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OBSTACLES AND OBLIGATIONS:
WIND ENERGY AND MIGRATORY BIRD PROTECTION IN NEW ZEALAND

DISSERTATION

LAWS 592

FACULTY OF LAW

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

2011

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Abstract

Wind farms create unique risks to birds because of the danger of the turbine blades, which can be up to 150 meters tall. Placement of wind farms in the wrong areas can have a detrimental impact on bird species. New Zealand's commitment to renewable energy is shared with its obligations to protect biodiversity, which are reflected in the ratification of international conventions such as the Convention on Migratory Species and the Biodiversity Convention. Domestic legislation, such as the Resource Management Act 1991, seeks to enhance the development of alternative sources of energy with the intention of reducing the effects of climate change on the environment and conserving indigenous biodiversity.

Migratory bird protection in the wind farm context in New Zealand relies upon environmental impact assessment under Schedule 4 of the Resource Management Act 1991. International obligations include protecting or endeavouring to protect 37 migratory bird species along their complete flight paths. The Resource Management Act 1991 does not meet international obligations to protect migratory birds in the wind farm consent process because (1) the assessment of environmental effects process fails to adequately identify effects on migratory birds; and (2) even if the assessment of environmental effects process adequately identifies effects on migratory birds, the RMA fails to give priority weight to effects on birds when it balances those effects with other factors in deciding to approve the wind farm application. Other countries provide guidance on the next steps for New Zealand to take to comply with its international obligations to migratory birds.

Word length

The text of this paper (excluding abstract, table of contents, footnotes, bibliography and appendices) comprises approximately 33,000 words.

Subjects and Topics

Environmental law

Resource Management Act 1991

Renewable energy

I INTRODUCTION

Wind power in New Zealand is quickly gaining momentum as the search for environmentally friendly energy sources are pursued. Wind energy is an alternative energy source that generates little or no pollution and it does not emit greenhouse gases into the atmosphere. It is the world's most rapidly growing source of energy.[1] New Zealand is one of the best countries in the world for the production of wind energy because of its consistently high wind speeds throughout the year.[2] As a result, wind farms are expected to supply 20 per cent of New Zealand's electricity by 2030.[3] New Zealand has twelve operating wind farms and there are at least 23 more wind farms in the planning stages.[4]

Wind farms create unique risks to birds because of the danger of the turbine blades, which can be up to 150 meters tall. Placement of wind farms in the wrong areas can have a detrimental impact on bird species. The most widely known example is the Altamont Pass Wind Farm in California which results in a high number of collision fatalities per year because of its placement in the flight path of raptors. Migratory birds are especially at risk to the effects of poor wind turbine placement because of the likelihood they may be overlooked in the assessment process due to their seasonal variation of presence, variation in flight altitude, and the under-evaluation of the effects on migratory bird populations.

New Zealand's commitment to renewable energy is shared with its obligations to protect biodiversity, which are reflected in the ratification of international conventions such as the Convention on Migratory Species and the Biodiversity Convention. Domestic legislation, such as the Resource Management Act 1991, seeks to enhance the development of alternative sources of energy with the intention of reducing the effects of climate change on the environment and conserving indigenous biodiversity.

Placement of turbines in areas where migratory birds may be harmed is detrimental to the wind industry. The reputation and growth of wind as a renewable energy source is hindered by the negative impacts of some wind farms, such as Altamont Pass. Yet it is necessary to consider the beneficial effects of renewable energy on mitigating the effects of climate change on migratory birds. Therefore, it is important to have procedures in place that prevent harm to migratory birds from wind farms. The primary method that is used to implement migratory bird protection in New Zealand is environmental impact assessment under the Resource Management Act 1991.

The purpose of this paper is to determine if there are adequate mechanisms of protection in place for migratory birds in New Zealand's wind farm consent process. Firstly, New

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[1] MB Lilley and Jeremy Firestone "Wind Power, Wildlife, and the Migratory Bird Treaty Act: A Way Forward" (2008) 38 Envtl L 1167 at 1169.

[2] Mark Ashby *Winds Up: Planning the Future Now* (Connel Wagner, Wellington, 2004) at 9.

[3] Ministry of Economic Development "New Zealand Energy Quarterly: Issue 12" (press release, 15 December 2010).

[4] "NZ Wind Farms" (2011) New Zealand Wind Energy Association <www.windenergy.org.nz>.

Zealand's international obligations to migratory birds will be evaluated. Then, an analysis is made of how New Zealand actually protects migratory birds in the wind farm context. An argument is next presented to show that New Zealand's migratory bird protection measures are inadequate to meet international obligations. A comparison with other countries is then used to illustrate ways New Zealand could meet its obligations.

II ECOLOGICAL IMPACT OF WIND FARMS ON MIGRATORY BIRDS

Wind energy is known as an effective method for creating environmentally friendly electricity but it can also create risks to avian wildlife. Most wind farms do not cause harm to migratory birds. However, wind farms that have been placed in migratory flight paths have caused significant impacts to migrants. The location of the wind farm is the single most important factor contributing to harm to migratory birds.

Wind farms are placed in open and exposed areas with high average wind speeds and these areas often overlap with important habitats for breeding, wintering, and migrating birds.[5] The main potential hazards to birds from wind farms are (1) disturbance leading to displacement, including barriers to movement; (2) loss of habitat to wind turbines and associated infrastructure; and (3) collision mortality.[6]

Migratory birds are particularly susceptible to harm from wind energy developments. In a review of bird collisions from 31 studies at wind farms in the United States, 78 per cent of carcasses found at wind-energy facilities (outside of California) were birds protected under the Migratory Bird Treaty Act.[7] Additionally, migratory birds are more likely to be affected by wind turbines because of how costly small depletions to their energy requirements can be. Migratory species are susceptible to minor energy expenditures because of the energy needed to travel large distances such as, for example, the bar-tailed godwit which travels approximately 10,000 kilometres non-stop to reach New Zealand from its home in arctic Alaska.[8] Wind farms may cause additional energy expenditures by forcing birds to take alternative routes to avoid turbine blades and by physical displacement which creates the need to establish new habitat. Decreased energy reserves may lead to decreased survival rates.

The precise location of a wind farm can be critical to bird populations.[9] Wind turbines placed on ridgelines and tall turbines may create a collision risk for avian species and this risk may be increased in bad weather when birds are likely to fly at lower altitudes.

Wind farm construction is a matter of concern as New Zealand is an important breeding location for migratory land and sea birds from the Northern Hemisphere. The magnitude of bird movements to and from New Zealand is enormous. There are between 100,000-200,000 arctic breeding waders, millions of sea birds, up to 30,000 trans-Tasman fledglings, and similar numbers of indigenous migratory birds that arrive in or depart from New Zealand

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[5] A Drewitt and R Langston "Assessing the Impacts of Wind Farms on Birds" (2006) 148 Ibis 29 at 30.

[6] R Langston *Windfarms and Birds: An Analysis of the Effects of Windfarms on Birds, and Guidance on Environmental Assessment Criteria and Site Selection Issues* (BirdLife, Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 2002).

[7] T Kunz and E Arnett and others "Assessing Impacts of Wind-Energy Development on Nocturnally Active Birds and Bats: A Guidance Document" (2007) 71 Journal of Wildlife Management 2449 at 2450.

[8] Phil Battley and Theunis Piersma "Body Composition and Flight Ranges of Bar-Tailed Godwits from New Zealand" (2005) 122 The Auk 922 at 923.

[9] Drewitt and Langston, above n 5, at 31.

annually.[10] Also, thousands of birds travel between the Pacific Islands and the forests in New Zealand each year. These figures do not include the thousands of "stragglers" that make landfall in New Zealand as a refuge from storms or from being blown off course.[11]

Many of the migratory avian species in New Zealand are shore birds whose flight paths are largely unknown.[12] Flights paths to coastal breeding areas may cross through wind farm territories. Migratory shore birds may also travel to inland areas to forage which may involve passing through areas with wind turbines.

A Indirect Impacts: Disturbance Leading to Displacement

Wind farms create both direct and indirect impacts on birds that can contribute to increased fatality, alterations in the availability of food, roost and nest sources, increased risk of predation, and potentially altered demographics, genetic structure, and population viability.[13] Indirect impacts from wind farms includes visual disturbance.[14] The visual disturbance creates an avoidance response which results in both physical effects and ecological effects including: barriers to movement (migration, feeding movements), displacement from ideal feeding locations, increased flight distance, "effective" habitat loss, enhanced energy consumption, reduced energy intake rates and/or increased energy expenditure rates.[15] Relatively long lines of turbines can become an important barrier on the local and seasonal migration routes of non-breeding birds.[16] These physical and ecological effects of avoiding wind farms can result in changes to annual breeding output and annual survival.[17]

Additionally, actual physical habitat loss or modification can result in changes to annual breeding and survival rates. Even a small population change can cause an exponential detriment to rare, endangered, large, and/or slow-maturing species.[18]

B Direct Impacts

Direct impacts of wind farms on birds refer to fatalities of birds that collide with wind turbine blades and poles. Collision mortality of birds directly coming into contact with the

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[10] Murray Williams, Helen Gummer and others *Migrations and the Movement of Birds to New Zealand and Surrounding Seas* (Department of Conservation, Wellington, 2006) at 6.

[11] Ibid, at 6.

[12] Ibid, at 32.

[13] Kunz, Arnett, and others, above n 7, at 2450.

[14] Mark Desholm "Wind Farm Related Mortality Among Avian Migrants: A Remote Sensing Study and Model Analysis" (PhD Thesis, University of Copenhagen, 2006).

[15] Ibid, at 10.

[16] J Everaert and Eric Stienen "Impact of Wind Turbines on Birds in Zeebrugge (Belgium)" 16 Biodivers Conserv 3345.

[17] Desholm, above n 14, at 10.

[18] Drewitt and Langston, above n 5, at 29.

turbine blades and/or other structures can result in a decrease in overall bird population.[19] Fatalities and injuries are usually caused by either collision with rotor blades, or by the force of the turbine's wake (behind the rotor) which drives birds to the ground.[20] Wind speed, flight type, and flight altitude influence the risk of collision as well as species, age, and stage of the bird's annual cycle.[21] Flight altitude depends on species, size and structure of bird, weather, air temperature and humidity, wind speed and direction, time of day, flight distance, and topography.[22] When birds are flying into a headwind, they may fly at a lower altitude than if they were flying with the wind.[23] Breeding season may increase susceptibility to collision risk when adults are making frequent foraging flights.[24] Avian mortality as a result of collisions is significant and some authors consider it to be the greatest unintended human cause of avian fatalities.[25] Although the majority of studies conclude that bird populations are unaffected by collision mortality, there are some cases where collisions have at least contributed to local population declines or indicate demographic changes. These studies show that location of the wind farm is the primary concern for avoiding impacts on birds. The number of bird fatalities reported in studies has ranged from no birds during a five month study in Vermont, United States of America, to 11.7 birds per megawatt of energy per year during a one year study in Tennessee, United States of America.[26] Or, in terms of the number of turbines, there can be no collisions per turbine per year to up to 64 collisions per turbine per year.[27] However, wind farms that cause even a small number of fatalities, may have a harmful impact on the survival of certain species. Factors influencing collision risk include structural attributes, location, species, time of year, weather conditions, bird flight behaviour, turbine structure and layout.[28]

1 Structural attributes

Structure size and dimensions influence the risk of bird strike (collision), particularly in areas with poor visibility.[29] For example, there is evidence that taller communication towers present a greater risk to nocturnal migrants than shorter towers.[30] The modern turbine design of taller towers and large blade lengths with slower speed tips may pose higher collision risks

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[19] Desholm, above n 14, at 10.
[20] R Langston, above n 6, at 12.
[21] Ibid, at 12.
[22] Ibid, at 13-14.
[23] Ibid, at 14.
[24] Ibid, at 13.
[25] A Drewitt and H Rowena "Collision Effects of Wind-Power Generators and Other Obstacles on Birds" (2008) 1134 Ann NY Acad Sci 233 at 234.
[26] Kunz, Arnett and others, above n 7, at 2450.
[27] Everaert and Stienen, above n 16, at 3354.
[28] A Drewitt and H Rowena, above n 25, at 234.
[29] Ibid, at 234.
[30] Ibid, at 234.

to birds than earlier turbine designs.[31] In general, the likelihood of collision mortality is related to the number of birds present, whereas the size of the turbines may be less important.[32]

Layout, orientation, and spacing are also important factors influencing collision risk.[33] Long lines of wind turbines or large wind farms can act as a barrier to seasonal migration routes.[34] Long lines of turbines have been found in some studies to result in more collision mortality than turbines that are constructed in clusters.[35] For wintering and feeding birds, and possibly breeding birds, a dense cluster of turbines may be less likely to result in collision as birds maybe dissuaded from flying in between the turbines.[36] Migratory birds may benefit from a line formation of turbines that are parallel to the main flight direction or a loose cluster.[37] The turbines with the highest mortality rate are usually located at the ends of rows, and wind turbines that are more isolated from other turbines kill disproportionately more birds than those situated in the interior of wind turbine clusters.[38]

Often, one of the most important structural factors related to the likelihood of collision is lighting. Birds may be attracted to and disoriented by lights, especially on overcast nights with drizzle or fog.[39] The noise that wind turbines generate does not alert birds because the sounds are too low in frequency for birds to hear.[40] Therefore, wind turbine noise does not act as a deterrent for birds and, if weather blocks the sight of the turbines, birds may not be able to detect the presence of turbines.

2 Location

The location of the wind farm can dramatically affect the likelihood of collision mortality. Wind turbines present a greater risk of collision if placed on or near areas regularly used by large numbers of feeding, breeding, or roosting birds, or on migratory flyways or local flight paths, such as those between foraging, nesting, and roosting areas.[41] Many migrants have a tendency to fly along a broad front, although topographical features, such as mountain passes, may funnel high numbers of birds into the turbines.[42] Migratory birds tend

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[31] W Kuvlesky, L Brennan and others "Wind Energy Development and Wildlife Conservation: Challenges and Opportunities" (2007) 71 Journal of Wildlife Management 2487 at 2488.

[32] Everaert and Stienen, above n 16, at 3354.

[33] A Drewitt and H Rowena, above n 25, at 234.

[34] Everaert and Stienen, above n 16, at 3357.

[35] Kuvlesky, Brennan and others, above n 31, at 2488.

[36] R Langston, above n 6, at 15.

[37] Ibid, at 15.

[38] R Kikuchi "Adverse Impacts of Wind Power Generation on Collision Behaviour of Birds and Anti-predator Behaviour of Squirrels" (2008) 16 Journal for Nature Conservation 44 at 49.

[39] A Drewitt and H Rowena, above n 25, at 234.

[40] V Sutton “Wind and Wisdom” (2007) 1 Envtl Law and Energy Policy J 345 at 349.

[41] A Drewitt and H Rowena, above n 25, at 235.

[42] Ibid, at 235.

to fly lower when skirting mountains which are often the location for wind farms.[43] Turbines that are placed along landscape features followed by migrating birds, such as river valley or coastal areas, where large numbers of migratory birds congregate before and after crossing the sea, are likely to present a greater risk of collision.[44] Determining locations outside of migratory routes can be difficult as some routes can be as wide as a country (e.g., Spain, Italy, and Israel are the natural highways to Africa for most European migrants).[45]

3 Vulnerable Species

The impact of wind farms on birds tends to be species-specific; however, no studies have been published concerning the vulnerability of bird species to wind farms in New Zealand.[46] Therefore, international literature concerning particularly vulnerable bird species is relied upon in hoping to understand which birds are potentially vulnerable to wind farm mortality and displacement. But, even international literature is scant on the effects of wind farms on wildlife, especially in regard to bird migration corridors.[47] Because of the lack of knowledge and the site-dependent impact on birds, an in-depth evaluation of the proposed wind farm site needs to be done before wind farm construction begins.

The movement or migration routes, flight characteristics (e.g. manoeuvrability, altitude under various weather conditions, diurnal versus nocturnal), and reaction to wind turbines (displacement, flight avoidance) are not well known for New Zealand species.[48] Drawing on the available literature, the Department of Conservation identified the key species that are prone to wind farm disturbance. These species include swans, geese, ducks, waders, gulls, terns, large soaring raptors, owls, and nocturnally migrating passerines.[49] Many species in New Zealand are nocturnally active and therefore wind farm studies need to take into account the differences in bird behaviour between night and day.[50]

4 Time of Year

Although collisions can occur throughout the year and varies by geographic location, weather, and species, collision risks are usually higher during spring and autumn because bird migration predominates during these seasons.[51]

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[43] Kikuchi, above n 38, at 50.
[44] A Drewitt and H Rowena, above n 25, at 235.
[45] Kikuchi, above n 38, at 50.
[46] Ralph Powlesland *Bird Species of Concern at Wind Farms in New Zealand* (Department of Conservation Research and Development Series 317, Wellington, 2009) at 7.
[47] Kuvlesky, Brennan and others, above n 31, at 2487.
[48] Powlesland, above n 46, at 8.
[49] Ibid, at 6.
[50] Ibid, at 20.
[51] Kuvlesky, Brennan and others, above n 31, at 2488.

C Pre-Construction and Post-Construction Monitoring

Research and monitoring studies are needed to assess activities and abundance of birds (1) before construction of the wind farm (i.e., before any landscapes such as forests have been cleared or altered); (2) during construction of the wind farm; and (3) post-construction of the wind farm.

The Department of Conservation recently published two studies concerning the ecological and scientific impacts of wind farms on birds. The study results concluded that the effects of wind farms on birds are species specific, site specific, and season specific.[52] The study highlighted the need for detailed wind farm site investigations to be a minimum of *three years* in duration to reduce the risk of habitat change, habitat loss, disturbance and/or displacement, and collision mortality of a threatened bird species. [53] Migration routes may vary from year to year; therefore, it is probably insufficient to monitor a potential wind farm site for less than two years prior to construction.[54] The Department of Conservation report highlighted the importance of wind farm location and layout to minimise collision risk and prevent barriers for flight paths.[55]

There are a number of challenges to monitoring wind farm effects on birds and these include the searcher efficiency bias and the scavenger bias. The lack of reliable correction factors for biases associated with searcher efficiency and scavenging make it difficult to derive reliable estimates of fatalities.[56] A study to determine how efficient searchers are at detecting bird carcasses found that, on average, only half of the birds were discovered by human observers.[57] Smaller birds may be less likely to be discovered and more likely to be removed by scavengers before discovery by researchers.[58] When researchers used trained dogs, they were much more efficient at finding carcasses.[59] Landscape type – e.g., grassland versus ridge top – may influence people's ability to find carcasses as well.[60] Additionally, scavengers are known to remove bird carcasses before researchers discover them. Both of these factors make it likely that fatality rates are underestimated in wind farm studies. Fatality monitoring needs species-specific scavenger removal rates based on methods improved through directed research. To fully determine the effects of turbine collisions on local populations, birds need to be tagged and monitored.

Researchers need to be aware of the crippling bias which occurs when birds have been injured by the turbines but are able to leave the wind farm location. Additionally, birds can be

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[52] Powlesland, above n 46, at 6.
[53] Ibid.
[54] Kikuchi, above n 38, at 50
[55] Ibid, at 50.
[56] Kunz, Arnett and others, above n 7, at 2450.
[57] Ibid, at 2450.
[58] K Smallwood and C Thelander "Bird Mortality in the Altamont Pass Wind Resource Area, California" (2008) 72 Journal of Wildlife Management 215 at 218.
[59] Kunz, Arnett and others, above n 7, at 2450.

thrown by the turbine blades outside of the research perimeter. These factors may cause researchers to underestimate collision mortality. Therefore, wind farm consents should be cautious and use conservative numbers in their decisions on estimated bird mortality.

D Mitigation of Impacts

Mitigation of the effects of wind farms on migratory birds may include temporary shutdowns of turbines during periods of high bird activity, especially at migration bottlenecks and staging areas, and near breeding or wintering concentrations. Scaring devices, such as recorded alarm calls, could be used to deter birds from wind farm sites.[61] Dummy poles could be installed around the edges of a cluster of turbines so that birds divert their flights before coming into contact with the turbines.[62] Moving problematic turbines that have a high incidence of collision to new areas may be a viable option.

E Offshore Wind Farms

The collision risk of birds at offshore wind farm sites share many of the same concerns as land-based wind farms. The location and layout of offshore wind farms are just as critical to limit the effects on migratory birds. Some studies have specifically recommended the following considerations for planning offshore wind farm locations[63]:

1. Placing turbines close together to minimise the area accommodated by a wind farm;
2. Grouping turbines to avoid alignment perpendicular to main flight paths;
3. The provision of corridors, potentially a few kilometres wide, between groups of turbines to allow passage of birds; and
4. Placement of turbines in deeper waters to avoid feeding areas of sea birds.

Habitat loss is usually insignificant for offshore wind farms but other concerns include offshore pollution, disruption of seabed and prey availability, and creating platforms for roosting, nesting, etc. for migratory birds.[64] Considerable uncertainty exists regarding the impact of offshore wind farms on migratory birds and further research is urgently needed to address the concerns of rare and endangered bird species.

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[61] A Drewitt and H Rowena "Collision Effects of Wind-Power Generators and Other Obstacles on Birds" (2008) 1134 Ann NY Acad Sci 233.

[62] Powlesland, above n 46, at 33.

[63] R Langston *Windfarms and Birds: An Analysis of the Effects of Windfarms on Birds, and Guidance on Environmental Assessment Criteria and Site Selection Issues* (BirdLife, Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 2002) at 19.

[64] Ibid, at 19.

