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# MAINTENANCE MANAGEMENT PLAN (MMP)

THE REMEDIAL REPAIR AND MAINTENANCE OF STORM-DAMAGED BEACH-ACCESS INFRASTRUCTURE AND THE COASTAL DUNE CORDON AT ROBBERG BEACH 5, SANCTUARY BEACH AND SOLAR BEACH, PLETTENBERG BAY




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| **Responsible person for the activity** | Bitou Local Municipality, Directorate: Community Services / Infrastructure Services |
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| **Local Municipality** | Bitou Local Municipality (WC047) |
| **District Municipality** | Garden Route District Municipality |
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| **Co-referral / coastal authority** | Department of Forestry, Fisheries & the Environment (DFFE: Oceans & Coasts), ICM Act |
| **Triggering event** | Coastal storm (cut-off low) of 6–8 May 2026 |

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# Table of Contents

1. Definitions and Acronyms ..... 4
2. Relevant Legislation ..... 5
2.1 National Environmental Management Act (NEMA) and the EIA Regulations, 2014 (as amended) ..... 5
2.1.1 Summary of triggered listed activities ..... 5
2.2 National Environmental Management: Integrated Coastal Management Act (ICM Act) 7
3. Introduction, Background and Location ..... 7
3.1 The May 2026 storm event ..... 7
3.2 Locality ..... 8
3.3 Site Locality Maps and Figures ..... 8
4. Objectives of the MMP ..... 10
5. Site Descriptions and Storm-Damage Assessment ..... 10
5.1 Robberg Beach 5 ..... 10
5.2 Sanctuary Beach ..... 11
5.3 Solar Beach ..... 12
6.1 General approach ..... 12
6.2 Beach-access infrastructure repair (boardwalks, stairways and decks) ..... 13
6.3 Parking-area stabilisation (Robberg Beach 5) ..... 13
6.4 Dune rehabilitation and sand-trapping ..... 14
6.5 Equipment, methods and timeframes ..... 14
6.6 Maintenance frequency and triggers ..... 15
6.7 Maintenance process flow ..... 15
7. Environmental Attributes ..... 15
7.1 Coastal processes ..... 16
7.2 Biodiversity importance and threatened species ..... 16
7.3 Ecological functioning and coastal-protection role ..... 18
7.4 Existing disturbance ..... 18
8. General Environmental Management and Mitigation Measures ..... 19
8.1 Environmental Control Officer (ECO) ..... 19
8.2 Pre-construction phase ..... 19
8.2.1 Environmental education / induction ..... 19
8.2.2 Method statements ..... 19
8.2.3 Site demarcation and timing ..... 19
8.2.4 Access, site camp and materials ..... 19

8.2.5 Plant rescue and vegetation ..... 19
8.3 Construction phase ..... 20
8.4 Rehabilitation requirements ..... 20
8.4.1 Rehabilitation success criteria ..... 21
8.5 Maintenance requirements ..... 21
8.6 Emergency Response Procedures ..... 21
9. Penalties for Non-Compliance ..... 22
10. Monitoring and Reporting ..... 22
10.1 Reporting procedure ..... 22
10.2 Maintenance-work monitoring procedure ..... 22
10.3 Monitoring schedule ..... 23
10.4 Authority notification process ..... 23
11. Conclusion ..... 23
12. References ..... 24
Annexure A, Photographic Damage Record ..... 25
A.1 Robberg Beach 5 ..... 25
A.2 Sanctuary Beach ..... 26
A.3 Solar Beach ..... 28
Annexure B, Reporting Forms ..... 30
Form A, Reporting of intent to undertake maintenance activities ..... 30
Form B, Reporting of completion of maintenance activities ..... 30
Annexure C, Environmental Compliance Checklist ..... 31

# 1. Definitions and Acronyms

| Term | Meaning |
|---|---|
| CBA | Critical Biodiversity Area |
| DEA&DP | (Western Cape) Department of Environmental Affairs & Development Planning |
| DFFE | Department of Forestry, Fisheries & the Environment |
| EAP | Environmental Assessment Practitioner |
| ECO | Environmental Control Officer |
| EIA | Environmental Impact Assessment |
| EMPr | Environmental Management Programme |
| ICM Act | National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) |
| Littoral active zone | any land forming part of, or adjacent to, the seashore |

| Term | Meaning |
|---|---|
| | that i s—<br>(a) unstable and dynamic as a result of natural processes; and<br>(b) characterised by dunes, beaches, sand bars and other landforms composed of unconsolidated sand, pebbles or other such material which is either unvegetated or only partially vegetated; |
| MMP | Maintenance Management Plan |
| NEMA | National Environmental Management Act, 1998 (Act No. 107 of 1998) |
| NEMBA | National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) |
| Primary dune / dune cordon | The foredune system forming the natural buffer between the beach and inland areas and infrastructure |
| Scarp | The near-vertical erosion face cut into a dune by wave attack during a storm |

# 2. Relevant Legislation

This section sets out the legal framework within which this Maintenance Management Plan (MMP) has been prepared and will be implemented. The remedial and maintenance works described in this MMP are undertaken to repair storm damage to existing municipal beach-access infrastructure and to restore the protective function of the coastal dune cordon. They do not constitute new development and will be prepared like-for-like.

## 2.1 National Environmental Management Act (NEMA) and the EIA Regulations, 2014 (as amended)

This document is a draft submitted for adoption by the competent authority. Reliance on a maintenance exclusion is limited to activities for which the applicable Listing Notice expressly provides that exclusion, and to work meeting its requirements within the adopted MMP's scope and conditions. Adoption does not authorise activities outside those exclusions or replace other applicable permissions. No activity requiring environmental authorisation may commence without that authorisation or another applicable lawful basis.

### 2.1.1 Summary of triggered listed activities

The table below summarises the listed activities triggered by the maintenance works and their applicability. The activity is undertaken for maintenance purposes in accordance with this MMP and is therefore excluded from the requirement for environmental authorisation.

*Table 2-1: Listed activities triggered by the maintenance works and their applicability.*

| Listing Notice | Activity | Trigger / description | Applicable |
|---|---|---|---|
| LN 1 (GN R983) | Activity 18 | The planting of vegetation or placing of any material on dunes or exposed sand surfaces of more than 10 square metres, within the littoral active zone, for the purpose of | Yes — Relevance: dune rehabilitation, sand-trapping (brush-packing / sand fencing) and the re-establishment of indigenous dune vegetation are |

| | | | |
|---|---|---|---|
| | | preventing the free movement of sand, erosion or accretion, excluding where —<br>(i) the planting of vegetation or placement of material relates to restoration and maintenance of indigenous coastal vegetation undertaken in accordance with a maintenance management plan; or<br>(ii) (ii) such planting of vegetation or placing of material will occur behind a development setback. | proposed at all three sites to restore the primary dune buffer lost during the May 2026 storm. Maintenance exclusion applies. |
| LN 1 (GN R983) | Activity 19A | The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from—<br>(i) the seashore;<br>(ii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater; or<br>(iii) the sea; —<br>(iv) but excluding where such infilling, depositing , dredging, excavation, removal or moving—<br>(v) (f) will occur behind a development setback;<br>(vi) (g) is for maintenance purposes undertaken in accordance with a maintenance management plan;<br>(vii) (h) falls within the ambit of activity 21 in this Notice, in which case that activity applies;<br>(viii) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or<br>(ix) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies. | Yes — Relevance: the return of wind- and wave-displaced sand to the dune zone, the reinstatement of undermined boardwalk and deck support poles, and the stabilisation of the undercut parking-area edge at Robberg 5 involve the movement of dune sand to maintain existing structures. Maintenance exclusion applies. |
| LN 3 (GN R985) | Activity 12 | The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.<br><br>i. Western Cape<br>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;<br>ii. Within critical biodiversity areas identified in bioregional plans;<br>iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding | No clearance of intact indigenous vegetation is anticipatetd. Where disturbance of indigenous vegetation is obviously unavoidable and necessary for maintenance, the area and species concerned must be quantified in Form A, confirmed against the applicable LN3 geographical criteria and kept within the approved maintenance footprint. Disturbance not expressly allowed by the approved MMP, or cumulative clearance reaching an applicable threshold, requires prior legal screening and any necessary authorisation. |

| | | | |
|---|---|---|---|
| | | where such removal will occur behind the development setback line on erven in urban areas;<br>iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or<br>v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister | |

