EFFECTS OF SELECTED ACTIVITIES ON SHOREBIRDS IN TASMAN DISTRICT:

MANAGEMENT ISSUES AND OPTIONS FOR SITES OF INTERNATIONAL IMPORTANCE

David S. Melville and Rob Schuckard
November 2013

Executive Summary

This report is a companion to *Shorebirds of Farewell Spit, Golden Bay and Tasman Bay* (Schuckard & Melville, August 2013) which reviewed trends in shorebird numbers in the Top of the South Island. That 'state of our shorebirds' report showed that several species of arctic-breeding migratory shorebirds including Red Knot, Bar-tailed Godwit, and Ruddy Turnstone in the Top of the South Island have declined by an average of over 25% over the periods of 1983-2000 and 2001-2012. Other shorebird populations such as Banded Dotterel and Wrybill are currently stable in Tasman District, but have declined as a whole over New Zealand. Eight areas in the Top of the South Island were identified as being of international importance for shorebirds, meeting criteria for designation under the Ramsar wetland convention to which New Zealand is a party – currently only Farewell Spit is so recognised.

This report analyses the threats to shorebirds and provides recommendations to address them. The reasons for these declining populations are varied but disturbance to high-tide roosts throughout the year is considered the most immediate threat facing these birds in this region. The next highest threat in Tasman District is disturbance to Banded Dotterel and Variable Oystercatcher breeding areas. Following the direct disturbance of birds, habitat degradation or destruction of high-tide roosting areas, breeding areas and feeding areas are the next most important threats (in that order).

Dogs and people walking into important shorebird areas are significant threats in Tasman, as in many parts of the world. However, other threats including horse-riders, vehicles, marine craft, and aircraft, while coastal erosion and sea-level rise are also important in Tasman. A range of management methods including signage/education, dog control bylaws, and restricting public access are considered with advantages and disadvantages listed for each.

It is recommended that the Tasman Resource Management Plan (TRMP) be reviewed to expand the rules regarding the effects of vehicles and craft (including hovercraft) to include disturbance that is likely to displace shorebirds from an area temporarily or long term. Schedule 25D of the Plan also needs revising to include the seven additional internationally-significant sites: Westhaven Inlet, Pakawau, Totara Avenue/Collingwood, Rototai, Motueka Sandspit, West Waimea Inlet and East Wiamea Inlet. Management actions are recommended specifically for each of the internationally-important shorebird areas in Tasman.

Bar-tailed Godwits roosting at Bell Island Shellbank (David Melville)

CONTENTS

Introduction

Existing Controls for Managing Threats to Shorebirds

Ranking the Threats to Shorebirds

Potential management responses to identified threats
- Disturbance to high tide roosts
- Disturbance to breeding areas
- Degradation/physical disturbance to high tide roosts and breeding areas
- Degradation/physical disturbance to feeding grounds

Site specific recommendations for management

Monitoring

Appendices
1. Sites of international importance for shorebirds and DOC and TDC reserves at/nearby.
2. New Zealand Coastal Policy Statement: Policy 11 Indigenous biological diversity (biodiversity)
3. Threatened and at risk coastal bird species in Tasman District
4. Extracts from the Tasman Resource Management Plan of objectives and policies relevant to the conservation and management of shorebirds and their habitats

South Island Pied Oystercatchers roosting at Bell Island Shellbank (David Melville)

Introduction

This report briefly reviews the main issues or threats to shorebirds within Tasman District and outlines potential management options to minimise such threats, especially at sites of international importance. This report is a companion to the report entitled '*Shorebirds of Farewell Spit, Golden Bay and Tasman Bay'* (August 2013) which presents a picture of declining populations of several species of shorebirds (see Figure 1).

	Farewell Spit	Golden Bay	Tasman Bay	Trend in Top of South Island
Comparison November counts 1983-2000 with 2001-2011 for migratory species				
Red Knot	-37%	-55%	74%	Decline
Bar-tailed Godwit	-31%	1%	-19%	Decline
Ruddy Turnstone	-42%		-59%	Decline
Comparison June counts 1984-2001 with 2002-2012 for endemic species				
Variable Oystercatcher	46%	149%	161%	Increase
South Island Pied Oystercatcher	-20%	61%	-1%	Stable
Pied Stilt			103%	Increase
Banded Dotterel	-14%	64%	78%	Stable
Wrybill			3%	Stable

Table 1: Trends in shorebird populations in the Top of the South Island.

This report considers the threats to shorebirds within Tasman District, ranks them with respect to particular shorebird habitat, and provides a brief evaluation of management options for threat reduction and site-specific management actions.

The coasts of Tasman District provide important habitats for a variety of both endemic and migrant shorebirds. These birds require good quality feeding grounds, which generally means relatively unpolluted areas with low suspended solids, low nutrient levels and a rich invertebrate life in the intertidal substrate (benthos). These areas are also generally preferred by humans for recreation. At high tide the birds require an undisturbed area where they can roost, and those that nest locally also require relatively undisturbed beaches if they are to breed successfully. With increasing pressure on Tasman's coastline the challenge is to manage coastal areas, especially those of international importance, to safeguard the region's shorebird populations whilst recognising the community's interests in the same coastal areas. Threats to the arctic-breeding migratory shorebirds, in particular coastal land claim (reclamation), occur at stop-over sites on the eastern seaboard of Asia, but these fall outside the remit of local councils.

Tasman District has eight coastal areas that are of international importance for resident and/or migratory shorebirds[1] - meeting selection criteria under the Ramsar Convention on the Conservation of Wetlands, to which New Zealand is a Party. These are (Figure 1):

- Westhaven Inlet
- Farewell Spit
- Pakawau
- Collingwood
- Rototai
- Moueka Sandspit
- West Wamea Inlet (including Grossi Point and No-Mans Island)
- East Waimea Inlet (including Rabbit Island East, Bell Island Shellbank, Sand Island and Nelson Airport area [the latter falling outside Taman District])

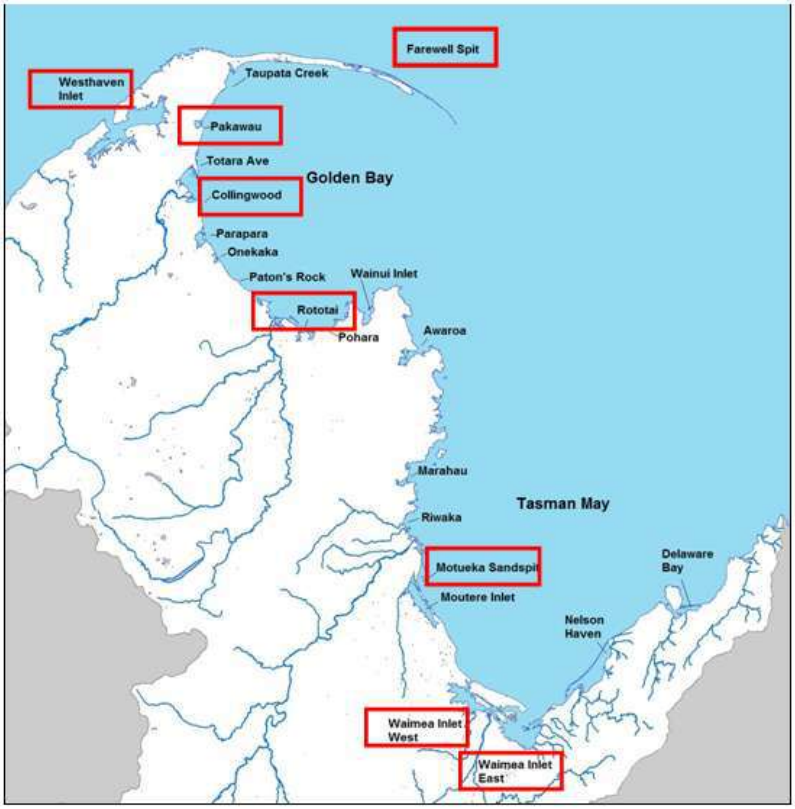

Figure 1. Sites of international importance for shorebirds in Tasman District (red boxes)

