Reform of the Wildlife Act 1953

AN OPPORTUNITY FOR TRANSFORMATIONAL CHANGE OF AOTEAROA NEW ZEALAND'S BIODIVERSITY LAW

Appendix C
Interface between the Wildlife Act and introduced species

Environmental Defence Society

Photo by Bruce Quirey

Appendix C

Interface between the Wildlife Act and introduced species

Contents

Abbreviations

CITES	Convention on International Trade of Endangered Species
DOC	Department of Conservation
FPAs	Freshwater Protected Areas
IUCN	International Union for Conservation and Nature
PCE	Parliamentary Commissioner for the Environment
MPI	Ministry for Primary Industries
NZTCS	New Zealand Threat Classification System
SPCA	Society for the Prevention of Cruelty to Animals
WACA	Wild Animal Control Act 1977
U.S.	United States of America

Introduction

Currently, the management of different introduced species is divided between the conservation and biosecurity systems. Introduced species are managed across multiple Acts: Wildlife Act, WACA, Game Animal Council Act, Biosecurity Act, Conservation Act, Reserves Act and National Parks Act. The role of, and interface between, these laws is complex and not well integrated.

Which system is applied, and what management approach is adopted, is primarily dependent on what the species is, rather than the level or type of threat it poses. The conservation system primarily responds to threats posed by introduced birds, terrestrial mammals and reptiles, which fall under the definitions of "wildlife" or "wild animals". In contrast, because that system does not apply to micro-organisms, most invertebrates, fish or any plant species, the Biosecurity Act often becomes the primary tool for the management of threats posed by these species.

These distinctions are largely the product of historical legacy, rather than by design, and so do not always operate effectively, or even as might be expected.

There are three main issues with this system and these laws:

Issue 1: Introduced species laws are not well integrated

Issue 2: Introduced animals have been allowed to persist, to the detriment of indigenous, and sometimes threatened, flora and fauna

Issue 3: The Biosecurity Act is not well framed for protection of biodiversity

Underlying these issues is a broader issue about the extent to which the current systems accommodate and provide for diversity of values, needs and concerns.

Spotlight: Introduced species terminology

Law, policy and discussion relating to introduced species is particularly confusing due to the plethora of terms used to describe categories of introduced species. Several key terms are defined and discussed below. Terms specific to the Biosecurity Act are addressed separately below under discussion of that Act.

Introduced species:

The definition of introduced species used in this review is taken from *Te Mana o te Taiao* and refers broadly to any species brought to Aotearoa New Zealand, whether intentionally or unintentionally.

The Wildlife Act does not use the term introduced species, but several adjacent statutes do:

- Section 4 of the National Parks Act 1980 aims to preserve national parks in a "natural state"; a corollary of this is that native species are to be protected and "introduced plants and animals" are to be exterminated as far as possible.
- Section 53 of the Conservation Act gives the Director-General power to "control any introduced species causing damage to any indigenous species or habitat".
- The long title of the WACA states that it is an Act to control "harmful species of introduced wild animals".

Reference to "introduced" species is useful to distinguish this group, and their treatment or prioritisation, from those species which are native to our shores. Contextually, reference to

introduced species often occurs in association with provision for managing the damage or harm they can cause.

Introduced invasive species or invasive alien species:

The Convention on Biological Diversity, the European Commission and the IUCN all employ the term 'invasive alien species'. Invasive alien species are considered to be the main direct driver of biodiversity loss around the globe,[1] and are defined as those species "introduced into places outside their natural range, negatively impacting native biodiversity, ecosystem services or human well-being".[2] There is now a Global Invasive Species Database, and the Aichi Biodiversity Targets (discussed below) include goals of controlling and eradicating these species.

The term 'invasive alien species' is seldom used in this country, however *Te Mana o te Taiao* does reference both "invasive species" and "introduced invasive species". The need to target "invasive species" is likely to grow in the future, as species that are already invasive, spread further in response to climate change. *Te Mana o te Taiao* expressly recognises this and contains a section dedicated to policy around "introduced invasive species", which it defines to include deer, goats, pigs, mustelids, rats, mice, introduced fish and wallabies.

Pest:

The term pest has one of the most complex usages. The primary statute employing the term is the Biosecurity Act, Part 5 of which provides for "pest management". However, the Act simply defines a pest as "an organism specified as a pest in a pest management plan".[3] The criteria for pest management planning is more informative, it requires that such organisms must be causing, or capable of causing, "adverse effects".[4] This is in line with the purpose of Part 5, which is the eradication or management of "harmful organisms".

Conservation General Policy and General Policy for National Parks both provide a fuller definition of pest as "any organism, including an animal, plant, pathogen or disease, capable or potentially capable of causing unwanted harm or posing significant risks to indigenous species, habitats and ecosystems or freshwater fisheries".

Both of these instruments make extensive reference to pests under Policy 4 which deals with "biosecurity and management of threats to indigenous species, habitats and ecosystems". Although the Conservation Act does not reference pests, Conservation General Policy attempts to fill this gap, directing that the threat of pests is to be identified and prioritised in conservation management strategies and plans, and for pest management to be undertaken to:[5]

- Prevent the establishment of pests;
- Eradicate newly established pests;
- Contain and reduce the range of pests; and
- Control widespread pests.

While both these high-level policy documents employ the term 'pest', there is additional complexity arising from how they do so. For example, both Conservation General Policy and the General Policy

[1] https://www.cbd.int/invasive/
[2] International Union for Conservation of Nature, 2021, *https://www.iucn.org/sites/default/files/2022-04/ias_and_climate_change_issues_brief_2021.pdf*
[3] Biosecurity Act 1993, s2
[4] Biosecurity Act 1993, s62(d)
[5] Conservation General Policy, policy 4.2(b)

for National Parks make several references to '*wild animals and* pests', implicitly distinguishing these two groups. Further, both Policies specify that biosecurity and pest management programmes may control "sports-fish and game birds" where necessary to protect or restore threatened species, habitats or ecosystems,[6] notably failing to extend the same standard to "wild animals". There is therefore some ambiguity as to how the term pest is applied within the conservation system and in relation to what species.

Despite the distinction between wild animals and pests under conservation policy, it is important to note, from a purely legal perspective, that "wild animals" may be declared "pests" under the Biosecurity Act for pest management planning purposes.

Further, although the term 'pest' is frequently used in conservation policy and strategy documents, it is not used in the Wildlife Act, the WACA or the Conservation Act, and used only once in the National Parks Act.[7] Differences in terminology are likely historical, since all core conservation legislation predates the Biosecurity Act. The most recently developed policy document, *Te Mana o te Taiao*, uses the term "pest" throughout - without distinguishing "pest" and "wild animals".

Harmful species:

The Wildlife Act and WACA regimes refer to "harmful species", this is not a designation but simply a descriptor for identifying species that require management. The Wildlife Act provides for harmful species of wildlife to be eradicated,[8] while the WACA provides for the "control of harmful species of wild animals", and only their eradication locally, where necessary. The Biosecurity Act similarly refers to "harmful organisms" in relation to pest management planning, where "adverse effects" are one of requirements for determining "pest" status.

Valued introduced species:

A new term coming through more recently under *Te Mana o te Taiao* is "valued introduced species". These are introduced species "including sports fish, game animals and species, introduced for biocontrol, which provide recreational, economic, environmental or cultural benefits to society." The challenge here is to manage these species in a way that also ensures indigenous biodiversity thrives.

Summary

The large array of terms applied in relation to introduced species is a historical legacy. The lack of consistency in terminology makes the application of the above Acts unclear. It would be valuable to review the terminology in place across the conservation and biosecurity frameworks to create greater alignment and clarity.

A shift in focus under new wildlife legislation to an approach centered on biodiversity protection, rather than the regulation of hunting, will also require a shift in terminology and framing, towards a more biosecurity, threat management and risk assessment focus. Terms such as "pest" are contentious when employed in relation to valued introduced species, this highlights the need for a national conversation about how species are framed.

As *Te Mana o te Taiao* represents the most recent thinking in this area, it will also be important that terminology aligns with and supports the Strategy. Consideration could be given, for example, to

[6] Conservation General Policy, policy 4.2(d)
[7] See National Parks Act 1980, s5A
[8] See Wildlife Act 1953, s41, also note that "wild animals" are not included within the definition of "wildlife" under the Wildlife Act

creating a new category within new wildlife legislation of "valued introduced species", providing clear criteria for qualifying, and aligning the management approach of these species. This could greatly simplify not only the terminology but approach in this arena.

While this report focuses on the interface between the Wildlife Act and introduced species laws, it also requires noting that indigenous species can be invasive, or be moved from outside their traditional range, for example weka. How to manage these species is not canvased here, but it is a matter that will need further thought in new wildlife legislation. It is likely that new law will need a mechanism to accommodate such species into pest management regimes.

Regulating introduced species under the Wildlife Act

Game

Schedule 1 of the Wildlife Act lists species designated as "game". There are currently seven types of game birds listed in the schedule (no mammals are listed), including quail, pheasant, partridge and a range of duck species. It also includes some indigenous bird species, for example pūkeko, grey duck and paradise shelduck.

A significant proportion, if not the majority, of the Wildlife Act is focused on the regulation and management of game birds, to ensure their populations are sustained to support the hunting resource. The Act does this in several ways, including by:

- Prohibiting hunting or killing of game birds except within specified open seasons;
- Providing rules for hunting and killing in designated game areas;
- Setting out the restrictions on taking game and on the methods and practices that can be employed to hunt or kill them;
- Establishing a licencing system for hunting game bird species;
- Providing further funding mechanisms to support game-bird management, such as the game bird habitat stamp;[9]
- Declaring closed game areas where it is an offence to hunt or kill waterfowl;
- Establishing area designations, where game-bird habitat and game birds are fully protected, even in the open seasons;[10]
- Providing for the appointment of Fish and Game rangers with powers to enforce these provisions; and
- Setting out a range of offences, including infringement offences, and penalties for taking game in contravention of the Act.

