Persevering to preserve a Ramsar wetland: Shoalwater and Corio Bays, QLD

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Abstract
Shoalwater and Corio Bays are located approximately 50 kilometres (km) north of Rockhampton, covering 201,620 hectares. The Ramsar area lies just north of the Tropic of Capricorn, where temperate and tropical zones overlap, resulting in high species diversity and a broad range of ecosystems including parabolic dunes, mangroves, sinkholes, freshwater wetlands and woodlands. The site is significant because it is the only remaining remnant of its type, size and condition in central Queensland. Key threats to these assets include pollution, erosion, pests and inappropriate recreational use.

Working in Shoalwater Bay is challenging, and project planning needs to accommodate live firing military exercises and highly seasonal weather conditions, both of which make the land inaccessible for extended periods. Public perception and recreational values also need to be considered when working in Corio Bay to maintain project sites and prevent vandalism.

Despite these challenges, FBA formed strong partnerships with Department of Defence, who manage the Shoalwater Bay Military Training Area to the north, and Queensland Parks and Wildlife Service, who manage Corio Bay and Byfield National Park in the south, delivering a range of on-ground conservation projects. These partnerships have enabled pest control programs, improvements to fish passage, protection of cultural heritage sites, reduced erosion and removed harmful marine debris from beaches in the Ramsar area.

Shoalwater and Corio Bays give valuable insight into how our coastal ecosystems functioned prior to disturbance, and provide a unique opportunity for trials of innovative technology and methods in both management and community engagement. We have learned that although challenging, projects in this site are hugely rewarding, and that the role of partnerships cannot be underestimated, especially when working across large areas. Focussing on values or addressing threats that extend beyond individual management areas provides opportunities for partners to share knowledge, coordinate efforts and improve NRM outcomes.

Introduction
Fitzroy Basin Association Inc. (FBA) is a non-government, not-for-profit, regional NRM body that works with a range of partners to sustainably manage, protect and restore central Queensland's natural assets. The area managed by FBA includes central Queensland's coastal catchments, is twice the size of Tasmania, and is the third largest catchment in Australia after the Eyre and Murray-Darling Basins.

The Shoalwater and Corio Bays Ramsar site is in the northern section of this area, with the southern boundary of Corio Bay approximately 50 km north of Rockhampton, on the Capricorn Coast (Figure 1). The site, as the name suggests, is formed of two disconnected areas, with Shoalwater Bay in the north, and Corio Bay in the south. It covers approximately 330 km of coastline and satisfies eight out of the nine criteria for inclusion in the Ramsar List of Wetlands of International Importance (Department of Defence 2009a). The site has significant biodiversity value, containing a number of important species and ecosystems not found elsewhere in central Queensland.

