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90831 Analyse the impact that policies have on a sustainable future

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The Impacts of the Wildlife Act 1953 and the Climate Change Response Act on a Sustainable Future

Policy One: Wildlife Act 1953

Section One: Introduction

The first policy that will be discussed in this report is the Wildlife Act 1953 which came into effect on 1 November 1953.[1] The Wildlife Act 1953 is a piece of New Zealand legislation that protects wildlife by controlling human interaction with species. It is managed by the Department of Conservation (DOC), a government agency that has the role of conserving New Zealand's heritage.[2] The Act defines wildlife as 'any animal that is living in a wild state'.[3] This includes both native and introduced species of mammals, birds, amphibians and reptiles.[4] Marine species are also classified as animals under the Act. At present the Wildlife Act 1953 specifies the treatment of over 900 native and 71 introduced species through a tiered system where species have differing amounts of protection based on schedules in the Act.[5] It is important to note that species protection is not based on whether they are native or introduced, or their level of endangerment. The three main tiers of this management system are: absolutely protected wildlife, wildlife with varying protection, and unprotected wildlife.[6]

Species listed in the 'absolutely protected' tier cannot be killed, hunted or possessed without a permit from DOC.[7] This limit applies at all times and it is a punishable offence to break. Most species in New Zealand belong to this group. The punishment for killing protected wildlife is up to two years in prison or a fine of up to $100,000.[8] Wildlife with varying protection are not absolutely protected and can therefore be killed in particular conditions.[9] Species in this tier include game birds that can be hunted during open season and species that are protected unless they cause damage to land.[10] Species classified as unprotected wildlife can be hunted or killed without a permit. Schedule 5 specifies species that are not protected. This includes wildlife that harm the environment through predation, damage natural plants, farms and orchards, and pose a risk to people's safety.

The main purpose of the Wildlife Act 1953 is to protect wildlife and conserve the ecosystem. Currently in New Zealand there are approximately 4,000 species in danger of becoming extinct or threatened.[11] This means that the Wildlife Act 1953 is still a relevant piece of legislation necessary for the sustainable future of New Zealand. However, throughout the 21st century, the Act has largely been criticised by officials for being outdated and in need of revision. The main practices of the Wildlife Act 1953 are the protection of wildlife through wildlife sanctuaries, refuges and management reserves, the regulation of game hunting, and pest control. These practices have social and environmental impacts that contribute towards a sustainable future in New Zealand.

Section 2: Policy development process

Environmental Force

An environmental force that influenced the creation of the Wildlife Act 1953 was the growing national understanding of the effects of decreasing biodiversity. It became more obvious that the arrival of humans and introduced species was the driving force that devastated New Zealand's biodiversity. New Zealand's isolation from the rest of the world meant that the ecosystem could flourish with unique species. The first people arrived in New

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[1] Rescue Fish. *Wildlife Act 1953.* Accessed 23/10/24 from https://rescuefish.co.nz/resource/wildlife-act-1953/
[2] Environment Guide. *Legislation*. Accessed 23/10/24 from https://www.environmentguide.org.nz/issues/biodiversity/im:2506/legislation/
[3] Environment Guide. *Legislation*. Accessed 23/10/24 from https://www.environmentguide.org.nz/issues/biodiversity/im:2506/legislation/
[4] DOC, *Wildlife Act summary brochure*. Accessed 23/10/24 from https://www.doc.govt.nz/globalassets/documents/about-doc/role/legislation/wildlife-act-summary-brochure.pdf
[5] DOC. *Wildlife Act 1953.* Accessed 23/10/24 from https://www.doc.govt.nz/about-us/our-role/legislation/wildlife-act/
[6] DOC. *Wildlife Act 1953.* Accessed 23/10/24 from https://www.doc.govt.nz/about-us/our-role/legislation/wildlife-act/
[7] DOC. *Wildlife Act 1953.* Accessed 23/10/24 from https://www.doc.govt.nz/about-us/our-role/legislation/wildlife-act/
[8] DOC. *Protected Species.* Accessed 23/10/24 from https://www.doc.govt.nz/parks-and-recreation/things-to-do/hunting/what-to-hunt/protected-species/
[9] DOC. *Wildlife Act 1953.* Accessed 23/10/24 from https://www.doc.govt.nz/about-us/our-role/legislation/wildlife-act/
[10] DOC. *Wildlife Act 1953.* Accessed 23/10/24 from https://www.doc.govt.nz/about-us/our-role/legislation/wildlife-act/
[11] Environmental Defence Society. Dr Deidre Koolen-Bourke, Raewyn Peart, Shay Schlaepfer. *Reform of the Wildlife Act 1953, An Opportunity for Transformational Change of Aotearoa New Zealand's Biodiversity Law.* June 2023. Accessed 24/10/24 from https://eds.org.nz/wp-content/uploads/2023/07/Wildlife-Act-Report_FINAL.pdf

Zealand between 1250 and 1300 AD. In the 1800s European settlers arrived and with them they brought introduced species. Since the late 18th century 54 mammal species have been introduced to New Zealand.[12] From this, 11 predators have become naturalised to the ecosystem.[13] Introduced species have caused the extinction of various native and endemic species. In fact, 64 endemic species of birds, lizards, frogs and one bat have become extinct since human settlement.[14] This is because native species are not equipped with strategies that allow them to compete with or defend themselves against introduced species. As well as causing the extinction of species, the arrival of humans and introduced species has altered New Zealand's ecosystem. This not only directly affects species through habitat loss and population bottleneck but also interrupts multiple cycles of the ecosystem, such as decomposition, pollination and clean air. This environmental force influenced the creation of the Wildlife Act 1953 because it showed lawmakers that New Zealand's native species and overall biodiversity were at risk.