III INTERNATIONAL PROTECTION OF MIGRATORY BIRDS

New Zealand has international treaty obligations to protect migratory birds through its ratification of the Convention on Migratory Species, the Ramsar Convention, and the Biodiversity Convention. This section will evaluate New Zealand's obligations to migratory birds and identify international environmental impact assessment procedures. The extent to which international obligations are incorporated into domestic legislation will be analysed in the next chapter.

A Convention on Migratory Species

The Convention on Migratory Species ("Bonn Convention") established in Bonn, Germany on the 23 June 1979, is the primary international obligation that requires protection of migratory bird species in New Zealand. New Zealand ratified the Convention on 1 October 2000, following the Government's signing of the Convention in September 1999. New Zealand is also a party to a supporting agreement under the Convention entitled "Agreement on the Conservation of Albatrosses and Petrels 2001" ("ACAP"). New Zealand's decision to accede to the Convention on Migratory Species sprang out of an urgent need to work cooperatively with other countries to protect Southern Hemisphere albatrosses and petrels that pass through New Zealand's territory. On signing the Convention, New Zealand noted that it is the part-time home of many other migratory species, including approximately 80 species of seabirds, and New Zealand is located at the southern end of the eastern Asian flyway for migratory wading birds, such as the godwit.[65] It was further recognised that many of these species face an uncertain future because of global warming, habitat loss, accidental capture and other human activities.[66] There are over 100 parties to the Convention.

The Bonn Convention is ambitious in scope as it seeks to mitigate every conceivable threat that may occur to migratory birds along their migratory paths.[67] The preamble to the Convention states:[68]

> States are and must be the protectors of the migratory species of animals that live within or pass through their national jurisdictional boundaries; . . . conservation and effective management of migratory species of wild animals require the concerted action of all States within the national jurisdictional boundaries of which such species spend any part of their life cycle.

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[65] Convention on Migratory Species "Parties Opening Statements" (Seventh Meeting of the Conference of the Parties, Bonn, 2002).

[66] Ibid, at 146.

[67] Ibid, at 146.

[68] Convention on the Conservation of Migratory Species of Wild Animals (opened for signature on June 23, 1979, signed on 1 October 2000), art 3.

The preamble requires states to jointly manage the protection of migratory species that cross into multiple countries. This may be quite significant for small or third world countries that may not have the means to initiate a protection plan on their own.

The conservation status of migratory species is used to establish general standards to protect migratory species according to how endangered they are. Conservation status is divided between those that are endangered (listed in Appendix I to the Convention) and those that have an "unfavourable" conservation status (listed in Appendix II to the Convention). Each party to the convention is obligated by these general standards and must adopt them into the country's domestic law.

The general requirements of the Convention in Article II set out obligations for individual parties to the Convention as well as range states. A "range state" is defined in the Convention as any State "that exercises jurisdiction over any part of the range of that migratory species. If a party is a range state for a specific migratory species, it must provide maximum protection throughout the entire range of migratory birds within the state. The Convention's general obligations require the parties and range states to take action "whenever possible and appropriate, individually or collectively, to take steps to conserve such species and their habitats; to take protective action to prevent any migratory species from becoming endangered; and to endeavour to take the necessary measures prescribed in the Convention to protect species listed in Appendices I and II."[69] The species listed in Appendix I are absolutely protected from any taking as these are the most endangered. New Zealand is currently required to protect or endeavour to protect 37 bird species under the convention.[70] Exceptions may be made to this prohibition only if:

a) the taking is for scientific purposes;
b) the taking is for the purpose of enhancing the propagation or survival of the affected species;
c) the taking is to accommodate the needs of traditional subsistence users of such species; or
d) extraordinary circumstances so require.

Any such takings under an exception should not disadvantage the species and must be limited. Also, there are many species that are not protected in their entire habitat ranges because not all range states are parties to the Convention.

New Zealand has not created a specific act to reflect the obligations of this Convention. However, New Zealand, as a range state, must take measures to protect migratory species listed in Appendices I and II from harm occurring through the construction and operation of wind farms. It must adopt procedures to prevent the risk of mortality from turbine blades and other structures. New Zealand has a duty to act as the protector of migratory birds that pass through its borders and to jointly prepare management plans with other countries for species

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[69] Convention on the Conservation of Migratory Species of Wild Animals (opened for signature on June 23, 1979, signed on 1 October 2000), art 3.

[70] Department of Conservation "New Zealand's Migratory Species" <www.doc.govt.nz>.

that inhabit ranges across multiple countries. The general standards and requirements of the Convention may have been incorporated into separate domestic environmental statutes such as the Resource Management Act. The extent of inclusion needs further analysis, which will be addressed in the next chapter.

1 Agreement on the Conservation of Albatrosses and Petrels

The Bonn Convention facilitates the adoption of separate regional agreements, which are also open to non-parties of the Convention. These separate subsidiary agreements address specific threats to certain species. The Agreement on the Conservation of Albatrosses and Petrels is one such agreement which aims to maintain a favourable conservation status for albatrosses and petrels.[71] New Zealand is one of the thirteen parties to the Agreement on the Conservation of Albatrosses and Petrels which came into effect in New Zealand in February 2004. Other parties to the Agreement include Australia, United Kingdom, Norway, France, Spain, Chile, Peru, Argentina, Ecuador, Brazil, Uruguay, and South Africa. Albatrosses and petrels are migratory sea birds that spend most of their time at sea and often use offshore islands for nesting and breeding. Albatrosses and petrels are among the most critically endangered migratory bird species in the world as a result of commercial fishing activities, use and abandonment of non-selective fishing gear, pollution, reduction of food resources, and degradation and disturbance to habitats. Parties to the Agreement recognise that "albatrosses and petrels are an integral part of marine ecosystems and that their conservation is a matter of common concern, particularly in the Southern Hemisphere.[72] The Agreement generally aims to improve the conservation status of albatrosses and petrels.

The ACAP agreement addresses the protection of albatrosses and petrels in areas outside of the Exclusive Economic Zone ("EEZ") primarily from commercial fishing related mortalities.[73] The ACAP agreement promotes international cooperation to protect the species listed in the Agreement by modifying fishing practices to limit bird bycatch, protect and restore habitat, develop research initiatives, monitor species, promote awareness, and modify human activities that harm such species.[74] There are 22 species of albatrosses and 7 species of petrels that are protected under the Agreement.[75] The ACAP agreement recognises that to protect the environment, the precautionary approach should be widely applied.[76]

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[71] Agreement on the Conservation of Albatrosses and Petrels (opened for signature on 19 June 2001, entered into force on 1 February 2004), art 2.

[72] Agreement on the Conservation of Albatrosses and Petrels (opened for signature on 19 June 2001, entered into force on 1 February 2004), art 2.

[73] John Cooper, G Barry Baker and others "The Conservation of Albatrosses and Petrels: Rationale, History, Progress, and the Way Forward" (2006) 34 Marine Ornithology 1.

[74] Ibid, at 2.

[75] Agreement on the Conservation of Albatrosses and Petrels (opened for signature on 19 June 2001, entered into force on 1 February 2004), Annex I.

[76] Ibid, at art 6.

Albatrosses and petrels are protected under ACAP in the event of harm resulting from the creation of offshore wind farms. At present, there are no offshore wind farms in New Zealand; although, this could change at any time. However, the Agreement may provide protection to albatrosses and petrels that fly over mainland New Zealand and for those who get blown off-course in bad weather. If it is determined that albatrosses or petrels have flight paths across New Zealand and if offshore wind farms are created, ACAP obligations must be met throughout the wind farm consent process.

B Convention on Biological Diversity

The Convention on Biological Diversity is an important source of protection for migratory birds because wind farms may contribute to the loss of biodiversity. The Convention on Biological Diversity was adopted in Rio de Janeiro in 1992 and came into force on 29 December 1993.[77] The Convention has been signed by 193 parties and was ratified by New Zealand in 1993. Significantly absent from the Convention is the United States of America who has signed the Convention but has yet to ratify it. Nearly all states adhere to the Convention.[78]

The Convention on Biodiversity is an international legally binding treaty that creates three primary objectives for participating countries: (1) conservation of biological diversity; (2) sustainable use of biological diversity; and (3) equitable sharing of biodiversity benefits. Other matters of concern identified in the preamble to the treaty include making the parties conscious of the intrinsic value of biodiversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational, and aesthetic values of biological diversity and its components. The preamble confirms that the conservation of biodiversity is a common concern among people worldwide and that biodiversity is being significantly reduced by certain human activities. It also makes the parties aware of the lack of information and knowledge regarding biological diversity and the urgent need to develop scientific, technical and institutional capacities so that states can plan and implement appropriate measures to protect biodiversity. Importantly, this Convention may extend coverage to protect migratory species that are not rare or endangered as a source of biodiversity. The Convention defines biological diversity to include all diversity between and among genes, species, and ecosystems.

1 The Precautionary Principle

The preamble to the Convention states that it is vital to anticipate, prevent, and attack the causes of significant reduction or loss of biodiversity at the source and that a lack of

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[77] Convention on Biological Diversity (opened for signature on 5 June 1992, entered into force on 29 December 1993).

[78] Alexandre Kiss and Dinah Shelton *Guide to International Environmental Law* (Martinus Nijhoff Publishers, Leiden, 2007), at 182.

scientific certainty should not preclude adoption of measures to avoid or minimize threats to biodiversity. In the case of wind farms, the precautionary principle may restrict construction in areas that could potentially affect the biodiversity of migratory bird species. It requires member states to take the conservative approach in decisions that may affect biodiversity.

2 Biodiversity Impact Assessment

The Convention recognises the value of environmental impact assessment as a tool for integrating biodiversity into decision making processes. Article 14 of the Convention states that:

> Each Contracting Party, as far as possible and as appropriate, shall:
>
> (a) Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimising such effects and, where appropriate, allow for public participation in such procedures;
>
> (b) Introduce appropriate arrangements to ensure that the environmental consequences of its programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account.

The Convention has been hailed as "the principal framework within which the development and implementation of rules on biodiversity conservation will occur."[79]

While traditional EIA often deals with some aspects of biodiversity (for example, endangered species and habitat loss), it is undoubtedly less likely to address other aspects, such as diversity of non-threatened species and the functional components of biodiversity.

Presently, biodiversity may not be being taken into account in state legislation. According to a survey conducted by the International Institute of Impact Assessment, 50per cent of survey participants responded that biological diversity was not addressed either procedurally or technically in their countries' guidelines.[80] Another study completed in the United States evaluated 35 impact assessment statements and found that biodiversity assessment was almost entirely lacking in the impact assessment process.[81] Similar results were found in a study done in the United Kingdom where environmental impact assessment procedures did not mention biodiversity.[82] A lack of inclusion of biodiversity in environmental assessment may relate to the fact that EIA laws were largely in effect before

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[79] V Koester "The Five Global Biodiversity-Related Conventions" (2001) 31 Environmental Policy and Law 152 at 154.

[80] A Bagri and V Frank *Biodiversity Impact Assessment* (Biodiversity Policy Coordination Division, IUCN, Montreal, 1997).

[81] Atkinson, S, Bhatia, S and others "Treatment of Biodiversity Impacts in a Sample of US Environmental Impact Statements" (2000) 18 Impact Assessment and Project Appraisal 271.

[82] H Byron *Biodiversity and Environmental Impact Assessment of UK Road Schemes: Current Practice and Proposed Guidance* (Imperial College, London, 1999).

the CBD came into being, and may have not been updated since.[83] Another reason may relate to the fact that most EIA practitioners are not trained in ecology and biodiversity.[84]

3 New Zealand Biodiversity Strategy

New Zealand developed the New Zealand Biodiversity Strategy ("NZBS") in response to its obligations under the Biodiversity Convention.[85] The management of biodiversity in New Zealand is spread amongst national, regional, and local governmental agencies as well as iwi and hapu, community and environmental groups, and private landowners.[86] The Department of Conservation ("DoC") is responsible for biodiversity management on public conservation lands and regional, city, and district councils are jointly responsible for the biodiversity management on other lands.[87] Although there are significant formal conservation protected lands managed by DoC, approximately 70 per cent of New Zealand's land is in private ownership.[88] The large percentage of private property holdings makes the role of local councils much more important in managing land in accordance with the principles of sustainable management and international conservation obligations. Biodiversity conservation on private land is an important goal for New Zealand.[89] Importantly, wind farms are often developed on private land where the conservation of biodiversity is important.

The New Zealand Biodiversity Strategy was prepared in response to the decline of indigenous biodiversity. However, another key goal of the New Zealand Biodiversity Strategy is to protect threatened introduced plants and animals.[90] The Strategy states that "New Zealand has become a refuge for some introduced species at risk in other parts of the world."[91] Objective 4.5 states that New Zealand must "assist with international efforts to conserve threatened introduced plants and animals in New Zealand, provided that this does not conflict with conserving indigenous biodiversity."[92] This requires New Zealand to protect non-native migratory species so long as it does not impede conservation efforts for native migratory species. If conservation preferences are given to indigenous or native species,

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[83] D Annandale "Biodiversity and Environmental Impact Assessment: A Good Practice Guide for Road Schemes" (2001) 3 Journal of Environmental Assessment Policy and Management 302 at 302.

[84] A Bagri and V Frank *Biodiversity Impact Assessment* (Biodiversity Policy Coordination Division, IUCN, Montreal, 1997).

[85] Department of Conservation and the Ministry for the Environment "New Zealand Biodiversity Strategy" (February 2000, Wellington).

[86] Department of Conservation and the Ministry for the Environment "New Zealand Biodiversity Strategy" (February 2000, Wellington), part 3.

[87] David Norton and Judith Roper-Lindsay "Assessing Significance for Biodiversity Conservation on Private Land in New Zealand" (2004) 28 New Zealand Journal of Ecology 295.

[88] Department of Conservation and the Ministry for the Environment "New Zealand Biodiversity Strategy" (February 2000, Wellington), part 3.

[89] David Norton and Judith Roper-Lindsay, above n 87, at 295.

[90] Department of Conservation and the Ministry for the Environment "New Zealand Biodiversity Strategy" (February 2000, Wellington), part 3.

[91] Ibid.

[92] Ibid.

migratory birds may be disadvantaged. This could occur when a mitigation plan for the effects of a wind farm on birds includes establishing a reserve at another location that would be suitable habitat for native birds but may not be suitable for migratory birds.

In *Director-General of Conservation v Wairoa District Council*, the court analysed the New Zealand Biodiversity Strategy and considered "loss of biodiversity" an adverse effect under RMA section 104.[93] In *Kaimanawa Wild Horse Preservation Society Inc*, the court stated that it was obligated to follow the principles of the Convention on Biodiversity "in any considerations we undertake on matters relevant [to it]" because it has been ratified by New Zealand.[94]

C Ramsar Convention

The Ramsar Convention complements the Bonn Convention by protecting the wetland habitat of migratory birds. The Ramsar Convention is more formally known as the Convention on Wetlands of International Importance and it focuses on global protection of wetland habitat for migratory birds.[95] There are currently 159 parties, including New Zealand, to the Convention with over 1,800 designated wetland sites.[96]

Wetlands are defined broadly in the Convention as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine waters the depth of which at low tide does not exceed six metres."[97] This broad definition ensures that a wide variety of habitats are covered including rivers, coastal areas, and coral reefs. Parties have three obligations under the Convention:[98]

1. Include wetland conservation in national planning;
2. Designate wetlands; and
3. Establish nature reserves.

The first general obligation requiring contracting parties to include wetland conservation in their national planning also requires the contracting parties to implement their national plans to "promote . . . as far as possible the wise use of wetlands in their territory."[99] The "wise

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[93] *Director-General of Conservation v Wairoa District Council* (2007) W 81/07 at para 17 per Thompson J.

[94] *Kaimanawa Wild Horse Preservation Society Inc v Her Majesty's Attorney-General* [1997] NZRMA 356.

[95] Daniel Navid "The International Law of Migratory Species: The Ramsar Convention" (1989) 29 Nat Resources J 1001 at 1002.

[96] Convention on Wetlands of International Importance Especially as Waterfowl Habitat (opened for signature on 2 February, 1971, entered into force on 21 December 1975).

[97] Navid, above n 95, at 1004.

[98] Convention on Wetlands of International Importance Especially as Waterfowl Habitat (opened for signature on 2 February, 1971, entered into force on 21 December 1975), art 3.

[99] Convention on Wetlands of International Importance Especially as Waterfowl Habitat (opened for signature on 2 February, 1971, entered into force on 21 December 1975), art 3(1).

use" of wetlands has been interpreted as requiring the maintenance of the ecological character of wetlands.[100]

The second obligation requiring the designation of wetlands which will be included in the List of Wetlands of International Importance, maintained by the Convention Bureau, more specifically requires that each contracting party designate at least one site (possibly more than one site required if more than one biogeographic area in contracting party's country) using specific selection criteria.[101] In 1987, the Ramsar Convention adopted criteria to assist contracting parties in the identification of wetlands of international importance.[102] After designation of a wetland to be included in the List of Wetlands, the site is not automatically given a legally protected status.[103] However, the designating country can choose to give it a legally protected area status.[104] The designated site will, however, enjoy the recognition of being internationally important. The third requirement obliges contracting parties to promote the conservation of wetlands in their territory through the establishment of wetlands, whether or not they are included on the List of Wetlands.[105] In summary, each party to the Convention must "consider its international responsibilities for the conservation, management, and wise use of migratory stocks."[106]

Wetlands in New Zealand are now rare and comprise only about 8 per cent of the original wetland network.[107] In many regions, no freshwater wetlands remain and the losses associated with destruction of wetlands are cumulative.[108] New Zealand has an obligation to protect wetlands of international importance under the Ramsar Convention. But, because many wetlands do not qualify for protection under the Ramsar Convention as internationally important wetlands, the full protection of wetlands must be achieved through the implementation of national management strategies.[109] Wetlands are critical habitat for migratory birds[110] and must be protected to meet New Zealand's obligations to protect migratory species crossing into New Zealand.

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[100] Navid, above n 95, at 1005-1006.
[101] Ibid, at 1005.
[102] Ibid, at 1005.
[103] Convention on Wetlands of International Importance Especially as Waterfowl Habitat (opened for signature on 2 February, 1971, entered into force on 21 December 1975).
[104] Ibid, at 16.
[105] Navid, above n 95, at 1006.
[106] Staunton Golding "Beyond the Ramsar Convention: A Proposal for the International Protection of Wetlands Through Binding Regional Agreements" (1992) 3 Colo J Intl Envtl L & Policy 359 at 365.
[107] Deanne Jones, Chris Cocklin and others "Institutional and Landowner Perspectives on Wetland Management in New Zealand" (1995) 45 Journal of Environmental Management 143, at 144.
[108] Ibid, at 144.
[109] Ibid, at 144.
[110] Golding, above n 106, at 361.

So far, New Zealand has only established six wetlands of international importance.[111] A network of wetland sites is very important to the survival of some migratory species.[112] The Minister of Conservation is responsible for nominating wetland sites to be included in the list of internationally important wetlands. The Convention does not directly protect migratory species from hard resulting from wind warms, it only protects their habitat. However, if migratory birds are located on reserves, they will be incidentally protected. Participation in the Ramsar Convention demonstrates New Zealand's dedication and interest in protecting migratory bird species. By signing this Convention, New Zealand has made a commitment to the protection of migratory bird habitat. However, New Zealand's actions under the Convention have been limited. New Zealand has done little to satisfy its obligations under the Convention, which is an indication that migratory bird species are not being given the attention required by international law.

The Ramsar Convention may be invoked in the wind farm process where the location of the proposed wind farm may affect wetland habitat. Indeed, the Convention specifies environmental impact assessment procedures to apply to such situations (discussed further below). Wetland habitats are important to certain migratory birds and, because there are so few remaining wetland habitats in New Zealand in combination with New Zealand's obligation to protect wetland habitat under the Convention, wetlands are likely to be considered unsuitable for wind farms.

D Environmental Impact Assessment under International Law

Environmental impact assessment ("EIA") procedures are crucial to determining an appropriate location for a wind farm. International treaties often provide EIA guidelines for members to follow. Most international EIA commitments contemplate that the implementation of international obligations will occur through domestic EIA processes, as opposed to a distinct international process – which is true for New Zealand.[113]

1 EIA under Ramsar Convention

The Ramsar Convention sets forth voluntary guidelines for incorporating environmental impact assessment in situations where the ecological character of wetlands and Ramsar sites may be threatened by development or other policies. Environmental impact assessment is defined as "a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socioeconomic, cultural and human-health impacts, both beneficial and adverse." Contracting parties are also encouraged to adopt the

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[111] Department of Conservation *Ramsar Convention: Biodiversity* (Department of Conservation, Christchurch, 2006).

[112] Golding, above n 106, at 363.

[113] Neil Craik "Deliberation and Legitimacy in Transnational Environmental Governance" (2007) 38 Victoria U Wellington L Rev 381 at 392.

environmental impact assessment guidelines into their country's legislation.[114] The guidelines focus on promoting a biodiversity inclusive environmental impact assessment process.[115] The guidelines are formulated under the standards set forth by the International Association for Impact Assessment ("IAIA") to which New Zealand is a member. The IAIA objectives are:[116]

1. To ensure that environmental considerations are explicitly addressed and incorporated into the development decision making process;
2. To anticipate and avoid, minimize or offset the adverse significant biophysical, social and other relevant effects of development proposals;
3. To protect the productivity and capacity of natural systems and the ecological processes which maintain their functions; and
4. To promote development that is sustainable and optimizes resource use and management opportunities.

