THE TRUE COST OF RECREATIONAL DRIVING ON BEACHES

A FRIENDS OF STRADBROKE ISLAND RESEARCH INITIATIVE



An investigation of the issues surrounding the impact of Off-Road Vehicles on beaches on Minjerribah/North Stradbroke Island and South East Queensland

For further information, please contact Friends of Stradbroke Island (FOSI) at info@fosi.org.au

Executive Summary

Sandy beaches are important transition zones between land and sea. They provide habitat for birds, turtles, crabs and other wildlife and their associated dunes support unique vegetation communities, which in turn help maintain the integrity of the beaches and dunes.

Sandy beaches are also increasingly popular destinations for recreation, with Off- Road Vehicles (ORVs) being a preferred mode of access for many people. There is now a significant body of scientific research showing that ORVs are having major impacts on beaches on Minjerribah/North Stradbroke Island (NSI) and on other sandy beaches throughout South East Queensland (SEQ) and elsewhere in Australia and overseas. These impacts include:

- erosion of beaches and dunes
- destruction of vegetation on beaches and dunes
- destruction of beach and dune habitats
- death and displacement of shore and migratory birds
- destruction of turtle nests and eggs and disorientation of turtle hatchlings
- death of invertebrate animals, including crabs, worms, clams and molluscs that live on, and within, the sand of the beaches
- bushfires in adjacent vegetation
- increased litter on the beaches and dunes
- contamination of water in streams and water tables by human waste
- damage to Indigenous cultural and heritage sites
- disturbance, injury and death to people on the beach
- degradation of beach amenity and aesthetics
- disruption to beachside villages and communities

Local governments have the powers, under state laws, to regulate ORVs on beaches. There are, however, few council regulations in place, and the willingness and capacity to enforce them is often limited. Queensland state legislation includes a number of acts and regulations that aim to protect and manage coastal lands, seas and wildlife. They contain a range of measures to regulate ORVs on beaches but it seems that they are rarely enforced. Likewise, management plans have been drawn up under these acts to protect wildlife and regulate beach driving, but little has been done to implement the plans.

On Minjerribah/NSI, management of the Recreation Area (which includes the beaches) and of the adjoining national park, is by a partnership between the native title holders, the Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) and state agencies. Minjerribah Camping, a QYAC subsidiary, issues the permits to drive on the beaches and manages the beach camping sites.

Other sandy beaches and dune systems in SEQ, including on Mulgumpin/Moreton Island, Bribie Island, the Cooloola coast and K'gari/Fraser Island, face similar impacts from ORVs and have similar fragmentary and poorly enforced regulatory regimes to those on Minjerribah/NSI.

Wetlands, and some of the beaches, on the Moreton Bay islands are listed under the Ramsar Convention on Wetlands of International Importance, including the eastern beach south of the

causeway and most of Flinders beach on Minjerribah/NSI. Ramsar wetlands are protected under the federal *Environment Protection and Biodiversity Conservation Act*.

Most other Australian states, as well as countries such as New Zealand, the United Kingdom and the United States, have similarly piecemeal and poorly enforced regulatory regimes as that of Queensland. Significantly, however, both the state of Victoria and the country of South Africa prohibit all recreational ORV use on their beaches, with only a very few exceptions.

The science describing the impacts of ORVs on the beaches of Minjerribah/NSI and of the other sand islands and coasts in SEQ is strong, and there are good examples in other places of how to reduce ORV impacts on beaches and dunes. What is needed now is a widening of public awareness of this issue and a concerted campaign to create the will within our authorities to act to reduce these impacts.

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Introduction

Off-road vehicles are cemented in the modern Australian psyche as the harbingers of freedom to explore the great outdoors in the air-conditioned comfort of what is now Australia's most popular selling vehicle category. Advertising and marketing campaigns incessantly promote the off-road capabilities of 4WDs and where they can go. Many customers choose to test their vehicles on the sandy expanses of Australia's world-renowned beaches.

However, the use of recreational off-road vehicles on beaches must now be questioned when we see the devastating ecological, social, archaeological and aesthetic impacts of their use. An overwhelming body of evidence prescribes that policy must align with the scientific research and remove off-road vehicles from beaches to conserve the precious natural environment that is Australia's sandy shore systems.

The complex socio-cultural and political impediments to restricting their use necessitated the compilation of this review paper to collate the diverse body of evidence to support the exclusion of recreational beach vehicles.

The report includes an overview of relevant scientific literature; international and domestic legislation, regulations and policy; and the situation in Queensland.

The information gathered in this report will be used as a basis for informing the Friends of Stradbroke Island Organisation Inc. (FOSI) and others of the key issues and for identifying options for reducing the harm caused to beaches by off-road vehicles. Useful as both an information compendium and research paper, it is the hope that it will be a bedrock for future campaigns and effective action on the issue.

Definitions

Off-road vehicle

For the purposes of this paper, 'off-road vehicle' will be an inclusive term to describe vehicles capable of being driven on roads and tracks that are not paved or formed up into a firm surface. They include four-wheel drive vehicles (4WDs), tractors, quad bikes, trail motorbikes, all-terrain vehicles (ATVs) and other off-road capable vehicles.

Some ORVs are used on beaches for non-recreational purposes, including land and sea management by governments and native title holders, licensed commercial fishing and gathering, authorised scientific research, surf lifesaving and emergency services.

Recreational off-road vehicle use

This report focuses on recreational ORV use, which is defined as the use of ORVs on beaches by private individuals and businesses for the purposes of recreation, tourism and transport, including non-commercial fishing and gathering, boat launching, camping, picnicking, swimming and surfing, walking, birdwatching etc.

Beach

Australia's 36,000-kilometre-long coastline encompasses a variety of coastal ecosystems including sandy shore beaches, sand dunes, rocky shores, coastal wetlands, salt marshes and sea cliffs. For the purposes of this report, 'beach' includes both the sandy shore and the coastal sand dunes.

Abbreviations

4WD = Four-wheel drive

ATV = All-terrain vehicle

EPBCA = *Environment Protection and Biodiversity Conservation Act* 1999

FOSI = Friends of Stradbroke Island Inc.

ORV = Off-road vehicle

QYAC = Quandamooka Yoolooburrabee Aboriginal Corporation

RAMA = *Recreation Area Management Act 2006* (Qld)

VAP = Vehicle Access Permit

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SECTION ONE: Overview of Scientific Literature

1.1 Section Summary

The scientific research on the impact of ORVs on beaches has proven that they destroy dune and coastal vegetation; fatally collide with and crush birds, turtles, crabs and other macroinvertebrates; compress and rut fragile sand habitats; and hasten erosion of dunes. In turn this weakens the ability of beaches to respond to weather events, provide the necessary breeding, feeding and nesting habitat for resident and migratory fauna, and protect inland coastal areas from erosion. ORVs by allowing access to previously inaccessible and remote areas also increase risk of wildfires, lead to increased litter and increase the risk of contamination of groundwater.

1.2 Background

Sandy beaches and their surrounds geographically dominate the world's shorelines and are one of the coastal environments most actively used by humans. The exponential increase of coastal populations and their activity on sandy shore systems has resulted in a wide array of physical changes to coastal habitat types. Anthropogenic activity on beaches has a corresponding ecological impact on the diverse ecosystems that are sandy shore systems.

Sandy shores provide a wide range of ecosystem services, many of which are essential to support human uses of sandy coasts. The most important ecosystem services include:

- sediment storage and transport
- wave dissipation and associated buffering against extreme events such as storms and cyclones,
- dynamic response to sea level rise (within limits)
- breakdown of organic materials and pollutants
- water filtration and purification
- nutrient decomposition and recycling
- water storage in dune aquifers and groundwater discharge through beaches
- maintenance of biodiversity and genetic resources
- nursery areas for juvenile fishes
- nesting sites for turtles and shorebirds, and, in southern Australia, rookeries for seals
- roosting sites for seabirds resting between fishing trips
- prey resources for birds and terrestrial wildlife
- scenic vistas and recreational opportunities
- bait and food organisms
- functional links between terrestrial and marine environments in the coastal zone.[1]

[1] Defeo et al, 2009:3.

Beaches are used for various recreational pursuits including surfing, swimming, sunbathing, four-wheel driving, personal fishing, walking and beach camping. Four-wheel driving in ORVs is a popular recreational pursuit that is now a common and widespread activity on sandy beaches in both Australia and internationally, but there is mounting concern at the impacts of this activity on the beach environment.[2] Their use is also a supplementary activity to many other recreational pursuits such as accessing beach camping sites, fishing spots and surf breaks.

Beaches are also used for a variety of commercial activities including fishing, mining and tourism. These commercial activities may also involve intensive access of the beach with off-road vehicles. For example, commercial fishermen require tractors or similar type vehicles to launch fishing vessels or require the use of ORV mounted winches when dragging in nets for shore-based fishing activities.

Different types of vehicles used in coastal habitats are likely to have differing impacts on specific sandy shore systems. For example, the use of 4WDs on the soft upper shore and sand dunes will have a different impact compared to traffic that remains on the lower foreshore. The size, weight and power of the vehicle, the time of vehicle operation (regarding tides and beach composition) and the frequency of vehicular traffic will also have a variable ecological impact. But no matter their type or usage, all ORVs driving on beaches will have a tangible ecological, aesthetic and recreational impact.

Schlacher and Thompson[3] found that traffic volumes on Australian beaches can be considerable (up to 500 vehicles per day) and that the spatial and temporal patterns of ORV traffic overlap significantly with a variety of beach biota. Furthermore, the paths chosen by ORVs were mainly dictated by driver behaviour and tidal movements, with anywhere between 16% and 67% of vehicles accessing the soft, upper sandy shore near foredunes. Public campaigns have focused on educating drivers to traverse the hard sand below the tide mark known as the intertidal zone, however recent studies have shown that this practice places significant ecological pressure on intertidal macroinvertebrates.

1.3 The Ecological Impacts of ORVs on Beaches

Summary of impacts

The growth of 4WD sales and the corresponding increase in their recreational use on beaches has led to the realisation that the cumulative impacts of ORVs needs to be considered in environmental assessment, management and scientific research. Along with scholars in Africa and New Zealand, Australia and the United States of America have global pioneers undertaking the scientific investigation that informs this project. These researchers have identified the many ways that ORVs, both directly and indirectly, impact on beaches, dunes and adjacent coastal wetlands. They include:

- vegetation loss and consequential erosion
- fatal collisions with such fauna as shore and migratory birds, turtle hatchlings and macrobenthic invertebrates

[2] Schlacher, T. & Thompson, L. (2007). 'Exposure of Fauna to Off-Road Vehicle (ORV) Traffic on Sandy Beaches.' *Coastal Management*, 35:567.

[3] Schlacher, T.A., & Thompson, L.M. (2008).

- continuous disturbance of feeding, resting and breeding fauna
- destruction of bird and turtle nests
- crushing of benthic macro-, micro- and meiofauna through sediment compaction
- reduction of the capacity of coastal ecosystems to combat storm surges and weather events
- reduction of food sources for higher order animals such as birds
- long-term degradation of dunes and foredunes
- contamination by litter and human waste
- more frequent and severe wildfires in the vegetation adjoining the beach

The scientific literature collated for this project all identify and provide evidence that ORVs have a discernible impact on beaches and that current Australian conservation management practices fail to prevent the ecological devastation of ORV beach traffic.

1.3.1 Impacts on flora

Erosion and vegetation loss

Exposed sandy beach are physically dynamic and resilient habitats, inhabited by specialised assemblages of organisms that are mainly structured by physical forces, such as storms, variations in climate and currents and human-induced alterations.[4] However, human development and activity severely restricts the flexibility of beaches to adapt to natural and unnatural variations due to such behaviours as shore armouring (the process of reinforcing shorelines with rocks and/or concrete), sand mining, the driving of ORVs on beaches and other beach engineering such as raking or grooming of sand.[5] Coupled with the manifestations of climate change and the increase of severe weather events, environmentally 'stressed' beaches are becoming increasingly eroded[6] with more than 70% of the world's beaches experiencing erosion.[7]

[4] Defeo et al, 2009; Schlacher et al, 2007.

[5] Defeo et al, 2009; Schlacher et al, 2007.

[6] Schlacher et al, 2007.

[7] Bird, 1996.

FIGURE 1.1. TYRE RUTS ON MAIN BEACH, NORTH STRADBROKE ISLAND. SOURCE: FOSI.

There is significant evidence to suggest that ORV traffic is physically damaging to the structure and function of the various coastal habitats, including sandy beaches and saltmarsh ecosystems.[8] The susceptibility of dune and beach vegetation to mechanical degradation by trampling is already well established[9] and the contemporary impact of ORVs on erosion and beach vegetation has become increasingly apparent since the initial studies in the early 1980s. Frequent or continuous disturbance of beaches and dunes by ORVs usually leads to loss of habitat, threatens native vegetation species, reduces seed sources, lowers the resilience of plant communities and increases the risk of dune erosion by storms.[10] The recreational driving of ORVs is perhaps the most environmentally damaging of direct human use to dune systems and their biota.[11] The low tolerance of dune systems to vehicle traffic directly translates to severely negative impacts on dune vegetation and therefore, potentially the structure and form of the total system.[12]

Godfrey and Godfrey's 1980 study on Cape Cod, Massachusetts, found that 50 vehicle passes were enough to inhibit the seaward development of the dune and the dune profile became 'scarped', rather than sloped. Vegetation was eliminated after only 70–175 vehicle passes and that the number of vehicles using a single track or set of tyre tracks has a negligible difference once vegetation has been impacted. ORVs were shown to destroy beach vegetation and prevent embryonic dune development by trampling mature plants and root systems as well as disturbing seeds, germinated seedlings and root fragments in the drift line.[13] The authors did note however that the hardiness of beach and dune vegetation to adapt to harsh coastal conditions means that recovery of dune biomass can occur—although this process can take two years or more and only can occur following the total removal of ORVs and pedestrians from affected areas.[14] The destruction of dune grass rhizomes lying under the surface of the sand was also observed during studies on Fire Island, New York.[15] A 2014 survey of New Jersey beaches found that *'*ORV activities reduced beach vegetation by 86% (all year), 61% (off-season), and 21% (government [or law enforcement access] only) on average, with percent cover of vegetation being 2 x greater on protected beaches than ORV beaches overall, and 7 x greater than on beaches subject to all-year recreational ORV use'.[16]

Domestically, a 1999 South Australian study found that extensive ORV use had slowed or prevented the expansion of foredunes by impacting vegetation sprouting in the drift line, such as pioneer

[8] Brodhead & Godfrey, 1977; Godfrey & Godfrey, 1980; Anders & Leatherman, 1987; Rickard et al., 1994; Defeo et al., 2009; Schlacher et al., 2007; Schlacher & Thompson, 2008a; Schlacher & Thompson, 2008b; Lucrezi et al., 2010; Kelly, 2014.

[9] Liddle & Grieg-Smith, 1975.

[10] Nordstrom et al., 2000; Roze & Lemauviel 2004; Feagin et al., 2005; Thompson & Schlacher, 2009.

[11] Godfrey & Godfrey, 1980.

[12] Thompson & Schlacher, 2008.

[13] Kelly, 2014; Broadhead & Godfrey, 1977.

[14] Godfrey & Godfrey, 1980.

[15] Anders & Leatherman, 1987.

[16] Kelly, 2014:391.

species as sea spurge (*Euphorbia paralias*) and sea rocket (*Cakile maritima*).[17] Data from a 2008 study of World Heritage-listed K'Gari/Fraser Island suggested that of 124km of ocean-exposed beach, 122km are open to ORVs and beach camping zones cover 23% of these dunes. 235 vehicle tracks are cut across the foredunes to access the camping zones, effectively destroying over 20% of the dune front with no vegetation recorded in the tracks.[18] The destruction of vegetation undermines the dune's capacity to bind and accrete sediment and protect beaches from the destructive process of erosion.[19]

FIGURE 1.2. DAMAGED DUNES AND VEGETATION, OCEAN BEACH, BRIBIE ISLAND. SOURCE: BIEPA.

Furthermore, the destruction of the foredunes through direct vehicle tracks and vegetation loss has consequences for shoreline stability, erosion events, and the ability of dune systems to successfully resist storms. The increased frequency of storm events due to a changing climate is predicted to reduce the ability of dune systems to recover from anthropogenic activities such as ORV use and beach camping.[20] The effectiveness of dunes to therefore act as a barrier to severe weather events and prevent incursions into established inland dunes and damage to adjacent inland areas is significantly compromised and accelerates the already occurring erosion process.

The aeolian (wind-blown) movement of sand is also directly altered by the tyre tracks of ORVs. The greatest distribution of ORV tracks is between the swash zone (peak of wave run-up) and the foredune. This zone is the principal source of sand for the 'creation, replenishment and growth of

[17] Stephenson, 1999

[18] Thompson & Schlacher, 2008b

[19] Barbour et al., 1985; Weakley et al. 1996; Dugan & Hubbard, 2010; Nordstrom et al., 2011b

[20] Thompson & Schlacher, 2008b.

coastal dunes'[21]. The movement of sand to the dunes is important for the protection of beaches from the erosion caused by king tides and weather events.[22] Studies have shown that the tracks created by ORVs traversing beaches causes a change in the surface roughness of sand and affects the airflow of wind over the beach[23]. This significantly disrupts the transport of sand from the beach to the dunes by the wind as the tyre tracks form 'micro-catchments' that trap sand and prevent its movement across the beach.[24] Estimates of sand displacements and compaction indicate that ORVs displace a significant volume of beach sand in just a single day along with increasing sand mobility via increased bottom turbulence caused by tyre track rutting.[25] Thus, by changing the displacement of sand across the beach, ORVs may potentially be contributing to beach erosion even when following the current 'best-practice' driving guidelines of avoiding dunes.

Weed invasion

Weedy plants have invaded the camping areas adjacent to Flinders Beach, aided by the increased nutrient in the sandy soil from campers' disposal of food scraps, dishwashing water and human excrement. Seeds and pieces of weed have also come in on vehicles and footwear. Some of these weeds have the potential to spread onto the adjacent beach.[26]

1.3.2 Impacts on Fauna

Dunes and foreshores provide critical and irreplaceable habitat for a variety of invertebrate and invertebrate taxa, including shorebirds, crabs, turtles and other beach biota.[27]

Shore and migratory birds

Sandy shoreline beaches are critical, irreplaceable habitats for beach-dwelling and migratory birds. They function as ecologically essential ecosystems for bird-breeding, chick-rearing, nesting, foraging and roosting.[28] Populations of many coastal birds are now in decline because of increased coastal anthropogenic activity, habitat loss and expanding coastal development, of which the use of ORVs plays a significant role.[29]

[21] Austin, 2016.

[22] Austin, 2016.

[23] Austin, 2016.

[24] Austin, 2016.

[25] Anders & Leatherman, 1987; Thompson & Schlacher, 2008b.

[26] Maher & Associates, 1998

[27] Hosier et al., 1981; Watson et al., 1997; Bouchard & Bjorndal, 2000

[28] Dowling & Weston, 1999; Maslo et al., 2011; Schalcher et al., 2013.

[29] Defeo et al., 2009; Foster et al., 2009; Wilson et al., 2011; Schlacher et al., 2013.

The use of beaches by ORV traffic has been shown to degrade food sources (such as the prevalence of macro-benthos and invertebrates), to disturb roosting and resting birds in a process known as 'flushing', and to cause direct bird strike, usually with fatal consequences.[30]

Among many documented instances of beach traffic negatively impacting coastal shorebirds, ORVs have been credited with the destruction of Fairy Tern and Little Tern nests in New South Wales.[31] Moreover, the use of ORVs on dunes and beaches are believed to be the contributing factor to decreased Fairy Tern colonies in Eastern Tasmania and the Eyre Peninsula.[32] A 1989 study of Hooded Plover nests on the Younghusband Peninsula in South Australia determined that 81% of nests were run over by ORVs and that up to 30% of chicks sheltering in wheel ruts could be fatally crushed.[33] Comparatively, US studies concerning the American Oystercatcher determined that ORV disturbance directly produced measurable differences in chick behaviour, habitat use and mortality rates with broods on beaches with vehicle traffic having a lower survival rate than those on closed beaches.[34] The interference of vehicles during the chick-rearing phase also increased the predation of unattended nests and chicks as adults respond to the perceived threat of ORV activity.[35]

The effects of vehicles on coastal birds can also be larger than those caused by individuals or groups of people, as 'birds perceive motorised vehicles as a bigger threat due to their larger size, speed and more noise'.[36] ORVs also allow fishermen, tourists, campers and other beach visitors (potentially accompanied by both legal and illegal pets) to access previously remote and undisturbed areas of beach that would usually be too distant to readily access by foot. The extension of the anthropogenic footprint by ORVs therefore reduces the availability of habitat free from human disturbance and interference. The incursion on these previously remote beaches by ORVs is documented as occurring on over 100km of Fraser Island's coastline[37], along the entire eastern length of Minjerribah/NSI[38], Mulgumpin/Moreton Island[39], Cable Beach near Broome in Western Australia[40]and the Coorong in South Australia[41].

[30]Buick & Paton, 1989; Schlacher et al., 2013; Taylor et al., 2014; Weston et al., 2014; Borneman et al., 2016.

[31] NSW National Parks and Wildlife Service, 2003.

[32] Birds Australia, 2009; Threatened Species Section 2010; Department of Environment and Heritage, 2008.

[33] Buick & Paton, 1989.

[34] Schulte & Simons, 2014

[35] Schulte & Simons, 2014

[36] Maslo et al., 2012; Schlacher et al., 2013:37.

[37] Thompson & Schlacher, 2008; Schlacher et al., 2013:37.

[38] Schlacher, Thompson & Price, 2007.

[39] Meager, Schlacher & Nielsen, 2012.

[40] Randall, Macbeth & Newsome, 2006.

[41] Buick & Paton, 1989.