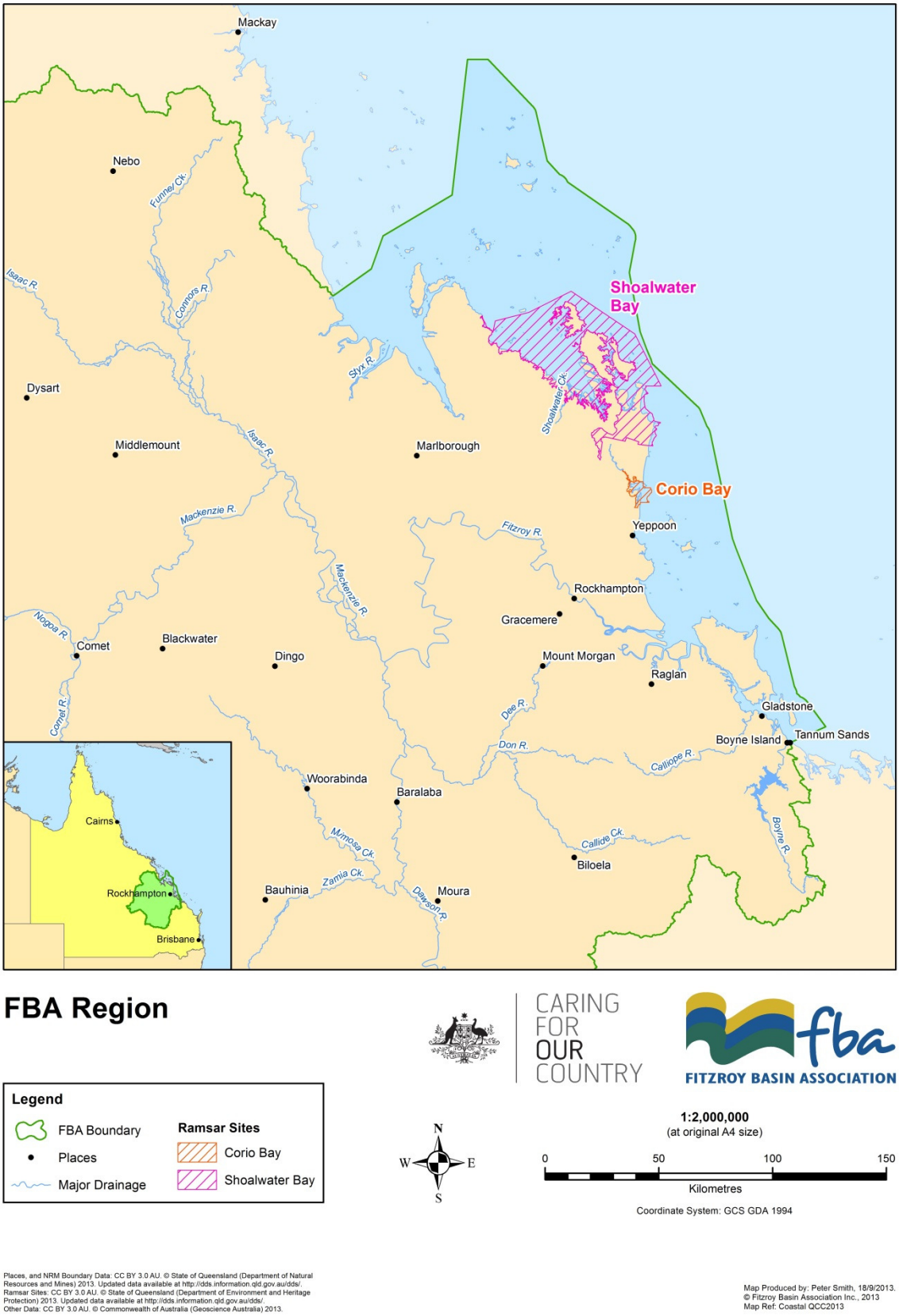

Figure 1- Shoalwater and Corio Bays Ramsar site, in the north of the Fitzroy Basin NRM region.

The northern section of the Ramsar site is the Shoalwater Bay Military Training Area which has been managed by the Department of Defence since 1965 (Department of Defence 2009b). It is used for large-scale joint military training exercises and is closed to the public at all times above the high water mark. Military training exercises occur annually with larger international exercises, occurring biennially. The Darumbal People, the traditional owners of the land, also have access to the Shoalwater Bay Military Training Area to maintain connection to country. The environmental value of the site is recognised by the Department of Defence and it is managed accordingly (Department of Defence 2009b).

Corio Bay in the south forms part of the Byfield National Park and is managed by the Queensland Parks and Wildlife Service (QPWS). It consists of the estuary itself, the lower Water Park Creek and Sandy Point, a long sand spit which has changed dramatically over time. There is a strong sense of community ownership of the area, which is used heavily for coastal and marine recreation.

Overall the Shoalwater and Corio Bay Ramsar site is in good condition with nearly 100 % native vegetation cover in the Shoalwater Bay Military Training Area and environmental damage that occurs during training exercises restricted to defined non-Ramsar areas that undergo remediation following exercises. Threats to the ecological character of the site vary according to tenure. Pollution and pests pose a threat to both sections of the Ramsar site, while vegetation trampling and damage to dunes are more prominent at Corio Bay as the result of recreational use.

There are a number of challenges faced when working in Shoalwater and Corio Bays, however, there are also great opportunities. FBA and its project partners believe that it is important to conserve despite these complications in order to preserve the ecological character of the Ramsar site and to encourage a greater community understanding of the environment; these principles underpin our project design and delivery.