## 2.2 National Environmental Management: Integrated Coastal Management Act (ICM Act)

The works fall within the coastal zone as defined in the ICM Act. The Act requires that the coastal protection zone, of which the primary dune cordon forms part, be managed so as to protect the ecological integrity, natural character and economic, social and aesthetic value of coastal public property. Restoring the dune cordon and repairing beach-access infrastructure in a manner that reinstates the natural dune buffer is consistent with the duty of care (section 58) and with the emergency and maintenance provisions of the Act. Where any works are undertaken seaward of the high-water mark or within coastal public property, the co-operative governance role of DFFE (Oceans & Coasts) is recognised and this MMP is framed to support both the DEA&DP and DFFE mandates.

# 3. Introduction, Background and Location

Eco Route Environmental Consultancy has been appointed to compile this Maintenance Management Plan on behalf of Bitou Local Municipality to enable the lawful, environmentally responsible repair and ongoing maintenance of storm-damaged beach-access infrastructure and the associated coastal dune cordon at three of Plettenberg Bay's municipal beaches: Robberg Beach 5, Sanctuary Beach and Solar Beach. These beaches form part of the continuous, high-energy sandy shoreline of the greater Plettenberg Bay embayment on the south-eastern seaboard of the Western Cape. The dune cordon along this shoreline is the natural first line of defence protecting municipal access infrastructure, boardwalks, dune stairways, viewing decks, parking areas and ablution facilities, from wave attack and wind erosion. Periodic storm-driven erosion of this cordon is a natural feature of the system; the purpose of this MMP is to guide the recovery works after such events and to establish a repeatable maintenance regime that restores the dune buffer rather than replacing it with hard structures.

## 3.1 The May 2026 storm event

Between 6 and 8 May 2026 a severe cut-off low-pressure system moved across the southern Cape, causing widespread damage across the Garden Route. The Garden Route District Municipality reported more than 300 mm of rain across parts of the district over three days, with George, Bitou and Kannaland among the hardest-hit areas; Plettenberg Bay received in the

order of 150 mm of rain. At the peak of the event dozens of roads across the eastern Garden Route were closed simultaneously, homes were flooded, and water supply in Bitou was disrupted by damage to pumping infrastructure. The event coincided with heavy, long-period swell and elevated sea levels, producing severe coastal erosion along the Plettenberg Bay shoreline. Wave attack cut deep scarps into the primary dunes, undermined and in places destroyed timber beach-access structures, and, at Robberg 5, undercut and collapsed a section of the tarred beach parking area. The erosion was severe enough elsewhere in the bay to expose portions of long-buried historical shipwrecks. The damage recorded at the three subject beaches on 17 July 2026, and addressed by this MMP, is a direct consequence of this event.

## 3.2 Locality

All three sites lie within Bitou Local Municipality on municipal land zoned for public open space / transport (parking and access). The affected infrastructure and dune areas fall within the littoral active zone and the coastal protection zone. Site-specific coordinates and erf numbers are to be confirmed and inserted by the Municipality prior to submission (see placeholders in the site descriptions below).

## 3.3 Site Locality Maps and Figures

The maps and figures below locate the subject sites at regional, municipal and site scale and delineate the maintenance footprint and environmental sensitivity of each area. Maintenance areas are to be outlined in red on the cadastral and aerial figures, and site coordinates confirmed against the municipal GIS. Each figure box below is a placeholder for the final graphic.

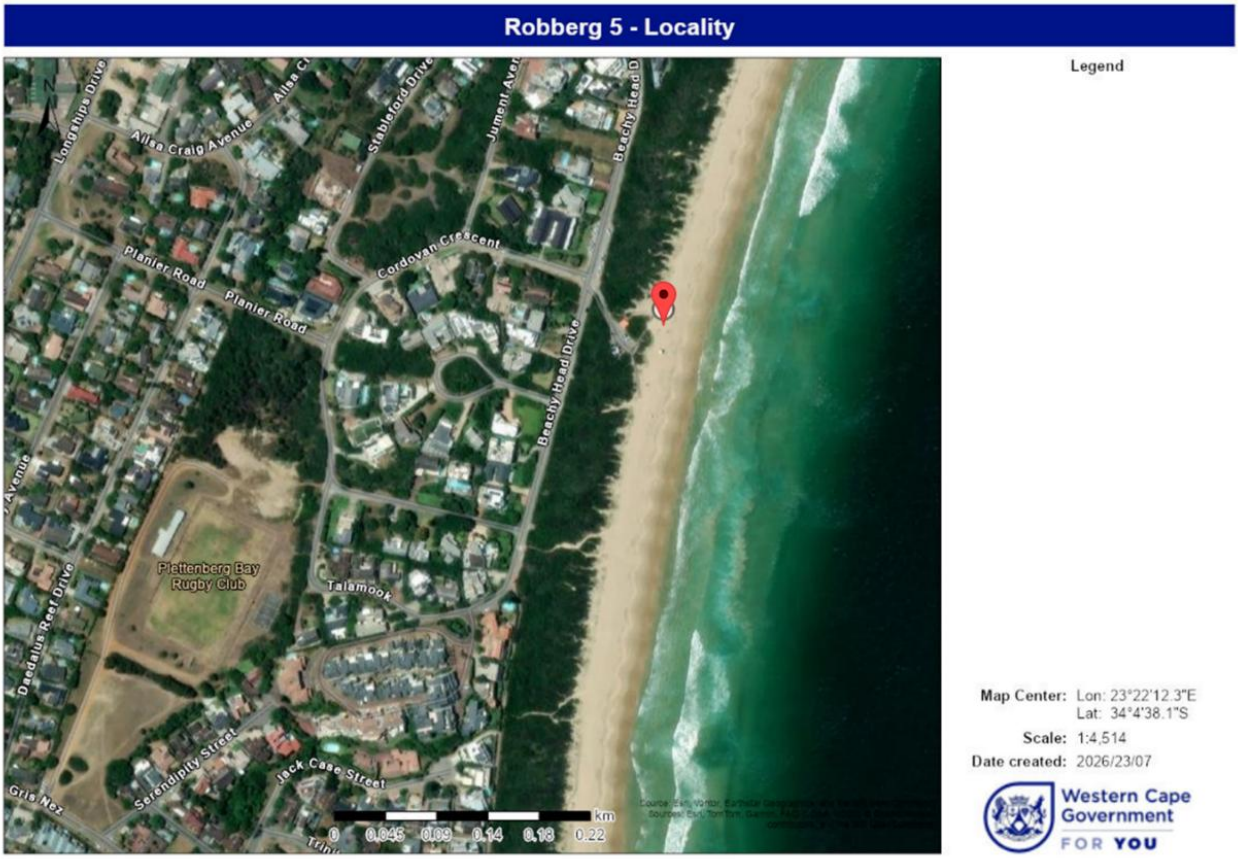



**Figure 1 —** *Robberg Beach 5 locality. Aerial view of the Robberg Beach 5 site (red marker), showing the beach-access and parking area within the surrounding dune and urban context (Western Cape Government aerial imagery, 2026).*