In South Africa, shorebirds and waders decreased in numbers at two beach survey sites as ORV numbers increased during the 1980s and 1990s, but then increased again within one year after ORV access was restricted in 2001.[42]

The use of ORVs on beaches can have both direct and indirect effects on shorebirds such as deaths caused by vehicles fatally colliding with post-fledging birds, the crushing of eggs or pre-flight young.[43] The tracks left by ORVs are often deep enough for both mature and nestling shorebirds to use as shelter, which can result in fatal collisions as ORV drivers commonly follow or retrace existing tyre tracks.[44]

[42] Williams, Ward & Underhill, 2004.

[43] Buick & Paton, 1989; Melvin et al., 1994; Warnock, 2003.

[44] Weston, Schlacher & Lynn, 2014.

FIGURE 1.3. A) EXAMPLE RECREATIONAL ORVS ON SEQ BEACHES B) FLOCK OF CRESTED TERNS FLUSHED BY ONCOMING TRAFFIC C) BADLY INJURED D) AND DEAD CRESTED TERN INSIDE TYRE RUTS ON THE BEACH E) & F) DEAD PIED OYSTERCATCHER IN TYRE TRACKS. SOURCE: THOMAS SCHLACHER.[45]

Indirectly, increased human activity can cause disturbance to fauna in a way that disrupts their ability to perform their regular activities.[46] A 2013 joint study on Queensland's K'Gari /Fraser Island by the University of the Sunshine Coast and Deakin University concluded that 'motorised traffic is

[45] Schlacher et al, 2013:39.

[46] Hockin et al., 1992; Schalcher et al., 2013.

the prime agent of disturbance to birds on these beaches, resulting in frequent and time-consuming behaviours.[47]

On beaches where the 'flushing' of birds by vehicular traffic occurs, birds must first and foremost avoid collisions with oncoming traffic, leading to increased levels of vigilance to the threat of collision.[48] This ongoing conflict between birds and ORVs results in birds being displaced from their preferred feeding and roosting sites. Moreover, their need to be continually vigilant negatively impacts their capacity to forage and roost effectively, thereby depleting their survival and reproductive success.[49] For migratory birds, this poses a serious problem as interruptions to feeding time and the energy expended to avoid collisions with ORVs can directly affect their fitness for their return migratory flights.

This behaviour has also been noted in birds of prey such as White-bellied Sea Eagles that inhabit beaches. Birds that scavenge animal carcasses, beached fish and other available food sources are 'more vigilant on beaches with vehicle traffic and dogs' and are therefore, more likely to abandon potential food sources impacted by these activities.[50]

[47] Schlacher et al., 2013:31.

[48] Schlacher et al., 2013.

[49] Stolen, 2003; Sih et al., 2011; Schlacher et al., 2013; Flemming et al., 1998; Williams et al., 2004; McGowan & Simmons, 2006.

[50] Schlacher et al., 2013: 39.

FIGURE 1.4. WHITE-BELLIED SEA EAGLE PERCHED ON THE DUNE CREST, MAIN BEACH, MINJERRIBAH/NSI. SOURCE: BRUCE MARTIN.

This is compounded by the growing body of research regarding the degradation of macro-benthic invertebrates on beaches with ORV traffic, which are a vital food source for many coastal birds including the Pied Oystercatcher, Greater Crested Tern (see Figure 1.4), Silver Gulls and Red-capped Plovers.[51] The compaction of the sand by ORVs has been demonstrated in numerous studies to severely reduce numbers of various invertebrates and molluscs that live beneath the sand.[52] Thomas Schlacher of the University of the Sunshine Coast has done significant studies on the reduction of macro- and microbenthic invertebrates in both abundance and diversity on Queensland beaches with a correlating factor being a high volume of ORV traffic. This is confirmed by global studies on such bio-indicators as Ghost Crabs, Surf Clams and other beach dwelling vertebrates and non-vertebrates[53] which show that increased ORV traffic has a damaging impact on all beach biota.

FIGURE 1.5. EVEN ANIMALS NOT CONSIDERED AS USUAL BEACH INHABITANTS ARE AT RISK—BRIBIE ISLAND IS THE ONLY ISLAND IN SEQ WITH AN EMU POPULATION BUT THEIR SURVIVAL IS HIGHLY THREATENED. SOURCE: 4 WHEEL DRIVING ON BRIBIE ISLAND, APRIL 2012. TRIPADVISOR.

[51] Schlacher et al., 2016.

[52] Greenslade & Greenslade, 1979.

[53] Schlacher, Richardson & McLean, 2008.

Turtles

Marine turtles are also severely impacted by ORVs accessing beaches and coastlines. Loggerhead, Leatherback and Olive or Pacific Ridley turtles are all listed under the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as endangered, while the Green, Hawksbill and Flatback Turtles are classified as vulnerable species.[54] ORVs can significantly impact turtle nesting sites by crushing eggs and/or compacting sand, disturbing females attempting to nest and impeding or directly killing emergent hatchlings traversing the beach.[55]

One of the most evident and widely agreed negative impacts of ORVs on beaches is the obstruction of turtle hatchlings' seaward movement by tyre tracks. The depth of ORV tracks on sandy beaches has a significant impact on hatchlings overcoming the period of high mortality during the initial rush to enter the ocean upon hatching.[56] Vehicle tracks vary greatly in dimension depending upon substrate and vehicle characteristics, although it is common to find tracks 10–15 centimetres deep[57] and some tyre ruts have been observed on South Stradbroke Island measuring up to 50cm in depth.[58] Comparably, a 2008 study on Minjerribah/NSI recorded a maximum rut depth of 28cm with 21% of ORV tracks exceeding a depth of 10cm.[59] Tracks of this depth are a considerable impediment for hatchlings moving across the sand swiftly to minimise predation by avian and mammalian predators.

A 2012 Griffith University study found that only 9% of Green Turtle hatchlings were able to traverse a single 15cm rut, 53% were able to traverse 10cm ruts while 99% of hatchlings were able to traverse 5cm ruts, respectively. They concluded that if hatchlings had to traverse 100 ORV ruts during dispersal, it would take 1.9 hours and 25.1 hours for 5cm and 10cm deep ruts, respectively. Hatchlings spent 2.6 times and 18.6 times longer to get through a single rut compared to the flat sand control path. [60]

[54] Retrieved 15th July 2018 from Australian Department of Environment and Energy http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl#reptiles_endangered

[55] Schroeder, 2001: 118; da Silva et al., 2016; Lamont et al., 2002; Schroeder, 2001; Hosier et al., 1981; Aguilera et al., 2018; Van der Merwe et al., 2012.

[56] Warren & Antonopoulou, 1990; Aguilera et al., 2018.

[57] Hosier et al., 1981.

[58] Van de Merwe & Cuttriss, 2006.

[59] Schlacher & Thompson, 2008.

[60] Van der Merwe et al., 2012.

FIGURE 1.6. DEAD TURTLE HATCHLING: SUSPECTED DEATH FROM ORV COLLISION. MAIN BEACH, MINJERRIBAH/NSI 2017. SOURCE: MATTHEW BRADY.

Hatchlings can become disoriented in their seaward movement by depressions as little as 5 centimetres, thus further increasing the amount of time on the beach resulting in greater energy expenditure and potential for predation. Turtle hatchlings must survive the first few days of life using only the energy in the residual yolk of their egg, as they generally do not begin feeding until they are in deeper waters. Therefore, conserving energy expenditure in their initial dispersal from the nest is paramount to their survival.

Turtle hatchlings orient themselves through phototaxis and photokinesis, which means they are attracted towards light (the illuminated breaking surf) and will move faster under bright conditions.[61] Anthropogenic sources of light can therefore disorient hatchlings and draw them away from the ocean and towards potentially fatal distractions such as oncoming car lights, stationary street or building lights or walkers with personal torches.[62] This leads to further exposure of hatchlings during the critical period. Minimising hatchling exposure therefore becomes a priority in any conservation efforts to restore marine turtle populations.

Potential solutions offered, such as manually smoothing the ruts of ORV tracks at the end of each day during nesting season, is a fiscally unfeasible policy that would involve considerable time and resources.[63] The alternative measure of restricting drivers to the harder sand near the high tide mark aims to allow the regular tidal and wave movements to eradicate or minimise track depths.[64] Nonetheless, driver behavior studies indicate that a significant portion of ORVs still use the softer sand above the high tide mark so any move to concentrate ORV traffic below the tide mark in the intertidal zone would severely impact the high volume of ecologically significant macroinvertebrate species that already display ecologically concerning decline due to ORVs. [65,66] Thus the impacts of

[61] Warren & Antonopoulou, 1990.

[62] Dimitriadis et al., 2018.

[63] Van der Merwe et al., 2012.

[64] Hosier et al., 1981.

[65] Schlacher & Thompson, 2008a.

[66]Van der Merwe & Van der Merwe, 1991; Schlacher & Thompson, 2008.

ORVs on turtle hatchling dispersal, nesting mothers and nests indicate the need to manage areas where recreational use of vehicles occurs on marine turtle nesting beaches.

Macrobenthic invertebrates

Macrobenthic invertebrates consist of the organisms that inhabit the ecological zone known as the benthic zone and that are visible to the naked eye, including worms, clams, molluscs and crustaceans. The benthic zone begins at the shore line (intertidal or littoral zone) and extends along the substrate (bottom) of the continental shelf away from the land mass.

Macrobenthics are an irreplaceable food source for many shore and migratory birds and provide important ecological services such as nutrient recycling on beaches and regulation of the transference of minerals and energy through the food web to higher order consumers (e.g. birds, fish and turtles). Damage to this 'macrobenthos' threatens the habitat energy value of feeding areas and available food sources.

Due to their key roles in maintaining the ecological balance of beaches, macroinvertebrates are considered important bio-indicators of ecosystem health and a measure of environmental responses to human disturbance. Recent studies outlined below suggest that ORV traffic on beaches negatively impacts macroinvertebrate populations and therefore, has potentially devastating effects on beach ecosystems as a totality.

FIGURE 2.4. HORN EYED GHOST CRAB (*OCYPODE CERATOPHTHALMIA*) ON A MINJERRIBAH/ NSI BEACH SOURCE: BRUCE MARTIN.

Macrobenthic invertebrates generally inhabit the sand/water matrix of the intertidal zone where much of ORV traffic is concentrated. Thus, the spatial overlap between ORVs and

macroinvertebrates directly contributes to direct crushing and collisions, sand compaction, the destruction of burrows and suitable habitat, interference with reproduction and recruitment, and decreased populations.[67] Beach invertebrates can be killed at high volumes by beach traffic through direct crushing on both the surface and in burrows. The severity of these incidents depends on the compactness of the sediment, the sensitivity of individual species to crushing and the depth to which they are buried underneath the sand.[68] The damage to intertidal species also increases notably when organisms are on or near the surface of the sand.[69] Although 'pulse' events occur during peak holiday seasons, these ecological impacts are likely to be ongoing as ORVs can traverse beaches throughout the year. Therefore, the current governance of ORVs does not allow for seasonal recovery of macroinvertebrates because a period of minimal or zero impact has not been established on many of Australia's beaches.

A 2008 study of Teewah and Noosa North Shore on Queensland's South East coastline identified that there was significant biota loss on sandy upper shores—84% of all sample units on the upper shores of impact beaches were void of animals compared to only 12% on control beaches. In addition, 25–63% of the middle beach section was de-faunated, whereas macrobenthos occurred in all but 2% of reference beach samples. 7% of all cores from impact beaches in the lower shore and swash zone were void of invertebrates compared with reference beaches that contained individuals in every core taken.[70]

Moss and McPhee (2006) conducted research on MInjerribah/NSI's Ghost Crab *Ocypode cordimanus* population and compared their abundance along exposed beaches closed and open to recreational ORVs. They found that the presence of 4WD activity on beaches correlated with a lower abundance of ghost crabs, with beaches closed to ORVs containing a mean abundance of Ghost Crab burrows over double that of those beaches that allowed four-wheel driving.

Ghost Crabs are predominantly surface active during the night time hours and the most crab fatalities from direct ORV crushing occur during this period.[71] Nocturnal studies to determine the impact of ORVs on surface-active crabs determined that considerable numbers of crabs were killed when crab activity was high. Currently, the causes of high crab activity at night cannot be causally explained and could be combination of a 'direct response to light intensity, weather conditions, an internal timing mechanism, or simply a random behaviour'.[72] Schlacher, Thompson and Price's 2007 North Stradbroke Island study found that a single vehicle traversing the beach at night killed 13–26

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[67] Wolcott & Wolcott, 1984; Christoffers, 1986; Steiner & Leatherman, 1981; Wolcott. 1978; Bird et al., 2004; Moss & McPhee, 2006; Schlacher, Thompson & Price, 2007; Schlacher & Thompson, 2007; Schlacher & Thompson, 2008; Jonah et al., 2015; Stelling-Wood et al., 2016; Davies et al., 2016.

[68] Van der Merwe & Van der Merwe, 1991.

[69] Van der Merwe & Van der Merwe, 1991.

[70] This divergence of the lower shore and swash zone from the 2008 study is considered by the UWA 2016 Study to be potentially due to individual beach morphodynamics, in particular the width of the surveyed beaches in Western Australia in comparison to the wider South East Queensland beaches of Teewah and Noosa North Shore.

[71] Wolcott & Wolcott, 1984; Moss & McPhee, 2006; Schlacher, Thompson & Price, 2007.

[72] Schlacher, Thompson & Price, 2007: 363.

crabs over a distance of 200–300 metres: a mortality rate of 0.12%–0.75% of the total intertidal ghost crab population.[73]

Previous studies have suggested that burrows offer adequate protection from 4WD activity.[74] However, it is now believed that burrows offer only partial protection from being crushed by ORVs.[75] Crab mortality within burrows is strongly dependent on the burrow depth. Schlacher, Thompson and Price (2007) showed that crabs that construct burrows shallower than 25cm are being killed by ORVs. Sediment compaction and other beach attributes may explain the differing conclusions or the weight of the ORVs used in the experiments.[76] They also noted that the density of ghost crabs was significantly higher in the two sections that received low and medium volumes of ORV traffic compared to areas that received high volumes of beach traffic (a reduction in ghost crab burrow numbers by 42–48%).[77]

Correspondingly, the University of Western Australia's 2016 study determined that even low-level vehicle traffic negatively impacts the physical beach environment and macroinvertebrate assemblages. Cores taken from ORV-impacted beaches showed lower species richness, species diversity and abundance than the control beaches for both upper and lower zones.[78] Although beach morpho-dynamics differ considerably across many of the studies, habitat characteristics are highly unlikely to have been the contributing factor in the diversity and abundance of macrobenthic assemblages.[79]

1.3.3 Fire

A bushfire, sparked by an illegal campfire in mid-October 2020, burned more than 85,000 hectares of scrub on K'gari/Fraser Island.[80] Access to many camping sites on sand islands such as K'gari and

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[73] Of the 78 crabs crushed at night in the four experimental runs, 77% were *Ocypode ceratophthalma* and 23% were *Ocypode cordimanus*.

[74] Wolcott & Wolcott, 1984.

[75] Schlacher, Thompson & Price, 2007.

[76] ORV weights have changed significantly since the 1980s.

[77] Schlacher, Thompson & Price, 2007.

[78] *Overall, there was a significant difference in void core numbers between the control and impact beaches for both the upper (impacted beaches: mean of 12.62 void cores; control beaches: 1.88 void cores; n= 8) and lower (impacted beaches: 8.50 void cores; control beaches: 2.25 void cores; n= 8) levels (ANOVA, p< 0:001 and p= 0.003 respectively, n= 120). For cores that contained fauna, 23 different species were recorded, with 4616 individuals sampled. Numerically, crustaceans dominated, representing 42% of individuals collected (12 species). Major crustacean groups were Isopoda (contributing 26.9% to the whole), Decapoda (8.5%) and Amphipoda (6.6%). Insects were the second most speciose group, with seven species recorded, however they contributed substantially less to the overall numbers, making up only 14.6% of the individual count. The single most abundant species was the mollusc Paphies elongate, with 1922 individuals collected over the entire sampling period.* (Davies, Speldewinde & Stewart, 2016:3)

[79] Schlacher, Richardson & Mclean, 2008.

[80] *Brisbane Times* 13/12/2020.

Minjerribah/NSI depends on ORV access along beaches and across dunes. Unrestricted ORV access along beaches and across dunes is likely to lead to more frequent and severe bushfires.

1.3.4 Litter

There are anecdotal reports of litter contaminating campsites on the frontal dunes on Minjerribah/NSI, but no research documentation of this could be found as research into beach litter has focussed on beach litter washed up from the ocean.

1.3.5 Faecal contamination

A study of markers of human faecal contamination of groundwater near popular camping areas on K'gari/Fraser Island showed that beach camping and associated dune disposal of human waste appears to be closely associated with elevated faecal coliform levels and persistent elevated nutrient levels in the groundwater.[81]

1.4 Conclusion

The research discussed above highlights the devastating ecological impact that even small numbers of 4WDs and other ORVs can have on the flora and fauna on beaches and on the adjoining dunes and vegetation. Measurable impacts on beach biota have been determined by numerous studies to correlate with the levels of ORV traffic on beaches. Current management programs are clearly insufficient to combat the environmental degradation of ORV beach traffic and therefore, if retention of the ecological integrity of our beaches is the objective, a complete reform of contemporary practice guided by the findings of the scientific research is of the utmost importance.

Godfrey and Godfrey succinctly summarise the management predicament of recreational ORVs driving on beaches: 'There can be no doubt that ORVs do environmental damage in just about any ecological setting. The problem is to decide where the least damage will occur, and how much, if any is acceptable'.[82]

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SECTION TWO: Social, Recreational and Aesthetic Impacts of ORVs on Beaches

2.1. Section Summary

Recreational beach driving also affects other important recreational, cultural and social activities.

Indigenous Australian societies have been present on beaches for tens of thousands of years. Their irreplaceable cultural material and heritage sites exist across the coastlines of Australia and retain important archaeological and contemporary significance. The variable exposure and location of culturally prominent sites means that they are highly susceptible to ongoing damage from ORVs traversing shorelines, foredunes, main dunes and sand marshes.

ORVs also completely change the aesthetic of beaches and the way in which they can be used. They cause significant disruption of beach aesthetics from noise, invasion of space, visual eyesore and vehicle pollution. The whole beach, from the foredunes to the swash zone, becomes the domain of vehicles at the expense of other users, flora and fauna.

This has direct social impacts on other beach users and public safety, especially on activities that are incompatible with motor vehicles (walking, swimming and playing, sunbathing, fishing etc.). Deaths and injuries to both active (ORVs) and passive (walkers, swimmers etc.) beach users have occurred as the numbers of recreational users accessing beaches, campsites and swimming/fishing spots has continued to increase dramatically. Non-ORV users seeking the recreation and obvious natural beauty of beaches are required to constantly monitor the movements of themselves and their dependents (children, pets) to prevent a potentially fatal collision.

ORVs' range of travel also allows plant, dirt and bio-organisms to be transported from different ecosystems and deposited in the fragile coastal environments of sandy beaches.

2.2. Aboriginal/Indigenous Cultural Heritage

Indigenous Australians have, for over 60,000 years, maintained stewardship over coastal regions creating many important cultural heritage sites on beaches, dunes and coastal regions. Shell middens, artefacts, meeting and ceremonial grounds and burial sites[83] are all examples of Indigenous cultural heritage that exist along Australia's coastline. Preserving these irreplaceable and archeologically significant sites is a key responsibility outlined in state coastal management strategies, and the impact of ORVs on these sites cannot be underestimated. Beaches are naturally changing landscapes, which poses a threat for more cultural material to be potentially exposed and thus, at risk from trampling and damage by recreational motor vehicles.[84] ORV users may have little

[83] Sargent (ed.) et al., 2012.

[84] Worimi Conservation Lands Plan of Management, 2015, 20.

to no understanding of the location, appearance or significance of cultural sites, increasing the likelihood of incidental damage.

The Worimi Conservation Lands in New South Wales are an example of where ORV traffic access was limited to preserve Indigenous cultural sites because of inappropriate and reckless ORV activity (see Figure 2.1). Temporary signage, bollards and prohibited access were measures implemented to deter further damage to shell middens in a section of swale and dunes. The 2015 Worimi Conservation Lands Plan of Management acknowledges that only in areas in which ORV activity has been wholly prohibited, have shell middens remained undisturbed and, in some cases, been successfully repaired and rehabilitated.[85]

FIGURE 2.1. DAMAGE TO WORIMI CULTURAL SITES FROM OFF-ROAD VEHICLES AND TRAIL BIKES. SOURCE: WORIMI CONSERVATION LANDS PLAN OF MANAGEMENT, 2015, PAGE 21.

Similarly, the Arthur-Pieman Conservation Area (also known as the Tarkine coast) in north-west Tasmania has been closed to recreational ORVs since 2012 due to the demonstrable impacts on Aboriginal cultural heritage and natural values. Home to thousands of Aboriginal sites, the Arthur-Pieman Conservation Area is of invaluable significance to Tasmanian Aboriginals[86], and has been described by the Australian Heritage Commission as *'*one of the world's greatest archaeological regions'[87]. The middens in the Tarkine are distinctive in Australia for their representation of a sedentary lifestyle and lack of fish waste and are archaeologically unique evidence of thousands of

[85] Worimi Conservation Lands Plan of Management, 2015, page 21.

[86] Arthur-Pieman Conservation Area Draft Report, 2010.

[87] Parks and Wildlife Service Tasmania, 2011.

years of Aboriginal stewardship of this landscape.[88] However, under the Hodgman Liberal state government, these tracks were reopened to ORV access but with some prohibited areas signposted. Since the reopening of nearly 40km of off-road tracks, recreational ORV users have been photographed illegally driving in the restricted zones. Ongoing conflict between conservationists and illegal ORV users has prompted local Indigenous leaders, such as Sharnie Everett from the Tasmanian Aboriginal Centre, to label the activity as 'not just a dent in the actual coastline. This is destroying Aboriginal heritage sites, ancient sites, that are non-renewable'.[89]

FIGURE 2.2. DAMAGE AT ARTHUR-PIEMAN CONSERVATION AREA CAUSED BY 4WD VEHICLES. SOURCE: CRAIG BROADFIELD[90]

In relation to Minjerribah/NSI, a cultural heritage study was conducted by Everick Consultants in conjunction with the Quandamooka-Yoolooburrabee Aboriginal Corporation (QYAC) to determine areas on the island of cultural significance to the Quandamooka people.[91] Encompassing the Minjerribah Camping Grounds, Adam's Beach, Bradbury's Beach, Amity Point, Adder Rock, Home Beach, Cylinder Beach, Flinders Beach and Main Beach, the study indicated that ORV access areas and Indigenous cultural sites do overlap across a range of areas on Minjerribah.