Of these, Farewell Spit and No Man's Island are Nature Reserves administered by the Department of Conservation, with restricted public access, but all other sites are open to public access. Motueka Sandspit and Raumanuka are Scenic Reserves under the jurisdiction of the Department of Conservation, while Rabbit Island is a Recreation Reserve that also has plantation forestry, administered by the Tasman District Council. A list of Department of Conservation and Tasman District Council reserves that include all/part of internationally

[1] Schuckard, R. & Melville, D.S. 2013. *Shorebirds of Farewell Spit, Golden Bay and Tasman Bay*. Prepared for Nelson City Council and Tasman District Council. Pp. 81.

important shorebird areas and/or are in the immediate vicinity of such sites is given in Appendix 1.

The Ramsar Convention requires (Article 3.1) that 'The Contracting Parties shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List [of Wetlands of International Importance], and as far as possible the wise use of wetlands in their territory'. New Zealand's Controller and Auditor General has identified this as the 'key obligation' under the convention. Wise use of wetlands is defined as 'the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development'[2].

The *Resource Management Act* and the *New Zealand Coastal Policy Statement* provide a legal framework for adoption of the 'wise use' concept in New Zealand, while the *Tasman Resource Management Plan* (TRMP) provides for local implementation.

Existing Controls for Managing Threats to Shorebirds

The New Zealand Coastal Policy Statement

Policy 11 (Appendix 2) aims to protect indigenous biological diversity in the coastal environment, in particular by avoiding adverse effects of activities on indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System lists. Coastal bird species recorded from Tasman District that are included in the current list[3], including nine species of shorebird, are given in Appendix 3. Policy 11 also calls for avoidance of significant adverse effects, and 'avoid, remedy or mitigate other adverse effects of activities' on, *inter alia*:

- Habitats in the coastal environment that are important during the vulnerable life stages of indigenous species
- Habitats, including areas and routes, important to migratory species

The Tasman Resource Management Plan

The Tasman Resource Management Plan (TRMP) includes a number of provisions that are relevant to the conservation of shorebirds and their habitats. The following highlights some of the relevant matters. Extracts of some relevant objectives and policies are given in Appendix 4

1. **Sites of significance for shorebirds.** These are identified in Schedule 25D of the TRMP. However, only one site (Farewell Spit) is currently listed as a site of 'international' importance for its significant shorebird communities. Seven sites currently listed as being of 'national' importance need to be upgraded to 'international' status following the assessment of Schuckard & Melville (2013).

[2] http://www.ramsar.org/ pdf/res/key_res_ix_01_annexa_e.pdf

[3] Robertson, H.A.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Miskelly, C.M.; O'Donnell, C.J.F.; Powlesland, R.G.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. 2013: Conservation status of New Zealand birds, 2012. *New Zealand Threat Classification Series 4.* Department of Conservation, Wellington. 22 p.

2. **Aquaculture**: The issue of the effect of aquaculture on the recruitment of the benthos (shorebird food supply) is considered in the resource consent process. As an example, this issue was considered for the inter-tidal flats of the inner Farewell Spit area when the (then) Ministry of Fisheries processed permits for aquaculture management areas (AMAs) for Golden Bay. The Ministry limited the extent of the AMAs in view of uncertainty as to potential adverse impacts on benthos (and potentially shorebirds). The TRMP now limits the amount of shellfish aquaculture for this reason, among others.

3. **Vehicles and craft**: The TRMP (25.2.2) permits the passage of craft or vehicles across or along the foreshore only if:

    (b) the launching and retrieval of any craft, the most direct route is taken between any launching ramp and water.

    (c) In relation to any craft or vehicle, including any motorcycle, land yacht, or hovercraft:

        (i) there is no damage[4] to the foreshore or seabed or to animal or plant habitats;

    (d) There is no vehicle or craft passage across any foreshore within any estuary at all times that that foreshore is exposed to the air, except where the passage is for or in connection with:

        (i) any lawful structure, occupation or disturbance; or

        (ii) any scientific research or coastal management activity.

    The TRMP (25.3.2.1) also permits the use of any craft (ship) for navigation purposes if:

    (b) The activity does not damage or destroy coastal marine habitat or species within the estuarine or intertidal areas identified in Schedule 25D.

    (c) The activity does not disturb coastal marine species in a manner that prevents animals or plants from occupying their usual habitat within the estuarine on intertidal areas identified in Schedule 25D.

4. **Aircraft**: The TRMP (25.3.3.1). Coastal permit to land aircraft is currently a discretionary activity (requires resource consent if within 500m seaward of MHWS) in areas with nationally or internationally important natural ecosystem values (Listed in Schedule 25.D). No such consents have been applied for or granted. However, there is a current issue with a pilot landing a seaplane near Port Motueka which is being investigated by council.

5. **Contaminant discharge**: Rules in the TRMP should theoretically protect coastal environments from discharges. However, there have been several instances where excessive sediment discharges from land disturbance and subsequent erosion has affected coastal and stream environments. A review of land disturbance rules under way to address this, including whether there should be consideration of preventative measure for sediment and erosion control. Currently compliance with the rules is all

[44] Emphasis added.

based on levels of sediment in the stream bed or water column. Usually when such an effect is measured it is too late and the effect can last for very long time periods.

Conservation Act and the Reserves Act

These are relevant to areas under Department of Conservation jurisdiction.

Kayakers approaching roosting Bar-tailed Godwits at Motueka Sandspit (Rob Schuckard)

Horse riding on the beach Raumanuka Scenic Reserve, Motueka (Julia Melville)

Ranking the Threats to Shorebirds

Shorebirds around the coasts of Tasman District are subject to a variety of direct and indirect threats, including:

- Disturbance
- Habitat loss and degradation
- Aquaculture and fisheries
- Pollution
- Exotic organisms
- Climate change and sea-level rise

The nature of these threats is explained in Schuckard & Melville (2013). These potential threats may impact on birds whilst roosting, nesting or foraging.

Table 1 prioritises threats in terms of their potential to adversely impact shorebird populations within Tasman District.