Social Force

A social force that influenced the creation of the Wildlife Act 1953 was the change in social attitudes from colonial to post-colonial. The colonial attitude towards the New Zealand environment was to tame the wilderness and import familiar species to New Zealand. This attitude favoured economic progress over the preservation of the environment. The colonial attitude led to introduced species and the destruction of habitats which ultimately devastated the New Zealand ecosystem. In the mid 20th century perspectives on the environment shifted to be postcolonial. The post colonial attitude was concerned with how human activity impacted the environment. There was also a growing appreciation for New Zealand's unique native and endemic species and how they contribute to national identity. For example, in November 1948, the takahē were rediscovered after long being believed to be extinct.[15] The rediscovery sparked public interest in conservation and brought the issue of extinction more to the mainstream. The shift from colonial to postcolonial attitudes is a social force because it caused more people to be concerned for the preservation of New Zealand's species and overall ecosystem. This created more demand for lawmakers to create stronger legislation around the protection of wildlife. Although this is significant, it is important to note that Māori perspectives were excluded during the making of the Act. This means that the Act was largely influenced by the Pākehā perspective, which can be seen in the Act's shortcomings in differentiating protection between native and introduced species.

Another social force that influenced the creation of the Wildlife Act 1953 was the desire to regulate game hunting. Game bird hunting is a recreational activity in which birds labelled as 'game' may be hunted for the purposes of sport or food. For years before Europeans arrived Māori hunted New Zealand's wildlife. This was for the purpose of food and cultural practices such as using feathers for garments.[16] However, as Māori hold a deep connection with the environment, birds were usually hunted in a sustainable way. When European settlers arrived they brought game birds for the purpose of sport, food, tourism and a reminder of home. This meant that the regulation of game bird hunting was seen as a necessity for the environmental future of New Zealand. When the Wildlife Bill was introduced, parliamentary debates were largely focussed on the protection of game species for hunting. The Act was created to "consolidate and amend the law relating to the protection and control of wild animals and birds, the regulation of game shooting seasons, and the constitution and powers of acclimatisation societies."[17] As this excerpt points out one of the main social forces that influenced the creation of the Wildlife Act 1953 was the regulation of game bird hunting. It was seen as very important to preserve game bird hunting as a recreational activity while also conserving the environment and protecting wildlife.

Section 3: Discussion of policy implementation

Practice 1: The regulation of game bird hunting

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[12]Ministry for the Environment. *Chapter 12: Biodiversity, Introduction.* Accessed 24/10/24 from https://environment.govt.nz/publications/environment-new-zealand-2007/chapter-12-biodiversity/introduction/
[13]Ministry for the Environment. *Chapter 12: Biodiversity, Introduction.* Accessed 24/10/24 from https://environment.govt.nz/publications/environment-new-zealand-2007/chapter-12-biodiversity/introduction/
[14] Te Ara. *Page 4. New Zealand extinctions since human arrival.* Accessed 26/10/24 from https://teara.govt.nz/en/extinctions/page-4
[15] Te Ara. *Conservation.* Accessed 26/10/24. https://teara.govt.nz/en/conservation-a-history/print
[16] Te Ara. *History of Bird Catching. Accessed 26/10/24 from* https://teara.govt.nz/en/te-tahere-manu-bird-catching/page-1
[17]Environmental Defence Society. Dr Deidre Koolen-Bourke, Raewyn Peart, Shay Schlaepfer. *Reform of the Wildlife Act 1953, An Opportunity for Transformational Change of Aotearoa New Zealand's Biodiversity Law.* June 2023. Accessed 24/10/24 from https://eds.org.nz/wp-content/uploads/2023/07/Wildlife-Act-Report_FINAL.pdf

One of the main implementations of the Wildlife Act 1953 is the regulation of game bird hunting. As mentioned above, game bird hunting is a recreational sport that was popularised in New Zealand by European settlers. Schedule 1 of the Wildlife Act 1953 lists game birds that are allowed to be hunted during open season. These include five native species: shoveler, grey duck, pūkeko, paradise shelduck, and black swan, and eight introduced species: mallard, pheasant, chukar, grey partridge, red-legged partridge, bobtail quail, brown quail, and California quail.[18] The New Zealand Fish and Game Council (est. 1990) has control over game bird hunting. Throughout New Zealand there are 12 Fish and Game Councils. The organisation, along with the approval of the Minister for Hunting and Fishing, decides when open season begins and ends. Under the Wildlife Act 1953 it is illegal to hunt species with varying protection outside of open season. The New Zealand Fish and Game Council also sets areas for game hunting, sets game restrictions, and limits what kinds of guns, shots and hunting methods can be used. Hunters must also purchase a game-bird licence from Fish and Game New Zealand and a game bird hunting permit from DOC in order to take part.[19] The regulation of game bird hunting is relevant to the purpose of the Wildlife Act 1953 because it has positive implications on environmental and social sustainability.