Fish and Game is responsible for recommending conditions and drafting open season notices, that the Minister may approve or amend.[11] It is an offence to hunt game species outside of these seasons,[12] with the penalty for breaches being a fine not exceeding $5,000 for an individual or $10,000 for a body corporate.

Currently, Fish and Game's functions are spread across the Conservation and Wildlife Acts. Under the Conservation Act, Fish and Game is required to exercise its powers to represent the interests of anglers and game bird hunters and provide co-ordination for the "management, enhancement and

[9] Wildlife Act 1953, s19A
[10] For example, wildlife sanctuaries and refuges under sections 9 – 14 of the Wildlife Act 1953
[11] Wildlife Act 1953, s15(3)
[12] Wildlife Act 1953, s15(6) with penalties set out under s67E

maintenance of sports fish and game".[13] The primary planning mechanisms for sport fish and game management plans are provided for under the Conservation Act.[14] These statutory functions follow through to open seasons provided for under the Wildlife Act. This means that under the Wildlife Act, game birds are to be managed so that the bird resource is enhanced.

Under the Conservation Act, buried within definitions of definitions, DOC also has a function of enhancing plants and animals, but these are "of any kind".[42] EDS's phase two report on the conservation system discusses conceptual underpinnings of the Conservation Act in more detail, including the need for an overarching purpose which elevates indigenous species. An indigenous species starting point under the Conservation Act and new wildlife legislation is likely to provide DOC with greater ability to prioritise indigenous species where interests conflict.

Further, Fish and Game's function under the Conservation Act, to advocate not just for game species but also their habitat provides a very specific connection between the management of these species and protection of their critical habitat.[15] Despite representing the angling community, Fish and Game has shouldered a significant part of the burden of habitat advocacy that benefits the public interest in conservation and in indigenous fish.

Spotlight: Historical approach to the Wildlife Act's regulation of game species

Early wildlife related legislation in Aotearoa New Zealand, such as the Protection of Animals Act 1872 and the Animals Protection and Game Act 1921, focused on the regulation of game-bird hunting to manage the game resource. These statutory regimes applied to both imported and native game species.[16]

This meant that historically, the statutory default was of no protection, with restrictions only being applied where necessary to maintain a hunting resource. Species were scheduled for protection to enable the setting of closed and open hunting seasons, or the implementation of other hunting controls. Consequently, early restrictions on taking or killing were primarily afforded to introduced species. The best way to protect a native species was also to declare it game, but then not set any open season, effectively making it illegal to hunt or kill them.

Historically, a range of native species, such as Tūī, Bittern, curlew (godwit), kākā, morepork, crested grebe, white heron, huia and even tuatara were declared native game. Tūī were listed as game from 1873 to 1906 and their exclusion from all game season lists from 1878 ironically led to them being the first New Zealand bird to be fully and continuously protected nationwide.[17] The listing of tuatara as native game in 1895 was made to protect the species; associated pest control measures necessary for its persistence were justified on that basis.[18]

The Wildlife Act reversed this historical approach, to protecting "animals" unless specified in the Act. This change was made "in conformity with public opinion, which now attracts the greatest importance to the protection of native bird life".[19]

Spotlight: Controlling the Canada Geese game bird

[13] Conservation Act 1987, s26B
[14] Conservation Act 1987, s17L
[15] Conservation Act 1987, s26C(1)(g)
[16] See Animals Protection and Game Act 1921, ss5-6
[17] Miskelly, 2014, 28
[18] Miskelly, 2014, 39
[19] Bodkin, 8 October 1953, Wildlife Bill, *New Zealand Parliamentary Debates* 300, 1698

Canada Geese were originally listed in Schedule 1 of the Wildlife Act as a game bird. They were moved to Schedule 5 (unprotected wildlife) in 2011 due to impacts the bird was having on pasture and crops, defecation in recreational areas and aviation safety.[20] Before protection was listed, there was uncertainty about the ability of regional councils to manage the species given Fish and Game's authority under the Wildlife Act.

As noted above, Fish and Game has a statutory requirement to manage game birds to "maintain and enhance" the resource. When preparing game management plans, it must "maximise recreational opportunities for hunters" while only "having regard to" any adverse impacts game birds might have on the interests of other users of the habitat.[21]

These statutory directions complicate Fish and Game's management response of game birds. It means that when a game bird is a pest, the costs of control fall on Fish and Game and that conflicts with their core functions.[22] As a Regulatory Impact Statement on the Canada Geese noted "it could be unreasonable to expect fish and game councils and hunter volunteers to undertake work outside the interests of recreational hunters".[23] This limited the range of options available while the species was listed as a game bird. DOC could issue section 54 permits, in consultation with Fish and Game, under the Wildlife Act to enable council control operations, however this was a high cost and administrative burden. Another alternative was to enable an open season so that goose control could occur without a permit, however this would necessitate land owners paying for a game licence when they had no interest in game hunting.

The Regulatory Impact Statement notes that much of the debate on this issue focused on who should cover the costs of control. Both Fish and Game and regional councils sought "to maximise their own gains and minimize their losses, without regard to the costs that their decisions place on other parties",[24] this situation had created conflict and resentment between the parties that had been ongoing for decades. This example shows that conflict arises in this arena, not just between introduced and indigenous species, but also where hunting interests clash with those "of landowners, urban amenity or aviation safety."[25]

Further, the Regulatory Impact Statement notes the importance of actively reviewing the protected status of wildlife species "in response to changes in abundance and distribution of species and changes in land use" and reconsidering their protection status "where policy objectives are no longer being achieved." [26]

Unprotected wildlife

Schedule 5 of the Wildlife Act lists species that are not protected by the Act so that they can be hunted or killed without a permit. Schedule 5 contains many common introduced species, including cats, dogs, sheep, horses, rats, mice, members of the mustelid family, possum and wallabies. It also contains many common introduced birds such as blackbirds, mynas, starlings, magpies, pigeons and birds like chickens and turkeys.

[20] Nicolson, 2011, 2, https://www.doc.govt.nz/globalassets/documents/about-doc/role/legislation/regulatory-impact-statement-canada-goose.pdf
[21] Conservation Act 1987, s17L(4)b) and (c)
[22] Several species within Schedule 1 of the Wildlife Act could be potential pests with no management. Even though Fish and Game has different management objectives, the work it conducts provides some pest management benefits that may otherwise be left completely unchecked and potentially cause significant impacts to the environment
[23] Nicolson, 2011, 2
[24] Nicolson, 2011, 3
[25] Nicolson, 2011, 2
[26] Nicolson, 2011, 9

Removal of protection enables agencies to undertake animal control and pest management operations. The Wildlife Act does not set out any criteria or formal process for guiding or developing animal control and/or management plans. It simply provides the Minister with a variety of broad, non-prescriptive and thus highly discretionary powers such as the ability to:

- Coordinate the policies and activities of departments of State, local authorities and public bodies in relation to the protection, management, control, and conservation of wildlife and the eradication of harmful species of wildlife;[27]
- Prepare and issue plans for the "control of wildlife and the eradication of harmful species of wildlife";[28] and
- Establish and "carry on any operations or industry relative to the conservation, management or control of wildlife or the eradication of harmful species of wildlife."[29]

The Governor-General also has a power to make regulations as "necessary or expedient for the protection or control of wildlife".[30]

It is clear that these powers are provided in order to enable the control, management or eradication of "harmful species of wildlife". However, the Wildlife Act provides no direction as to how that assessment is to be made, on what basis or who is to be consulted. Neither are there any 'triggers' in the Act to prompt the consideration or use of these powers.

In reality, a primary advantage to listing species on Schedule 5 is that it also enables them to be managed under the Biosecurity Act, so that additional tools for their control and management are available.

Regulating wild animals under the WACA and Game Animal Council Act

Schedule 6 of the Wildlife Act lists "wild animals" that are to come under the jurisdiction of the WACA, simultaneously removing them from the Wildlife Act's jurisdiction.

The Wildlife Act provides no criteria to guide the categorisation of "wild animals" and the approach applied in relation to this schedule has changed over time. Until 2011, Schedule 6 related to "noxious animals" and species such as possum and wallaby were listed. Currently, all Schedule 6 species are popularly hunted, and include deer, chamois, goat, Himalayan tahr and pigs. These species are now commonly characterised as "valued introduced species".[31]

More clarity as to the purpose of Schedule 6 can be drawn from the WACA. The WACA is an Act "for the purposes of controlling wild animals generally, and of eradicating wild animals locally where necessary and practicable, as dictated by proper land use".[32] This indicates that species under the WACA are provided a degree of tolerance: they are to be controlled at the broad scale to reduce and manage their impacts, and only "eradicated" as "necessary and practicable" at place.

The degree of tolerance provided for these species needs to be reassessed considering the impact introduced browsers have on indigenous flora and fauna. Ungulates can have a significant adverse effect on forest regeneration, and therefore the forest's ability to operate as an effective carbon

[27] Wildlife Act 1953, s41(1)(c)
[28] Wildlife Act 1953, s41(1)(e)
[29] Wildlife Act 1953, s41(2)(b))
[30] Wildlife Act 1953, s72
[31] Te Mana o te Taiao, the Aotearoa New Zealand Biodiversity Strategy 2020 uses the term "valued introduced species" throughout and specifically in relation to pigs, deer, tahr and chamois, see the Biodiversity Strategy at page 53
[32] Wild Animal Control Act 1977, s4

sink. Wild animals can also affect forest composition, the spread of invasive plants and, for pigs, through their foraging and rooting behaviours, can operate as a vector for diseases such as Kauri Dieback (see below *Spotlight: Browsing herbivores* and *Spotlight: Wild Pigs, Poaka* in Appendix B).