Table 1. Prioritisation of threats to shorebirds in Tasman District

Rank	Threat	Impact	Season
1	**Disturbance to high tide roosts** e.g. by activity of people, dogs, horses, vehicles, aircraft and watercraft.	Disturbance results in increased energy expenditure as birds are forced to fly, reduced rates of pre-migratory fattening and reduced survival.	Throughout the year
2	**Disturbance to breeding areas** e.g. by predators, activity of people, dogs, horses, vehicles, aircraft and watercraft.	Disturbance results in reduced breeding success and contributes to population declines.	Summer (September-March)
3	**Degradation of high tide roosts** e.g. vehicle damage, sea-level rise, erosion and re-vegetation	Loss of roosting habitat may result in increased energy expenditure as birds are forced to fly further, reduced rates of pre-migratory fattening and reduced survival.	Throughout the year

	projects		
4	**Degradation of breeding areas** e.g. vehicle damage, sea-level rise, erosion and re-vegetation projects	Loss of breeding habitat contributes to population declines.	Throughout the year
5	**Degradation of feeding grounds** e.g. sedimentation and other pollution, aquaculture, shellfish harvesting, vehicles, exotic organisms (plants and animals)	Loss of foraging habitat contributes to population declines.	Throughout the year

Hovercraft in Waimea Inlet (Don Cooper)

Potential management responses to identified threats

The potential threats identified above can be managed in a variety of ways. For each issue or threat various management options are listed and the advantages and disadvantages of each option are outlined (see Tables 2-5). This is developed in separate tables for disturbance activities at high tide roosts, breeding and feeding areas.

Table 2. Disturbance to high tide roosts (this issue is ranked the most immediate threat to shorebirds as a whole)

Issue/Threat	Management options		Pros	Cons
Walkers	Public awareness	Signage - targeted at entry points	Easy to erect and can be moved as circumstances change. If the messages are simple and clear and signs sited well, people cannot say that they were not informed if the signs are at all key access points.	People ignore signs. Signs subject to vandalism and natural damage (beach erosion).
		Public events (e.g. Welcome to the Godwits)	Opportunity for broad-based community support – e.g. Motueka Arts Society.	Only some of the community will attend – usually those already sympathetic to the cause – those less likely to comply with the rules are those less likely to attend.
		Volunteer rangers	Involves the community in safeguarding sites. More surveillance time available than can be supplied by Council officers.	No authority to undertake enforcement if required.
	Restrict public access at key times – this is only possible if the land is owned by the council or Department of		Useful when all other avenues fail.	Likely to be unpopular unless well explained.

	Conservation			
Dog walkers	Public awareness	Events - e.g. Dog's Breakfast[5] ; include information for dog owners at time of dog registration or adoption from SPCA.	Opportunity for broad-based public support – e.g. kennel club, SPCA	Only some dog owners will attend events.
		Volunteer rangers[6].	Involves the community in safeguarding sites. More surveillance time than can be supplied by Council officers.	Purely educational and can notify Council officers of possible offences. No authorisation to enforce bylaws. Could put volunteer's safety at risk due to potential aggressive response by those breaking the rules.
	Increase compliance monitoring by Council warranted officers. 1 or 2 warnings given before fines are issued.		Clear evidence from other regions (e.g. Christchurch) that face-to-face contact with enforcement officer does work.	Increase in budgets for Council staff time.
	<u>Dog Control Bylaw[7]:</u> Dog prohibition areas Leash control areas Enable infringement notices to be issued under this Bylaw		Legally enforceable.	Low to modest cost. Difficulty of enforcement (TDC staff constraints). Requires public awareness to garner

[5] This is a successful Australian initiative to develop conservation awareness among dog owners/walkers.

[6] Tasman District Council voluntary Launch Wardens do have powers to enforce provisions of the Council Bylaws relating to water safety and these could potentially be copied if a bylaw was enacted.

[7] The objects of the Dog Control Act include: (a) to make better provision for the care and control of dogs— (iv) by imposing on owners of dogs obligations designed to ensure that dogs do not injure, endanger, or cause distress to any stock, poultry, domestic animal, or protected wildlife. All shorebirds are protected under the Wildlife Act.

				support for changes to Bylaws.
	Liaison with DOC re dogs on Conservation Estate.[8]		Reduce inconsistencies between overlapping legal responsibilities. Need to resolve land status for Motueka Sandspit.	'Tradition' of taking dogs on some Conservation Estate lands but particularly the tradition of taking the dog to the beach.
Horse riding	Public awareness	Signage – targeted at entry points	Easy to erect and can be moved as circumstances change. If the messages are simple and clear and signs sited well, people cannot say that they were not informed if the signs are at all key access points.	Horse riders more likely to ignore signs if they cannot concentrate so well while keeping the horse under control as well as the sign height will be low relative to the rider. Signs subject to vandalism and natural damage (beach erosion).
		Events (e.g. Welcome to the Godwits).	Opportunity for broad-based public support – e.g. Golden Bay Pony Club.	Only some of the community will attend – usually those already sympathetic to the cause – those less likely to comply with the rules are those less likely to attend.
		Volunteer rangers	Involves the community participation in safeguarding sites. More surveillance time than can be supplied by Council officers.	Purely educational and can notify Council officers of possible offences. No authorisation to enforce bylaws. Could put volunteer's safety at risk due to potential aggressive response by those breaking the rules.
	Liaison with DOC re horses on Conservation Estate[9].		Reduce inconsistencies between overlapping legal	'Tradition' of taking horses on the beach and some Conservation Estate lands.

[8] The Reserves Act 1997 s122A prohibits, unless specifically authorised for a particular purpose, the taking of dogs onto …. [a] scenic reserve …

			responsibilities. Need to resolve land status for Motueka Sandspit.	
	Increase compliance monitoring by Council warranted officers. 1 or 2 warnings given before fines are issued.		Clear evidence from other regions that face to face contact with enforcement officer does work.	Increase in budgets for Council staff time.
Off road vehicles	Public awareness	Signage - targeted at entry points	Easy to erect and can be moved as circumstances change.	People ignore signs.
		Liaison with 4x4 clubs etc.	Opportunity for broad-based public support – e.g. Nelson 4 Wheel Drive Club	Many 4x4 drivers are not club members
		Volunteer rangers	Involves the community in safeguarding sites. More surveillance time than can be supplied by Council officers.	Purely educational and can notify Council officers of possible offences. No authorisation to enforce bylaws. Could put volunteer's safety at risk due to potential aggressive response by those breaking the rules.
	Block access to beaches at key locations.		Prevents direct disturbance as well as habitat destruction.	Legality may be challenged in some circumstances. Drivers will seek alternative access.
	Review vehicle access. Place temporary restrictions on access on key 'legal roads' at		Prevents direct disturbance as well as habitat destruction.	Time consuming legal process. Enforcement once closed difficult.

