

MBBA Submission on the Eastern Beaches Coastal Management Plan

The Marcus Beach Bushcare Association thanks the Noosa Council for the opportunity to comment in detail on the Eastern Beaches Foreshore Management Plan.

This submission is divided into three sections:

- A. Introduction
- B. Outcomes
- C. Community feedback received by the MBBA

A. Introduction

The Eastern Beaches Foreshore Management Plan is a clear, concise and well-structured plan with excellent readability. In particular, the Snapshots on pp 4-11 give the reader a useful, informative overview of the Foreshore Reserves, together with the specific values and challenges for each section of the Reserve.

The Plan acknowledges and embraces the importance of the Eastern Beaches for recreational use, tourism and environmental activities, while highlighting that, as usage of the beaches increases, additional measures will be required to protect, manage and maintain the ecological health of the Foreshore Reserves.

The comprehensive reach of the Plan demonstrates a thorough scoping process. The Plan incorporates community viewpoints, as well as local knowledge. It has responded to specific community concerns in relation to encroachments and the coastal creeks, in particular Burgess Creek.

The Plan considers the anticipated impacts of Climate Change and is consistent with the CHAP.

It is an excellent starting point as it clearly articulates the key issues and challenges. While acknowledging that the Foreshore Management Plan is an overarching document, not an operational plan, the MBBA believes it would be strengthened by having a section on Outcomes as per the following section of this submission.

By including outcomes in the Plan, there would be a basis for formulating more detailed operational plans with attendant KPIs. It would provide a solid framework for directing operational activities and for assessing progress.

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B. Outcomes

The Marcus Beach Bushcare Association believes that a management plan must provide a clear statement of specific, achievable, outcomes. These outcomes drive planning and strategies, which then makes it possible to set goals and actions, and assess whether or not the actions have achieved their goals in working towards the outcomes.

We would therefore suggest that the Plan contains an articulated statement of Outcomes. The MBBA proposes the following (not in prioritised order):

Outcomes:

- 1. The western boundaries of the Coastal Reserves are regularly monitored to ensure that there are no property incursions into the Reserves, no weeds entering the park from adjacent properties, and any damage to the Reserves is quickly rectified.*
- 2. The eastern (seaward) boundaries of the Coastal Reserves are maintained by undertaking measures that allow the dunes to regenerate naturally, and by active restoration when required.*
- 3. The ecological health of the Coastal Reserve is improved, so that the biodiversity of native flora and fauna increases; the quality of coastal streams and their surrounding areas increases; erosion and other forms of degradation decrease.*
- 4. The Beach Access pathways and other Reserve infrastructure are designed and located to support the ecological health of the Foreshores Reserves, and to improve the visitor experience of the eastern beaches.*
- 5. An ongoing awareness and education campaign for Noosa residents and visitors that will increase the community's understanding of the importance of protecting the dunes. Visitors appreciate the value of the Foreshore Reserves as a habitat, and as a place for people to enjoy without damaging the delicate balance of the ecosystem.*
- 6. The managed response by Council to natural disasters, critical incidents, and adverse weather events minimises their impact on the Foreshore Reserves and wildlife and minimises the risks to the public and the environment.*

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C. Comments and recommendations

Section 6: Climate change

The focus of the actions in the Plan in regard to climate change is monitoring and assessment. This is a first, necessary step. The Council needs to have a clear understanding of what climate change-driven environmental impacts will be over time so that it can formulate appropriate, cost-effective responses that ensure sound environmental outcomes.

The protective value of the Foreshore Reserves has been noted in the Plan. This means keeping the Reserves well-vegetated and in healthy condition in order to minimise erosion. A monoculture or high weed load is undesirable in situations where weather conditions are likely to change rapidly.

We do not know which species are most likely to withstand higher temperatures and different weather patterns. Therefore, having a healthy, biodiverse habitat will enable a better chance of adaptation to the new conditions. Some native species will become more dominant, while others may be unable to adapt to emerging conditions.

Containing groundcover weeds such as Asparagus Fern and Gloriosa Lily that slow down or prevent the germination of native species is a key priority.

