

What is happening at Tahuna Beach?



1. Tahuna Beach is barely 100 years old.

When the first European settlers arrived in Nelson, the area that we now know as Tahuna Sands Reserve was the main channel draining the Waimea Inlet. At low tide the intertidal sandbank of Rabbit Island reached across to the western end of the present Tahuna Beach.

Sketch map of the 1850's Waimea Bank and Channel



Tahuna Beach – the Big Picture

Can you see:

Haulashore Island, Bolton Hole, Tahuna Beach, the airport, Monaco, Rabbit Island?



LINZ Aerial photo 2002

In the 1850s

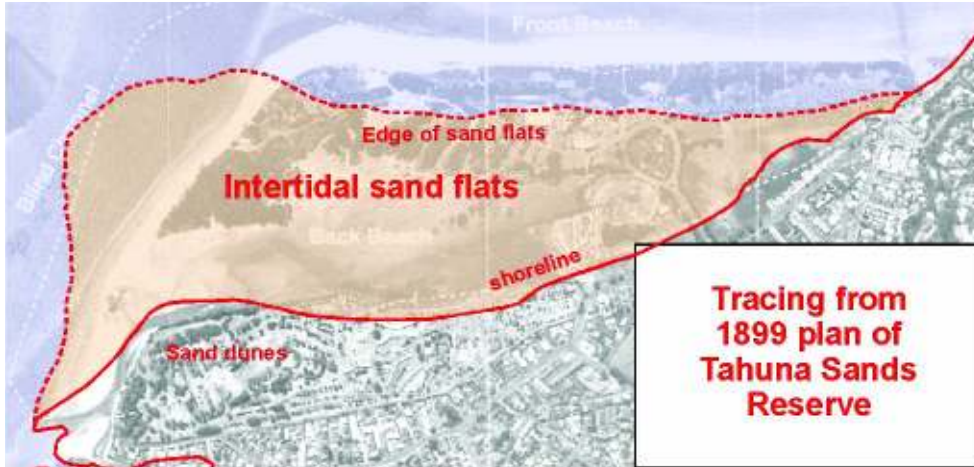
In the 1850s the beach alongside Rocks Road was a gravel beach, and a lot of gravel was taken from it for building roads in the Tahuna area. The stones had come from erosion of the Tahuna slump. They were already rounded as they had their origins in the Moutere gravels.



Old Tahuna Beach Brusewitz Collection NPM 6x8 35

In 1853, after a series of storms, the Waimea Estuary started to drain around the western end of Rabbit Island at Mapua.

In the 1870s a new channel broke through the eastern sandbank forming the Blind Channel and the old channel started to silt up. By 1900 the present area of Tahuna Sands Reserve was largely formed, but most of it was an intertidal sandbank, completely covered by water at high tide.



Then dunes started forming and by 1923 there was a well established line of dunes along the northern side of the reserve. The front beach was some way south of the present beach, running through the present roller skating rink and hard tennis courts.



Tahunanui from hillside , Kerr Collection NPM 1/2 20,

This early photograph of a Gala Day at the beach shows the eastern end of the beach-top around the position of the Plunket Rooms behind the Nellie Nightingale Library.



Gala Day Tahuna F.N. Jones Collection NPM 6x8,14



Tahunanui Beach Photo News Collection 3288 fr

This photo taken in 1960s shows the changing sheds and people enjoying the beach. In this picture you can see the Tahuna slump coming down to the road to the right of the cliffs.



Landslide Tahuna Hillside G.C. Woods Collection NPM 1398 fr 16

In the 1960s the Tahuna Slump started to move again. The soil had become saturated and slips started. Some of these movements destroyed houses. Now the slump has better drainage and there are rules about where building can be done on the slump.

2. The Eastern end of the beach near Rock's Road

What makes a beach?

1. the supply of sand to a beach
2. waves
3. man made features
4. location of the shoreline.

Sand supplies

Where do you think the sand has come from?

Sand is food for beaches. The sand on Tahuna beach comes from as far away as Motueka. Most of the movement in this part of the bay is west to east. Longshore drift drags it along Rabbit Island. Some has come from the erosion of the Tahuna slump and from Nelson Haven.

Waves

How do you think waves affect beach formation?

Waves, combined with tides and wind, are really important in making a beach. The higher the waves and the greater the angle at which they strike a beach, the larger the volume of sand carried. During storms, waves move sand offshore and flatten the beach. Most often shorelines retreat in jumps, each jump corresponding to a storm. After a storm, sand builds up again, though recovery is much more gradual than erosion.

