







# **Biodiversity Management Plan**

**Maketū Ongatoro Wetland Society Inc.  
Dotterel Point, Pukehina**

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BMP Site No.	987.1 and 418.1
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# 1 Site introduction

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## 1.1 Overall goal

This Biodiversity Management Plan (BMP) aims to restore the ecological integrity of Dotterel Point as habitat for populations of threatened species and maintain its important coastal ecosystem function. Dotterel Point Reserve is regionally significant, as it has remained relatively unmodified with indigenous flora species providing habitat for the diverse population of threatened native birds and invertebrates. This unique coastal habitat is being degraded by nitrogen fixing pest plants that modifying the dune habitat to allow greater distribution of non-coastal species and pest animals that predate on nesting birds and native invertebrates and reptiles.

## 1.2 Site description

Dotterel Point Reserve is an area of dune land and sand spit located at Pukehina, Western Bay of Plenty. It extends from the surf club at the western end of Pukehina Beach Road to the mouth of Little Waihi Harbour and is Crown land administered by Western Bay of Plenty District Council. The Department of Conservation own and administer a marginal strip that surrounds the reserve.

Protection site (ha's):            6.8 ha

## 1.3 Landowner/s

Current owner/s:                Western Bay of Plenty District Council

Address:                            Private Bag 12803  
    Tauranga Mail Centre  
    Tauranga

## 1.4 Site biodiversity status

Dotterel Point is divided into two distinct ecological areas: the distal end and the sand dunes. The distal end spit is a low lying sand spit which is an important breeding site for the threatened New Zealand Dotterel *Charadrius obscurus* with 6-8 pairs breeding there along with a number of pairs of Variable Oystercatcher *Haematopus unicolor*. A variety of native and migrant birds use the spit and surrounding Little Waihi Estuary mudflats for feeding and roosting, especially during the winter. The dune area, from the surf club to the sandspit, is a 10 m high sand dune with spinifex and pingao on the foredune and pohuehue *Muehlenbeckia complexa* on the backdune. The dune system has an unknown number of native invertebrates, but is likely to be equally abundant and diverse as Maketu Spit. Habitat and breeding success of birds has improved recently, which has been attributed to increased pest control on the spit by Maketū Ongatoro Wetland Society (MOWS).

## 1.5 Site map



## 1.6 Partners to the plan

### Partner(s)

Maketū Ongatoro Wetland Society  
Western Bay of Plenty District Council  
Department of Conservation  
Bay of Plenty Regional Council

### Project Manager(s)

Julian Fitter/Ryan Standen

### Bay of Plenty Regional Council Liaison Officer

Ryan Standen

*(If the Project Manager is a Bay of Plenty Regional Council officer then that officer will also be the Bay of Plenty Regional Council Liaison Officer)*

## 1.7 Site legal protection

The point is gazetted as a Western Bay of Plenty District Council Recreation Reserve.



## 2 Site goals, objectives and outcome monitoring

### 2.1 Biodiversity Management Plan goals

#### 2.1.1 Site objectives

- 1 Evaluate the biodiversity of the spit to produce baseline data.
- 2 Restore native vegetation.
- 3 Improve breeding success of native bird populations.
- 4 Protect native invertebrate and reptile species.
- 5 Reduce infestations of introduced pest animals.
- 6 Reduce infestations of introduced pest plants.
- 7 Develop environmental education with Pukehina School and other schools in the area.
- 8 Involve community through an education and awareness raising campaign in conjunction with signage and interpretation panels.

### 2.2 Biodiversity outcome monitoring

Data has been collected, and will continue to be collected, on native flora and fauna populations and introduced pest species to provide an ongoing ecological assessment of the site.