Stages in the EIA process include:[117]

- ***Screening***: to determine which projects or developments require a full or partial impact assessment study;
- ***Scoping***:
    - To identify which potential impacts are relevant to assess (based on legislative requirements, international conventions, expert knowledge and public involvement);
    - To identify alternative solutions that avoid, mitigate or compensate adverse impacts on biodiversity (including the option of not proceeding with the development, finding alternative designs or sites which avoid the impacts, incorporating safeguards in the design of the project, or providing compensation for adverse impacts); and
    - To derive terms of reference for the impact assessment;
- ***Assessment and evaluation of impacts and development of alternatives***: to predict and identify the likely environmental impacts of a proposed project or development, including the detailed elaboration of alternatives;
- ***Reporting***: the environmental impact statement (EIS) or EIA report, including an environmental management plan (EMP), and a non-technical summary for the general audience;
- ***Review***: of the environmental impact statement, based on the terms of reference (scoping) and public (including authority) participation;
- ***Decision-making***: on whether to approve the project or not, and under what conditions; and
- ***Monitoring, compliance, enforcement and environmental auditing***:
    - Monitor whether the predicted impacts and proposed mitigation measures occur as defined in the EMP.

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[114] Ramsar Convention "Environmental Impact Assessment and Strategic Environmental Assessment: Updated Scientific and Technical Guidance" (10th Meeting of the Parties to the Convention on Wetlands, 2008), at 6.

[115] Ibid, at 5.

[116] International Association for Impact Assessment "Principles of Environmental Impact Assessment Best Practice" <www.iaia.org>.

[117] Ramsar Convention, above n 126, at 6-7.

- Verify the compliance of proponent with the EMP, to ensure that unpredicted impacts or failed mitigation measures are identified and addressed in a timely fashion.

These stages only represent the minimal guidelines and states are encouraged to adopt procedures that are more stringent. In New Zealand, there is no separate EIA process for activities that may impact obligations under the Ramsar Convention. The all-encompassing statute—the Resource Management Act—governs all EIA processes for activities that affect the environment in New Zealand.

2 EIA under the Convention on Biodiversity

EIA commitments in the Convention on Biodiversity require states to ensure that domestic EIA processes consider the impacts of planned activities on all levels of biological diversity.[118] The Convention places obligations on states to assess project impacts on biological diversity in recognition of the universal character of the problem itself.[119]

EIA is considered a domestic process under the Convention, but it requires consideration of international environmental norms in specific domestic contexts.[120] The assessment procedures recommended by the Convention are those that are embraced by the Ramsar Convention under the IAIA. The IAIA standards for environmental impact assessment are generally accepted by the international community and states are encouraged to adopt those procedures to ensure there is adequate environmental impact assessment of new development so as not to compromise the obligations and responsibilities of the Convention.

3 The Espoo Convention

The Espoo Convention, which is more formally known as the Convention on Environmental Impact Assessment in a Transboundary Context, came into force on 10 September 1997. New Zealand is not a party to the Convention but it can draw on the Convention for guidance in creating its own environmental impact assessment procedures. Parties to the Convention include the United Kingdom, many European countries, including the European Union, and Canada. The United States and Russia have signed the Convention but have not yet ratified it. The Convention sets out the obligations of parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries. The Convention requires environmental impact assessment to include all parties

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[118] Neil Craik, above n 113, at 393.
[119] Ibid, at 392.
[120] Ibid, at 393.

which may be affected by the proposed activity, including those across international boundaries.[121]

The Espoo Convention directs the state of origin to take account of the EIA, as well as the comments from the public and the affected state. But, nothing in the Convention obliges the state of origin to prohibit a proposed activity or even minimise its adverse trans-boundary effects.[122] Despite the lack of substantive obligations, the Convention does require parties to notify and consult with potentially affected states. The Convention is largely applicable to migratory birds as any effects on migratory birds will cross state boundaries.

[121] Convention on Environmental Impact Assessment in a Transboundary Context (opened for signature on 25 February 1991, entered into force on 10 September 1997).

[122] John Knox "The Myth and Reality of Transboundary Environmental Impact Assessment" (2002) 96 The American Journal of International Law 291 at 304.

IV NEW ZEALAND'S PROTECTION OF MIGRATORY BIRDS

This chapter analyses the level of protection that New Zealand's environmental statutes give to migratory birds throughout the wind farm consent process. It also analyses the extent to which international obligations are incorporated into these statutes. The sources of domestic protection for migratory birds in New Zealand include the Resource Management Act 1991, national and district policy statements, district and regional plans, the New Zealand Biodiversity Statement, and the Wildlife Act.

The wind farm consent process takes multiple regulations into consideration, although the Resource Management Act is the primary piece of legislation governing wind farms. National policy statements, regional, and district plans and policies are often a source of reference.

A Resource Management Act 1991

The Resource Management Act 1991 ("RMA") is the main legislation for the protection of the environment and natural resources in New Zealand.[123] The overriding purpose of the RMA is sustainable management. The RMA mainly seeks to protect "habitat" and entire ecosystems versus specific species of plants and animals.[124] It also seeks to manage "effects" rather than "activities."[125] It is frequently referred to as "permissive" or "enabling" legislation that allows for land development, subject to an assessment of any effects.

The construction of a wind farm in New Zealand requires consent. The consent process is conducted through the Resource Management Act by local authorities and includes an assessment of the effects on the environment from the proposed wind farm. This is the ideal stage to determine whether a wind farm will have a detrimental effect on migratory birds. Because of the nature of the wind farm consent process in New Zealand, much of the decision-making and determinations of the effects of wind farms are done by local authorities who are acting under the guidance of their district plans and policies as well as the Resource Management Act and national policy statements. If consent is appealed to the Environment Court, the determination for wind farm consent is also made under the guidance of the Resource Management Act. Therefore, the Resource Management Act is likely to be the most important piece of legislation in determining the outcome of where and under what conditions a wind farm is constructed. Furthermore, because the RMA may be the only point of reference for such a decision, it is important that it incorporates international and domestic obligations for the protection of migratory birds.

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[123] David Norton and Judith Roper-Lindsay "Assessing Significance for Biodiversity Conservation on Private Land in New Zealand" (2004) 28 New Zealand Journal of Ecology 295.

[124] Ulrich Klein "Assessment of New Zealand's Environmental Planning Model" (2005) 9 *New Zealand J Envtl Law* 287 at 293.

[125] Stephen Dovers and Simon Marsden (eds) *Strategic Environmental Assessment in Australasia* (The Federation Press, Sydney, 2002) at 197.

1 Environmental Impact Assessment

The RMA requires wind farm developers to complete an environmental impact assessment. Environmental impact analysis under the RMA evaluates proposed activities by looking at their effects on the environment.[126] It is a widely used and accepted mechanism to implement environmental objectives and has been advocated by environmental policy-makers.[127] Environmental impact assessment ("EIA") is limited in that it is self-regulatory and is only as comprehensive as the prevailing substantive environmental norms.[128] However, EIAs are a standardised processes of analysing proposed projects, programmes, or policies for their possible impacts on existing environmental or social structures, and they also identify ways to mitigate impacts. In terms of timing, an EIA is usually conducted after the core idea for a project, programme, or policy has been developed but before it is given permission to be carried out. In the wind farm context, this would be at the time the developer files an application with a local authority for consent to build a wind farm. Critically, EIA is the primary process through which impacts to migratory birds are identified. This section will look at New Zealand's criteria for environmental impact assessment under the RMA and evaluate how EIA procedures apply for wind farm developers in the migratory bird context.

Environmental impact assessment, which is also referred to as an Assessment of Environmental Effects ("AEE"), is a crucial component to the proper functioning of the Resource Management Act 1991 and is often hailed as the "cornerstone" of the Act.[129] An assessment of environmental effects is a statutory requirement for every resource consent application under the RMA; therefore, every wind farm consent application requires an AEE. The environmental impact assessment process is largely administered by regional councils whose functions include management of the effects of use of freshwater, coastal waters and land.[130] The purpose of the assessment of environmental effects under the RMA is to identify, early in the decision-making process, the environmental consequences of a proposed activity, so that the environmental consequences are taken into account in the approval and management of the proposed activity.[131] The AEE ensures that the consent authority—the local council—makes its decision in accordance with the principles of sustainable management contained in the RMA.[132] "All actions and decisions must be made within the

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[126] Neil Craik "Deliberation and Legitimacy in Transnational Environmental Governance" (2007) 38 Victoria U Wellington L Rev 381 at 383.

[127] Ibid, at 383.

[128] Ibid, at 383.

[129] Dovers and Marsden (eds), above n 125, at 195.

[130] Richard Morgan "Progress with Implementing the Environmental Assessment Requirements of the Resource Management Act in New Zealand" (1995) 38(3) Journal of Environmental Planning and Management 333, at 335.

[131] Chris Reid (ed) *Assessment of Environmental Effects (AEE): Administration by Three Territorial Authorities* (Office of the Parliamentary Commissioner for the Environment, Wellington, 1995) at 3.

[132] Ibid, at 3.

limits set out in the purpose and principles [of the Act]."[133] The underlying principle of the RMA is sustainable management, which is defined in section 5(2) as:[134]

> Managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well being and for their health and safety while –
>
> a. Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations;
> b. Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
> c. Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

These principles of sustainable management are the bare minimum requirements that must be complied with under a resource consent application.[135] The Fourth Schedule of the RMA sets forth the AEE requirements. The requirements, pertinent to the wind farm consent process, include identifying any significant adverse effects (actual or potential) on the environment, any possible alternative locations or methods, mitigating measures to reduce effects, identification of persons affected, and whether a monitoring programme should be used.[136] To help the applicant prepare an AEE, the Fourth Schedule of the RMA lists matters that should be considered when assessing environmental effects, as follows:[137]

a) Any effect on those in the neighbourhood and, where relevant, the wider community including any socio-economic and cultural effects;
b) Any physical effect on the locality, including any landscape and visual effects;
c) Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity;
d) Any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural, or other special value for present or future generations;
e) Any discharge of contaminants into the environment, including any unreasonable emission of noise and options for the treatment and disposal of contaminants; and
f) Any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.

The Resource Management Act 1991 sets forth in these provisions what should be included and the matters to be considered in an assessment of environmental effects, but it

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[133] BE Montz and Jennifer Dixon "From Law to Practice: EIA in New Zealand" (1993) 13 Environmental Impact Assessment Review 89 at 91.
[134] Resource Management Act 1991, s 5(2); and Ibid, at 2.
[135] Reid (ed), above n 131, at 4.
[136] Resource Management Act 1991, sch 4.
[137] Resource Management Act 1991, sch 4(2).

does not provide a "detailed prescription" of what should be covered in an Assessment of Environmental Effects.[138] The Ministry for the Environment provides information on auditing assessments of environmental effects to assist local authorities.[139]

The Energy Efficiency and Conservation Authority ("EECA"), which was established to promote renewable energy, created guidelines for local authorities to follow for environmental assessment procedures under the RMA.[140] These guidelines are voluntary and provide general information on various stages of a wind farm. During the construction phase, there is a section on how to manage the environmental effects, including ecological effects. The guidelines for ecological effects on birds are limited to avoiding construction during nesting of birds in the area.[141] There is also a section in the operation phase on bird deaths, which identifies five impacts of wind farms on birds: collision, direct/indirect habitat loss, electrocution from infrastructure, and cumulative impacts.[142] It states that developers should seek advice on the main flight paths of birds and to avoid impacts on rare or unusual species. It also notes that wind farms are at an early stage in New Zealand and that not much is known about potential bird deaths and uses the Brooklyn turbine and a wind farm in the Tararuas as examples where limited harm is caused to birds. The Guidelines state that it would be good practice for developers to seek advice on particular characteristics of local species with the Department of Conservation. Measures to mitigate and manage effects on birds listed include:[143]

1. *Site selection*: maintain sufficient setbacks from high bird use areas; avoid migration routes, and features that attract birds. Locate wind turbines in areas that support fewer species such as intensive agricultural, pastoral, or industrial sites.
2. *Reduce perching opportunities*
3. *Off-site mitigation*: increase the security of birds off-site, to secure conservation status of the species by conserving nest sites, breeding areas and over-wintering grounds.
4. *Quantifying potential effects*: undertake scientific surveys both before and after development by using standardised investigation and measurement methods of bird utilisation rates and bird mortality.

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[138] Morgan, above n 130, at 334.
[139] Ministry for the Environment *Auditing Assessments of Environmental Effects* (Wellington, 1999).
[140] Energy Efficiency and Conservation Authority *Guidelines for Local Authorities: Wind Power* (Wellington, 2004).
[141] Ibid, at 16.
[142] Ibid, at 26.
[143] Ibid, at 26.

It also identifies ideal regions for developing wind farms in New Zealand based on the average annual wind speed and are not based on ecological reasons. This is significant because it gives a base for ecological experts to focus on identifying migratory bird flight paths within those regions.

The level of detail of the Assessment of Environmental Effects is determined by the significance of the effects of the potential activity on the environment.[144] Therefore, the more significant the effect on the environment of the activity, the more detailed the AEE should be. Because of the potential for significant effects on the environment in the construction of wind farms, the AEE should be of considerable detail. However, the applicant must make that determination.[145] It is then under the discretion of the resource consent reviewer – the local council – to decide whether the AEE submitted by the applicant is of adequate detail.[146] Each council determines what information must accompany a resource consent application.[147] A study using six selected councils across New Zealand, found that councils often requested the same types of information from resource consent applicants but that the quality of information provided by the applicant was highly variable.[148] The study concluded that the results meant that "there is little consistency between councils in deciding what environmental information is used to make decisions on consent applications."[149] Wind farm consent decisions that are based on inconsistent environmental information may indicate that inadequate information is being provided to consent authorities.

Adequate detail of the AEE requires that sufficient information is provided to make a decision of whether the proposed activity shall be worthy of consent.[150] In *Hubbard v Tasman District Council*, the court held that some subjective assessment of the level of detail required in the Assessment of Environmental Effects is allowed when estimating the scale and significance of the potential or actual effects of the activity.[151] In *Scott v New Plymouth District Council*, the court held that merely stating that there are no environmental issues in connection with the proposed activity is inadequate.[152] The applicant is required to discuss the environmental and physical effects and how such effects may be mitigated.[153] However,

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[144] Resource Management Act 1991, s 88(2); and sch 4.
[145] Ibid.
[146] Christopher Wood *Environmental Impact Assessment: A Comparative Review* (Addison Wesley Longman Limited, England, 1995) at 177.
[147] Michael Bachurst, Maxine Day and others "The Quality of District Plans and their Implementation: Towards Environmental Quality" (Australia-New Zealand Planning Congress, Wellington, 2002) at 9.
[148] Ibid, at 9.
[149] Ibid, at 9.
[150] *AFFCO NZ Ltd v Far North District Council* (1994) 1B ELRNZ 101.
[151] *Hubbard v Tasman District Council* (1995) W 1/95 13 per Kenderdine J.
[152] *Scott v New Plymouth District Council* (1993) W 91/93 per Treadwell J.
[153] Ibid.

merely underestimating the potential effects of an activity on the environment does not invalidate the consent application.[154]

The level of detail included in the AEE is extremely important for migratory birds. The Department of Conservation ("DoC") recommends a study of the wind farm location beginning a minimum of three years before estimated construction and continuing after construction.[155] DoC advocates the need for a detailed study on a case-by-case basis and a minimum of three years is required to determine which bird species use the site and how and when they use the site.[156] The duration of the study is very important because:[157]

> The timing of arrival probably varies from species to species, and will depend on factors such as the timing of their breeding season (which may be affected by timing of snow-melt in the previous northern spring), breeding cycle, migration route, and tide and weather conditions at stopover sites. At stopover sites, waders will wait for favourable weather to provide tail-winds for the next leg of the journey. Other factors, e.g. disturbance by people or birds of prey at stopover sites, can affect the rate of fat deposition and hence affect the timing of onward movement.

The variation in arrival times and numbers of species means that the duration of the study needs to be long enough to account for these differences. Additionally, there is a consensus view that migratory birds arrive in small groups over a long period of time and thus may be difficult to detect.[158] Therefore, the study needs to be of adequate detail to account for the variation of migratory bird behaviour.

The consent authority may lack the adequate training to determine whether an AEE is sufficient because specialist training in AEE requirements has not been readily available.[159] Staff training in the general administration of the RMA has been provided in some local councils.[160] This training is usually in the form of studying the Ministry for the Environment guidelines, case decisions, and attendance of in-house seminars.[161] A University of Otago study analysed environmental consultants' training in environmental assessment, which highlighted that some councils need further training to become familiar with resource consent decision-making.[162] From an ecological perspective, common criticisms of environmental impact statements include:[163]

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[154] *Hubbard v Tasman District Council*, above n 151, at 12.

[155] Ralph Powlesland *Bird Species of Concern at Wind Farms in New Zealand* (Department of Conservation Research and Development Series 317, Wellington, 2009) at 37.

[156] Ibid, at 37.

[157] Murray Williams, Helen Gummer and others *Migrations and the Movement of Birds to New Zealand and Surrounding Seas* (Department of Conservation, Wellington, 2006) at 9.

[158] Ibid, at 9.

[159] Reid (ed), above n 131, at 18.

[160] Ibid.

[161] Ibid.

[162] Williams, Gummer and others, above n 157, at 9.

[163] J Treweek "Ecology and Environmental Impact Assessment" (1996) 33 Journal of Applied Ecology 191 at 193.

- Neglect of key issues;
- Failure to mention presence of designated areas and/or protected species;
- Failure to consider other important nature conservation resources which are not designated, or which lie outside the actual site of the proposed development;
- Failure to characterise baseline conditions or identify nature conservation constraints;
- Failure to provide the data needed to identify or predict ecological impacts;
- Failure to quantify ecological impacts or measure impact magnitude (even simple, direct impacts like habitat loss);
- Weak prediction;
- Failure to undertake field surveys;
- Failure to undertake appropriate surveys at appropriate times;
- Bias towards easily surveyed and charismatic taxonomic groups;
- Over-reliance on superficial "walk-over" surveys;
- Inadequate replication; and
- Failure to estimate ecological significance.

J Treweek advocates that environmental impact assessments lack ecological input and scientific rigour and therefore fail to predict and evaluate ecological impacts.[164] It is widely acknowledged that some councils lack the experienced staff required to assess the AEEs of major proposals.[165] Regional councils often have the appropriate technical staff in the physical and engineering areas and district councils have the appropriate planners and engineers.[166] However, most councils lack staff with skills concerning ecological issues as well as social, cultural, and economic issues.[167]

Under section 36A of the RMA, resource consent applicants are not required to consult with any specific expert or third party to assess environmental effects.[168] Therefore, the AEE may not contain any expert opinions on the potential effects on the environment of the proposed activity. Admittedly, it is unlikely in the wind farm context that an expert would not be consulted to determine the ecological effects. The concern is whether the reviewing authority has the knowledge to properly evaluate the expert's conclusions. The consent authority can request more information from the applicant. But, this is not a fool proof option as the consent authority must have the skills to identify when information provided is incomplete or inaccurate. The applicant may not provide the quality of information that is adequate for a complete assessment of environmental effects and local councils may lack the funding to request an independent assessment of environmental effects:[169]

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[164] Ibid, at 191-199.

[165] Richard Morgan "Progress with Implementing the Environmental Assessment Requirements of the Resource Management Act in New Zealand" (1995) 38 Journal of Environmental Planning and Management 333 at 338.

[166] Ibid, at 338.

[167] Ibid, at 338.

[168] Resource Management Act 1991, s 36A.

[169] Ulrich Klein "Assessment of New Zealand's Environmental Planning Model" (2005) 9 New Zealand J Envtl L 287 at 303.

> Thus the burden of procuring and analyzing information is obviously more than the financially weak districts are able to cope with. It is not uncommon for the authorities in such areas to have to resort to using information from the environmental project assessments of applicants or information provided by interest groups participating in the planning process. It has recently become considerably more difficult for citizens and authorities to gain access to independent information. National research institutes have lately had to lay full claim to their costs, not just from individuals, but also with respect to other authorities. The collection and evaluation of data must be separately commissioned.

The lack of skills and funding in local governments to deal with technical ecological concerns of wind farms is a serious concern for the protection of migratory birds. Local governments may not be able to afford to conduct their own independent review of the AEE. Because no independent review of the resource applicant's AEE is required, local governments may be relying on the interested party's assessment, whose assessment may be biased in favour of construction of the wind farm despite ecological concerns. Additionally, local governments may be interested parties themselves because of the benefits of meeting renewable energy targets and the benefits of the addition of the wind farm to the local economy. Lack of funding to carry out independent reviews of ecological considerations and the self-interest in seeing the wind farm go ahead, may compromise AEE obligations.

(a) Review of the Assessment of Environmental Effects

The review of the AEE report is usually forwarded to the council member that has the particular skills to deal with that specialist area by circulating the consent application for comment to a list of council members.[170] The resource consent application is rarely reviewed in an integrated manner (even for larger developments) so that a variety of council members can come together to assess the potential indirect and cumulative effects.[171] The lack of integrated assessment by local councils is a serious detriment to the quality of the review of the assessment of environmental effects. When there is a lack of skill among local councils to adequately assess applications, it would be beneficial for council members to collaborate in the decision-making process.