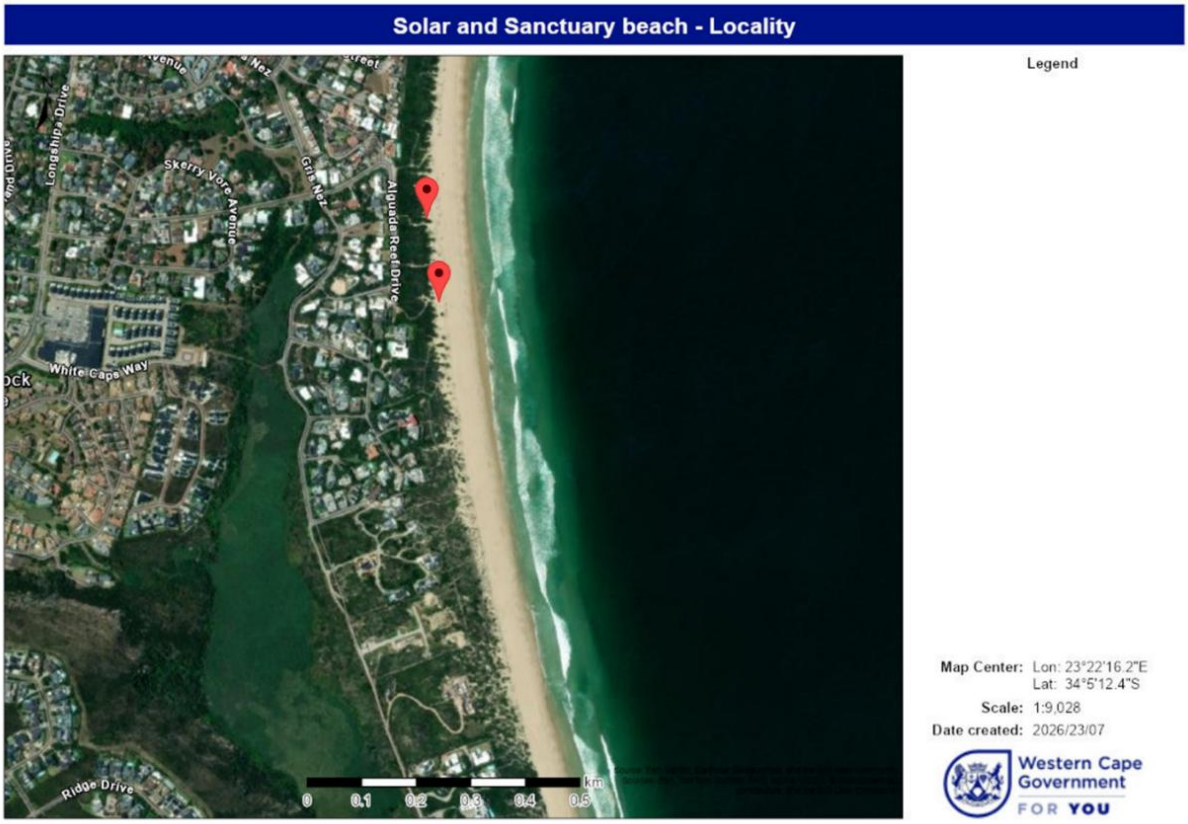



**Figure 2 —** *Sanctuary Beach and Solar Beach locality. Aerial view of the Sanctuary Beach and Solar Beach sites (red markers) along the Plettenberg Bay shoreline (Western Cape Government aerial imagery, 2026).*

## 4. Objectives of the MMP

The objectives of this MMP are to:

- Enable the prompt, lawful repair of storm-damaged, publicly-used beach-access infrastructure so as to restore safe public access and remove immediate safety hazards.
- Restore the protective function of the primary dune cordon through the return of displaced sand, sand-trapping and the re-establishment of indigenous dune vegetation.
- Ensure that all repair and maintenance works are undertaken with minimal impact on the coastal environment and in accordance with the mitigation measures set out in this document.
- Establish a repeatable, low-impact maintenance regime that can be applied after future erosion events without the need for a fresh environmental authorisation on each occasion.
- Avoid, as far as possible, reliance on hard coastal-protection structures, favouring soft (dune-based) protection that works with natural coastal processes.
- Provide a clear framework of roles, responsibilities, monitoring and reporting for the Municipality, its contractors and the Environmental Control Officer.

## 5. Site Descriptions and Storm-Damage Assessment

The damage described below was recorded during a site inspection on 17 July 2026. A full photographic record is provided in Annexure A; representative observations are summarised per site. Each site exhibits the same underlying process, storm-wave scarping of the primary dune and consequent undermining of infrastructure built on or immediately behind the dune, but the nature and severity of the damaged infrastructure differs.

### 5.1 Robberg Beach 5

Robberg Beach 5 is the most severely affected of the three sites. Wave attack during the storm cut back the primary dune beneath the seaward edge of the tarred beach parking area, undermining and collapsing a substantial section of the tar surface, including a demarcated accessible (disabled) parking bay, into the resulting scour hollow. The collapsed edge, the adjacent timber benches and boardwalk-access structure, and the refuse-bin stand now sit directly on an unstable erosion scarp and have been cordoned off with hazard tape as an immediate safety measure. Old buried rubble and concrete, together with exposed dune-vegetation root mats, are visible in the scarp face, and driftwood and organic debris have accumulated in the scour hollow. The public parking area, ablution block and beach-access point remain in use immediately landward of the failure.




**Plate 5.1 —** *Robberg Beach 5: the collapsed seaward edge of the tarred parking area undercut into the wave-cut scour hollow, with refuse bins and hazard tape at the erosion lip and the beach beyond*

## 5.2 Sanctuary Beach

At Sanctuary Beach the storm scarped the primary dune along the line of the beach-access stairway, undermining and collapsing the timber steps and the lower boardwalk landing. Treads, stringers and support poles have been dislodged and now hang in, or lie scattered down, the eroded dune face, with loose planks and structural timber washed onto the beach below. The scarp has steepened the descent to the beach to the point that it is unsafe for public use. Exposed root mats and woody debris are present along the dune toe. The upper (landward) section of the access structure remains largely intact but is now terminated by an abrupt erosion scarp.




**Plate 5.2 —** *Sanctuary Beach: dislodged timber stairway sections washed onto the beach at the foot of the eroded dune (site staff shown for scale)*

## 5.3 Solar Beach

At Solar Beach an elevated timber viewing deck and its connecting boardwalk and stairway have been undermined by scarping of the dune on which and in front of which they are built. The dune beneath and seaward of the deck has been scoured away, leaving the structure perched on a steep erosion face with several support poles partially exposed and undercut at their footings. The stair descent to the beach has been washed out, and a wheeled refuse drum has been dislodged into the eroded gully beside the steps. Loose planks and heavy woody debris lie along the dune toe. The structure has been cordoned off with hazard tape. While the deck itself remains standing, continued exposure of the pole footings threatens progressive collapse if the dune is not reinstated.