The MBBA notes the additional resources allocated in MA 7.2 but urges the Council to **make on-the-ground work on the Foreshore Reserves a high priority.**

The recent excessive rain high tides and winds have highlighted how quickly the topography of the dunes can change. It has also highlighted the weakness in the beach access paths that can become impassable and a lack of clear measures to manage these access issues which are likely to become an increasing problem.

MA 6.5. The MBBA welcomes the proposed \$25,000 for emergency bush regeneration following emergency events. It is a good initiative that, if allocated wisely, will save money, and have positive environmental outcomes, as the case study suggests.

Additional Actions:

- 1. Seek funding from State and Federal government to future-proof the Foreshore Reserves by improving their ecological health.*

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2. *Establish a contingency plan for all beach accesses to manage adverse weather events that cause inundation or that restrict access to public access points.*
3. *Prioritise remediation works on Beach Access paths which are high-traffic paths that are known to flood or become inaccessible in extreme weather events.*
4. *Redirect the public to those pathways identified as principal access points using appropriate signage and barriers to ensure public safety, and to minimise damage to the dunes.*
5. *Implement measures to deter the public from walking along the edge of dunes when the dunes are damaged by adverse weather events and have vertical sheared edges.*

Refer to Sections 8 and 12 for further comments and additional actions pertinent to Climate Change. See also the Appendix examples of current beach accesses and their infrastructure

Section 7: Ecology

As an environmental group, the MBBA contends that Section 6 Climate Change and Section 7 Ecology are the key sections of the Coastal Management Plan. All other sections essentially contain actions to support Sections 6 & 7 while at the same time catering for the many ways in which our community and tourists interact with and enjoy the Eastern Beaches.

The MBBA notes that the Council has undertaken the detailed mapping of the Foreshore Reserves and in doing so has identified four previously unidentified Regional Ecosystems. This more detailed knowledge of the Reserves will inform weeding work schedules, restoration and regeneration processes.

MA 7.2 The MBBA welcomes the proposed \$225,200 per annum to update and implement the ecological restoration plans for all EBFs. It stresses that the focus needs to be firmly on the **attendant work on the ground**. If there is no follow through action, the hard work and cost of doing an ecological plan is a waste of time and of ratepayer money.

The MBBA notes that **even without extensive mapping and assessment** it is clear from a simple visual survey that there are large areas of the Coastal Reserves that are in very poor ecological health. As pointed out in the previous section there is a serious problem of

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introduced weeds outcompeting the native species in the Reserves. Not only does this lead to less biodiversity in the flora it also has detrimental flow-on effects on the native fauna.

Although total restoration would be the ultimate solution, this is not a realistic goal as the level of neglect over the years has been such that the cost would be prohibitive.

In order to increase the overall health of the habitat in the Foreshore Reserves, the Council will need to be very clear about its objectives, with targeted and achievable actions.

Section 7 Ecology must address this reality by including Management Actions that are very specific and that drive on-ground action. The MBBA therefore recommends the inclusion of the following Management Actions:

Additional Actions:

- 1. Target five invasive weeds that are widespread and are reducing the regeneration and seed germination of native flora. The five would include Singapore Daisy, Asparagus Fern, Gloriosa Lily and Brazilian Pepper.*
- 2. Work with Bushcare groups, field experts, government bodies, council staff and contract workers to develop containment and reduction strategies for each weed as well as procedural guidelines.*
- 3. Conduct an annual sweep of all the Foreshore Reserves targeting weedy saplings such as Brazilian Pepper and isolated outbreaks of weeds such as Mother-in-Laws Tongues. This could be undertaken with the assistance Bushcare groups at some sites.*
- 4. Pro-actively identify, monitor, document and remove emerging new weeds that have the potential to outcompete native.*
- 5. Engage the community with an awareness campaign focused around a specific weed species that includes opportunities for people to have some hands-on experience in the bush.*

Section 8: Social values

Cultural values

The MBBA endorses the idea of indigenous stewardship and the proposed action in **MA 8.1 & 8.2.**

Noosa Design Principles

MA 8.3-8.5

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The MBBA sees an opportunity to build structures that, in addition to having an aesthetic and functional value, are designed and located so that they have a **protective value** for the Foreshore Reserves. When considering infrastructure of any kind in the Foreshore Reserves, the disturbance to vegetation must be the first consideration and be minimised. The value of the infrastructure as an amenity and as a protective measure for the health of the dunes must justify any disturbance caused by building it.