The consent authority decision-maker makes a final decision on the basis of whether or not the effects of the proposed activity are minor. The consent authority decision-maker will use the planners' report for assistance in making the final decision. The planners' report often includes the statutory and planning framework, an evaluation of the application and AEE, and sometimes it also includes a recommended decision.[172] In a study conducted by the Parliamentary Commissioner for the Environment, an independent government agency that

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[170] Morgan, above n 165, at 337-338.
[171] Ibid, at 338.
[172] Ibid.

provides advice to the government on environmental issues, deficiencies in the planners' reports were identified and consisted of "inadequate technical evaluation of biophysical effects, such as ecological effects; a few instances of insufficient evaluation of effects."[173] In many cases, consent is given for development if the applicant has considered the topics in the Fourth Schedule.[174] Often, the consent authority uses the Fourth Schedule as a checklist to determine if the applicant's AEE is satisfactory.[175] A checklist is likely to be insufficient to determine whether migratory birds are effected unless there is a specific section for migratory birds and ways in which they could possibly be effected, i.e., seasonal variation and flight paths. Most environmental assessment methods advocate the use of scientific and technical models to determine the effects of a particular activity with more accuracy.[176]

In another study, it was determined that consent-authorities often incorporate the "consent conditions" suggested by the developer with little modification.[177] This reinforces the suggestion that the RMA places primary responsibility of assessing the environmental effects of a proposed activity on the applicant.[178] The court in *McFarland v Napier City Council*, stated that "an applicant is under no obligation to become a devil's advocate in order to destroy its own application before it has even started."[179] In *Environmental Defence Society Inc v South Pacific Aluminium Ltd*, the court approached the subject of the level of objectivity required of the resource consent applicant in her preparation of the AEE report.[180] The court states that it is expected that an applicant will promote the viability of the proposed activity but that the applicant should not attempt to avoid or ignore "awkward or significant" environmental issues from the AEE report.[181]

Richard Morgan identifies apparent weaknesses with the EIA process such as "the lack of a clear requirement for developers to consider alternative sites or designs, the amount of discretion allowed the impact assessors and the planning authorities in deciding the scale and scope of EIAs, and the lack of a formal, independent reviewing process for completed assessments."[182]

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[173] Ibid, at 40.
[174] Richard Morgan, above n 165, at 338.
[175] Ibid, at 338.
[176] Barry Smit and Harry Spaling "Methods for Cumulative Effects Assessment" (1995) 15 Environ Impact Assess Rev 81.
[177] Michael Bachurst, Maxine Day and others "The Quality of District Plans and their Implementation: Towards Environmental Quality" (Australia-New Zealand Planning Congress, Wellington, 2002) at 10.
[178] Bret Birdsong *Adjudicating Sustainability: New Zealand's Environment Court and the Resource Management Act* (Ian Axford Fellowship in Public Policy, New Zealand, 1998) at 38-39.
[179] *McFarland v Napier City Council* (1993) 2 NZRMA 440 at 442.
[180] *Environmental Defence Society Inc v South Pacific Aluminium Ltd* (1981) 1 NZLR 530 at 535.
[181] Ibid, at 534-535.
[182] Ibid, at 335.

(b) Third party involvement

The submission process on resource consent application invites third parties who have an interest in the application to submit a statement of their opinion. The submission process incorporates the views of the public, non-governmental organisations, and, often in the wind farm context, the Department of Conservation. The relevant consenting authority will review the submissions but is not required to follow any of the recommendations provided, even from the Department of Conservation. It is an opportunity for the consenting authority to be made aware of issues regarding wind farms that were not raised by the resource consent application. The submission process also occurs when the wind farm application is called in by the Minister for the Environment or the upcoming and independent Environmental Protection Authority on a matter of national significance. Wind farms have occasionally been considered matters of national significance and "called in", which bypasses the local authority.

(c) Examples of wind farm consent applications at the local authority level

There are currently many wind farm consent applications that are with local authorities and have decisions pending. I have analysed some of these applications and have paid particular attention to the Assessment of Environmental Effects to determine whether they are taking migratory birds into account.

The AEE for the Tararua wind farm extension (Te Rere Hau Eastern Extension) discussed the seasonal behaviour of native birds but did not mention migratory birds. Also noticeably absent was a discussion of the cumulative ecological effects of adding more turbines to the wind farm. Cumulative effects on the environment may be an issue when the mortality of bird species increases above an ecologically safe threshold and/or when the disturbance area is increased causing further displacement of birds.

The ecological assessment was undertaken by private consultants and potential effects to avifauna were proposed to be minor. The consultants concluded that during construction of the wind farm, resident bird populations were likely to experience a small amount of local disturbance but because the overall proportion of habitat loss is very small and short-term, the construction activities were unlikely to result in adverse effects on the local native bush-dwelling birds. The New Zealand Falcon was considered to potentially be at risk of collision with the turbines and the consultant proposed pre-construction monitoring to determine if the wind farm site was being used by falcons. The consultant did not discuss the details of pre-construction monitoring such as methodology or duration.

In Project Central Wind's AEE, the principal potential effects consisted of the potential for collision, displacement because of turbine avoidance, and habitat change and loss during the operational phase of the wind farm. The AEE noted that it has little formal research to draw upon from New Zealand specific sources but that international studies show that risks to birds are species and season dependent. It notes that the wind farm design and layout is consistent with contemporary international best practice to reduce the risk of bird strike with raptors and

migratory species. However, the assessment does not provide any details of what it considers international best practice and no source is cited. A preliminary assessment for avifauna at the site identified several threatened bird species that are potentially sensitive to wind farms at the site. The birds listed included one migrant: the long-tailed cuckoo. A one-year pre-construction study was suggested to further analyse the potential impacts on the avifauna. The study methodology was cited as similar to methodologies being used by five other wind farms in New Zealand and consistent with international guidelines for avifauna research. The ecological assessment also recommended post-construction monitoring to document bird strike for a three-year period following the establishment of the wind farm.

A wind farm application for Hauauru Ma Raki Wind Farm in the Waikato area is currently under review by the Environmental Protection Authority and was called in by Ministry for the Environment as a matter of national importance. Studies relating to the effects of a wind farm in the area on migrating birds are ongoing and reports with interim results have been submitted to the EPA.[183] The reports have found a difference between bird mortality and flight paths between summer and winter, with more birds at risk during winter because they fly closer to land. There was also variation with changes in weather, such as wind and rain. The Department of Conservation submitted a statement objecting to the wind farm until further information is known about birds in the area, particularly migratory birds. DoC stated that the application does not adequately address the potential adverse effects of species vulnerable to collision with wind turbines and transmission lines. The species include migratory shorebirds, resident shorebirds, wetland and lake birds, and forest birds.

DOC states that migratory shorebirds are particularly at risk because the proposed wind farm site is predominantly located on the main national north-south migration pathway or corridor for indigenous shorebirds including the wrybill (nationally vulnerable under New Zealand's threat classification system) and the South Island pied oystercatcher (not threatened under NZTCS). The west coast of the North Island is a known migratory pathway for pied stilt (not threatened but is declining under NZTCS), black stilt (nationally critical under NZTCS), and banded dotterel (gradually declining and listed as nationally vulnerable under NZTCS). Arctic migrants such as bar-tailed godwits, lesser (red) knots, and ruddy turnstones also use this route. The pathway is a significant ecological corridor and habitat for birds travelling between breeding sites in the South Island and southern North Island for wintering sites further north.

The measures in the Application, according to DOC, fail to adequately address the potential for significant adverse effects on avifauna because the proximity of the Proposal (including its construction, operation, and maintenance) within and in the vicinity of areas of

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[183] See reports dated 26 September 2010 and 27 April 2010 available on the EPA's website: <www.mfe.govt.nz>.

indigenous vegetation, wetland and coastal avifauna habitats (including the migration pathway) is likely to cause the following adverse effects on indigenous birds:[184]

- Potential for bird mortality as a result of collisions with wind turbines and transmission lines;
- Cumulative effects on bird mortality, with consequential population effects likely, resulting from adverse effects of other wind farms with are either consented and awaiting construction, or awaiting consenting outcomes;
- Displacement of birds from the site and neighbouring areas as a result of construction and operational activities;
- Habitat loss from indigenous vegetation clearance;
- Barrier effects and cumulative barrier effects of the proposed turbines (including in combination with other wind farms), which have the potential to cause adverse impacts on migratory shorebirds such that these birds may not fly between or over them and so are forced to fly around the Site;
- Reduced breeding success of birds nesting in, and in close proximity to the Site; and
- Potential increased predation pressure as a result of habitat modification favouring increased utilisation of the Site by predators.

DOC recommended a two-year pre-construction monitoring study to determine the risks to avifauna because of the lack of robust scientific information on bird movement and numbers. A long-term study is needed to adequately assess the risks to avifauna because:[185]

- Many of New Zealand's endemic bird populations are long lived and have low reproductive outputs. As a result they are highly sensitive to increases in adult mortality. Small increases in adult mortality will lead to substantial increases in rates of population decline;
- The monitoring techniques and resources being assigned to the Proposal are inadequate for a site of this size. With the present monitoring resources, there are real chances of false negative results, failure to detect the Firth of Thames flyway and a substantial underestimation of risk at the Site; and
- Mitigation as suggested, including both on and off-site mitigations, is almost entirely unproven, and may not work as a result. It is also difficult to assess what techniques and levels of mitigation may be appropriate without a realistic assessment of potential risks being undertaken first. Without such an assessment, the Applicant will not be in a position to know what costs it may incur in the long term.

The Department of Conservation urges that the decision on the wind farm application should be highly precautionary in nature and be subject to conditions that ensure adequate pre-construction and post-construction monitoring to ensure the Proposal does not proceed (either in whole or in stages) until any adverse effects to avifauna are capable of being addressed (either through avoidance, remediation, or mitigation, if possible). It also urges that the Proposal should include the ability to reduce the scale and intensity of the wind farm in the event that post-construction monitoring highlights significant adverse effects.

The assessments of environmental effects tend to show a significant gap around the effects on migratory birds. It is uncertain when reading many of the assessments prepared by wind

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[184] Ibid.
[185] Ibid.

farm applicants whether migratory birds were even considered as there is no mention of them in many cases. The assessments also reflect the lack of advice from the Department of Conservation being taken into account by consultants when preparing these assessments; particularly with site studies because they are often significantly shorter than DoC recommends.

(d) Consented wind farms

Wind farm consents through local authorities vary in their approach to addressing the effects on birds. Monitoring for effects on birds is usually a short-term study that is completed before an application for consent. The results of the study are included in the application. The consenting authority will then base its consent conditions on the results of that initial study. Often the consent conditions require post-construction monitoring for durations of up to two years.[186] Falcons are usually the primary concern in consent decisions in New Zealand, which are a species known to be affected by wind turbines. Reports of bird monitoring may be required and mitigation will be discussed, if appropriate. There have not been any consent appeals regarding effects on birds in the wind farm area. However, the upcoming consent decision by the EPA's Independent Board of Inquiry on the Hauauru Ma Raki Wind Farm, which is proposed to be in a migratory flight path, may change this.[187]

2 Cumulative Impact Assessment

Cumulative impact assessment is the "identification and analysis of all impacts on an area or region as they accumulate over space and time in response to an action or an activity."[188] Individual impacts may interact with each other to create effects that are different in nature, bigger in magnitude, greater in significance, more long-lasting, or more widespread than the individual impacts considered on an independent basis.[189] Cumulative effects are often inadequately considered in the wind farm environmental impact assessment process. Cumulative effects may arise from multiple wind farm proposals or from a wind farm proposal and other forms of development.[190] A cumulative impact assessment should include all projects that have been developed or are planned for the area surrounding the proposed wind farm site. Cumulative effects may be additive, compensatory, or synergistic. Additive effects may increase overall collision mortality or other effects; compensatory effects may be

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[186] See, for example, *Genesis Power Ltd v Franklin District Council* (appeal) (2006) 12 ELRNZ 71; and Otago Regional Council and Central Otago District Council "Joint Consent Decision on the Mahinerangi Wind Farm" (2007) <http://www.orc.govt.nz>.

[187] Check for updates on the decision on <www.mfe.govt.nz>.

[188] BE Montz and Jennifer Dixon "From Law to Practice: EIA in New Zealand" (1993) 13 Environmental Impact Assessment Review 89.

[189] Ibid.

[190] R Langston *Windfarms and Birds: An Analysis of the Effects of Windfarms on Birds, and Guidance on Environmental Assessment Criteria and Site Selection Issues* (BirdLife, Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 2002) at 34.

where collision mortality replaces other causes of bird mortality; and synergistic effects may increase mortality over and above the separate, individual developments; or it may increase to a critical threshold level.[191] Other cumulative effects such as habitat loss and disturbance are also important to consider as accumulated habitat loss (including effective habitat exclusion due to disturbance) may impact population size and distribution.[192]

Cumulative effects of wind farm mortalities, habitat displacement, and other effects on migratory birds need to be taken into account when approving wind farm resource consent applications under the Resource Management Act. The individual councils need to look outside their territorial borders at other wind farms and incorporate the cumulative effects of all wind farms on migratory birds into their decisions.

Under the Fourth Schedule of the RMA, a resource consent applicant is required to consider any "actual or potential effect[s] on the environment of the proposed activity."[193] "Effect" is defined in Section 3 of the RMA as including: --

a) Any positive or adverse effect;
b) Any temporary or permanent effect;
c) Any past, present, or future effect;
d) Any cumulative effect which arises over time or in combination with other effects—regardless of the scale, intensity, duration, or frequency of the effect, and also includes—
e) Any potential effect of high probability; and
f) Any potential effect of low probability which has a high potential impact."

The court in *Dye v Auckland Regional Council*, stated that the concept of "combination with other effects" is one of effect A combining with effects B and C to create an overall composite effect D, which must all be considered as "effects" of the proposed activity.[194] If existing activities have adverse effects on the environment, and, if the proposed activity would also have an adverse effect on the environment—even if it is only a minor effect—then, the definition of "effects" under Section 3 requires consideration of both the minor effects and the more substantial effects.[195] If an effect is such that it is "*the straw that will break the camel's back*," the risk to sustainable management will be imperilled and consent should be denied.[196] Every activity is subservient to the overarching purpose of sustainable management.[197] Minor effects to migratory birds may have a tremendous cumulative impact because of the distances they travel. Bird mortality of even small numbers is often critical for species whose populations are limited. Therefore, cumulative assessment of the effects of wind farms across New Zealand is extremely important.

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[191] Ibid, at 34.
[192] Ibid, at 34.
[193] Resource Management Act 1991, sch 4(1)(d).
[194] *Dye v Auckland Regional Council* (2001) 7 ELRNZ 209 at 222.
[195] *Kuku Mara Partnership v Marlborough District Council* (2005) 11 ELRNZ 466, para 52.
[196] *Outstanding Landscape Protection Society Inc v Hastings District Council* [2008] NZRMA 8 (EC), para 52.
[197] *Kuku Mara Partnership v Marlborough District Council*, above n 209, para 53.

Cumulative effects are necessary to the proper functioning of an AEE report. However, AEE reports are unlikely to consider the effects of other wind farms on migratory birds as the Fourth Schedule RMA requirements are local in scope rather than national in scope. The emphasis on the local environment is emphasized by the use of words such as "locality", "vicinity", "neighbourhood", and "community."[198]

RMA fails to ensure that cumulative effects of wind farms are considered because no studies have been published and/or conducted on current New Zealand wind farm bird strike numbers so cumulative effects are unknown.[199] Since there have not been any published studies using scientifically rigorous methodology, resource consent authorities cannot accurately take into account cumulative effects of the proposed wind farm with existing wind farms. All that courts and consenting authorities can do is therefore use the precautionary principle in assessing cumulative impacts.[200]

Wind farm mortality rates are not the only cumulative effects that must be taken into account as cumulative effects of disturbed flight paths need to be considered. The RMA has authorised the construction of numerous wind farms throughout New Zealand without adequate evidence to determine the cumulative effects of each wind farm in relation to the other. In *Outstanding Landscape Protection Society Inc v Hastings District Council*, the court analysed the cumulative effects of adding two new wind farms to the local vicinity—effectually creating one large wind farm.[201] However, the court only considered the cumulative effects of wind farms in the local vicinity. The cumulative effects of wind farms across New Zealand were not taken into account in the court's decision. Without considering the cumulative effect of wind farms across New Zealand, the protection of migratory birds and their flight paths is arguably inadequate to meet New Zealand's obligations under international law.

Jennifer Dixon and Burrell Montz inquired as to what extent the applicant is required to consider the cumulative effects of a proposed activity.[202] They stated that it is arguable whether the legislation requires consideration of cumulative effects by the resource consent applicant.[203] In their opinion, "it is unrealistic to expect applicants to have the expertise or access to baseline information to evaluate fully the impacts of their proposals in the broader context of district or regional management."[204] They advocated that the burden of cumulative impact assessment should rest on the resource consent authority.[205] The local council is better

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[198] Resource Management Act 1991, sch 4, ss 2(b), 2(c) and 2(f).

[199] Ralph Powlesland, above n 155, at 36; and M Gontier, B Balfors and others "Biodiversity in Environmental Assessment" (2006) 26 Environmental Impact Assessment Review 268 at 278.

[200] See a further discussion of the precautionary principle below.

[201] *Outstanding Landscape Protection Society Inc v Hastings District Council* [2008] NZRMA 8 (EC), para 55.

[202] BE Montz and Jennifer Dixon "From Law to Practice: EIA in New Zealand" (1993) 13 Environmental Impact Assessment Review 89.

[203] Ibid.

[204] Ibid.

[205] Ibid.

situated to assess the cumulative effects of proposals within the parameters of the local plans and policies.[206] However, local councils may lack the skills needed to properly assess cumulative effects. Adequate assessment of cumulative effects involves complex scientific and technical modelling skills.[207] Local resource consent authorities may lack the funding needed to hire outside help in assessing cumulative effects. This is especially relevant for rural regional councils who may be in areas suitable for wind farms but who have little resources available for environmental impact assessment.

(a) Inclusion of precedent effects

In the resource consent process, councils need to consider the effects of the precedent they are creating by granting consent for construction of a wind farm in their area. Although, a consent authority is not strictly bound to follow previous consent decisions, the granting of a consent may influence how another application should be dealt with.[208] If consent is given for the construction of wind farms without adequate determination of the cumulative effects, other consent application decisions will be compromised because of the risk that the councils will use prior wind farm consent decisions as the baseline or authority for the standards that are required for such applications. For example, a checklist for the environmental impacts or cumulative impacts may be re-used for subsequent wind farm consent applications. The precedent effect increases the need for stringent and accurate assessment of cumulative effects in each application for wind farm consent.

3 Matters of National Importance

The Resource Management Act 1991 requires resource consent applications to comply with matters of national importance.[209] The RMA does not define what national significance means. However, section 142, of the RMA states that when deciding whether a matter is, or is part of, a proposal of national significance, the Minister for the Environment may have regard to any relevant factor. Section 142 provides examples of factors that the Minister may consider, including whether the matter:

a. has aroused widespread public concern or interest regarding its actual or likely effect on the environment (including the global environment);
b. involves or is likely to involve significant use of natural and physical resources;
c. affects or is likely to affect a structure, feature, place, or area of national significance;
d. affects or is likely to affect or is relevant to New Zealand's international obligations to the global environment;

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[206] Ibid, at 449.

[207] Cheryl Contant and Lyna Wiggins "Defining and Analyzing Cumulative Environmental Impacts" 11 Environ Impact Assess Rev 297 at 303-304.

[208] *Dye v Auckland Regional Council*, above n 194, at 220.

[209] Resource Management Act 1991, s 6.

e. results or is likely to result in or contribute to significant or irreversible changes to the environment (including the global environment);
f. involves or is likely to involve technology, processes, or methods that are new to New Zealand and that may affect its environment;
g. is or is likely to be significant in terms of section 8;
h. will assist the Crown in fulfilling its public health, welfare, security, or safety obligations or functions;
i. affects or is likely to affect more than one region or district; or
j. relates to a network utility operation that extends or is proposed to extend to more than one district or region.

The 2009 amendments to the RMA established the Environmental Protection Authority which streamlines the decision-making process for nationally significant proposals, such as public works projects. Two wind farm proposals are currently with the EPA for a decision. There are now three ways in which a matter may come to the Minister for his or her decision on whether to refer the matter to a board of inquiry or the Environment Court:

- The Minister may, at his or her own initiative, make a direction on a matter that has been lodged with the council;
- The council or the applicant may request that the Minister make a direction on a matter after it has been lodged with the council;
- The applicant may lodge the application directly with the Environmental Protection Authority (EPA), rather than the council. The EPA will recommend to the Minister whether the matter should be referred to a board of inquiry or the Environment Court.

Matters that may be nationally significant can now be lodged directly with the EPA, instead of the relevant council. The Minister then decides whether to refer the matter to a board of inquiry, the Environment Court, or send it to the relevant local authority. The Minister for the Environment can also call-in a consent application that has been initially lodged with a local authority to the EPA. The EPA functions like a consent authority in considering whether or not the application is complete. The EPA can request information from the applicant. The EPA must commission a report from the relevant local authority on the relevant planning framework and may commission reports from other persons on the matter. The EPA is expected to be operational in July 2011.

4 Climate Change Initiatives under the RMA

The Resource Management Act 1991 was amended in 2003 to give greater weight and consideration to the effects of climate change.[210] The amendment reflects national energy objectives that requires councils to consider national energy objectives in developing their plans so that proposals for renewable energy and energy efficiency do not encounter

[210] Resource Management Act 1991, s 7.

unnecessary barriers. The New Zealand government commented on the amendment bill in an official press release as follows:[211]

> This Bill provides national direction by ensuring that efficient use of energy, the benefits of renewable energy and the effects of climate change are flagged for the attention of those working with the RMA. For example, it requires local authorities, when considering proposed wind farming projects, to have particular regard to the benefits of lower greenhouse gas emissions offered by such an energy source. This does not confer automatic approval on renewable energy proposals, but it requires anyone exercising functions and powers under the RMA to take these matters into consideration.