**Plate 5.3 —** *Solar Beach: the elevated timber viewing deck and boardwalk cordoned with hazard tape above the eroded dune, with the beach and Robberg headland beyond*

# 6. Description of the Proposed Maintenance Activities

## 6.1 General approach

The guiding principle of this MMP is to work with natural coastal processes. The primary means of protecting the affected infrastructure is the reinstatement and stabilisation of the dune cordon, not the introduction of new hard structures. Damaged infrastructure is to be repaired or replaced on a **like-for-like** basis using the existing footprint and, where possible, the existing poles and materials. All works are to be undertaken by hand or with light machinery/plant only, sized to the task, to limit disturbance of the dune and beach.

Where practical, immediate hazard-reduction measures (barricading, removal of unstable/loose timber, making the collapsed parking edge safe at Robberg 5) should be undertaken as emergency works ahead of, and reported under, the full maintenance programme.

## 6.2 Beach-access infrastructure repair (boardwalks, stairways and decks)

- Recover and either re-use or remove dislodged timber, planks and poles from the beach and dune face; recovered sound timber to be re-used, unusable material removed to an approved disposal facility.
- Replace damaged boardwalks, stairways and deck sections on a like-for-like basis within the existing footprint, re-using existing poles where they remain sound; new poles to match existing (treated timber) and be founded to an adequate depth below the reinstated dune level.
- At Solar Beach, re-establish sand around and against the undercut deck-support poles and reinstate the beach stairway; monitor pole footings until the dune has recovered sufficient cover.
- At Sanctuary Beach, rebuild the dune stairway and lower landing to follow the reinstated (re-profiled and revegetated) dune slope, rather than perpetuating an over-steep descent. (See existing design below – like-for-like replacement)
- Barricade and clearly sign all work areas and any structure that remains unsafe until repairs are complete.




***Figure 3**. existing design and footprint of Sanctuary Beach walkway.*

## 6.3 Parking-area stabilisation (Robberg Beach 5)

- Make the collapsed tar edge safe: retain robust barricading set well back from the live fall-edge, and remove any undercut slabs that present a fall hazard.

- Reinstate the eroded dune beneath and seaward of the parking edge by returning displaced dune sand to the scour hollow, re-profiling to a natural dune slope, and stabilising with sand-trapping and revegetation (Section 6.4).
- Reinstate the tar surface, kerb and the accessible parking bay only once the supporting dune has been rebuilt and stabilised; the reinstated edge should be set back from, and protected by, the restored dune where feasible.
- Protect and, where necessary, relocate any services (cables/pipes) exposed in the scarp, in consultation with the relevant municipal department, before backfilling.

## 6.4 Dune rehabilitation and sand-trapping

Reinstating the dune cordon is the core protective measure at all three sites. The following soft-engineering methods are to be applied:

- Return displaced sand to the dune zone: sand that has moved out of the dune system (onto the beach or into scour hollows) is to be returned mechanically by light plant or by hand and re-profiled to a natural dune form.
- Sand-trapping fences / brush-packing: install rows of brushwood (from local alien-vegetation clearing) or sand fencing perpendicular to the prevailing wind to trap wind-blown sand and rebuild the fore-dune. Brush-packing is the preferred method as it is non-invasive, requires no construction, decomposes naturally and is readily available locally.
- Re-use of beach-cast organic material: organic wrack and woody debris cleared from the beach is to be placed behind the sand traps to assist dune formation and revegetation, mimicking natural dune-building processes.
- Revegetation: re-establish indigenous dune pioneer and stabilising species by planting rescued material and cuttings and by distributing locally-collected seed (see Section 8.4). Foot access across rehabilitating areas is to be prevented by brush-packing and signage.

This approach recognises that the dune profile in this high-energy setting naturally oscillates between eroded and accreted states. After each erosive event it is necessary to assist the deposition and dune-building cycle so that the dune can resume its buffer role; this is the essence of the maintenance regime established by this MMP.

## 6.5 Equipment, methods and timeframes

- All works to be undertaken by hand or with light machinery/plant appropriate to sand movement; no heavy earthworks plant on the dune or beach beyond what is necessary.
- Detailed methods, quantities and timeframes for each site will be set out in the contractor's method statements and tender documentation, to be approved by the appointed engineer and the ECO before work commences on site.
- Coastal-infrastructure repair and dune reinstatement are to follow erosion events on an as-needed basis; the initial (post-May-2026) works will be the most extensive, with subsequent maintenance expected to be minor and ad hoc.

## 6.6 Maintenance frequency and triggers

Maintenance under this MMP is event-driven but underpinned by routine inspection. The Municipality (supported by the ECO) will undertake maintenance at the following frequencies and triggers:

- Routine annual inspection of the dune cordon and all beach-access infrastructure at the three sites (pre-summer / start of the storm season).
- After every severe storm or coastal surge event, inspection within a reasonable period once conditions are safe, and remedial works as required.
- After any significant erosion event that scarps the primary dune or exposes / undermines infrastructure or buried protection.
- After any infrastructure damage reported by the public, lifeguards / NSRI or municipal staff.
- Emergency repairs, immediate hazard-reduction works (barricading, removal of unstable timber, making collapsed edges safe) as soon as a hazard is identified, reported under the Form A / Form B procedure.

The initial post-May-2026 works are the most extensive; subsequent maintenance is expected to be minor and ad hoc, tied to the triggers above.

## 6.7 Maintenance process flow

The following sequence applies from storm damage through to final reporting:

| **Storm / erosion event** |
|---|
| **Municipal inspection of damage** |
| **Notify DEA&DP (Form A, ≥7 working days before works)** |
| **ECO site inspection, tag plants, demarcate no-go areas** |
| **Contractor method statements approved (ECO + engineer)** |
| **Maintenance / repair works (hand or light plant)** |
| **Dune rehabilitation & revegetation** |
| **Monitoring against success criteria** |
| **Final ECO compliance report (Form B) to DEA&DP** |

*Figure 4 — Maintenance process flow, from storm damage to final reporting.*

# 7. Environmental Attributes

The subject areas comprise coastal foredune and back-dune habitat supporting Cape Seashore Vegetation and dune thicket, within the littoral active zone of the Plettenberg Bay shoreline. Parts of the coastal strip are indicated as Critical Biodiversity Areas and/or Ecological Support Areas in the Western Cape Biodiversity Spatial Plan, and the dune cordon performs an important ecological support and coastal-protection function. The works proposed are restorative in intent, their purpose is to re-establish indigenous dune vegetation and the natural

dune buffer. The site-specific biodiversity mapping and any estuarine/CBA overlaps are to be confirmed by the ECO prior to commencement and reflected in the method statements.

## 7.1 Coastal processes

The shoreline is a high-energy, wave-dominated sandy beach and dune system within the Plettenberg Bay embayment. The primary (fore) dune naturally oscillates between eroded and accreted states: storm-wave scarping removes sand seaward, and subsequent aeolian (wind-driven) transport and vegetation trapping rebuild the dune over time. The dune cordon is the natural first line of defence for the municipal access infrastructure, and the maintenance regime is designed to assist this natural erosion–accretion cycle rather than to fix the dune position with hard structures.

## 7.2 Biodiversity importance and threatened species

Parts of the coastal strip are indicated as Critical Biodiversity Areas (CBAs) and/or Ecological Support Areas (ESAs) in the Western Cape Biodiversity Spatial Plan. The dune system provides habitat for coastal fauna and forms part of an ecological corridor along the shoreline. Any species of conservation concern potentially present (e.g. nesting shorebirds, protected dune flora) are to be confirmed by the ECO.

