DOWN THE BAY

A NATURAL AND CULTURAL HISTORY OF ABEL TASMAN NATIONAL PARK

PHILIP SIMPSON
FOREWORD

Spending part of my childhood next to Abel Tasman National Park developed in me a strong feeling for its bush and beaches. I remember the long, winding and dusty summer road through the towering rātā and then the descent in anticipation of the brilliant golden sand and bright blue sea at Titiranui. Later, when I realised that the apparent beauty was skin-deep only, at least as far as the native birds were concerned, I felt driven to find solutions to the problem weeds and predatory pests. In 2011 I raised the question with the Department of Conservation staff and other concerned people to find the funds and skills to reverse the decline in biodiversity and begin the long journey to restore the park to a semblance of its earlier character. Project Janszoon is the result.

My wife Anne and I often holidayed at Tata Beach at the time, and Philip and Wendy were neighbours, down the road at Pōhara. I have worked with Philip for many years as we were both trustees for the long journey to restore the park to a semblance of its earlier character. Project Janszoon is the result.

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When the Project Janszoon Trust had its first board meeting in Nelson in early 2012, the conversation around the table turned to the need to help locals and visitors alike understand and value the potential of this wonderful place and engage them in the trust’s mission. The project needed community support to succeed. There were potentially contentious issues, namely how best to effect a good relationship with the Department of Conservation (which has a statutory responsibility to manage the park, with a particular focus on the visitor experience and their impact on the ecology), the use of controversial tools such as 1080 for predator control, and the inclusion of tangata whenua in decisions about future management. Keeping a record about how the project unfolded was considered important. When I asked Philip if he was up for another book he jumped at the opportunity to research, record and communicate the multi-faceted complexity of this special place. This book is the product of that conversation.

Philip’s previous three books are on individual species of iconic New Zealand trees. Each follows a familiar comprehensive theme, dealing with the origin and evolution of the species, and how each is adapted for its daily life. Each book explores the stories that Māori have told over the centuries regarding the particular tree species, and how Māori have used them in their daily lives. They trace, too, the history of European New Zealanders with regard to these trees: not only their physical, pragmatic roles but also cultural attitudes embodied in art and in business. Each book ends by highlighting the conservation needs of the particular species. By tying together the botanical and human worlds Philip provides us with a richly holistic understanding of how important each species is and what is needed to protect it and allow it to flourish.

Philip has taken a similar approach with this new project. He explores the detailed accounts on the orchids and ferns, for which the park is renowned, but which are seldom the focus of attention. The book has a history going back hundreds of years, a history involving the use of the resources the area supports. As Philip makes clear, this is a people’s book. He interprets and explains the names of many of the places, revealing the collective identity we all share. He highlights some of the people who have contributed to the park, and he brings us to the issues that we face today. The first five years of Project Janszoon work are covered and his experience with this work is summed up in his visions for the future.

This book is a virtual walk in the park. But it is not one to place in the pack. Rather, it is to contemplate once your journey is complete. It will answer questions that may arise when you gaze out to sea from the black beech headland. It will lead you to the literature on a myriad topics. It will enhance your experience of the park and infuse in you the pleasure of knowing that the unique character of the place and its life are being looked after. Long after your last visit it will call you back to experience the beauty of this place and the transformation that a little effort by many can achieve. Down the Bay places a stick in the golden sand: how it was, what we are doing, and what it can become.

Devon McLean, QSM
Founding director, Project Janszoon, Nelson

Overleaf Torrent Bay/Rākaua, home of Māori gardens, d’Urville’s exploration, and early and continuing European settlement, plus a low tide crossing of the Coast Track.

DAVID BRUCKTON
Golden sand and sculptured granite rocks define the essence of the park coast. Rob Brown

For five days you can wind lazily along the Coast Track of Abel Tasman National Park, never out of earshot of the waves and the welcoming calls of the gulls. From an elevated headland you will see the sea, some kayaks spearing intimately along, or a water taxi busily heading for a drop-off beach. You will look down on the golden sand and see some sun-worshippers lying on their backs, indolently exhausted, and beyond, a dark rocky mass reaching out into the frothy breaking waves. In the distance at low tide a solitary trekker will be crossing the mudflat, heading for the orange ball that marks the welcome shade of the bush and the next part of the journey. Here, roadsteads replace roads, and you can get away from it all. The coast is where humans like to relax and play.

