January 2012

ECOTOURISM

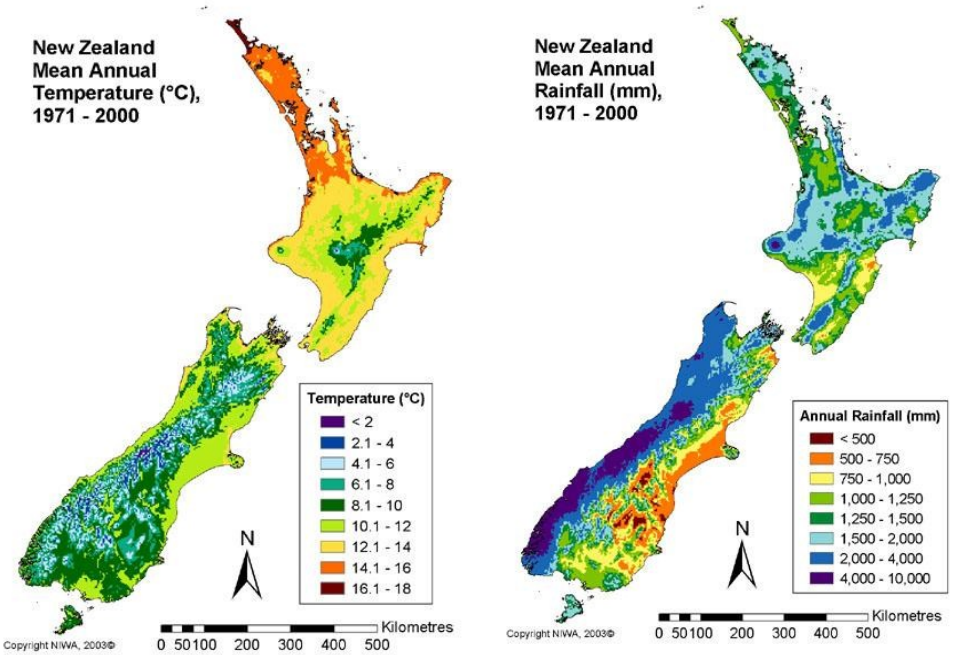
Biodiversity Hotspot

New Zealand

This is an aerial view of South Island's Fiordland. This is the nation's largest national park and a great place to visit!
(National Geographic 2012)

This is New Zealand's tallest mountain, Mount Cook. It is a great place for skiing or sightseeing. (National Geographic, 2012)

Just 2,000 miles southeast of Australia, lies the islands that make up New Zealand, a biodiversity hotspot. Being only 270,197 km², close to the size of Colorado, the land is mostly a deciduous or temperate forest biome. Located around 41°S and 174°E, these islands and their variable climates "has played a key role in biodiversity distribution". The land ranges from subtropical to subantarctic, with hot, humid and wet conditions on the Kermadec Islands and warm dry conditions on Chatham Islands. With one of the highest precipitation averages on earth, average rainfall here is 640mm to 1500mm. The terrain is super diverse. The North Island has forests, plains, lakes, and hot springs, and the South Island has miles of mountains, wetlands, and rainforests. (Tourism New Zealand) (Conservation International, 2007)



These maps show the mean annual temperature and rainfall. (New Zealand Tourism)

North Island

Though it is smaller in land mass than South Island, North Island is much more populated. The cities Auckland and Wellington are here, full of eating and shopping opportunities. The climate on North Islands is subtropical with hot summers, and a high average rainfall. This island has acres of plains, forests, lakes, and hot springs. (Tourism New Zealand)

Did you know that the *Leiopelmatidae* family is the only amphibious species family found in all of New Zealand! (Conservation International, 2007)

Located on North Island, Rotorua is a landmark with hot springs and geysers. This area is a great place to visit as a tourist. (National Geographic, 2012)

Fish

About 64% of the fish found in New Zealand are unique to the hotspot. The Redfin Bully is one of the endemic species. They can grow up to 12cm long and have diagonal cheek stripes. A lot of the native fish are nocturnal so they can avoid harm. Humans harm them by fishing and polluting the waters. (DOC)