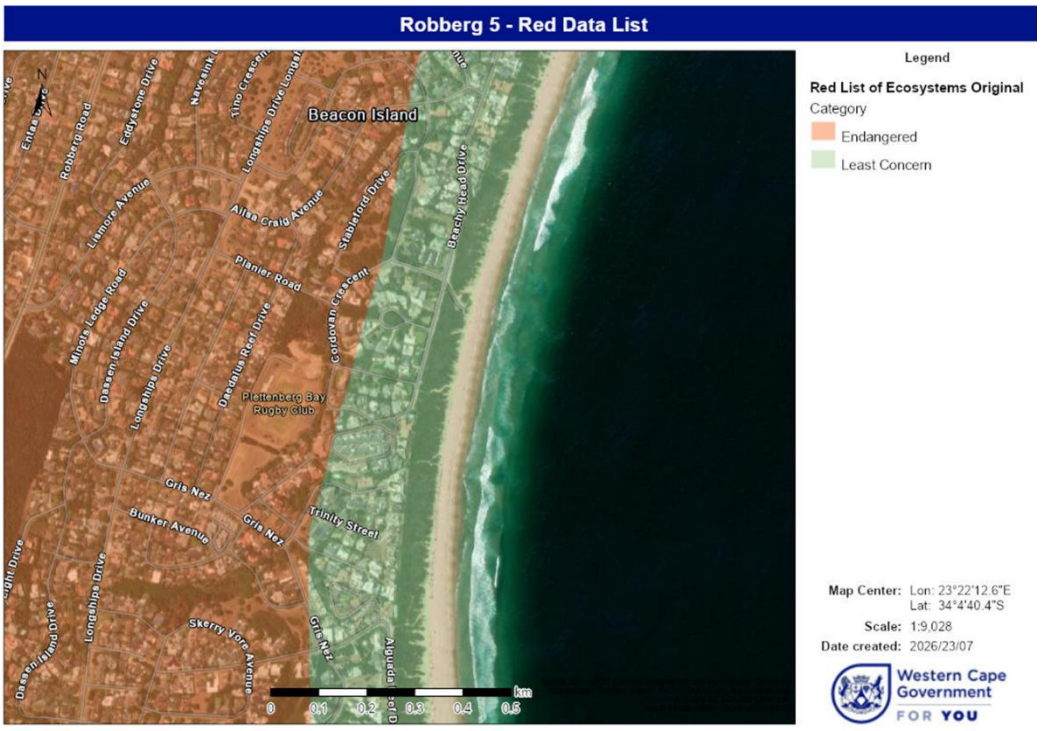



**Figure 5 —** *Robberg Beach 5: Red List of Ecosystems. Terrestrial ecosystem threat status at Robberg Beach 5.*

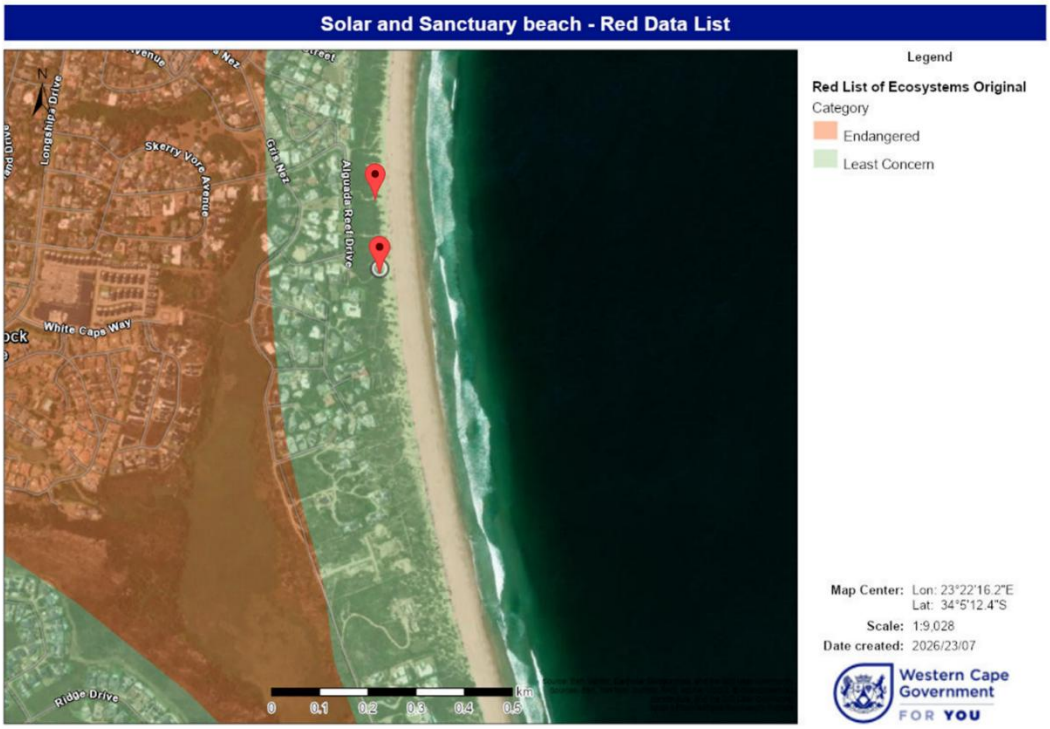



**Figure 6 —** *Sanctuary and Solar Beach: Red List of Ecosystems. Terrestrial ecosystem threat status at the Sanctuary and Solar Beach sites (Western Cape Biodiversity Spatial Plan / SANBI).*

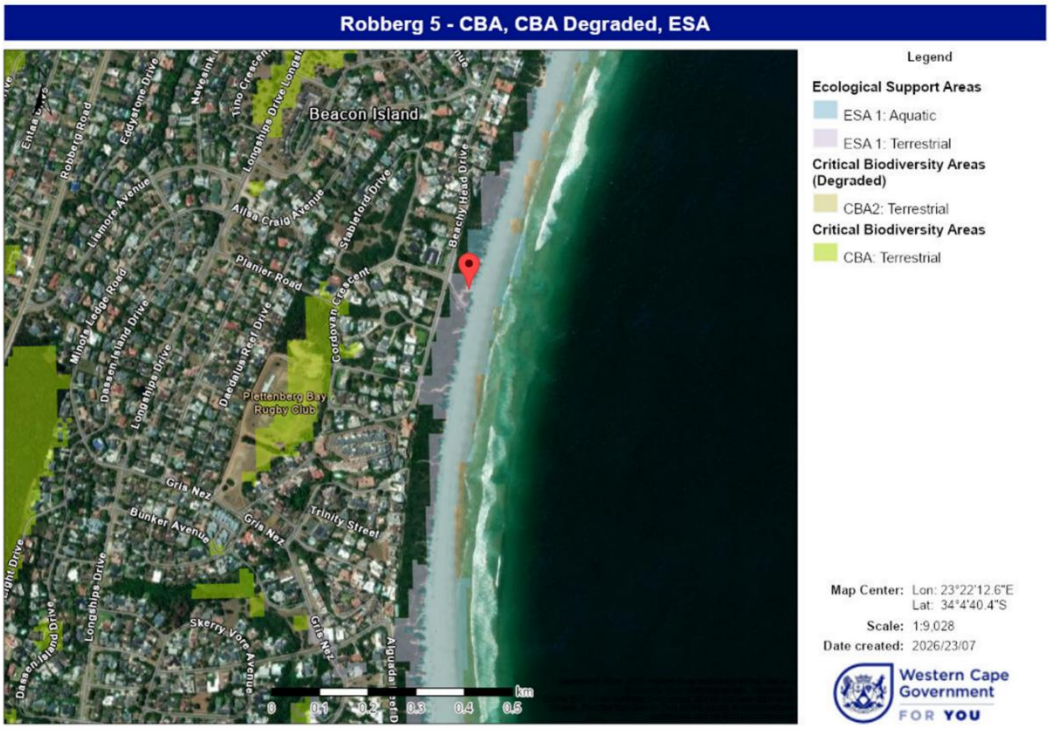



**Figure 7 —** *Robberg Beach 5: Critical Biodiversity Areas and Ecological Support Areas. CBA, degraded CBA and ESA mapping at Robberg Beach 5 (Western Cape Biodiversity Spatial Plan).*

