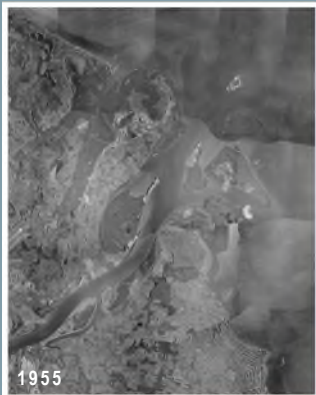


Mangrove and associated communities of Moreton Bay, Queensland, Australia: change in extent 1955–1997–2012–2016–2021

A program to monitor the mangroves and associated communities within Moreton Bay was established by the Queensland Herbarium and Biodiversity Science in 2011.

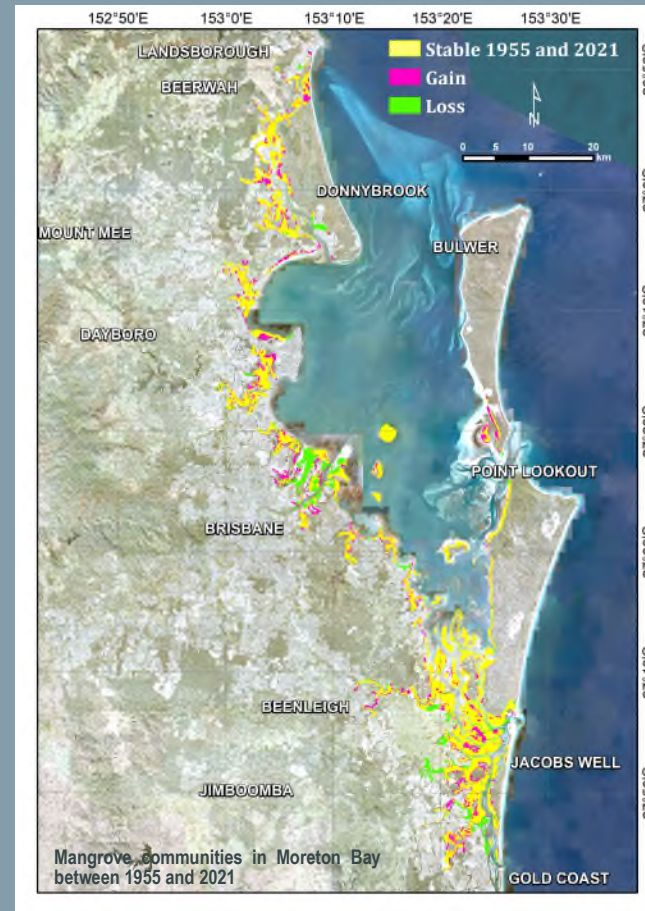
The mangrove communities in Moreton Bay have increased in area by 1,519 ha (10.9%) between 1955 and 2021 whereas saltmarsh communities (including samphire, marine couch and claypan) have lost 6,670 ha (70.4%) of their 1955 extent. *Casuarina glauca* communities have lost 425 ha (20.5%) of their area during the same period.

The spatial extent of each mangrove and associated community is described for the period 1955 to 2021. While these communities are all dynamic in nature, losses in extent due to anthropogenic causes have also occurred mainly from urban and infrastructure development.



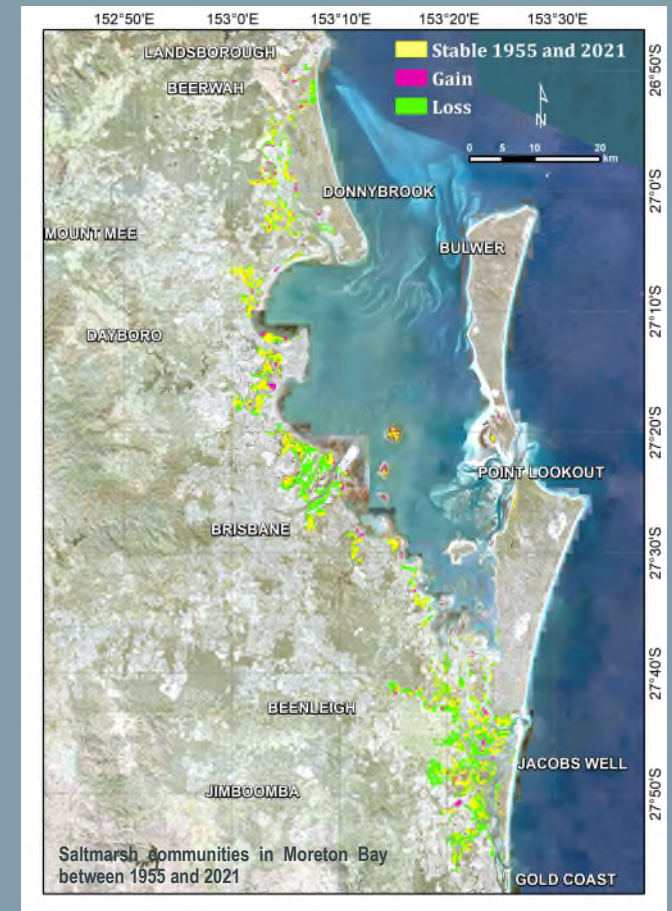
Changes in extent of mangrove communities from 1955 to 2021

- 10,909 ha were stable
- 3,041 ha either changed to another community type or were lost due to anthropogenic causes
- 4,560 ha were gained as a result of encroachment
- some mangrove community types have increased in area where others have decreased in extent
- 1,519 ha overall net gain of mangroves
- mangrove encroachment into saltmarsh and *Casuarina glauca* communities was 2,964 ha in the 1955 - 1997 period in comparison to 679, 138 & 204 ha in the period 1997-2012; 2012-2016 & 2016-2021 respectively