Section 9: Partnerships

The MBBA welcomes the Council's commitment to develop, support and drive more community-based partnerships and initiatives. Climate Change awareness, particularly amongst the younger generation has sparked a wider interest in the environment. The MBBA believes that there is a largely untapped pool of residents, young and old, who would be willing to participate in environmental activities.

Section 10: Community education

The Plan recognises the importance of "ongoing community education and targeted communication between Council visitors and neighbours" in protecting the Foreshore Reserves. It points to the complexity of reaching different audiences and the need to target the messages.

MA 10.1-10.5

Developing the appropriate communication programs, designing the material, determining effective forms of delivering the message(s), costing the exercise, and determining means to ensure that the material reaches its targets **takes specialised expertise that involves a cost which has not been factored in. There are also ongoing labour and material costs in delivering, updating and maintaining communications, materials and systems.**

The MBBA is concerned that the actions for *Section 10 Community education* do not have a funding allocation and that the sole responsibility lies with environmental services. While this sounds fine in theory, in reality, if it is undertaken properly, it diverts valuable resources from on-ground core work. The most likely outcome for these actions will be that they are low down on the list of priorities, resulting in them either not being done or being done in a piecemeal way, reducing their effectiveness.

The MBBA recommends that the Council takes a whole of region approach to providing information and community education on Natural Areas and Reserves. We can see considerable cost value in terms of resources used in formulating strategies, message delivery, and developing educational material if a Foreshore Reserves community education

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and awareness campaign is conceptualised as something that can be rolled out, with appropriate adjustments, for other reserves.

For example, standardised signage could provide uniformity across Reserves and be designed in a way that promotes a “Noosa feel.” Visitor information, both digital and paper-based can have a similar design with eye-catching elements (e.g. colour, logos layout).

Additional Actions:

- 1. Develop and implement a comprehensive, multifaceted communications strategy on the value, protection, and visitor experiences of the Foreshore Reserves at a pilot project to inform communications on other Nature Reserves and public spaces in the Noosa region. (The strategy for the Foreshore Reserves will encompass Management Actions 10.1-10.5.)*
- 2. Create a template from this pilot project that can be adapted for all Nature Reserves in the Noosa Region. (Additional Actions 1&2 to be funded as a pilot project.)*

Section 11: Encroachments

MA 11.1-11.3

The MBBA endorses all the actions in this section.

The MBBA welcomes resources directed at dealing with this issue. There is clear articulation in this Plan of how encroachments have detrimental impacts on the Coastal Reserves. This is not always understood by Reserve neighbours and the public.

Refer also to the Additional Actions under MA10.1-10.5

Section 12: Public access and recreation

MA 12.1 to 12.8

The MBBA endorses all the actions in this section.

The MBBA supports the work being done to review existing beach accesses and infrastructure as part of the secured design grant. We note that a strong emphasis on beach access points is in line with the way the public interacts with the Foreshore Reserves. While the review work is important and necessary, disappointingly, **MA 12.1 to 12.5** do not result in any on-the-ground work being done to address the problems identified in the Plan.

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Most of the recreational activities occur on the beachfront, not within the body of the Reserves. For the majority of beach visitors, both locals and tourists, the Foreshore Reserves are literally a pathway to a destination. (This pattern of behaviour is also evident in the illegal private pathways that intersect the Coastal Reserves.)

We believe that a useful way to conceptualise the Foreshore Reserves is as a **transitional space rather than a destination**, with eastern (ocean) and western (land) boundaries. This aligns with a sound ecological approach as, from the perspective of preserving habitat and wildlife, the less traffic through the bushland by humans, feral animals and dogs, the better.