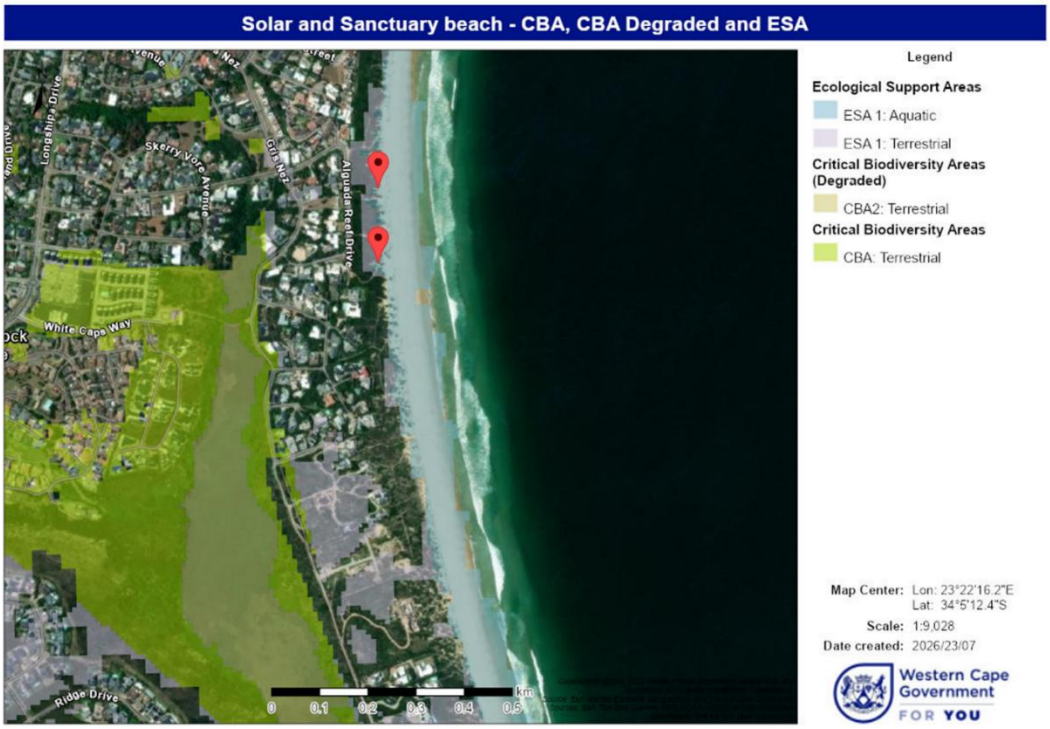



**Figure 8 —** *Sanctuary and Solar Beach: Critical Biodiversity Areas and Ecological Support Areas. CBA, degraded CBA and ESA mapping at the Sanctuary and Solar Beach sites (Western Cape Biodiversity Spatial Plan).*

## 7.3 Ecological functioning and coastal-protection role

The dune cordon performs several linked functions: it dissipates wave energy and buffers landward infrastructure against storm surge; it stores and supplies sand to the beach through the natural sediment budget; it supports indigenous dune vegetation whose root systems bind the sand; and it provides habitat continuity along the coast. Maintaining a vegetated, naturally-profiled dune therefore protects both the ecological functioning of the system and the public infrastructure behind it.

## 7.4 Existing disturbance

The sites are already substantially developed for public recreation, with parking areas, ablution facilities, boardwalks, stairways and viewing decks, and experience high seasonal visitor pressure and associated trampling. The May 2026 storm has left fresh erosion scarps, dislodged timber and exposed buried rubble and services. The proposed works are restorative and confined to already-disturbed footprints; they do not extend into intact, undisturbed dune habitat.

# 8. General Environmental Management and Mitigation Measures

## 8.1 Environmental Control Officer (ECO)

An ECO is to be appointed to oversee compliance with this MMP. The ECO must induct all contractors before work begins, must mark plants for rescue and demarcate no-go areas, and must inspect the site during the works and on completion (see Section 10).

## 8.2 Pre-construction phase

### 8.2.1 Environmental education / induction

All personnel are to receive an environmental induction from the ECO covering the sensitivity of the coastal environment, the requirements of this MMP, no-go areas, waste management and emergency procedures. Induction registers are to be kept.

### 8.2.2 Method statements

The contractor must submit method statements for each activity (sand movement, structural repair, revegetation, waste handling) for approval by the ECO and engineer before that activity commences.

At a minimum, method statements must be submitted, and approved before the relevant work begins, for:

- Dune reconstruction and sand re-profiling (including sand sources and volumes);
- Boardwalk, stairway and viewing-deck repair / replacement;
- Sand movement and use of light plant on the dune and beach;
- Vegetation rescue, salvage and transplanting were necessary;
- Dune revegetation and rehabilitation (species, densities, aftercare);
- Waste management and removal (including recovered timber and debris);
- Emergency / hazard-reduction works.

### 8.2.3 Site demarcation and timing

- Work areas and no-go areas are to be clearly demarcated; existing hazard barricading at all three sites is to be maintained and upgraded to robust barricading during works.
- Works are to be timed to avoid, as far as possible, peak public-use periods and sensitive biological periods; work in the intertidal zone to be scheduled around tides and sea conditions.

### 8.2.4 Access, site camp and materials

- Existing access routes and hardened areas (e.g. the Robberg 5 parking area, landward of the failure) are to be used for access and laydown; no new access to be created across intact dune.
- Materials, fuels and plant are to be stored on hardened ground behind the dune, with spill containment; no storage on the beach or active dune.

### 8.2.5 Plant rescue and vegetation

Before earth-moving, the ECO is to identify and tag indigenous dune plants for rescue and re-use in rehabilitation. Clearing of intact indigenous vegetation is to be avoided; only vegetation

unavoidably within the repair footprint may be disturbed, and such material is to be salvaged for replanting where viable.

## 8.3 Construction phase

- Signage: appropriate safety and public-information signage to be maintained at all work areas and access closures.
- Waste management: all construction and general waste to be contained and removed to an approved facility; no burying or burning of waste on site; the dislodged blue refuse drum at Solar Beach and scattered debris to be recovered.
- Fire protection: no open fires; hot-work controls where required; firefighting equipment on site.
- Erosion and stormwater: ensure the free, non-erosive discharge of any stormwater outlets onto the beach; where outlets are causing scour, extend/manage them (e.g. perforated lay-flat outlets) and backfill and revegetate eroded areas.
- Excavations and earthworks: minimise; barricade all open excavations and undercut edges; backfill and re-profile to natural dune form.
- Protection of surrounding habitat: confine all activity to the demarcated footprint; protect adjacent dune vegetation and root zones from trampling and compaction.
- Site closure and rehabilitation: on completion, remove all plant, materials and waste, and rehabilitate all disturbed areas in accordance with Section 8.4.