An environmental implication of the regulation of game bird hunting was the formation of the New Zealand Game Bird Habitat Trust (NZGBHT). The NZGBHT is an organisation under Fish and Game New Zealand that works to improve the habitats of game birds. One of the significant actions of this organisation was adding a $3 fee on game bird hunting licences.[20] The money from this fee helps to fund wetlands projects. Since its introduction the NZGBHT has granted over $1.5 million towards wetland and pond conservation projects.[21] Many game birds rely on the wetlands for breeding, shelter and feeding. This means that the preservation of their habitat is very important. Therefore, this action is successful because species can continue to inhabit the wetlands which also ensures the continuation of game bird hunting in New Zealand. Another environmental implication of game bird hunting is that it keeps populations under control. Controlling game bird populations is important as overpopulation can devastate the environment and other species. Furthermore it allows protected species to have less competition for food, shelter and ground space. This allows them to survive and reproduce. Keeping populations under control through hunting also leads to species being more healthy overall. It can help to reduce the spread of disease and intraspecific competition. Therefore this implication shows that the regulation of game bird hunting is successful because it allows population numbers to remain steady and for the ecosystem to continue its natural processes.

The regulation of game bird hunting also has positive implications on social sustainability because it allows for people to hunt without greatly decreasing the populations of species. For many people in New Zealand, game bird hunting is a way to spend meaningful time with family and friends. It can also provide a food source for smaller, more rural communities. This shows how the preservation of game bird hunting is important to New Zealand citizens. This implication shows the success of regulating game bird hunting because it can continue while still ensuring the conservation of the environment.

Practice 2: Protection of wildlife through the establishment of wildlife sanctuaries, refuges and management reserves

The protection of wildlife through the establishment of wildlife sanctuaries, refuges and management reserves is another main implementation of the Wildlife Act 1953. These are controlled by the DOC. With the permission of the appropriate Minister or landowner they can be opened on conservation land, private land or estuaries. As of now there are 12 wildlife sanctuaries, 7 wildlife refuges, and 1 management reserve.[22]

Wildlife sanctuaries are areas where wildlife are absolutely protected unless there is specific instruction that states otherwise in a Proclamation. These areas are formed by the Governor General under the recommendation from

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[18] DOC. *Wildlife Act 1953.* Accessed 23/10/24 from https://www.doc.govt.nz/about-us/our-role/legislation/wildlife-act/
[19] Te Ara. *Whārangi 1. Game birds in New Zealand.* Accessed 26/10/24 from https://teara.govt.nz/mi/game-birds/page-1
[20] EVIDENCE OF RUDOLPH JAN HOETJES, *On behalf of the Northland Fish and Game Council*, 10 August 2019, Sarah Ongley
[21] EVIDENCE OF RUDOLPH JAN HOETJES, *On behalf of the Northland Fish and Game Council*, 10 August 2019, Sarah Ongley
[22] Environmental Defence Society. Dr Deidre Koolen-Bourke, Raewyn Peart, Shay Schlaepfer. *Reform of the Wildlife Act 1953, An Opportunity for Transformational Change of Aotearoa New Zealand's Biodiversity Law.* June 2023. Accessed 24/10/24 from https://eds.org.nz/wp-content/uploads/2023/07/Wildlife-Act-Report_FINAL.pdf

the appropriate Minister.[23] Wildlife sanctuaries limit human interactions with protected wildlife. In wildlife sanctuaries it is illegal to hunt, kill or disturb species in any way. Wildlife sanctuaries also contain either none or very few pests. This means that protected wildlife have the opportunity to thrive which is especially important if they are endangered. The Brook Waimārama Sanctuary is an example of a wildlife sanctuary. The Brook Waimārama Sanctuary is open to the public and is home to many species that are absolutely protected under the Wildlife Act 1953. The sanctuary also has a predator proof fence and pest traps to further protect the wildlife.[24] Wildlife refuges are formed by the Governor General under Proclamation. These areas have guidelines that ban or restrict pollution, boats, guns, dogs, cats and other things that may 'cause any wildlife to leave the wildlife refuge.'[25] An example of a wildlife refuge is Sulphur Bay Wildlife Refuge. Sulphur Bay is home to endangered species such as the New Zealand Dabchick, Banded Dotterel and Black-billed Gull.[26] This refuge is open to the public but dogs and mechanically powered boats are banned. In 1980, Wildlife management reserves were added to the Wildlife Act 1953.[27] Wildlife management reserves serve as areas for habitat conservation and regulated game hunting during the open season. These are created by the Governor General based on Proclamation.[28] An example of a wildlife management reserve is the Ōtukaikino Wildlife Management Reserve. The Ōtukaikino Wildlife Management Reserve is home to native and endemic species. Wildlife sanctuaries, refuges and management reserves are relevant to the Wildlife Act 1953 because they promote the protection and conservation of New Zealand wildlife. They provide wildlife with habitats that are protected from human interaction and predators. This allows for the restoration of populations and ecosystems.

Wildlife sanctuaries, refuges and management reserves have helped in restoring habitats, allowing species to increase populations and tackle extinction. However, these practices of the Wildlife Act 1953 have been criticised for being underutilised. There are only 20 of these areas in all of New Zealand which is not enough to protect wildlife. A limitation to wildlife sanctuaries, refuges and management reserves that impacts environmental sustainability is that they do not contain protected areas that are based on a species level of endangerment. This is due to the fact that absolute protection does not differentiate between native and introduced species, and levels of protection are not designated based on endangerment. This shortcoming of the Wildlife Act 1953 means that this practice does not align with modern standards regarding the protection, control and recovery of wildlife. According to Michele Lloyd, an environmental and agricultural statistics senior manager, "Ninety-four percent of our reptile species, 82 percent of bird species, 80 percent of bat species, 76 percent of freshwater fish species, … are either facing extinction or are at risk of being threatened with extinction."[29] This statistic shows that there are still many endangered species in New Zealand. Wildlife sanctuaries, refuges and management reserves need to be modernised in order to further protect species. It is especially important that the Act is revised to better the protection of native, endemic and threatened species.