In ecological terms, boundaries have a critical influence on the surrounding habitat, which is another reason why the Plan needs to focus on them. **See MA 11.1-11.3** While the Plan maintains that the public access paths are in relatively good condition, the impact of increased path use has had detrimental effects on the foredunes, particularly in periods of dune depletion.

Additional Actions:

- 1. Identify the high-priority Beach Access paths. Fast-track the work on these paths and allocate funds. Use a set of criteria that includes foot traffic volume, the physical condition, the safety of the path, the location in relation to waterways and vulnerable vegetation, steep slopes and other geographic features. A key selection criterion could be the suitability for becoming an emergency access point.*
- 2. Implement low-cost improvements to all access paths that will improve accessibility and protect the foredunes as a priority (See Marcus Beach case Study)*

Section13: Incidents and disaster management

MBBA stresses the importance of knowing whom to contact in case of a disaster or critical incident, particularly during out-of-office hours.

For example, in the case of a major crisis such as the 2019 fires, the Council's disaster response team would be the first responders, not necessarily environmental services.

It is critical that various departments within Council, as well as the general public, know the appropriate point of contact in the case of a critical incident or disaster, particularly out-of-office hours.

The Council's response to the polystyrene washing up on the beaches was delayed because it happened on a Friday afternoon.

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Section14: Coastal Creeks and stormwater

The MBBA has always recognised the importance of coastal creeks and from its inception has been actively involved in maintaining the health of riparian areas and monitoring water quality. We therefore in general support the actions of the Council in this area with minor changes.

While Burgess Creek has management issues that are unique, it is important that **all** coastal creeks are resourced to restore riparian areas and improve water quality. This is why Coastal Connect, in which the MBBA was one of the lead organisations, has focused its efforts on rehabilitating three coastal creeks as part of its grant.

A recent report compiled by MBBA collating historical data on the water monitoring of Peregrin, Marcus and Castaways Creeks shows that these creeks rate poorly on some indicators of water quality.

The MBBA notes that the movement of the mouth of coastal creeks is normal creek behaviour and that wherever possible it is better to leave nature to its own devices rather than engineer responses that often prove costly and unsatisfactory.

The MBBA also recommends that closer attention be paid to stormwater and drain outlets as this with the anticipated increase in rainfall and adverse weather events predicted as a result of Climate change there is a greater potential for habitat damage and erosion from deluges.

14.2. Amendment: “Prioritise, plan, schedule and implement the management of coastal mouth alignment and erosion” ***where necessary.***

14.3. Amendment: “Work with Unity Water, the State Government and community members to restore bushland and improve water quality at Burgess Creek” ***and all other coastal creeks in the Foreshore Reserves***

Additional Actions:

- 1. Conduct a twelve-monthly check and do the necessary maintenance on all stormwater discharge sites on the Foreshore Reserves.***
- 2. Survey all the infrastructure that is associated with coastal creeks where a creek intersects with hard surfaces such as David Low Way. Document and attend to their condition.***

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- 3. Identify and earmark for improvements the poorly designed culverts and drainage systems so that when they are replaced or upgraded the design of new infrastructures supports environmental principles rather than being detrimental to the adjoining ecosystems.*

See Appendix for examples of creek movement, poorly designed culvert infrastructure and storm water drainage erosion.

Section 15. Foreshore tenure and gazettal

The MBBA understands that the differing tenure and classification of the land that makes up the Foreshore Reserves adds an additional layer of bureaucracy to the overall management of the vegetated coastal strip along Noosa's eastern beaches.

The best way to ensure that the short to medium-term effects of climate change are minimised and property is protected is to have a buffer of healthy native vegetation that withstands the onslaught of waves and inclement weather. The classification of the foreshore reserves and adjoining areas need to be aligned with this.

While nobody is suggesting that the bush in the Reserves be converted to grassed areas - the experiences in the northern communities in NSW demonstrate how little protection turf affords - one assumes that an area classified as a recreational reserve could in theory become a park.

The MBBA believes that in the interests of better management of and in order to preserve the vegetated coastal strip, the Council must deal with the issues of tenure, reserve purposes and land management plans as a matter of priority. The process is likely to be complex and lengthy, so immediate action with a budget allocation is recommended.