## 8.4 Rehabilitation requirements

Once protective measures (sand traps / brush-packing) are in place, all exposed sand areas are to be rehabilitated with indigenous, locally-occurring species. Species suitable for rescue and re-use, and for planting from cuttings and seed, include (subject to availability at the time of the works):

- *Arctotheca populifolia* (beach pumpkin)
- *Carpobrotus edulis* (sour fig)
- *Cynanchum ellipticum* (monkey rope)
- *Gazania rigens* (trailing gazania)
- *Passerina rigida* (seekoppiesgonna)
- *Rhoicissus digitata* (baboon grape)
- *Searsia crenata* (dune crow-berry)
- *Sporobolus virginicus* (brakkweek)
- *Tetragonia decumbens* (dune spinach)

Cuttings of local creepers and creeping succulents are to be planted into the rehabilitated areas; brushwood is to be packed to protect them from wind erosion and to prevent foot access; and seed of local coastal species (e.g. *Searsia crenata, Grewia occidentalis, Chrysanthemoides monilifera / bietou*) is to be collected and distributed to increase diversity.

No alien invasive vegetation is to be introduced, and any alien species encountered are to be controlled by accepted clearing methods.

### 8.4.1 Rehabilitation success criteria

Rehabilitation will be regarded as successful, and the site signed off for that criterion, when the following measurable outcomes are achieved:

- At least 80% indigenous vegetation cover established over rehabilitated sand areas within 12 months;
- No active blow-outs or unvegetated deflation hollows in the rehabilitated dune;
- A stable, naturally-profiled dune slope re-established (no over-steepened scarps in the maintenance footprint);
- Safe, functioning public access reinstated (boardwalks, stairways, decks and parking edge);
- No active erosion or scour around reinstated structures or support poles;
- Indigenous pioneer and stabilising species established and self-sustaining, with no introduced alien invasive species.

Where a criterion is not met at the time of the final report, the ECO is to specify the remedial action and aftercare required and the review date.

## 8.5 Maintenance requirements

Care is to be taken to ensure that the integrity of the dune cordon is restored and that the future erosion threat is minimised. After each storm event the affected areas should be inspected and, where necessary, maintenance undertaken in accordance with this MMP. Reporting Forms A and B (Annexure B) are to be used to keep DEA&DP informed of the works proposed and completed. Failure to maintain these areas after an erosive event will result in progressive undermining and the eventual collapse of infrastructure, after which major hard-engineering works would be required.

## 8.6 Emergency Response Procedures

The contractor is to have basic emergency procedures and equipment in place for the duration of the works. The following incidents are to be managed as set out below, and all incidents recorded and reported to the ECO:

- Fuel / oil spills, keep a spill kit on site; contain and clean up immediately; store fuels and plant on hardened ground behind the dune with drip trays; report significant spills to the ECO and the Municipality.
- Injuries, administer first aid; keep a stocked first-aid kit and emergency contact list on site; call emergency services for serious injuries; comply with the OHS Act.
- Fire, no open fires; keep firefighting equipment on site; apply hot-work controls; report and extinguish any fire immediately.

- Archaeological / heritage chance finds, if bone, shell middens, artefacts or historical material (e.g. shipwreck remains) are uncovered, stop work in that area immediately, cordon it off and notify the ECO and Heritage Western Cape before continuing.
- Pollution incidents, contain any release of cement, waste or contaminated water; prevent discharge to the beach or sea; clean up and report to the ECO.
- Severe storms during works, suspend works and secure the site, plant, materials and any open excavations when a severe storm or high sea is forecast; re-inspect before resuming.

## 9. Penalties for Non-Compliance

Penalties in terms of the applicable environmental legislation (NEMA and associated provincial legislation) apply to any action that causes damage to the natural environment. In addition, spot fines may be instituted at the discretion of the ECO for any breach or non-compliance with this MMP, with fines increasing for repeat offences. In the event of avoidable environmental damage, the contractor will be responsible for the cost of clean-up, repair or rehabilitation as necessary, in addition to any fine. It is recommended that fines collected be applied, at the discretion of the ECO, to environmental rehabilitation of the area.

## 10. Monitoring and Reporting

As this is a Maintenance Management Plan, the initial (post-storm) works are required to correct the current erosion and structural damage, while ongoing maintenance will be required to prevent future erosion problems. The initial works will therefore be extensive and follow-up maintenance is expected to be minor and ad hoc.

### 10.1 Reporting procedure

- Reporting Form A (Annexure B) must be completed and submitted to DEA&DP at least seven (7) working days before the commencement of any maintenance activity, describing the intended activity, method, footprint and volumes, and including 'before' photographs with coordinates.
- Reporting Form B (Annexure B) must accompany the ECO's compliance report on completion of the maintenance activity.
-

### 10.2 Maintenance-work monitoring procedure

- An induction meeting between the ECO / municipal environmental officer and the contractor is to be held before any activities commence; induction registers to be kept.
- The ECO is to inspect the site before commencement to tag plants for rescue and demarcate no-go areas.
- The ECO is to inspect the site at least weekly during the works and rehabilitation phase and submit a monthly compliance report to the contractor and applicant.

- ECO reports are to advise on any remedial actions or method-statement changes required to manage identified and emerging impacts.
- On completion, the ECO is to submit a final compliance report signing off environmental compliance to DEA&DP, the engineer and the applicant within one (1) month of completion of the works, irrespective of the status of ongoing revegetation.

## 10.3 Monitoring schedule

The following monitoring schedule applies during the works and rehabilitation phase and for ongoing maintenance:

| Activity | Frequency | Responsible |
|---|---|---|
| ECO site inspections | Weekly during works | ECO |
| Photographic (fixed-point) monitoring | Monthly | ECO |
| Vegetation establishment / success | Quarterly | ECO |
| Storm-damage inspection | After every storm event | Municipality / ECO |
| Compliance reporting | Monthly during works; final report within 1 month of completion | ECO |
| Annual dune / infrastructure review | Annually (pre-storm season) | Municipality / ECO |

*Table 10-1: Monitoring schedule.*

## 10.4 Authority notification process

The Form A / Form B procedure (Section 10.1) follows the sequence below for each maintenance event:

| |
|---|
| **Storm / erosion event or reported damage** |
| **Municipal inspection & scoping of works** |
| **Form A notification to DEA&DP (≥7 working days before works)** |
| **Maintenance works undertaken** |
| **ECO monitoring & compliance inspection** |
| **Form B + final ECO compliance report to DEA&DP** |

*Figure 9 — Authority notification process for each maintenance event.*

# 11. Conclusion

The May 2026 storm caused significant erosion of the primary dune cordon at Robberg Beach 5, Sanctuary Beach and Solar Beach, undermining and in places destroying municipal beach-access infrastructure and, at Robberg 5, collapsing a section of the beach parking area. The works described in this MMP are maintenance and remedial in nature: they repair existing infrastructure on a like-for-like basis and restore the natural dune buffer that protects it. Undertaken in accordance with the mitigation, rehabilitation, monitoring and reporting measures set out herein, and using the Form A / Form B reporting procedure to keep DEA&DP

informed, these works fall within the maintenance exclusions of the EIA Regulations and are consistent with the ICM Act. Their implementation will restore safe public access, reduce the immediate safety risks arising from the collapsed and undermined structures, and re-establish the resilience of the dune cordon against future storm events.

