2022
- Second phase 2023



<https://www.ogc.org/projects/initiatives/fmsdi>



Pacific Statement

We, The Leaders of the Pacific Islands Forum ...

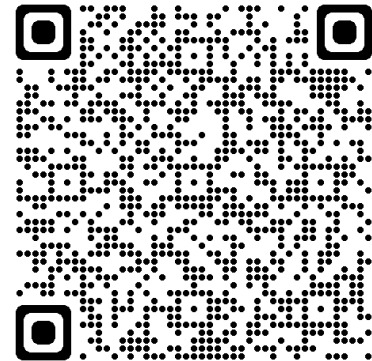
Declare that once having, in accordance with the Convention, established and notified our maritime zones to the Secretary-General of the United Nations, **we intend to maintain these zones without reduction, notwithstanding climate change-related sea-level rise,**

Further declare that we do not intend to review and update the baselines and outer limits of our maritime zones as a consequence of climate change-related sea-level rise, and

Proclaim that our maritime zones, as established and notified to the Secretary-General of the United Nations in accordance with the Convention, and the rights and entitlements that flow from them, shall continue to apply, without reduction, notwithstanding any physical changes connected to climate change-related sea-level rise.

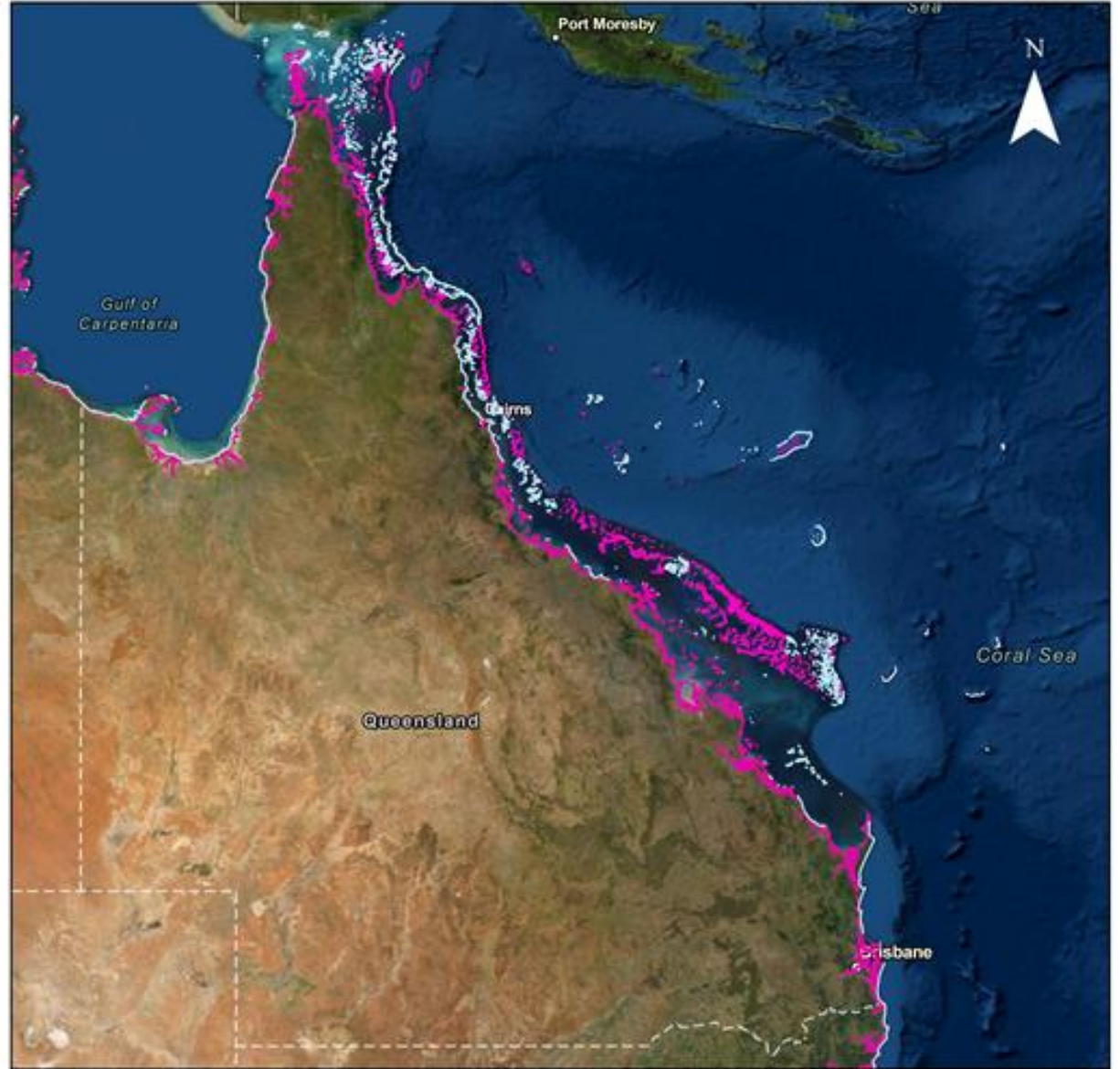


DECLARATION ON
PRESERVING MARITIME ZONES
IN THE FACE OF
CLIMATE CHANGE-RELATED
SEA-LEVEL RISE



<https://www.forumsec.org/wp-content/uploads/2021/08/Declaration-on-Preserving-Maritime.pdf>