Monitoring type	Year 1 2014-15 measure	Year 2 2015-16 measure	Year 3 2016-17 measure	Year 4 2017-18 measure	Year 5 2018-19 measure
Tracking tunnels. Mammalian animal movements.	MOWS: August and December.	MOWS: August and September.	MOWS: August and September.	MOWS: August and December.	MOWS: August and December.
Shorebird and seabird breeding.	MOWS: Visual counts twice monthly from September to February.	MOWS: Visual counts twice monthly from September to February.	MOWS: Visual counts twice monthly from September to February.	MOWS: Visual counts twice monthly from September to February.	MOWS: Visual counts twice monthly from September to February.
Shorebird populations.	MOWS: Visual counts every two weeks mid-August to end of February.	MOWS: Visual counts every two weeks mid-August to end of February.	MOWS: Visual counts every two weeks mid-August to end of February.	MOWS: Visual counts every two weeks mid-August to end of February.	MOWS: Visual counts every two weeks mid-August to end of February.
Pitfall traps – Invertebrates.	Contracted out: Traps checked every second month.	Contracted out: Identification and report.			

Monitoring type	Year 1 2014-15 measure	Year 2 2015-16 measure	Year 3 2016-17 measure	Year 4 2017-18 measure	Year 5 2018-19 measure
Pitfall traps: Reptiles.	Contracted out:  Set for three days spring and autumn.	Contracted out:  Set for three days spring and autumn.	Contracted out:  Set for three days spring and autumn.	Contracted out:  Set for three days spring and autumn.	Contracted out:  Set for three days spring and autumn.
Plant transects.  Plant communities composition.	Contracted out:  Survey.	Contracted out:  Scott Height Frequency plots 10 x 10 rec. plots.	Contracted out:  Frequency plots 10 x 10 rec plots.	Contracted out:  Scott Height Frequency. plots 10 x 10 rec plots.	Contracted out:
Photo points-  Plant restoration.	MOWS:  Photos from marked positions with data sheet.	MOWS:  Photos from marked positions with data sheet.	MOWS:  Photos from marked positions with data sheet	MOWS:  Photos from marked positions with data sheet.	MOWS:  Photos from marked with data sheet.

There is a lack of historical ecological monitoring (pre-introduced pest plants and animals) on Dotterel Point. MOWS will work with qualified professionals to undertake an ecological assessment of the point to provide a baseline measure to review future monitoring results against. Assessments will include plant transects, reptile and invertebrate pitfall traps pitfall trap surveys. MOWS will be leading the monitoring of pest animal control, native bird breeding and native bird populations.

### 3 Site threat evaluation

#### 3.1 Threat assessment

##### 3.1.1 Pest animal threat

Introduced mammalian species (possum, stoat, weasel, hedgehog, rat, and mouse) pose a major threat to the breeding success of the northern New Zealand dotterel *Charadrius obscurus* - a threatened native species, and other native bird species. They also pose an unquantified threat to native reptiles; specifically shore skink and common gecko and native invertebrates.

##### 3.1.2 Pest plant threat

At present Dotterel Point is one of the least modified dune systems by pest plants in the Western Bay of Plenty. The pest plants would, if left unchecked, change the nature and biology of the spit and reduce its attractiveness as an open sand spit habitat for native species. Habitat restoration is vital to ensure the continued survival of the spit for native biodiversity and an invaluable natural protection from storms and other natural events. Recent work to remove the invasive iceplant has significantly improved the vegetation of the point.

##### 3.1.3 Human intrusion

There is readily available access to Dotterel Point along both beaches (ocean and estuary) and along the top of the dune. Quad bikes and un-controlled dogs have a significant negative impact on the habitat and breeding bird. The erection of the semi-permanent fence by MOWS has reduced the problems caused by quad bikes, but the presence of dogs is ongoing.