[9] Horses are not permitted in Scenic Reserves (s94 Reserves Act)

	critical times of year (can be done under Local Government Act, 1974).		
	Increase compliance monitoring by Council warranted officers. 1 or 2 warnings given before fines are issued.	Clear evidence from other regions that face to face contact with enforcement officer does work.	Increase in budgets for Council staff time. However, if targeted to a few key sites at key times this time requirement may not be much.
Marine craft including Personal Water Craft (PWC) such as jet skis.	Navigation Safety Bylaw[10]	Ensure that any new water ski areas, PWC areas etc. do not adversely impact roost sites. Maintain current Rabbit Island East water ski and PWC area boundaries.	
	Public awareness – liaison with local sailing/boating clubs and kite surfing schools. Information at PWC retail outlets.	Opportunity for broad-based public support – e.g. Motueka Power Boat Club, Motueka Yacht and Sailing Club, Mapua Boat Club, Pohara Boat Club, Kite Surf Nelson, Kitescool.	Not all craft operators will accept restrictions.
Hovercraft[11]	Prohibit use of hovercraft within 500m of MHWS at internationally important roost	Very little existing hovercraft activity so opportunity to be pre-	Craft operators may not accept restrictions.

[10] The Navigation Safety Bylaw cannot be used for purposes other than navigation safety, but changes to locations of water ski lanes etc. could potentially impact roost sites.

[11] Hovercraft and wing-in-ground-effect vehicles are currently classified as marine craft, not aircraft when operating over water (TRMP 2.2); they are vehicles when operating over land (Land Transport Act).

	sites. (Similar to current restriction on aircraft landing). Consider revising TRMP 25.2.2.1(c) to take account of disturbance from use of hovercraft passage across or along the foreshore prohibit use on beaches.	emptive.	
Aircraft	Legal flight restrictions Ensure that low flying zones (for training) are situated away from important shorebird sites.	Legal control of minimum flight height[12]. Legal control of minimum flight height[13].	Difficult to get approval for additional 'restricted areas'. Difficult to enforce.
	Float planes	Maintain restrictions on landing/take off within 500 m of MHWS (TRMP 25.3.3.1)	Existing provision – problem to enforce.
	Public awareness – liaison with training schools, flying clubs, commercial operators etc.	Opportunity for broad-based public support – e.g. Nelson Aero Club, Nelson Aviation College, Tasman Helicopters.	Aircraft need options for flying in different weather conditions. Aircraft (in particular helicopters) need opportunities for training flights.

[12] Currently the minimum flight height is 500 ft, (Civil Aviation Rules 91,311) however the Civil Aviation Authority of New Zealand recommends: 'Where possible, pilots should avoid over flying bird nesting/roosting areas either along the coast or other wetlands, or remain at least 1,000 feet above them, to minimise disturbance to birds'. Civil Aviation Authority of New Zealand.2003. *Bird hazards*. p. 12. The Nelson Aviation College has voluntarily agreed with the Department of Conservation to maintain a minimum height of 1,000 ft above Mouteka Sandspit. Farewell Spit and adjacent intertidal areas are a 'restricted area' with a minimum height limit of 2,000 ft.

[13] Nelson Aviation College currently has an approved low flying zone at the Riwaka River mouth (minimum 200ft for fixed wing aircraft).

		Potential to reduce bird strike risk/improve aviation safety.	

Dog's Breakfast event, Australia (New South Wales Department of Environment and Heritage)

Table 3. Disturbance to breeding areas (this issue is ranked the second highest threat to shorebirds as a whole)

Issue/Threat	Management options	Pros	Cons
See above for disturbance to high tide roosts – most of these provisions are also relevant to breeding areas			
Walkers	Fencing of nesting areas e.g. Banded Dotterel and Variable Oystercatcher.	Protects nests from inadvertent damage (e.g. trampling)	Draws attention to nesting areas. Requires someone to find and then mark nesting areas. Visual impact of posts with signs.
	Public awareness – 'I'm a wet sand walker'[14]	Opportunity for broad-based public support. Walking below high tide line does not threaten nests/nesting sites.	Some people will want to walk at high tide/beachcomb.
	Maori Rahui – example Taranaki Whanui kaumatua who recently placed a land based temporary rahui at Parangarahu, on the Pencarrow Coast.	Wider community involvement, recognition of kaitiaki role of iwi in bird conservation	None
Dog walkers	Fencing of nesting areas e.g. Banded Dotterel and Variable Oystercatcher.	Protects nests from inadvertent damage (e.g. trampling, predation)	Draws attention to nesting areas. Requires someone to find

[14] This is a successful Australian initiative to encourage people to walk below the high tide line.

			and then mark nesting areas. Visual impact of posts with signs.
	Public awareness – 'I'm a wet sand walker' (walk below the high tide mark)	Opportunity for broad-based public support. Walking below high tide line does not threaten nests/nesting areas.	Some people will want to walk at high tide/beachcomb.
Horse riding	Fencing of nesting areas e.g. Banded Dotterel and Variable Oystercatcher.	Protects nests from inadvertent damage (e.g. trampling)	Draws attention to nesting areas. Requires someone to find and then mark nesting areas. Visual impact of posts with signs.
	Public awareness – 'I'm a wet sand walker' (walk below the high tide mark).	Opportunity for broad-based public support. Walking below high tide line does not threaten nests/eggs/chicks.	Some people will want to walk at high tide/ beachcomb.
Off road vehicles	Public awareness – Liaison with 4x4 clubs etc.	Opportunity for broad-based public support.	Many 4x4 drivers are not club members
	Fencing of nesting areas e.g. Banded Dotterel and Variable Oystercatcher.	Protects nests from inadvertent damage (e.g. running over by vehicle)	Draws attention to nesting areas. Requires someone to find

			and then mark nesting areas. Visual impact of posts with signs.
	Block access to beaches at key locations.	Prevents direct disturbance as well as habitat destruction.	Legality may be challenged in some circumstances. Drivers will seek alternative access.
Hovercraft	Prohibit use of hovercraft within 500m of internationally important breeding areas. (Similar to current restriction on aircraft landing) Consider revising TRMP 25.2.2.1(c) to take account of disturbance from use of hovercraft passage across or along the foreshore – prohibit use on beaches.	Little existing hovercraft activity so opportunity to be pre-emptive.	Craft operators may not accept restrictions.
Predators	Predator control measures implemented	Opportunity for community involvement	Cost of traps. Need for regular checking and maintenance in salty environment.

Banded Dotterel nest (Rob Schuckard)

Sign in Abel Tasman National Park (David Melville).

