CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Listing all species in the genera *Hoplodactylus* and *Naultinus* (New Zealand endemic geckos) on Appendix II in accordance with Article II (2a, 2b). This proposal also addresses the Biological and Trade Criteria required by Resolution Conf. 9.24.

B. Proponent

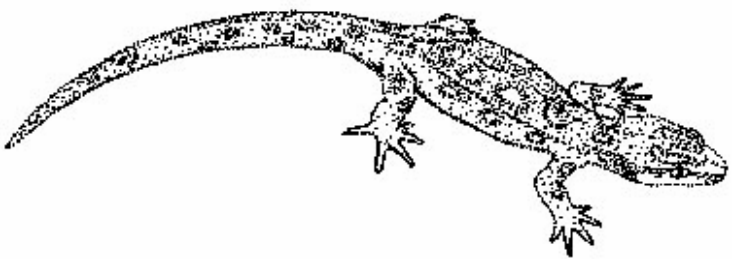
New Zealand.

**Summary**

Recent evidence and anecdotal information have shown that New Zealand gecko species are appearing on the international market at numbers far exceeding the breeding capacity of the captive population. Most trade is with animals taken from the wild. Specimens are being advertised for sale for which there are no captive population and no documented export from New Zealand. It is predicted that the full extent of illegal trade in New Zealand geckos is yet to be realised as demand for them rises. At least one wild population has declined, at least in part, from poaching. The ability of New Zealand gecko populations to recover is limited by their low reproductive potential. Even low levels of trade can have significant effects on wild populations.

Although fully protected throughout their natural range, New Zealand geckos are fetching high market values (up to US$15 000 per individual) and intelligence suggests they are becoming increasingly popular. Having the animals CITES listed will assist New Zealand protect wild populations by minimising or eliminating illegal trade, thus providing a greater assurance of their long-term viability in the wild.

This proposal is to list all species in the genera *Hoplodactylus* and *Naultinus* in Appendix II.



G. Flaws, DOC

C. Supporting Statement

1. Taxonomy

1.1 Class: Reptilia

1.2 Order: Sauria

1.3 Family: Gekkonidae

1.4 Genus: All species of *Hoplodactylus* (Fitzinger, 1843), and *Naultinus* (Gray, 1842)

Species: Hoplodactylus pacificus (Gray, 1842), Hoplodactylus maculatus (Gray, 1845), Hoplodactylus chrysosireticus (Robb, 1980), Hoplodactylus duvaucelii (Dumeril & Bibron, 1836), Hoplodactylus stephensi (Robb, 1980), Hoplodactylus kahutarae (Whitaker, 1985), Hoplodactylus rakiurae (Thomas, 1981), Hoplodactylus granulatus (Gray, 1845), Hoplodactylus nebulosus (McCann, 1955).

Naultinus elegans (Gray, 1842), Naultinus punctatus (Gray, 1843), Naultinus grayii (Bell, 1843), Naultinus gemmeus (McCann, 1955), Naultinus manukanus (McCann, 1955), Naultinus rudis (Fischer, 1882), Naultinus stellatus (Hutton, 1872), Naultinus tuberculatus (McCann, 1955).

There are a further nineteen groups within the *Hoplodactylus* complex and one within the *Naultinus* complex that are thought to warrant specific status (Hitchmough, 1997) but have yet to be formally described. These additional groups will be included within the two genera protected by CITES.

1.5 Scientific synonyms:

1.6 Common names: English:
French:
Spanish:

1.7 Code numbers:

2. Biological Parameters

Because more than fifteen species are listed, biological parameters will not be detailed for individual species. Instead the common features of the group are described in proceeding sections.

2.1 Distribution

Distributions are patchy, but for most species where there is suitable predator-free habitat, densities can be high.

Some species are endangered or threatened, with limited fragmented distributions e.g. *H. stephensi*; which is restricted to three small offshore islands. Others are known from a few places and additional locations may still be discovered (e.g. *H. nebulous* and *H. kahutarae*). Some species have fragmented distributions (eg. *N. manukanus*), regional distributions (e.g. *N. grayii*), or are widespread (e.g. *H. granulatus*), while yet others have unknown distributions and are of uncertain conservation status. Several are undescribed.

The Atlas of the Amphibians and Reptiles of New Zealand (Pickard and Towns, 1988) is the most comprehensive published distribution record. New Zealand's Department of Conservation also holds a database on distribution. Detailed distribution maps can be produced for most species but their circulation is restricted because of risks associated with illegal collection.

2.2 Habitat availability

Habitat for New Zealand geckos has decreased significantly since colonisation by humans. Polynesian fire followed by European clear felling destroyed over two thirds of the forested habitat in New Zealand and severely restricted the habitat, range and population numbers of forest dwelling

geckos. Similar loss and modification of other habitat has contracted the range of many other species.