The strategy, of allowing some species to persist because they are highly valued, is a high-risk approach in some areas. If monitoring and management is not robust, populations can grow and spread, causing potentially significant impacts and degradation to indigenous species and habitat. Despite this, the provision for management planning under the WACA suffers from the same defects as the Wildlife Act. For example, it also lacks the direction necessary to activate or guide planning in a way that is responsive to the protection of indigenous or threatened species. Like the Wildlife Act, it also provides the Minister with a broad range of powers (e.g., undertake research, coordinate and approve policies, and to prepare and issue wild animal control plans) to control or eradicate wild animals, without any supporting framework or criteria to guide the use of these powers.

Spotlight: Evolution of legal approach to harmful animals

When the Wildlife Act was introduced, there was debate over the approach to be adopted for harmful species of wildlife. Parliamentary debates record discontent amongst conservationists, such as Forest and Bird, which felt that the legislation should set out a clear eradication approach and was too accommodating of hunting. In return, some Members of the House responded that "sportsmen have some rights" and that these rights were not to be taken away.[33]

The use of what is now Schedule 6, which removed absolute protection for species like deer, pigs and possum[34] "while still retaining power to restrict killing",[35] was seen as a compromise. The impact of these species on indigenous and threatened species is now widely acknowledged and their continued persistence in some areas has become more contentious given the twin crises of biodiversity loss and climate change.

The Noxious Animals Act 1956:

Not long after the Wildlife Act was enacted, the need for a dedicated pest management regime became clear. Concern at alarming increases in the populations of "pests" or "noxious animals", particularly deer, raised concern at the level of protection afforded such species. As a result, the Noxious Animals Act 1956 was enacted to provide for the "control and eradication of harmful species of wild animals". The Act provided a general right to hunt or kill "noxious animals", except where hunting or killing might interfere with research being undertaken "for the purpose of planning their extermination."[36]

The Wildlife Act was amended and linked to the Noxious Animals Act. A new section dealing with "noxious animals" was added to the Wildlife Act and linked to a new Schedule 6 (which remains today). Thus Schedule 6 was initially intended as a mechanism for declaring "wild animals of any species … to be noxious animals and subject to the Noxious Animals Act 1956." Deer, chamois, goat, possum, pigs, tahr and wallaby were all declared "noxious animals" under Schedule 6 at that time.

By 1977 the title of the Noxious Animals Act had become controversial, primarily because of the growth of deer farming. This raised concern at the "inappropriateness of the word 'noxious'" and "the effect it may have on the export of wild or farmed venison or goat meat".[37] The provision of a

[33]Kearns, 8 October 1953, Wildlife Bill, *New Zealand Parliamentary Debates* 300, 1701
[34] For which there was an active fur trade
[35] Stewart, 8 October 1953, Wildlife Bill, *New Zealand Parliamentary Debates* 300, 1700
[36] Smith, 8 May 1956, Noxious Animals Bill, *New Zealand Parliamentary Debates* 308, 755
[37] Talbot, 29 November 1977, Noxious Animals Bill, *New Zealand Parliamentary Debates* 416, 4837

general right, or entitlement of sorts, to the hunting community to be able to hunt these animals had also likely strengthened both reliance on these species and their framing as a 'resource'.

Wild Animal Control Act 1977:

In 1977, the WACA replaced the Noxious Animals Act. The new Act enabled the establishment of recreational hunting areas to be managed under a licensing system by sportsmen and hunters, changes welcomed by the Deerstalkers Association and Big Game Hunters Association.[38] These changes marked a swing back towards a recreational hunting, rather than an eradication, approach. The new framework would enable recreational hunting areas to be declared and managed under "wild animal control plans" and for the establishment of a National Recreational Hunting Advisory Committee "composed of representatives of organisations whose object is to foster hunting or shooting in recreational hunting areas".[39] This provided a statutory based advocacy mechanism to the recreational hunting sector, and can be seen as an early precursor to the Game Animal Council that exists today.

Game Animal Council Act 2013:

In 2013, the Game Animal Council Act came into force and established the Game Animal Council. The Act arose as part of the National Government's confidence and supply agreement with the United Future Party in 2011. It aimed to place "hunter's interests at the forefront" and "give hunters a greater say in the management of our big game resource".[40] The Game Animal Council has a statutory role to advise and make recommendations on game animals to the Minister and to "improve hunting opportunities" and raise awareness of the views of the hunting sector.

The Act also gives the Minister the power to designate "herds of special interest" to be managed by the Animal Game Council for hunting purposes and in a way that is "compatible with the management of public conservation law and resources".[41] To date no herds of special interest have been designated.

Since the Game Animal Council Act's introduction, the lens applied to wild animals has shifted further, to distinguish for example between wild animals and "game animals" considered to be valued introduced species.[42] Those species that qualify as both are chamois, tahr, deer and pigs. This means that the only "wild animal" that lies outside that additional regime is now goats.

Summary

This historical review demonstrates how the framing of introduced species, and the legal system's approach to them, has changed over time. Species that were treated as "noxious animals" to be eradicated (in 1956) are today highly valued game animals. It also highlights that the law in this area has changed primarily in response to economic considerations and interest group bargaining, in a relatively *ad hoc* and highly political, rather than in a considered and strategic manner.

Parliamentary debates across these laws demonstrate a clash of values, of introduced species framed either as resource, to which people have a right to hunt, or as invasive pests to be eradicated. Yet surprisingly, there is very little discussion about the priority to be accorded introduced versus indigenous species where those interests clash or as to how these different values

[38] Talbot, 29 November 1977, Noxious Animals Bill, *New Zealand Parliamentary Debates* 416, 4838
[39] See Wild Animals Control Act 1977 (as enacted) Part III
[40] https://www.beehive.govt.nz/release/game-animal-council-be-established
[41] Game Animal Council Act 2013, s7(1)(i)(i)
[42] Game Animal Council Act 2013, s4

might be reconciled. There is also scant reference to the science or the need for evidence informed decision making, and little discussion as to what management approach the evidence points to.

Reform of the Wildlife Act should attempt to take a more strategic rather than reactive path, and directly address these tensions.

The multitude of statutes and potential management models applicable to Schedule 6 species make the purposes of and approach to this grouping of wildlife especially unclear. Reform of the Wildlife Act to address these issues will have implications for animal control policy and planning broadly. Because both the WACA and Game Animal Council Act are central to the management of introduced species, any review should also closely examine these interfaces to ensure consistency and alignment. Reviewing the institutional arrangements in place, and the role, membership and functions of both Fish and Game and the Game Animal Council should form a part of the broader alignment project.

Non-statutory conservation policy guiding introduced species management

Several other instruments inform management of introduced species. It is important that new wildlife legislation aligns with these instruments and/or that they are amended in response to reform to ensure a consistent approach.

Conservation General Policy

Conservation General Policy currently states that conservation management strategies and plans should identify and prioritise threats posed by pests to indigenous species, habitats and ecosystems. It also states that biosecurity and pest management programmes should prioritise:

- Preventing pests becoming established, including illegal or inadvertent introductions;
- Eradicate newly naturalised pests where practicable;
- Eradicate, contain or reduce the range of pests that are established but not widespread, where practicable; and
- Control widespread pests where required to protect indigenous species, habitats and ecosystems, "where eradication or containment of them is not practicable".[43]

Conservation General Policy also states that biosecurity and pest management programmes should maximise outcomes for the benefit of indigenous species, habitats and ecosystems, and makes it clear that they may "include control of indigenous species, sports fish and game birds where necessary to protect *or restore* threatened populations of indigenous species, or habitats and ecosystems with unique or distinctive values."[44]

In relation to recreational hunting, Conservation General Policy states that "recreational hunting of wild animals and animal pests should be encouraged where this does not diminish the effectiveness of operations to control them and is consistent with planned outcomes at places."[45]

Te Mana o te Taiao – the Aotearoa New Zealand Biodiversity Strategy 2020

[43] Conservation General Policy, 4.2(b)(iv)
[44] Conservation General Policy 4.2(d)
[45] Conservation General Policy 4.2(f)

Te Mana o te Taiao also makes use of the term "pests". It sets goals for identifying new and emerging biosecurity threats, including pests and weeds, for managing their impacts on "indigenous biodiversity" and eradicating or reducing their impacts in areas of high biodiversity value.

It also refers to "valued introduced species", which "provide recreational, economic, environmental or cultural benefits to society",[46] or are important as mahinga kai.[47] Sport fish (e.g., trout and salmon) and game animals (e.g., pigs, deer, tahr and chamois) are all identified as valued introduced species. The goals set by *Te Mana o te Taiao* in relation to valued introduced species include the identification of their impacts on indigenous biodiversity, their effective "active management" and their removal "from high priority biodiversity areas and threatened ecosystems".[48]

The term "invasive species" is also used and applies to introduced species including pests (e.g., rats, possums and mustelids) as well as some wild animals (e.g., pigs, goats and deer). It also includes within it, invasive weeds, invertebrates (such as wasps) and micro-organisms (e.g., myrtle rust and Kauri Dieback disease). Invasive species are a particular concern because they can increase or spread rapidly. Climate change is expected to accelerate this movement.

Crucial to the management of these three categories of introduced species is a focus on ensuring that their impacts are contained or managed and that their management is prioritised according to the degree of risk or threat they pose. A core message echoed throughout is the need to "recognise and prioritise the special responsibility we have towards indigenous species, while still recognising the recreational, economic and cultural benefits and human sustenance of valued introduced species".[49]

Te ara ki mua - Framework for adaptive management of wild animals

Te ara ki mua sits beneath the above laws and policy and sets a framework for adaptive management of wild animals under the WACA regime.[50] It recognises that for indigenous biodiversity to thrive, the ecological impacts of these species must be managed. In the absence of natural predators of wild animals this remains a challenge, since wild animal populations can quickly increase and "compromise the resilience, structure, and diversity of forests, shrublands and native grasslands".