Australian Coastline Survey Program



Revised Maritime Boundaries



GBRMPA

[P-20-23] Olympic Reef (20-377) and surrounds

The area bounded by a line commencing at 20° 47.760' S, 151° 13.920' E then running progressively:

1. east along the parallel to its intersection with longitude 151° 16.562' E
2. south along the meridian to its intersection with latitude 20° 49.440' S
3. southerly along the geodesic to 20° 54.240' S, 151° 15.359' E
4. west along the parallel to its intersection with longitude 151° 12.000' E
5. northerly along the geodesic to 20° 52.320' S, 151° 11.760' E
6. north along the meridian to its intersection with latitude 20° 51.600' S
7. northerly along the geodesic to 20° 48.480' S, 151° 12.720' E
8. north-easterly along the geodesic to 20° 48.000' S, 151° 13.200' E
9. easterly along the geodesic to the point of commencement

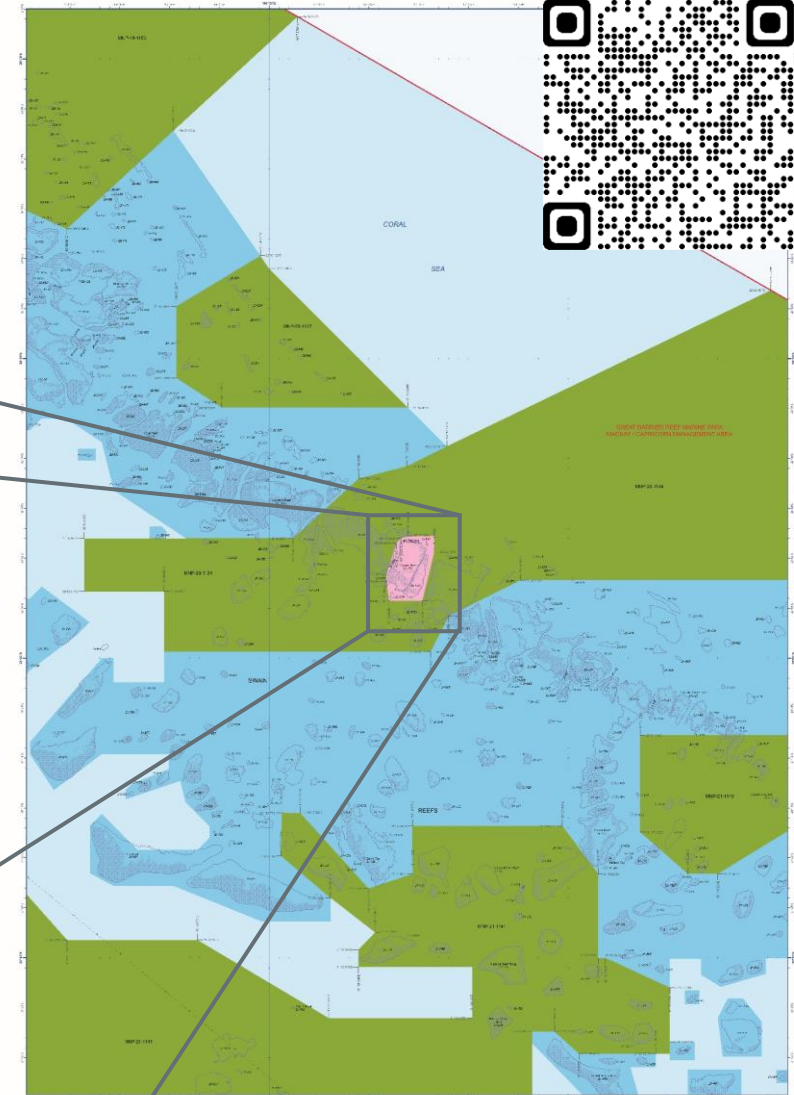
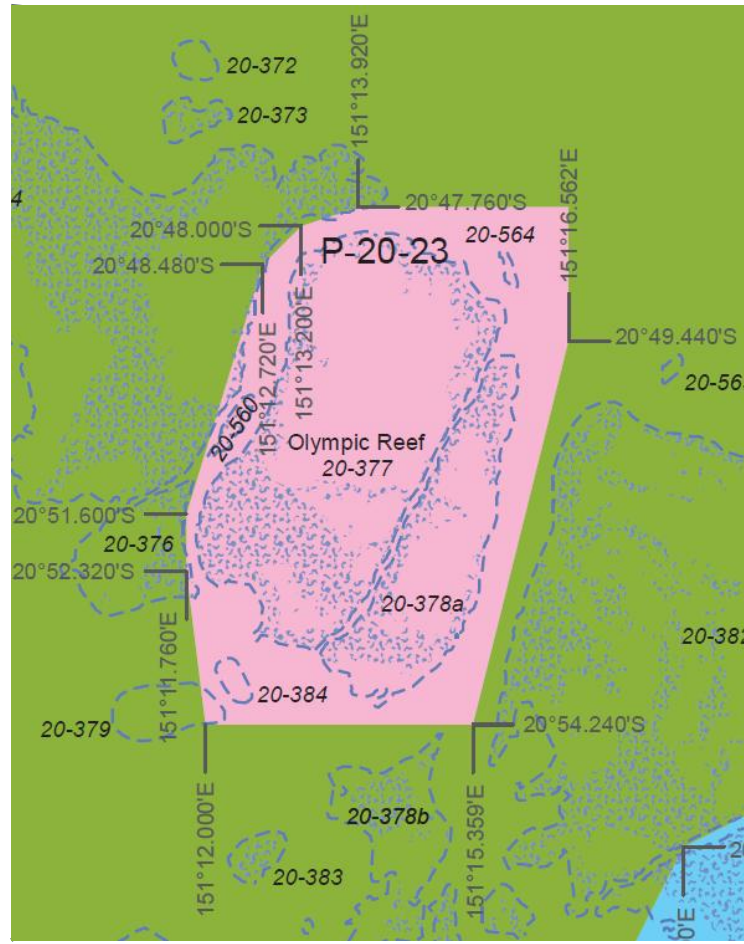