#### 3.2 Threat evaluation

Pest animals		Notes/trends
Possums:	<input type="checkbox"/> Absent <input checked="" type="checkbox"/> Present <input type="checkbox"/> Medium <input type="checkbox"/> High <input checked="" type="checkbox"/> Low	Unknown.
Mustelids:	<input type="checkbox"/> Absent <input checked="" type="checkbox"/> Present <input type="checkbox"/> Medium <input type="checkbox"/> High <input checked="" type="checkbox"/> Low	Stoats, specifically late in season.
Goats and deer:	<input checked="" type="checkbox"/> Absent <input type="checkbox"/> Present <input type="checkbox"/> Medium <input type="checkbox"/> High <input type="checkbox"/> Low	None.
Wallaby:	<input checked="" type="checkbox"/> Absent <input type="checkbox"/> Present <input type="checkbox"/> Medium <input type="checkbox"/> High <input type="checkbox"/> Low	None.
Rabbits/hares:	<input type="checkbox"/> Absent <input checked="" type="checkbox"/> Present <input checked="" type="checkbox"/> Medium <input type="checkbox"/> High <input type="checkbox"/> Low	
Hedgehogs:	<input type="checkbox"/> Absent <input checked="" type="checkbox"/> Present <input type="checkbox"/> Medium <input checked="" type="checkbox"/> High <input type="checkbox"/> Low	Serious problem pest.

<b>Pest animals</b>		<b>Notes/trends</b>
Rats and mice:	<input type="checkbox"/> Absent <input checked="" type="checkbox"/> Present <input type="checkbox"/> Medium <input checked="" type="checkbox"/> High <input type="checkbox"/> Low	
Cats:	<input type="checkbox"/> Absent <input checked="" type="checkbox"/> Present <input checked="" type="checkbox"/> Medium <input type="checkbox"/> High <input type="checkbox"/> Low	Occasional.

<b>Pest plants</b>				
<b>Common name</b>	<b>Botanical name</b>	<b>Density</b>	<b>Descriptive location</b>	<b>Level of threat</b>
Norfolk pine:	<i>Araucaria heterophylla.</i>	Medium.	Back dune.	Medium.
Iceplant:	<i>Aizoaceae spp.</i>	Low.	All over.	High.
Marram grass:	<i>Ammophila arenaria.</i>	Low.	Spit.	High.
Moth plant:	<i>Araujia sericifera.</i>	Low.	Back dune.	High.
Velvet groundsel:	<i>Senecio elegans.</i>	Low.	Fore dune.	Medium.
Tree lupin:	<i>Lupinus arboreus.</i>	Low.	Fore dune.	Medium.
<b>Grazing</b>				<b>Notes/trends</b>
Grazing:	<input checked="" type="checkbox"/> Absent <input type="checkbox"/> Present <input type="checkbox"/> Medium <input type="checkbox"/> High <input type="checkbox"/> Low			
<b>Land use threats</b>				<b>Notes/trends</b>
Erosion:	Significant danger posed from bicoastal erosion.			

## 4 Work programme

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### 4.1 Work programme

The following is the work programme for the spit from 2014 to 2019. The annual work programme corresponds to the works programme cost table 4.2 and works programme map 7 in regards to the area. Most actions are repeated through subsequent years of the BMP without change. These activities are listed 'as above' with any additional actions or changes noted for each activity. Works for the BMP are contained within the dune land and sandspit. Maketū Ongatoro Wetlands Society are coordinating the works programme of the BMP and contributing towards ecological monitoring and pest control activities.

MOWS will submit an annual work plan to partners by 30 June each year.

#### 4.1.1 Work programme 2014/2015

- Archaeological assessment –to determine if archaeological sites within the BMP site boundary will be affected by the proposed work programme.
- Ecological baseline monitoring – This will be done by MOWS using contractors when required. Data will be gathered on reptile, invertebrate and plant communities of Dotterel Point.
- Biodiversity monitoring – MOWS volunteers will continue to monitor shorebirds populations throughout the year with data recorded.
- Pest animal control – Traps will be checked by MOWS volunteers at monthly intervals throughout the year. Trap catch rates will be recorded and analysed by MOWS to evaluate pest animal control operations.
- Pest plant control – MOWS volunteers will control pest plants with herbicide. MOWS will work with coast care to remove ice plant and use specialist contractors to remove Norfolk pines.
- Protection fence maintenance – Due to erosion and deposition of sand on the spit the protection fence may need to be shifted from time to time to provide protection for nesting shorebirds.
- Coastal margin protection planting – MOWS will volunteer at coast care events to selectively replant areas where pest plants have been removed. MOWS will plant additional 500 coastal plants in back dune areas beyond the coast care area of interest.
- Rubbish collection – MOWS volunteers will spend 20 hours collecting rubbish from Dotterel Point.
- Signage and interpretation – Contractor and MOWS to design, construct and erect information sign about Dotterel Point and BMP by the Pukehina Surf Club.
- Project administration – MOWS will spend 30 hours of time undertaking project administration i.e. engaging contractors, co-ordinating volunteers, and advertising for public working bees, and reporting on works.

