

FAQS

1) State Highway 94 Milford Road Avalanche Control Programme

When and why was the avalanche control programme established?

State Highway 94 Milford Road is the only road link to Milford Sound, New Zealand's top tourist destination. It is also the only public highway with a significant avalanche problem in New Zealand. This is because of its extremely steep, glacially carved terrain with tributary valleys that "hang" above the main valleys and its heavy rain that of 7,000 to 8,000 millimetres (7-8 metres) per year.

Transit's forerunner, the Ministry of Works, began the programme in 1983 following requests from the tourism and commercial fishing industry to keep the road open as long as possible through winter for their economic success.

From its opening to traffic in 1953 until the late 1970s, Milford Road was routinely closed from May to September, the main avalanche season.

Today, the programme has become an internationally recognised leader in its field that keeps the road open on all but eight days a year on average.

What is the purpose of the avalanche control programme?

The avalanche control programme predicts and manages the risk of avalanches on Milford Road. It does this through both passive and active methods.

How many lives have been lost on Milford Road due to avalanches?

Four. Three were early road workers helping to build the road. The fourth was Robert "Pop" Andrew, a respected road maintenance supervisor and Te Anau resident, whose death in an avalanche near Mt Homer in 1983 provided the impetus for the rapid development of the avalanche control programme, which at that time was just getting started.

What are the roles of Wayne and Ann Carran in the programme?

Robert Andrew's fellow worker and friend Wayne Carran was there the day Robert was killed by an avalanche. Wayne's determination that this should never happen again was picked up by Transit's predecessor, the Ministry of Works, and the Milford team. Wayne Carran is now the Avalanche Programme Manager with contractor Downer EDi Works which runs the programme on Transit's behalf.

Wayne and wife Ann, who developed a staff location system and advance warning updates for road users and media, were awarded Queen's Service medals for their services to conservation in the Queen's Birthday Honours this year (2008).

How does the avalanche control programme work?

There are three main aspects to the programme:

a) Monitoring and predicting

The avalanche team regularly fly in by helicopter to check the start zones of 85 avalanche paths, 50 of which can potentially affect the road.

Six weather stations transmit data on weather and snow conditions round the clock to the programme's Te Anau base. Four are high level and can only be reached by helicopter in winter conditions and two are at road level.

Even tiny changes in data can indicate a risk of avalanche. The team has developed world-first tools to increase the accuracy of its risk assessment, including equipment that:

- Measures timing and volume at which water filters through the snow pack
- Measures down-slope creep and tension of snow packs
- Transmits temperature of the snow pack
- Improves the function of weather stations
- Measures the weight of the snow.

b) Active control

Active control involves assessing an avalanche risk and dropping 25 kilograms of explosives from a helicopter to start an avalanche in a controlled manner before it can become a danger to human life. New Zealand's Milford programme is the only one in the world to be totally reliant on avalanche control by helicopter.

The road is always closed before active control begins. The air crew checks the area to ensure it is clear of vehicles and people before dropping explosives on to the snowfields.

Precise handling techniques and a clear code of communication between bomber, observer and pilot have ensured no incidents since the programme began. Once the avalanche settles, the road crew clears the debris before re-opening the road.

c) Passive control

Passive control combines controlling access to the road with an awareness programme informing travellers of the conditions. This is supported by continuing road improvements to provide a smoother drive.

During winter, Transit operates an information kiosk just north of Te Anau where staff inform drivers of the avalanche risk and how to drive safely in often tricky conditions. They check travellers have the correct chains and know how to fit them.

What has been the programme's effect on the Fiordland economy?

To keep Milford Road open costs just over \$1 million a year for the avalanche control programme but makes it possible to extend the tourism season and maintain a land link for the fishing industry.

It is easy to see why this is a good investment when Tourism Ministry figures indicate more than a million people visit Fiordland each year, spending a total of \$120 million. A Department of Conservation report shows Fiordland National Park adds \$228 million to the economy per year.

Closures of the road are estimated to cost the economy between \$200,000 and \$600,000 a day. If the road was closed for about three months as in the past, this would mean about \$18 million lost to the economy. Today, closures have been reduced to around eight days of the year.

What causes an avalanche?