Banded Dotterel nest with protective fencing, Motueka Sandspit - fencing of individual nest attracts public attention – generally it is better to fence off nesting areas rather than individual nests (David Melville)

Table 4. Degradation of high tide roosts and breeding areas (this issue is ranked the third highest threat to shorebirds as a whole)

Issue/threat	Management options	Pros	Cons
Vegetation encroachment – birds like open spaces	Liaise with Coast Care and other community groups not to plant at roost sites, or to initiate planting at certain distances from them.	Roost sites maintained.	Groups may not understand why planting native vegetation is seen as a negative activity in some areas. Planting may enhance predator habitat.
Coastal erosion	Undertake more regular minor plan changes to zone maps reflect the change in the coastal (MHWS) boundaries in response to natural coastline change. Limit the ability to erect coastal erosion protection structures where there is a buffer between the eroding coastline and any existing/likely future development.	Allows new habitat to become established as coastline moves – good for the environment as well as reducing storm damage through natural processes (saves money). Cannot 'fight' natural coastal processes driven by the sea.	Private land ownership issues. Cost. Difficult to achieve where there is already established development or infrastructure close to the coastal margin
Sea level rise	Allow for realignment of coastal planning boundaries in response to natural coastline change	Allows new habitat to become established as coastline moves – good for the environment as well as reducing storm damage through natural processes (saves money). Cannot 'fight' natural	Private land ownership issues. Cost.

			coastal processes driven by the sea.	
Beach grooming[15]	Maintain TRMP controls on mechanical beach grooming and replenishment, i.e. subject to a Resource Consent and assessment of effects should include potential impacts on shorebirds.		Ensures that physical disturbance to roosts and breeding areas are avoided.	Cost (Resource Consent application).
Off road vehicles	Public awareness	Signage	Easy to erect and can be moved as circumstances change.	People ignore signs.
		Liaison with 4x4 clubs etc.	Opportunity for broad-based public support – e.g. Nelson 4 Wheel Drive Club	Many 4x4 drivers are not club members
		Volunteer rangers	Involves the community in safeguarding sites. More surveillance time than can be supplied by Council officers.	Purely educational and can notify Council officers of possible offences. No authorisation to enforce bylaws. Could put volunteer's safety at risk due to potential aggressive response by those breaking the rules.
	Block access for vehicles to beaches		Prevents direct disturbance as well as habitat destruction.	Legality may be challenged. Drivers will seek alternative access.

[15] Regular mechanical beach re-nourishment and redistribution (grooming) to restore beach profiles for erosion protection and amenity reasons is currently carried out at Kaiteriteri and to a lesser extent Torrent Bay. At both these sites any effects on birds is recognised and specifically controlled under Resource Consent. For example, works is restricted to non-breeding times. If this activity was to be replicated in other areas it would be subject to similar conditions.

	Review vehicle access Close 'legal roads'	Prevents direct disturbance as well as habitat destruction.	Time consuming legal process. Enforcement once closed difficult.
	Increase compliance monitoring by Council warranted officers. 1 or 2 warnings given before fines are issued.	Clear evidence from other regions that face-to-face contact with enforcement officer does work.	Increase in budgets for Council staff time.

Signs at Motueka Sandspit (David Melville)

Table 5. Degradation of feeding grounds

Issue/threat	Management options	Pros	Cons
Offshore aquaculture – harvest of zooplankton reduces recruitment of benthos on intertidal flats	Environmental assessments under RMA to include assessments of impacts on intertidal life. (Note: this was provided for in the decision about aquaculture in Golden Bay affecting Farewell Spit)	Continued recruitment of benthos on intertidal flats for consumption by both shorebirds and people.	May limit the extent of future offshore aquaculture in some areas (e.g. near Farewell Spit)
Commercial and recreational shellfish [and worm][16] harvesting in intertidal areas	Liaise with Ministry of Primary Industries. Continue to restrict harvesting in intertidal areas. Environmental Assessments should include assessments of potential effects on shorebirds. Liaise with iwi re sustainable harvesting.	Food remains available to shorebirds. Community support for sustainable management.	May result in reduced opportunities for future harvesting.
Encroachment of exotic *Spartina* (cord grass)	Continue herbicide spraying to achieve total eradication. Maintain current pest status.	Intertidal foraging areas maintained (good for general ecosystem health, not just birds).	Requires continued monitoring and treatment.
Invasion of new	Maintain current biosecurity	Intertidal foraging areas	Requires continued monitoring and

[16] Not thought to be carried out at present, but could become an issue in future.

exotic organisms (animals and plants)	surveillance.	maintained (good for general ecosystem health, not just birds).	treatment. Cost (but also potential costs if damaging/hazardous organisms become established).
Sedimentation	Reduce fine suspended sediment inputs to estuaries.	Reduces the likelihood of adverse effects on the coastal environment including recreational and commercial shellfish harvesting. This is a core activity of Council. The options for removal of sediment once it is in the coastal environment are limited.	Monitoring cost
Pollution	Maintain or improve pollution prevention and control measures – particularly controls at facilities using hazardous substances. Oil spill contingency planning should include important shorebird sites.	Reduces the likelihood of adverse effects on the coastal environment. This is a core activity of Council.	Monitoring cost
'Sporting' events – e.g. Muddy Buddy, Abel Tasman Run	Liaise with organisers to avoid sensitive areas and minimise impacts through site selection.	Reduced adverse environmental effects.	Some sporting events may require resource consents or consider alternative areas.
Coastal erosion	Allow for realignment of coastal planning boundaries	Allows new habitat to become established as	Private land ownership issues.

	in response to natural coastline change. Limit the ability to erect coastal erosion protection structures where there is a buffer between the eroding coastline and any existing/likely future development.	coastline moves – good for the environment as well as reducing storm damage through natural processes (saves money).	Difficult to achieve where there is already established development or infrastructure close to the coastal margin
Sea-level rise	Allow for realignment of coastal planning boundaries in response to natural coastline change	Allows new habitat to become established as coastline moves – good for the environment as well as reducing storm damage through natural processes (saves money).	Private land ownership issues. Difficult to achieve where there is already established development or infrastructure close to the coastal margin
Off road vehicles	Public awareness – signage - targeted at entry/exit points	Easy to erect and can be moved as circumstances change.	People ignore signs. Signs subject to vandalism and natural damage (beach erosion).
	Public awareness – volunteer rangers	Community participation in safeguarding sites. More surveillance time than can be supplied by Council officers.	Purely educational and can notify Council officers of possible offences. No authorisation to enforce bylaws. Could put volunteer's safety at risk due to potential aggressive response by those breaking the rules.
	Block access to beaches	Prevents direct disturbance as well as habitat destruction.	Legality may be challenged. Drivers will seek alternative access.
	Review vehicle access - Close	Prevents direct disturbance	Time consuming legal process.

	‘legal roads’	as well as habitat destruction.	Enforcement once closed difficult.
	Public awareness – liaison with 4x4 clubs etc.	Opportunity for broad-based public support – e.g. Nelson 4 Wheel Drive Club	Many 4x4 drivers are not club members
	Increase compliance monitoring by Council warranted officers. 1 or 2 warnings given before fines are issued.	Clear evidence from other regions that face-to-face contact with enforcement officer does work.	Increase in budgets for Council staff time.

Horse riding above the tideline, Motueka Sandspit Scenic Reserve (David Melville)

Site specific recommendations for management

Future management of sites to ensure that they retain their status of international importance will require management of threats, both directly at individual sites and in the wider environment. In particular it must be recognised that all of the currently identified 'sites' of international importance (as referred to in Melville & Schuckard, 2013) relate to roost sites – and do not take into account foraging areas used by waders from the various roosts nor incorporate the importance of a site as a breeding habitat (Table 6). Furthermore a precautionary approach for other areas of lower than international importance is required. An update of breeding shorebirds and other coastal species including 'threatened' and 'at risk' Black-billed and Red-billed Gulls, Caspian Tern, White-fronted Tern and Banded Rail is of utmost urgency. OSNZ could potentially play an important role for this breeding habitat survey.