On Cable Beach in the far north of Western Australia, the traditional owners of Broome, the Rubibi people, are unequivocally opposed to the presence of ORVs. In submissions made to the Cable Beach Motor Vehicle Management Advisory Committee in 2007, 'Rubibi are adamantly opposed to

[88] Jones, 1974; Stockton & Rodgers, 1979; Huys, 2010; Commonwealth Government of Australia, 2013.

[89] Australian Broadcasting Corporation News, 2017 Retrieved from https://www.abc.net.au/news/2017-11-27/quad-bike-return-to-tarkine-angers-wilderness-society/9194672

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[91] See Figure 2.1—QLD Government, Department of Aboriginal and Torres Strait Islander Partnerships, 2016.

any cars driving on the beaches of Broome' and that the 'continued and unregulated vehicle access to the area of Cable Beach north of the rocks is absolutely inconsistent with the protection of, and respect for the cultural heritage values of this segment of Cable Beach'.[92] Further, 'the unregulated vehicle access to the area of Cable Beach north of the rocks constitutes an ongoing breach of the traditional Aboriginal law and customs pertaining to the area'.[93] Thus, it would appear that local and state governments are, in many instances, prioritising tourism over the explicit concerns from traditional owners regarding the devastation that beach driving can have on significant Indigenous sites and its disrespect for the traditional custodians of the land.

[92] Cable Beach Motor Vehicle Management Advisory Committee, 2007, p. 8.

[93] Cable Beach Motor Vehicle Management Advisory Committee, 2007, p. 8.

FIGURE 2.3. CULTURAL HERITAGE STUDY ON MINJERRIBAH/NORTH STRADBROKE ISLAND—BLUE DENOTES STUDY AREA. SOURCE: XXX

2.3. Public Safety

The safety of other beach users and of the drivers and passengers of ORVs is a fundamental concern. Beach driving is a highly technical and difficult skill as drivers may have to negotiate washouts, submerged creeks, soft sand, undulating terrain and other maritime obstacles. Coupled with an increase in ORVs over the years and the presence of other recreational beach users, it has become a potentially deadly activity. Safety and risk management strategies are imperative for land managers as vehicle accidents potentially become more frequent with increased numbers using beaches for recreation, especially during peak holiday seasons.[94]

During the 20 years from 2001 to 2019, six vehicle crashes causing injury or death were recorded on the beaches on Minjerribah/NSI. Five of these were on Main Beach, including one fatal crash in 2018.[95], and one occurred on Flinders Beach. Three victims required hospitalisation. Four of the six crashes occurred between 2017 and 2019, indicating that the incidence of crashes has been increasing in recent years.[96]

Unfortunately, many near-misses or low-level accidents are not recorded in traffic data nor are there comprehensive studies to collate and determine the accident data on recreational beach driving[97], thereby making it difficult to substantiate claims about how many accidents do occur. As state and local governments define beaches differently—highway, road, track etc.—condensing crash data to determine the involvement of ORVs is difficult and beyond the time and resources available for this report. However, ORVs are undoubtedly involved in accidents on beaches.

Information packs provided by state governments, local councils, 4WD clubs and road safety authorities (such as the RACQ, NRMA etc.) all declare the dangers of driving on beaches and the corresponding safety measures that must be adhered to.[98] The variance in speed limits, passing space, prohibited zones and numbers of passive and active beach users across different regulatory jurisdictions furthers clouds the picture of what is deemed appropriate use of this shared space.

The South Coastal Management Group also noted in 2009 that the increased numbers of injuries presented from ORV and ORV-related incidents places an increasing strain on local health and volunteer emergency services in what can be remote and limited access coastal areas.[99] As many ORV accessible beaches are in regional areas, the demand is placed on potentially underfunded regional health services and relies significantly on emergency extraction helicopters such as the

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[94] Sargent (ed.) et al., (2012), p. 8.

[95] Redland City Bulletin, 2018.

[96] Queensland Government Open Data Portal: Road Crash Locations. http://www.tmr.qld.gov.au/~/media/aboutus/corpinfo/Open%20data/crash/locations.csv

[97] Cable Beach Motor Vehicle Management Advisory Committee, 2007, p. 8.

[98] See RACQ; Queensland Parks and Wildlife Service; Queensland Department of Environment and Science; Australian Geographic etc.

[99] South Coastal Management Group, 2009.

RACQ Life Flight Rescue[100]. A review found the following examples of injuries and fatalities caused by ORVs on beaches.

In 2009, a Japanese tourist was killed and seven others injured when an ORV rolled on the eastern side of K'gari/Fraser Island (see Figure 2.4). It was the 43rd serious car accident on the island in the 6 years prior.[101]

In 2014, an English tourist died after the ORV she was travelling in rolled over on Fraser Island. Seven others were injured in the accident.[102] The crash prompted renewed calls for the safety recommendations of a 2010 coronial inquest into the deaths of three tourists in two separate crashes to be implemented.[103]

FIGURE 2.4 FATAL ORV ROLLOVER ON FRASER ISLAND IN 2009. SOURCE: *FRASER COAST CHRONICLE*, 2009.

In 2016, also on Fraser Island, a 20-year-old Dutch woman tourist was run over by a Toyota Landcruiser 4WD while sunbaking on the beach. The 21-year-old driver was allegedly under the influence of alcohol, recording 0.064 per cent in a police breath test following the collision.[104]

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[100] See RACQ LifeFlight Helicopters— https://www.lifeflight.org.au/

[101] *Fraser Coast Chronicle*, 2009.

[102] Australian Broadcasting Corporation, 2014a.

[103] Australian Broadcasting Corporation, 2014b.

[104] Fraser Coast Chronicle, 2016.

In August 2017, a 39-year-old woman was run over by a four-wheel drive ORV at 3am while asleep in her swag on Cable Beach near Broome, Western Australia. Thankfully, the collision was not fatal.[105] Cable Beach is a volatile mix of camel tourist trains, ORVs, off-leash dogs, nudists, families and children (see Figure 2.5). The Broome Shire council maintains an ORV and camel train free zone, however recent campaigns by cameleers to open these areas to the world-famous and heavily promoted camel trains has been prompted by public safety concerns in the mixed-use areas.

The 2007 report to the Council of the Shire of Broome from the Cable Beach Motor Vehicle Management Advisory Committee states that:

> *A number of accidents have occurred on Cable Beach in recent years, some of which have been fatal. Accidents on Cable Beach often involve irresponsible behaviour, speed and alcohol. In addition, there have been many incidents of hooning and reckless driving with the potential to cause serious injury …* ***there is no doubt that there is a level of anxiety amongst some beach users concerning their personal safety and that of their children****.*[106]

FIGURE 2.5. RUSH HOUR AT CABLE BEACH, BROOME WESTERN AUSTRALIA. SOURCE: ABC NEWS.107

In November 2017, a 16-year-old girl was killed when a four-wheel drive rolled at Stockyard Point, Five Rocks. Five Rocks is a popular off-road destination near Yeppoon in Queensland.[108]

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[105] Australian Broadcasting Corporation, 2017.

[106] Cable Beach Motor Vehicle Management Advisory Committee, 2007, p. 8.

[107] ABC News. Retrieved from https://www.abc.net.au/news/2018-10-08/camel-rushhour-1.jpg/10351798

[108] *Mornington Bulletin*, 2017.

In March 2018, a 19-year-old man was killed when he fell from a ute being driven on North Stradbroke Island's Main Beach.[109]

This is not an exhaustive list of fatalities and accidents from beach driving, rather it demonstrates the numerous ways in which tragic and preventable accidents have occurred. ORVs operating on beaches presents a real public safety risk to other recreational beach users and to the drivers and passengers of the vehicles themselves.

2.4. Beach Amenity and Aesthetics

Beach views and coastal aesthetics are valued for many reasons. The natural vistas of sand dunes, water, waves and big sky are synonymous with the coastal lifestyle that many Australians enjoy. The rhythmical wave motion, the expanse of blue ocean, the combination of coastal flora and sand dunes running down to the foreshore—the very essence of what is attractive about beaches is the naturalness of its undisturbed environment. With urbanisation rapidly changing city and suburban landscapes, natural environments become an oasis and counterbalance to the concrete jungle that envelops many Australians.

In fact, it is this sadly ironic reason that ORVs have become prevalent on beaches as their occupants seek the seclusion of superb natural landscapes and the recreational activities associated with sandy beaches. While some argue that it is 'generally accepted that recreation use in natural environments results in some degree of negative social and environmental impact',[110] some activities are more damaging and disruptive than others. Although there are views to the contrary, most coastal tourists perceive ORV driving on beaches to be extremely damaging to the coastal environments and amenity.[111] While the activities of other beach users such as swimmers, walkers, birdwatchers and fishermen have low impact, recreational beach driving is invasive and explicitly disruptive to beach aesthetics and amenity.[112] It actively degrades the wilderness aspect of beaches and reduces their attractiveness for people to engage with them. It also generates pollution, including generation of noise, oil, engine fumes and litter.

[109] *Redland City Bulletin*, 2018.

[110] White et al., 2008, p. 647.

[111] Priskin, 2003; Schlacher & Thompson, 2008.

[112] Priskin, 2003; Schlacher & Thompson, 2008.

FIGURE 2.6. ORVS ON TEEWAH BEACH, NOOSA NORTH SHORE.

With potentially hundreds of vehicles being active on a single beach during peak times, their visual appearance also drastically alters the experience of all beach goers This severely impairs the essence of why beaches are attractive and hold significant value as places of untouched nature, remote wilderness and environmental beauty. One industry source told the Cable Beach Motor Vehicle Management Advisory Committee in 2007, 'we do not want to lay claim to the world's biggest beach carpark, as the beach is the icon rather than the driving experience'.[113] As the population continues to climb, 4WD numbers on beaches are likely to also increase, further impinging on the aesthetics of sandy beaches and limiting how the many people without ORVs can enjoy them.

Another impact of ORVs on beach amenity that is rarely considered is the impact of transient ORVs through coastal communities and the disruption of their domestic life. The economic argument is regularly made that local communities benefit financially from the increased tourism and subsequent expenditure of visitors to the region. However, the tangible benefits of tourism are not always fully understood or balanced against community amenity and aesthetic. What is more, the presence of ORVs could potentially offset any economic benefits when other recreational groups or users decide to stay away from ORV beaches.[114]

[113] Cable Beach Motor Vehicle Management Advisory Committee, 2007, p. 11.

[114] Schlacher & Thompson, 2008.

Bribie Island is a prime example of where local community group have raised serious concerns about the audible and visual pollution of normally quiet beachside streets by ORVs accessing beaches. The Bribie Island Environmental Protection Association Inc. (BIEPA) highlights North Street in Woorim, near the beach access point on the eastern coast of Bribie Island as a prime example of how the concerns of local residents are disregarded by regulatory authorities. They cite noise pollution and engine emissions of ORVs as socially disruptive on their quality of life and economically destructive to housing prices in the area.[115]

2.5. Socio-cultural Considerations

While the ecological, social and indigenous impacts caused by beach traffic support the case against recreational ORVs on beaches, sociocultural and economic considerations also need to be considered.[116] Many people have the expectation of an inalienable right to recreation and outdoor leisure activities in the Australian outdoors.[117] Fishing, surfing and camping are very popular activities, which in some instances are only accessible via ORV. This is the situation on many beaches in Australia, including on Minjerribah/NSI, where the beach camping areas on Main Beach are only accessible with a 4WD and require a drive of nearly 20km to the furthest camping and fishing point.

However, the opportunity to remove oneself and escape from motor vehicles and ORVs is an equally fundamental right of recreational beach users, especially when the presence of ORVs impairs their recreation so severely.[118] Moreover, a study of the impacts of ORVs in Broome, WA, found that although ORV users do not perceive ORVs to be impacting key environments, when they are informed, they show a high level of support for management actions.[119]

[115] Bribie Island Environment Protection Association (2019) *pers. comm.*

[116] Celliers et al., 2004; Schlacher & Thompson, 2008.

[117] Celliers et al., 2004.

[118] Wilkinson, 2001.

[119] Randall, M., Macbeth, J., & Newsome, D., 2006.

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SECTION THREE: Australian Legislation and Regulations Concerning Driving on Beaches

3.1. Section Summary

The varying range legislation and regulations across the Australian Commonwealth, state and local government jurisdictions, and their complexity, does little to assist the proper governance of the driving of recreational ORVs on beaches.

The Queensland regulatory framework for ORVs relies primarily on local councils passing by-laws to restrict, prohibit or allow recreational vehicles to access beaches under their jurisdiction. Councils may be given powers from the State to manage areas of land including coastal areas, recreation areas, declared beach areas, national parks and marine parks. However, there is provision for designation of Recreation Areas to be managed by the Queensland Parks and Wildlife Service, usually in conjunction with local regulatory authorities.

An overarching umbrella of Commonwealth and State legislation, regulations and non-regulatory documents inform the decisions of coastal land managers, including on such issues as environmental protection, public safety and tourism. They are therefore under obligation to consider the potential environmental implications of ORVs on coastal areas under their management. Whether they fully consider or prioritise their ecological management obligations is less clear.

Legislative avenues to campaign for stricter regulation of beach driving certainly exist and should be fully explored to hold land managers to account on their responsibility to ensure recreation (ORVs and other recreational pursuits) are not at the expense of the fragile coastal ecosystems they are charged with protecting. The broad discretionary powers of regulatory authorities under many aspects of different legislative instruments also allow for imposing conditions that restrict vehicle access. Convincing the relevant authority to restrict or prohibit access therefore becomes the issue at stake.

This section provides a legislative and regulatory overview for concerned organisations and individuals looking to engage with the legal, regulatory and legislative inhibitions that prevent the further restriction, if not prohibition, of recreational ORV activity on beaches.

Friends of Stradbroke Island Inc. (FOSI) commissioned the Environmental Defenders Office Queensland (EDO) to undertake research on the following:

a) Compiling an overview of the legislation and various management regimes that concern the driving of vehicles on beaches in Queensland

b) Compiling an overview of the legislation and various management regimes that concern vehicles on beaches in other Australian states and territories

This section is a summation of the EDO's legal research and advice concerning the driving of ORVs on beaches and is augmented by the FOSI project team's research. The EDO have also provided potential legal avenues to be pursued for future submissions, campaigns and hopefully, reform. The EDO document in its entirety is included in Appendix 3.1.

3.2. Overview of Queensland Legal Framework

The general principle in Queensland is that local councils, through delegation from the State, have a general power to manage roads through the *Local Government Act 2009* (Qld) and some additional powers to manage other areas through cause-specific legislation. Councils may be given powers from the State to manage areas of land including coastal areas, recreation areas, declared beach areas, national parks and marine parks.

Other jurisdictions have varying legislative regimes that either restrict the driving of vehicles on beaches, or create powers to manage areas that potentially extend to restriction of driving of vehicles on beaches.

3.3. Key Legislation, Regulations and Management Regimes in Queensland

3.3.1. Relevant Queensland legislation

The position at law regarding regulating vehicle access to beaches in Queensland can be found within various legislative instruments, including:

- *Local Government Act 2009* (Qld)
- *Coastal Protection and Management Act 1995* (Qld)
- *Land Act 1994* (Qld)
- *Land Regulation 2009* (Qld)
- *Recreation Areas Management Act 2006* (Qld)
- *Recreation Areas Management Regulation 2017* (Qld)

Further guidance and regulation can be found within other legislative instruments, such as:

- *Environmental Protection and Biodiversity Conservation Act* 1999 (Commonwealth)
- *Marine Parks Act 2004* (Qld)
- *Marine Parks (Declaration) Regulation 2006* (Qld)
- *Vegetation Management Act 1999* (Qld)
- *Nature Conservation Act 1992* (Qld)
- *Nature Conservation (Protected Areas) Regulation 1994* (Qld)

3.3.2. Coastal Protection and Management Act 1995 (CPMA) (Qld)

Objectives of the CPMA seek to preserve coastal assets from environmental harm by introducing special management practices. Relevantly, the CPMA seeks to:[120]

(a) provide for the protection, conservation, rehabilitation and management of the coastal zone, including its resources and biological diversity; and

(b) ensure decisions about land use and development safeguard life and property from the threat of coastal hazards.

[120] *Coastal Protection and Management Act 1995* (Qld), section 3(a) and (c).

3.3.3. 2014 Coastal Management Plan (CMP)

Under the CPMA (Qld), the Queensland Environment Minister must prepare a coastal plan[121] for Queensland that stipulates how the coastal zone and areas are to be managed[122], and may include requirements about coast resources or land management in the zone.[123] The 2014 Coastal Management Plan prepared by the Department of Environment and Heritage Protection (now the Department of Environment and Science) is the current non-regulatory coastal management document for relevant regulatory authorities and coastal land managers. Primarily aimed at local government, it also can guide port authorities, natural resource management groups, traditional owners and other coastal management groups in best practice coastal administration.[124]

The plan guides management planning, activities and works relating to:[125]

- *maintaining coastal landforms and physical coastal processes*
- *conserving nature*
- *maintaining access to coastal resources for indigenous cultural activities*
- *maintaining or enhancing public access*
- *management planning*
- *knowledge sharing and community engagement. The Coastal Management Plan is non-regulatory, and the policies contained in the plan provide best practice coastal management guidance only*

The 2014 Coastal Management Plan emphasises the impact of vehicles on beaches and specifies best coastal management practices to limit the ecological damage they cause.[126] The Plan importantly indicates the significance of research on benthic invertebrates, shorebirds, turtles and dune vegetation being adversely affected by beach traffic that was presented in Section One of this report.

3.3.4. 2014 CMP Suggested management actions[127]

- *Seasonal and night closures of turtle nesting beaches*
- *Preventing artificial light pollution on turtle nesting beaches*
- *Seasonal closures for areas with nesting migratory birds or other protected species*
- *Pest control at turtle nesting beaches*
- *Beach clean ups to remove marine debris*
- *Education about the impacts of boat strikes and marine debris on MSES*

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[121] *Coastal Protection and Management Act 1995* (Qld), section 20.

[122] *Coastal Protection and Management Act 1995* (Qld), section 21(1).

[123] *Coastal Protection and Management Act 1995* (Qld), section 21(3)(b).

[124] 2014 Coastal Management Plan. Retrieved from https://www.qld.gov.au/environment/coasts-waterways/plans/coastal-management/management-plan

[125] 2014 Coastal Management Plan. Department of Environment and Science.

[126] 2014 Coastal Management Plan. Department of Environment and Science, p. 10.

[127] 2014 Coastal Management Plan. Department of Environment and Science, p, 10.

- *Rehabilitating damaged vegetation*
- *Regulating beach driving by—*
    - *introducing a permit system*
    - *speed limits*
    - *beach closures*
    - *seasonal and night closures for protected species, and*
    - *restricting vehicle access to below the drift line, away from dune vegetation*

3.3.5. Nature Conservation Act 1992 (Qld)

The objective of the NCA is the conservation of nature,[128] which is achieved by several strategies including the protection of native wildlife and its habitat by prescribing protected and prohibited wildlife.[129] The classes of wildlife to which the NCA applies are as follows:[130]

- *protected wildlife, that is:*
    - *extinct in the wild*
    - *endangered*
    - *vulnerable*
    - *near threatened*
    - *least concern*
- *international wildlife; and*
- *prohibited wildlife*

Section 73 of the NCA provides that protected wildlife (which includes for example, the Eastern Curlew) is to be managed to conserve the wildlife; including to ensure the survival of the wildlife, reduce or remove effects of threatening processes, and conserve the wildlife's critical habitat to the greatest possible extent.

Section 88 of the NCA places restrictions on taking protected animals. It states that 'a person must not take a protected animal unless the person is an authorised person or the taking is authorised under the NCA'.[131] This section specifically relates to the 'taking' of a protected animal rather than a protected animal's habitat. The definition of 'take' in the NCA includes:[132]

(a) in relation to an animal—

(i) hunt, shoot, wound, kill, skin, poison, net, snare, spear, trap, catch, dredge for, bring ashore or aboard a boat, pursue, lure, injure or harm the animal; or

(ii) attempt to do an act mentioned in subparagraph (i); and

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[128] *Nature Conservation Act 1992* (Qld), section 4.

[129] *Nature Conservation Act 1992* (Qld), section 5(d)(ii).

[130] *Nature Conservation Act 1992* (Qld), sections 71–82.

[131] *Nature Conservation Act 1992*(Qld), section 88(2).

[132] *Nature Conservation Act 1992* (Qld), Schedule Dictionary (definition of 'take').

(b) in relation to a plant—

> *(i) gather, pluck, cut, pull up, destroy, dig up, fell, remove or injure the plant or any part of the plant; or*
>
> *(ii) attempt to do an act mentioned in subparagraph (i).*

According to advice on behalf of the EDO, 'it could be seen that driving in areas that contain protected animals which may wound, injure or harm that particular animal, or in relation to a plant, destroy or injure the plant, may constitute a breach of the NCA'.[133]

3.3.6. Recreation Area Management Act 2006 (Qld) & Recreation Area Management Regulation 2017 (Qld)

A regulation may declare an area to be a 'recreation area'.[134] However, it is important to note that land other than State land cannot be included in a recreational area unless the land-holder enters into a written agreement (a 'recreation area agreement') with the State for its inclusion.[135] What must be included in a recreation area agreement is outlined in s 6(3) of the *Recreation Area Management Act 2006* (Qld) (RAMA).

Restricted access

The chief executive may declare all or part of a recreation area to be a restricted access area by displaying a 'restricted access area notice' in, at or near the entrance to the area.[136] They may only do this if it considers that access to, or activity in, the restricted access area should immediately be restricted or prohibited:[137]

> *(a) to secure the safety of a person or a person's property; or*
>
> *(b) because of a fire or other natural disaster; or*
>
> *(c) to conserve or protect the cultural or natural resources of the recreation area or native wildlife.*

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[133] Conclusion as per Advice line enquiry response—*Beach Driving Permits*. EDO, p. 15.