However, wildlife sanctuaries, refuges and management reserves do have some positive implications on social sustainability. These areas allow for the New Zealand public and tourists to observe New Zealand wildlife in a way that protects species. It is important that the public can know about these species and the threats that they face. As our native and endemic animals are very important to our national identity, this promotes social sustainability.

Practice 3: Pest control

Pest control is another practice of the Wildlife Act 1953. Under the Wildlife Act 1953 human interactions with unprotected wildlife are not monitored. The practice of pest control is a main outcome of unprotected wildlife. Pests have had a harmful effect on New Zealand's native and endemic wildlife. They compete with species for food and shelter, and kill wildlife. New Zealand currently has a goal of being predator free by 2050. Pest control is

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[23]Environmental Defence Society. Dr Deidre Koolen-Bourke, Raewyn Peart, Shay Schlaepfer. *Reform of the Wildlife Act 1953, An Opportunity for Transformational Change of Aotearoa New Zealand's Biodiversity Law.* June 2023. Accessed 24/10/24 from https://eds.org.nz/wp-content/uploads/2023/07/Wildlife-Act-Report_FINAL.pdf
[24] Wikipedia. *History of* Brook Waimārama Sanctuary. Accessed 28/10/24 from https://en.wikipedia.org/wiki/Brook_Waim%C4%81rama_Sanctuary
[25]Environmental Defence Society. Dr Deidre Koolen-Bourke, Raewyn Peart, Shay Schlaepfer. *Reform of the Wildlife Act 1953, An Opportunity for Transformational Change of Aotearoa New Zealand's Biodiversity Law.* June 2023. Accessed 24/10/24 from https://eds.org.nz/wp-content/uploads/2023/07/Wildlife-Act-Report_FINAL.pdf
[26] DOC. *Sulphur Bay Wildlife Refuge.* Accessed 28/10/24 from https://www.doc.govt.nz/parks-and-recreation/places-to-go/bay-of-plenty/places/sulphur-bay-wildlife-refuge/?tab-id=Bird-and-wildlife-watching
[27]Environmental Defence Society. Dr Deidre Koolen-Bourke, Raewyn Peart, Shay Schlaepfer. *Reform of the Wildlife Act 1953, An Opportunity for Transformational Change of Aotearoa New Zealand's Biodiversity Law.* June 2023. Accessed 24/10/24 from https://eds.org.nz/wp-content/uploads/2023/07/Wildlife-Act-Report_FINAL.pdf
[28]Environmental Defence Society. Dr Deidre Koolen-Bourke, Raewyn Peart, Shay Schlaepfer. *Reform of the Wildlife Act 1953, An Opportunity for Transformational Change of Aotearoa New Zealand's Biodiversity Law.* June 2023. Accessed 24/10/24 from https://eds.org.nz/wp-content/uploads/2023/07/Wildlife-Act-Report_FINAL.pdf
[29] Stats NZ. *Our indigenous species are at risk of extinction.* Accessed 28/10/24 from https://www.stats.govt.nz/news/our-indigenous-species-are-at-risk-of-extinction/

relevant to the Wildlife Act 1953 because it helps to protect New Zealand's native and endemic wildlife. This is important for species survival in the face of endangerment and extinction. The success of pest control can be seen through environmental implications.

The main methods of pest control are 1080 and ground control. 1080 is a type of biodegradable pellet that can ethically and effectively kill pests such as possums, rats and stoats.[30] This is strictly controlled by the DOC. So far 1080 has been successful in protecting New Zealand's native and endemic species. According to a study by the DOC, the survival rate of North Island Brown Kiwi chicks is 12 times higher with the use of 1080.[31] Without pest control only 5% of chicks hatched in the wild and reached breeding age. With pest control up to 60% of the chicks that hatched in the wild will reach breeding age.[32] According to another study by the DOC, whio were three times more likely to survive to fledge due to the use of 1080 and trapping.[33] Ground control is another main method of pest control. Ground control is the use of specially designed traps and bait stations in order to kill specific pests.[34] This method is commonly used for stoats, rats and hedgehogs. Currently DOC has around 180,000 traps in operation.[35] In the Murchison Mountains, for example, there are 3,450 traps that protect takahe from stoats.[36] These examples of the success of pest control show how it has had positive implications on environmental sustainability. Pest control has helped to prevent predators from competing with or harming New Zealand wildlife. This has allowed species populations to continue to grow and begin to stabilise. This shows how the Wildlife Act 1953 has been successful in terms of pest control.

One downside of pest control is that it is expensive. This can have negative implications on economic sustainability. DOC spends a reported total of $5 million each year on stoat and rat traps.[37] Furthermore, according to a DOC report from 2021, the estimated total spending on Predator Free 2050 projects by local governments is $26 million per year.[38] These statistics show that pest control is expensive which compromises its economic sustainability.