Te ara ki mua also underscores the importance of:

- An adaptive management approach;
- Site-based planning;
- High level engagement and partnership with iwi/hapū and stakeholders;
- A diverse toolkit enabling management, containment and control approaches;
- Targeted, collaborative and collective management; and
- Approaches being underpinned by evidence, including mātauranga Māori and science.

Importantly, *Te ara ki mua* acknowledges that "a step change in performance" is needed at a system level to:

- Improve our systems of knowledge, science, data and innovation;

[46] Department of Conservation, 2020, 9
[47] Department of Conservation, 2020, 31
[48] Department of Conservation, 2020, 53
[49] Department of Conservation, 2020, 13
[50] Department of Conservation, 2022, https://www.doc.govt.nz/globalassets/documents/conservation/biodiversity/te-ara-ki-mua-framework.pdf

- Appropriately prioritise action at place;
- Implement key roles and responsibilities; and
- Develop the tools necessary to effectively balance conservation with the various hunting interests.

As discussed below, these mechanisms do not currently exist under the Wildlife Act and the WACA and there is a need for legislative reform to enable such an approach.

Finally, although the WACA and *Te Mana o te Taiao* set out an approach that includes site based "eradication" or "removal" where needed to protect indigenous biodiversity, this is absent from *Te ara ki mua*. It is an omission that needs to be addressed, since it is likely to be a key aspect to threatened species protection.

Regulation of pests under the Biosecurity Act

Aotearoa New Zealand was one of the first countries to employ the term 'biosecurity' and create a statutory based biosecurity framework, the Biosecurity Act, which provides for integrated institutional arrangements and biosecurity budget.[51]

Core terms and definitions under the Biosecurity Act

Organism: this includes not only plants and animals, but micro-organisms, viruses and reproductive cells and developmental stages of an adult organism.

New organism: any species not present in New Zealand prior to 29 July 1998, species that have previously been eradicated, or those formally recognised as an unwanted organism for which approval is required for their containment or release.[52]

Unwanted organism: an organism capable or potentially capable of causing unwanted harm to natural or physical resources or human health. Natural resources are further defined to include organisms of all kinds, the air, water, soil in which they live and to encompass "systems of interacting living organisms and their environment".

Pest: an organism specified in a pest management plan.

Part 5 of the Biosecurity Act deals with "pest management", its purpose is to provide for the eradication or effective management of harmful organisms present in New Zealand by providing for "the development of effective and efficient instruments and measures that prevent, reduce or eliminate" their adverse effects.[53]

Regional councils may only undertake pest management for species that have been designated as an "unwanted organism" or that are a "pest" specified in a regional or national pest management plan. Section 62 of the Biosecurity Act sets out the criteria for pest management plans. To qualify, an organism must be capable of causing an "adverse effect" to one or more of the following:

- Economic wellbeing;
- The viability of threatened species of organisms;
- The survival and distribution of indigenous plants or animals;

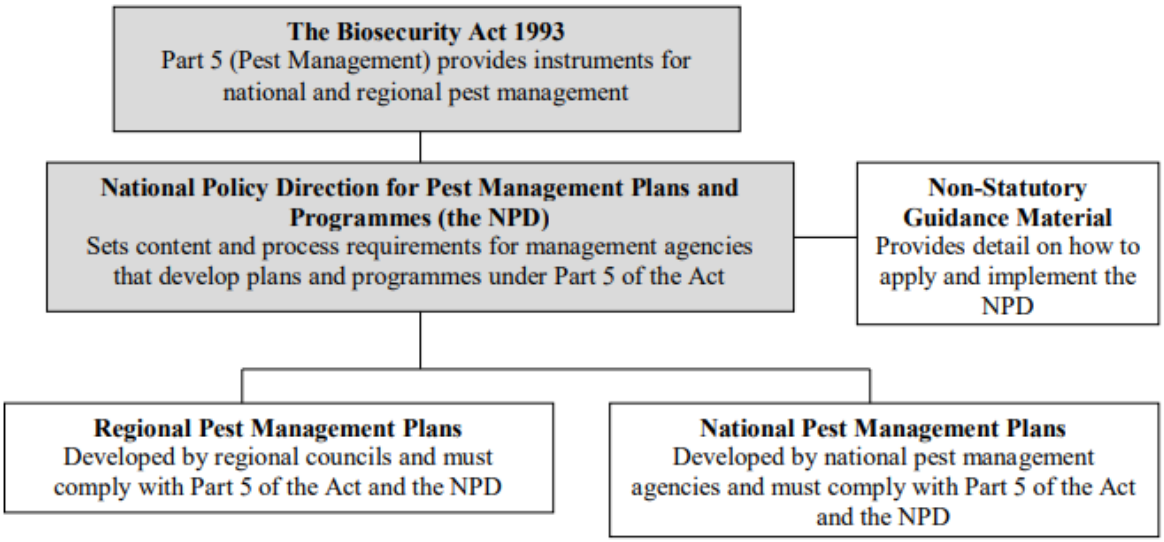
[51] Quinlan et al 2016, 26
[52] Hazardous Substances and New Organisms Act 1996, s2A
[53] Biosecurity Act 1993, s54

- The sustainability of natural or developed ecosystems, ecological processes and biological diversity;
- Soil resources;
- Water quality;
- Human health;
- The enjoyment of the recreational value of the natural environment;
- The relationship between Māori, their culture, and their traditions and their ancestral lands, waters, sites, wāhi tapu, and taonga; or
- Animal welfare.

The scope and applicability of the Biosecurity Act is deliberately broad to enable the regime to be activated in response to the full gambit of potential threats, including threats to the primary sector, human health and the environment. It is also able to respond to threats from a broad range of organisms, from plants and animals to micro-organisms and viruses. This approach is highlighted in literature as taking a "more environmental perspective" than similar overseas legislation by recognising the need to protect "valued biological systems".[54]

A valuable feature of the Biosecurity Act is that it provides for both national directions, thereby ensuring a consistent approach to the prevention and eradication of new incursions, and for regional, place based, pest management strategies aimed at managing or eradicating pests.[55] Although MPI is responsible for administration of the Biosecurity Act, other entities can initiate pest management planning and be assigned responsibilities.

In 2015, MPI put in place a National Direction for Pest Management (which is currently under review). This sets out the framework for developing national and regional pest management plans and clarifies the Biosecurity Act's requirements, as well as the requirements for developing 'good neighbour rules' (to address issues at boundaries). The National Direction also provides guidance to Councils on criteria to add/remove species to their regional pest management plans, therefore what species are considered 'pests' under legislation and the rules around their management. A core goal is to ensure that plans are aligned and consistent at both the national and regional level.



[54] Quinlan et al, 2016, 27

[55] A good comparison of the distinctions between the two options is set out by MPI here: https://mpi.govt.nz/dmsdocument/14362-nppa-and-regional-pest-management-strategies

Figure 1. Biosecurity Act framework[56]

When a national pest management plan is proposed, a cost-benefit analysis is undertaken to ensure that "the benefits of the plan would outweigh the costs, after taking account of the likely consequences of inaction or other courses of action".[57] A formal part of the planning process is the development of a proposal for the allocation of costs, which specifies the sources of funding to support implementation. Plans may also provide compensation for losses suffered by individuals where "a person's income derived from feral or wild organisms is adversely affected by the implementation of the plan".[58] The Act binds the Crown to national pest management plans (and to good neighbor rules in regional pest management plans), so requires it to comply with any obligations set and to "meet the costs" imposed on it.[59]

The advantage of national pest management plans under the Biosecurity Act is that their rules prevail over local authority bylaws so that rules may be made that require people, including private owners and occupiers, to take specified actions to prevent spread of the pest, to keep records of actions or to prohibit or regulate specified activities and practices.[60] Those rules can apply nationally or to specified areas, and contravention of those rules is an offence under the Act. The ability to impose rules nationally, including over private land, is a powerful tool to help ensure a consistent and integrated approach to pest management.

The Biosecurity Act provides a range of valuable tools currently lacking in the conservation system, including mechanisms to initiate management planning and pest control proposals, funding levers to ensure those programmes are resourced, and compliance mechanisms to ensure a consistent and integrated approach is adopted.

Context for reform of introduced species laws

Aotearoa New Zealand has a strong conservation record in comparison to many other countries and is often viewed as a world leader in protecting island biodiversity and threatened species management. This is largely because of its efforts in pest management.

While internationally, the cumulative number of invasive species continues to increase, Aotearoa New Zealand has the advantage of relative isolation, lack of terrestrial connectivity to other areas, and one of the most highly regarded biosecurity and border control regimes in the world.

The most recent Global Biodiversity Outlook report by the Secretariat of the Convention on Biological Diversity cited Aotearoa New Zealand as an example of one of the few nations making progress on Aichi Target 9, which is focused on the control and management of invasive alien species. This progress has primarily been obtained through the establishment of the predator-free 2050 programme.[61]

Aichi Target 9: "To identify and prioritize invasive alien species, control or eradicate priority species and have measures in place to prevent their introduction and establishment, by 2020. The target also requires legislation or regulations to be implemented to control or eradicate invasive alien species and to establish national guidelines for management and control."

[56] Ministry for Primary Industries, 2015, 5
[57] Biosecurity Act 1993, s62(e)
[58] Biosecurity Act 1993, s64(4)
[59] Biosecurity Act 1993, s60(2)
[60] Biosecurity Act 1993, s64(5)
[61] Secretariat of the Convention on Biological Diversity, 2020, 74-77

Despite this, Aotearoa New Zealand continues to have the second-highest recorded number of invasive species in the world.[62]

In its 2019 report on progress made towards achieving Aichi Target 9, DOC notes that the spread of species on the mainland remains a challenge and, although progress is being made in relation to predators, "the amount of area under management for mammalian herbivores (for example deer and goats) has increased very little, and these animals have become more common".[63]

The country is struggling to meet DOC's pest control goals set out in its Statement of Intent 2021-2025.[64] These include the target of ensuring Threatened, At Risk and conservation dependent species receive the management they need to "contain" the range of "established exotic pests" and limit their impact on vulnerable indigenous populations. For terrestrial, freshwater and marine invasive species there is currently "insufficient data to assess trends", indicating that our existing monitoring and data collection systems are inadequate.