[134] *Recreation Areas Management Act 2006* (Qld), section 7(1).

[135] *Recreation Areas Management Act 2006* (Qld), section 6(2).

[136] *Recreation Areas Management Act 2006* (Qld), section 101(1).

[137] *Recreation Areas Management Act 2006* (Qld), section 101(2).

It is an offence to enter or remain in restricted access areas without approval/permit.[138]

FIGURE 3.1 RESTRICTED AREA ON NOOSA NORTH SHORE FOR MIGRATORY SHOREBIRD ROOSTING. SOURCE: QPWS.

3.3.7. Permits

A Vehicle Access Permit (VAP) is required to drive on recreation areas in Queensland, such as national parks and beaches. The Queensland State Government's National Parks and Wildlife Service look after applications. An application for a VAP must be made to the chief executive and be supported by sufficient information to enable the application to be decided.[139] The chief executive may issue VAPs for maximum one year.[140] A person must not take a motor vehicle into a recreation area unless authorised by a permit.[141]

[138] *Recreation Areas Management Act 2006* (Qld), section 106.

[139] *Recreation Areas Management Act 2006* (Qld), section 41.

[140] *Recreation Areas Management Act 2006* (Qld), sections 34–35.

[141] *Recreation Areas Management Act 2006* (Qld), section 109.

3.3.8. Further regulation of driving in a recreation area

In a recreation area, a person must not:[142]

(a) drive a vehicle at a speed/in a way that may cause damage to the area;

(b) use a vehicle in a way that may disrupt someone else's enjoyment of the area;

(c) park/stand a vehicle in a way that may damage/disturb the area;

(d) drive a vehicle other than on a road or on a non-vegetated part of a coastal beach or along a route/surface that a regulatory notice states is okay;

(e) drive a vehicle on a coastal beach if doing so is prohibited by a regulatory notice or sign under s13(1).

3.3.9. Council powers in Queensland

The *Local Government Act 2009* (Qld) (LGA) provides discretion to a local government authority to introduce and enforce local laws that are 'necessary or convenient for the good rule and local government of its local government area'. A local government authority may be a council, such as the Redland City Council, Noosa Shire Council or Moreton Bay Regional Council.

3.4. North Stradbroke Island and other areas in South East Queensland—Management Regimes

3.4.1. Overview

Many of the major Queensland ORV driving beaches are in South East Queensland and operate under a separate regulatory structure pursuant to the Recreation Areas Management Act 2006 (QLD) (RAMA). With South East Queensland's exponential population growth expected to continue, there is the potential for the number of ORVs accessing these sites to increase accordingly. Currently under the legislation, vehicles accessing the RAMA are required to purchase a Vehicle Access Permit (VAP) (see Section Five) from QPWS and authored third parties. In such areas, 'nature-based recreation is encouraged but carefully planned and managed to

[142] *Recreation Areas Management Regulation 2017* (Qld), s 15.

protect these places for conservation'.[143] However, the regulatory distinction of what constitutes 'conservation' becomes blurred when considering the ecological damage ORVs unequivocally cause.

Designated recreation areas

Areas in South East Queensland that are primarily impacted by the driving of vehicles on beaches all rely on a combination of legislation and regulations for conservation management strategies. A significant number of these areas are unique because they have been declared as recreation areas under the Recreation Areas Management Act 2006 (QLD). (RAMA) Queensland has seven recreation areas established under the Recreation Areas Management Act 2006 (QLD). The seven areas are: 144

- Minjerriibah/NSI
- K'gari/Fraser Island
- Green Island[145]
- Moreton Island
- Bribie Island
- Inkskip Peninsula
- Cooloola

Most of Moreton Island, Bribie Island, Fraser Island146 and the eastern half of Green Island, as well as Cooloola, are also national parks. A significant proportion of Minjerribah/NSI has recently become National Park, and more areas are planned to be gazetted as the surrender and rehabilitation of mining leases continues.

The recreation areas are administered in *conjunction with other legislative instruments such as the provisions provided by the Nature* Conservation Act 1992, the *Coastal Protection and Management Act 1995* (Qld), the *Marine Parks Act 2004 (Qld)*, *Vegetation Management Act* 1999 (Qld), *Local Government Act 2009* (Qld) and *Land Act 1994* (Qld).

Recreation areas are generally managed by the Department of Environment and Science's (DES) Queensland Parks and Wildlife Service (QPWS) in conjunction with relevant local councils and third parties. For example, Cooloola is managed with Gympie and Sunshine Coast regional councils, and the Minjerribah Recreation Area is managed by Minjerribah Camping (formerly Straddie Camping), a Quandamooka-Yoolooburrabee Aboriginal Corporation (QYAC)-operated initiative, in conjunction with the Queensland Government.

3.4.2. Minjerribah/North Stradbroke Island

Minjerribah Recreation Area

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[143] QPWS and Department of Environment and Science. Retrieved from https://www.npsr.qld.gov.au/recreation-areas/

[144] Retrieved from https://www.npsr.qld.gov.au/recreation-areas/

[145] Although Green Island is administered under the Green Island Recreation Area and Green Island Management Plans 2003, driving is not available as the Island is 27km offshore from Cairns. It remains one of the most accessible and popular islands on the Great Barrier Reef, however fishing and camping on the island are both banned.

[146] K'gari/Fraser Island is also a recognised World Heritage site.

The Minjerribah Recreation Area has historically been managed by the Redland City Council. This management scheme has been replaced by a joint management partnership between the QPWS and QYAC on NSI. QYAC is a Registered Prescribed Body Corporate created under the *Native Title Act 1993* to manage the recognised Native Title rights and interests of the Quandamooka Peoples following the historic High Court determination of their Native Title claims on 4 July 2011[147]. That decision recognised the Quandamooka People's native title rights and interests over land and waters on, and surrounding North Stradbroke Island, and some islands in the wider Moreton Bay area.[148]

It was declared a recreation area under the *Recreations Areas Management Amendment Regulation (No 1) 2011* (Qld) following the Native Title determination to:

> *provide a consistent management framework over the camping areas and beaches on North Stradbroke Island, and to provide a capacity building opportunity for the Traditional Owners of the island, the Quandamooka People, as the custodians and managers of their traditional country.*[149]

The amendment states that its key application is to continue providing vehicle and camping access on beach areas in the Recreation Area, but also provide opportunities for improved coastal management strategies to balance the competing interests of tourism and indigenous land care.[150]

Within this partnership Minjerribah Camping now manages camping infrastructure, tourism, recreational beach driving and other recreation activities as prescribed under the RAMA on NSI. Rangers patrol the beaches and beach camping sites to ensure that 'the Island's foreshores, dune systems, bushland and freshwater systems are cared for to maintain not only their scenic appeal, but also to protect the Island's unique natural and Aboriginal cultural heritage'.[151]

The Minjerribah Recreation Area covers the following sites:

- the holiday parks at Adams Beach, Bradbury's Beach, Amity Point, Adder Rock, Thankful Rest and Cylinder Beach
- the beach camping areas at Main Beach and Flinders Beach
- the foreshores at Main Beach and Flinders Beach

It has not been possible to obtain information about the number of beach access permits issued for ORVs in the Minjerribah Recreation Area. However, in 2020, Minjerribah Camping reportedly decreased the number of beach camping sites on Main Beach from 300 to 200, and made a similar reduction on Flinders Beach.

There are 4WD Vehicle Access Permit Guidelines available for the Minjerribah Recreation Area (see footnotes and Appendix II).[152] The purpose of these guidelines is provided in the *Recreation Area*

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[147] Quandamooka-Yoolooburrabee Aboriginal Corporation. Retrieved from http://www.qyac.net.au/

[148] Minjerribah Camping. Retrieved from https://www.minjerribahcamping.com.au/the-island/quandamooka

[149] *Recreations Areas Management Amendment Regulation (No. 1) 2011* (Qld), p. 1. Retrieved from https://www.legislation.qld.gov.au/view/pdf/published.exp/sl-2011-0290

[150] *Recreations Areas Management Amendment Regulation (No. 1) 2011* (Qld), p. 2.

[151] Minjerribah Camping. Retrieved from https://www.minjerribahcamping.com.au/the-island/the-environment/national-parks-and-recreation-areas

[152] See Minjerribah Camping—4WD Vehicle Access Permit—Guidelines.

Management Regulation Schedule 1, which contains 'management intent' provisions for each prescribed recreation area. For the Minjerribah Recreation Area, this includes (amongst others):

> *(a) providing nature-based recreation and settings that complement and maintain the area's natural condition and protect the area's cultural resources and values;*[153]
>
> *(b) maintaining the quality of recreation and tourism opportunities and visitor experiences;*[154]
>
> *(c) maintaining the scenic appeal of the area including foreshores and dune systems;*[155]
>
> *(d) protecting the area's natural diversity associated with the sensitive sand environment, including significant animal species and plant communities.*[156]

According to the EDO advice: 'These provisions would be relevant in considering, in particular circumstances, what constitutes 'causing damage to the area' under section 15(1)(a) of the RAMA. The wide scope of these statements indicates the discretionary power of regulatory authority to impose conditions on vehicle access, which may include, for example, limiting access to areas during turtle nesting seasons'.[157]

NSI has one declared national park known as Naree Budjong Djara (My Mother Earth[158]) National Park[159], which exists alongside the Minjerribah Recreation Area. Management principles for conservation parks include, to:[160]

> *(a) conserve and present the area's cultural and natural resources and their values; and*
>
> *(b) provide for the permanent conservation of the area's natural condition to the greatest possible extent; and*
>
> *(c) provide opportunities for educational and recreational activities in a way consistent with the area's natural and cultural resources and values; and*
>
> *(d) ensure that any commercial use of the area's natural resources, including fishing and grazing,*

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https://www.minjerribahcamping.com.au/files/381_4wd_vehicle_access_permit_guidelines.pdf?v=860

[153] *Recreation Area Management Regulation 2017* (Qld), Sch 1, Part 2—Minjerribah Recreation Area, Management Intent (a).

[154] *Recreation Area Management Regulation 2017* (Qld), Sch 1, Part 2—Minjerribah Recreation Area, Management Intent (b).

[155] *Recreation Area Management Regulation 2017* (Qld), Sch 1, Part 2—Minjerribah Recreation Area, Management Intent (c).

[156] *Recreation Area Management Regulation 2017* (Qld), Sch 1, Part 2—Minjerribah Recreation Area, Management Intent (d).

[157] Conclusion as per Advice line enquiry response—Beach Driving Permits. EDO, pp. 9–10.

[158] Minjerribah Camping. Retrieved from https://www.minjerribahcamping.com.au/the-island/the-environment/national-parks-and-recreation-areas

[159] *Nature Conservation (Protected Areas) Regulation 1994* (Qld), sch 2.

[160] *Nature Conservation Act 1992* (Qld), section 20(1).

is ecologically sustainable.

The animals that are listed in Schedules 1, 2, 3, and 5 of the *Nature Conservation (Wildlife) Regulation 2006* (Qld) (NC (Wildlife) Reg) as extinct in the wild, endangered wildlife, vulnerable wildlife, near threatened wildlife or least concern wildlife are all 'protected wildlife'.[161] As outlined in the Land Management Plans for Minjerribah/NSI, there are a number of significant flora and fauna species listed in the NC (Wildlife) Reg that are evident on Minjerribah and are protected by the NCA. An overview of the species is listed in the table below:[162]

Table 1 – Protected Flora and Fauna Species

Type	National [B]	State [C]
Ramsar Site	1	
Flora	6	4
Marine birds	49	-
Migratory birds [A]	40	-
Threatened birds	8	15
Threatened reptiles	5	2
Marine reptiles		3
Threatened frogs	1	4
Marine mammals	1	3
threatened mammals	5	1
Threatened sharks	4	1

Notes: -

A – Includes terrestrial and wetland species some of which are listed as both terrestrial and wetland species.

B – EPBC search around Dunwich with a 2 km radius used for this analysis.

C - Wildlife online data for Pt Lookout used for this analysis with a 5 kilometre radius around Adder Rock.

3.4.3. Other Recreation Areas in South East Queensland

3.4.3.1. Bribie Island

The Bribie Island Recreation Area (BIRA) was declared in July 2005 under the *Recreation Areas Management Act of 1998.* It includes the Bribie Island National Park and adjacent lands managed by HQ Plantations, the Department of Transport and Main Roads, the Department of Agriculture, Fisheries and Forestry, South East Queensland Water (SEQ Water) and the Moreton Bay and Sunshine Coast regional councils.[163] The BIRA is intended to manage the 'conservation, cultural,

[161] *Nature Conservation Act 1992* (Qld), Schedule.

[162] See Redland City Council website, Land Management Plans for NSI, Table 1—Protected Flora and Fauna Species, p. 8, http://www2.redland.qld.gov.au/RecreationFacilities/ManagementPlans/Documents/LandManagementPlanNSI HolidayParks100610FINAL.pdf

[163] Bribie Island National Park and Bribie Island Recreation Area Management Statement 2013, page 2. Retrieved from https://www.npsr.qld.gov.au/managing/plans-strategies/statements/pdf/bribie-island.pdf

educational, production and recreational values of the areas" alongside the "interests of area land-holders'.[164]

Portions of the BIRA and other Moreton Bay islands, including the tidal marshes and some of the beaches surrounding Minjerribah/NSI, are administrated as part of the Moreton Bay Ramsar Site—as designated by the Federal Government under the Ramsar Convention (Convention on Wetlands of International Importance especially as Waterfowl Habitat).[165]

The Ramsar Convention is an international agreement to protect internationally significant wetlands. The Department of Environment and Science outlines on its website that:[166]

> *Moreton Bay is a Ramsar site because of its outstanding coastal wetland values and features. Many of its diverse habitat types retain a near-natural character and are interconnected with other habitats supporting biodiversity.*

Ramsar wetlands are protected under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth). There are a number of offences relating to declared Ramsar wetlands outlined in s 17B of the EPBCA, which include it being an offence if a person takes an action that results, or will result in, or is likely to have, a significant impact on the ecological character of a declared Ramsar wetland.[167] Certain exceptions for this action are outlined in subsection (4).[168]

Waters and tidal areas surrounding Bribie Island also comprise part of the Moreton Bay Marine Park, which is administered under the *Marine Parks Act* 2004 (Qld) and the Marine Parks (Moreton Bay) Zoning Plan 2008 (Qld). Thus, BIRA is subject to a range of legislative and regulatory frameworks to inform its management as a place of recreation and ecological conservation.

The *Bribie Island National Park and Bribie Island Recreation Area Management Statement 2013* (BINPBIRAMS) outlines the conservation, tourism and historical purposes of the BIRA under RAMA 2006 (Qld). It recognises the complexity of management frameworks and indicates that the statement 'should be read in conjunction with any management plan, strategy or policy for the marine park'[169]. In doing so, the statement declares that the area's 'significant plant and animal species and communities, including its extensive network of wetlands, will be protected by maintaining the landscape'.[170]

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[164] Bribie Island National Park and Bribie Island Recreation Area Management Statement 2013, page 2.

[165] RAMSAR Convention. Retrieved from https://www.ramsar.org/

[166] See Queensland Government, DES, Moreton Bay—a wetland of international importance https://wetlandinfo.ehp.qld.gov.au/resources/static/pdf/resources/fact-sheets/fs-moreton-bay-ramsar-231013.pdf .

[167] EPBCA, s 17B (1) and (2)

[168] EPBCA, s 17B (4)

[169] *Bribie Island National Park and Bribie Island Recreation Area Management Statement 2013*, page 2.

[170] *Bribie Island National Park and Bribie Island Recreation Area Management Statement 2013*, p. 2.

The Shorebird Management Strategy Moreton Bay (QPWS 2005) identified the area beyond the World War II northern searchlight emplacement on Bribie Island's North Spit (see Map in Appendix II: Resources) as containing important roosting sites for shorebird species.

The 2013 BINPBIRAM Statement acknowledges that 'birds using the North Spit are affected by people recreating near feeding and foraging sites, especially during peak human use periods, while birds using Ocean Beach are mainly disturbed by vehicles'.[171]

These include the endangered Little Tern (*Sterna albifrons*), the vulnerable Australian Painted Snipe (*Rostratula australis)*, the resident Beach Stone-curlew (*Esacus neglectus)* and the near threatened Eastern Curlew (*Numenius madagascariensis)* and Black-necked Stork (*Ephippiorhynchus asiaticus)*.[172] As a result of these recommendations, the regulatory authority has used its discretionary powers to place restrictions on beach access by ORVs to the North Spit.

The 2013 BINPBIRAM Statement also references the threat directly posed to turtle nests and turtle hatchlings by vehicles on Ocean Beach, but states that further investigation of the disturbance of threatened species is required.[173] Applying for the regulatory authority to declare all or more of the BIRA to be 'restricted access' therefore offers a potential avenue to pursue conservation reform under the RAMA (Qld) (see EDO document p. 7).

3.4.3.2. Moreton Island

The 2007 *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan* is the management plan prepared by the QPWS in accordance with the NCA 1992 (Qld) and the RAMA 1988 (Qld). A large proportion of Moreton Island National Park lies within the Moreton Island Recreation Area, although some areas of the national park and the Cape Moreton Conservation Park are outside the recreation area. Most of the island has also been included in the previously mentioned Moreton Bay Ramsar Site in recognition of its important wetland sites: the salt marsh, tidal flats, sandy beaches and perched lakes.[174]

The planning area (19,863ha) includes:[175]

- *Moreton Island National Park (16,900ha)*
- *Cape Moreton Conservation Park (3.36ha)*
- *unallocated State land around the townships of Kooringal, Cowan Cowan and Bulwer*
- *intertidal areas (including a defined 40m width from Tangalooma Point to Reeders Point)*
- *gazetted esplanades other than those used for road purposes within the township boundaries*

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[171] *Bribie Island National Park and Bribie Island Recreation Area Management Statement 2013*, p. 3.

[172] *Bribie Island National Park and Bribie Island Recreation Area Management Statement 2013*, p. 3.

[173] *Bribie Island National Park and Bribie Island Recreation Area Management Statement 2013*, pp. 3–4.

[174] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 5. Retrieved from https://www.npsr.qld.gov.au/managing/plans-strategies/pdf/moreton-island-national-park-2007.pdf

[175] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 3.

- *Port and Harbour Purposes Reserve R3069 south of Cowan Cowan; and*
- *Permit to Occupy No PO7103 in front of Tangalooma Resort lease*

The plan does not cover lands outside the national park, conservation park and recreation area:[176]

- *freehold land*
- *leasehold land*
- *licensed oyster areas*
- *reserves for local government (refuse disposal) purposes*
- *gazetted roads*
- *intertidal areas within the Moreton Banks Fish Habitat A*

Alongside the other Moreton Bay sand islands, Moreton Island provides a vital feeding and resting point for over 50,000 migratory waders making their annual journey from the Arctic and sub-Artic regions between September and April each year.[177] Thirty-one species of migratory birds protected under international agreements—such as the Japan/Australia Migratory Bird Agreement (JAMBA) and the China/Australia Migratory Bird Agreement—have been recorded on Moreton Island.[178]

The unique eco-system of Moreton Island and the surrounding bay supports such uncommon migratory birds as the Far Eastern Curlew (*Numenius madagascariensis*) and the Grey Tailed Tattler (*Heteroscelus brevipes*).[179] More so, the endangered Little Tern (*Sternula albifrons*) and the vulnerable Beach Stone-curlew (*Esacus neglectus*) are resident species, which use the beaches of Moreton Island as habitat.[180] The island also has significant resident wader populations of Pied Oystercatcher (*Haematopus longirostris*) and the Red-capped Plover (*Charadrius ruficapillus).*[181]

[176] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 3.

[177] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 11.

[178] See JAMBA. DFAT, Retrieved from http://www.austlii.edu.au/au/other/dfat/treaties/1981/6.html; & CAMBA. DFAT, Retrieved from http://www.austlii.edu.au/au/other/dfat/treaties/1988/22.html. The Republic of Korea and Australia also have a bilateral migratory bird agreement under the acronym ROKAMBA see http://www.austlii.edu.au/au/other/dfat/treaties/2007/24.html

[179] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 11.

[180] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 11.

[181] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 11.

The Osprey (*Pandion haliaetus*) which breeds on the island is considered regionally vulnerable in South East Queensland up to Fraser Island and is listed in the Bonn Convention on the conservation of migratory species of wild animals.[182]

Moreton Bay also has the most significant Loggerhead Turtle population in Australia. Limited numbers of Green Turtles and Loggerhead Turtles nest on the shores of Moreton Island each year.[183]

Management practices concerning the use of recreational ORVs on Moreton Island beaches highlight the importance of conserving and protecting the pristine and vulnerable animal, bird and plant Moreton Island eco-system. There are recommendations within the management plan to trial closing beaches during the migratory bird season of September to April around the Mirapool Lagoon and surrounding beaches.[184] Vehicle access is already prohibited in the special protection zone in the Lake Jabiru–Spitfire Creek area, with increased use of inland bypass tracks being encouraged in other significant areas such as the Heath Island Intertidal Area and Mirapool Lagoon.[185]

Public safety concerns led to proposed closures of the beaches at North Point and Comboyuro Point to public vehicle traffic in 2007.[186]

However, current information available on Moreton Island now stipulates that a speed limit of 30 km/hour applies at all time in front of and between:[187]

- *Ben-Ewa and The Wrecks campgrounds, and*
- *barge landing areas at:*
    - *Reeders Point*
    - *The Wrecks*

A speed limit of 20 km/hr applies at:

- *Bulwer barge landing area*
    - *North Point beach*
    - *The beach in front of Comboyuro Point campground*
- *The speed limit on other areas of beach is 60 km/hr and as signed on other tracks.*

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[182] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 11.

[183] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 11.

[184] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 23.

[185] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 23.

[186] *Moreton Island National Park, Cape Moreton Conservation Park & Moreton Island Recreation Area Management Plan 2007.* QPWS, p. 23.