#### 4.1.2 **Work programme 2015/2016**

- Ecological baseline monitoring – As above without invertebrate monitoring.
- Biodiversity monitoring – MOWS volunteers will monitor bird populations twice monthly during September to February (breeding season).
- Pest animal control – Traps will be set out in July/August and checked by MOWS on a weekly basis until the end of January. MOWS will also lay pindone toxin to control rabbits as required and Diatrac toxin in bait stations for rats and mice in July and August.
- Pest plant control – MOWS will control dune weeds with herbicide. Refer to pest plant control notes. Contractors will be used to remove or spray remaining areas of iceplant. Contractors will be used to remove any remaining Norfolk pines.
- Protection fence maintenance – Due to erosion and deposition of sand on the spit the protection fence may need to be shifted to provide protection for nesting shorebirds.
- Coastal margin protection planting – MOWS will volunteer at coast care events to selectively replant areas where pest plants have been removed. MOWS will plant additional 500 coastal plants in back dune areas beyond the coast care area of interest.
- Rubbish collection – MOWS volunteers will spend 20 hours collecting rubbish from Dotterel Point.
- Signage and interpretation – Contractor and MOWS to design, construct and erect information signs about Dotterel Point and BMP along the spit.
- Project administration – MOWS will spend 64 hours of time undertaking project administration i.e. engaging contractors, co-ordinating volunteers, advertising for public working bees, and reporting on works.

#### 4.1.3 **Work programme 2016/2017**

- Ecological baseline monitoring – As above without invertebrate monitoring.
- Biodiversity monitoring – MOWS volunteers will monitor bird populations twice monthly during September to February (breeding season).
- Pest animal control – Traps will be set out in July/August and checked by MOWS on a weekly basis until the end of January. MOWS will also lay pindone toxin to control rabbits as required, and diatrac toxin in bait stations for rats and mice in July and August.
- Pest plant control – MOWS will control dune weeds with herbicide. Refer to pest plant control notes. Contractors will be used to remove or spray remaining areas of iceplant. Contractors will be used to remove any remaining Norfolk pines.
- Protection fence maintenance – Due to erosion and deposition of sand on the spit the protection fence may need to be shifted to provide protection for nesting shorebirds.
- Coastal margin protection planting – MOWS will volunteer at coast care events to selectively replant areas where pest plants have been removed. MOWS will plant additional 250 coastal plants in back dune areas beyond the coast care area of interest.

- Rubbish collection – MOWS volunteers will spend 20 hours collecting rubbish from Dotterel Point.
- Signage and interpretation – Contractor and MOWS to design, construct and erect information signs about Dotterel Point and BMP along the spit.
- Project administration – MOWS will spend 64 hours of time undertaking project administration i.e. engaging contractors, co-ordinating volunteers, advertising for public working bees, and reporting on works.

#### 4.1.4 **Work programme 2017/2018**

- Ecological baseline monitoring – As above without invertebrate monitoring.
- Biodiversity monitoring – MOWS volunteers will monitor bird populations twice monthly during September to February (breeding season).
- Pest animal control – Traps will be set out in July/August and checked by MOWS on a weekly basis until the end of January. MOWS will also lay pindone toxin to control rabbits as required, and diatrac toxin in bait stations for rats and mice in July and August.
- Pest plant control – MOWS will control dune weeds with herbicide. Refer to pest plant control notes. Contractors will be used to remove or spray remaining areas of iceplant. Contractors will be used to remove any remaining Norfolk pines.
- Protection fence maintenance – Due to erosion and deposition of sand on the spit the protection fence may need to be shifted to provide protection for nesting shorebirds.
- Coastal margin protection planting – MOWS will volunteer at coast care events to selectively replant areas where pest plants have been removed. MOWS will plant additional 250 coastal plants in back dune areas beyond the coast care area of interest.
- Rubbish collection – MOWS volunteers will spend 20 hours collecting rubbish from Dotterel Point.
- Signage and Interpretation – Contractor and MOWS to design, construct and erect information signs about Dotterel Point and BMP along the spit.
- Project Administration – MOWS will spend 64 hours of time undertaking project administration i.e. engaging contractors, co-ordinating volunteers, advertising for public working bees and reporting on works.