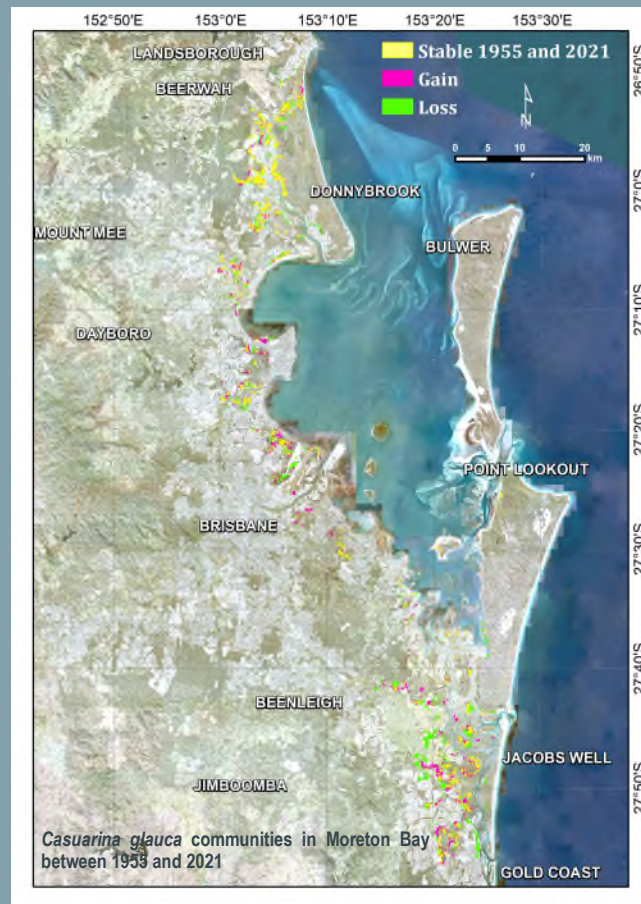
Changes in extent of saltmarsh communities from 1955 to 2021

- Moreton Bay saltmarsh communities are part of the subtropical and temperate coastal saltmarsh ecological communities that are listed as vulnerable under the Commonwealth EPBC Act 1999
- 2,345 ha were stable
- 7,223 ha either changed to another community type or were lost due to anthropogenic causes
- 553 ha were gained by dieback of other community types
- there was a large decrease across all the saltmarsh community types
- 6,670 ha overall net loss
- saltmarsh community invasion by mangrove and *Casuarina glauca* communities was 3,159 ha in the 1955–1997 period in comparison to 824, 163 & 226 ha in the period 1997–2012, 2012–2016 & 2016–2021 respectively



Changes in extent of *Casuarina glauca* communities from 1955 to 2021

- Moreton Bay *Casuarina glauca* communities are part of the Forest of New South Wales and South East Queensland ecological communities that are listed as Endangered under the Commonwealth EPBC Act 1999
- 963 ha were stable
- 1,106 ha either changed to another community type or lost due to anthropogenic causes
- 681 ha were gained by encroachment
- some *Casuarina glauca* communities have decreased in area where others increased
- 425 ha overall net loss
- *Casuarina glauca* communities' encroachment into mangrove and saltmarsh communities was 459 ha in the 1955-1997 period in comparison to 179, 33 & 25 ha in the period 1997–2012, 2012–2016 & 2016-2021 respectively



Changes in extent 2016 to 2021

Mangrove communities

- 164 ha net loss
- 40 ha loss includes 32% of losses due to anthropogenic causes (e.g. roads); change to other community types such as free-standing water—saline and brackish 47%, saltmarsh 21% and *Casuarina glauca* 0.2%
- 204 ha gain by encroachment into: saltmarsh 93%; free standing water—saline and brackish 22%; *Casuarina glauca* 4% and other 3%

Saltmarsh communities

- 198 ha net loss
- 226 ha loss includes 83.2% due to mangrove encroachment; 8.3 % by encroachment of *Casuarina glauca*; 7.2% as a result of ponding and changing to free standing water saline and brackish and 2% due to anthropogenic causes
- 28 ha of gain by encroachment: mangrove communities 29.2%; *Casuarina glauca* communities 30.4%; free standing water—saline and brackish 33 % and other 7.1%

Casuarina glauca communities

- 34 ha net gain
- 15.2 ha loss including 44.6% due to mangrove encroachment; saltmarsh encroachment 56.1%, and encroachment of other grasses and *Melaleuca* spp. 14.9% anthropogenic causes 10.1% (e.g. roads)
- 49 ha gain by encroachment: other grasses and *Melaleuca* spp. communities 58%, saltmarsh 41%, and mangrove communities and free standing water – saline and brackish community 1%

Acknowledgement is made of funds and support by the Department Agriculture and Fisheries and, the Department of Environment, Science and Innovation (DESI). The Wetland team (DESI). The Department of Resources provided support in the development of the web 'map journal' application.

The Mangrove and Associated Communities of Moreton Bay viewer showing change from 1955, 1997, 2012, 2016 and 2021 can be accessed at: [Mangroves and associated communities of Moreton Bay \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](#)



Intertidal communities of Moreton Bay

Change in extent 1955–1997–2012–2016–2021 mangrove and associated communities

Queensland Herbarium and Biodiversity Science, September 2022



[Mangroves and associated communities of Moreton Bay \(Department of Environment, Science and Innovation\) \(des.qld.gov.au\)](#)