



Ecosystems are considered at risk if they are changed beyond their natural state of equilibrium. In the Great Barrier Reef and Barrington Tops, human impacts have changed the nature and rate of change in the ecosystems causing them to become ecosystems at risk.

~~In that~~ All ecosystems are dynamic (constantly changing), human impacts on the Great Barrier Reef has changed the nature and rate of change beyond the ecosystems equilibrium.

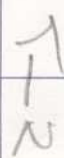
The main human impacts on the Great Barrier Reef include tourism, industry and commercial fishing and shipping. The Great Barrier Reef is the largest reef ecosystem in the world. Tourists, industry and fishing interests



stem from humans fascination of the ecosystem and what it can provide for humans. This leads to exploitation of its resources.



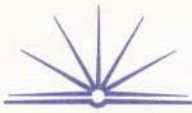
The main tourism areas are Brisbane and Cairns (shown on map)



NSW

/// = Great Barrier Reef

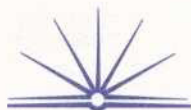
At main tourist areas tourists, enter the reef ecosystem, swimming, boating and reef walking (actually walking on the coral). These activities destroy the coral and the zooathella (living organism within the coral polyp). The coral is damaged which removes habitats and a source of food for many



organisms. These organisms die out or move to other coral colonies invading the habitats of other species and groups changing the reefs evolution. The continued use of areas ~~for~~ recreational pursuits (particularly reef walking) can lead to the area being pushed beyond a stage of equilibrium where it can return.

Industry on the reef includes shipping and agriculture.

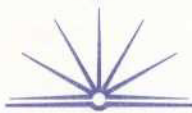
Shipping poses a direct threat to coral colonies. Ships bows can be torn on coral or ships can be stranded on coral beds in quickly lowering tides. Due to these human induced problems tracks of coral are blasted out by dynamite.



These coral colonies are destroyed and have no hope of returning as ships constantly frequent the Channels.

Agriculture changes equilibriums within the reef through its use of fertilisers.

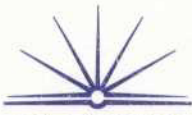
The fertilisers used by farmers along the Queensland coast and Great Dividing Range wash onto the reef in periods of heavy rain. The fertilisers increase the growth rate of sea grasses ~~at~~ and algae which feed on the nutrients provided by the fertiliser. The sea grasses and algae smother the coral and block light from penetrating the surface of the water thus making the coral



unable to photosynthesise and it dies.

Overfishing on the ~~great~~ Great Barrier Reef has reached critical levels reducing fish numbers particularly coral trout which is quite rare. Overfishing removes a vital link from the food chain, not only affecting larger animals which feed on the fish, but also smaller animals which are usually ~~prey~~ prey for their larger counterpart parts. These smaller fish increase in numbers ~~and~~^{and are} changing the equilibrium of the reef.

The Barrington Tops ecosystem is situated 38km from ~~Glenister~~^{Glenister} and 58km from ~~Scone~~ Scone. The

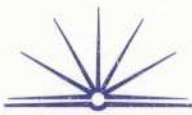


Barrington Tops forms part of the Great Dividing Range which runs the length of the East Coast of Australia.

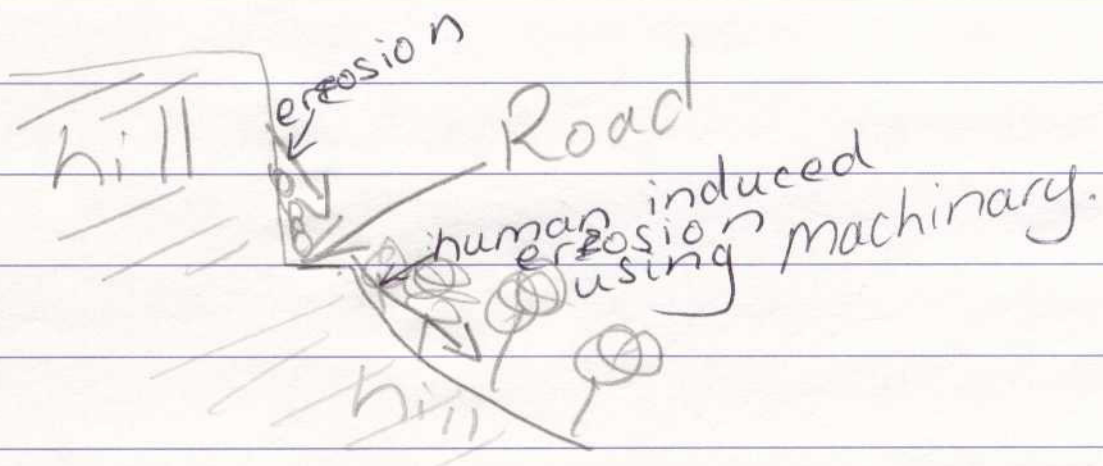
The Barrington Tops ecosystem has been subjected to various human impacts which have changed the ecosystem from a state of equilibrium. Logging, timber cutting and Gold Mining have previously been used in Barrington Tops. ~~These~~^{these} activity~~on~~ no longer continues on ~~the~~^{Barrington} Tops.

The main threat to the biodiversity of the area at present is tourism and the infrastructure needed to sustain their activities.

Barrington Tops is a mountainous area.

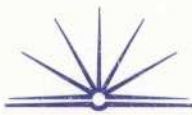


and access roads for tourism are cut into the sides of the mountains.



As shown in the ~~f~~ previous diagram erosion occurs where the soil and rocks from the exposed hillside erode onto the road. These rocks are then pushed to the side of the road and into bushland by machinery to clear the road for tourists.

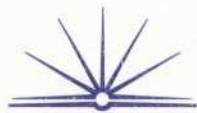
Walking Tracks



are constructed by National Parks and Wildlife service in an effort to decrease tourists wandering into unmarked areas. These tourists become lost and cause damage to the ecosystems.

The removal of native plants by tourists for their gardens is an increasing problem. Tree ferns are particularly expensive to buy and as tourist numbers increased to the area, tree fern numbers decreased. ~~The~~ Tree ferns provide food and shelter for animals and other plants who grow under them.

Both the Great Barrier Reef and Barrington



Tops have been changed in different ways and at an increased ~~rated~~ rates due to human impacts. Some areas of these ecosystems have been changed beyond their equilibrium and have no possibility of returning to their previous state of diversity.