This is Archey's frog one of New Zealand's endangered species. Be on the look out for these sweet little creatures. (DOC)

Archey's Frog

Amphibians are rare in New Zealand. All of the amphibians currently found in this biodiversity hotspot are endemic. Belonging to the *Leiopelmatidae* family, Archey's frog lives only on the North Island, in the Whareorino range and Coromandel range. This rare species is severely endangered though. Due to habitat loss as a result of deforestation, and chytrid fungus, 3 endemic frog species have gone extinct and the unique Archey's frog may be next. (DOC) (Conservation International, 2007)

South Island

Stretching over 151,215 km², 2/3 of this island is covered by mountains. This other main island is much less populated than the North Island. This island has endless opportunities for adventures and sightseeing, with different landscapes from hot, wet rainforests to cold and snowy mountains. New Zealand's South Island also features the hotspots tallest mountain Mount Cook. (Tourism New Zealand)

New Zealand is home to Tongariro, the world's fourth national park established worldwide! (DOC)

These are southern royal albatrosses gathering on an offshore island. Be on the look out for these social birds. New Zealand is a great place for bird watching, for there is a wide variety of species. (National Geographic 2012)

Land of Birds

For several years the main attraction in New Zealand has been birds. This hotspot has around 200 bird species and about 44% of them are endemic. This is only a fraction of the past bird population though. Since 1500, 20 bird species have gone extinct. When domesticated cats and dogs were brought to New Zealand, the birds were hunted as prey and this lead to threatened species, endangered species, and extinct species.

The flightless bird, Kiwi, is special to the hotspot. It is their national bird and they are exclusive to New Zealand. The four species of Kiwi are the Tokoeka, the spotted kiwi, the brown kiwi, and the spotted kiwi. Kiwis are mammal like birds with chicken like bodies and hair like feathers. They are an endangered species as a result of habitat loss and predation.

New Zealand is also known as the seabird capital of the world. It has an extremely diverse seabird population, with around 80 species that breed here. Nearly a third of the 80 seabirds are endemic to this hotspot! For example, the Westland Petrel is found only on the west coast of the South Island and most of their lives are spent on the water. (DOC) (Conservation International, 2007)

Other Islands

There are over a dozen small islands that are a part of New Zealand. A majority of them have little or no human inhabitants. Wildlife is able to strive here without being harmed by humans. These small islands are great areas for sightseeing and quiet getaways. The most unique wildlife can be found here, including species that can't be found on the main islands. (Tourism New Zealand)

Abel National Park is the nations smallest park. Located on an offshore island this protected area is full of beautiful beaches and blue waters. (National Geographic, 2012)

The One and Only: Bats

The only native land mammal in New Zealand are bats. There are only two species that reside here: the New Zealand long tailed bat and the Lesser short-tailed bat. The latter is a different kind of bat. It does not fly much, and gets around by crawling on all fours. It spends most of its time crawling around and hunting on the forest floor. Both bat species are endangered though. Habitat loss and predation has victimized these endemic species. (Conservation International, 2007)

Reptiles

All 40 of the reptile species found in New Zealand are endemic. The rare and unique tuatara is found in this hotspot. They look like iguanas and have a peculiar third eye. They were once able to survive on the mainland, but now they only live on offshore islands. There are no predators there so they are able to strive. Rats are the tuatara's biggest threat. Most likely the rats came as stowaways on boats from other countries. They steal the reptile's eggs and the tuataras are not able to make up for their losses. (Conservation International, 2007)

Plants

About 81% of New Zealand's plants are endemic. The endemic Pingao golden sand sedge is extremely important to New Zealand natives, the Maori's. They use this plant as a traditional material for buildings. The biggest threat to the species is the invasive plant, marram. Another threat is animals grazing and vehicles in dune areas. (Conservation International, 2007) (DOC)

Conservation Efforts

Nearly 150 years ago New Zealand started making Conservation efforts. "Most conservation laws are administered by the Department of Conservation, the main government agency responsible for the protection and sustainable use of biodiversity," (Biodiversity Hotpot) but a lot of the greatest efforts are made by determined individuals. Richard Henry was the first person to make conservation efforts back in 1880. He tried to save an endemic bird species by moving it from the main island to offshore islands. By doing this, the birds were able to avoid predators and human contact. His efforts influenced hundreds of other people to make an effort in conserving this hotspot.