Authoritative Legislation



Legally Authoritative Digital Data

Operationally Useful Data



Activities Guide

Activity	Permitted	Prohibited
Boating	Yes	No
Swimming	Yes	No
Snorkelling	Yes	No
Scuba Diving	Yes	No
Fishing	Yes	No
Collecting	No	Yes
Trampling	No	Yes
Drift Netting	No	Yes
Use of Explosives	No	Yes
Use of Firearms	No	Yes
Use of Motor Vehicles	No	Yes
Use of Aircraft	No	Yes
Use of Helicopters	No	Yes
Use of Drones	No	Yes
Use of Motorboats	No	Yes
Use of Jet Skis	No	Yes
Use of Personal Watercraft	No	Yes
Use of Submersibles	No	Yes
Use of Remotely Operated Vehicles	No	Yes
Use of Underwater Robots	No	Yes
Use of Dredging Equipment	No	Yes
Use of Mining Equipment	No	Yes
Use of Construction Equipment	No	Yes
Use of Agricultural Equipment	No	Yes
Use of Industrial Equipment	No	Yes
Use of Military Equipment	No	Yes
Use of Nuclear Equipment	No	Yes
Use of Hazardous Materials	No	Yes
Use of Flammable Liquids	No	Yes
Use of Flammable Solids	No	Yes
Use of Flammable Gases	No	Yes
Use of Flammable Dusts	No	Yes
Use of Flammable Fumes	No	Yes
Use of Flammable Vapours	No	Yes
Use of Flammable Liquids	No	Yes
Use of Flammable Solids	No	Yes
Use of Flammable Gases	No	Yes
Use of Flammable Dusts	No	Yes
Use of Flammable Fumes	No	Yes
Use of Flammable Vapours	No	Yes

Great Barrier Reef Marine Parks Zoning
MAP 13 - Hardline Reefs

Queensland Government

LEGEND

- Boundary Permitted
- Boundary Prohibited
- Boundary Not Permitted
- Boundary Not Prohibited
- Boundary Not Specified
- Boundary Not Determined
- Boundary Not Assessed
- Boundary Not Approved
- Boundary Not Licensed
- Boundary Not Registered
- Boundary Not Recorded
- Boundary Not Indexed
- Boundary Not Mapped
- Boundary Not Surveyed
- Boundary Not Verified
- Boundary Not Validated
- Boundary Not Audited
- Boundary Not Reviewed
- Boundary Not Updated
- Boundary Not Archived
- Boundary Not Deleted
- Boundary Not Restored
- Boundary Not Recovered
- Boundary Not Rebuilt
- Boundary Not Repaired
- Boundary Not Replaced
- Boundary Not Reinstated
- Boundary Not Reissued
- Boundary Not Revalidated
- Boundary Not Reverified
- Boundary Not Reapproved
- Boundary Not Relicensed
- Boundary Not Rechecked
- Boundary Not Reconfirmed
- Boundary Not Revalidated
- Boundary Not Reverified
- Boundary Not Reapproved
- Boundary Not Relicensed
- Boundary Not Rechecked
- Boundary Not Reconfirmed

Scale: 1:50,000

Map 13



Australian Government

Geoscience Australia

**Evidenced
based decision
making**

**A trusted source
of data and
information**

**Collaboration,
cooperation and
partnership**

**Creating a
location-enabled
Australia**