Even Aotearoa New Zealand's network of pest free islands has declined in recent years. The maintenance of these island's pest free status takes substantial resourcing and the number of islands being maintained is trending down, with performance targets not being met, and more than 40 percent of formally "pest free" islands losing that status over the last 5 years (Figure 2).

	2016/17	2017/18	2018/19	2019/20	2020/21 Actual	2020/21 Target
Number of pest-free islands	79	63	51	44	47	55

Figure 2 Number of island biosecurity programmes where pest free status has been maintained[65]

Introduced animal and plant species remain the most significant threat to indigenous biodiversity and habitat in Aotearoa New Zealand.[66] Climate change will exacerbate this threat and put many species at risk in ways current knowledge systems are unlikely to be able to predict. For example, climate change is expected to increase the movement of invasive species into new areas as a result of changing temperature and precipitation patterns.[67] The spread of avian malaria carried by mosquito in Hawaii is a salient reminder of the danger this presents to indigenous species. As temperatures rise, the mosquito moves further up the mountain, killing indigenous Hawaiian songbirds as it goes (see Figure 3). The birds' habitat is getting squeezed and will eventually no longer exist, sealing the birds' fate forever.

[62] Ministry for the Environment, 2020, 20
[63] Department of Conservation, 2019, 55
[64] Department of Conservation, 2021, 46, https://www.doc.govt.nz/globalassets/documents/about-doc/annual-reports/annual-report-2021/annual-report-2021.pdf
[65] Department of Conservation, 2021, 46
[66] Ministry for the Environment et al, 2015, 78
[67] Christie et al, 2020, 5

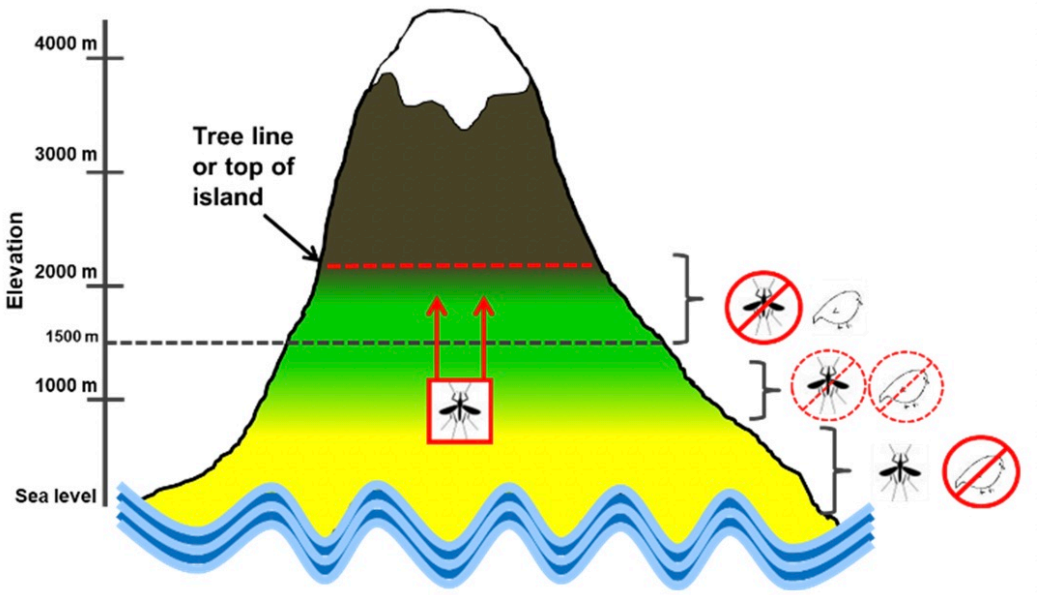


Figure 3. Distribution of native birds and non-native mosquitoes in the transmission of avian malaria relative to temperature and elevation in Hawaii[68]

In Aotearoa New Zealand, the increasing frequency of mast seeding events, in combination with shifting snow lines, is simultaneously boosting rodent and mustelid populations and extending the range of these predators. This is placing already threatened species like whio/blue duck under increasing pressure. The whio is doubly unfortunate in preferring fast running mountain rivers, making them additionally vulnerable to extreme weather events like flooding.[69]

In the marine space, the impact of the 200-odd introduced marine species in Aotearoa New Zealand will be compounded by climate change because indigenous species decline in the wake of marine heatwaves. This will open new opportunities for introduced species to establish.[70]

In order to build resilience to the impacts of climate change, Aotearoa New Zealand needs to do more than just maintain indigenous flora and fauna. Instead, the focus needs to be on restoration and enhancement of biodiversity at scale (enhancement is ironically already applied for sports-fish and game). Aichi Target 15 acknowledges this mandate:

Aichi Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems.[71]

In this context, and as reported by DOC, invasive species control is now doubly crucial, not only to protect indigenous and threatened species, but also to reduce the effects of climate change.[72] This is particularly the case with respect to browsing herbivores (see below *Spotlight: Browsing herbivores*).

Spotlight: Browsing herbivores

[68] https://www.usgs.gov/media/images/distribution-native-birds-and-non-native-mosquitoes-transmit-avian-malaria-relative
[69] https://www.doc.govt.nz/nature/native-animals/birds/birds-a-z/blue-duck-whio/
[70] Ministry for the Environment et al, 2022, 20
[71] United Nations Convention on Biological Diversity, 2010, Strategic Plan for Biodiversity 2011-2020, Target 15
[72] Department of Conservation, 2021, 113

Browsing herbivores, such as deer and goat, eat seedlings of indigenous plants that would otherwise have become mature trees. This can have multiple impacts:

- A direct impact on indigenous, and sometimes threatened, species;
- A reduction of important carbon sinks; and
- The creation of new space for the spread of invasive plants.[73]

With respect to deer, studies have shown that:

- Deer culling has not been able to deliver successful forest regeneration because population levels are almost never sustained to sufficiently low levels to allow palatable species to re-establish.
- In contrast, regeneration occurs relatively rapidly when deer are fenced out of an area.[74]
- This means that "even low densities of introduced herbivores may restrict ecosystem recovery".[75]
- In part, this is linked to the fact that many indigenous plant species have a slow re-growth following browsing damage.[76]

Based on the above, browsing herbivores raise challenging questions. If effective control is not achievable, and large scale restoration of indigenous biodiversity is required to reverse biodiversity loss and provide resilience to climate change impacts, is eradication, or perhaps containment to very limited areas, the only solution to managing these species?

A 2021 report from the Invasive Species Council in Australia argues that while there are additional costs to implementing more widespread and intensive invasive species control, in the longer term it is the most fiscally prudent approach.[77] The report underscores the importance of controlling introduced browsing animals to ensure Australia can maintain and grow its carbon capture capacity.[78]

Key issues with the management of introduced species

The legislative frameworks for introduced species detailed above require reform for the following reasons.

Issue 1: Introduced species laws are not well integrated

As noted above, management of introduced species is spread across the conservation and biosecurity systems. These systems are not well integrated. For example:

- The Wildlife Act only manages introduced species which fall within its jurisdiction, e.g., birds, reptiles and animals. Other species are left to the Biosecurity Act, e.g., most invertebrates, most marine species and all plants. This artificial separation of species into different management frameworks hinders co-ordinated responses to introduced species and effective ecosystem management.

[73] Department of Conservation, 2020
[74] Husheer, 2007, 79-87
[75] Tanentzap et al, 2009, 1064-1072
[76] Tanentzap et al, 2009, 1064-1072, 1071
[77] Jacobs et al, 2021, 5
[78] Jacobs et al, 2021, 9

- It is difficult to promptly respond to and eliminate invasive introduced species that breach border controls and/or escape into the wild when the species' taxa falls under the Wildlife Act's jurisdiction. For MPI to take control, a wildlife permit to hunt or kill the species must be obtained, or the species must be added to Schedule 5 (species not protected). Once protection is lifted, the species can be formally declared an "unwanted organism" under the Biosecurity Act and then eradicated.[79] However, this undermines the kind of rapid response necessary to address border breaches.
- The Biosecurity Act is the primary mechanism for coordinating pest management planning and control functions of regional councils. However, if the introduced species falls within the Wildlife Act's jurisdiction, regional councils require permission from DOC before taking any action (until the species is declared an unwanted organism).

Integration of introduced species and pest management across the conservation and biosecurity systems is required to ensure effective protection of indigenous biodiversity.

Issue 2: Introduced animals have been allowed to persist, to the detriment of indigenous, and sometimes threatened, flora and fauna

Stag rubbing on beech tree. Photo by Mike Harding

As described above, some introduced species, such as wild animals, pose a significant threat to indigenous and threatened flora in Aotearoa New Zealand. Yet, these animals have been allowed to persist. This has been able to occur because of the following legal and operational constraints:

- Plants are not covered by the Wildlife Act, thus they are afforded no protection under that statute. Plants are instead protected under a historical Act that no one uses or implements (see *Spotlight: Exclusion of plants* in the main report).
- There is a lack of clarity as to the purpose(s) of the conservation system, including under the Wildlife Act.
- As described in *Spotlight: Evolution of legal approach to harmful animals*, wild animals have established a foothold in animal laws through their listing in Schedule 6 of the Wildlife Act

[79] Biosecurity Act 1993, s7(6)

and subsequent management under the WACA. This has provided wild animals with a degree of statutory protection.