New Zealand's first national park, Tongariro, was established in 1887. After expansion and more protection efforts, "74,000 km² of land is officially protected today." Most of these areas are protected to help threatened species survive.

Pest management is another form of conservation actions. With all the diseases spreading and invasive species killing native species, they need to be removed or controlled. Since this effort started, over a dozen animal species have been removed from offshore islands, allowing native species to strive without predators. New efforts are being made on the main island to remove the rodent pests. Using quarantine and other efforts New Zealanders are able to get rid of rats and prevent future mass invasions. (DOC) (Biodiversity Hotspot)

Human Impacts

Humans have had a huge impact on the New Zealand biodiversity. When humans, the Maori's, first came to New Zealand 700 to 800 years ago, they brought domesticated cats and dogs. These domesticated animals made prey of the native species, causing them to deplete. "The first great impact was from humans hunting, fishing, and gathering, which caused the extinction of native bird species such as the giant moas and eagles."

The biggest threat that came later on though, was the introduction of invasive species. Europeans brought over 30 nonnative mammal species and hundreds of invasive plants with them when they arrived in the hotspot in the early 19th century. The combination of hunting, habitat destruction, and invasive species led to extinction of key species. Some native species were completely wiped out; others barely survived and are only able survive in special conditions as specialist species.

Massive habitat loss is currently the biggest issue. Through "deforestation, wetland drainage and ecosystem degradation" natural habitats are being degraded." (Conservation International, 2007) (DOC)

Current Indigenous Habitat

Type of Ecosystem	**Amount Left (km²)**
Forest Ecosystem	35,000
Grassland-scrub Ecosystem	15,000
Wetland Ecosystem	4,000
Alpine Ecosystem	1,800
Coastal Ecosystem	1,000
Smaller Island Ecosystem	2,600
Current Total	59,400

(Conservation International, 2007)

Species Count

Taxonomic Group	Species	Endemic Species	Percent
Plants	2,300	1865	81.1
Mammals	10	3	30.0
Birds	195	86	44.1
Reptiles	37	37	100.0
Amphibians	4	4	100.0
Freshwater Fishes	39	25	64.1

(Conservation International, 2007)

This is Fiordland, the largest national park, National geographic says "Precipitation here tops 21 feet (6.4 meters) a year, making it one of the wettest places on Earth." Be sure to go to this protected tourist attraction for a hike! (National Geographic, 2012)

Success

With their constantly growing conservation efforts, New Zealand can avoid more wildlife loss and bring some species out of endangerment. Based on current conservation efforts, species will be able to strive. Many offshore islands have never been inhabited by humans, allowing all species to survive without too much human interaction. There is no way to bring back extinct species, but if humans monitor and take care of the native species environment, the will be able to survive. Slight environment or climate changes may allow the current species to adapt and create a new genetic species. Some species that were thought to be extinct have been found recently in small populations, showing that because of the bettering conditions they were able to live. (Conservation International, 2007)

Demise

The continuation of habitat destruction may lead to the worst. Some species, such as the mammals and birds have already been heavily affected by humans. This could lead to the extinction of more species. The bats are already at low numbers and endangered and through more carelessness they may be wiped out completely. Changes in environment and/or climate have the potential to be unbeneficial, and may cause depletion of a species. (Conservation International, 2007)

Indigenous Habitat

Estimate Original Total	270,100 km²
Estimate Current Total	59,400 km²
Estimate Total Lost	210,700 km²

(Conservation International, 2007)

What You Can Do to Help

You can be on the field in the environment helping the hotspot. You can volunteer by helping the DOC with bird counts, weed control, and tree planting. You can also plant native plants while you're there. The Department of Conservation offers many opportunities for volunteering, just visit the website listed on the back of this book. (DOC) Also see the "Other Things to Check Out" below.

Other Things to Check Out

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