Section 4: Conclusion

Environmental Sustainability

Although the Wildlife Act 1953 has had some positive implications on the sustainable future of New Zealand it has ultimately fallen short in terms of protecting wildlife. In the 21st century the Act has faced widespread criticism for its outdated approach to conservation and shortcomings in protecting endangered native and endemic species. In a 2019 report, DOC said the Wildlife Act 1953 was "overlapping, contradictory, contested, ineffective", "slow" and "outdated."[39] The Act no longer meets modern standards for conservation law. The main flaw of the Wildlife Act 1953 in terms of environmental sustainability is that it does not distinguish species protection status based on whether they are native or introduced, or their status of endangerment. New Zealand has the highest proportion of threatened native species worldwide. This comprises 90 percent of seabirds, 84 percent of reptiles, 76 percent of freshwater fish and 74 percent of terrestrial birds.[40] We also have the second greatest amount of invasive species.[41] These statistics show how protecting New Zealand's native and endangered wildlife is important for a sustainable future. This cannot be achieved with the current state of the Wildlife Act 1953. The Act must be changed to include

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[30] DOC. *Our pest control methods.* Accessed 28/10/24 from https://www.doc.govt.nz/nature/pests-and-threats/methods-of-control/
[31] DOC. *Proof 1080 is protecting native species.* Accessed 28/10/24 from https://www.doc.govt.nz/nature/pests-and-threats/methods-of-control/1080/proof-that-1080-is-protecting-our-species/
[32] DOC. *Proof 1080 is protecting native species.* Accessed 28/10/24 from https://www.doc.govt.nz/nature/pests-and-threats/methods-of-control/1080/proof-that-1080-is-protecting-our-species/
[33] DOC. *Proof 1080 is protecting native species.* Accessed 28/10/24 from https://www.doc.govt.nz/nature/pests-and-threats/methods-of-control/1080/proof-that-1080-is-protecting-our-species/
[34] DOC. *Our pest control methods.* Accessed 28/10/24 from https://www.doc.govt.nz/nature/pests-and-threats/methods-of-control/
[35] DOC. *Ground control for pests.* Accessed 28/10/24 from https://www.doc.govt.nz/nature/pests-and-threats/methods-of-control/ground-control/
[36] DOC. *Ground control for pests.* Accessed 28/10/24 from https://www.doc.govt.nz/nature/pests-and-threats/methods-of-control/ground-control/
[37] DOC. *Ground control for pests.* Accessed 28/10/24 from https://www.doc.govt.nz/nature/pests-and-threats/methods-of-control/ground-control/
[38] MPI. *Economic costs of pests to New Zealand.* Accessed 28/10/24 from https://www.mpi.govt.nz/dmsdocument/48496-Economic-costs-of-pests-to-New-Zealand-Technical-report
[39] Wikipedia. *Wildlife Act 1953.* Accessed 28/10/24 from https://en.wikipedia.org/wiki/Wildlife_Act_1953#:~:text=Wildlife%20Act%201953%20is%20an,fines%20of%20up%20to%20%24100%2C000.
[40] Victoria University of Wellington. *NZ has world's highest proportion of species at risk.* Accessed 28/10/24 from https://www.wgtn.ac.nz/news/2019/05/nz-has-worlds-highest-proportion-of-species-at-risk
[41] Environmental Defence Society. Dr Deidre Koolen-Bourke, Raewyn Peart, Shay Schlaepfer. *Reform of the Wildlife Act 1953, An Opportunity for Transformational Change of Aotearoa New Zealand's Biodiversity Law.* June 2023. Accessed 24/10/24 from https://eds.org.nz/wp-content/uploads/2023/07/Wildlife-Act-Report_FINAL.pdf

protection based on status of endangerment and nativity. Therefore, the Wildlife Act 1953 falls short of contributing to a sustainable future unless it is changed.

In terms of the practices listed above in Section 3, the Wildlife Act 1953 can only be somewhat environmentally sustainable considering where it falls short. Regarding the regulation of game bird hunting, the Act has proven to have positive implications on environmental sustainability through the NZGBHT and population control. Wildlife sanctuaries, refuges and management reserves have had a positive impact on wildlife within these areas however continue to be underused. Pest control has had positive environmental implications on many species however is expensive to run and difficult when considering the sheer amount of pests in New Zealand.

Cultural Sustainability

The Wildlife Act 1953 also falls short in terms of cultural sustainability because it fails to involve the Māori perspective. New Zealand legislation has historically excluded Māori in decision making in favour of colonial ideologies. However, in the 21st century there has been progress in including Māori in environmental legislation. If the Wildlife Act 1953 is to be revised or changed it is vital to include Māori in viewpoints. Nyze Manuel, the chairwoman of Te Ruunanga Papa Atawhai O Te Tai Tokerau (The Northland Conservation Board), has said that "We need to re-align and review it and replace it with something [that reflects] where we're today, rather than 70 years ago."[42] This quote reflects how many Maori desire for the Act to centre more around Te Tiriti principles and for reform to include the view of iwi and hapū. Throughout the Act it is reinforced that the Crown owns all wildlife that is absolutely protected. This is problematic because it undermines Te Tiriti O Waitangi. Additionally, the European perspective that people should be separate from the land is conflicting with Māori values. In order for New Zealand to have a more sustainable future, the Wildlife Act 1953 must be changed or replaced to include the Māori perspective.