In *Outstanding Protection Landscape Society Inc v Hastings District Council*, the court made specific reference to climate change and New Zealand's obligations under the Kyoto Protocol to determine whether to grant a wind farm consent application.[212] It further specified the benefits to be gained from the development of renewable energy[213] and identified renewable energy as a key policy goal for New Zealand through the National Energy Efficiency and Conservation Strategy ("NEECS"), under which New Zealand had only reached 5 per cent of its renewable energy target.[214]

As a result of the pressure to create alternative sources of energy and the promotion of renewable energy in regional and district plans, there is a risk that wind farm consent applications will be pushed through by local councils without an adequate assessment of environmental impacts. The risk to migratory birds is increased because of the lack of specific criteria within the Resource Management Act that obligates councils to include them in their decision-making.

5 Appeals

A wind farm consent application decision that was made by a local authority may be appealed to the Environment Court.[215] The right of appeal rests with the applicant or consent holder and any person who made a submission on the application or review of consent conditions.[216] The Minister of Conservation may appeal coastal permits for restricted activities in coastal areas.[217] The Environment Court is a court of limited jurisdiction.[218] It is confined to exercising the functions that have been conferred on it by Parliament.[219] Other

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[211] Hon Pete Hodgson "Resource Management (Energy and Climate Change) Amendment Bill 2003: First Reading" (press release, 5 August 2003).

[212] *Outstanding Landscape Protection Society Inc v Hastings District Council* [2008] NZRMA 8 (EC) at para 99-100.

[213] Ibid, at para 100.

[214] Ibid, at para 101.

[215] Resource Management Act 1991, s 120.

[216] Resource Management Act 1991, s 120(1).

[217] Ibid.

[218] Resource Management Act 1991, s 299; *Friends of Pakiri Beach v Auckland Regional Council* (2009) NZRMA at para 20.

[219] *Waatara Black v Auckland Regional Council* (1993) 1A ELRNZ 290.

than the Resource Management Act, the court has the jurisdiction to include consideration of a limited range of statutes, i.e., the Local Government Act.[220] The court is without jurisdiction to enforce international instruments of law and international obligations that protect migratory birds are only vaguely included in the RMA. The RMA focuses on protection of indigenous fauna by making the protection of indigenous fauna a matter of national importance.[221] It does not make reference to international obligations or include a reference to migratory wildlife in its entirety. The limited jurisdiction of the Environment Court makes it unlikely that the court will look outside the Resource Management Act to apply international obligations concerning the protection of migratory birds.

New Zealand has a growing body of wind farm case law that may provide a better understanding of how migratory birds are managed in the consent process. Wind farm consent cases do not begin at the Environment Court but are initiated with a local public authority in the area of the wind farm. Wind farm cases that are heard by the Environment Court are cases that have been appealed after a decision has been rendered by the local authority. The cases are appealed for specific reasons that may not focus on ecological effects which were assessed and documented by the local authority. Therefore, these cases may not mention migratory birds if they were not brought up as an issue at the local-authority stage in the consent application. This point exemplifies the need to have procedures in place that consider migratory birds at the initial stages of the consent process, i.e., with local authorities.

B Wildlife Act

The Wildlife Act of 1953 covers the protection of all wildlife within New Zealand, including migratory birds.[222] The level of protection is determined by which schedule the wildlife are in. The schedules are divided up as follows:

- *Absolutely protected wildlife*: all wildlife not listed in the schedules are absolutely protected;
- *Wildlife declared to be game*: wildlife in Schedule 1 can potentially be hunted seasonally, e.g., Canada goose, black swan, pukeko, mallard duck;
- *Partially protected wildlife*: wildlife listed in Schedule 2 that cause damage or injury to land or property on land (can be other animals such as stock), can be killed by the occupier of the land, subject to relevant regulations. It includes, for example, black shag, little shag, and little owl;
- *Wildlife able to be hunted*: wildlife in Schedule 3 may be permitted to be hunted at the discretion of the Minister, e.g., black swan, mutton bird, pukeko, little shag, South Island weka.
- *Wildlife not protected*: wildlife listed in Schedule 5 are not protected under the Act; and
- *Noxious animals*: animals listed in Schedule 6 are subject to the Wild Animal Control Act of 1977, i.e., deer, goat, opossum.

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[220] Ministry of Justice <www.courts.govt.nz>.
[221] Resource Management Act 1991, s 6(c).
[222] Wildlife Act of 1953.

The Governor-General has authority under the Act to establish wildlife sanctuaries, refuges, and management preserves to further the purpose of the Act.[223] These refuges and sanctuaries may be established in any area as long as they do not conflict with another land management Act. Wildlife within sanctuaries are absolutely protected.[224] Wildlife districts are used to manage wildlife and may be managed by a fish and game council.[225]

The Act restricts the taking of protected wildlife. It is unlawful, without permission, to hunt or kill any absolutely protected wildlife or partially protected wildlife or any game.[226] It is also unlawful to "buy, sell, or otherwise dispose of, or have in his or her possession any absolutely protected wildlife or partially protected wildlife or any game."[227] The restriction includes the skin, feathers, eggs, or any other portion of absolutely protected wildlife, partially protected wildlife, and any game.[228] The Act protects the nest of any absolutely protected or partially protected wildlife or game including any attempts to rob, disturb or destroy a nest.[229]

Prosecution of wind farm developers for migratory bird deaths under the Wildlife Act may be limited as monitoring for bird deaths at wind farms in New Zealand is infrequent and no case law has addressed the issue. Monitoring for bird deaths is usually only carried out for a limited period of time following construction, e.g., from one to three years. There is also the issue of discovering bird carcasses which may be difficult to find and may be removed by predators before a search is initiated. Wind farm developers may advocate for a defence in that they did not intend to kill birds. However, there is no case law to interpret how courts may perceive an action for violation of the Wildlife Act in the wind farm scenario.

C Policy Statements and Plans

The RMA delegates environmental decision making to local authorities, so that those who are most directly affected make the decisions.[230] Local authorities have the responsibility under the RMA to create plans that identify local issues and to formulate objectives, policies and rules to deal with local issues identified in those plans. When considering a wind farm consent application, local authorities must take into account any relevant provisions of a national policy statement, a regional policy statement, and local plans

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[223] Wildlife Act of 1953, Part I, s 9.
[224] Wildlife Act of 1953, Part I, s 9.
[225] Wildlife Act of 1953, Part I, s 9.
[226] Wildlife Act of 1953, Part V, s 63.
[227] Wildlife Act of 1953, Part V, s 63.
[228] Wildlife Act of 1953, Part V, s 63.
[229] Wildlife Act of 1953, Part V, s 63.
[230] Janet McLean "New Zealand's Resource Management Act 1991: Process with Purpose?" (1992) 7 Otago L Rev 538 at 539.

as well as any other matters it deems to be important.[231] Any proposed regional policy statements or local plans must be taken into account in the consent decision as well.[232]

1 National Policy Statements

The government provides direction to local authorities in the form of a variety of tools, including national policy statements and national environmental standards. National policy statements provide mandatory guidance for local authorities to adhere to the national government's interests in creation of their own regional and district plans.[233] The purpose of a national policy statement is to state policies concerning matters of national significance that are relevant to achieving the purpose of sustainable management of natural and physical resources.[234] The guidance given to local authorities from national policy statements is very limited as there are very few national policy statements. The structure of the policy statements demands that national policy statements be the guiding principles for the creation of regional and district plans.[235] Because of the lack of national policy statements – the National Coastal Policy Statement, being the sole existing statement[236] – the regional and district authorities have difficulty formulating local plans and policy statements that reflect national interests and international obligations. In a Ministry for the Environment report that analysed the status of national biodiversity protection, the creation of a national policy statement to address biodiversity protection was advocated.[237] This report shows that the creation of another national policy statement is an idea that has been advocated by others. The creation of a second national policy statement would likely be supported by others and is a realistic solution to ensure that international obligations to migratory birds are being considered at the local authority level in the wind farm consent process.

The Minister of Conservation has the authority to prepare new national policy statements and can draw on a number of environmental factors to do so. These factors include the actual or potential effects of the matter in issue; New Zealand's interests and obligations in maintaining or enhancing aspects of the national or global environment; anything affecting any structure, feature, place or area of national significance; anything which affects or potentially affects more than one region; any matter concerning effects of the introduction of new technology or processes affecting the environment; any development which because of its scale or nature may have significance to New Zealand; anything which

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[231] Resource Management Act 1991, s 104.
[232] Resource Management Act 1991, s 104.
[233] Resource Management Act 1991, s 55.
[234] Resource Management Act 1991, s 45(1).
[235] Stephen Horton and Ali Memon "SEA: The Uneven Development of the Environment" (1997) 17 Environ Impact Assess Rev 163 at 169.
[236] Ulrich Klein "Assessment of New Zealand's Environmental Planning Model" (2005) 9 New Zealand J Envtl L 287 at 301.
[237] Daniel Rutledge, Robbie Price and others *National Analysis of Biodiversity Protection: Methods and Summary Results* (Ministry for the Environment, Christchurch, 2004) at 6.

because of its uniqueness or irreversibility is significant to the environment; the need to identify practices, including measures relating to economic instruments; the need to implement the purposes of the Resource Management Act 1991; and any other matter related to the purpose of a national policy statement.[238] The creation of a national policy statement that provides wind energy guidelines to local authorities may be a solution for the wind industry.

(a) National Coastal Policy Statement

Offshore wind farms will invoke a separate decision making process because the New Zealand Coastal Policy Statement will apply; therefore, the Minister of Conservation may be responsible for the resource consent decision and not local authorities.[239] At present there are no offshore wind farms in New Zealand but this may be important for future wind farm developers, particularly with the potential impacts on sea birds covered under the Agreement on the Conservation of Albatrosses and Petrels.

2 District plans and policy statements

The RMA operates on an effects-based system in which the effects are limited by local authorities in their creation of mandatory District Plans.[240] District Plans permit any type of land use or activity so long as it does not have an adverse effect upon the biophysical environment.[241] Allowable effects are those that uphold the sustainable management of the land, air, and water.[242] Regional policy statements must be prepared for each region to identify policies and methods for the management of natural and physical resources within the region.[243] The regional policy statements are mainly used for general guidance in environmental decision-making as they do not contain specific rules.[244] The decentralized government places a lot of pressure on local planners and smaller districts lack the adequate funds to prepare quality district plans and policy statements.[245] Plans include environmental goals for the region, i.e., increased renewable energy sources. Local authorities look to their plans for determining whether the proposed wind farm fits with the region's goals.

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[238] Resource Management Act 1991, s 45(2).

[239] Mark Ashby *Winds Up: Planning the Future Now* (Connel Wagner, Wellington, 2004) at 25.

[240] Resource Management Act 1991, s 73.

[241] Harvey Perkins and David Thorns "A Decade On: Reflections on the Resource Management Act 1991 and the Practice of Urban Planning in New Zealand" (2001) 28 Environment and Planning 639 at 641.

[242] Ibid, at 641.

[243] Resource Management Act 1991, s 60.

[244] Raewyn Peart ``Landscape-level Biodiversity Protection Under New Zealand's Resource Management Act 1991" (The Biodiversity Extinction Crisis: An Australasian and Pacific Response Conference, Sydney, 2007) at 7.

[245] Ulrich Klein "Assessment of New Zealand's Environmental Planning Model" (2005) 9 New Zealand J Envtl L 287 at 301.

D The Precautionary Approach

The precautionary approach is highly relevant in a general sense to the wind industry and with regard to protection of migratory birds. It is a principle that is widely applied under both international law and in New Zealand courts. The precautionary approach is likely to arise in the assessment of environmental effects of wind farms because actual and potential effects on the environment may be scientifically uncertain. The precautionary approach generally affirms that a lack of scientific certainty of a particular effect's occurrence should not preclude acting in a cautious manner. It places the burden on the party proposing to carry out a potentially harmful activity to show that the activity will not be environmentally harmful.[246] The Bergen Declaration also recognised that the precautionary principle can shift the burden of proof to the party proposing to carry out the activity to show that its activity will not cause harm to the environment.[247]

The precautionary approach is recognised by the Environment Court in resource consent application decisions. The Environment Court defined when the precautionary approach may be applied:[248]

> The precautionary approach may be applied in making the judgment where, on the totality of the evidence, it finds that due to scientific uncertainty, exercise of the consent would be likely to cause serious or irreversible harm to the environment.

The court in *Motorimu* upheld application of the precautionary approach and stated that it would be appropriate for it to apply the precautionary approach, if it found evidence of scientific uncertainty about whether the activity will cause "serious or irreversible harm" to the environment.[249]

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[246] *Ngati Kahu Ki Whangaroa Co-Operative Society Ltd v Northland Regional Council* [2001] NZRMA 299, para 161.

[247] Ibid.

[248] *Ngati Kahu Ki Whangaroa Co-Operative Society Ltd v Northland Regional Council* [2001] NZRMA 299, para 161; and *McIntyre v Christchurch City Council* (1995) 2 ELRNZ 84.

[249] *Motorimu Wind Farm Ltd v Palmerston North City Council* [2008] W067/08 11 per Dwyer J.

V COMPARATIVE LAW: MIGRATORY BIRD PROTECTION ABROAD

Wind energy has become an important source of alternative energy around the world. Its success is largely to do with countries' commitments to reduce greenhouse gases under various climate change initiatives. Regulations for wind farm construction vary from country to country, but environmental impact assessment is the primary process through which consent is granted in most countries. The United States of America and the United Kingdom have different approaches to the protection of migratory birds in the wind farm consent process. These countries provide lessons for New Zealand on how to effectively regulate the wind industry while upholding international obligations for migratory bird protection.

A Migratory Bird Protection in the United States of America

Most wind farms in the USA are built on non-federal land, i.e. private land and state-owned land. As a result, wind energy regulation is largely left to state and local governments.[250] However, federal statutes such as the Endangered Species Act and the Migratory Bird Treaty Act still apply to any migratory bird deaths that occur as a result of wind farm construction and operation on either private or federal land. Wind farms on federal land are regulated by NEPA, in addition to the Endangered Species Act and Migratory Bird Treaty Act, among others. The United States Fish and Wildlife Service is the primary department responsible for wildlife protection. In March of 2007, FWS announced the establishment of the Wind Turbine Guidelines Advisory Committee. The Committee's objective is to provide advice to FWS on developing effective measures to avoid or minimize impacts to wildlife and their habitats related to land-based wind energy facilities. Industry's compliance with FWS guidelines for wildlife assessment at wind farms may help meet the obligations required under various environmental statutes, which are discussed below.[251]

1 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 ("MBTA") is one of the United States' first wildlife conservation laws that was implemented in response to the convention between the United States and Great Britain to protect birds migrating between Canada and the United States.[252] The MBTA also later reflected treaties with Mexico, Japan, and the Union of Soviet Socialist Republics.[253] The initial treaty was between the United States and Great Britain for the protection of birds migrating between Canada and the United States and was

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[250] Meredith Blaydes Lilley and Jeremy Firestone "Wind Power, Wildlife, and the Migratory Bird Treaty Act: A Way Forward" (2008) 38 Envtl L 1167 at 1176.

[251] United States Fish and Wildlife Service *Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines* (US Department of the Interior, 2003); and United States Fish and Wildlife Service *Wind Turbines Advisory Committee Recommendations* (United States Department of the Interior, 2008).

[252] Steven Margolin "Liability Under the Migratory Bird Treaty Act" (1978) 7 Ecology L Q 989.

[253] Migratory Bird Treaty Act s 703(a).

entitled "Convention for the Protection of Migratory Birds" of 16 August, 1916. It was known as the "cornerstone for migratory-bird conservation and protection" in the United States.[254] The court in *Missouri v Holland* stated "but for the treaty and the statute there soon might be no birds for any powers to deal with."[255] The MBTA was established as a conservation initiative to prevent the decimation of migratory birds that had occurred, largely as a result of hunting.[256] The MBTA is the most problematic wildlife protection law for the wind industry.

The preamble to the Convention sets forth the purposes of the Convention and specifically mentions the value of birds as food, controllers of insect damage to crops, forests, and public pasturage. It also expresses the necessity of providing protection to birds during migrations and nesting periods. By the 1970s, the MBTA purpose was expanded in the treaties with the USSR and Japan to include protection of birds as a "natural resource of great scientific, economic, aesthetic, cultural, educational, recreational, and ecological value."[257] The treaty is powerful in scope as it applies to individuals, entities such as corporations, and state-and-federal governments across the entire country. The scope of the treaty is especially significant to the application of migratory birds which occur across multiple jurisdictions. State legislation protecting migratory birds is much less effective because as soon as the birds leave a particular state, they are no longer protected under that state's law. The statute makes taking, killing, or possessing migratory birds unlawful and specifically states:[258]

> It shall be unlawful at any time, by any means or manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof, included in the terms of the conventions.

The exceptions to the treaty are limited to any applicable government regulations and the particular species of migratory birds it protects. The MBTA does not deprive the Secretary of the Interior of its regulatory authority. The Secretary of the Interior has retained the authority to create regulations allowing hunting, etc., with presidential approval and in regard to the "distribution, abundance, economic value, breeding habits, and times and line of

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[254] Craig A Faanes "Birders and US Federal Laws" (1992) 24 Birding 299.

[255] *Missouri v Holland* (1920) 252 US 416 at 445.

[256] Faanes, above n 254, at 1.

[257] The Convention between the Government of the United States of America and the Union of Soviet Socialist Republics Concerning the Conservation of Migratory Birds and their Environment (23 May 1972), and The Convention between the Government of the United States of America and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction, and their Environment (4 March 1972).

[258] Migratory Bird Treaty Act 1918, 16 USC s 703(a).

migratory flight of such birds, to determine when, to what extent, if at all, and by what means, it is compatible with the terms of the conventions to allow hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or expert of any such bird, or any part, nest, or egg thereof."[259] The official agent of the Secretary of the Interior is the United States Fish and Wildlife Service ("FWS"), which has delegated authority to manage the MBTA. The Fish and Wildlife Service grants permits for activities that would normally be unlawful under the MBTA, such as scientific research, hunting, and falconry. Of most importance to the wind industry, the Fish and Wildlife Service does not provide permits for incidental take or its equivalent. As a result, wind farms cannot legally be placed in any area that may result in a single death to a migratory bird (i.e., take), or the developer faces risk of criminal liability under the MBTA, if a take occurs.

The MBTA protects 83 percent (868 species) of native birds in the United States.[260] A further nine percent (75 species or subspecies) are protected in all or a portion of their range by the Endangered Species Act ("ESA"), and five percent are protected by both the MBTA and the Endangered Species Act. There are a further 175 migratory bird species that are not protected by either the MBTA or the ESA that are mainly introduced species or island species.[261] The unauthorised killing of any one of those species constitutes a violation of the MBTA.

Central to the application of the MBTA to wind energy developers is the unsolved controversy about interpreting what the intent requirement of the Act is. The main issue is whether the Act applies to unintentional actions that result in a "take" of a protected migratory bird. The general consensus of the courts is that the Act is a strict liability statute that does not require scienter.[262] Strict liability means that one does not have to knowingly, or intentionally violate a provision of the Act to be convicted of a criminal misdemeanour.

Any violator of the Act—whether a person, association, partnership, or corporation—is subject to penalty.[263] The only means of enforcing MBTA compliance is criminal. There is no civil tort liability and no means of filing a civil lawsuit for any violation. Felony convictions apply to those who "knowingly" take a migratory bird for "commercial purposes" (i.e., for sale) without a permit. Whereas, those who—without regard to proof of knowledge—take or attempt to take a migratory bird are subject to a misdemeanour conviction.[264] The Act has created confusion to those who are at risk of incidentally causing migratory bird deaths. Courts have routinely interpreted what constitutes a prosecutable activity under the Act in many different ways.[265]

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[259] Ibid.
[260] Faanes above n 254, at 2.
[261] Ibid, at 2.
[262] *United States v FMC Corporation* (1978) 572 F 2d 902 (2d Cir).
[263] Migratory Bird Treaty Act 1918, s 707.
[264] Ibid, at s 704.
[265] GC Coggins "Federal Wildlife Law Achieves Adolescence: Developers in the 1970s" (1978) 3 Duke L J 753 at 761.

The case law is largely centred on the application of the MBTA to incidental take. Take is defined as: to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect. The case law surrounding the application of the MBTA to incidental take can be categorised as (1) cases determining whether the MBTA actually applies to incidental take, and (2) cases determining whether the MBTA effectively regulates incidental take resulting from habitat modification or destruction.[266] There has not yet been a wind farm case in federal court for violation of the MBTA. However, courts have decided cases on the application of the MBTA in other circumstances ranging from bird deaths caused by toxic water to power lines. There is a split of opinion amongst federal courts on the application of the MBTA's lack of intent requirement to incidental take. This split opinion provides uncertainty to the wind industry as some courts have upheld that it is not necessary to knowingly or purposefully kill a migratory bird to be in breach of the MBTA.[267] "These decisions suggest that the MBTA provides a means of prosecuting degraders of the environment in situations where harm to birds is not intended but accompanies the degradation."[268]

(a) Standing and likelihood of prosecution

By not allowing permits for the incidental take of migratory birds and by criminalising the unauthorised taking of migratory birds, the MBTA is problematic for wind energy developers whose wind turbines and associated infrastructure may cause migratory bird deaths. Any suit for violation of the MBTA can only be brought by the federal government. A private individual or corporation cannot bring suit under the MBTA. However, citizens can invoke the Administrative Procedure Act to sue a federal agency for violating the MBTA. The Executive Order further clarified that federal agencies can be liable under the MBTA. The Fish and Wildlife Service ("FWS") is the agency that has the authority and discretion to prosecute any violations of the MBTA. The FWS is much more likely to prosecute when entities fail to implement measures to prevent reasonably foreseeable incidental take of migratory birds.[269] However, the decision to prosecute offenders lies solely with the FWS.