Additional Actions:

- 1. Seek to have all land that makes up the Coastal Reserves as defined in this document, including unallocated state land and undescribed land, gazetted as Nature Reserves.*
- 2. Where this is not possible secure long-term management plans between local and state governments that guarantee the long-term retention natural vegetation and "Nature Reserve-like" status.*

D. Community feedback received by the MBBA

The MBBA has also received written and verbal feedback directly from community members who would like their opinions noted.

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Turtle Care

“An audit of all lights along eastern beaches is needed. This could be a community task if an audit form was created.”

By email

Dogs and the reserves

The following is verbal feedback from MBBA Bushcarers and others who work in the Foreshore Reserves.

Dog faeces

Our Bushcarers find working at the entrances of dog friendly beaches extremely unpleasant as they are weeding and kneeling in close contact with dog faeces. Some understandably will not work in these areas. The contractors working on the Coastal Connect site at Marcus Beach have also commented on this problem.

The Bushcare coordinator at Marcus Beach had to remove the copious amount of dog faeces prior from an area where school children were coming to plant. This is a health hazard to which the Council would not want to expose children to.

From an environmental viewpoint dog faeces provide fertilizer for weeds, something we have observed over the years.

Out-of-control dogs and irresponsible owners

Our Bushcarers also comment on the number of dogs that are permitted to run on the dunes and into the reserves. Not only does this destabilise the fragile foredunes, it also frightens wildlife. There are instances where bush wallabies have been mauled by dogs.

In addition, there is a blatant disregard for keeping dogs confined to the dog zones and for keeping dogs on the leash in areas where dogs are permitted only if they are on a leash.

Whilst none of the above is the responsibility of Bushcarers, they and other environmentally aware beachgoers do from time to time talk to dog owners about this. Some owners understand while others are either dismissive or rude. This is definitely an area where Council needs to step up and take more responsibility.

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Foreshore incursions at Marcus Beach

1/ A NOOSA COUNCIL INFRINGEMENT PLAN

Council should be able to print out plans showing all the residential blocks that adjoin PUBLIC LAND where Native reserves and public spaces are in place. Sadly, our fight is with non-caring people. Some with others very selfish agendas. These plans should then all be inspected for existing infringements such as —

- . Poaching of the public land (official Boundaries)
- . Destruction of native Fauna and Flora (e.g. Removal of trees in the reserve to create uninterrupted ocean views or simply add cleared public land to theirs).
- . Building unauthorised wooden or other man-made walkways
- . Fences extended from their freehold properties into the reserve to stop public passage past the front of their property.

Lack of seemingly any prompt intervention by Council on infringements merely prompts like minded others to take the law into their own hands. We are seeing this right now on a regular basis as more new breaches occur.

- . Advise all residents in this situation of what the Council is planning.
- . Encourage residents to report on damage to flora and fauna, dumping of rubbish and unattended dogs and cats roaming as feral.

2/ INFRINGEMENT PLAN IMPLEMENTATION

The various landcare groups could possibly provide volunteers to help council to compile the infringement map showing which properties have been registered .

The landcare groups have experienced people who could identify flora and fauna irregularities inside their own boundaries and in the public reserve.

The end result would be...

- . Identifying who are the offenders and details of the offence
- . Notifying the offenders and the consequences of their infringements
- . A detailed document accompanying all rate notices clearly communicating their responsibilities.

This should include ALL their responsibilities, especially including the laws that apply to cat and dog owners. (cats, not just feral) are plundering the birds and other wildlife without any consequences.

- . Sale of property should be forbidden until the owners have fixed the infringements.
- . Vendors of any type, Real estate agents should be made aware that ALL possible buyers will be responsible for restitution if the vendors have failed to get a clearance from the Council.

Hand delivered to MBBA

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“I would like to see an end date or time limit on reinstating the natural reserve and replanting of native species to its former (glory)state, at the owner’s cost. I also would like to see very substantial fines for breaching the Noosa foreshore plan and for encroaching on the Nature Reserve as well.”