[187] Driving Safely—Moreton Island. NPSR, Retrieved from https://www.npsr.qld.gov.au/parks/moreton-island/about.html

Likewise—regarding the disturbance of shorebirds—vehicle access along the beach at Mirapool is still possible, although it is prohibited three hours either side of high tide, and a speed limit of 30 km/hour applies at all times.[188]

3.4.3.3. K'Gari/Fraser Island and Cooloola Recreation Area

K'gari/Fraser Island is a World Heritage-listed area managed by Queensland Parks and Wildlife Service. It forms part of the broader Great Sandy Region that includes the Cooloola Recreation Area, Double Island Point, Rainbow Beach, Noosa North Shore and Teewah.

The *Great Sandy Region Management Plan 1994–2010*[189] guides the management of the area. Fraser Island is protected to conserve its natural and cultural resources. Most of the island is a national park protected under the *Nature Conservation Act 1992* (Qld) and the *Recreational Area Management Act* to the low water mark. There are some freehold areas, such as townships.

3.5. Key Legislation, Regulations and Management Regimes in other Australian states and territories

3.5.1. New South Wales

In New South Wales, the *Local Government Act 1993* (NSW) provides local government authorities (councils) with responsibility for public reserves.[190] Additionally, a Council may order a person to do, or to refrain from doing, a thing that is contrary to the *Protection of Environment Operations Act 1997* (NSW).[191]

Many NSW councils do regulate beach traffic and the beach access of vehicles, with a variety of specific conditions including maximum speed limits, minimum passing distances from pedestrians, nesting shorebirds and other beach users, distance from dune vegetation, and a requirement for vehicles to remain below the high tide mark. Significant examples include the Ballina Shire Council's Seven Mile Beach/Lennox Head Four Wheel Drive Beach Access Policy; the Richmond Valley Council's Vehicle Access Points and Regulations; and the Byron Shire Council's Motor Vehicles on Beaches Policy.

Permits are not always required and are subject to specific council regulations. In some instances, the only requirement for a vehicle to enter council-regulated beaches is to be an 'four-wheel drive RTA registered vehicle'.[192]

3.5.2. Northern Territory

Section 53 of the *Traffic Act 2007* (NT) allows regulations to be made that provide for the regulation or

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[188] *Driving Safely—Moreton Island*. NPSR, Retrieved from https://www.npsr.qld.gov.au/parks/moreton-island/about.html

[189] Queensland Government, Parks and Forests, *Great Sandy Region Management Plan 1994–2010* https://www.npsr.qld.gov.au/managing/plans-strategies/great_sandy_region.html

[190] *Local Government Act 1993* (NSW), section 48.

[191] *Local Government Act 1993* (NSW), section 124.

[192] *Richmond Valley Council's Vehicle Access Points and Regulations*. Retrieved from http://www.richmondvalley.nsw.gov.au/page/Economic_Development/Tourism/4WDs_and_Dogs_on_our_Beaches/Vehicle_Access_and_Regulations/

prohibition of persons driving vehicles, including driving on beaches.[193]

Section 33A of the *Traffic Regulations 2007* (NT) provides that:

(1) A person must not drive a motor vehicle on a prescribed beach below high water mark except—

(a) On a ramp or jetty;

(b) For the purpose of launching a boat or taking a boat out of the water;

(c) With the written approval of the competent authority in respect of the beach.

The *Traffic Regulations 2007* (NT) define 'prescribed beach' as all beaches between Emery Point and Buffalo Creek.[194] The *Traffic Act 2007* (NT) defines 'competent authority' as a person, body or authority (including the Territory) having the care, control and management of that street or place.[195]

The *Local Government Act 2017* (NT) gives councils the power to make by-laws. The *Darwin City Council By-Laws 2009* (NT) apply to the municipality of Darwin City but these by-laws do not contain any prohibition on driving vehicles on beaches.

3.5.3. South Australia

Councils in South Australia can establish by-laws under the *Local Government Act 1999* (SA) that are within the contemplation of the Act or another Act or that relate to a matter in relation to which the making of by-laws is authorised.[196] By-laws are local laws established by councils to deal with issues specific to the areas under the care and control of council. A council may assume the control and management of land in its areas that has been set aside for public use if the owner and any other person with an interest in the land consents.[197] A council may, by majority vote of the council, exclude vehicles from the whole or part of a road or public place.[198]

For example, City of Onkaparinga By-law number 6 of 2016 prohibits activities being carried out on foreshore areas. It is also summarised here on the City of Onkaparinga website. Article 9.5 of the by-law prohibits activities that may threaten integrity of sand dunes, pebble banks, coastal slopes or cliff, activities that introduce non-indigenous flora or fauna and other activities.[199]

3.5.4. Tasmania

Section 46 the *Crown Lands Act 1976* (Tas) provides that:[200]

(3) No person shall, without lawful authority—

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[193] *Traffic Act 2007* (NT), section 53(2)(c)(i).

[194] *Traffic Regulations 2007* (NT), section 33(2).

[195] *Traffic Act 2007* (NT), section 3.

[196] *Local Government Act 1999* (SA), section 246.

[197] *Local Government Act 1999* (SA), section 192.

[198] *Local Government Act 1999* (SA), section 234A.

[199] City of Onkaparinga *Foreshore By-Law 2016,* By-Law No.6 2016, 9.5.

[200] *Crown Lands Act 1976* (Tas), section 46(3)(b).

(b) Drive any vehicle on a part of any beach or foreshore that is being used by people for bathing, playing or other recreational purposes.

There is a policy on the use of recreational vehicles applying to roads, tracks and beaches on all lands administered by Forestry Tasmania, Hydro Tasmania and the Parks and Wildlife Services of the Department of Tourism, Parks, Heritage and the Arts.[201]This policy does not apply to roads maintained by local councils. However, it appears that most beaches are administered by the Parks and Wildlife service and tourists are advised to contact Parks and Wildlife service to arrange a permit.

3.5.5. Victoria

Under the *Land Conservation (Vehicle Control) Act 1972* (Vic) and the *Recreation Vehicles Act 1973* (Vic), driving on beaches is a prohibited activity. The *Land Conservation (Vehicle Control) Act* 1972 stipulates that the movement of vehicles through public land is confined to roads formed for the passage of vehicles having four or more wheels. The *Land Conservation (Vehicle Control) Act* 1972 amended the Local Government Act 1958 to include the following paragraph:

Prohibiting or regulating the use of motorized vehicles for recreational purposes on any land or any specified part or parts of land not being a highway or private street or road or public land within the meaning of the 1970 Land Conservation Act.[202]

This enabled cities, towns and boroughs to make by-laws to prohibit or regulate the use of recreational ORVs on any land within their jurisdiction.

The only exceptions are for non-recreational ORV activity (primary production, construction and maintenance) and vehicles operating in a 'free access area'. At the time of the 1972 legislation, a single 'free access area' was proclaimed on a temporary, experimental basis near Portland in South Western Victoria in the dunes of Discovery Bay Coastal Park.[203] The Portland Dune Buggy Club (PDBC) still operates on the 1800 hectares of sand dunes on the now permanent 'free access area' as the sole regulator of vehicular activity. As the Discovery Bay Dunes are now declared as National Park, the environmental management of the area is in conjunction with Parks Victoria. Prospective recreational users must be members of the PDBC (they also offer temporary 4-day memberships) and adhere to club rules including strictly no access to vegetated areas and driving on the Discovery Bay Beach.[204]

3.5.6. Western Australia

There is no prohibition against driving vehicles on beaches under the *Road Traffic (Vehicles) Act 2012* (WA), or under its regulations, the *Road Traffic (Vehicles) Regulations 2014* (WA). However, the regulation of off-road vehicle permits is governed by the *Control of Vehicles (Off-road Areas) Act 1978* (WA). Section 45 provides that local governments may make laws for the purposes of off-road driving regulation in accordance with the Act.

There are some restrictions in relation to specific areas, such as Rottnest Island and Cable Beach. [205] Under

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[201] See Policy for the Use of Recreational Vehicles on State-Owned Lands in Tasmania (2005) https://www.sttas.com.au/sites/default/files/media/documents/policies/recreationalvehiclepolicy.pdf .

[202] Land Conservation (Vehicle Control) Act 1972 (legislation.vic.gov.au)

[203] PDBC About-Us. Retrieved from http://www.portlanddunebuggyclub.com.au/PDBC%20-%20history.htm

[204] PDBC By-Laws. Retrieved from http://www.portlanddunebuggyclub.com.au/PDBC%20-%20bylaws.htm

[205] See *Rottnest Island Authority Act 1987* (WA), sections 5 and 11.

the *Rottnest Island Regulations 1988* (WA), a person is prohibited from using a vehicle on the Island without permission.[206]

Rottnest Island is a Class A Reserve[207] governed by the *Rottnest Island Authority Act 1987* (WA) (RIAA), which establishes the Rottnest Island Authority as a statutory body to control and manage the Island. The Act gives the Authority the power to control and manage the Island for the following purposes:

> *(a) to provide and operate recreational and holiday facilities on the Island;*
>
> *(b) to protect the flora and fauna of the Island; and*
>
> *(c) to maintain and protect the natural environment and the man-made resources of the*
>
> *Island to the extent that the Authority's resources allow, repair its natural environment.*

Generally, driving permits are only granted for work purposes. This is to protect the bicycle and pedestrian-friendly environments as a basis for improving sustainability.

The Broome Shire Council restricts vehicle access to Cable beach during turtle nesting season (October–February).

3.6. Legal Avenues for Campaigning

On the legal advice of the EDO Queensland, there are several potential avenues to advocate for the reduction of beach vehicular access.

It should be noted that this is not an exhaustive list, rather a summation of the joint research conducted by FOSI and the EDO Queensland.

***Local Government Act 2009* (Qld)**

If the land under management is the property of the State, local land managers (councils etc.) are subject to both the *Coastal Protection and Management Act 1995* (Qld) and their own regulations, pursuant to the LGA. There is then an obligation to consider the impact that activities may have on the declared coastal erosion area within its catchment, including foreseeable human impacts. Exemptions to land being State property apply if the land has a registered owner, is subject to a lease, zoned as a reserve or a party has occupation rights or rights under the *Native Title Act 1993* (Cth).

As such the EDO believes that:

> *[They] (the designated land manager) consequently has an obligation to consider the impact that activities may have on the declared coastal erosion area within its catchment. Specifically, it must consider the area's vulnerability to erosion by the sea or to wind induced effects, as well as, foreseeable human impacts and coastal hazards in the area.*

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[206] *Rottnest Island Regulations 1988* (WA), section 46(1).

[207] *Rottnest Island Authority Act 1987* (WA), section 4. For further information regarding Class A Reserves see WA EDO Factsheet entitled *Conservation Reserves* http://www.edowa.org.au/wp-content/uploads/sites/7/2016/11/factsheet_bhpl-reserves.pdf

The existing legislative framework provided around coastal management and protection and the discretionary powers provided under the LGA should provide a solid basis upon which to argue that vehicular access to NSI can be proscribed entirely, or at least limited to seasons in which beach animals are not endangered.

***Recreation Area Management Act 2006* and *Recreation Area Management Regulation 2017* (Qld)**

The RAMA 2006 and RAMR 2017 collectively provide avenues for the chief executive to declare areas of restricted access due to conservation concerns. Representations would need to be made to the QPWS and other management partners to establish these areas under the provisions stipulated in the RAMA. As such the EDO recommends:

If [one] believe[d] that an area should be declared a restricted access area due to the need to either:

(a) to secure the safety of a person or a person's property; or

(b) to conserve or protect the cultural or natural resources of the recreation area or native wildlife;

then we suggest writing to the Minister requesting that the particular area of concern be declared a restricted access area.

It is important to note that while the definition of native wildlife is not found in RAMA, the NCA provides for a definition as follows:

***native wildlife** means any taxon or species of wildlife indigenous to Australia.*

As such, if [one] was to request an area be declared a restricted access area to conserve or

protect native wildlife, FOSI would need to be certain of the following:

a) the wildlife is native to Australia; and

b) restricting access to the area would help conserve or protect that particular native wildlife;

particularly if FOSI believes that there are certain areas that require beach driving access due to protection of known habitat for protected flora and fauna.

***Land Act 1994* (Qld) and *Land Regulation 2009* (Qld)**

Under the *Land Act 1994* (Qld) and the *Land Regulation 2009* (Qld), the Minister or local government, in devising use conditions of said land (in this case - beaches), may consider issues raised by members of the public and environmental issues, for example turtle breeding habitats or shorebird roosting sites.

The EDO advises:

As such, if [one] believes or has strong evidence to show that there are areas on NSI [or other potential ORV site] where turtles are renowned to nest during the nesting periods, we suggest [to] write to the Minister and/or local Council requesting that a use condition be included in the local laws to restrict vehicle access to those areas during that particular time.

3.7. Conclusion

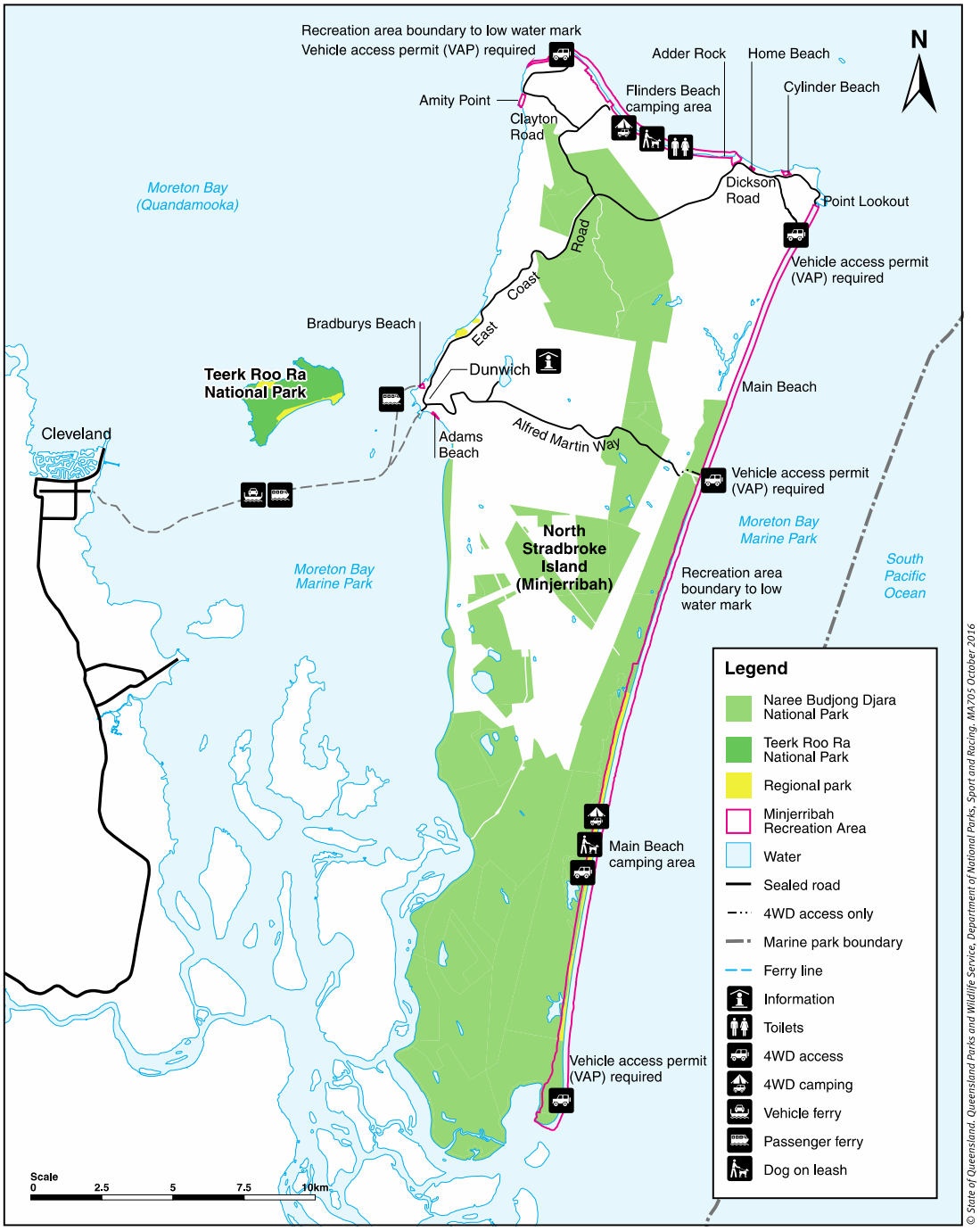
Asking relevant Ministers, local regulatory authorities and land managers to exercise the powers within their existing legislation would seem to be the first action that should be taken to seek reform on this issue.

Therefore, it is hoped that this section may act as a guiding framework and activist encyclopaedia from which advocates can quickly access relevant legislation and regulatory research on ORVs and their damaging impact on sandy beaches. Significant legal scope is available to press reform and potentially prohibition on the issue, however it requires a coalition of concerned parties to consistently raise the profile of the issue with those who can bring about that reform.

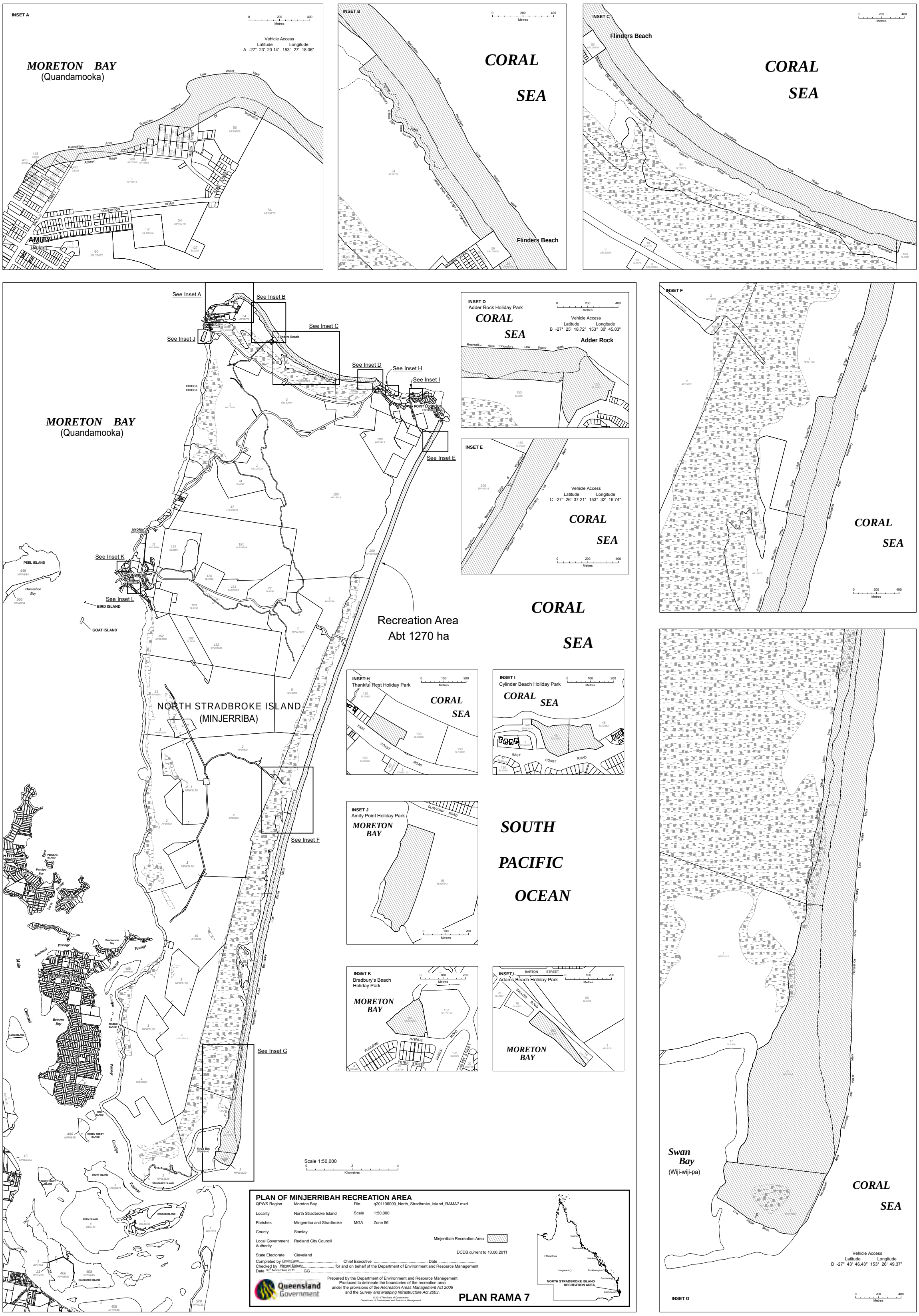
Recreation Area Maps:

Minjerribah Recreation Area map

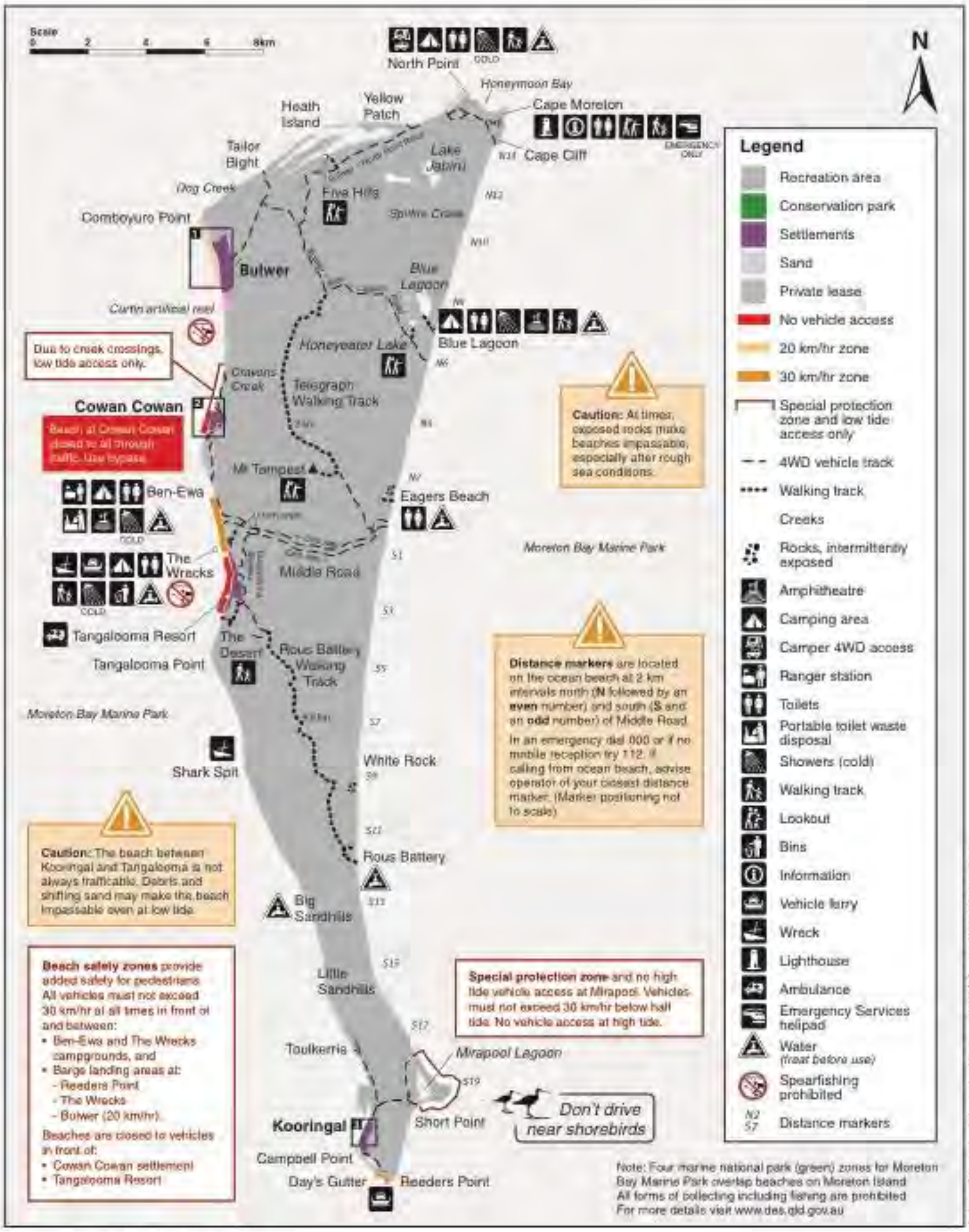
North Stradbroke Island



Queensland Government

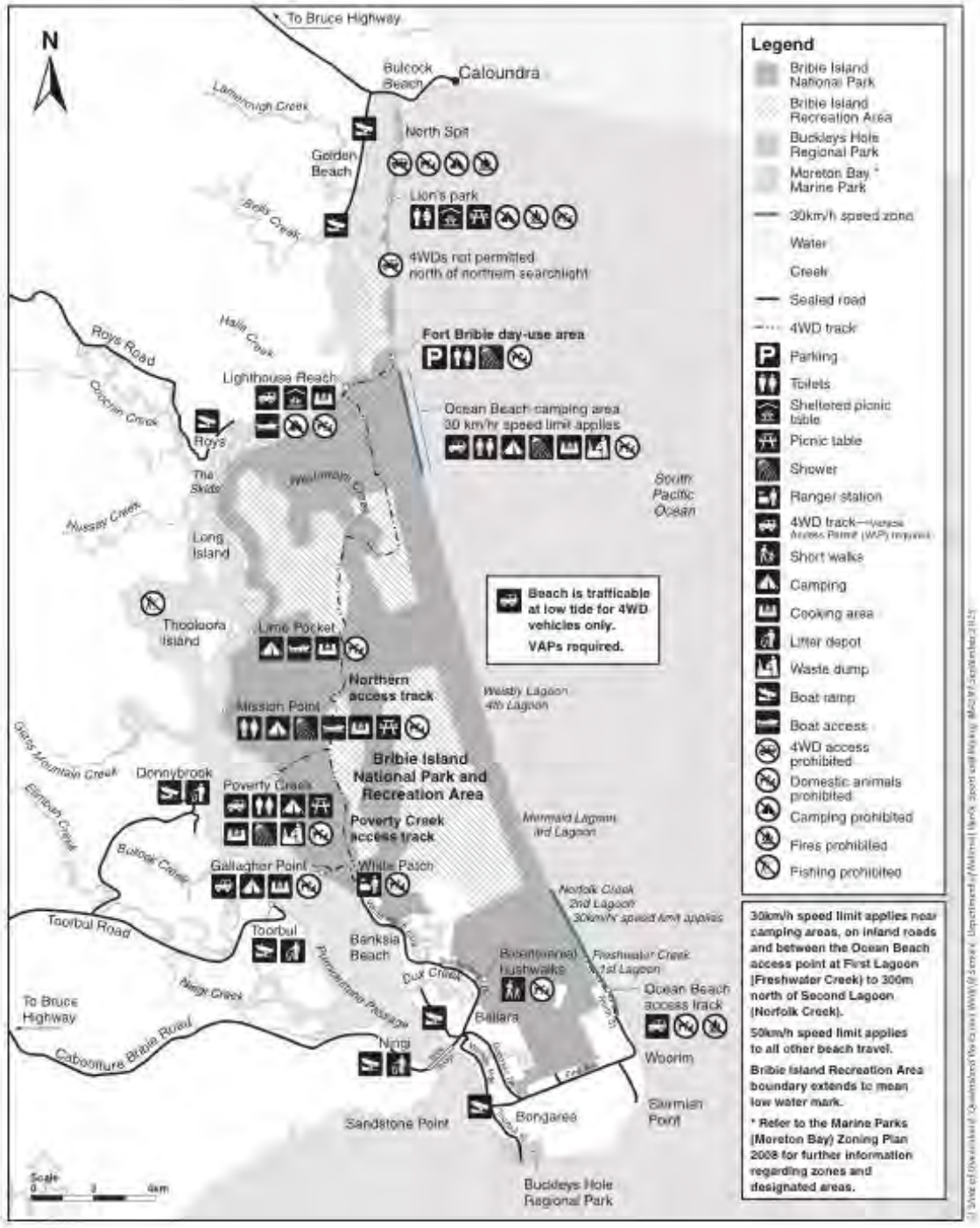

INSET A
MORETON BAY
(Quandamooka)
Vehicle Access
Latitude Longitude
A -27° 23' 20.14" 153° 27' 18.06"
AMITY
INSET B
CORAL
SEA
Flinders Beach
INSET C
Flinders Beach
CORAL
SEA
See Inset A
See Inset B
See Inset C
See Inset J
See Inset D
See Inset H
See Inset I
See Inset E
MORETON BAY
(Quandamooka)
See Inset K
See Inset L
PEEL ISLAND
BIRD ISLAND
GOAT ISLAND
Recreation Area
Abt 1270 ha
CORAL
SEA
NORTH STRADBROKE ISLAND
(MINJERRIBA)
See Inset F
See Inset G
INSET D
Adder Rock Holiday Park
CORAL
SEA
Vehicle Access
Latitude Longitude
B -27° 25' 18.72" 153° 30' 45.03"
Adder Rock
INSET E
Vehicle Access
Latitude Longitude
C -27° 26' 37.21" 153° 32' 16.74"
CORAL
SEA
INSET H
Thankful Rest Holiday Park
CORAL
SEA
INSET I
Cylinder Beach Holiday Park
CORAL
SEA
INSET J
Amity Point Holiday Park
MORETON
BAY
SOUTH
PACIFIC
OCEAN
INSET K
Bradbury's Beach
Holiday Park
MORETON
BAY
INSET L
Adams Beach Holiday Park
MORETON
BAY
INSET F
CORAL
SEA
Swan
Bay
(Wiji-wiji-pa)
CORAL
SEA
Vehicle Access
Latitude Longitude
D -27° 43' 46.43" 153° 26' 49.37"
INSET G
Scale 1:50,000
0 2 4
Kilometres
PLAN OF MINJERRIBAH RECREATION AREA
QPWS Region Moreton Bay
File q201106009_North_Stradbroke_Island_RAMA7.mxd
Locality North Stradbroke Island
Scale 1:50,000
Parishes Mingerriba and Stradbroke
MGA Zone 56
County Stanley
Local Government Authority Redland City Council
State Electorate Cleveland
Minjerribah Recreation Area
DCDB current to 10.06.2011
Completed by David Clark .... Chief Executive .... Date ....
Checked by Michael Siebuhr .... for and on behalf of the Department of Environment and Resource Management
Date 30th November 2011 ....GG ....
Prepared by the Department of Environment and Resource Management
Produced to delineate the boundaries of the recreation area
under the provisions of the Recreation Areas Management Act 2006
and the Survey and Mapping Infrastructure Act 2003.
© 2010 The State of Queensland
Department of Environment and Resource Management
PLAN RAMA 7
NORTH STRADBROKE ISLAND
RECREATION AREA
BRISBANE

Moreton Island National Park and Recreation Area map



Queensland Government

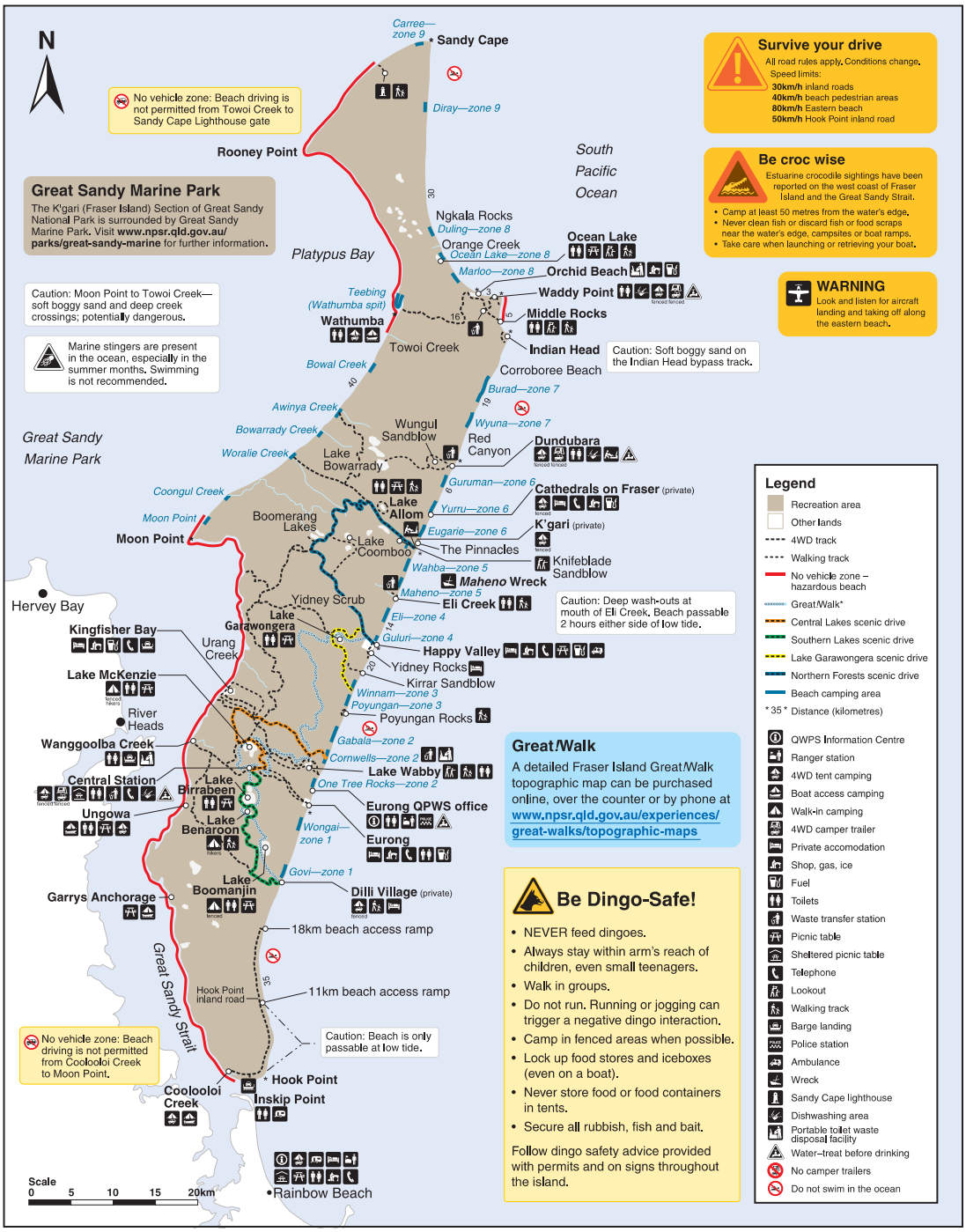
Bribie Island National Park and Recreation Area map



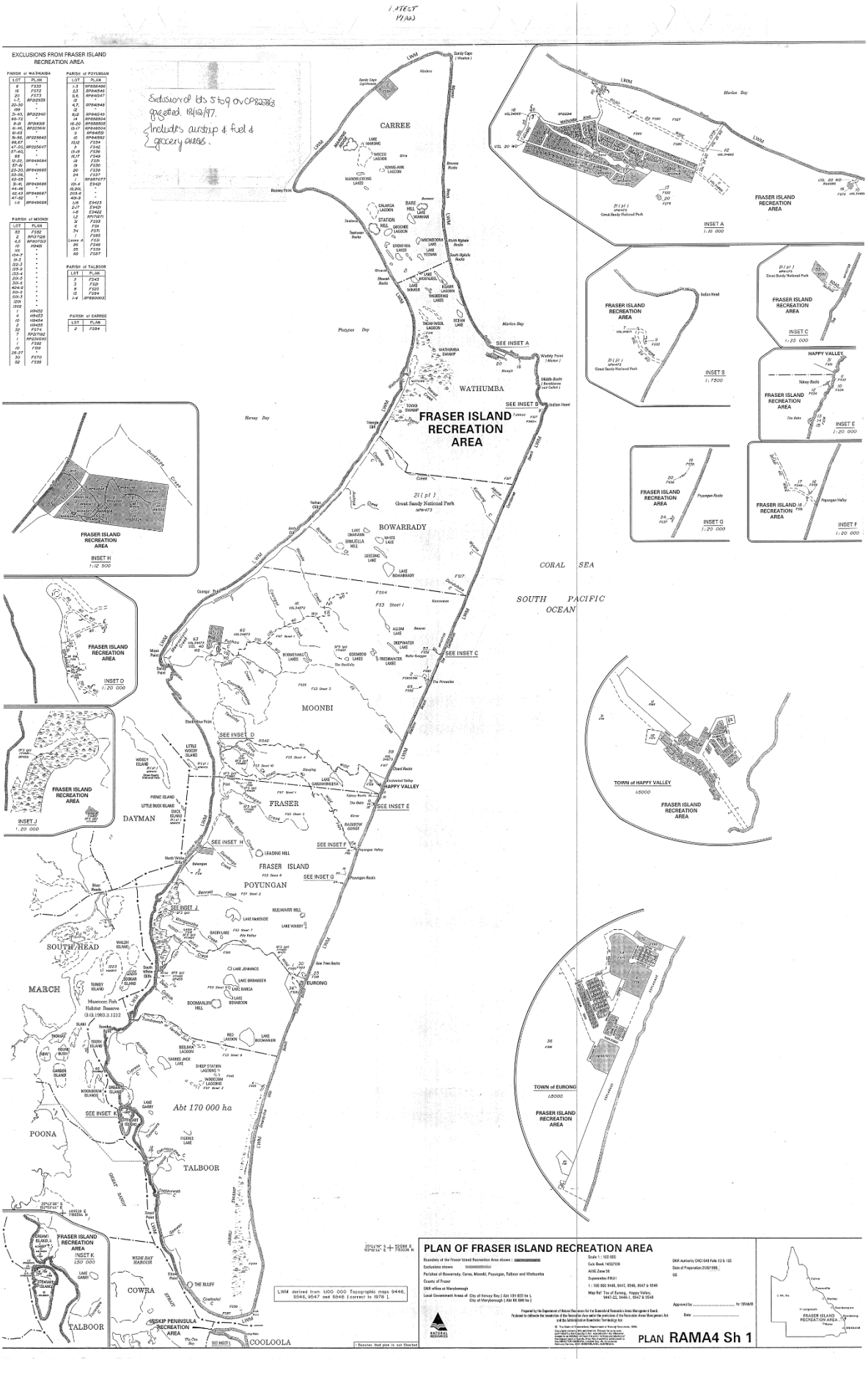
Queensland Government

K'gari (Fraser Island) Recreation Area map

Great Sandy National Park

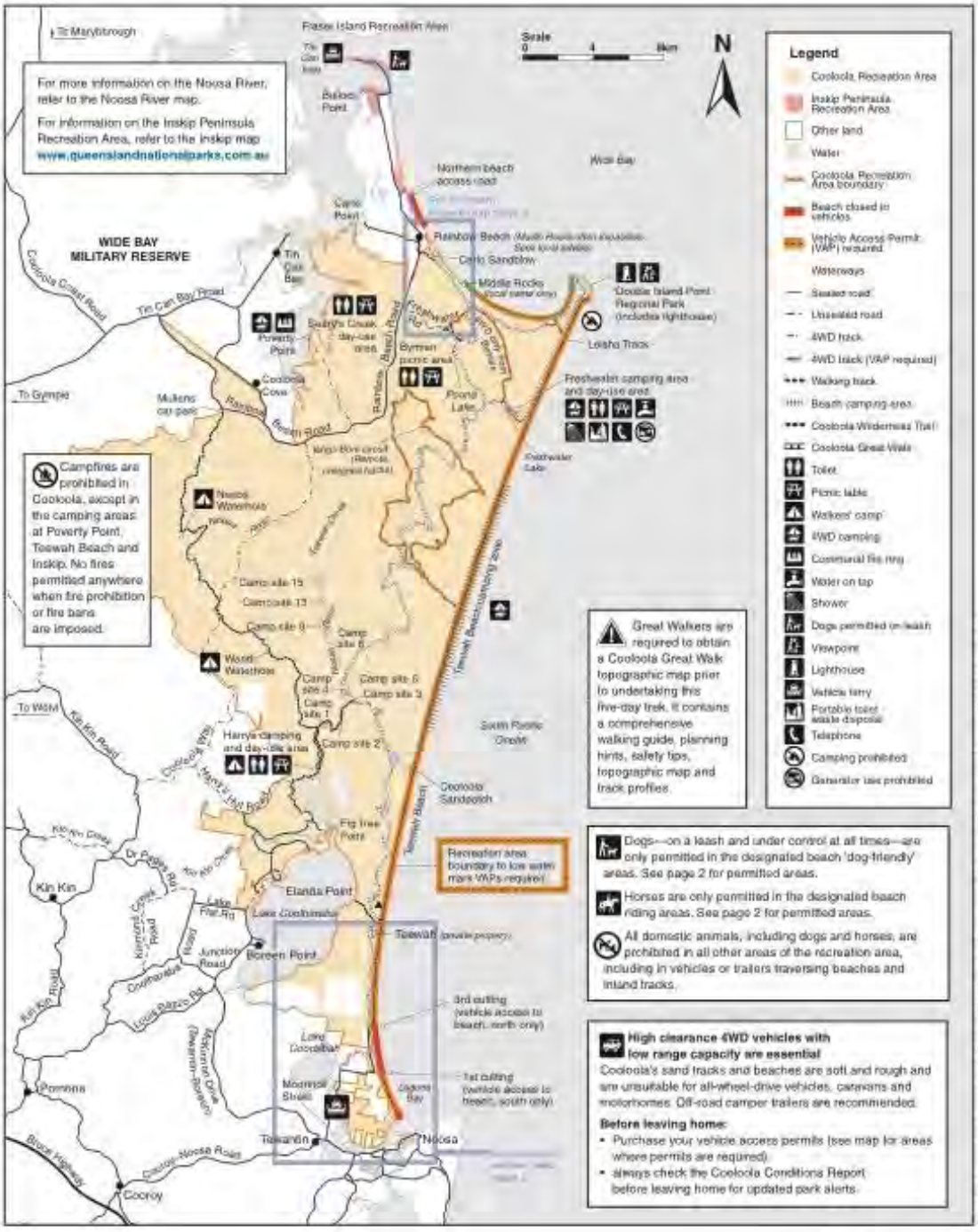


Queensland Government


EXCLUSIONS FROM FRASER ISLAND RECREATION AREA
Exclusion of lots 5 to 9 on CP882363 gazetted 18/10/97. Includes airstrip & fuel & grocery areas.
CARREE
WATHUMBA
FRASER ISLAND RECREATION AREA
BOWARRADY
CORAL SEA
SOUTH PACIFIC OCEAN
MOONBI
FRASER
DAYMAN
POYUNGAN
SOUTH HEAD
MARCH
EURONG
POONA
TALBOOR
COWRA
COOLOOLA
HAPPY VALLEY
Great Sandy National Park
Abt 170 000 ha
INSET A 1:10 000
INSET B 1:7500
INSET C 1:25 000
INSET D 1:20 000
INSET E 1:20 000
INSET F 1:20 000
INSET G 1:20 000
INSET H 1:12 500
INSET J 1:20 000
INSET K 1:50 000
TOWN of HAPPY VALLEY 1:5000
TOWN of EURONG 1:5000
PLAN OF FRASER ISLAND RECREATION AREA
PLAN RAMA4 Sh 1

Cooloola access map

Cooloola Recreation Area, Great Sandy National Park



Queensland Government

SECTION FOUR: Review of International Legislation and Regulations Concerning Driving on Beaches

4.1. Section Summary

This section provides an overview of the regulations relating to the use of vehicles on beaches in four national jurisdictions: New Zealand, South Africa, the United States of America and the United Kingdom. Firstly, it explains where law-making power is derived from in each jurisdiction for the regulation of vehicle use on beaches. Secondly, this section provides examples of specific regulations that have been imposed that impact the practice.