The unit of prosecution varies across cases. In *Corbin Farm Service,* the court applied a limited liability scope and found defendants guilty for only one bird death despite the fact that over 1,000 birds were killed. The rule applied by the court declared that a single action that results in the deaths of multiple birds is only a single violation of the MBTA.[270]

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[266] Lilley, above n 269, at 1181.

[267] *United States v Corbin Farm Service* (1978) 444 F Supp 510; *United States v FMC Corporation* (1978) 572 F 2d 902; and *United States v Union Texas Petroleum* (1973) No 73-CR-127 (D Colo).

[268] Margolin, above n 252, at 990.

[269] Lilley, above n 250, at 1197.

[270] *United States v Corbin Farm Service* (1978) 444 F Supp 510 at 531.

Other cases have applied different rules. Some cases have treated all birds killed on one day as one count, and charged multiple counts when violations occur on more than one day.[271] In *FMC*, counts were charged by species, i.e., one count for the deaths of 26 geese, another count for ducks, etc. The defendant argued that a single course of conduct can result in only one offense under the Act, but the court disagreed and he was convicted of multiple offenses. In other cases, each bird death was a unit of prosecution, e.g., in *United States v Equity Corporation*, the defendant was charged with 14 counts for the death of 14 ducks arising from the failure to build oil slumps in such a way to keep ducks out (C.r. 75-51 (D. Utah, Dec 8 1975) see also United States v Stuarco Oil Co, 73-CR-129 (D. Colo., Aug 17 1973) (defendant was charged with 23 counts for the death of each 23 birds)). However, many of these cases did not raise multiplicity of counts. Therefore, the wind industry is potentially liable for each migratory bird death.

(b) Habitat protection

The MBTA may provide habitat protection although the Endangered Species Act does a much better job of it. There have been a few cases invoking the MBTA to protect the habitat of migratory birds. In *Mahler v United States Forest Service*, the court held that plaintiff's argument that logging would indirectly take migratory birds by destroying their habitat and directly take migratory birds during nesting season would not produce takings of migratory birds within the purview of the MBTA.[272] The court cited *Seattle Audubon Society v Evans* for support and stated that the "MBTA and regulations promulgated under it make no mention of habitat modification or destruction."[273] The court also held that "habitat destruction in the form of logging causes harm under the Endangered Species Act but does not 'take' birds within the meaning of the MBTA."[274] Therefore, the wind industry may be spared from liability for bird deaths that occur while land is cleared or prepared for turbines.

2 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act ("BGEPA") may also affect the location of a wind farm. The BGEPA functions similarly to the MBTA but it is limited to raptors, specifically bald and golden eagles. The Act prohibits taking, including wounding or killing, any bald eagle or any golden eagle, alive or dead, or any part, nest, or egg.[275] Failure to comply with the Act may result in both civil and criminal penalties. Each taking is a separate violation of the Act.[276] The Secretary of the Fish and Wildlife Service ("FWS") has authority to remit or mitigate any fines. The gravity of the offense as well as the good faith of the

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[271] *Rogers v United States* (1966) 367 F 2d 998 (8th Circ).
[272] *Mahler v United States Forest Service* (1996) 927 F Supp 1559 (SD Ind).
[273] *Mahler*, above n 272, at 1574 (citing *Seattle Audubon Society v Evans* (1991) 952 F 2d 302)).
[274] Ibid, at 1574.
[275] Bald and Golden Eagle Protection Act (2000) 16 USC s 668.
[276] Ibid, at s 668(b).

person charged may be considered by the Secretary in determining the amount of the penalty.[277]

The MBTA and the BGEPA has resulted in at least one notable effect on US wind power development. The Center for Biological Diversity filed a 2004 complaint filed in state court against the Altamont Pass Wind Resource Area in California. The complaint alleged that wind turbines had killed around 1,000 raptors over the last 20 years.[278] However, the case was brought under novel theories, such as unfair business practices — not under the MBTA or BGEPA – and was later dismissed by Alameda County Superior Court for lack of standing. The dismissal was upheld on appeal.[279] This highlights the difficulty citizen's face by not being permitted to bring suit against wind farm developers.

The case was not successful but it did bring attention to the issue and Alameda County approved a six-month, $600,000 plan to investigate and monitor effect[s] of the Altamont wind farm on avian mortality.[280] Alameda County created a "Wind Power Working Group" consisting of representatives of California's Department of Fish and Game, the United States Fish and Wildlife Service, the applicants, property owners, Center for Biological Diversity, and other objectors and interested parties. The Wind Power Working Group's purpose was to assist the County in addressing operational issues and identifying appropriate measures to reduce avian mortality.[281] Alameda County received input and recommendations from this working group and adopted a resolution to ensure that the existing wind energy facilities are managed in a way as to aggressively respond to the greatest extent feasible to the ongoing but unintentional death of various species of raptors and other birds in the Altamont Pass area, while also maintaining sustainable levels of wind energy.[282] Conditions were imposed and included immediate formation of a scientific review committee with balanced, independent technical experts appointed by Alameda County with expertise in avian issues and wind farms. Financing of the committee was to be by wind farm companies. An intensive monitoring program was to begin immediately and be funded by the wind farm companies was also required. Alameda County also required the wind farm companies to review new wind technology and study the layout of the wind farm as a whole and to replace 100 per cent of the wind farms over thirteen years. The wind farm companies were also required to review offsite mitigation measures to encourage reductions in avian mortality. Additionally, it required the most dangerous 2 per cent of the wind turbines to be shut down immediately and required winter shutdowns of two months (escalating to 3 ½ months) for every turbine. The

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[277] Bald and Golden Eagle Protection Act (enacted 1940) 16 USC s 668.

[278] *Center for Biological Diversity Inc v FPL Group Inc* (2008) 166 Cal App 4th 1349 (Court of Appeals of California, First District).

[279] Ibid.

[280] Adam M Dinnell and Adam J Russ "The Legal Hurdles to Developing Wind Power as an Alternative Energy Source in the United States: Creative and Comparative Solutions" (2006) 27 Northwestern J Intl Law & Bus 535 at 558.

[281] *Center for Biological Diversity Inc v FPL Group Inc* (2008) 166 Cal App 4th 1349 at 1357.

[282] Ibid, at 1357.

goal was to reduce raptor fatalities by 50 per cent. This scenario highlights the importance of wind farm placement and gives the wind industry guidance on how to mitigate effects on birds post-construction, if they do occur.

3 Endangered Species Act

The Endangered Species Act ("ESA") has high potential to impact the wind industry from construction through operation. The ESA is a comprehensive statute that protects species according to their conservation status, i.e., threatened or endangered, and the habitat they depend on. The ESA seeks to ensure that all federal departments and agencies utilize their authorities to conserve endangered and threatened species, as well as their ecosystems.[283] It is administered by the Fish and Wildlife Service, which is part of the Department of Interior, and requires the Secretary of the Interior to take action to avoid jeopardizing the continued existence of species. Regulations issued by the FWS define "jeopardize the continued existence of" a species as an action "that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.[284] The FWS defines jeopardy by looking to whether a specific action pushes a species appreciably closer to a point of greater danger, without regard for how great that danger is; it is the appreciable worsening of a species' plight that violates the ESA, not the absolute danger that the species faces.[285] The Secretary must conserve threatened and endangered species until they are no longer threatened or endangered with highest priority given to endangered species. In general, the ESA commands all government agencies to conserve listed species, and conservation is defined very broadly.[286] Section 1538 prohibits taking of a listed species by anyone, whether the government is involved or not. Therefore, the wind industry will be required to meet ESA obligations.

In *TVA v. Hill*, a landmark case for the ESA where the court halted construction of a dam in the interest of protecting an endangered species, the court held that: [287]

> All federal agencies shall, in consultation with and with the Secretary of the Interior utilize their authorities in furtherance of the purposes of this chapter by taking such action necessary to insure that actions authorised, funded, or carried out by them do not jeopardize the continued existence of such endangered and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary of Interior, after consultation as appropriate with the affected states to be critical.

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[283] Endangered Species Act of 1973, 16 USC s 1531(c)(1).
[284] Endangered Species Act s 7 Regulations (1989) 50 CFR, s 402.14(g).
[285] Eric T Freyfogle and Dale D Goble *Wildlife Law: A Primer* (Island Press, Washington, DC, 2009) at 258.
[286] Endangered Species Act of 1973, 16 USC s1531(5).
[287] *TVA v Hill* (1978) 437 US 153 (USSC); and Endangered Species Act of 1973, s 7.

All federal agencies must insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of an endangered species or result in the destruction or modification of habitat that the species depends upon. The ESA bars jeopardizing a listed species through its prohibition against "taking." The term "take" as defined under the ESA is very similar to the definition under the MBTA, yet the ESA adds the terms "harass" and "harm" to the definition.[288] By including harm in the definition of take, liability under the ESA may extend to habitat modification or degradation. Regulations define "harm" in the definition of "take" as:[289]

> [A]n act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioural patterns, including breeding, feeding, or sheltering.

Both definitions of "take" apply to wind farm development which may result in harm to threatened or endangered species and destruction or modification of their habitat. The ESA is a comprehensive statute, which is apparent from its definition of "conserve" that means all methods and procedures must be used to the point which is necessary to bring any endangered species or threatened species to the point where the ESA is no longer needed. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking. When a species is listed, the Secretary must also designate critical habitat that the species depends upon. Federal agencies must avoid "destruction or adverse modification" of critical habitat through their direct actions or any actions which they approve or fund. Recovery plans for listed species must be developed by the Secretary to ensure for the conservation and survival of listed species.

Fortunately for wind farm developers, the ESA includes a provision that may allow for wind farms in areas that would otherwise be prohibited because of harm to threatened or endangered species. Proposed actions that may have adverse impacts on listed species may be permitted in two ways. The permit process is divided between federal actions and non-federal actions. Under section 7 of the ESA, federal agencies are required to consult with the Secretary about proposed actions that might affect a listed species. Science plays an important role in the consultation process because the Secretary is required to use the best scientific and commercial data available to determine if a listed species might be in the area of a proposed agency action.[290] The FWS will prepare a written statement, known as the biological opinion, analysing whether the proposed agency action is likely to jeopardize the

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[288] Victoria Sutton and Nicole Tomich "Harnessing Wind is Not (by Nature) Environmentally Friendly" (2005) 22 Pace Envtl L Rev 91 at 113.

[289] Endangered Species Act s 7 Regulations (2004) 50 CFR s 17.3.

[290] Evelyn T Vega (ed) *Endangered Species Act Update and Impact* (Nova Science Publishers, 2008) at 42.

continued existence of a listed species or destroy or adversely modify critical habitat. If the biological opinion concludes that the agency action is not likely to jeopardise the species or that it can be modified to avoid jeopardy, FWS may issue a permit that excuses the taking of listed species that is incidental to the otherwise lawful activities. If the Secretary finds that an action would jeopardize a listed species or destroy or adversely modify critical habitat, the Secretary must suggest reasonable and prudent alternatives that would avoid these harms, i.e., modification of wind farm layout or an alternative location. If the Secretary concludes that jeopardy cannot be avoided, the agency may seek an exemption for the action from the Endangered Species Committee. Exemptions to the ESA are granted by a seven member committee created by Congress, which is known as the "God Squad" because of its power to decide which species would live and which would die. The committee consists of six cabinet-level officials and the governor of the state in which the proposed activity is to take place. If five of the seven members of the committee agree, the committee can issue an exemption upon finding that: there are no reasonable and prudent alternatives to the action; the action is of regional or national significance; and the benefits of the action clearly outweigh the benefits of alternative courses of action consistent with conserving the listed species or its critical habitat.[291] The committee is required to impose reasonable mitigation measures to minimise the adverse effects on the listed species. The exemption process is rarely invoked. There have only been six instances throughout its history where the exemption process was initiated and only one has been granted.[292]

For non-federal actions that may take a listed species, the Secretary may issue permits to allow "incidental take" of species for otherwise lawful actions under section 10. The applicant for an incidental take permit must submit a habitat conservation plan that shows the likely impact, the steps to minimise and mitigate the impact, the funding for the mitigation, the alternatives that were considered and rejected, and any other measures the Secretary may require.

Enforcement of the ESA allows for criminal and civil penalties. Citizens are allowed to file suit to enforce certain aspects of the ESA. The citizen suit provisions have been a driving force in the ESA's history and have often been used to force reluctant federal agencies to provide for species conservation.[293] Therefore, the wind industry must carefully consider whether a protected species will be harmed by a wind farm or it will face criminal or civil liability.

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[291] Freyfogle and Goble, above n 285, at 275.
[292] Vega (ed), above n 290, at 43.
[293] Ibid, at 36.

4 National Environmental Policy Act

The National Environmental Policy Act of 1969 ("NEPA") will affect any wind power development project that requires a federal action which significantly affects the quality of the human environment.[294] The purpose of NEPA is to create a national policy that promotes better harmony between mankind and the environment, particularly in regards to environmental damage caused by society.[295] This broad applicability makes NEPA an important piece of legislation that must be considered by anyone proposing a wind farm project.[296]

NEPA requires that federal agencies assess the environmental consequences of proposed governmental actions and the available alternatives. A detailed report must be prepared analysing the environmental effects.[297] NEPA's focus is on impacts to whole ecosystems, which is in contrast to the MBTA and the ESA that focus on impacts to specific species.

5 Summary of the US System

The United States system provides a high-level of protection to migratory birds and their habitat from wind farm developments. The Migratory Bird Treaty Act has the potential to be a disabling statute, i.e., prevent the growth of wind industry, but in practice that has not been the case. The statute brings migratory birds to the forefront of impact assessments for wind farms. It gives teeth to the wildlife police – the Fish and Wildlife Service – to step-in and ensure that harm is not occurring to protected migratory birds. FWS' authority extends to the ability to shut-down and bring criminal prosecution against offenders. Additionally, if FWS fails to bring a suit against a wind farm that is causing harm to endangered migratory birds, citizens are allowed to bring a lawsuit to enforce the Endangered Species Act. This level of authority provides tremendous incentives for the wind industry to follow the FWS' guidelines and advice in relation to migratory bird protection.

There has also been a significant contribution of case law and scientific research into migratory bird protection to guide the wind industry. The federal government has provided strong direction to the Fish and Wildlife Service through its establishment of a technical committee to advise on matters related to migratory bird protection. The Fish and Wildlife

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[294] National Environmental Policy Act of 1969, 42 USC ss 4321-47.
[295] Ibid, s 4321.
[296] Dinnell and Russ, above n 280, at 562.
[297] NEPA, s 4332.

Service provides independent review of wind farm decisions and retains final decision-making on whether the wind farm will cause harm to migratory birds.

B Migratory Bird Protection in the United Kingdom

The United Kingdom participates in the international environmental treaties that affect migratory birds such as the Convention on Biological Diversity, Ramsar Convention, and the Bonn Convention. Additional migratory bird protection is provided nationally by the United Kingdom's membership with the Council of Europe—the oldest international organisation working towards European integration—and the European Union, which is smaller with only 27 member states who share common policies and binding laws. EIA procedures are also an important source of protection to migratory birds within these frameworks.

1 Domestic Legislation

The United Kingdom has adopted a framework to promote the development of the wind industry. The Town and Country Planning Act 1990 provides that planning permission is required for any development on land.[298] The wider environmental and economic benefits of all proposals for renewable energy projects, whatever their scale, are material considerations that should be given significant weight in determining whether proposals should be granted planning permission. Environmental impact assessments are required for wind farms, if they are considered likely to have significant effects on the environment.[299]

The government has designated suitable areas for wind farms, particularly offshore areas.[300] For example, in Wales, the government identified favoured locations for large onshore wind developments and provided maps of the areas where onshore wind developments should be concentrated. Scotland has required local development plans to explicitly define broad areas suitable for wind development and to identify specific sites. A comprehensive legal framework governs the exploration of constructing and operating wind farms. Strategic environmental impact assessment is used by the UK government to obtain licenses for wind farm development. The strategic environmental assessment ("SEA") identifies likely and potential impacts on local wildlife and their habitats. It also considers economic and environmental benefits of generating energy using renewable resources into account in the decision-making process. To obtain a license, developers must produce an environmental statement which includes an assessment of the impact of the project on the natural environment as well as protected areas. It must also include the cumulative impact of

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[298] Town and Country Planning Act 1990, s 57(1).

[299] Town and Country Planning Regulations 1999, sch 2.

[300] Karen Scott "Tilting at Offshore Windmills: Regulating Wind Farm Development within the Renewable Energy Zone" (2006) 18 Journal of Envtl L 89 at 66.

the project when considered against other developments in the region.[301] Anyone conducting an environmental impact assessment is required to consult not only the local authority, but a list of statutory consultees, for example, Natural England who manage biodiversity. The local planning authority makes the decision on the basis of the EIA and other planning policy documents. However, major proposals are usually called-in for decision by the Secretary of the State who appoints an inspector and holds a public local inquiry into the proposal. The inspector produces a report with recommendations and submits it to the relevant Minister. The Minister then decides using the report and an economic impact report submitted by the applicant and having regard to government policies, whether the project should go ahead.[302]

2 Summary of UK Approach

The United Kingdom approach to wind farm consent is very prescriptive in the way that it allocates particular areas for wind farms. The central government has provided strong direction to local government by requiring wind farms to be located within these pre-approved sites. However, these pre-approved sites may not necessarily be outside of migratory bird flight paths but they are outside of protected bird habitat. Central government has the authority to "call-in" wind farm applications and it usually exercises that authority; therefore, wind farm decisions are made at the national-level. Consultation requirements are high with the applicant being required to consult a statutory list of parties that may be affected, including the government agency responsible for biodiversity. The strong direction from central government gives assurance to the wind industry that wind developments within the defined areas are less likely to result in harm to wildlife with the appropriate environmental assessment. The prescriptive approach provides efficient assessments of environmental effects because of the limited areas needing assessments. Cumulative effects from other wind farms on migratory birds will be more likely to be considered because the central government is making the decisions for each wind farm and is aware of the presence of wind farms within the prescribed areas.

C Council of Europe

The Convention on the Conservation of European Wildlife and Natural Habitats is the primary source of protection for migratory birds within the Council of Europe framework. It was signed in Bern, Switzerland in 1979 and is commonly known as the Bern Convention. The Convention entered into force in 1982 and its development proceeded in parallel with the Wild Birds Directive and the Convention on Migratory Species, which were negotiated

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[301] Ibid, at 97.

[302] Georgina Crowhurst and Simone Davidson "Planning: a Roadblock to Renewable Energy in the UK" (2008) 181 Enviro L R 10.

around the same time.[303] The main aim of the Bern Convention is to promote cooperation among governments on the protection of wild species of flora and fauna and their habitats.[304] The treaty recognises that wild flora and fauna constitute a natural heritage of aesthetic, scientific, cultural, recreational, economic and intrinsic value that needs to be preserved and handed on to future generations.[305] It also recognises that the conservation of wild flora and fauna should be taken into consideration by governments in their national goals and programmes, and that international cooperation should be established, in particular, to protect migratory species.[306] Each member develops their own respective laws and regulations and policies on wildlife and habitat protection to meet the Convention's objectives.[307] The Convention's commitments are generally described in broad terms.

The Convention states that the conservation of natural habitats is vital to the protection and conservation of wild flora and fauna.[308] In Article 2, the parties agree to maintain population levels or adapt levels to correspond to ecological, scientific, and cultural requirements while taking into account economic and recreational requirements as well as the need of other species at risk. Generally, the parties must take steps to promote national policies for wildlife conservation by taking appropriate and necessary legislative and administrative measures.[309] In Article 4, the parties undertake to give special attention to the protection of areas that are of importance to the migratory species listed in Appendices II and III and which are appropriately situated in relation to migration routes as well as wintering, staging, feeding, breeding, and moulting areas. The Convention prohibits all forms of deliberate capture or killing of species listed in Appendix II. It also prohibits deliberate damage or destruction of breeding or resting sites, destruction or taking of eggs, deliberate disturbance, particularly during breeding season, insofar as disturbance would be significant in relation to the objectives of the Convention. Governments must protect species listed in the Convention as flora, fauna, or vulnerable species. Species listed as vulnerable require governments to carefully monitor them and may require adoption of specific regulations such as closed hunting seasons.

The institutional framework of the Bern Convention includes the Standing Committee. The Standing Committee consists of the representatives of the Parties, each of which is entitled to one vote. The Standing Committee has general responsibility for monitoring the

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[303] Robert Boardman *The International Politics of Bird Conservation: Biodiversity, Regionalism and Global Governance* (Edward Elgar Publishing, 2006) at 102.

[304] Convention on the Conservation of European Wildlife and Natural Habitats (entered into force on 1 June 1982).

[305] Ibid.

[306] Ibid.

[307] Ibid, art 3.

[308] Ibid.

[309] Ibid, art 3 and 4.

application of the Convention.[310] Of particular interest in assessing the role of the Standing Committee is its authority to make recommendations to the Parties regarding implementation of the Convention and to make proposals for improving the effectiveness of the Convention.

In addition, non-governmental organisations ("NGOs") play a key role in monitoring the application of the Convention. The Standing Committee that operates under the Convention acts as a political forum for publicizing conservation issues, highlighting achievements as well as continuing problems in particular countries, and as a source of recommendations to governments for national actions.[311] NGOs and intergovernmental organisations, both national and international, can obtain observer status at Committee meetings which has become increasingly significant as cooperation between the Council of Europe and bird conservation organisations has grown. Reports by NGOs have been used as consideration for species conservation plan under the Convention.[312]

Of specific importance to the wind industry, is the Committee's willingness to address specific development projects that are potentially threatening to bird populations.[313] For example, delegates from the Committee criticized a project to build two wind farms in an ecologically significant area where the environmental impact assessment identified possible risks to eagles and other bird species in Smola, Norway.[314] The Royal Society for the Protection of Birds took the case to the Berne Convention but the decision to proceed was upheld. The Standing Committee has also adopted specific guidelines for the conservation of particular species.[315] And, the Committee has the power to make recommendations to Parties for further action and are made viewable to the public. The recommendations give the Convention's provisions substance and may evolve as customary international law.[316] They also provide NGOs with the basis for initiating or undertaking further action against non-complying Parties.