South Island Pied Oystercatchers roosting at Bell Island Shellbank (David Melville)

Table 6. Site specific assessment of threats to internationally important shorebird sites in Tasman District

	Roosting Sites									Breeding Sites									Feeding areas										
	Physical destruction and degradation	Destruction, degradation and physical disturbance	Walkers	Dog walkers	Horse riding	Off Road Vehicles	Marine Craft	Hovercraft	Aircraft	Physical destruction and degradation	Walkers	Dog walkers	Horse riding	Off Road Vehicles	Marine Craft	Hovercraft	Aircraft	Predaors	Offshore aquaculture	Commercial and recreational intertidal shellfish harvesting	Exotic grasses smoothering benthic environment	Invasive organisms	Sedimentation	Pollution	Recreation	Coastal erosion and sealevel rise	Walkers	Dog walkers	Off Road vehicles
Farewell Spit	Δ	Θ	Θ	Θ	Θ	Θ	Θ	Θ	Θ	Θ	•	Θ	Θ	Θ	Θ	Θ	Θ	Δ	Θ	Θ	Δ	Δ	Θ	Δ	Θ	•	•	Θ	Θ
Westhaven Inlet	Θ	Δ	Θ	Θ	Θ	Θ	Θ	Θ	Θ	Δ	Θ	Θ	Θ	Θ	Θ	Θ	Θ	Δ	Θ	Θ	Δ	Δ	Δ	Δ	Δ	Δ	Θ	Θ	Θ
Pakawau	•	Θ	••	••	Δ	•	Θ	Θ	Θ	Δ	••	••	Δ	•	Δ	Δ	Θ	Δ	Θ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Collingwood	Δ	Δ	••	••	Δ	••	Δ	Δ	Θ	Δ	••	••	Δ	Δ	Δ	Δ	Θ	Δ	•	•	Δ	Δ	Δ	Δ	Θ	•	Δ	Δ	Θ
Rototai	•	Θ	•	••	••	••	Θ	Θ	Θ	••	•	••	••	••	Θ	Θ	Θ	Δ	Θ	Θ	Δ	Δ	Δ	Δ	Δ	Δ	•	•	••
Motueka Sandspit	Δ	Δ	••	••	••	•	•	Δ	•	Δ	••	••	••	•	•	Δ	•	•	Θ	Δ	Δ	Δ	Δ	Δ	•	•	Δ	Δ	•
West Waimea Inlet	Δ	Δ	•	Δ	Δ	Δ	•	Δ	Θ	Δ	Δ	Δ	Δ	Δ	•	Δ	Θ	•	Θ	Δ	Δ	•	Δ	Δ	•	•	•	Δ	Δ
East Waimea Inlet	Δ	Δ	•	Δ	Δ	Δ	•	Δ	•	Δ	•	Δ	Δ	Δ	•	Δ	•	•	Θ	Δ	Δ	•	Δ	Δ	•	•	•	Δ	Δ

No issue	Θ
Issue	•
Big issue	••
Unknown	Δ

Options for managing identified threats at each site of international importance are summarised below:

1. **WESTHAVEN INLET**

Roost site

The roost site is difficult to access. Westhaven is a Wildlife Management Reserve administered by the Department of Conservation. There is a strip of Conservation Land along the coast adjacent to the roost area and the adjacent marshland supports 'nationally endangered' Australian Bittern.

Actions

- Maintain Wildlife Management Reserve status.
- Liaise with adjacent landowners to increase awareness of the international importance of the site.
- Prohibit operation of hovercraft on the shore and within 500m to seaward.

2. **FAREWELL SPIT**

Roost site

Breeding site

Farewell Spit is a Nature Reserve administered by the Department of Conservation. Access is controlled; dogs are prohibited. There is a low flying restriction over the Nature Reserve (minimum height 2,000 ft).

Actions

- Maintain Nature Reserve status and current restrictions.

- Reduce disturbance to roosting birds in 'Gobi Desert' public access area through provision of signage.

3. PAKAWAU

Roost site

This site along the foreshore is heavily disturbed especially during the Christmas/New Year holiday period, by people, dogs, and off-road vehicles. Coastal planting has also affected the upper beach. There is already a sign highlighting the issue at the Pakawau Beach Reserve.

Actions

- Promote community support for conservation by raising public awareness of the values and importance of the site, e.g. a flier drop to all adjacent and nearby properties (currently in progress – a DOC/TDC/OSNZ initiative) and increase interpretive signage at key access points (one already there - TDC).

- Prohibit operation of hovercraft on the shore and within 500m to seaward.

4. **<u>TOTARA AVENUE/COLLINGWOOD</u>** (including offshore sand banks)

Roost site

This site is heavily disturbed especially during the Christmas/New Year holiday period, by people, and dogs. The offshore sand banks are occasionally visited by boaters and kayakers.

<u>Actions</u>

- Promote community support for conservation by raising public awareness of the values and importance of the site, e.g. a flier drop to all adjacent and nearby properties (currently in progress – a DOC/TDC/OSNZ initiative) and increase interpretive signage at key access points (TDC planned)

- Prohibit operation of hovercraft on the shore and within 500m to seaward.

- Revise TRMP Schedule 25D to include offshore sand banks.

5. **ROTOTAI**

Roost site
Breeding site
This site is heavily disturbed by people, dogs, and off-road vehicles.

Actions

- Promote community support for conservation by raising public awareness of the values and importance of the site, e.g. a flier drop to all adjacent and nearby properties (currently in progress – a DOC/TDC/OSNZ initiative) and increase signage at key access points (TDC planned)

- Prohibit operation of hovercraft on the shore and within 500m to seaward.

6. MOTUEKA SANDSPIT

Roost site
Breeding site
This is the most challenging site to manage due to its proximity to Motueka and easy access. This area is a designated Scenic Reserve[17] however the land status is complex due to movement of the sandspit and extensive accretion and requires resolution. Provisions of the Reserve Act are not currently implemented over part of the area with respect to dog access and incursions by horses are not infrequent.

Actions

- Liaise with Department of Conservation for urgent resolution of land status issues to reflect the international conservation status of the site and support effective management.

- Revise TRMP Schedule 25D to include area of accretion at south end of Spit.

- Promote community support for conservation by raising public awareness of the values and importance of the site, e.g. events such as 'Welcome to the Godwits', a flier drop to adjacent and nearby properties, additional interpretive signage.

[17] Motueka Sandspit was declared a Scenic Reserve on 17 June 1992. (43.3 hectares, more or less, being Sections 1, 2 and 3, S.O. Plan 14586, situated in Block IV, Motueka Survey District Scenic reserve subject to section 19 (1)(b) of the Reserves Act 1977). (DOC H.O. COA 0126, LEG0047, R.O.LOC 23C).