Policy Two: Climate Change Response Amendment Act 2019

Section One: Introduction

The second policy that will be discussed in this report is the Climate Change Response Amendment Act (CCRAA) 2019. The CCRAA 2019 is a piece of New Zealand legislation that creates guidelines for climate change policies. The CCRAA 2019 is a development of the Climate Change Response Act 2002 which provided the original framework for New Zealand to reach its commitments made under the Kyoto Protocol and Paris Agreement. The overall purpose of the CCRAA 2019 is to ensure that New Zealand participates in the worldwide effort to limit the global average temperature increase to 1.5℃.[43] The goal is for New Zealand to become low emissions and climate change resistant. This will enable New Zealand to prepare for and adapt to the environmental impacts of climate change. The CCRAA 2019 has five international and domestic targets:

International targets

- A 5% decrease in neet emissions below 1990 gross emissions between the 2013 - 2020
- A 50% decrease in net emissions below 2005 gross emissions between 2021 - 2030

Domestic Targets

- Net zero emissions target for all greenhouse gases except for biogenic methane by 2050 and onwards
- A 10% decrease below 2017 levels of biogenic methane by 2030

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[42] NZ Herald. *Northland conservation spokesperson call for Treaty-centric Wildlife Act replacement.* Accessed 28/10/24 from https://www.nzherald.co.nz/northern-advocate/news/northland-conservation-spokesperson-calls-for-treaty-centric-wildlife-act-replacement/WGCQWBBEUNCUFJ7Z6N4HYN6ORY/

[43] Ministry for the Environment. *Climate Change Response (Zero Carbon) Amendment Act 2019.* Accessed 24/10/24 from https://environment.govt.nz/acts-and-regulations/acts/climate-change-response-amendment-act-2019/

- A 24 to 47% decrease of biogenic methane emissions by 2050 and onwards

The goals set out by the CCRAA 2019 will help the New Zealand government to execute climate change policies. This will contribute to the sustainable future of New Zealand because it will help to reduce greenhouse gas emissions therefore protecting ecosystems and preventing severe weather events. The main practices of the CCRAA 2019 are the Emissions Trading Scheme, Climate Change Commission and Emissions Budgets.

Section 2: Policy development process

Environmental Force

The main environmental force that influenced the creation of the CCRAA 2019 was the alarming increase of global temperatures and its effect on the New Zealand environment. The increase in global temperatures is caused by greenhouse gas emissions. Greenhouse gases are gases in the Earth's atmosphere that trap heat from the sun. Worldwide average temperatures have risen by approximately 1℃ in the last 100 years.[44] In New Zealand alone, the average annual temperature increased by 1.26℃ between 1909 and 2022. Increases in New Zealand's average annual temperature have worsened during the 21st century. According to a study by Stats New Zealand, 8 out of the 10 warmest years recorded in New Zealand history occurred within the previous decade.[45] These eight years have had an annual average temperature of around 13.5℃. Furthermore, scientists anticipate that New Zealand will warm by 0.7 to 1.0 by 2040, and between 0.7 to 3.0 by 2090.[46] The increase in average annual temperatures was an environmental force that influenced the creation of the CCRAA 2019 because it is detrimental to the environment. It causes severe weather events, rising sea levels, the extinction of animals and the collapse of ecosystems. Therefore, the CCRAA 2019 was created because improved legislation was needed to address the increase in global temperatures and climate change because it has only worsened over time.

Political Force

The political force that influenced the creation of the CCRAA 2019 was the global agreements on climate change action. The 1992 United Nations Framework Convention of Climate Change (UNFCCC) was one of the first agreements that influenced climate change legislation in New Zealand.[47] The UNFCCC was adopted by New Zealand after the Rio Earth Summit 1992 and came into effect on 21 March 1994. This agreement was a first step in recognising that climate change was a global problem and that countries must come together to prevent it. However, it became apparent that greater action was needed in order to mitigate the effects of climate change. The 1997 Kyoto Protocol made legally binding greenhouse gas emissions targets for developed countries. The Kyoto Protocol was ratified by the New Zealand government in December 2002.[48] These two global agreements influenced the creation of the Climate Change Response Act 2 (CCRA) 2002. The CCRA 2002 provided a legal framework to limit global warming by reducing greenhouse gas emissions. This Act was a political force because it set the foundation for the CCRAA 2019. Although this Act was somewhat effective by the mid 2010s it became obvious that changes needed to be made to global climate change legislation. The 2015 Paris Agreement is another political force that influenced the CCRAA 2019. The 2015 Paris Agreement is a legally binding UN treaty that commits countries to reducing greenhouse gas emissions. The goals of the Agreement are to keep global temperatures below 2℃ above pre-industrial levels and continue efforts to keep it below a 1.5℃ increase.[49] The

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[44] Stat New Zealand. *Temperature*. Accessed 26/10/25 from https://www.stats.govt.nz/indicators/temperature/

[45] Stats New Zealand. *Eight of the 10 warmest years in New Zealand recorded in last decade.* Accessed 26/10/24 from https://www.stats.govt.nz/news/eight-of-10-warmest-years-in-new-zealand-recorded-in-last-decade/

[46] Environmental Health Intelligence New Zealand. *Temperature*. Accessed 26/10/24 from https://www.ehinz.ac.nz/indicators/climate-change/temperature-our-changing-climate/

[47] MInistry for the Environment. *New Zealand and the United Nations Framework Convention on Climate Change*. Accessed 26/10/24 from https://environment.govt.nz/what-government-is-doing/international-action/nz-united-nations-framework-convention-climate-change/

[48] MInistry for the Environment. *New Zealand and the United Nations Framework Convention on Climate Change*. Accessed 26/10/24 from https://environment.govt.nz/what-government-is-doing/international-action/nz-united-nations-framework-convention-climate-change/

[49] Ministry for the Environment. *Paris Agreement.* Accessed 26/10/24 from https://environment.govt.nz/what-government-is-doing/international-action/about-the-paris-agreement/

2015 Paris Agreement was a main political force that influenced the creation of the CCRAA 2019 because it set out targets and the legal framework for climate change policies. It emphasised the importance of climate action for the sustainable future of New Zealand and the entire globe.