- Conservation laws specifically provide for the interests of recreational hunters via the Game Animal Council (and anglers via Fish and Game). Such provisions enable vested interest lobby groups to have a say on invasive species control.
- Hunting introduced animals as a recreational and food gathering activity is highly valued by New Zealander's.
- Wild animal control is especially difficult and costly, and no one has sufficient resources or money to carry it out. In the absence of being able to do it itself, DOC has relied on recreational hunters to undertake wild animal control,[80] thus perpetuating the entitlement of such hunters to be able to access these animals. To a large extent, this has rendered moot the debate about the extent to which wild animals should be provided for. It has meant that eradication is off the table, with wild animal management to date being resource, rather than conservation, driven.

As an aside, this outcome is rather perplexing given the significant resource invested in developing a deer-repellent 1080 bait. When 1080 was first developed (to kill possum) it incidentally killed, and thus lowered deer numbers, in target areas.[81] This generated "antipathy to 1080 amongst hunters" and active hunter opposition to 1080 baiting. In response, 1080 bait formulations were developed, at significant cost, to ensure no adverse impacts on deer mortality.[82] Money diverted to this issue is resented by some conservationists[83] who have questioned DOC's expenditure in order "to avoid killing an animal that causes extensive damage to native forest" when the money could better be used saving native species, "rather than protecting an introduced pest."[84]

- Dependent as it has been on recreational hunting, wild animal control has been patchy and *ad hoc*.
- The inclusion (if done) of wild animals in Regional Pest Management instruments is constrained by the legislative direction in the WACA that an eradication approach occur "locally where necessary and practicable".
- Wild animals are not adequately monitored. Missing early detection of new incursions reduces the viable management responses available, making control more complex and costly. Without more resourcing and more effective monitoring frameworks, adaptive management approaches, such as *Te ara ki mua*, may be high risk in some areas.
- There is no trigger in the system for the management and control of wild animals, for example when monitoring (if there is any) demonstrates the need for this.
- Neither DOC's biodiversity monitoring and reporting system or the NZTCS is linked to the Wildlife Act or to the statutory based wild animal and pest control planning frameworks. This means that listing of a species in the NZTCS does not trigger any assessment of the threat posed by wild animals or any required management response to address that threat.
- The Biosecurity Act's pest management tools cannot be applied to wild animals without authorisation (except where they are vectors for another pest or unwanted organism).
- Getting animals declared "unwanted" can be difficult because that designation cannot be situational (e.g., farmed vs wild deer).

[80] See Fraser, 2000
[81] Fraser K, 2000, 6
[82] See Morriss et al, 2020
[83] Driver G, 2019, DOC spending hundreds of thousands on controversial deer repellent, *Wilderness Magazine* (17 July 2019)
[84] Forest and Bird in particular has raised concerns, see comments in Driver G, 2019, 'DOC spending hundreds of thousands on controversial deer repellent', *Wilderness Magazine*, 17 July 2019

Deer wallow. Photo by Mike Harding

Management planning of valued introduced species such as wild animals is thus highly contested and conflict laden. The 'rub' is the extent to which these animals should be provided for given their impact on indigenous, and sometimes threatened, flora.

Conserving Nature details this issue in the context of the Himalayan tahr control plan and its subsequent failure to protect indigenous biodiversity.[85] The tahr control plan example highlights several problems:

- The lack of statutory direction and process to guide the development of management plans, including consultation requirements and the complexity this gives rise to in practice;
- The focus on protecting hunting and fishing interests throughout conservation statutes elevates the interests, legitimate expectations and priority accorded to this sector;
- The core purposes of the Wildlife Act and the WACA are not sufficiently clear to inform planning objectives and standards; and
- The significant level of resourcing, monitoring and enforcement required for an adaptive management approach are too often unavailable.

There are several other wild animal management planning processes that demonstrate similar problems (see below *Spotlight: Cases on wild animal management planning*).

Spotlight: Cases on wild animal management planning

Lower North Island Red Deer Foundation v Minister of Conservation involved a successful challenge by the Deer Foundation to the legality of DOC decisions altering concessions provided for Wild Animal Recovery Operations. Such operations are a mechanism for introduced species management under the WACA. It is intended to enable concessions to support wild animal recovery operations.

When issuing Wild Animal Recovery Operation concessions under the WACA, the Minister must have regard to the purposes and provisions of the Act, purposes for which the land in question is held,

[85] Koolen-Bourke et al, 2021, 131 - 133

and "the role of persons engaged in hunting for recreation in achieving the purposes of the Act".[86] From a "cumulative effect of several factors" within the WACA regime, including the above purpose, the Court held that recreational hunters had a range of legitimate expectations, including to be consulted and recognition that recreational hunting could assist with achieving adequate control.[87] The Court held that DOC's decision was invalid.

As in the Tahr case, the hunting advocacy group contested the scientific basis for DOC's decision. In *Lower North Island Red Deer*, the Court gave a considerable degree of deference to DOC. However, it demonstrates how exposed to vested interests decisions relating to wild animal management are.

In *Back Country Helicopters Ltd v Minister of Conservation*[88] aerial assisted trophy hunting guides argued that conditions placed on concessions were illegal on the basis "that the Associate Minister took into account animal welfare ethics, the issues of herding and hazing, public perception, New Zealand's reputation overseas, and his political agenda, all of which were irrelevant" and likely *ultra vires*. Amongst the proposed changes to conditions were alterations of their term, and it was argued that businesses were not viable without long term concessions and that people had operated their businesses in reliance on that.

While the Court found no illegality, that such cases continue to arise highlights the degree of conflict and tension that exists in this area, and that current settings have created a sense of entitlement that can operate as a barrier to the prioritisation of indigenous species protection. It also underscores the importance of establishing a much clearer framework for decision making.

Difficulties with managing wild animals under Schedule 6 of the Wildlife Act and the WACA can be compared to the relatively straightforward process (discussed above) of managing unwanted organisms under the Biosecurity Act. For example, possum and wallaby were initially managed under the WACA but were removed from Schedule 6 of the Wildlife Act and placed into Schedule 5 by the Biosecurity Law Reform Act 2012. At the same time, they were also declared "unwanted organisms" under the Biosecurity Act. These changes helped to provide clarity as to the ability of regional councils to formulate pest management plans for these species and address ongoing complaints about the high amount of "red tape and bureaucracy around the culling of possums" while they were under the WACA regime.[89]

Issue 3: The Biosecurity Act is not well framed for protection of indigenous biodiversity

The Biosecurity Act has come under fire for its application in the conservation space. At present, there are barriers undermining the effective utilisation of the Biosecurity Act's pest management tools and mechanisms for biodiversity protection. These include:

- The Act provides no prioritisation, so protection of biodiversity is not paramount, which is important when organisms might have impacts across a range of contexts.
- Evaluating non-economic matters is difficult within the cost-benefit analysis required by the Biosecurity Act. This issue is highlighted in *Conserving Nature* in relation to the *Pieris brassicae*, an invasive white butterfly that posed a risk to indigenous brassica species.[90] MPI calculated the benefit of eradication as small, but DOC considered the risk provided a clear mandate for action (and then acted using the powers of the Biosecurity Act). Another

[86] Wild Animal Control Act 1977, s23(c)
[87] *Lower North Island Red Deer Foundation Inc v Minister of Conservation* [2017] NZHC 1346 at [76]
[88] *Back Country Helicopters Ltd v Minister of Conservation* [2013] NZAR 1474
[89] Davis, 16 August 2011, Biosecurity Law Reform Bill – Second reading, *New Zealand Parliamentary Debates* 675, 20636
[90] Koolen-Bourke et al, 2021, 136

example is where a pest poses a threat to the forestry sector it is a simple matter of valuing the timber. But when the species is kauri, how should the calculation proceed?

- It is easier to find funding to support pest programmes as the sector at risk can be levied to cover some of the costs. Funding sources are much more difficult to locate and so leverage in the conservation space. Action in response to threats to indigenous biodiversity requires a significant financial investment from the Government. This reflects that although the Biosecurity Act can be applied to protect indigenous biodiversity, it was not designed with that use front of mind.
- In cases where the threat is to indigenous biodiversity, but the species does not fall under the Wildlife Act, MPI, not DOC, is not the lead agency. Questions have been raised about whether MPI is the most appropriate agency responsible for identifying and appropriately prioritising pest management for biodiversity protection.[91] *Conserving Nature* explored this issue in the context of the management of kauri dieback disease.[92] An issue with the management response employed was that it was MPI led, even though it required conservation management expertise and skills.

Spotlight: Invasive plants

Almost half of New Zealand's flora consist of alien plants.[93] The number of non-native plant species established outside of cultivation "is higher than for any other islands worldwide".[94] In 2016, it was reported that a new plant species establishes in the wild every 39 days.[95] "While New Zealand has successfully eradicated several non-native plant species from its territory, the small number of successes reflects the short-term, local and often uncoordinated efforts to manage non-native plants rather than national programmes backed by legislation and financed over several decades."[96] Introduced plants are the "main hazard" to one third of all nationally threatened plant species.[97]

The most significant of these invasive species is *Pinus radiata*. But other less known examples include *Actinidia deliciosa* (kiwi fruit), *Vitus vinifera* (grapes), *Pseudotsuga menziesii* (Douglas fir), *Lolium perenne* (rye grass), *Eucalyptus spp.*, *Cupressus macrocapa* (cypress), *Trifolium repens and T. pratense* (white and red clovers), *Olea europaea* (olives), *Agrostis capillaris* (browntop/grass), *Dactylis glomerata* (cocksfoot) and *Passiflora edulis* (passion fruit). Each has been listed as a non-native environmental weed.

Historically, invasive plants were managed under their own bespoke framework, the Noxious Plants Act 1978. When that Act was repealed, its relevant provisions were subsumed within the biosecurity, rather than conservation system. This means that the Biosecurity Act manages both border security, and plant pests established within the border, to prevent harmful spread.