- Review Dog Control Bylaw – liaise with DOC regarding option of moving the boundary of the 'dog prohibited' area further to the north.
- Prohibit operation of hovercraft on the shore and within 500m to seaward.
- Liaise with Nelson Aviation College to maintain 1,000ft height limit over Motueka Sandspit and restrict low flying zone to current area at Riwaka River mouth.
- Prohibit use as a helicopter training area.
- Enforce prohibition of horse riding.
- Fencing off nesting areas (especially for Banded Dotterel) at the Northern end of the spit from 1 September to 13 March – provision of interpretive panels to explain why people should walk below the high tide line.
- Encourage 'I'm a wet sand walker' – walking below the high tide line in the period 1 September – 31 March to reduce disturbance to nesting shorebirds.
- Liaise with sailing, kayaking and kite board communities to reduce disturbance to roosting birds.
- Liaise with kennel club, SPCA and DOC to run 'Dog's breakfast' events to increase awareness among dog owners/walkers.
- Input to review of mooring areas at Motueka – potential impact on shorebird foraging areas.
- Consider designation as a Ramsar Wetland of International Importance.

7. WAIMEA INLET WEST

Roost site
Breeding site
No Man's Island is a Nature Reserve (for plants) administered by the Department of Conservation.

Actions

- Maintain Nature Reserve status of No Man's Island.
- Maintain interpretive panel at Grossi Point (TDC). Consider additional interpretive panel(s) along cycle trails on Western Rabbit Island and at Mapua.
- Prohibit operation of hovercraft on the shore and within 500m to seaward.
- Ensure no extension of boundaries of Hunter Brown/Traverse waterskiing and personal watercraft areas[18] to the West or South.
- Maintain prohibition of seaplanes from the whole of Waimea Inlet[19].

[18] Boundaries established under Tasman District Council Navigation Safety Bylaw.
[19] Schedule 2, s1(b) of Tasman District Council Navigation Safety Bylaw

8. WAIMEA INLET EAST

The Waimea East site of international importance is comprised of three sub-sites that are used by the same population of birds – depending on tide conditions, weather and levels of disturbance.

The fact that Nelson Airport is adjacent to Waimea Inlet east means that management of shorebird populations needs to take account of the potential risk of birdstrike to aircraft operating in the area. Whilst the National Airspace Policy of New Zealand (2012) does not make specific reference to birdstrikes it does note: 'To avoid or mitigate incompatible land uses or activities and potential obstacles or hazards that will impact, or have the potential to impact on the safe and efficient operation of aircraft, regional and district plans should have regard to applicable Civil Aviation Rules.' The Civil Aviation Authority of New Zealand's *Guidance material for land use at or near aerodromes* (June 2008) states: 'It is important that land use changes are monitored and reviewed by the aerodrome operator in areas outside their immediate control to ensure that these land use changes do not increase wildlife hazards for the aerodrome'.

The proposals given below take into account the need to avoid disturbance to high tide roost sites to minimise the risk of potential birdstrike hazard at Nelson Airport.

Actions

- Maintain prohibition of seaplanes from the whole of Waimea Inlet[20].

[20] Schedule 2, s1(b) of Tasman District Council Navigation Safety Bylaw

SAND ISLAND

Roost site

Breeding site for Variable Oystercatcher, Red-billed Gull, Black-billed Gull and White-fronted Tern.

The site is located at the boundary of Tasman District and Nelson City. Disturbance at this site may increase the risk of bird strike hazard at Nelson Airport. The site has native pingao and *Spinifex* that has been planted. That part of the island within Nelson City is a 'dog prohibited area' under the Nelson City Council Dog Control Bylaw.

Actions

- Declare the site a 'dog prohibited area' under the Tasman Dog Control Bylaw.
- Prohibit use as a helicopter training area.
- Prohibit operation of hovercraft on the shore and within 500m to seaward.

BELL ISLAND SHELLBANK

Roost site.

Breeding for Variable Oystercatcher, Caspian Tern (c1% of the national population). This site is difficult to access but nonetheless is occasionally visited by wildfowlers – an informal agreement with Fish & Game NZ requests wildfowlers not to shoot at the site. Disturbance at this site may increase the risk of bird strike at Nelson Airport.

Actions

- Declare the site a 'dog prohibited area' under the Tasman Dog Control Bylaw.
- Prohibit use as a helicopter training area.
- Prohibit operation of hovercraft on the shore and within 500m to seaward.
- Ensure no southward extension of boundaries of Rabbit Island waterskiing and personal watercraft areas[21] towards Bell Island.

[Vegetation management is required annually (currently by OSNZ volunteers) to maintain the Caspian Tern colony site]

EAST END OF RABBIT ISLAND

Roost site

Breeding site for Variable Oystercatcher.

Beach access by walkers and horse riders is usually below the high tide line. Disturbance at this site may increase bird strike hazard at Nelson Airport. The importance of the shorebird roost site and the potential birdstrike hazard at Nelson

[21] Boundaries established under Tasman District Council Navigation Safety Bylaw.

Airport need to be taken into account when the Rabbit Island Management Plan is reviewed.

Actions

- Maintain ‘dog prohibited’ status for Rabbit Island.
- Prohibit use as a helicopter training area.
- Prohibit operation of hovercraft on the shore and within 500m to seaward.
- Do not open the Eastern half of Rabbit Island to recreational activities.
- [There has been some previous discussion of creating a shorebird habitat within the eastern half of Rabbit Island. Depending on the location and design of such an area it might act as a roost site and therefore potentially contribute to reducing the risk of a birdstrike at Nelson Airport, however no feasibility study has been undertaken and the potential costs of construction and subsequent management are unknown.]

Variable Oystercatcher nest, Motueka Sandspit (David Melville)

Monitoring

Surveys conducted by the Ornithological Society of New Zealand have shown that Tasman District supports internationally and nationally important populations of seven species of shorebirds, and that eight areas within the district are of international importance for shorebirds.

Continued monitoring of populations and site conditions (roosting, nesting, feeding) is considered necessary as part of State of the Environment monitoring to determine the effectiveness of coastal management actions and RMA compliance. Specific monitoring recommendations are listed in Schuckard & Melville (August 2013).

Bar-tailed Godwits roosting at Farewell Spit (David Melville)

Appendix 1

Sites of international importance for shorebirds and DOC and TDC reserves at/nearby.