Section 3: Discussion of policy implementation

Practice 1: Emissions Trading Scheme

The Emissions Trading Scheme (ETS) is one of the main practices implemented by the CCRAA 2019. The ETS was first introduced under the CCRA 2002 but was improved under the CCRAA 2019. The ETS is an approach managed by the Environmental Protection Authority. It is relevant to the CCRAA 2019 because it helps New Zealand reach its 2050 greenhouse gas emission reduction targets and meet the obligations under the 2015 Paris Agreement. The ETS includes the following sectors: liquid fossil fuels, stationary energy, industrial processes, waste, synthetic gases, forestry.[50] Under the ETS, businesses must report their greenhouse gas emissions to the government and pay a New Zealand Unit (NZU) for every tonne of carbon dioxide equivalent they emit. This means that NZUs are used by businesses to pay for greenhouse gas emissions. NZUs are sold at government auctions which are held four times per year.[51] Over time the government will reduce the availability of NZUs available in auctions in order to limit how much businesses can emit. The ETS has proven to be somewhat successful. Currently over 50% of New Zealand's greenhouse gas emissions are covered by the scheme.[52] Additionally, money earnt from the ETS goes towards the Climate Emergency Response Fund.[53] This is used to fund other projects to further reduce greenhouse gas emissions. The ETS has positive implications for environmental sustainability because it incentivises emissions reduction targets. This encourages businesses to make more sustainable decisions. This will help New Zealand reach its goals under the CCRAA 2019 ensuring a more environmentally sustainable future.

One limitation of the ETS that impairs its success is that the agricultural sector does not have to surrender NZUs. The sector does have to report carbon dioxide emissions but does not have to pay for them like other sectors do. This is an issue because the agriculture sector contributes approximately half of the total greenhouse gas emissions.[54] This means that without including the agricultural sector the ETS will never reach its full potential. Making the agricultural sector use NZUs would contribute to a sustainable future and help the Act reach its goals even more.

Practice 2: The Climate Change Commission

The establishment of the Climate Change Commission is another practice of the CCRAA 2019. The Climate Change Commission was formed in November 2019.[55] It is an independent government organisation that performs research into climate change policies and suggests changes. This helps the New Zealand government to continue to improve the practices of the CCRAA 2019 and reach emissions targets. In 2023, the Climate Change Commission established Pou Herenga, a Māori advisory board that helps advise decisions. Pou Herenga is important because it guides the Commission in areas relating to Māori. This ensures that the Climate Change Commission is culturally sustainable by continuing to engage with Māori and centre Te Tiriti O Waitangi in decision making. The Climate Change Commission has been successful in terms of social and environmental sustainability. The Climate Change Commission is socially sustainable because it is transparent with the New Zealand public on its practices. It also takes the perspectives of businesses and different communities into consideration when advising policies. This is relevant to the purpose of the Act because climate change action requires the contribution and awareness of all New Zealanders.

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50 He Pou a Rangi. *FAQs: What is the NZ Emissions Trading Scheme (NZ ETS)?.* Accessed 27/10/24 from https://www.climatecommission.govt.nz/get-involved/exploring-the-issues/what-is-the-nz-ets/#:~:text=How%20does%20the%20ETS%20work,the%20greenhouse%20gases%20they%20emit.

51 Ministry for the Environment. *NZ ETS Unit Settings and Annual Regulatory Updates 2024.* Accessed 27/10/24 from https://consult.environment.govt.nz/climate/nz-ets-unit-settings-and-regulatory-updates-2024/

52 Ministry for the Environment. *New Zealand Emissions Trading Scheme.* Accessed 27/10/24 from https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/ets/

53 Ministry for the Environment. *The New Zealand Emissions Trading Scheme Explained*. Accessed 27/10/24 from https://www.youtube.com/watch?v=YqTlzbXMzec

54 Ministry for the Environment. *New Zealand Emissions Trading Scheme.* Accessed 27/10/24 from https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/ets/

55 Climate Change Commission. *Our Story*. Accessed 27/10/24 from https://www.climatecommission.govt.nz/who-we-are/our-story/

The Climate Change Commission has succeeded in being environmentally sustainable. This can be seen through its success in guiding practices under the CCRAA 2019. A recent example of this is when the Government took on the advice from the Commission to reduce the number of NZUs available between 2025 and 2029 from 45 million to 21 million.[56] This example shows how the Climate Change Commission is relevant to the CCRAA 2019 because it continues to help the New Zealand government reach greenhouse gas emissions targets. As the environment of New Zealand is ever changing it is important for the practices of the CCRAA to change alongside it.

Practice 3: Emissions Budgets

Emissions budgets are another practice of the CCRAA 2019 that is run by the New Zealand government. Emissions budgets set out the maximum amount of greenhouse gas emissions allowed during a five year period. They are legally binding and must be met through greenhouse gas emissions. In order for emissions budgets to reach the 2050 goals they are paired with Emissions Reduction Plans. In 2022, the first three emissions budgets were set. Each budget is based on the amount of megatonnes of carbon dioxide equivalent ($MtCO_2e$) that is emitted per year.[57] Budget 1 (2022) is allowed 290 $MtCO_2e$ with a yearly average of 72.5 $MtCO_2e$. Budget 2 (2026 - 2030) is allowed 305 $MtCO_2e$ with a yearly average of 61 $MtCO_2e$. Budget 3 (2031 - 2035) is allowed 240 $MtCO_2e$ with a yearly average of 48 $MtCO_2e$.