In a report carried out by the Bern Convention, cumulative effects were given a high level of importance in the environmental impact assessment process. Cumulative effects are an important consideration in the approval process for a wind farm because of the nature of migratory birds which cover vast areas and may pass multiple wind farms. By passing through multiple wind farms areas, the risk of collision, increased habitat loss or

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[310] Bern Convention, art 14; and S Jen "The convention on the conservation of European wildlife and natural habitats (Bern, 1979): Procedures of application in practice" (1999) Journal of International Wildlife Law & Policy 2 at 227.

[311] Boardman, above n 303, at 104.

[312] Ibid, at 104.

[313] Ibid, at 104.

[314] Ibid, at 105.

[315] Jen, above n 310, at 230.

[316] Ibid, at 229.

displacement, and the resulting effects on the population increases. The Convention's report stated, on cumulative effects:[317]

> 7.20 This is an essential, but often inadequately covered, component of wind farm EIA. Cumulative effects may arise from multiple wind farm proposals or from the wind farm proposal and other types of development. A cumulative impact assessment should include all projects that have been developed, or are planned for the area surrounding the proposed wind farm site. Using collision mortality for illustration, effects may be *additive* – increasing overall mortality; or *compensatory* – replacing other causes of mortality; or *synergistic* – increasing mortality over and above the separate, individual developments; or may increase to a critical *threshold level*. Sub-lethal effects (such as loss of body condition, from avoidance behavior or loss of habitat) are more insidious than direct mortality and there may be a delay before any population-level impact is detected.
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> 7.21 The key questions are: *At what point do accumulated habitat loss (including effective habitat exclusion due to disturbance) and collision mortality impact on population size and distribution?*
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> 7.22 These are not straightforward questions to address and may be most effectively considered at a strategic level, hence the need for Strategic Environmental Assessment (SEA). Strategic Environmental Assessment requires both sector -level and cross-sector assessment of cumulative impacts (SEA Directive). National and international government-led programmes are likely to be the only satisfactory way to deliver strategic overviews, including fundamental monitoring and the necessary research.

The report highlights the need to evaluate the effects of all wind farms and other obstacles to birds together on both a national and international level. The only way to adequately assess cumulative effects is through a national or international government-led programme.

The Council of Europe implemented the Pan-European Biological and Landscape Diversity Strategy to strengthen the application of the Bern Convention in relation to the Convention on Biological Diversity.[318] The Pan-European Biological and Landscape Diversity Strategy ("PEBLDS") addresses all biological and landscape initiatives under one European approach. It promotes the integration of biological and landscape diversity considerations into social and economic sectors.[319] The Strategy introduces a coordinating and unifying framework for strengthening and building on existing initiatives. It does not aim

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[317] R Langston *Windfarms and Birds: An Analysis of the Effects of Windfarms on Birds, and Guidance on Environmental Assessment Criteria and Site Selection Issues* (BirdLife, Convention on the Conservation of European Wildlife and Natural Habitats, Strasbourg, 2002), ss 7.20-7.22.

[318] See Chapter III for a discussion of the Convention on Biological Diversity.

[319] Pan-European Biological and Landscape Diversity Strategy 1994, Executive Summary.

to introduce new legislation or programmes, it only intends to fill gaps.[320] The legal basis for implementing action under the Strategy is found in existing and widely accepted international agreements and treaties such as the Convention on Biological Diversity, Bern Convention, Bonn Convention, Ramsar Convention, and the Habitats and Birds Directives of the European Union.[321] The focus is on the energy and industry sector to integrate ecological considerations into general policies within the industry.[322] The Strategy included ten strategic principles which may have a general impact on wind farm construction. The Principle of Avoidance requires environmental impact assessment of projects that are likely to have significant adverse effects on biological and landscape diversity, with a view to avoiding such effects, and, where appropriate, to allow for public participation in such procedures.[323] The Precautionary Principle is also included to introduce appropriate procedures to avoid or minimise potentially adverse impacts of activities on biological and landscape diversity when the causal link between those activities and the impact has not been fully confirmed.[324] Of particular interest to wind farm developers, is the Principle of Translocation which holds that activities that are exceptionally harmful to biological and landscape diversity, and cannot be avoided, where possible or practicable, must be relocated to areas where they will cause less impact.[325]

1 Summary

The Council of Europe framework is strongly focused on the effects of development on birds and mitigating those effects. Under the Bern Convention, parties agree to give special attention to areas that are important to migratory birds, such as migration routes and stopover sites, and to protect certain migratory birds that are listed in the Convention. The Convention has machinery in place to monitor the parties and make recommendations regarding implementation of the Convention. Non-governmental organisations have a strong partnership with the Convention and play a key role in monitoring the application of the Convention. Delegates do not hesitate to confront states over specific projects that are potentially threatening to bird populations. Environmental impact assessments under the Convention give a high-level of importance to cumulative effects, including the risk of passing through areas with multiple wind farms and the effects on bird populations. In addition to the precautionary principle, wind farm developers must consider the Pan-European

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[320] Ibid.
[321] Pan-European Biological and Landscape Diversity Strategy, Executive Summary at 10.
[322] Pan-European Biological and Landscape Diversity Strategy, s 2.3.
[323] Pan-European Biological and Landscape Diversity Strategy, s 2.4.
[324] Pan-European Biological and Landscape Diversity Strategy, s 2.4.
[325] Pan-European Biological and Landscape Diversity Strategy, s 2.4.

Biological and Landscape Diversity Strategy, which incorporates ten strategic principles that the wind industry must abide by. These strategic principles ensure that wind developments avoid significant adverse effects or, in exceptional cases, are relocated to areas where they will cause less impact.

D European Union

The main institutions of the European Union are the Council of European Union, the European Commission, the European Parliament, and the European Court of Justice. The Council consists of a representative member of each Member State and adopts regulations and directives. The Commission has one person from each member state, although Commissioners act in the community's interest and not on behalf of their individual states.[326] The Parliament has 626 members who are elected by the member states according to political affiliation. The Parliament formulates EC law and the community budget, and monitors the activities of the European Commission and Council. Once a regulation or directive is adopted, the European Court of Justice ensures correct interpretation and application of its provisions. The Court has jurisdiction to settle disputes within the community and to award damages.

Unlike in the Council of Europe, European Union ("EU") decisions are intended to be enforced by national governments and through the EU machinery itself.[327] European environmental and conservation law has been greatly influenced by the cases deliberated on by the European Court of Justice ("ECJ") which publicizes the alleged failures of national governments.[328] The protection of birds and their habitats are made through EU institutions following formal proposals from the European Commission, which acts as the European Union's bureaucracy. National governments pursue their countries' interests on environmental issues primarily through meetings of the Council of Ministers (the Council of the European Union).[329] Non-governmental organisations are given access to provide input on environmental issues through established formal and informal processes.

(a) Wild Birds Directive of 1979

The Wild Birds Directive of 1979 was initiated by the European Union in response to the rapidly declining number of wild birds in Europe. The Directive gives special attention to migratory birds which are recognised as making up the majority of bird species in Europe. Conservation of wild birds and sustainable development is key to the development of the

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[326] Alexandre Kiss and Dinah Shelton *Guide to International Environmental Law* (Martinus Nijhoff Publishers, Leiden, 2007) at 227.
[327] Boardman, above n 303, at 109.
[328] Ibid, at 109.
[329] Ibid, at 108.

Directive. States within the European Union agree to take measures to limit the effects of development activities on birds, particularly, the destruction and pollution of their habitat, as well as capture and killing of wild birds. Member states agree to maintain wild bird populations at levels which correspond to ecological, scientific, and cultural requirements.[330] This includes preserving sufficient habitat for all wild bird species.[331] Economic and recreational interests were not allowed to be taken into account when selecting areas.[332] The ECJ rejected all non-ornithological reasons for not designating areas.[333] The International Council for Bird Preservation made up a list of Important Bird Areas in Europe that was very authoritative in designating particular areas.[334]

Member states must also establish a general system of protection for all wild bird species listed in Article 1 that prohibits deliberate killing or capture by any method; deliberate destruction of, or damage to, their nests and eggs or removal of their nests; deliberate disturbance, particularly during breeding periods, if the disturbance would impact the objectives of the Directive.[335] Wild bird species that are in danger of extinction, vulnerable to specific changes in their habitat, or rare because of small populations or restricted local distribution, or other species requiring particular attention for reasons of the specific nature of their habitat, which are listed in Annex I, require member states to take special conservation measures concerning their habitats. The most suitable territories must be classified in both number and size as special protection areas for the conservation of these species while bearing in mind their need for protection in breeding, moulting, wintering, and staging areas along migration routes.[336] Wetlands are specifically mentioned as important, particularly wetlands of international importance, and must be given special protection.[337] Habitats to protect Annex I species must be protected from pollution, deterioration, or any disturbances affecting the birds.[338] The effectiveness of the Directive is helped by requiring member states to submit a report every three years on the implementation of the national provisions of the treaty, which is then shared among the member states.[339]

There are a number of exceptions to the prohibition on deliberate killing, destruction of nests, and deliberate disturbance of wild birds listed in Article 5. Member states may derogate from the provisions of Article 5 when there is no other satisfactory solution, for the following reasons: in the interests of public health and safety; to prevent damage to

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[330] Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds, art 2.
[331] Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds, art 3.
[332] Barbara Beijen "The implementation of area protection provisions from European environmental directives in the Member States" (2009) 5 Utrecht Law Review 101 at 104.
[333] Ibid, at 104.
[334] Beijen, above n 332, at 103.
[335] Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds, art 5.
[336] Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds, art 4.
[337] Ibid.
[338] Ibid.
[339] Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds, art 12.

agriculture, farming, fisheries, forests, and water; for the protection of flora and fauna; and for the purposes of research and teaching.[340] The wind industry may be able to invoke an exception for climate change prevention and its benefits to flora and fauna. The use of an exception requires adherence to strict obligations and submitting a yearly report to the Commission.[341] The Commission must then take the appropriate steps to ensure that the derogations are compatible with the Directive.[342] And, generally, member states must encourage research and any work required for the protection, management, and use of the population of all wild bird species listed in Article 1.[343] Member states are free to introduce stricter protective measures than those provided for under the Directive.[344]

(b) Habitat Directive

The primary aim of the Habitat Directive is to promote the maintenance of biodiversity, taking into account economic, social, cultural and regional requirements and the general objective of sustainable development.[345] Generally, the Directive aims to achieve a "favourable conservation status" for certain habitat types and species which are listed in the Appendices.[346] The core obligation of Member States is to avoid any deterioration of protected areas.[347] The Habitats Directive was intended to remedy some of the deficiencies of the Birds Directive and extend the level of protection to a wider range of species and habitat types.[348] The Directive recognises that the maintenance of biodiversity may require the encouragement and/or maintenance of human development.[349] This may mean that wind development will be encouraged under the Directive as a source of alternative energy to slow climate change and its effect on biodiversity. The Directive functions by having member states designate special areas of conservation ("SAC") with the intended aim to create a coherent European ecological network, which will become part of NATURA 2000.[350] NATURA 2000 is a network of ecological sites across the EU that represents the EU's biodiversity conservation policy.[351] The types of sites that should be designated by Member States are included in Annex I to the Directive and the Member States must pay particular

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[340] Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds, art 9.
[341] Ibid.
[342] Ibid.
[343] Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds, art 10.
[344] Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds, art 14.
[345] Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora.
[346] Laure Ledoux, Stephen Crooks and others "Implementing EU biodiversity policy: UK experiences" (2000) 17 Land Use Policy 257 at 259.
[347] Beijen, above n 332, at 106.
[348] Ledoux, Crooks and others, above n 346, at 259.
[349] Ibid, at 259.
[350] Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora.
[351] Ledoux, Crooks and others, above n 346, at 259.

attention to the habitat requirements for the species listed in Annex II. Member States initially came up with a list of proposed sites according to the Annex III criteria and relevant scientific information and submitted the list to the Commission.[352] Since the adoption of the Directive, the European Court of Justice ("ECJ") has clarified that a "Member State may not take account of economic, social and cultural requirements or regional and local characteristics when selecting and defining the boundaries of sites to be proposed to the Commission as eligible for identification as sites of Community importance."[353] A draft of the proposed sites was initially created by the Commission with the agreement of the Member State. Areas designated under the Wild Birds Directive are also included in the network. Areas which the Community considers essential for either the maintenance or the survival of priority natural habitat type or a priority species but which have not been proposed by the Member State may, nonetheless, be included in exceptional cases.[354] A site of Community importance means a site in the biogeographical region which contributes significantly to the favourable conservation status of a natural habitat or species, and/or contributes significantly to the maintenance of biological diversity within the biogeographic region.[355] A favourable conservation status is defined within the Directive as:[356]

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and

There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis. Sites that have been designated or which may be designated in the future are protected from activities that which may have an effect on the conservation objectives of the site.[357] Wind farms are unlikely to be approved in areas adjacent to protected habitat or in areas that will affect any protected habitat's conservation goals. The source of protection comes from an assessment of any programme or plan that is likely to have a significant effect on the conservation objectives of the site.[358] Most, if not all, member States are reported as having some form of environmental assessment of development projects in or near NATURA 2000 sites.[359] However, the reports provided by the members do not

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[352] Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora, art 4.

[353] *First Corporate Shipping Ltd* (2000) C-371/98 (European Court of Justice).

[354] Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora.

[355] Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora, art 1(k).

[356] Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora, art 1(i).

[357] Ibid.

[358] Ibid.

[359] Report from the Commission on the Implementation of the Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Brussels, 2004) at 21.

show to what extent environmental assessment is being carried out in practice.[360] It is also not possible to evaluate the impact of activities on the conservation status of habitats from the national reports of members.[361]

The Directive prohibits deliberate capture, killing, disturbance, destruction or taking of eggs, and deterioration or destruction of breeding sites or resting places for animal species listed in Annex IV(a). Incidental capture and killing of species listed in Annex IV(a) are monitored to ensure that incidental capture and killing do not have a significant negative impact on the species concerned. Member states are required to respond to the results of such monitoring to prevent a negative impact of incidental capture and killing.[362] In general, national reports contain very little information on relevant monitoring systems. Austria, Belgium, Luxembourg, Germany, Sweden, and the United Kingdom have monitoring systems but do not elaborate on the type of systems in place or the results obtained.[363] Where monitoring systems are in place, they are frequently limited to particular regions or occasional surveys of the impact on, for example, power lines and traffic on wild fauna.[364] Existing monitoring systems tend not to cover the entire range of the species and may not be carried when (1) the risk of incidental capture or killing involves certain species which Member States may consider negligible but which are included in the Directive appendices, or (2) when the monitoring of incidences of killing or capture is considered too difficult.[365] This may require the wind industry to monitor wind farms on a long-term basis to ensure incidental take does not occur.

The Directive includes an exception to permit deliberate actions that result in capture, killing, disturbance, destruction or taking of eggs, and deterioration or destruction of breeding sites or resting places for animal species listed in Annex IV(a) in exceptional circumstances. When there is no satisfactory alternative and the derogation would not be detrimental to the maintenance of the population at a favourable conservation status, Member States may carry out otherwise prohibited activities as long as the activity is in the interests of public health and safety, or for other imperative reasons of overriding public interest, including social and economic factors which are beneficial and of primary importance for the environment.[366] The wind industry will most likely qualify for an exception under social and economic factors because of the benefits to a community in terms of employment, etc. The use of an exception requires the Member State to produce and submit a report to the Commission every two

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[360] Ibid, at 21.
[361] Ibid, at 21.
[362] Report from the Commission on the Implementation of the Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Brussels, 2004) at 23.
[363] Ibid, at 24.
[364] Ibid, at 24.
[365] Ibid, at 24.
[366] Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora, art 16.

years.[367] The Commission will respond to the report within 12 months and give an account of its opinion to the Committee, which consists of representatives of the Member States and is chaired by a representative of the Commission.[368] The report must specify:[369]

a. The species which are subject to the derogation and the reason for the derogation, including the nature of the risk, with, if appropriate, a reference to alternatives rejected and scientific data used;
b. The means, devices or methods authorised for the capture or killing of animal species and the reasons for their use;
c. The circumstances of when and where such derogations are granted;
d. The authority empowered to declare and check that the required conditions obtain and to decide what means, devices, or methods may be used, within what limits and by agencies; and which persons are to carry out the task; and
e. The supervisory measures used and the results obtained.

The exceptions may cover any harm deemed to be deliberate to migratory birds from wind farm development. In addition to the economic benefits of a wind farm exception, the wind industry may also qualify for an exception under "overriding public interest" because of the public's interest in increasing renewable energy sources. Climate change prevention initiatives have taken precedence for local governments and communities and therefore, energy alternatives are in the interests of the public. Wind farms may successfully invoke this exception under the Directive provided that construction of the wind farm will not affect the favourable conservation status of migratory bird species. However, wind farms are more likely to result in incidental deaths which are permitted under the Directive provided that the Member State establishes a monitoring system to ensure that incidental killing of migratory birds does not have a significant negative impact on the species as a whole.

The European Commission has supported implementation of the Directive by using the threat of legal proceedings against Member States.[370] In cases of persistent failure to implement the Directive, the Commission has initiated legal proceedings against Member States. The ECJ has ruled in three cases against Member States for failing to implement provisions of the Directive in a timely manner.[371] The ECJ confirmed that economic or any non-ecological interests cannot be taken into account when designating sites under the Directive.[372] The ECJ has also stepped in to provide protection for listed sites from development impacts to bird species and their habitat. In *Commission v Austria*, the court reviewed a decision by the Austrian government that authorised an extension of a golf course

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[367] Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora, art 16.

[368] Ibid, art 16.

[369] Ibid, art 16.

[370] Report from the Commission on the Implementation of the Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Brussels, 2004) at 12.

[371] Greece C-329/96, Germany C-83/97, and France C-256/98 (European Court of Justice).

[372] *The Queen v Secretary of State for the Environment, Transport, and the Regions* C-371/98 (2000) ECR I-09235 at para 22-24.

by two holes on a site classified as a specially protected area. The Commission issued a report stating that the extension of the golf course gave rise to a significant risk of disturbance to a population of birds—corncrakes—who were the last population capable of breeding in the central Alps. The possible effects of the extension only applied to a relatively small amount of corncrake habitat but included the loss of part of the feeding and resting areas, division of areas used by the corncrake which may cause destruction of relationships between corncrake birds, and the loss of and disturbance to elements of its habitat.[373] The expert stated that the disturbance of people walking along could cause the corncrake to permanently leave the area.[374]

The Commission also raised doubts about whether the conditions to offset the effects to the corncrake population would alleviate all of the harmful effects of the extension. The conditions included:[375]

- Working on the extension only during the period when the corncrake is not found in the affected area (from 1st September to 28 February);
- The two new holes are to be used only when the vegetation to the south of the golf course has reached a certain level so that the corncrake can move from the northern sector to the southern sector;
- Playing the two new holes would be forbidden from 6:00pm to 8:00am from May to August, which is when the male corncrakes parade for breeding purposes;
- The grassed areas are to be cut by mechanical lawnmower;
- A barrier of trees and hedges is to be planted to reduce noise and a 2m high noise barrier erected near the two holes;
- Noise and dogs banned on the new holes with signs every 50m giving information regarding noise nuisance;
- The holes will be created without earthmoving or the use of chemicals at any time; and
- A person will be responsible for ensuring compliance regarding noise and periods when holes may not be played.

An expert stated that the conditions would be difficult to monitor and would only partially reduce the risk to the corncrake population, which could not be considered negligible.[376] The Commission also referred to a study carried out by an ecologist who concluded that the area in questions was situated within the section of grasslands which the corncrake could use and as a result, some of its habitat would be destroyed by the extension.[377] The Commission gave Austria two months to comply with its report, whereby Austria concluded that the extension was not likely to have a significant effect on the site.[378] The Commission then filed suit with the ECJ. During the court's review, it stated that where an "assessment of the project's implications for the site in question gives a negative result, the project may be authorised only

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[373] *Commission v Austria* C-209/02 at 1222.
[374] Ibid, at 1222.
[375] *Commission v Austria* C-209/02 at 1216.
[376] Ibid, at 1222.
[377] Ibid, at 1217.
[378] Ibid, at 1217.

on the basis of imperative reasons of overriding public interest, under the conditions laid down in Article 6(4) of the Habitats Directive."[379] If the project cannot be justified by such reasons, the national authorities may agree to it only after having ascertained that, in light of the assessment, it will not adversely affect the integrity of the site concerned. The extension to the golf course could only proceed if the assessment concluded that the integrity of the site would not be adversely affected. If there was a significant chance the extension would adversely affect the conservation objectives for the corncrake, the Austrian authorities should have refused authorisation for the golf course extension.[380] The expert concluded that the extension would have a significant effect on the corncrake in three ways: firstly, the reduction of its habitat in size; secondly, the destruction of and disturbance to elements of its habitat; and, thirdly, the noise caused by grass cutting and by players, the effects of which carry over a distance of up to 200 m.[381] On this basis, the court ruled in favour of the Commission and held that the extension to the golf course had a significant and serious risk of disturbance to the corncrake population and that Austria had not demonstrated that the risks were capable of being eliminated.[382] This case demonstrates the importance of exceptions to allow for the take of migratory birds in the wind farm context. A similar scenario is not unlikely to occur in the wind farm context and the only way to proceed is to qualify for one of the exceptions.