In short, it appears that regulation of this issue is primarily done by local government authorities through the creation of bylaws. In the jurisdictions examined here, only South Africa has federal statutory restrictions on the use of vehicles on beaches.

Examples of local authority schemes demonstrate that there are several different regulatory approaches in practice. These include: outright prohibition of vehicle use, prohibition during certain times, prohibition at certain locations and the requirement that a permit be obtained to use a vehicle on the beach.

Australia promotes itself as an international leader in nature conservation and environmental protection, yet on regulating ORVs it fails to prioritise the issue as others have done internationally. Examples of successful international approaches to ORV regulation can be used to put pressure on regulatory authorities in Australia to enact similar policies here.

The legislative provisions discussed in this memorandum are reproduced in Appendix 4.1.

4.2. New Zealand

In New Zealand, the Land Transport Act 1998 (LTA) provides local councils with the power to make bylaws for restricting or prohibiting the use of vehicles on beaches.208 However, under the *Local Government Act 2002* (LGA) local councils may also make bylaws for the general purpose of regulating reserves and other land under the control of the local authority.209 The LGA does not specify that these regulations must be directed at a particular purpose. This indicates that, despite the emphasis of the LTA, local councils can create bylaws that regulate vehicle use on beaches without restricting or prohibiting it.

Although there are strong traditions of vehicle use on beaches in New Zealand, there is a growing recognition of the need to regulate the practice to protect ecological interests. In 1999, the New Zealand Department of Conservation published a report titled *Vehicle impacts on the biota of sandy beaches and coastal dunes*, which concluded that vehicle use on coastal areas should be heavily restricted.[210]

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[208] *The Land Transport Act 1998 (*NZ*),* section 22AB(f).

[209] *Local Government Act 2002* (NZ), section 146(b)(vi).

[210] Gary Stephenson, 1999. 'Vehicle impacts on the biota of sandy beaches and coastal dunes' (published by New Zealand Department of Conservation) p. 33. See at: https://www.doc.govt.nz/documents/science-and-technical/Sfc121.pdf

Specifically, the report found that vehicle use impacting coastal dunes should be banned altogether and that vehicle use impacting sandy beaches should be limited to certain hours and beach conditions.[211]

There are several examples of local authorities regulating the use of vehicles on beaches since the report's publication. The Whangarei District Council created the *Control of Vehicles on Beaches Bylaw* in 2009. Regulations under this bylaw prohibit the use of vehicles on all areas in a designated section of Ruakaka Beach South [212] and the use of vehicles on dunes within the Whangarei District area.

Contrastingly, the Northland Regional Council created the *Vehicles on Beaches* bylaw in 2015. This scheme does not prohibit vehicle use on beaches and regulates it only by providing that a person operating a vehicle must 'show due consideration for other users of the beach' and operate the vehicle in a 'courteous, appropriate, safe and responsible manner'.[213]

In 2015, the Greater Wellington Regional Council introduced the *Proposed Natural Resources Plan*, which seeks to restrict vehicle access to coastal areas that are home to protected wildlife habitats, archaeological sites or have significance to the indigenous Māori population. The Plan identifies several coastal locations where vehicle use on the beach is prohibited because they are 'sites with significant value' and creates a guiding policy that allows district and city councils to restrict the use of vehicles on the foreshore, excepting vehicle use for purposes such as surf lifesaving operations and emergency situations.[214] Recent commentary suggests that the plan is not yet being fully enforced as it is still in draft form.[215]

4.3. United States of America

In the United States there is a distinction between the regulation of beaches that are under the control of the federal government through the National Parks Service and those that are under the control of local government authorities. In terms of federally regulated beaches, a guiding policy regime is provided by the *National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands*, published by the US Department of the Interior Bureau of Land Management in 2001. The strategy creates three designations for off-highway areas (including beaches). 'Closed' areas are those where vehicle use is

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[211] Gary Stephenson, 1999. 'Vehicle impacts on the biota of sandy beaches and coastal dunes' (published by New Zealand Department of Conservation) p. 33. See at: https://www.doc.govt.nz/documents/science-and-technical/Sfc121.pdf

[212] *Control of Vehicles on Beaches Bylaw*, Wharangarei District Council, sections 6.1 and 6.2. See at: http://www.wdc.govt.nz/PlansPoliciesandBylaws/bylaws/Documents/Control-of-Vehicles-on-Beaches-Bylaw.PDF

[213] *Vehicles on Beaches Bylaw*, Far North District Council, section 4. See at: https://www.fndc.govt.nz/your-council/councils-bylaws/bylaw-documents/bylaw-documents/Vehicles-on-Beaches-Bylaw-FINAL.pdf

[214] *Proposed Natural Resources Plan*, 2015. Greater Wellington Regional Council, policy 147. See at: http://www.gw.govt.nz/assets/Plans--Publications/Regional-Plan-Review/Proposed-Plan/Proposed-Natural-Resources-Plan-for-the-Wellington-Region-July-2015.pdf

[215] See at: https://www.stuff.co.nz/environment/105285034/vehicle-ban-on-beaches-across-wellington-region-leaves-some-residents-dismayed

prohibited, 'limited' areas are where vehicle use is restricted at certain times or locations and 'open' areas are those where vehicle use is permitted.[216]

An example of a federally regulated beach that has been designated as 'limited' is The Cape Cod National Seashore in Massachusetts. The Cape Cod seashore is regulated by the Superintendent of Cape Cod National Seashore through the *Superintendent's Compendium*, which has delegated authority under the *Code of Federal Regulations*. *Appendix 1 Special Regulations* provides that oversand driving routes are open in designated areas between April 15 and November 15.[217] The regulations also provide that drivers may only operate oversand vehicles with a permit, which is granted and administered by the Superintendent. Permit holders must comply with additional regulations, including a 15 miles per hour speed-limit, and a requirement to decrease tire pressure before entering the beach.

There are also examples of the regulation of use of vehicles on beaches that are administered by local counties. These authorities typically provide regulations that account for seasonal and conditional factors. For example, Volusia County, Florida, regulates the practice through the *Code of Ordinances of Volusia.* Sec.20–173(a) provides that:

> *Motor vehicular traffic shall be authorized only between 8:00 a.m. and 7:00 p.m. or sundown whichever is earlier from May 1 through October 31, and between sunrise to sunset from November 1 to April 30, tides permitting.*[218]

Vehicles may access the beach in Volusia County if they pay a daily fee of $20USD, or have purchased an annual pass, which costs $25USD for local residents, and $100USD for everyone else.[219]

In Currituck County, North Carolina, the *Currituck County Code* regulates the use of vehicles on the beach. Although this Code provides general authorization for vehicles to be operated on the beach strand and other beach areas, sec.10–63 specifies that vehicles are prohibited on the beach strand and foreshore where there is an "improved all-weather road, dedicated to public use" running parallel to the beach strand during the period between May 1 and September 30.[220] In addition, sec.10–61 prohibits the operation of vehicles where that use would be destructive to natural features, stating:

> *No person shall operate any vehicle, moped, motorcycle or motor vehicle or use any horse on or across any dune barrier or in such a manner as would destroy natural vegetation.*[221]

In the Borough of Seaside Park, New Jersey, the *Borough Code* regulates the use of vehicles on beaches and provides specific restrictions on the operation of four-wheel-drives. Article 135–12 of the Code provides an

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[216] *National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands*, published, 2001. U.S Department of the Interior Bureau of Land Management in 2001, 3. See at: https://www.ntc.blm.gov/krc/uploads/320/National%20OHV%20Strategy.pdf

[217] *Superintendent's Compendium (Cape Cod National Seashore of Massachusetts), Code of Federal Regulations* section 36, appendix 1. See at: https://www.nps.gov/caco/learn/management/compendium-appendix-1.htm

[218] *Code of Ordinances,* Volusia County (FL), Sec.20–173(a). See at: https://library.municode.com/fl/volusia_county/codes/code_of_ordinances

[219] *Code of Ordinances,* Volusia County (FL), Sec.20–202,203.

[220] *Currituck County Code*, Currituck County (NC), Sec.10–61. See at: https://library.municode.com/nc/currituck_county/codes/code_of_ordinances?nodeId=COOR_CH10PARE_ARTIIBE

[221] *Currituck County Code*, Currituck County (NC), Sec.10–63.

absolute prohibition on the use of all vehicles on the Borough's bayfront beach whilst article 135–13 provides that four-wheel-drive vehicles are required to obtain a permit to operate on the Borough's ocean beach and that these vehicles are only permitted to operate between the period of May 16 to September 30.[222] Article 135–14 provides that only vehicles registered at 10,000 pounds or less can obtain a permit.[223]

4.4. South Africa

In South Africa there are federal statutory restrictions on vehicle use on beaches. In 2001 the Minister of Environmental Affairs made the *Control of Use of Vehicles in the Coastal Area* regulations pursuant to the *National Environmental Management Act 1998* (NEMA).[224] The regulations prohibited the recreational use of vehicles in the country's coastal areas, except where that use was a 'permissible use', such as driving on a public road, or on private land with the permission of the owner. The regulations also allowed the Director-General of Marine and Coastal Management to declare a coastal area as a 'recreational use area' (RUA) within which recreational use was allowed for vehicle operators who had obtained a permit from the relevant local authority.[225]

The province of Kwazulu-Natal provides an interesting example of the issues surrounding the designation of RUAs. This area possesses many of the most popular beaches in South Africa and, as such, there was support for certain beaches within Kwazulu-Natal province to be designated as RUAs after the introduction of the 2001 regulations.[226] However, under section 27(7) of the NEMA, the Director-General could not designate RUAs unless they had fulfilled certain requirements, including investigating, assessing and communicating the potential impacts of vehicle use and consulting with provincial authorities and other government organs, including the Coastal Management Unit (CMU). With this in mind, the local CMU in Kwazulu-Natal approached the Oceanographic Research Institute to develop an evidence-based system that could be used to assist in the making of determinations of RUAs in the area. Working in cooperation with the CMU, the Oceanographic Research Institute published research that identified the following 'exclusion parameters' that should, if possessed by a coastal area, immediately disqualify it from being designated as an RUA:

- *Any area outside the hard sand of the intertidal zone*
- *Fragile, rare, relict or vanishing vegetation*
- *Wildlife sanctuaries and reserves*
- *Unsuitable physical attributes of beaches or natural barriers*
- *Areas of fragile natural features or scientific interest*
- *Areas of potential beach user conflict*

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[222] *Borough Code*, Seaside Park (NJ), article 135–13. See at: https://ecode360.com/15461335?highlight=four-wheel-drive#15461329

[223] *Borough Code*, Seaside Park (NJ), article 135–14.

[224] *Control of Vehicles in the Coastal Zone*, Regulations published in Government Gazette on 21 December 2001 pursuant to *National Environmental Management Act 1998.* See at: http://extwprlegs1.fao.org/docs/pdf/saf52055.pdf

[225] *Control of Vehicles in the Coastal Zone* (2001), section 5.

[226] Celliers L., Moffett, T.. James, N.C., & Mann, B.Q., 2004. 'A Strategic Assessment of Recreational Use Areas for Off-Road Vehicles in the Coastal Zone of KwaZulu-Natal, South Africa'. 47(1) *Ocean & Coastal Management* 124.

- *Unidentified or unexplored key ecological processes*[227]

According to the researchers, the exclusion parameters represented a ;simple and logical' tool that could assist the RUA designation process by ensuring that decisions were informed by a 'strong conservation logic'. Applying the exclusion parameters to the Kwazulu-Natal province the researchers found that more than 50% of the coastline was disqualified from RUA designation.[228]

In 2014, the regulations were updated in a way that significantly strengthened the restrictions on vehicle use in coastal areas. The updated regulations were made under the *National Environmental Management: Integrated Coastal Management Act* (NEMICMA), which was legislated in 2008 to support the NEMA and specifically promote the conservation of coastal areas.[229] The 2014 regulations retained the general prohibition against vehicle use but narrowed the permissible uses by removing the ability for coastal lands to be designated as RUAs.[230] This means that, under the 2014 regulations, vehicle use can only be authorized in coastal areas in circumstances where it is on a public road, or where permission is granted by the management authority of the relevant coastal area.[231] The 2014 regulations also grant the Minister of Environmental Affairs the power to issue permits to authorize vehicle use in the coastal area. However, permits can only be issued for non-recreational purposes—such as conducting scientific research or operating a tourism business.

The 2014 regulations also significantly bolstered the punitive measures that apply to an offence against the regulations. The 2014 regulations provide that a fine of up to R500,000 ($48,000AUD)[232] can be issued to any person convicted of an offence under the regulations – which increased the penalty from R10,000 ($680AUD), as stipulated by the 2001 regulations[233].

Bylaws created by local authorities must support the federal regulations. Under section 156 of the *Constitution of the Republic of South Africa* a by-law made by a local authority that conflicts with national legislation is invalid.[234] This means that even though local authorities hold law-making authority over beaches pursuant to part B of Schedule 5 of the Constitution[235], any regulatory efforts must be consistent with relevant federal legislation, such as the NEMA and NEMICMA. For example, in 2015, the Municipal Council of the eThekwini Metropolitan Municipality established the *Beaches Bylaw*, which stated that:

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[227] Celliers L., 2004, 129.

[228] Celliers L., 2004, 136.

[229] *National Environmental Management: Integrated Coastal Management Act 2008* (South Africa).

[230] *Control of Vehicles in the Coastal Zone*, sections 2–4, Regulations published in Government Gazette on 27 June 2014 pursuant to *National Environmental Management Integrated Coastal Management Act 2008.* See at: https://cer.org.za/wp-content/uploads/2010/10/Control-of-vehicles-in-the-coastal-zone.pdf

[231] *Control of Vehicles in the Coastal Zone* (2014), section 3.

[232] *Control of Vehicles in the Coastal Zone* (2014) section 10

[233] *Control of Vehicles in the Coastal Zone* (2001) section 16.

[234] *Constitution of the Republic of South Africa,* section 156.

[235] *Constitution of the Republic of South Africa, Part B Schedule 5.*

No person may enter onto the beach ***using a motor-vehicle or*** *bring or drive a motor vehicle on any part thereof in contravention of any legislation or Regulations made in terms of any applicable legislation*.[236]

4.5. United Kingdom

Sections 82 and 83 of the *Public Health Act Amendment 1907* provide local authorities with law making power over the sea-shore and promenades and specifically, the use of vehicles and traffic control in these areas.[237]

The local authorities have exercised this power in different ways. For example, the Borough Council of King's Lynn & West Norfolk created the *Beach Bylaws*, which provides a general prohibition on the use of vehicles on the 'seashore or promenade'.[238] Exemptions to the law are available for vehicle use in connection with the launching of boats at specific sites and where prior written approval has been obtained from the Council.[239]

Some local authorities have created bylaws that effectively permit vehicle use on beaches. The Sedgemoor District Council created the bylaw *Seashore and Esplanade at Burnham-on-Sea, Berrow and Brean in the County of Somerset*, which proscribes vehicle use on beaches in the context of a race or competition, and where the vehicle is being driven at a speed exceeding 15 miles per hour.[240] As such, vehicle use that does not fall into either of these categories is allowed.

There are also examples of restrictions on vehicle use on beaches that are located within areas designated as national parks. Under section 20(2)(b) of the *National Parks and Access to the Countryside Act 1949*, 'appropriate conservation authorities' may make bylaws 'prohibiting or restricting the entry, or movement within, nature reserves of persons, vehicles, boats and animals'.[241] An example of the exercise of this power is provided by the Pembrokeshire Coast National Park in Wales. The national park authority administering this reserve created bylaws prohibiting the driving of 'mechanically propelled vehicles over the foreshore within the Pembrokeshire Coast National Park' except on a part of the foreshore designated for the parking of vehicles.[242]

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[236] *Beaches Bylaw 2015,* Municipal Council of the eThekwini Metropolitan Municipality, section 7. See at: https://openbylaws.org.za/za-eth/act/by-law/2015/beaches/eng/

[237] *Public Health Act Amendment 1907* (U.K), sections82 and 83.

[238] Beach Bylaws, Borough Council of Kings Lynn & West Norfolk, section 6.1. See at: https://www.west-norfolk.gov.uk/info/20169/leisure_in_hunstanton/349/beach_bylaws

[239] Beach Bylaws, Borough Council of Kings Lynn & West Norfolk, section 6.5.

[240] By-law: *The Seashore and Esplanade at Burnham-on-Sea, Berrow and Brean in the County of Somerse*t, Sedgemoor District Council, section 2. See at: https://www.sedgemoor.gov.uk/1646

[241] *National Parks and Access to the Countryside Act 1949* (U.K), section 20(2)(b).

[242] *Bylaws*, Pembrokeshire Coast National Park. See at: https://www.pembrokeshirecoast.wales/default.asp?PID=302

SECTION FIVE: Conclusion

This report indicates that the recreational use of ORVs is now a highly prominent and environmentally damaging human behaviour on sandy beach shores with negative ecological consequences.

Therefore, the management of ORVs requires a new conservation approach that acknowledges beach biota as incredibly diverse and interconnected. With new scientific research highlighting the ecological impact of ORVs on beaches, management strategies need to more readily incorporate the ecological responses of beaches to human pressures when determining the broader anthropogenic use of coastal ecosystems.

The science is clear that, ultimately, the only option consistent with a new conservation approach to managing our beaches and dunes is to phase out recreational ORV beach and dune access entirely.

This report provides detailed information about existing legislation and regulations in QLD and in other places in Australia and overseas, that could be used by relevant authorities to reduce ORV impacts on beaches and ultimately to phase them out entirely.

However, the fact that ORV impacts are worsening and that even the minor existing restrictions on ORV beach access are not being enforced, despite growing evidence of damage, indicates that government agencies and politicians currently perceive that there is not sufficient support for actions to protect our beaches from ORV impacts.

The task ahead for organisations such as FOSI, therefore, is to build the level of support for such actions. The first requirement for action is awareness and the first aim of this report is to help spread awareness of this issue.

As awareness spreads, there is likely to be a strong reaction from the significant portion of the population that has a strong investment in the ORV culture and who believe that there should be an unfettered right of access to beaches using ORVs.

However, as the number of ORVs on beaches increases and the visual and research evidence of their impacts becomes greater, there is an opportunity for local environmental NGOs such as FOSI and its sister NGOs on the other sand islands and beaches to work together, and with other like-minded groups, to change the culture and challenge the industry stakeholders. An important ingredient in changing the culture will be to create and promote alternative, non-harmful ways to access and enjoy our beaches, not just to advocate that the beaches be locked away.

FOSI hopes that this report will stimulate awareness of this important issue and that this awareness will lead to engagement and cooperation amongst all stakeholders to ensure that our precious beaches and dunes, the plants and wildlife that inhabit them and all of us who enjoy them can co-exist safely and sustainably into the future.

APPENDIX 4.1 : TABLE OF LEGISLATION

Country	Legislative Authority	Source of regulation	Relevant provisions
New Zealand			
1.	Government of New Zealand	*The Land Transport Act 1998*	**22AB Road controlling authorities may make certain bylaws** (1) A road controlling authority may make any bylaw that it thinks fit for 1 or more of the following purposes: • (a) controlling, restricting, or prohibiting cruising, including (but not limited to)— o (i) specifying the section of road or roads on which cruising is controlled, restricted, or prohibited: o (ii) prescribing the period of time that must elapse between each time a driver drives on a specified section of road for the driver to avoid being regarded as cruising: • (b) prescribing fines, not exceeding $1,000, for the breach of any bylaw made under this section. • (c) prohibiting or restricting, absolutely or conditionally, any specified class of traffic (whether heavy traffic or not), or any specified motor vehicles or class of motor vehicle that, by reason of its size or nature or the nature of the goods carried, is unsuitable for use on any road or roads: • (d) for the safety of the public or for the better preservation of any road,— o (i) fixing the maximum speed of vehicles or of specified classes of vehicles on any road: o (ii) designating any area, where that designation will have the effect of determining the speed limit in that area: • (e) prohibiting or restricting engine braking in any area where the permanent speed limit does not exceed 70 kilometres per hour: • (f) prohibiting or restricting the use of vehicles on beaches:

			• (g) restricting the use of motor vehicles on unformed legal roads for the purposes of protecting the environment, the road and adjoining land, and the safety of road users: • (h) prescribing the use of roads and cycle tracks, and the construction of anything on, over, or under a road or cycle track
2.	Government of New Zealand	*Local Government Act 2002*	**146 Specific bylaw-making powers of territorial authorities** Without limiting section 145, a territorial authority may make bylaws for its district for the purposes— • (b) of managing, regulating against, or protecting from, damage, misuse, or loss, or for preventing the use of, the land, structures, or infrastructure associated with 1 or more of the following: o water races; o (ii) water supply: o (iii) wastewater, drainage, and sanitation; o (iv) land drainage; o (v) cemeteries; o (vi) reserves, recreation grounds, or other land under the control of the territorial authority.
3.	Whangarei District Council	*Control of Vehicles on Beaches Bylaw 2009*	**6 Prohibitions** 6.1 All vehicles are prohibited on dunes at all times 6.2 Vehicles prohibited from beach areas outlined in schedule included in legislation • Explanatory note: The provisions of Council's District Plan and other bylaws apply to all vehicles on beaches. This includes, but is not limited to, the Speed Limits Bylaw 2005, the Parking and Traffic Bylaw 2009 and the Public Places Bylaw 2014. The Land Transport Act 1998 defines a beach as a road and therefore all relevant traffic rules and regulations apply to any vehicles on beaches. **7 Exemptions**

			7.1 Any employee, contractor or nominee of an authorised agency who is carrying out the lawful functions or activities of that authorised agency may use a vehicle in any area identified as prohibited in Schedule 1 of this Bylaw. 7.2 Council may issue exemption permits for the areas identified in Clause 6.2. 7.3 Council may impose such conditions as are deemed necessary on any exemption permits issued. 7.4 Council may revoke an exemption permit at any time. **9 Persons to provide details** 9.1 Where an enforcement officer has reasonable grounds to believe a person has failed to comply with any provision of this Bylaw the person shall, on demand by an enforcement officer, give his or her full name and full address. **10 Offenders to leave beach** 10.1 Where an enforcement officer has reasonable grounds to believe a person has failed to comply with any provision of this Bylaw, the enforcement officer may direct the person to immediately leave the beach, and the person may be further prohibited by that officer from re-entering the beach for a period of 24 hours. **11 Penalties** 11.1 • a) An offence against clause 6 or 7 makes the offender liable to a fine not exceeding $500 • b) An offence against clause 9 or 10 makes the offender liable to a fine not exceeding $20,000
4.	Northland Regional Council	Bylaw – *Vehicles on Beaches*	**4 Vehicles on beaches** **General provisions** (a) Any person operating any vehicle, on any part of the beach must show due consideration for other users of the beach.