By email

Footpaths and universal access

“Regarding the entrance point at the Marcus Beach car park pathway (Access 47).

This is now a very well-used pathway, and also the southern entry point for the dog access area to the north. It can get very congested if a car parks in this location, with dogs coming and going, and getting hosed after their beach sojourn. It would be good to put in a pram ramp, as we are seeing more families with young children (and old dogs!) in prams.”

By email and verbally

“A couple of designated disability parking spots close to the pathway entrance would be welcomed by our older citizens who have difficulty walking.”

By email

Beach Access 45

At times during school holidays, good surf conditions and public holidays the beach access is overused. The state of the paths from the track down to the beach is being constantly extended and the dunes damaged. Currently cars park almost to the top of the hill on the eastern side of the road from the access point and also on the western side.

To restrict access, all that is needed is to extend the metal barrier on the eastern side of the road, from just south of the access point to part of the way up the hill.”

By email



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Appendix

NOTE:

This Appendix contains photographs, case studies and examples that while specific to the MBBA work areas, illustrate issues that are pertinent to all Foreshore Reserve sites.

The examples serve simply to illustrate the multidimensional approach that will be required for effective management of the Foreshores Reserves.

It is not a comprehensive summation of all issues, nor is it implying any priority for MBBA sites.

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Appendix

The case studies in this Appendix arise out of years of active involvement and observation within the Coastal Reserves in the vicinity of Marcus Beach. MBBA Bushcare groups work in an area that is bounded by Peregian Creek to the South and Castaways Creek to the north. All of these examples are located within those boundary points.

The examples illustrate some of the challenges for the future management the Foreshore Reserves, including developing infrastructure that supports the environment while enhancing the visitor experience. Finally, the MBBA celebrates some positive outcomes, small but significant.

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Beach Access Paths

Example 1

When adverse weather events have an impact on accessibility the Council needs to have appropriate measures in place as per the following scenario. A clear action plan is critical to support the idea that the body of the Foreshore Reserve is a transitional space to be moved through.

BA B7 is the principal access point at Marcus Beach (most foot traffic, best parking and best infrastructure). In 2022 it was temporarily flooded but the water soon receded. At BA 46 the next access to the north, the path was unpassable for several months.

In a scenario like this, the Actions required are:

- Physical closure of BA 46 (land and sea entrance points) and a redirection sign to BA 47
- Remedial work on the drainage at the low point of the concrete path at BA 47 so that it is accessible even after persistent heavy rain.
- A contingency plan ensuring the seaward access at BA 47 is safe during and after adverse weather events and to stop people from walking along the edge of steep dunes.



BA 47



BA 46: impassable in the summer of 2022

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This step on the heavily used beach access path in Tristania Carpark (BA 47) could easily be made into an angled ramp to make it more compliant with universal accessibility standards while also making it more obvious to people parking that this is a walkway access point. It doesn't have to wait for an overall review of the beach access footpaths to be done.

It is worth noting that since this photo was taken the dog poo bag dispenser has been replaced here and at BA 45 with better dispensers that make it harder for people to take large numbers of bags for other purposes. Previously, there were often no bags which resulted in an increase in dog faeces on the beach and in the Reserve. Two community volunteers are now consistently keeping the dispensers topped up. These small initiatives are things that the community notices; MBBA members have heard positive comments from community members regarding the better availability of bags.

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Example 2

This set of stairs at BA 42 at Castaways Creek exemplifies a poorly thought-out beach access solution. It is a costly structure servicing a low-use beach access point and is not fit for purpose. The photo on the next page shows why.

The design of functional infrastructure needs to be informed by an understanding of dune morphology (and by common sense!) This ensures that it maintains its functionality in areas where there are challenges such as: shifting and eroding dunes; and intermittent water in creeks; and ephemeral wetland swales.

While some structures such as boardwalks and concrete paths will be permanent, others will be semipermanent, moveable or temporary. The seaward beach access entrances will present particular design challenges in this respect.



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Example 3

When designing beach access paths near water, the high ecological value of riparian areas and the small wetlands within the Foreshore Reserves, together with their vulnerability to damage needs to inform built structures, path location and management.