There are many ways an avalanche can be created:

- Layers of snow build up and slide down the mountain
- A vibration or movement like the voice of a person or a train can start an avalanche
- Certain weather conditions like wind and rain
- A rock or a piece of ice can shake the snow to slide down the mountain
- Water under the snow can make the snow slide
- A section of the snow could fall down or break apart and slide down the mountain.

Avalanches can vary in size from small to devastating, massive avalanches that are among the most powerful and complex natural phenomenon. It is difficult to predict with absolute certainty when they will come down.

What is the strength of Fiordland's avalanches?

Fiordland's avalanches are regarded internationally as among the world's most powerful. The impact pressure of an avalanche can be up to 5,000 kilopascals. For example, only 15kPA is needed to break a car's windscreen.

How much explosive does it take to create an avalanche?

Transit's Milford Road Avalanche control programme uses 25 kilograms of explosives precisely placed to cause an avalanche in a controlled manner before it can become a danger to human life.

How are explosives used to make a controlled avalanche happen?

The road is always closed before an avalanche active programme begins. The air crew checks the area to ensure it is clear of vehicles and people before dropping explosives on to the snowfields.

Precise handling techniques and a clear code of communication between bomber, observer and pilot have ensured no incidents since the programme began. Once the avalanche settles, the road crew clears the debris before re-opening the road.

2) Milford Road

How long is the journey from Te Anau to Milford Sound?

119km (74 miles) approximately. www.milfordroad.co.nz

How high is Milford Road?

At its peak Milford road is 940 metres high and is one of the highest highways in New Zealand. That's as high as five Auckland Sky Towers piled on top of one another.

Why is Milford Road so important?

Milford Road on SH94 provides the only road access to one of New Zealand's major tourist attraction which has recently been acclaimed by the tourism industry as the top New Zealand destination.

How long did it take to build the Milford Road?

It took 20 years to build the road – from the early 1930s to its opening in 1953. That's the same amount of time it took to build the Great Pyramid of Giza in 2500 BC, the only remaining member of the Seven Wonders of the Ancient World.

It started as one of the many work schemes created during the 1930s Depression by the then Liberal Government, led by Georges Forbes. Milford Sound, However, it was inaccessible by road until 1953 when the Homer Tunnel was completed

Why did it take so long to build Milford Road?

The early years of building the road were done by gangs of men wielding picks and shovels. The extreme terrain and weather conditions, including avalanches, made it a difficult and dangerous job with many setbacks. Three men were killed; bridge structures, road works and tunnel portals destroyed.

The greatest danger to confront the road workers was the construction of the Homer Tunnel. The tunnel is situated in the Cleddau Valley, on the descent to Milford. Workers had to excavate the 1.3 kilometre long structure by hand. Unknown at the time, they were working in the most avalanche-prone site of the route.

At six metres wide, the Homer Tunnel is very narrow yet needs to be open for two-way traffic during avalanche season – a potentially daunting experience for visitors used to driving on wider lanes, especially when there is an oncoming bus!

Where is the worst part of Milford Road for avalanches?

The 17-kilometre stretch from Falls Creek, above Hollyford Road Junction, 91 kilometres north of Te Anau, and ending at the Chasm on the Milford Sound side of the Homer Tunnel. This is a no-stopping zone in winter and can be closed off by gates when there is a risk of avalanche or when a controlled avalanche is being started.

How do you prepare for travelling the Milford Road in winter?

Carry chains that are the correct size for your vehicle and make sure someone in the car knows how to fit them. Obey the “Avalanche Area No Stopping” signs.

When is the Milford Road information kiosk open?

The Milford Road information kiosk is open during winter when vehicles travelling the road need to be fitted with chains. This is usually around 20 days a year between June and November. Kiosk staff provide road users with information on safe winter driving, the state of the road ahead, and check they have the right tyre chains and know how to fit them.

How many days a year is the Milford Road closed and why?

Milford Road is on average closed eight days a year, mainly in winter when the treacherous weather conditions and high risk of avalanches mean driving on the road wouldn't be safe. .

Where can you find out information on the latest roading conditions for Milford Road?

You can find the most up to date information on the roading condition for Milford Road on either the Milford Road website or ring Transit's free phone number 0800 4 HIGHWAYS (0800 444 449) available 24/7. www.milfordroad.co.nz

3) Facts about Fiordland

What is the status of Fiordland?

Fiordland National Park is listed as a UNESCO (United Nations Educational, Scientific and Cultural Organisation) World Heritage Area.