			(b) Any person operating any vehicle on the beach, shall operate that vehicle in a courteous, appropriate, safe and responsible manner, giving due consideration to other vehicle operators and to other users of the beach at all times. (c) Any person operating any vehicle on the beach shall not operate that vehicle in such a manner as to present a real or implied danger or threat to the wellbeing and safety of any other user of the beach at all times
5.	Greater Wellington Region	Proposed *Natural Resources Plan for the Wellington Region*	**Policy P147: Motor vehicles on the foreshore** District and city councils may restrict the use of motor vehicles on the foreshore, with the exception of vehicles associated with: • (a) surf lifesaving operations, or • (b) emergency situations, including (but not restricted to) firefighting, oil spills, rescue operations, salvage of vessels and marine mammal strandings, or • (c) local authority activities, or • (d) the development, operation, maintenance and upgrade of regionally significant infrastructure. **Policy P148: Motor vehicles in sites with significant value** The use of motor vehicles on the foreshore in a site identified in Schedule C (mana whenua), Schedule E4 (archaeological sites), Schedule F2c (birds-coastal), Schedule F4 (coastal sites), Schedule F5 (coastal habitats) shall be avoided, except when required for surf lifesaving, emergency, law enforcement, local authority or regionally significant infrastructure purposes. **Rule R196: Motor vehicles—permitted activity** The disturbance of the foreshore from motor vehicles in the coastal marine area is a permitted activity, provided the following conditions are met: • (a) the activity is not within the area of Tītahi Bay shown on Map 35, and

			• (b) the activity is not within a site or habitat identified in Schedule C (mana whenua), Schedule E4 (archaeological sites), Schedule F2c (birds-coastal), Schedule F4 (coastal sites), Schedule F5 (coastal habitats) or Schedule J (geological features). **Rule R197: Motor vehicles for certain purposes – permitted activity** The disturbance of the foreshore or seabed from motor vehicles in the coastal marine area, for the following purposes: • (a) surf lifesaving operations, or • (b) emergency situations, including firefighting, oil spills, rescue operations, salvage of vessels and marine mammal standings, or • (c) local authority activities, including law enforcement, or • (d) the maintenance, upgrade and operation of regionally significant infrastructure is a permitted activity, provided the following conditions are met: • (e) the vehicle shall take the most direct route, and shall only operate within the area necessary to carry out the activity to ensure minimal disturbance to the foreshore or seabed, and • (f) the activity shall comply with the coastal management general conditions specified above in Section 5.7.2. **Rule R198: Motor vehicles inside sites of significance—non-complying activity** The disturbance of the foreshore or seabed from motor vehicles inside a site or habitat identified in Schedule C (mana whenua), Schedule E4 (archaeological sites), Schedule F2c (birds-coastal), Schedule F4 (coastal sites), Schedule F5 (coastal habitats) or Schedule J (geological features) in the coastal marine area, that is not permitted by Rule R196 or Rule R197 or prohibited under Rule R199, is a non-complying activity.
USA			

<table>
<tr>
<td>1.</td>
<td>Cape Cod National Seashore Massachusetts (National Parks Service)</td>
<td>Superintendent's Compendium, Code of Federal Regulations - Appendix 1, Special Regulation</td>
<td>
(a) Off-road operation of motor vehicles

1. What do I need to do to operate a vehicle off road? To operate a vehicle off road at Cape Cod National Seashore, you must meet the requirements in paragraphs (b) through (e) of this section. You also must obtain a special permit if you:

• (i) Will use an oversand vehicle (see paragraphs (a)(6) and (a)(7) of this section for details);
• (ii) Will use an oversand vehicle to camp (see paragraph (a)(8) of this section for details); or
• (iii) Are a commercial operator (see paragraph (a)(9) of this section for details).

2. Where and when can I operate my vehicle off road? You may operate a vehicle off road only under the conditions specified in the following table, except when a near (less than ½ mile) or total closure exists (see section I. 36 CFR §1.5). However, the Superintendent may close any access or oversand route at any time for weather, impassable conditions due to changing beach conditions, or to protect resources.
<table>
<tr><th>Route</th><th>When You may Use The Route</th></tr>
<tr><td>On the outer beach between the opening to Hatches Harbor, around Race Point to High Head, including the North and South Beach access routes at Race Point and the bypass route at Race Point Light.</td><td>April 15 through November 15, except Exit 8 to High Head which is closed April 1 through July 20.</td></tr>
<tr><td>Off road vehicle corridor from Exit 8 to High Head</td><td>July 21 through November 15.</td></tr>
<tr><td>Access road at High Head from the inland parking area to the primary dune.</td><td>January 1 through December 31.</td></tr>
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				Designated dune parking at High Head (for fishing only)	January 1 through December 31.
				Power Line Route access and fishing parking area	Only when the Superintendent opens the route due to high tides, beach erosion, shorebird closure or other circumstances which will, as a result, warrant public use of this access way.
				On controlled access routes for residents or caretakers of individual dune cottages in the Province Lands.	January 1 through December 31.
				On commercial dune taxi routes following portions of the outer beach and cottage access routes as described in the appropriate permit.	April 15 through November 15.
				On the outer beach from High Head to Head of Meadow	July 1 through August 31.
				Coast Guard beach in Truro to Long Nook beach	April 15 through November 15 (hours posted).

2.	Volusia County, Florida	*Code of Ordinances of Volusia, Volume 1*	**ARTICLE VI.—TRAFFIC AND VEHICLES** **Sec.20 – 173.—Vehicles authorized on beach; traffic-free zones** (a) Motor vehicular traffic shall be authorized only between 8:00 a.m. and 7:00 p.m. or sundown whichever is earlier from May 1 through October 31, and between sunrise to sunset from November 1 to April 30, tides permitting. **Sec.20 – 174.—Prohibited acts** It shall be unlawful for any person to: • (1) Violate any of the provisions of the Florida Uniform Traffic Control Law, F.s. ch.316, which is incorporated as part of this article by reference • (2) Operate a motor vehicle or moped on any portion of the beach other than in the driving area, except roving concession vehicles operating adjacent to the driving area under the guidelines established by the beach department. • (3) Operate any vehicle or moped on the beach at a speed of more than ten miles per hour. • (4) Park or operate a motor vehicle on the beach at any time other than the hours established in this article. • (5) Operate any motor vehicle or moped on the beach so as to pass any other motor vehicle, except under circumstances indicating that such other vehicle is in a temporarily disabled condition. **Sec.20 – 202.—Daily fee** Except as otherwise provided in this division, on every day of the year that the beach is open to vehicular access, all motor vehicles entering the beach are subject to a $20.00 vehicular access fee which allows for a single entry to the beach and one same-day re-entry.

			Sec.20 – 203.—Annual passes; vehicular approaches (a) An annual pass may be used for motor vehicular access to the beach at no less than 15 vehicular approaches on weekends and 12 vehicular approaches on weekday. **(**c) The charge for an annual pass is $25 for a permanent resident of the county/ $100 for everyone else
3.	Currituck County, North Carolina	*Currituck County Code*	**ARTICLE II.—BEACHES** **Division 2. Vehicles and horse on outer banks** **Sec 10-52.—Applicability of division** (a)This division shall apply to the operation of any and all vehicles, mopeds, motorcycles or motor vehicles, on the Outer Banks. (b)This division shall also expressly apply to the use of horses on the Outer Banks, whether used for riding, pulling carts or for any other purposes. **Sec.10-53.—Exemption for fishermen** This division shall not apply to the operation of mopeds, motorcycles, motor vehicles or automotive equipment belonging to and used and operated by commercial fishermen only while and as such fishermen are actually engaged in the fishing or setting of seines for or in the Atlantic Ocean.

			Sec.10.54.—Violation of division Whoever violates any provision of this division shall, upon conviction, be punished by a fine of not more than $500.00 or by imprisonment for not more than 30 days for each separate violation. **Sec.10-55.—Locations where use prohibited** (a) No vehicles, mopeds, motorcycles or motor vehicles shall be operated on the Outer Banks except on a cartway, a neighborhood public road, a dedicated right-of-way, the foreshore or beach strand or any other public vehicular area. **Sec.10 – 61.—Destruction of natural features prohibited** No person shall operate any vehicle, moped, motorcycle or motor vehicle or use any horse on or across any dune barrier or in such a manner as would destroy natural vegetation. **Sec.10 – 63.—Restricted areas** (a)Where there is an improved all-weather road, dedicated to public use, and running generally north and south and parallel to the beach strand, all vehicles, mopeds, motorcycles or motor vehicles on the foreshore and beach strand are prohibited between May 1 and September 30. This section shall apply specifically to, but is not limited to, the foreshore and beach strand extending from the Dare County line to the north side of the North Beach Access Ramp at North Beach Access Road. (b)All commercial activities involving motor vehicles, mopeds and horses shall be prohibited from operating on the beach foreshore and the beach strand. This includes vehicles used to tow hang gliders.

4.	Borough of Seaside Park, New Jersey	*Borough of Seaside Park Code*	**CHAPTER 135, ARTICLE II: USE OF MOTOR VEHICLES ON BEACHES** **Sec.135-11.—Purpose** The purpose of this article is to protect the safety of those who use our ocean and bay beaches from the dangers created by the operation of privately owned (as opposed to municipally owned), unlicensed and improperly equipped motor vehicles upon the Borough's ocean and bay beaches. Further, this article is designed to protect those who would otherwise unduly subject themselves as well as others to the dangers created by failure to maintain a properly equipped or proper type of motor vehicle. **Sec.135-12.—Operation of vehicles on bayfront beach prohibited** No person shall operate a motor vehicle upon the bayfront beach at any time of the year. **Sec.135-13.—Operation of vehicles on bayfront beach prohibited** No person shall operate a motor vehicle upon the bayfront beach at any time of the year. **Sec.135-13.—Operation on ocean beach restricted** The following rules and regulations shall be adhered to by all those operating four-wheel-drive motor vehicles upon the ocean beach in Seaside Park: • (a) Any person desiring to operate a motor vehicle on the ocean beach in Seaside Park shall be required to apply to the Borough of Seaside Park and pay a fee of $50 for said permit. The maximum number of permits shall be established by resolution of the Seaside Park governing body.

			• (b) No vehicles shall enter or leave the ocean beach except upon the provided Brighton Avenue ramp. Once upon the beach all vehicles shall remain within a corridor 50 feet from the water's edge. • (d) No person shall operate a privately owned motor vehicle (as opposed to a municipally owned vehicle) of any type upon the ocean beach at any time from May 16 through September 30. **Sec.135-14.—Use of four-wheel-drive vehicles on ocean beach** During the remainder of the year, only four-wheel-drive motor vehicles which have received a Borough permit and which are registered at 10,000 pounds or less shall be allowed upon the Seaside Park ocean beach. Additionally, anytime said vehicle is to be used on the Seaside Park ocean beach it must contain the following equipment and be subject to the following restrictions: • (a)Fishing equipment and bait/tackle for each person over 12 years of age. When said vehicle is not operating, said individuals must be actively engaged in fishing. • (b) Tire guage • (c) Spare tire • (d) Workable jack and board/support for jack in sand • (e) tow chain/snatch line
Guernsey			
1.	Guernsey Environment Department	*The Foreshore (Riding and Driving) Ordinance (1951)*	• Act prohibits members of the public from riding on, driving a vehicle, or riding a horse on the foreshore between May 1 and September 30 in any year between the hours of 10am and 7pm, unless they have written permission from the Chief Officer of Police • Exemptions for persons using a vehicle legally to collect seaweed, sand, stones or other beach material, or the haulage of fish, boats or their stores and hear (noting that collecting sand, stones or beach material is prohibited under the Coast Protection Ordinance, 1949, unless permission has been granted by the Environment Department
United Kingdom			

1.	United Kingdom Government	*Public Health Act Amendment 1907*	**Section 82—byelaws as to sea-shore** The local authority for the prevention of danger, obstruction, or annoyance to persons using the sea-shore may make and enforce byelaws to— • (1) Regulate the erection or placing on the sea-shore, or on such part or parts thereof as may be prescribed by such byelaws, of any booths, tents, sheds, stands, and stalls (whether fixed or movable), or vehicles for the sale or exposure of any article or thing, or any shows, exhibitions, performances, swings, roundabouts, or other erections, vans, photographic carts, or other vehicles, whether drawn or propelled by animals, persons or any mechanical power, and the playing of any games on the seashore, and generally regulate the user of the seashore for such purposes as shall be prescribed by such byelaws; • (2) Regulate the user of the seashore for riding and driving **Section 83—byelaws as to promenades** The local authority may, for the prevention of danger, obstruction, or annoyance to persons using the esplanades or promenades within the district, make byelaws prescribing the nature of the traffic for which they may be used, regulating the selling and hawking of any article, commodity, or thing thereon, and for the preservation of order and good conduct among the persons using the same.

2.	Borough Council of King's Lynn & West Norfolk	*Beach bylaws*	**Vehicles** 6.1 No person shall ride or drive a cycle, motor cycle or motor vehicle on the seashore or promenade, or bring or cause to be brought on to the seashore or promenade a motor cycle or motor vehicle. 6.2 This bylaw shall not extent to invalid carriages. 6.3 This bylaw shall not apply to a motor cycle or motor vehicle belonging to the police, fire or ambulance service, or where entry to the seashore or promenade is required for the purpose of any emergency in connection with the saving of life. 6.4 This bylaw shall not apply to the riding of cycles on that part of the promenade between the Power Boat Club Launching Ramp and 'The Hump' (a distance of approximately five hundred and sixty five (565) metres. 6.5 This bylaw shall not apply to a motor vehicle where— • (a) It is used in connection with the launching of boats at the PowerBoat Club Launching Ramp or the Sailing Club Ramp; or • (b) Prior written approval or a license has been obtained from the Council for its use.
3.	Sedgemoor District Council	By-law – *The Seashore and Esplanade at Burnham-on-Sea, Berrow and Brean in the County of Somerse*t	**2(i) No person shall on any part of the sea-shore:** • (a) Drive or cause to be driven any motor vehicle in any race or competition • (b) Drive or cause to be driven any motor vehicle at a speed exceeding 15 m.p.h

4.	United Kingdom Government	*National Parks and Access to the Countryside Act 1949*	**Section 20 Byelaws for protection of nature reserves** (2) Without prejudice to the generality of the last foregoing subsection, byelaws under this section – • (a) may provide for prohibiting or restricting the entry into, or movement within, nature reserves of persons, vehicles, boats and animals
5.	Pembrokeshire Coast National Park	*Bylaws*	**Mechanically Propelled Vehicles** No person shall without lawful authority ride or drive a mechanically propelled vehicle over the access land except on a part of the access land set out and made up for the parking of vehicles.
South Africa			
1.	Department of Environmental Affairs, Government of South Africa	*Control of Vehicles in the Coastal Area (2001)*, Regulations published in Government Gazette made pursuant to *National Environmental Management Act, 1998*	**2 General Prohibition** (1) No person may use a vehicle in the coastal area unless that use- • (a) is a permissible use under regulation 3; • (b) is authorised in terms of a permit granted under regulation 4; • (c) is authorised in terms of an exemption granted under regulation 16; or • (d) is lawful in terms of regulation 18. **3 Permissible uses** (1) Subject to section 58 of the Act, the following uses of vehicles within the coastal area are permissible without a permit or exemption granted under these regulations: • (a)the use by any person of a vehicle— o (i) on a public road; o (ii) on private land by the owner or with the written permission of the owner or lawful occupier of that land;

			- o (iii) on a road within a coastal protected area where written permission has been granted by the management authority of that coastal protected area, or provided that such use is authorised in the protected area management plan or integrated management plan compiled by the management authority; (b) the use of a vehicle within a vehicle use launch site, or privately used launch site; (c) the use by a physically disabled person of an electrically propelled wheelchair that is specifically designed and manufactured for use by such person; (d) the use of a vehicle by an employee or agent of an organ of state acting in the course and scope of their employment or mandate, or by any person contracted by an organ of state, for the purposes of performing the public duties of that organ of state mandated by law **4 Permits to use vehicles in coastal areas** (1) A permit to use a vehicle in the coastal area may be issued by the Minister for the purposes of (a)carrying out a non-recreational activity in terms of a right, permit or exemption granted under the Act, the Marine Living Resources Act, 1998 (Act No. 18 of 1998) or the Sea Fishery Act, 1988 (Act No. 12 of 1988); (b) scientific research; (c) operating a tourism business; (d) accessing private property provided there is no reasonable alternative access to the property; (e) producing an advertisement, film, still photograph or a television programme; (f) access by a physically disabled person; (g) hosting a fishing competition; or (h) the construction or maintenance of infrastructure authorised by a law. (2) An application for a permit shall be made to the Minister. (3) A permit may be issued subject to conditions as determined by the Minister. **10 Law Enforcement**

			(1) Any authorised officer may in addition to any powers he or she may have in terms of the National Environmental Management Act or the Criminal Procedure Act- • (a) arrest any person whom he or she has reasonable grounds to believe has committed or is committing an offence in terms of these regulations; • (b) seize any vehicle if he or she on reasonable grounds believes that the vehicle o (i)has been or is being used in the commission of an offence in terms of these regulations; o (ii) may afford evidence of the commission or suspected commission of an offence in terms of these regulations; or o (iii) is intended to be used in the commission of an offence in terms of these regulations; • (c) at any time within 30 days of the alleged commission of the offence, issue a written notice in terms of the Criminal Procedure Act, stipulating an admission of guilt fine which shall not exceed R2500, to any person whom he or she has reasonable grounds to believe has committed or is committing an offence in terms of these regulations. **16 Exemptions** (1) Any person, including an organ of state, may apply in writing to the Minister for an exemption from obtaining a permit or from complying with any of the requirements in regulation 4 for the granting of a permit. (2) The Minister shall only issue an exemption if satisfied that granting such exemption will not result in significant harm to the coastal area, will not seriously affect any rights of the general public to enjoy the coastal area, and is in the public interest, alternatively in the interests of protecting the environment. **19 Offences and penalties** Any person who contravenes any provision of these regulations shall be guilty of an offence and liable on conviction to a minimum fine of R2000 but not exceeding R10000, or to imprisonment for

			al minimum period of six months but not exceeding two years, or to both such fine and such imprisonment.
2.	Department of Environmental Affairs, Government of South Africa	*Control of Vehicles in the Coastal Area (2014)*, Regulations published in Government Gazette made pursuant to *National Environmental Management Integrated Coastal Management Act, 2008*	**2 General prohibition** (1) No person may use a vehicle in the coastal area unless that use – • (a) is a permissible use under regulation 3; • (b) is authorised in terms of a permit granted under regulation 4; • (c) is authorised in terms of an exemption granted under regulation 16; **3 Permissible uses** (1) Subject to section 58 of the Act, the following uses of vehicles within the coastal area are permissible without a permit or exemption granted under these regulations: • (a) the use by any person of a vehicle – o (i) on a public road; o (ii) on private land by the owner or with the written permission of the owner or lawful occupier of that land; o (iii) on a road within a coastal protected area where written permission has been granted by the management authority of that coastal protected area, or provided that such use is authorised in the protected area management plan or integrated management plan compiled by the management authority; o (iv) within a mining area as defined in section 1 of the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); o (v) in coastal public property within an operational harbour area that has already been physically modified from its original natural state; or o (vi) in an emergency in order to safeguard human life or health, property or any aspect of the environment; • (b) the use of a vehicle within a vehicle use launch site, or privately used launch site; • (c) the use by a physically disabled person of an electrically propelled wheelchair that is specifically designed and manufactured for use by such person;

			• (d) the use of a vehicle by an employee or agent of an organ of state acting in the course and scope of their employment or mandate, or by any person contracted by an organ of state, for the purposes of performing the public duties of that organ of state mandated by law **4 Permits to use vehicles in coastal area** (1) A permit to use a vehicle in the coastal area may be issued by the Minister for the purposes of – • (a) carrying out a non-recreational activity in terms of a right, permit or exemption granted under the Act, the Marine Living Resources Act, 1998 (Act No. 18 of 1998) or the Sea Fishery Act, 1988 (Act No. 12 of 1988); • (b) scientific research; • (c) operating a tourism business; • (d) accessing private property provided there is no reasonable alternative access to the property; • (e) producing an advertisement, film, still photograph or a television programme; • (f)access by a physically disabled person; • (g) hosting a fishing competition; • (h) the construction or maintenance of infrastructure authorised by a law. (2) An application for a permit shall be made to the Minister (3) A permit may be issued subject to conditions as determined by the Minister **13 Offences and penalties** Any person who contravenes any provision of these regulations shall be guilty of an offence and liable on conviction to a fine up to a maximum of R500 000 per vehicle per offence, or to imprisonment not exceeding two years, or to both such fine and such imprisonment.
3.	The Municipal Council of the eThekwini	*Beaches By-law, 2015*	**7 Motor-Vehicles**

	Metropolitan Municipality		(1) No person may enter onto the beach using a motor-vehicle or bring or drive a motor vehicle on any part thereof in contravention of any legislation or Regulations made in terms of any applicable legislation. (2) Exclusions for • (a)motor-vehicle used by an authorised official in the course of his or her duties; • (b)authorised emergency or rescue motor-vehicle; • (c)motor-vehicle driven by a person authorised to implement the provisions of any legislation; • (d)ordinary motor-vehicle involved in a bona fide emergency situation; • (e)off-road vehicles used in terms of relevant legislation; or • (f)motor-vehicle authorised by the Municipality or any other sphere of government in terms of any law