The PCE has been highly critical of the effectiveness of the Biosecurity Act framework and the approach it takes. A 2021 PCE review of how Aotearoa New Zealand manages weeds that threaten native ecosystems argues that the Biosecurity Act contains "no explicit reference to native ecosystems or biodiversity", although this was recommended in a submission on the Biosecurity Law Reform Bill 2010.[98]

[91] See Parliamentary Commissioner for the Environment, 2021
[92] Koolen-Bourke et al, 2021, 136 citing Russell, 2019
[93] See Biological Reviews, 2020, 1511-1534, https://onlinelibrary.wiley.com/doi/pdf/10.1111/brv.12627
[94] See Hulme, 2020, 1539-1562
[95] Ministry for Primary Industries, 2016, 4
[96] See Hulme, 2020, 1539-1562
[97] See Hulme, 2020, 1539-1562
[98] Parliamentary Commissioner for the Environment, 2021, 118

The situation also means that DOC only has authority to manage weeds on conservation land.[99] This can create a patchy response and undermine management activities, since if control is inadequate outside the conservation estate, constant reinvasions are likely. Having said that, DOC's role controlling invasive plants is substantial. DOC retains its own separate system to prioritise exotic plant control on conservation land. It also contributes directly to regional pest management.[100]

Most interviewees agreed that the Biosecurity Act requires more direct triggers and guidance in relation to indigenous biodiversity, a more bespoke funding model for indigenous biodiversity and a stronger role for DOC. The two systems could also be aligned by better reference to Biosecurity Act tools in new wildlife legislation.

The Biosecurity Act is currently under review. Key aspects of that review include an examination of:

- The overarching purposes and guiding principles;
- How te ao Māori is reflected in biosecurity regulation;
- Clear and consistent roles and responsibilities;
- How the system is funded; and
- Filling gaps in the legislation that past biosecurity responses and events have revealed.

It is important that reform of the Wildlife Act and the Biosecurity Act are closely coordinated, so that a strategic and integrated regime designed to deliver for indigenous biodiversity is crafted.

Key recommendations

The following is a summary of key recommendations relating to introduced species.

Prioritise indigenous and threatened species

The starting point of absolute protection for all species, including introduced species, creates unintended outcomes and operates as a barrier to quick responses to introduced species incursions. New wildlife law should prioritise indigenous and threatened species. Management mechanisms and schedules will need to be adjusted accordingly. On this basis, a biosecurity, rather than game management, approach could be adopted in relation to introduced species.

Such an approach can still accommodate diverse values for wild introduced species, but it would make clearer that such accommodation must not be at the expense of the protection of indigenous and threatened species.

Change approach to scheduling introduced species

Wildlife Act schedules currently categorise species into groups according to the level of protection provided to them and their management regime. With respect to introduced species, schedules might be better applied as a mechanism to cluster groups of species according to the degree of risk or threat they pose and/or to the management approach required.

As these risk profiles alter with species threat status assessments, schedules would enable a degree of agility for the regime to respond to those changes. In this way, the schedules could be linked to NZTCS assessments so that if an assessment identified a particular threat to a newly listed species

[99] DOC has powers to appoint a Chief Technical Officer under the Biosecurity Act s101(1) and to use that Act's powers but it has not
[100] See discussion in: Parliamentary Commissioner for the Environment, 2021, 147

(or one moving up the threat spectrum) that threat could be added to the schedules and then managed appropriately.

This would also help shift the focus away from game management to a more evidence-based biosecurity or species protection frame. The management approach; of eradication, containment or population management, could also be made clear.

Link management of valued introduced species to biodiversity values present

Some introduced species are now highly valued as a resource, however, many still have an impact on indigenous biodiversity. *Te Mana o te Taiao* sets as an objective that these species be:

- Removed from high priority biodiversity areas and threatened ecosystems; and
- Actively managed outside of those contexts to reduce their impacts.

Te Ara ki mua acknowledges that this requires a site-based planning regime and adaptive management approach, underpinned by evidence, including mātauranga Māori.

To be effective, an adaptive management approach requires significant resourcing since it must be sufficiently monitored to ensure adjustments in response to impacts are possible. Because of the risks associated with lack of funding and therefore monitoring, and the time lag between identification of impact and adjustments, adaptive management is only appropriate where the risk to fragile ecosystems and species is low. Deployment of such an approach therefore requires a careful evidenced based risk assessment and cost-benefit analysis to be undertaken.

It also requires a spatial planning approach, that includes:

- The identification of priority sites for biodiversity protection and critical habitat mapping, where an eradication zone is adopted;
- As recommended by international best practice, the creation of buffer zones around those high biodiversity areas, as an additional safety net and a delineated containment area which is regularly monitored; and
- The identification of sites where the species can be sustainably managed as a resource.

Spatially bounding introduced species, particularly ungulates which have a significant impact on indigenous flora, would better enable regional councils to make their own management decisions and pest management planning in relation to animals like deer (rather than relying on DOC). It would also reduce the broad presumption of a right to hunt introduced species anywhere, and therefore an expectation that these species should be allowed to persist, even in areas of high biodiversity. The setting of authorised hunting areas would need to consider both access and equity considerations. For example, the extent to which a specific hunting resource is relied upon by Māori and non-Māori for subsistence hunting.

An issue not traversed in detail in this report, but which is a significant problem in Aotearoa New Zealand, is that of illegal releases. A spatially bound hunting regime improves the chance of being caught, so of enforcement action, since possession of the species outside the authorised area can attract immediate penalties. U.S. based research has found that the most effective system to disincentivise illegal release is to institute prohibitions on hunting in specified areas, alongside strict liability fines and the revocation of hunting licences for breach.[101]

[101] Caudell et al, 2016, 237-238

Spotlight: Invasive fish management

A spatially bound approach could also be employed more broadly. Studies have demonstrated that for the survival of native galaxiids not only must trout-free source populations be maintained but "new sources created." [102] This requires a two-pronged approach of containing invasive fish to prevent incursions and spread, and not disrupting connectivity between indigenous fish sources and sinks.[103]

With respect to the latter, technological responses, such as barriers that prevent passage by salmonids but which allow passage by galaxiids, have been an essential tool. Identification of suitable sites from which to remove introduced species, including highly valued species such as trout, has been far harder to crack being highly politically and practically challenging.

Spatially bounded exclusion areas are an effective management tool, but they require a highly science-based approach. For example, the development of exclusion models that can reliably predict the presence or absence of galaxiids in trout-occupied, small, high-country tributaries and which can predict how habitat variability limits trout densities in streams, a factor that is also going to be increasingly influenced by climate change.[104]

To protect indigenous fish species, a framework of Freshwater Protected Areas, or FPAs, has been recommended.[105] The idea is that these be independent of surrounding land tenure to protect the population regardless of where the river network flowed. This would allow protection to be enforced, and future invasions to be prevented, without surrounding land having to be purchased. In a study commissioned for DOC, Woodford and McIntosh recommended new legislative provision to enable the development of such a system.[106]

Despite this, the development of a system of FPAs has been limited to date. A 2016 workshop, adopting a climate change lens to freshwater conservation, reiterated the need for such a framework.[107] This is a matter of some urgency since freshwater systems are expected to be highly exposed and sensitive to climate change, and the ranges of introduced fish species, as well as the resilience of native ones, are likely to be highly impacted and changeable.[108]

Upcoming freshwater plans and policy will likely fulfil a protective function for indigenous freshwater habitat as the NPS FW seeks to protect the habitats of indigenous freshwater species (Policy 9). This includes a requirement for regional councils to identify the location of habitats of threatened freshwater species and to manage the values of that habitat.[109]

Spotlight: Feedback from hunting and fishing stakeholders

Numerous interviews were conducted for this report, including with members of Fish and Game and the Game Animal Council. Discussions identified a high degree of agreement on three core matters.

[102] Woodford et al, 2013, 18
[103] Woodford et al, 2013, 18
[104] Woodford et al, 2013, 18
[105] Woodford et al 2013, 15
[106] Woodford et al, 2013, 18
[107] Robertson et al, 2016, 58
[108] Robertson et al, 2016, 58
[109] National Policy Statement for Freshwater Management 2020, cl 3.8(3)(c)

First, the need to prioritise threatened species over more common species. Second, the need to prioritise indigenous over introduced species, in most though not all situations (so with exceptions). Third, the need to better recognise and provide for Māori rights and interests.

The feedback from these interviews also highlighted the importance of:

- An evidence-based approach incorporating best science and mātauranga Māori, as well as the knowledge and understanding of place. This was viewed as an invaluable tool to navigating disagreements and identifying a clear starting point for decisions on introduced species management, particularly since ecosystem interactions are often complex and changeable.
- A robust monitoring and data collection framework to enable responsive, adaptive management and ensure early (as much as possible) identification of adverse impacts. Interviewees emphasised the need to build expertise and capacity, and for greater involvement of whānau, hapū, iwi and the hunting and fishing community. The role and expertise of Fish and Game in collecting data and undertaking monitoring activities was cited as an example of how synergies could be built in this area.
- Integrated spatial planning to identify critical habitat and areas of high biodiversity value, as well as mapping the hunting resource. Collectively, this can assist to ensure 'the right species, are in the right places, in the right numbers', and that the most appropriate management approach (whether that be, eradication, containment or population management) is adopted.
- Working in partnership with whānau, hapū, iwi and better co-management of the statutory planning and decision-making processes.

Interestingly, several interviewees highlighted the tension of having a statutory mandate to advocate for a sector while also ensuring the purposes of the conservation system were met. This could place members in politically challenging positions in regards to their sector, making the compromise of those interests contentious. Greater clarity of direction would therefore benefit all parties.

Pig damage to Aciphylla subflabellata. Photo by Mike Harding

Tightly control adaptive management of valued introduced species

The role and function of the WACA has changed significantly over the past decade with the establishment of the Game Animal Council and removal of possum and wallabies from its

jurisdiction. All of the species that remain on Schedule 6 of the Wildlife Act and are therefore managed under the WACA, apart from goats, have been identified as "valued introduced species" and "game animals". A non-statutory adaptive management framework, *Te ara ki mua*, has been established to manage these animals in order to help give effect to *Te Mana o te Taiao*, which sets the goal of managing valued introduced species in a way that enables indigenous biodiversity to thrive.