The boardwalk at Beach Access 49 that runs alongside Peregian Creek is an example of an attractive, ecologically friendly, minimal footprint path to the beach. The design of the path enhances the visitors' experience the Reserve while making their way to the beach.

Being raised above the ground it is able to traverse uneven ground and ensure that the path does not flood. The materials used are eco-friendly and blend in with the surroundings. Railing deters people from going down a steep slope to the small billabong area at the creek where wallabies come to drink. There are interpretive signs that explain the vegetation and topology of the dunes as well as plaques that identify some of the main species of vegetation.



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Example 4

Beach Access 45 at Marcus Creek is an example of a problematic creek side path. The combination of increased visitor numbers and the way the mouth of Marcus Creek changes creates a situation where the riparian areas and front dunes are weakened due to path fragmentation. (See aerial photos, next section on Creek Movement) Put simply, as the creek moves so too do the paths, creating multiple erosion points and damaging plant regeneration work done to consolidate the dunes.



Shifting creek movements affect pathways. The same access point photographed in 2016 (top) and 2019 (bottom)

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2023: This access point is no longer in use as the mouth of the creek has shifted once again. (path location at red circle below). Bushcarers and Landcare contractors are using low-impact anti-erosion techniques at the old access point to stop the inflow of seawater when low-pressure systems cause unusually high tides. The area has begun to regenerate.





Main Access Point to the beach at Marcus Beach, December 2019 with an unacceptable level of dune damage caused by greatly increased foot traffic. It is a common problem at the more popular beach accesses along the Foreshore Reserves.

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Creek Movement

In 2020, The MBBA commissioned Dr Javier Leon, Senior Lecturer in Physical Geography, University of the Sunshine Coast to record the movement of the mouth of Marcus Creek over a two-year period between January 22, 2021, and January 13, 2023. This period corresponded with a La Nina weather pattern which brings higher than average rainfall on the eastern seaboard of Australia.

The series of photos below highlights:

1. The water volume and path of the creek change considerably in short time frames when La Nina weather patterns occur. The flow of the creek can move from flowing to the south along the dunes, to flowing directly out to sea, depending on the shape of the edge of its northern bank at the exit point. This major repositioning can occur rapidly after one adverse weather event.
2. The predominant flow course of the creek is along the southern edge of the mouth which is where the Beach Access 45 path is located. The consequences of having a beach access path located in this area can be seen very clearly in the aerial photos. There is a weakening of the protective vegetation in the riparian zone and along the dune edge.
3. Dr Leon has calculated that at the point dune crest has receded approximately 8 metres during the monitoring period (as marked by the arrow.)
4. By continuing this monitoring as the La Nina period finishes and an El Nino weather pattern begins, it will be possible to study how well the dunes recover, identify what are the key factors in recovery, and how these align with predicted climate change patterns of weather.

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Jan 22 2021



April 14, 2021

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June 11 2021



Jan 9 2022

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Feb 28 2022



May 27 2022

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Jan 13 2023

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Stormwater

The example below is of a stormwater drainage outlet located to the south of Marcus Creek in a natural swale on the eastern side of David Low Way.

In 2011 the Sunshine Coast Council cleared the area in preparation for a National Tree Day Planting. At that time the stormwater outlet was completely covered. The only indication it was there was a depression in the ground which the council officers organising the event cordoned off as a safety precaution, apparently unaware that it was a stormwater drain.



Neglected stormwater drain February 2012

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Photo of 2011 National Tree Day site taken in February 2012

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In 2017 the Noosa Council uncovered the stormwater outlet and dredged a drainage line in the swale.



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The drainage line regularly silts up resulting in a water build-up running alongside the edge of the concrete footpath along David Low Way after prolonged rain when the swale fills up. The MBBA has sent Snap, Send, Solves to Council when this occurs which have been promptly followed up.