People, however, share this place with other forms of life. The habitats are lined up one next to the other, merging into a changeable sequence from the bush to the open sea. The rocky bush edge, the sandy beach, the estuary, the rocky reef and the open water all attract their characteristic species, from lichens to whales. The habitats are refreshed daily by the tides, or seasonally, or periodically when a great storm floods the land behind or drives waves into the rocks and sand, forging change. People can take shelter from the storm, but the species that live here have to bend with the energy of the coast. The oystercatchers pick through the debris along the tideline. The little streams dig their way across the sand once more. The intertidal plants and animals settle back into their profitable routine. And then the people can return.

THE COAST AND SEA

GRANITE SHORES

Although coastal parts of West Coast, Fiordland and Stewart Island/Rakiura are granite, there is nowhere in New Zealand where the details of a granite shore are so readily observed as in Abel Tasman National Park. All along the coast from Mārahau to Wainui the Coast Track cuts in and out of the bush to traverse

Golden sand and sculptured granite rocks define the essence of the park coast. Rob Brown
golden beaches of granite sand. Between the beaches, headlands of granite reach out into the sea, and places the track follows bands of rounded boulders. Owing to the nature of the national park legislation, however, the park officially ends at mean high-water mark. This means that most of the wonderful coast-line lies outside the boundary, including the lovely rock outcrops, the beaches, estuaries, rock pools and the sea itself. The enigma is somewhat resolved by the fact that a portion of the coastline (between Bark Bay and Awaroa) is included in the Tonga Island Marine Reserve. Important, moreover, the whole of the coastline, including the estuaries, is now managed as the Abel Tasman Foreshore Scenic Reserve, gazetted in 2007 and covering 774 hectares. And yet this still leaves most of the subtidal zone unprotected, despite the fact that recreation in the open water is a major park activity, and what goes on in the sea ecologically (for instance, food supplies for seabirds and marine mammals) has a direct impact on the park.

**THE GRANITE EFFECT**

The granite geology of the Abel Tasman National Park influences coastal communities in many ways. On land, granite weathering creates habitats in themselves for penguins, seals and cave dwellers. The released corestones and weakened base rock create interlocking boulders along the base of the coastal bluffs; these are habitats for crabs and serve to enhance the bird life of the coast. Perhaps the most notable of the granite features are the reefs and platforms that extend out from the headlands and are exposed at low tide or remain covered, yet close to the water surface where light can penetrate. Shattered by fractures, these reefs create a wilderness of crevices, pools and inlets and are richly inhabited, especially by barnacles, tube worms, and hauea or flea mussel (*Xenostrobus neozelanicus*), with Neptune’s necklace (*Hormosira banksii*) in the pools. Beyond the water, in the windy spray zone, the rock is shaved by abrasive sand and salt.

Colossal movement of sand occurs along the coast. Few animals can live in the unstable sand, but the waves deliver a daily flotilla of animal and plant debris and the beaches host a variety of birds such as gulls and variable oystercatchers.

Granite favours herbivores such as some sea snails (black-footed pāua, topshell snails, limpets, turban shells and conches), sea hares and sea cucumbers, which graze on algae, seaweed and other plants. However, the amount of available food may restrict growth; pāua around the park, for instance, seldom reach the minimum size (125 millimetres) allowed for harvesting in New Zealand. Variations in the strength of the rock lead to differential erosion, and inadvertent impacts, especially on the animals and their habitats. The released corestones and weakened base rock create interlocking boulders along the base of the coastal bluffs; these are habitats for crabs and serve to enhance the bird life of the coast. Perhaps the most notable of the granite features are the reefs and platforms that extend out from the headlands and are exposed at low tide or remain covered, yet close to the water surface where light can penetrate. Shattered by fractures, these reefs create a wilderness of crevices, pools and inlets and are richly inhabited, especially by barnacles, tube worms, and hauea or flea mussel (*Xenostrobus neozelanicus*), with Neptune’s necklace (*Hormosira banksii*) in the pools. Beyond the water, in the windy spray zone, the rock is shaved by abrasive sand and salt.
creating bays and headlands, often in conjunction with the river estuaries. The combined actions of the rivers and tides sort the sediments, creating sand ridges behind the beaches that can remain a solid barrier for centuries or be destroyed overnight in a single storm. Even small streams can be trapped by the sand and create temporary lagoons of brackish water: wonderful spots for seals and bird life to shelter, and places where whitebait can collect and grow before venturing into the hinterland. The finer sediments find their way back into the estuaries, and there form silt beds that support an entirely different range of life. Seagrass (Zostera muelleri and Z. novazelandica) grows most densely because, although submerged, the substrate oxygenates the silt, and provides shelter. But enhanced sedimentation from the land has damaged and reduced many of the beds.1

The beaches themselves are works of natural art. The wide tidal range and the prevailing onshore north-easterlies create steep beaches, the coarse, heavy sand dropping out quickly to reveal clear blue water.