An adaptive management approach is a high risk one if it does not have sufficient funding, monitoring and support. It should only be employed to valued introduced species in situations where the risk to indigenous biodiversity is within acceptable limits. In order to support such an approach, clear criteria for listing a species on any new schedule that ascribes management to the WACA should be set.

Further, due to the close association between the Wildlife Act and the WACA, the latter should also be reviewed to ensure alignment with new wildlife legislation.

Include mechanisms to trigger management responses

None of the existing animal management planning or control mechanisms under either the Wildlife Act or the WACA regime contain 'triggering' mechanisms to require action. For example, there is no formal requirement for an introduced species management response when:

(a) The Biodiversity Monitoring and Reporting System identifies significant habitat degradation or species decline, or encroachment and increases in pest populations; or
(b) An NZTCS assessment identifies that a species is at high risk or threat from another species.

This is a fundamental issue with the Wildlife Act and associated introduced species laws. New wildlife law could include mechanisms to ensure that pest management and control is responsive to new information, and that there are clear pathways to initiating such planning. This is not to say that pest management and control should always be mandated, but that mechanisms are needed to prompt their consideration and to guide plan development where necessary and appropriate.

To be effective, such provisions need to be able to initiate a management response in relation to any species which threatens biodiversity values, regardless of their status, including sports fish and game animals. It will also require that new wildlife legislation is given primacy over other associated legislative regimes (such as the WACA).

Review the role, composition and functions of key hunting and fishing advocacy agencies

Going into a modern era of conservation management it will be important to reconsider existing institutional arrangements.

Fish and Game has long historical roots, embedded throughout Aotearoa New Zealand's conservation system. However, those roots are highly colonial and narrowly defined to benefit a small group of introduced fish and game-bird species. In recent years, Fish and Game has played an increasingly important role in protecting freshwater quality, and fish and game-bird habitat. The latter aspect has significantly contributed to the protection of biodiversity values and environmental quality, frequently protecting introduced and indigenous species alike.

The more recently promulgated Game Animal Council Act does direct, within several of its provisions, that management for hunting purposes "is consistent with" the overriding considerations

of the conservation system. This enables some of the Conservation General Policy direction, that prioritises indigenous species, habitats and ecosystems, to operate.[110] However, the functions of the Game Animal Council itself has no balancing provision directing that its work also ensures indigenous habitat is not impacted in a way that is harmful to that habitat's effective function.

To ensure that any new wildlife regime is not undermined by existing provision for hunting and fishing advocacy, wildlife law reform should review the role, function and composition of these agencies to ensure greater alignment with the conservation system, and support for the purpose of new wildlife legislation.

The framing of these entities could be refocused on the common goal of "sustainable and adaptive management" in a way that ensures indigenous biodiversity thrives - rather than hunting or fishing advocacy, which is too narrowly focused and drives an oppositional approach. To that end, membership of these agencies could move away from a stakeholder driven model, towards membership selection based on knowledge (including mātauranga Māori) and expertise, to support an evidence-informed approach. Such an approach could also ensure alignment with that prescribed in *Te Mana o te Taiao* and under the *Te ara ki mua* regime.

EDS's phase 2 report on the conservation system will examine these matters in further detail.

Interface with the Biosecurity system

The Biosecurity Act has a number of advantages over that provided for in the conservation system because its pest management framework includes the ability to make nationally binding pest management plans and secure resourcing for the work. However, while in theory it can apply in the conservation space it was designed with the protection of the primary sector front of mind and its application to protect indigenous biodiversity remains complicated.

Arguably, this issue should be addressed by the development of a bespoke conservation focused pest management planning regime within any new wildlife legislation, applying to all organisms, including invasive weeds, fish, invertebrates and pathogens. This would enable DOC to undertake an integrated holistic approach to indigenous and threatened species protection, and to take the lead role. Indeed, the high degree of interaction and connection between indigenous and introduced species, as well as different types of introduced species (e.g., fungi and plant, mammal and plant), calls for such an approach. This would enable a connected, ecosystem based management approach to be adopted within the conservation system.

Alternatively, existing mechanisms which enable DOC to trigger the Biosecurity Act could be reviewed to ensure that the Act's tools and funding mechanisms are fit for conservation purposes. Given the complexities that arise at the interface between the Wildlife Act and the Biosecurity Act, this approach would require further testing with DOC and MPI.

Alignment of terminology

Lastly, the opportunity should be seized to review and align terminology and definitions across the various legislation.

A final note: animal welfare of wildlife

[110] Conservation General Policy, policy 4.2(d)

A significant lacuna exists in the welfare of animals that fall between the Wildlife Act and the Animal Welfare Act 1999. This is because the Animal Welfare Act is focused on regulating the welfare of domestic animals and placing requirements on owners and persons in charge of them, rather than wildlife. So, when the general prohibition against killing or disturbing animals is lifted under the Wildlife Act, these animals are left vulnerable.

The Animal Welfare Act provides for a system of 'codes of welfare' in relation to domestic animals (on farms, zoos, rodeo etc.) and 'codes of conduct' for laboratory animals. When the Act was introduced, there was significant debate around the need for 'codes of conduct' for wildlife, to set minimum standards for interaction, handling and treatment. The original proposal put forward included such a regime, but was removed on the basis that it would be too difficult to police and out of concern that "if a genuine attempt was made to reduce pain and suffering during hunting and fishing, it is likely that some types of hunting or fishing would need to be prohibited."[111] Although no formal framework was put in place at that time, several commentators warned that the issue, of wildlife welfare and treatment, was likely to remerge and the gap would need to be addressed at some point.

For many years the Animal Welfare Act provided a general exemption for the killing or taking of wildlife, making cruelty cases incredibly difficult to prosecute. In 2015, a new section was introduced to try and add clarity and fill this gap. The Act now makes wilful or reckless ill-treatment of wild animals or animals in a wild state an offence. However, it also provides a range of defences, including that the conduct is a "generally accepted practice" of hunting or killing or that the person was performing a function for the purposes of another Act and prosecution would be contrary to the purposes of that legislation. These provisions embed existing practices and treatment, regardless of whether they are humane. Coupled with the lack of regulatory guidance as to what is required and what is an acceptable practice for hunting or killing, means that the level of welfare protection provided to unprotected wildlife is currently very poor.

This approach to wildlife is in contrast with that adopted in other arenas, where appropriate standards and practices for handling and treatment are prescribed. For example, for domestic animals it is an offence to "kill the animal in such a manner that the animal suffers unreasonable or unnecessary pain or distress" and there is a general duty to alleviate pain or distress. The Animal Welfare Act does require persons who have caught an animal in a trap, and which is still alive, to attend to their care "or without delay kill the animal". It also requires traps to be regularly monitored by a "competent person". No similar duties exist in relation to hunting or killing. For example, there is no duty to attempt to locate downed or injured animals and dispatch them humanely, or to use reasonable skill and care.

The Supreme Court in *PauaMAC5* noted both the "limited protection" of the Animal Welfare Act, that it does not have "as its focus the protection of species in the wild", and the high threshold it sets for ill-treatment, which requires the animal must suffer "pain or distress that in its kind or degree, or in its object, in the circumstances in which it is inflicted, is unreasonable or unnecessary".[112] The Supreme Court characterised the Wildlife Act as the "fall back mechanism" for all wildlife, it remains "the mainstay of statutory protection of animals in the environment."[113] This makes the Wildlife Act's lack of provision and guidance in this area problematic.

The limited reach and high threshold set by the Animal Welfare Act, and corresponding lack of guidance or recognition of welfare requirements in relation to wildlife under the Wildlife Act, create

[111] Primary Production Select Committee, 1999, Animal Welfare Bill (No. 2)
[112] *Shark experience ltd v PauaMAC5 Inc* [2019] NZSC 111 [45]
[113] *Shark experience ltd v PauaMAC5 Inc* [2019] NZSC 111 [46]

a significant welfare gap in law, for both unprotected species as well as indigenous species that do not fall within the definition of wildlife (e.g., fish).

Spotlight: Traps and devices

Several interviewees were particularly concerned with traps, namely, that even when traps and devices fail welfare performance testing they can still be imported, sold, and used. The default position of allowing all traps and devices, with a highly discretionary power to prohibit or restrict them, sets the wrong starting point. Several scientists, as well as the SPCA, advocated a shift to a system where only traps and devices that have passed welfare performance testing should be permitted for import, sale and use. This change would give clarity and consistency and provide considerable welfare improvements.

The CITES regime is an informative example of how animal welfare requirements can and are being incorporated into wildlife protections. Under CITES, authorisations can only be made where it "will not be detrimental to the survival of that species" and, on a more individual level, where animals are handled and dealt with in a manner that will "minimise the risk of injury, damage to health or cruel treatment". The Convention references the need to minimise injury risk, damage to health and "cruel treatment" eight times, as a basic expectation in relation to wild animals.

Wildlife welfare is an emerging issue globally. The *PauaMAC5* case highlights the need for greater direction as to the requirements set for engaging and interacting with wildlife. New wildlife legislation should consider extending existing provisions to ensure animal welfare and well-being is taken into account in decision making, including decisions around animal re-locations and animal control planning and operations. Consideration should be given to the need to develop regulatory based codes of conduct or duties of care, for high impact activities such as hunting. Including requirements for humane killing and handling in a way that minimises the injury, pain or distress to wildlife.

The SPCA considers that it would be valuable to make clear within wildlife legislation that all wildlife, regardless of their status, are recognised under New Zealand law as sentient (as defined in the Animal Welfare Act). This would assist to shift the discourse towards increased recognition of the needs of the individual in wildlife protection and conservation.

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Appendix C

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