Challenges

The challenges of working in the Ramsar site include restricted access to the Shoalwater Bay Military Training Area, its isolated location, highly season rainfall regimes, strong community attitudes about the use of Corio Bay and a highly dynamic coastline.

Civilian access is not permitted in the Military Training Area, and strict security and safety protocols must be followed at all times meaning weekend access is not allowed. This has affected the capacity to involve the community in restoration projects such as marine debris removal as few volunteers are available during the week. Restricted access before, during and after live fire military training exercises also impacts upon the delivery of projects. Exercise Wallaby occurs annually, late in the dry season, leaving only a very small window of opportunity before the Christmas shutdown period to implement feral pig (*Sus scrofa*) control activities in optimal conditions.

Many areas are isolated, with project sites sometimes taking two hours to reach by road and in some cases requiring further travel on foot. In addition, contractors are usually unable to stay overnight in the Training Area, making project work expensive.

Rainfall in Central Queensland is strongly seasonal, and if received in large amounts, rain has the potential to restrict or limit access to, and activities within, both Shoalwater and Corio Bays. Earlier this year, a community marine debris removal day had to be rescheduled three times and weed control sites had to be changed as the original treatment sites were inaccessible due to flooding.

There is a strong sense of community ownership of Corio Bay, with the spot a popular recreational area among Capricornia residents, who partake in fishing, boating, camping, surfing and four wheel driving. Over time, sections of the dunes have been damaged, vegetation has been trampled and weeds have been spread by recreational use (BMT WBM 2009). These behaviours themselves present challenges to management. The area is also naturally dynamic, with the estuary prone to channel migration which alters the shape and extent of the Sandy Point spit. Storm events have the potential to exacerbate damage to dunes from four wheel driving, and can hamper dune rebuilding efforts.

Opportunities

Initially, the complicated nature of managing the Ramsar site meant that land managers were sceptical about working with FBA. Our team viewed this as an opportunity to build better relationships with land managers, demonstrating that we understood these challenges and could see value in working collaboratively to deliver on-ground results. To address the difficulties of working in these areas we have formed working groups for each project, developed communication and implementation plans that are flexible enough to allow for access issues, weather delays and changes in project sites and engaged the community to protect Corio Bay. We partnered with land managers, traditional owners and volunteers to reduce threats to the Shoalwater and Corio Bays Ramsar site and educate the community about the ecological value of the area. To date, FBA with our project partners have delivered projects to reduce the impact of pest plants and animals, improve fish passage, protect cultural heritage sites, reduce erosion, remove harmful marine debris from beaches and promote responsible use of the Ramsar area. Our partners are highly motivated and often align FBA funded activities with their existing management actions so they complement one another, and as a result add a significant in-kind contribution to the project. For example, earlier this year Greening Australia worked in tandem with the QPWS Roving Weed Team to control Lantana (*Lantana camara*) at Sandy Point. Without solid partnerships with key stakeholders and land managers this would not have been possible.

The Shoalwater and Corio Bays Ramsar site provides scientists and natural resource managers with a unique snapshot of how coastal ecosystems functioned prior to disturbance. The restricted access of the military training area also allows us to conduct monitoring and trial new technologies such as motion sensor camera observations of attractant uptake in feral pig baiting programs.

FBA have recently been lucky enough to receive funding to continue working with project partners to restore the Shoalwater and Corio Bays Ramsar site. We will continue to deliver pest plant and animal control programs, marine debris removal, dune restoration and community engagement to ensure that the Ramsar areas stay in good condition. We're also going to strengthen these relationships even further to work collaboratively with land managers and traditional owners to produce a holistic management plan for the Ramsar site.

Take Home Message

Initially FBA and our project partners were unsure if we could overcome the challenges in restoring the Shoalwater and Corio Bays Ramsar site, however, over the last five years, we have made considerable progress. The importance of partnerships in this process cannot be underestimated as the results achieved by working together are much greater than if any party worked alone. There is great value in restoring the Shoalwater and Corio Bays Ramsar site as it provides natural resource managers and scientists with a benchmark for restoration of a range of relatively undisturbed coastal ecosystems, and provides opportunity for research and management trials.

Acknowledgments

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