In January 2022 following an unprecedented rain event, the water from the swale broke through and flowed from the swale to the lowest point of the foredune causing erosion adjoining the BA 45 Access path. The area where water flowed from the foredune to the creek was the old access path that had been eroded by foot traffic. (REFER to Beach Access paths Example 4.) This exemplifies how human interventions can interact with natural processes to increase rather than decrease coastal erosion.



Culverts

Marcus Creek is an intermittent coastal creek. When it rains, the culvert running under David Low Way allows water from the permanent billabong on the western side of the highway to flow through to the beach and out to the ocean. In 2019 this structure was completely overgrown by Singapore Daisy. (This weed spreads into riparian areas where MBBA Bushcarers are trying to prevent the weed from becoming a monoculture.) Lantana and a Casuarina had grown directly on top of the structure.



Culvert in 2019

It was only when a burst water pipe required Unity Water to do extensive new pipework that the true state of the culvert became apparent. Unity Water determined that the structure was unsound. The Noosa Council had to act to prop up the culvert. This is an interim measure and at some point, the culvert will require major work with a significant capital outlay. While regular maintenance of culvert may not have changed need to upgrade, it would have allowed Council to budget ahead for the capital works.

In the Noosa Shire Waterways Assessment 2017, the Marcus Creek culvert was cited as an example of the environmental problems that arise where a waterway is directed into a culvert with a steep drop-off that "that causes fish passage and stream bed erosion issues." This is an example of an area that requires good communication and cooperation between different departments within Council to get a good environmental outcome.

MBBA Submission Appendix



Culvert in 2020



Culvert in 2021

Observation and knowledge sharing

Small actions can make a big difference. The final example of this Appendix are about working smarter and attending to small things. They are a celebration of action and dedication.



A Marcus Beach Bushcarer noticed an isolated patch of *Bryophyllum pinnatum* along the bike path at Castaways. This is an emerging relatively uncommon weed in the Reserves that grows roots from its leaves when the leaves drop on the ground. Having had the experience of trying to contain Mother-of-Millions a plant in the same genus with the same characteristic, he alerted the Bushcarer working at Castaways about its potential to spread. Several other patches were removed and the Castaways Bushcarer now monitors the work area for any regrowth.

Bryophyllum pinnatum is also growing in local gardens. To date, MBBA members have been successful in getting local property owners to remove it once they understand its weedy potential.

MBBA Submission Appendix

Good neighbours make a difference

At regular working bee in a Melaleuca ephemeral wetland swale located at Beach Access 46, the Marcus Beach Bushcare Coordinator identified an *Ardisia elliptica* shrub in the vicinity of the work area. There had been a wet period and a quick inspection of the site revealed hundreds of tiny *Ardisia* seedlings emerging.

Having seen the damage done to Melaleuca stands in a small section of the Marcus Beach National Park she realised that pre-emptive action was paramount.

The top photo shows a successful outcome at BA 46, thanks largely to a diligent neighbour who continued to pull up new seedlings, of which there were many. Now due to his persistence and Bushcare working bees the area retains its beautiful natural state.



Above: BA 45 The beautiful open form of a Melaleuca wetland with native vegetation at ground level.



National Park: No native ground cover, *Ardisia* forms a monoculture middle layer.

MBBA Submission Appendix

Low-tech erosion solution

Experience has taught the MBBA that one of the most effective ways of promoting regeneration on the foredunes where there is erosion caused by people creating multiple access points, is by using onsite fallen branches to fill in the eroded areas, making a natural barrier to foot traffic. Over time the branches capture and retain sand and groundcovers begin to spread across the filled-in areas.



One of several steep paths to the south of the main access path at Ba 45, Marcus Creek.

In early 2023, beachgoers progressively forged new paths and exit points further southwards along the top of the dunes as the movement of the creek made existing paths inaccessible.

This path, no longer in use, is closing over nicely with branches assisting in trapping sand and healthy adjacent vegetation enabling natural regeneration. The Casuarina seedling on the right that was damaged by foot traffic is also recovering well. The MBBA planted it as part of the stabilisation work taking place along the frontline dunes.

Sunshine Coast Council has used this method on a much larger scale around Mudjimba to stop people from walking down unvegetated slopes, to slow down erosion, and to allow natural regeneration.