TIDES

The park coastline, along with the wider environment of Tasman and Golden bays, has the greatest tidal range in New Zealand, typically three or four vertical metres, sometimes up to five.2 The reason for this is the location bordering Cook Strait/Raukawa, and the shape of the strait in constraining tidal flow. Every day, the time of high tide moves anticlockwise around the entire country, twice. It is the same with low tide. Furthermore, sea level is higher on the west coast of New Zealand (Tasman Sea) than the east (Pacific Ocean). This difference is made greater by the presence of the narrow gap of Cook Strait, and as a result a ‘standing wave’ occurs in the adjacent Tasman/Golden Bay. The high tide is reflected back on itself to the west by the narrow constriction of the strait at its north-western end, and water is pulled away from the coast at low tide. Thus the tidal range is enlarged. At the south-eastern entrance to Cook Strait, which is much wider, there is no such reflection and the tide ranges are much smaller.

What are the implications of the extreme tidal range? When the tide goes out, new substrates are exposed (sand, mud, vegetation and rock), all the new sites are exposed to drying air and wind, to air temperature that varies widely (from 0°C to around 30°C), to rain and other sources of fresh water, and to high light intensity. These new conditions create a range of distinctive habitats:

- The sandy beach is greatly expanded, providing a habitat for sand animals such as amphipods and polychaete worms, as well as a food source of dead and dislodged animals and plant debris for scavenging birds.
- Estuaries are drained, exposing a whole range of habitats around the margin to air and sun, allowing the influx of fresh water without dilution, exposing shoals of white shells and, in muddy areas, eel-grass beds.
- The large tidal range creates particularly strong currents at the mouths of estuaries, which in turn favour habitat for species such as pipi.
- Rocky habitats are exposed, like the cliff face along high-water mark, or the wave-cut platform that was formerly a submerged reef. In places this includes rock pools and seaweed beds.
- Below low tide a band of shallow water is created, often the place where seaweed grows most densely because, although submerged, it is exposed to high light intensity for photosynthesis.

WATER CURRENTS

The strong tidal currents move fine sediment and reduce water clarity. By carrying a constant supply of plankton, strong currents at some locations historically facilitated the establishment of bryozoan-dominated communities and rhodoliths. Rhodoliths are calcified red algae, usually growing on fragments of shell. An individual may be composed of one or more coralline species, as well as other encrusting organisms such as bryozoans and gastropods. They enhance the species diversity of the sea floor;3 but because they are not attached to a fixed surface, they are vulnerable to disturbances.

The D’Urville Current from the west is important because it brings nutrients that replenish the phytoplankton. At Separation Point/Te Matau one branch circulates clockwise around Golden Bay and the other enters Tasman Bay. That branch splits and part circulates clockwise, northwards, along the western coast.4 This is also important for carrying sediments from the Motueka River. In general these local currents have low velocity except during wind-driven storm events and during tidal change. Larger sediment particles drop out close to the estuarine areas, especially in Golden Bay. However, the currents generated by the diurnal tidal movements are substantial, and these are responsible for the tide having major impacts on the sea floor. Typically, fast-flowing water along the sea floor brings nutrients to bottom-dwelling biota, and is thought to be one reason for the development of the bryozoan beds, rhodolith beds and horse mussel colonies. Sediments are strongly affected by disturbance, and settled sediments are often re-suspended in the water column by waves and currents whipped up by wind. The suspended sediment adversely affects filter-feeding in species such as horse mussels and bryozoans, that form biogenic habitats; it also compromises photosynthesis by rhodoliths and makes it difficult for larvae to settle and survive.5 Mobile sediment caused by trawling has been suggested as a major contributor to the poor performance of the Tasman Bay scallop resource in recent years.
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