#### 4.1.5 **Work programme 2018/2019**

- Ecological baseline monitoring – Repeat of year one with invertebrate monitoring.
- Biodiversity monitoring – MOWS volunteers will monitor bird populations twice monthly during September to February (breeding season).
- Pest animal control – Traps will be set out in July/August and checked by MOWS on a weekly basis until the end of January. MOWS will also lay pindone toxin to control rabbits as required, and diatrac toxin in bait stations for rats and mice in July and August.

- Pest plant control – MOWS will control dune weeds with herbicide. Refer to pest plant control notes. Contractors will be used to remove or spray remaining areas of iceplant. Contractors will be used to remove any remaining Norfolk pines.
- Protection fence maintenance – Due to erosion and deposition of sand on the spit the protection fence may need to be shifted to provide protection for nesting shorebirds.
- Coastal margin protection planting – MOWS will volunteer at coast care events to selectively replant areas where pest plants have been removed. MOWS will plant additional 250 coastal plants in back dune areas beyond the coast care area of interest.
- Rubbish collection – MOWS volunteers will spend 20 hours collecting rubbish from Dotterel Point.
- Signage and interpretation – Contractor and MOWS to design, construct and erect information signs about Dotterel Point and BMP along the spit.
- Project administration – MOWS will spend 64 hours of time undertaking project administration i.e. engaging contractors, co-ordinating volunteers, advertising for public working bees, and reporting on works.