## 12. References


- Republic of South Africa. National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), and the Environmental Impact Assessment Regulations, 2014 (as amended), Listing Notices 1, 2 and 3.
- Republic of South Africa. National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) (ICM Act).
- Republic of South Africa. National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA).
- Republic of South Africa. National Forests Act, 1998 (Act No. 84 of 1998); National Water Act, 1998 (Act No. 36 of 1998); Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- Garden Route District Municipality. Garden Route Coastal Management Programme (CMP).
- Western Cape Department of Environmental Affairs & Development Planning (DEA&DP). Guideline on Maintenance Management Plans.
- Western Cape Government. Western Cape Biodiversity Spatial Plan (CBA / ESA mapping).
- South African National Biodiversity Institute (SANBI). National Vegetation Map (VegMap) and BGIS spatial data.

# Annexure A, Photographic Damage Record

*Photographs taken during the site inspection of 17 July 2026*

## A.1 Robberg Beach 5




**Figure 1 —** *Overview of the Robberg 5 parking area showing painted bays, refuse bins and the hazard-taped cordon at the collapsed seaward edge, with the beach-access path beyond*




**Figure 2 —** *The collapsed parking edge undercut into the scour hollow; refuse bins and hazard tape at the erosion lip, driftwood in the hollow, and the beach and surf beyond*

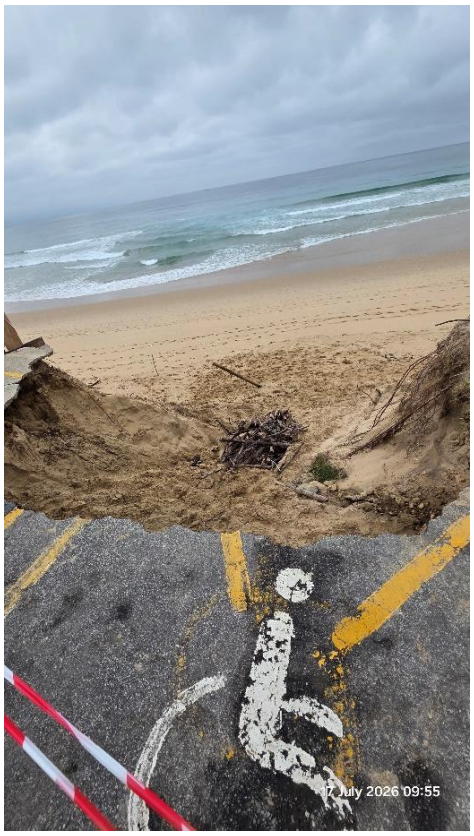






**Figure 3 —** *Close view of the undercut tar edge over the scour hollow, with the demarcated accessible-parking symbol at the erosion lip and red-and-white hazard tape*

**Figure 4 —** *Wave-cut scarp along the dune and parking edge showing the exposed sand face and eroded toe, with the beach and surf beyond*

## A.2 Sanctuary Beach






**Figure 5 —** *Eroded dune scarp at the beach-access stairway with collapsed and dislodged timber in the sand, and the beach beyond*

**Figure 6 —** *Steep dune scarp with undermined stair support poles and stringers leaning in the eroded face and loose timber scattered down the slope*




**Figure 7 —** *Lower boardwalk and stairway section dropped and skewed on the beach, support poles leaning and sand scoured around the base (10:12).*

## A.3 Solar Beach




**Figure 8 —** *Elevated timber viewing deck and boardwalk cordoned with hazard tape; the dune access is washed out to the left, with the beach and Robberg headland beyond (10:20).*







**Figure 9 —** *Hazard tape across the boardwalk with a dislodged blue refuse drum fallen into the eroded gully beside the steps, and exposed roots in the scarp (10:21).*

**Figure 10 —** *Undermined boardwalk deck edge; the dune scarp in front scoured away exposing root mats, with woody debris on the beach (10:21).*



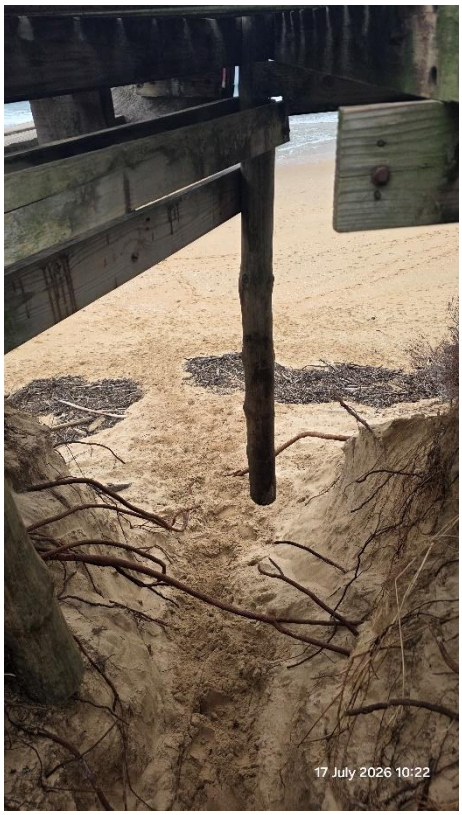




**Figure 11 —** *The elevated deck perched on a steep erosion scarp, with the scoured dune face and exposed roots beneath (10:21).*

**Figure12 —** *Beneath the deck: a support pole undercut and partially exposed above a scour hollow, with exposed roots (10:22).*

# Annexure B, Reporting Forms

## Form A, Reporting of intent to undertake maintenance activities

*To be completed and submitted to DEA&DP at least seven (7) working days before commencement of any maintenance activity.*

| Field | Detail |
|---|---|
| Landowner / applicant | Bitou Local Municipality |
| Erf no. / farm no. | |
| Site | Robberg 5 / Sanctuary / Solar |
| MMP reference code | |
| DEA&DP reference number for MMP | |
| Activity type | |
| Footprint (m²) | |
| Volume of material (m³) | |
| Equipment to be used | |
| Description of method | |
| Date of last storm/flood event for site | |
| Further damage / comments on site condition | |
| Date work will commence | |
| 'Before' photographs + coordinates (S / E) | |
| Date photographs taken | |

## Form B, Reporting of completion of maintenance activities

*To accompany the ECO's compliance report on completion of the maintenance activity.*

| Field | Detail |
|---|---|
| Landowner / applicant | Bitou Local Municipality |
| Erf no. / farm no. | |
| Site | Robberg 5 / Sanctuary / Solar (delete as applicable) |
| MMP reference code | |
| DEA&DP reference number for MMP | |
| Activity type | |
| Footprint (m²) | |
| Equipment used | |
| Description of completed method / any change to commencement date | |

| Field | Detail |
|---|---|
| Date of last storm/flood event for site | |
| 'After' photographs + coordinates (S / E) | |
| Date photographs taken | |
| ECO sign-off (name / date) | |

## Annexure C, Environmental Compliance Checklist

*To be completed by the ECO on completion of each maintenance event and appended to the Form B / final compliance report.*

| Requirement | Compliant (✓ / X / N/A) | Comment |
|---|---|---|
| ECO appointed and contractor induction completed | | |
| Method statements submitted and approved before works | | |
| No-go areas and work areas demarcated; barricading maintained | | |
| Plant rescue undertaken before earthworks | | |
| Works confined to existing / disturbed footprint | | |
| Displaced sand returned and dune re-profiled to natural form | | |
| Sand-trapping / brush-packing installed | | |
| Indigenous, locally-occurring species used; no aliens introduced | | |
| All construction and general waste removed to an approved facility | | |
| Recovered timber / debris and dislodged bins removed | | |
| No fuel / pollution incidents (or incidents managed and reported) | | |
| Rehabilitation success criteria met (or aftercare specified) | | |
| Form A submitted before works; Form B submitted on completion | | |
| Final ECO compliance report submitted to DEA&DP | | |

*Table C-1: Environmental compliance checklist.*