Milford Sound was described by the writer Rudyard Kipling as the “eighth wonder of the world”. It was also voted the most attractive tourist destination in the world in a recent survey by global internet travel advisory service Trip Advisor.

How many people visit Fiordland and Milford Sound a year?

Over one million people visit the Fiordland a year. *Fiordland RTO Pg. 2*

How many people walk the Milford Track each year?

Approximately 14,000 people walk the Milford Track each year. www.kirratours.co.nz

Do you know how deep the Fiordland Mountains go underwater?

Beneath the water, the mountains continue to plunge down steep rock walls until they reach floor of the fiord at depths of 100-450m, that's the same length as 18 blue whales.

www.milfordroad.co.nz

What is the name of the largest lake in the South Island?

Lake Te Anau in Fiordland is the largest lake in the South Island, second only to Lake Taupo on the North Island. The three western arms of Lake Te Anau are named North Fiord, Middle Fiord and South Fiord. <http://en.wikipedia.org/wiki/Fjord>

The resort town of Te Anau is the gateway to Fiordland and is the start of only land link via road to Milford Sound. It is a popular start and end point for trekking trips to the Fiordland National Park, New Zealand's largest national park at 12,500 km. <http://www.fiordland.org>.

What is the most endangered bird in New Zealand that can be seen at the Fiordland Wildlife Park?

The endangered takahe. Another Maori name for the takahe is 'moho'.

How important are Fiordland's fisheries?

The Fiordland coast supports New Zealand's most important commercial spiny rock lobster fishery, which is contained within the greater CRA8 Quota Management Area, with about 70 per cent of the annual CRA8 catch caught off Fiordland.

This 2008 season is expected to see about 300 tonnes of live lobster landed by Milford Sound-based boats. In addition there will be paua, fish and albacore tuna.

This year (2008) 17 commercial fishing vessels are berthed in Milford Sound.

What is the history of spiny rock lobster fishing in Southland/Fiordland?

In 1969, following the lifting of licensing control in 1963, there were 233 rock lobster fishing boats within Southland, including Fiordland. A thriving North American export market for frozen tails saw the Fiordland fishery rapidly expand to the extent that a controlled fishery regime was imposed in 1980 which restricted Southland/Fiordland vessel numbers to 317, the highest of any fishery nationally.

In 1987 a total of 20 commercial rock lobster fishing vessels were based in Milford Sound. Traditionally boat numbers would increase during the peak months between August and February depending where the “run fish” showed up. By 1997 vessel numbers had dropped to 18.

In 1988 technology and markets were developed to allow a live export lobster fishery to supersede the “tailing at sea” fishery. The use of helicopters and floatplanes meant lobsters could be at the packhouse within minutes of leaving the boat. The new live fishery based on Asian markets has today almost entirely replaced the North American frozen lobster tail market that drove the early fishery.

From 1999 to 2001, concern over declining catches within the CRA8 fishery saw a reduction in the total allowable commercial catch quota to 568 tonnes to allow rock lobster stocks to rebuild. This resulted in a number of fishers and vessels leaving the fishery. The fishery has recovered at a higher rate than expected to the extent that the total allowable commercial catch is 755 tonnes for 2006/07 and 966 tonnes for 2008/09.

Southland now produces 33 per cent of the country's rock lobster exports, earning approximately \$38 million in export receipts for the nation and bringing millions of dollars into the Southland business community on an annual basis. (Ministry of Fisheries, Invercargill)

Where can in Fiordland can you see seals up close?

Located at the mouth of the fiord is Seal Point, and one of the few areas in the fiord where seals can climb out of the water and onto the rocks. The seals are an all-year-round feature, whilst dolphins and penguins may also be seen at times. www.travellink.co.nz – Milford Sound: Points of Interest

What is the highest mountain in the Fiordland?

Mount Pembroke, at 2000 metres is one of the highest mountains in Fiordland and is permanently snow-capped and covered by a large thick glacier. It is followed in height by Mitre Peak standing at 1692 metres high, resembling a bishop's mitre or headdress. Both are at Milford Sound. The highest peak in New Zealand is Aoraki Mt Cook at 3754 metres.

How much snow falls in the Milford Sound a year?

Approximately 5,000 metres of snow falls a year in the Upper Hollyford and Cleddau Valley in the Milford Sound.