## Work programme costs

Area	Activity	Unit	Quantity	Rate	Cost	Cost Share				
						BOPRC	WBOPDC Reserves	WBOPDC Community Development	DoC	MOWS
<b>2014/2015</b>										
1	Archaeological Assessment	Hour	10	\$110.00	1,100	1,100	0	0	0	0
1	Ecological Baseline Monitoring	Hour	131.5	\$50.00	6,575	3,288	0	1,644	1,644	0
1	Biodiversity Monitoring	Hour	60	\$45.00	2,700	0	0	0	0	2,700
1	Pest Animal Control	Hour	122	\$45.00	5,400	1,080	1,080	0	2,160	1,080
1	Pest Plant Control	Hour	112	\$45.00	5,040	2,520	2,016	0	0	504
1	Protection Fence Maintenance	Hour	28	\$50.00	1,400	700	420	0	0	280
1	Coastal Margin Protection Planting	Plant	500	\$6.00	3,000	1,500	1,000	0	0	500
1	Rubbish Collection	Hour	20	\$25.00	500	0	0	0	0	500
1	Signage and Interpretation	Sign	1	\$2,000.00	2,000	1,000	0	800	0	200
1	Project Management	Hour	64	\$40.00	2,560	640	640	640	640	0
<b>2014/2015 - Total</b>					<b>\$30,275</b>	<b>\$11,828</b>	<b>\$5,156</b>	<b>\$3,084</b>	<b>\$4,444</b>	<b>\$5,764</b>
<b>2015/2016</b>										
1	Ecological Baseline Monitoring	Hour	54	\$50.00	2,675	1,338	0	669	669	0
1	Biodiversity Monitoring	Hour	64	\$45.00	2,880	0	0	0	0	2,880
1	Pest Animal Control	Hour	122	\$45.00	5,490	2,745	1,098	0	549	1,098
1	Pest Plant Control	Hour	38	\$45.00	1,710	855	684	0	0	171
1	Protection Fence	Hour	32	\$50.00	1,600	800	400	0	0	400
1	Rubbish Collection	Hour	20	\$25.00	500	0	0	0	0	500
1	Coastal Margin Protection Planting	Plant	500	\$6.00	3,000	1,500	1,000	0	0	500
1	Project Management	Hour	64	\$40.00	2,560	640	640	640	640	0
<b>2015/2016 - Total</b>					<b>\$20,415</b>	<b>\$7,878</b>	<b>\$3,822</b>	<b>\$1,309</b>	<b>\$1,858</b>	<b>\$5,549</b>
<b>2016/2017</b>										
1	Ecological Baseline Monitoring	Hour	53.5	\$50.00	\$2,675.00	1,338	0	669	670	0
1	Biodiversity Monitoring	Hour	64	\$25.00	\$1,600.00	0	0	0	0	1,600
1	Pest Animal Control	Hour	122	\$45.00	\$5,490.00	2,745	1,098	0	0	1,647
1	Pest Plant Control	Hour	38	\$45.00	\$1,710.00	855	684	0	0	171
1	Protection Fence	Hour	32	\$50.00	\$1,600.00	640	640	0	160	160
1	Rubbish Collection	Hour	20	\$25.00	\$500.00	0	0	0	0	500
1	Coastal Margin Protection Planting	Plant	250	\$6.00	\$1,500.00	750	500	0	0	250
1	Project Management	Hour	64	\$40.00	\$2,560.00	640	640	640	640	0
<b>2016/2017 - Total</b>					<b>\$17,635</b>	<b>\$6,968</b>	<b>\$3,562</b>	<b>\$1,309</b>	<b>\$1,470</b>	<b>\$4,328</b>
<b>2017/2018</b>										
1	Ecological Baseline Monitoring	Hour	53.5	\$50.00	\$2,675.00	1,338	0	669	670	0
1	Biodiversity Monitoring	Hour	64	\$25.00	\$1,600.00	0	0	0	0	1,600
1	Pest Animal Control	Hour	122	\$45.00	\$5,490.00	2,745	1,098	0	0	1,647
1	Pest Plant Control	Hour	38	\$45.00	\$1,710.00	855	684	0	0	171
1	Protection Fence	Hour	32	\$50.00	\$1,600.00	640	640	0	160	160
1	Rubbish Collection	Hour	20	\$25.00	\$500.00	0	0	0	0	500
1	Coastal Margin Protection Planting	Plant	250	\$6.00	\$1,500.00	750	500	0	0	250
1	Project Management	Hour	64	\$40.00	\$2,560.00	640	640	640	640	0
<b>2017/2018 - Total</b>					<b>\$17,635</b>	<b>\$6,968</b>	<b>\$3,562</b>	<b>\$1,309</b>	<b>\$1,470</b>	<b>\$4,328</b>
<b>2018/2019</b>										
1	Ecological Baseline Monitoring	Hour	88.5	\$50.00	\$4,425.00	2212.5	0	1106.25	1106	0
1	Biodiversity Monitoring	Hour	64	\$25.00	\$1,600.00	0	0	0	0	1600
1	Pest Animal Control	Hour	122	\$45.00	\$5,490.00	2745	1098	0	0	1647
1	Pest Plant Control	Hour	38	\$45.00	\$1,710.00	855	\$684.00	0	0	171
1	Protection Fence	Hour	32	\$50.00	\$1,600.00	640	640	0	160	160
1	Rubbish Collection	Hour	20	\$25.00	\$500.00	0	0	0	0	500
1	Coastal Margin Protection Planting	Plant	250	\$6.00	\$1,500.00	750	500	0	0	250
1	Project Management	Hour	64	\$40.00	\$2,560.00	640	640	640	640	0
<b>2018/2019 - Total</b>					<b>\$19,385</b>	<b>\$7,843</b>	<b>\$3,562</b>	<b>\$1,746</b>	<b>\$1,906</b>	<b>\$4,328</b>
<b>Total Cost Programme</b>					<b>\$85,960</b>	<b>\$33,640</b>	<b>\$16,102</b>	<b>\$7,010</b>	<b>\$9,242</b>	<b>\$19,969</b>

### 4.2 Site compliance monitoring of works (operations)

This table specifies the type and frequency of compliance and operational monitoring required providing confidence in the effectiveness of the work programme.