In the United Kingdom, the Scottish government recently refused consent on a proposal for one of Europe's largest wind farms on the basis that it would violate both the Birds Directive and the Habitat Direction.[383] Ministers concluded that the proposed 181 turbine Lewis Wind Farm would have a serious impact on the adjacent Lewis Peatlands Special Protection Area, which is designated under the EC Birds Directive and the EC Habitats Directive. The area was designated due to its high value for rare and endangered birds, which would be significantly adversely impacted by the wind farm.

1 Summary

The European Union gives special attention to migratory birds and various treaties limit the effects of development on birds and their habitats by preserving sufficient areas. Developmental interests, i.e., economic interests, were not allowed to be taken into account when countries selected areas for designation as important bird or conservation areas. And, delegate sites become part of a larger conservation network of sites (NATURA 2000), which are afforded protection from any activities that may have an effect on the conservation objectives of the site. Incidental capture and killing of particular species is monitored to ensure that incidental capture and killing do not have a significant negative impact on the

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[379] Ibid, at 1220-1221.
[380] Ibid, at 1221.
[381] Ibid, at 1223.
[382] Ibid, at 1223.
[383] The Scottish Government "Decision on Lewis Wind Farm" (press release, 21 April 2008).

species. It seems likely that wind farms could be developed within the vicinity of protected bird habitats as long as monitoring ensured that incidental killings would not affect the population. The Council of Europe has the authority to enforce the various treaty provisions through the Treaty machinery itself by carrying out a report and directing the country to respond within a certain amount of time or to file suit with the ECJ.

VI ASSESSMENT AND COMPARISON

The primary issue examined in this paper is whether the New Zealand wind farm consent process has adequate mechanisms in place to meet international obligations to protect migratory birds. New Zealand's international obligations to migratory birds are complex and wide-ranging and this paper argues that the wind farm consent process under the Resource Management Act 1991 fails to meet those obligations. The RMA's consent process does not adequately identify effects of wind farms on migratory birds and the standard for consent does not prioritise migratory bird protection to the level required by international obligations. As a result, New Zealand is not meeting its international obligations to protect migratory birds from wind farms because (1) the assessment of environmental effects process fails to adequately identify effects on migratory birds; and (2) even if the assessment of environmental effects process adequately identifies effects on migratory birds, the RMA fails to give priority weight to effects on birds when it balances those effects with other factors in deciding to approve the wind farm application.

A Summary of Key International Obligations and National Legislation

International obligations to migratory birds include providing absolute protection for endangered species, i.e., no take allowed, and endeavouring to protect other species of lesser conservation status. States are also required to take steps to mitigate every conceivable threat to migratory birds along their complete migratory path. As a whole, international obligations range from strictly protecting migratory birds, to conserving or restoring the places where they live, and mitigating migration obstacles and controlling other factors that might endanger them. In New Zealand, international obligations extend to protecting or endeavouring to protect 37 migratory bird species and their habitats.

The wind farm consent process is governed by the Resource Management Act 1991. The purpose of the RMA is to promote the sustainable management of natural and physical resources. Sustainable management under the RMA has been interpreted liberally by the courts as a balancing process. Development that does not, for example, avoid adverse effects on the environment, can still be classified as sustainable management by the courts, particularly if there are substantial benefits of the project going ahead. Decisions on applications for wind farms are integrated and need to take account of social, economic, and cultural considerations, in addition to environmental effects. The RMA operates by identifying the effects of activities and managing those effects rather than regulating activities. Other countries often choose to regulate activities by guiding and directing the location and type of activities. The effects-based system under the RMA places emphasis on the process of identifying any effects of proposed activities. In addition, the RMA assumes that local authorities are in the best position to identify any effects because they are most likely to be affected by the proposed activity. Therefore, the RMA places responsibility on local authorities to determine whether the proposed activity should proceed. Central

government's role is to provide direction to local authorities on matters of national significance.

B Inadequate identification of effects on migratory birds

Identification of any effects from wind farms on migratory birds in New Zealand relies upon the environmental impact assessment procedures under Schedule 4 of the Resource Management Act 1991. According to international obligations, the assessment of environmental effects must accurately identify whether a take of any protected migratory bird is likely to occur should the wind farm go ahead. Preventing the death of a single migratory bird is a significant task that Schedule 4 of the RMA does not meet. There are a number of reasons why the assessment of environmental effects fails to adequately identify effects on migratory birds. In comparison to other countries, such as the United States and the United Kingdom, New Zealand is behind in its ability to adequately identify effects on migratory birds from wind farms.

1 Complex study species

Firstly, it is difficult to accurately pinpoint effects of wind farms on migratory birds because of the lack of information on migratory bird ecology in New Zealand. Migratory bird ecology is complex and there is little known information on migratory bird flight paths, seasonal variation, and populations in New Zealand. There is no national forum on migratory bird data that persons carrying out assessments of environmental effects can draw upon – each relies upon their individual knowledge and funding to carry out site studies. And there have not been any peer-reviewed studies on wind farms and birds done in New Zealand. This is a significant undertaking for each consultant hired to assess the effects of a wind farm and results in inadequate and inconsistent information on potential effects. For example, the length of site investigations varies by years depending on the jurisdiction and the particular consultant hired. Inconsistent study durations mean that assessments of effects on migratory birds often fail to take into consideration that flight paths are weather dependent and change from season-to-season. Additionally, local authorities lack the ability to evaluate effects on migratory birds in combination with the effects of the wind farm in their jurisdiction. For birds that fly across local authority boundaries, adequate protection requires consideration of cumulative effects sustained along flight paths outside of the local authority's jurisdiction. As a result, wind farm applicants and/or the consent authority should be consulting with other local authorities about obstacles to migratory birds located within their jurisdiction. Further, for birds that cross state boundaries, providing adequate protection may mean consulting with other states to determine the full cumulative effect of a wind farm by considering effects along flight paths within other countries. Consultation across local authorities and outside the country does not occur.

Other countries have peer-reviewed research to draw upon for information about migratory bird ecology and central government provides guidance on methodologies to use to determine effects on birds. And, particularly in Europe, the government uses partnerships with NGOs to enhance research capability, assist with monitoring of effects, and identify effects. In New Zealand with its limited funding for migratory bird research, it should promote academic study and cooperation with external agencies to formulate guidance to local authorities on migratory bird protection.

2 Lack of expert and independent consultation

There is no obligation under the RMA to consult an expert (or anyone for that matter) on ecological effects of the proposed wind farm. In practice, wind farm applicants hire consultants to make that determination. The applicant hires a consultant of their choice who determines whether there are likely to be any ecological effects in the area. By hiring any consultant the applicant wishes, there is likely to be a biased assessment of environmental effects because of the likelihood that the consultant will act in their own best interests. The consultant is more likely to attempt to meet the client's expectations that a wind farm's effects on the environment will be limited, so that their relationship with the wind farm developer is positive and their consultant services are likely to be called-on in the future. Additionally, not all consultants are experts in migratory bird ecology and may fail to identify whether the proposed wind farm is in close proximity to a migratory bird flight path.

High level obligations such as "mitigating every conceivable threat" to migratory birds is a tough standard for local authorities to meet without technical expertise or the ability to employ experts in the field. Local authorities frequently have inadequate funding and knowledge to appropriately assess the developer's environmental impact assessment. Reviewers of environmental impact assessments need technical ecological knowledge to properly assess impacts of wind farms on bird populations and habitats. Otherwise, the reviewer is relying upon the developer's assessment. An independent assessment, i.e., by the Department of Conservation, would better meet international protection obligations. Local authorities are often acting without guidance from the national government, which results in disparity between local authority decisions. Wind farms bring many benefits to a region, such as assisting with renewable energy targets, employment, etc., which increases the risk that local authorities may "push-through" the consent process without giving adequate weight to environmental effects. The upcoming Environmental Protection Agency ("EPA"), could serve as an independent decision-maker for nationally significant wind farms. Indeed, some wind farm consent applications are currently under review by the EPA. Other benefits of using the EPA to process wind farm consents are access to technical expertise, substantial funding for reviewing consents, and limited disparity between consent decisions. Additionally, cumulative impact assessment of wind farms will be more likely to be taken into account by the EPA because of their focus on nationally significant proposals.

New Zealand is significantly different from other countries in its approach to consultation requirements. Both the United States and the United Kingdom require wind farm applicants to consult with governmental wildlife agencies (equivalent to New Zealand's Department of Conservation), who have the funding and expertise to properly evaluate a wind farm's effects on migratory birds. In New Zealand, local authorities rely on the wind farm applicant's consultant to determine the effects on birds. The Department of Conservation is only given the right to comment on applications and the local authority or decision-maker decides how much weight to give their submission. The decision-maker is free to balance DoC's concerns about environmental effects with the positives of the wind farm going ahead. The United States not only requires the wind farm applicant to consult with the Fish and Wildlife Service to ensure that there are no negative effects on migratory birds, but if FWS determines there are negative effects, they have the power to stop the wind farm going ahead. In contrast, any submission made by DoC to a local authority on the negative effects to migratory birds is not given priority weight over other submissions.

3 Lack of central government guidance

Because Schedule 4 of the RMA does not explicitly refer to determining ecological effects on migratory birds, there is a lack of direction to both the consultant preparing the assessment of environmental effects and the local authority reviewing that assessment. It is a concern because the RMA focuses on protecting ecosystems with particular attention to indigenous species and does not highlight migratory species, which may only be temporary visitors to an area and/or may only fly through an area, and so are not highly visible in the region. While migratory birds are considered indigenous species because they have brought themselves to New Zealand, the focus of indigenous species is usually on species that exist year-round in New Zealand. With environmental impact assessment focused on species that are present year-round, the wind farm consent process may not identify impacts to migratory birds whose flight paths vary from season-to-season and with the weather. Central government has given very little guidance to local authorities on how to carry out environmental impact assessments. No requirements exist for length of site investigation, the methodology to use, and data is not shared between consultants who carry out site investigations. As a result, wind farms are approved across the country based on inadequate and inconsistent information about effects.

The Department of Conservation ("DoC") is the nation's protector of wildlife and holds technical knowledge of migratory bird ecology, including some flight paths. The RMA allows for DoC to submit comments on resource consents but their submissions are optional for the local authority or consent decision-maker to follow. DoC recommends that the site investigation be at least three years long to account for flight path variations due to weather and season. However, most site investigations prepared by the applicant's consultants are only a year in length. The limited duration of site investigations coupled with the lack of

data-sharing among consultants substantially decreases the likelihood that the wind farm effects on migratory birds are accurately identified.

Other countries set a high-standard for strong central government direction on migratory bird protection. The United Kingdom operates at the other end of the scale from New Zealand by prescribing sites that are suitable for wind farm development. Development of a wind farm within the pre-approved sites still calls for consent and environmental impact assessment. The consent decision is carried out by the national government and consideration is explicitly given to upholding treaty obligations to migratory birds. In the United States, the Fish and Wildlife Service has the final say in wind farm developments that may harm protected migratory birds. In fact, the FWS gives voluntary guidance on how to carry out environmental impact assessments for wildlife. Although, the guidelines are voluntary for the wind industry, there are tremendous incentives to adhere to the guidelines given FWS' authority over developers. Because of the nature of migratory birds and their lack of visible presence, central government guidance to local authorities is critical to ensure that migratory birds are considered at the time the assessment of environmental effects is prepared.

4 Lack of consideration of cumulative effects

Local authorities are focused on the effects in their region and national cumulative effects may be ignored, i.e., placement of multiple wind farms in the same flight path. Additionally, local authorities are less likely to contemplate effects on migratory birds from obstacles along flight paths that exist outside not only their region but outside of New Zealand. And, it may be unfair to require local authorities to include national and international effects on migratory birds when approving wind farm applications without considerable support from central government. Cumulative effects can have tremendous impacts on migratory birds and absolute protection requires considering both the effects on birds from the wind farm in question as well as other impacts on those species. International obligations emphasise working jointly with other states to provide adequate protection along complete flight paths and this is not taking place at the local authority or central government level. Local authorities lack the funding and national data to properly assess cumulative impacts that may occur outside their jurisdiction.

Other countries set a high-bar for consideration of cumulative effects of wind farms on migratory birds. By having wind farm decisions made on a national-level, it increases the likelihood that effects from other wind farms and other obstacles will be taken into account when approving another wind farm. This is also the case when a single wildlife agency is consulted about effects on migratory birds, which is the case in both the United States and the United Kingdom. A single agency that processes wind farm decisions or reviews environmental effects will consider applications against the comprehensive picture of existing wind farms and the cumulative effects of adding to the existing picture. They are also more

likely to hold data on other assessments to refer to and compare with the current wind farm application.

C Inadequate Standard for Consent: Balancing Factors

Even if the assessment of environmental effects under Schedule 4 of the Resource Management Act adequately identified effects on migratory birds from a proposed wind farm, the standard for consent under the RMA means that those effects can be disregarded, if the benefits of having the wind farm outweigh any negative effects. The standard for consent under the RMA is a balancing act. Decision-making under the RMA consists of balancing a number of factors, including social, ecological, and economical. Local authorities review wind farm applications and balance the positive and negative social, ecological, and economical factors of it going ahead. A local authority can give consent for a wind farm, if there are benefits to having the wind farm, i.e., reducing greenhouse gases, or will provide jobs in the region, despite the fact that an assessment of environmental effects has identified negative effects on migratory birds. The courts have adopted a similar approach and will support development when there are substantial positive benefits despite adverse effects on the environment.

Local authorities weigh the effects on migratory birds which have been identified through the assessment of environmental effects and any information gained through submissions, i.e., from the Department of Conservation or NGOs, with all the other relevant costs and benefits of the proposed wind farm. And, in most cases conclude that any negative effects of wind energy are outweighed by the benefits, particularly in reducing the effects of climate change.

By balancing the effects of the wind farm on migratory birds with other factors, New Zealand is not meeting its international obligations to absolutely protect some migratory bird species. And, because balancing effects is one of the main principles of the RMA, it results in the RMA being fundamentally inconsistent with New Zealand's international obligations to migratory birds. Absolute protection requires giving consideration of negative effects on migratory birds priority over other factors. Activities which may lead to the death of a protected migratory bird cannot go ahead according to application of the precautionary approach under international obligations.

Other countries have approached this differently and vary from criminalising any take of a protected migratory bird to allowing incidental take as long as it does not cause any negative population effects. This is accomplished by significant input by bird experts at the environmental assessment phase (pre-construction) and by significant post-construction monitoring to ensure migratory bird protection is upheld; both of which New Zealand is lacking in. In the United Kingdom where there are established networks of important bird areas and conservation sites, consideration of economic benefits when allowing a wind farm is not allowed when it will compromise any conservation goal of a site. Indeed, wind farm

consents have been denied in areas where bird protection may be compromised. Whereas, in New Zealand, a wind farm's substantial economic benefits are likely to supersede any negative effects on migratory birds, which violates international obligations.

D Application of Comparative Law

The application of comparative law from the United States, United Kingdom and Europe, can be used to improve New Zealand's wind farm consent process to better meet its international obligations to migratory birds.

One of the primary concerns for migratory birds and the RMA in the wind farm consent process is the lack of central guidance to local authorities. New Zealand is an outlier in the terms of the powers devolved to local authorities, which in comparative countries belong to central or state governments. Both the United States and the United Kingdom have retained powers to regulate migratory bird protection in the wind farm context. Central government's retention of migratory bird protection means that burdensome costs of evaluating complex environmental impact assessments do not fall on local authorities. Evaluation of environmental impact assessments by central government authorities is less likely to disproportionately favour local values and is in a better position to consider national interests and effects. The upcoming Environmental Protection Authority may be the ideal central government agency to process and decide on wind farm consent applications.

To meet New Zealand's lack of attention on migratory birds, the creation of a separate statute to give effect to international obligations should be considered. The Migratory Bird Treaty Act (USA) and the Wild Birds Directive (UK) are statutes solely dedicated to bird protection. The core of these statutes is similar to New Zealand's international obligations to migratory birds because they do not allow take of protected migratory birds. Although, the statutes do not give specific guidelines for how the wind industry should go about an environmental impact assessment, both highlight the need to consider birds in such an assessment. A statute solely dedicated to migratory bird protection is applicable in the United States because of the history of migratory bird decimation from hunting. However, it may not be efficient to enact a new statute to solely address migratory birds in New Zealand because of significantly lower numbers of migratory birds in New Zealand. The MBTA also may restrict wind industry growth because of the lack of exceptions available for causing harm or death to migratory birds. If the MBTA was fully enforced by the Fish and Wildlife Service, it would severally restrict the wind industry by not allowing wind farms where even a single migratory bird listed in the statute may be harmed. The Fish and Wildlife Service have the authority to choose whether or not to prosecute an offender. To date, the Fish and Wildlife Service has not exercised its veto power over the wind industry and nor has it prosecuted any offenders. This has caused uncertainty to the wind industry. However, FWS' interim guidelines to the wind industry give quite specific criteria to voluntarily follow for the location and construction of wind farms. The guidelines have given more certainty to the

wind industry; FWS has indicated that, if the wind industry follows the guidelines, they are unlikely to be prosecuted by the FWS. In New Zealand, if a similar statute is created, the Department of Conservation would be the appropriate government agency to hold the veto power. A New Zealand version of the statute would significantly expand DoC's authority in the EIA process under the RMA. This is contrary to existing circumstances where DoC can only give feedback on wind farm proposals, which the decision-maker is not required to follow. If a similar statute was created, it would be best to allow exceptions where harm to migratory birds may occur if the benefits of providing wind energy outweigh the harm caused to migratory birds. In some cases the benefits of wind energy outweigh the costs to migratory birds in comparison to the effects of climate change.

New Zealand's Energy Efficiency and Conservation guidelines for wind power are particularly useful at identifying some of the main risks to migratory birds and providing ways to avoid those effects. The guidelines are voluntary just as the FWS interim guidelines are. However, the EECA guidelines do not hold the same power over the industry because of the lack of veto power held by the agency. In the United States, industry seems more likely to follow the guidelines because if they do not, the FWS may exercise its veto power to stop the wind farm. In New Zealand, there is not the same incentive to follow the guidelines. The guidelines are on a much more general level than the FWS Interim Guidelines.

Adoption of a statute similar to the European Union's Wild Birds Directive would require New Zealand to establish important bird areas. This would mean that would wind farms would not be allowed to be located near these important bird areas, if they would cause harm to the habitat or the birds. The Wild Birds Directive approach does not fully address the issue of wind farms on migratory birds because a lot of the concern related to wind farms is centred around the risk to birds while flying through an area, particularly in bad weather. Bad weather may mean that birds fly lower than they usually would and thereby, increasing the risk of collision with wind turbines. Protection of habitat where migratory birds stop to rest or breed is important as well, but the concern related to wind farms and migratory birds is particularly focused on flight path protection. Protection of flight paths could be achieved by considering air space as habitat. If air space is a habitat type that can be protected under the RMA, it may afford greater protection to migratory birds.[384] The statute is not as disabling as the MBTA because there are a number of exceptions.

Another option is to use the existing framework under the Resource Management Act to give more direction to the wind industry and to local authorities. The tools available under the RMA include national policy statements and the forthcoming Environmental Protection Agency. Local authorities must comply with national policy statements which provide guidance on matters of national significance. National guidance would help alleviate concerns of local authorities and the wind industry in carrying out environmental impact

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[384] Wallace, P "The Nature of Habitat" (2007) 12 NZ J Envtl L 195.

assessments of wind farms on birds. Standardising the environmental impact assessment process may remove barriers for the development of wind farms in terms of the costs associated with environmental impact assessments on migratory birds. A national database set up to share information from environmental impact assessments would greatly benefit the wind industry's ability to provide comprehensive environmental impact assessments. Additionally, the government could follow the United Kingdom's example of creating a network of sites that are suitable for wind farms. New Zealand could create a network of sites with the advice from the Department of Conservation on migratory bird flight paths and provide this information to local authorities and environmental consultants.

A national policy statement regarding renewable electricity that is currently being proposed by the Ministry for the Environment may be a good opportunity to provide national direction to local authorities on migratory bird protection in the wind farm consent process.[385] The policy statement focuses on the national significance of developing, upgrading, maintaining and operating renewable electricity generation activities throughout New Zealand. Unfortunately, it does not currently include any guidance on the ecological issues related to migratory birds and wind farms.

[385] Ministry for the Environment "Proposed National Policy Statement on Renewable Electricity Generation" (2011) <www.mfe.govt.nz>.

VII CONCLUSION

In conclusion, the assessment of environmental effects under the Resource Management Act fails to ensure that effects on migratory birds from wind farms are identified. The lack of identification of effects results from a combination of factors entrenched within the RMA. Without adequately identifying effects on migratory birds, New Zealand is unable to ensure that no takes of migratory birds are occurring and therefore, it is not upholding its international obligations to protect migratory birds. Additionally, the standard for wind farm consent under the RMA violates international obligations by failing to prioritise effects on migratory birds above other benefits.

Comparatively, New Zealand's environmental impact assessment process for wind farms lags behind other countries, i.e., United Kingdom and the United States, who provide much more certainty that effects of wind farms on migratory birds will be identified, primarily through central government guidance and mandatory consultation procedures. Additionally, the RMA's standard for consent is dramatically different from international standards where identification of negative effects on protected migratory birds will prevent a wind farm from proceeding.

A review of the wind farm consent process in New Zealand is necessary to better reflect its international obligations to migratory birds.

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