Man-made features

Can you see any man made features that may be affecting the beach?

Sea wall. Deflects waves away from eastern shore and pushes them south onto the beach.



Stormwater containment.: There was a problem with the open storm water drain as it kept the beach wet. When waves come in over dry sand some of the water soaks in and the sand that the wave is carrying has a chance to be deposited. When the sand is always wet this can't happen. The waves were eroding this end of the beach. The containment directs the stormwater away from the beach and allows it to flow into the sea further along the sea wall.

As a result sand is now being deposited and the beach is recovering

Shoreline location

This is the way people 'see' the shoreline. It is when the shoreline movement impacts on human-made structures that beach erosion becomes a 'beach erosion problem'.

Who is affected by changes at Tahuna beach?

3. Go along the beach to where you see roped off areas protecting golden 'grass'.

- Sit down and listen to the story of Coast Care.

Coast care is a community based, volunteer programme which aims to protect the natural coastal environment and enhance the beach and dunes. It is made up of concerned beach users, schools and residents who wish to be actively involved in managing and protecting their coastal environment.

In September 2001 sand trapping barriers were constructed to help reduce the erosion at the base of the dunes. The barriers work in three ways:

- to help trap and build up sand as wind blows it by. This has occurred, especially at the western end of the front beach where wind blown sand has built up, in some cases by over a metre. You may still see some of these barriers at the eastern end of the beach.
- to reduce the waves' energy when a high tide occurs together with a northwest wind. The barriers were particularly effective near the Lions Playground where storms have threatened to erode the dunes away.
- to encourage people to keep out of the fenced off areas. Erosion caused by people is surprisingly significant. Playing and walking over dunes can cause a lot of damage, both to the dunes and to plants growing in them.



The barriers have been doing their job and now the young dunes are being planted.

- Can you see evidence of current work to preserve the dunes? This work is supported by the Nelson City Council.

Many schools and community groups have taken part in planting native sand binding plants at the beach. Pingao was once a common plant all around NZ shores. It has a root system that is adapted to cope with moving sand. This helps to stabilise the dunes, and coarse, grass-like leaves that trap wind blown sand.

The orange 'grassy' plant is Pingao.



Signs were placed around the beach to encourage people to keep out of the fenced off areas. This is to give the new plants a chance to establish and to minimise the damage to dunes from people walking and playing on them. Fenced walkways encourage people to keep to the walkways rather than go onto the dunes.

- **Can you see any of these walkways?**

4. Walk on to where you can see a spit going out to sea. At low tide people can walk out a long long way.

Where has the sand come from?

There are huge amounts of sand available in the sand banks in the mouth of the Waimea Estuary.

The patterns of sand banks change all the time during storms.

What do you think would happen to the beach at the previous site if this sand bank was cut by a new channel?

One possibility is that so much sand would suddenly be available and it would build up at the eastern end of the beach.

What are the recreational uses for this area today?

Are there any kite surfers around today?

Look back along the dune line and you will see a sign with a dog on it. Dogs are prohibited on the eastern end of the beach but are encouraged on the western end and Back Beach.

5. Walk around the corner into the dog walking area. You can see Rabbit Island from here.

You are beside the Blind Channel at the western end of the beach which has been steadily moving eastwards.

What evidence can you see of this movement? Are we getting less beach or more beach?



We do not fully understand why this is happening. Some suggest that the long-shore drift of sand along the Rabbit Island foreshore is pushing it back towards its original position alongside Beach Road, while others believe that it may be caused by the Blind Channel changing from a straight to a meandering shape.

Whatever the cause, some 250 metres of the western end of the beach has been washed away over the past 60 years. If this continues at the same rate, then the roller skating rink might be threatened by erosion from the west in about 50 to 80 years from now.

Keep walking towards the end of the beach

Can you see where the sea has broken through in the past?

5. Move through onto the back beach



The Tahunanui Motor Camp have built this rock wall to try to protect their land.

This is the place where they used to race cars every summer. A wall of sand would be bulldozed up at the mouth of the back beach estuary to keep the sea out so the cars could race all day!



Car racing at Tahunanui Beach G.C Woods Collection NPM 6886 fr 2

The car racing churned up the sand and removed most of the plants trying to grow there. More recently we have become aware of conservation issues in this area. The Tahunanui Reserve Draft Management Plan 2003 identifies:

- Glasswort provides a home for the rare endemic (not found anywhere else) Back Beach Beetle.
- The rare estuarine tussock is found on the sandier areas of the Back Beach.
- Sea birds visit the area to feed and in the past have been known to nest here.

What do you think the rules should be for using the Back Beach?