Emissions budgets are relevant to the CCRAA 2019 because they help greenhouse gas emission reduction reach the 2050 goals. It guides New Zealand into a low emissions society and allows for businesses, government and communities to plan for this transition. The emissions budget is also relevant because it promises good implications on environmental and social sustainability. As we have not come to the end of Budget 1 we are yet to see whether the Emissions budget will help New Zealand reach the five year goal. The implementation does however provide a good plan that will help New Zealand achieve the 2050 goals. Emissions budgets are socially sustainable because they include the input of different advisory groups. This includes the Climate Business Advisory Group, the Local Government Emissions Reduction Advisory Group and the Climate Youth Advisory Group.[58] Input from advisory groups is important because it ensures that the concerns of different communities are being heard and taken into consideration.

Section 4: Conclusion

Environmental Sustainability

Despite attempting to mitigate the environmental impacts of climate change the CCRAA 2019 does not ensure that New Zealand will meet its 2050 goals of net zero emissions. According to the Climate Action Tracker in 2023, New Zealand's policies and action for climate are 'highly insufficient'.[59] It seems that New Zealand will not reach its goal of a 50% reduction in greenhouse gas emissions below 2005 levels by 2030. Rather we are projected to only have a 22% reduction which sets us behind in reaching 2050 goals.[60] Additionally, it is estimated that New Zealand will have greenhouse gas emissions of 74 $MtCO_2e$ in 2030 which is 14 percent higher than levels in 1990.[61] These statistics show that in terms of practice implementation the CCRAA 2019 is proving to be unsuccessful. This affects environmental sustainability because it means that the effects of climate change are not being properly reduced.

The shortcomings of the CCRAA 2019 on environmental sustainability can also be seen through the continued rise of temperatures and the occurrence of unusual weather events. In 2022, New Zealand experienced its hottest

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56 Beehive Government. *Updated settings to restore ETS market confidence.* Accessed 27/10/24 from https://www.beehive.govt.nz/release/updated-settings-restore-ets-market-confidence

57 Climate Change Commission. *FAQs: What are emissions budgets?* Accessed 28/10/24 from https://www.climatecommission.govt.nz/get-involved/exploring-the-issues/what-are-emissions-budgets/

58 Ministry for the Environment. *About the Emissions Reduction Plan.* Accessed 28/10/24 from https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/emissions-reductions/erp/

59 Climate Action Tracker. *New Zealand.* Accessed 29/10/24 from https://climateactiontracker.org/countries/new-zealand/targets/

60 Climate Action Tracker. *New Zealand.* Accessed 29/10/24 from https://climateactiontracker.org/countries/new-zealand/targets/

61 Climate Action Tracker. *New Zealand.* Accessed 29/10/24 from https://climateactiontracker.org/countries/new-zealand/targets/

recorded year. The average temperature in 2022 was 13.76°C.[62] This is 1.29°C above the 1961 - 1990 climate average of 12.47°C. The continued rise in temperatures shows that the CCRAA 2019 is yet to lower temperatures. This raises concerns about reaching the 2050 goals. According to the Ministry of the Environment, the South of New Zealand is becoming wetter while the North and East are becoming drier.[63] Additionally, extreme weather events such as the floods of 2022 and 2023 are becoming more frequent. The changes in weather conditions show how the effects of climate change continue to impact New Zealand even following the CCRAA 2019. In order for New Zealand to reach its 2050 goals the practices of the Act need to be enforced more strictly. Furthermore, the 2050 goals need to be brought to greater public attention. The evidence above shows that in its current state the CCRAA 2019 is proving to be somewhat ineffective in mitigating the environmental impacts of climate change.

Cultural Sustainability

The CCRAA 2019 has both positive and negative implications on cultural sustainability. The CCRAA 2019 aims to protect the interests of Māori and follow Te Tiriti O Waitangi principles. The Act has been successful in including Māori in decision making processes. This is through community and iwi outreach. For example, the Pou Herenga advisory board for the Climate Change Commission means that advice for the Government can align with Māori values. This is very important because it can help shape climate change policies that are culturally sustainable. However, the CCRAA 2019 failure to make progress towards 2050 has negative implications for cultural sustainability. For Māori the impacts of climate change are also felt on a spiritual level.[64] This is due to interconnectedness between living and non-living things. Therefore, if the CCRAA 2019 continues to fail in mitigating the effects of climate change, cultural sustainability will suffer due to the impact on Māori.

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Excellence

Subject: Education for Sustainability

Standard: 90831

Total score: 07

Task	Grade score	Marker commentary
One	E7	The candidate has presented enough evidence to fulfil the requirements for Excellence in this response. The critical analysis offered an in-depth discussion of how well both policies can achieve their intended goals. It also provided thoughtful conclusions on the degree to which each policy contributes to a sustainable future. Overall, this response included comprehensive analysis, demonstration of insight, and meaningful integration of Māori values, culminating in an effective critical analysis of the successes and failures of the policies discussed. The candidate did not explicitly use the terms kaitiakitanga and manaakitanga, which are both reflective of Māori concepts and values. However, there is strong evidence of analysis of Māori influence in effecting kaitiakitanga throughout the response. Candidates should be reminded to follow the assessment specifications for font size and page limit.