Site of international importance for shorebirds	DOC Reserve	TDC Reserve[22]
Westhaven Inlet	Westhaven (Whanganui Inlet) Wildlife Management Reserve	
Farewell Spit	Farewell Spit Nature Reserve	
Pakawau		Tomatea Point
Collingwood		
Rototai		Clifton Recreation Reserve
		Rototai Beach Esplanade Reserve
Motueka Sandspit	Motueka Sandspit Scenic Reserve	Motueka Beach Reserve
	Raumanuka Scenic Reserve	North Street Reserve
		Saltwater baths
		Trewavas Street Foreshore Reserve
West Waimea Inlet	No Man's Island Nature Reserve	Grossi Point Recreation Reserve
		Best Island Reserve
		Mapua Waterfront Park
		Rabbit Island Recreation Reserve
		Rough Island Recreation Reserve
East Waimea Inlet		Rabbit Island Recreation Reserve

[22] This is a partial list including the more important reserves administered by TDC (http://www.tasman.govt.nz/recreation/parks-reserves/parks-and-reserves-locations/)

Appendix 2

New Zealand Coastal Policy Statement: Policy 11 Indigenous biological diversity (biodiversity)

To protect indigenous biological diversity in the coastal environment:

(a) avoid adverse effects of activities on:

(i) indigenous taxa[23] that are listed as threatened[24] or at risk in the New Zealand Threat Classification System lists;

(ii) taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened;

(iii) indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare[25];

(iv) habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare;

(v) areas containing nationally significant examples of indigenous community types; and

(vi) areas set aside for full or partial protection of indigenous biological diversity under other legislation; and

(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:

(i) areas of predominantly indigenous vegetation in the coastal environment;

(ii) habitats in the coastal environment that are important during the vulnerable life stages of indigenous species;

(iii) indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh;

(iv) habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes;

(v) habitats, including areas and routes, important to migratory species; and

(vi) ecological corridors, and areas important for linking or maintaining biological values identified under this policy.

[23] Taxa: Named biological classification units assigned to individuals or sets of species (e.g. species, subspecies, genus, order, variety).

[24] Examples of taxa listed as threatened are: Maui's Dolphin, Hector's Dolphin, New Zealand Fairy Tern, Southern New Zealand Dotterel.

[25] Naturally rare: Originally rare: rare before the arrival of humans in New Zealand.

Appendix 3

Threatened and at risk[26] coastal bird species in Tasman District

Nationally critical
White Heron
Southern New Zealand Dotterel[27]
Black-billed Gull
Black Stilt
New Zealand Shore Plover

Nationally endangered
Australasian Bittern
Black-fronted Tern
Reef Heron

Nationally vulnerable
Wrybill
Lesser Knot
Banded Dotterel
Caspian Tern
Red-billed Gull
Pied Shag

At risk – declining
Banded Rail
South Island Pied Oystercatcher
Pied Stilt
Eastern Bar-tailed Godwit
White-fronted Tern

At risk – recovering
Variable Oystercatcher

Relict
Marsh Crake
Spotless Crake
Black Shag
Little Black Shag
Royal Spoonbill

[26] Robertson, H.A.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Miskelly, C.M.; O'Donnell, C.J.F.; Powlesland, R.G.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. 2013: Conservation status of New Zealand birds, 2012. *New Zealand Threat Classification Series 4.* Department of Conservation, Wellington. 22 p.
[27] Shorebird species (waders) are in bold.

Appendix 4

Extracts from the Tasman Resource Management Plan of objectives and policies relevant to the conservation and management of shorebirds and their habitats

Chapter 10 – Significant natural values and historic values

Objective 10.1.2 is: Protection and enhancement of indigenous biological diversity and integrity of terrestrial, freshwater and coastal ecosystems, communities and species.
Policies in support of this objective include:
10.1.3.2. To safeguard the life-supporting capacity of the District's indigenous ecosystems, including significant natural areas, from the adverse effects of subdivision, use and development of land.

Objective 10.3.2 is: Protection of the relationship a heritage resource or significant habitat may have with adjacent land.

Among the criteria for determining significance (Schedule 10C) are:

> 'Rarity – The area supports an indigenous species which is rare within the ecological district or threatened nationally.
> Migratory species – An area of river, wetland, lake or estuary that is important for migratory species of for vulnerable stages of common indigenous species'.

Chapter 14 Reserves and open space

This chapter notes that 'In coastal locations, reserves areas and open space can serve to provide a buffer to the adverse effects of coastal erosion and inundation as a result of sea-level rise as well as protecting plant and animal communities'.

Objective 14.1.2 is: Adequate area and distribution of a wide range of reserve and open spaces to maintain and enhance recreation, conservation, access and amenity values.

Objective 14.3.2 is: The conservation of those areas in the District which have significant natural and scientific values such as landform, ecosystems, natural character and heritage values.
Policies in support of this objective include:
14.3.3.1 To identify and protect areas of conservation value by incorporating them into land with a protective status.
14.3.3.2 To manage the range of activities permitted in areas of specific natural value so that they are of a type that provides for the maintenance and enjoyment of the special natural values with least adverse effects on those values.

Chapter 20 Effects of craft using the surface of coastal waters

This chapter notes that a range of activities in coastal waters can cause effects which include 'disturbance to wildlife…including damage to habitat'.

Objective 20.1.2 is: Safe navigation, amenity values and natural values that are not compromised by the passage of craft, or by other activities on the surface of the water.
Policies in support of this objective include:
20.1.3.3 To avoid, remedy or mitigate adverse effects on amenity values and natural values, including:

(a) disturbance to wildlife…

Chapter 21 Effects of disturbance, structures and occupation on coastal marine conservation, heritage, access and amenity values

This chapter notes that potential effects of disturbance include:

(a) changes to the natural functioning of marine ecosystem and resulting effects on marine plants and animal life and their habitats through physical disturbance or contamination.

(b) changes to natural coastal processes such as sediment movement or water flow, with modifications to the composition of the foreshore or seabed or locations of the shoreline

It further notes that 'There is a large number of areas within the coastal marine area that are recognised as having nationally or internationally important natural ecosystem values'.

Objective 21.1.2 is: Preservation of the natural character of the coastal marine area, particularly its margins, and including the maintenance of all values that contribute to natural character, and its protection from the adverse effects of use or development'.

Policies in support of this objective include:

21.1.3.1 To avoid, remedy or mitigate adverse effects on the natural character of the coastal marine area from activities, including:

(b) Disturbance of plants, animals, or their habitats.

21.1.3.4 To avoid, remedy, or mitigate damage to foreshore, seabed and coastal marine animals and plants, caused by the passage of people, vehicles, vessels, or passage or grazing by stock.

Objective 21.2.2 is Avoidance, remedying, or mitigation of adverse effects on marine habitats and ecosystems caused by [a variety of factors]…. with priority for avoidance in those areas having nationally or internationally important ecosystem values.

Policies in support of this objective include:

21.2.2.1 To assess existing unauthorised structures or works in the coastal marine area and either require their authorisation or removal after considering the significance of the effects of such structures or works on:

(a) natural character;

(b) natural coastal processes and patterns;

(c) coastal habitats and ecosystems, particularly those supporting rare or endangered indigenous or migratory species, or nationally or internationally significant natural ecosystems.

21.2.2.3 To avoid, remedy or mitigate adverse effects of structures or works in the coastal marine area, for any purpose, on:

(a) natural character;

(b) natural coastal processes and patterns;

(c) coastal habitats and ecosystems, particularly those supporting rare or endangered indigenous or migratory species, or nationally or internationally significant natural ecosystems.

21.2.2.24 To eradicate invasive non-indigenous species where practicable and protect coastal marine habitats and ecosystems from invasion by non-indigenous species.

21.2.2.26 To avoid, remedy or mitigate adverse effects of vehicles in estuarine areas.