Compliance activities	Programme
Pest plant control:	<p><b>MOWS:</b> To monitor eradication of pest plants and new occurrences.</p> <p><b>Bay of Plenty Regional Council:</b> Inspection of works takes place annually to check if methods of control are meeting the site objective of eradication.</p> <p><b>Western Bay District Council:</b> Site maintained at all times to reduce new occurrences during and after the BMP timeframe.</p>
Pest animal control:	<p><b>MOWS:</b> To monitor eradication of pest plants and new occurrences.</p> <p><b>Bay of Plenty Regional Council:</b> Inspection of works takes place annually to check if methods of control are meeting the site objective of eradication.</p> <p><b>Western Bay District Council:</b> Site maintained at all times to reduce new occurrences during and after the BMP timeframe.</p>

## 5 Site information

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### 5.1 Property details

Legal description:	Dotterel Point Reserve, Pukehina Beach.
Certificate of title number:	N/A.
Existing registered legal and or other protection mechanism against the site:	N/A.
Existing relevant legal documents registered against the site:	N/A.
District plan status:	Recreational Reserve.
Valuation number:	6920/31904.
BOPRC map number:	GIS 479158
BOPRC file number:	2523 111

### 5.2 Location and land use

Catchment: Little Waihi Estuary Catchment.

Land type:

Land type	Area (ha)	Tenure		LUC Units
Sand spit and associated coastal dune land.	6.8	<input type="checkbox"/> Private <input type="checkbox"/> Maori <input checked="" type="checkbox"/> Crown	<input checked="" type="checkbox"/> Local body <input type="checkbox"/> Mixed <input type="checkbox"/> Leased	8e1

### 5.3 Ecological and archaeological information

Ecological district:	Tauranga Ecological District.
Ecological status of site:	Regional significance.
Iwi/hapū information:	Ngāti Pikiao.
Archaeological information:	There are no archaeological features that will be affected by the proposed activities of the BMP.



## 6 Biodiversity Management Plan Agreement

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This Biodiversity Management Plan has been set up to provide long term protection for the site, and constitutes an agreement between Council and the landowner to undertake various actions over time to protect the site's biodiversity.

We, the undersigned signatories to this Biodiversity Management Plan acknowledge a commitment to the concept of partnering and agree to work in a cooperative and constructive manner to achieve the objectives, actions and responsibilities outlined in this Biodiversity Management Plan.

### 1 Grant money

- (a) Will be provided on completion of the works based on actual cost.
- (b) Actual costs paid will not exceed estimated costs and percentage grant rate as per the work programme unless a prior variation has been reached with Bay of Plenty Regional Council.
- (c) The Department of Conservation reserves the right to renegotiate its share of the cost after a period of two years from the signing of the agreement.

### 2 Ongoing maintenance

It is accepted that the any fencing in place protecting the site is maintained by the landowners.

### 3 Monitoring

The Council will at the Council's expense periodically monitor the effectiveness of the works and activities carried out in fulfilling the work programme.

This agreement is made on the \_\_\_\_\_ day of \_\_\_\_\_

between:

..... Date: .....  
Glenn Ayo  
**Environmental Development Officer, Western Bay of Plenty District Council**

..... Date: .....  
Peter Watson  
**Reserves and Facilities Manager, Western Bay of Plenty District Council**

..... Date: .....  
Jeff Milham  
**Conservation Services Manager, Department of Conservation (Tauranga/Rotorua)**

..... Date: .....  
Julian Fitter  
**Chairman, Maketū Ongatoro Wetland Society**

..... Date: .....  
Robyn Skelton  
**Manager Land Management – Western, Bay of Plenty Regional Council**

..... Date: .....  
Warwick Murray  
**General Manager of Environmental Delivery, Bay of Plenty Regional Council**



## **7 Work programme map number GIS 479158**

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