During the 1900s and more recently, habitat loss or modification has largely been limited to localised land development, clearance of small patches of regenerating native scrub and removal of retreat sites.

Approximately one third of New Zealand's landmass is now protected for conservation purposes and a significant amount of the remaining gecko habitat is legally protected.

2.3 Population status

The population status is not accurately known for most species. Gecko behaviour and habitat preferences make it difficult to monitor population numbers with any accuracy. An exception is a sub population of *N. gemmeus* on a reserve at Otago Peninsula. The gecko population inside the reserve has declined drastically since 1994 (M. Tocher, unpublished data). Wildlife crime authorities have collected anecdotal evidence showing that poachers have repeatedly collected *N. gemmeus* from this reserve, and exported them illegally from New Zealand.

A number of geckos are held in captivity, but population size and breeding capacity is small, with the exception of a few common species and hybrids. Most geckos are notoriously difficult to hold and breed in captivity.

2.4 Population trends

The numbers of geckos on offshore islands increase markedly when introduced mammalian predators are removed (Towns, in press). The population densities reached on predator-free offshore islands, even in severely modified habitats, suggests that the lower densities on the mainland are primarily attributable to predators. Although many gecko species are present on predator free offshore islands, others (e.g. alpine species) require habitat only found on the mainland.

Research suggests mainland species are in gradual decline, primarily due to introduced predators. Detailed research is available on some skink species (Oligosoma spp) that face similar threats and have similar requirements. Predators are causing the slow but steady decline of some skinks and it is likely that geckos are facing a similar fate.

2.5 Geographic trends

Although there is little information on the range or abundance of individual gecko species before human arrival, it is clear that population densities were high and most habitats occupied by at least one species. The overlap of similar species ranges today, suggests some had naturally limited ranges but the high densities achieved on predator-free offshore islands suggest mainland populations would have been extremely high prior to human arrival. The largest species (*H. duvaucelii*) is now found only on offshore islands, but its bones are abundant in pre-human mainland cave deposits. There is no evidence of direct human impact on this species causing its mainland extinction, but ample evidence that the agent of decline/extinction was introduced mammals.

There have been huge declines and contractions in geographic range, coinciding with the introduction of kiore (*Rattus exulans*) and Polynesian fires, and again with the introduction of ship rats (*Rattus rattus*), stoats (*Mustela erminea*), cats (*Felis domesticus*) and mice (*Mus musculus*), and further habitat loss by European land clearance.

2.6 Role of the species in its ecosystem

Geckos are a major predator of small invertebrates, are major pollinators of divaricating scrubs (whose flowers and dense twiggy structure makes it impossible for larger birds and insects to pollinate) and other plant species, and disperse seeds from small berries. They are the main pollinators and seed dispensers for divaricating *Hymenanthera* species. When at natural densities (when introduced mammalian predators have been controlled), geckos are a major food source for large native carnivores such as tuatara, morepork and kingfishers (Brockie, 1985). The large population densities attained by geckos in the absence of direct and indirect human impacts means that their biomass and the amount of energy flowing through them in local foodwebs are extremely high.

2.7 Threats

Introduced mammalian predators are believed to be the key causal agent of decline in gecko populations on the mainland, however the best documented decline of a gecko population has occurred in an Otago Peninsula reserve where a predator fence excludes cats, mustelids and rodents (except for mice) but poaching is frequent.

The impacts of illegal collection can be twofold. The direct impact of removing the individuals is obvious. However, because the species are often cryptic, there can be considerable damage done to the habitat as a consequence of searching. Dead trees are broken, rocks are turned and not replaced, and clay and rock banks are destroyed. Although initially this only has local effects, it can be expected to increase as demand at markets increase and search extends to other habitats as sub-populations are depleted. Further, since most species are difficult to rear in captivity, collection from the wild will be required to sustain the *ex situ* population.

Illegal collection poses a significant risk for many species residing on predator free offshore islands. Populations are dense (making capture easy), the islands are remote (making detection and policing access difficult) and are often the only population stronghold. A prosecution has already resulted from the illegal collection of tuatara (an Appendix I listed reptile) from Stephens Island. Reinvasion of predators or introduction of disease or competitors is a threat to these island populations as poachers enter the islands illegally without the necessary quarantine checks.

In addition to the threat from predators and poachers, geckos also suffer competition for favoured food sources from rodents, possums (*Trichosurus vulpecula*) and introduced vespulid wasps.

3. Utilization and Trade

All species have characters that make them attractive to dealers and, while several species are known in trade, all have similar character and looks. They are colourful and attractive, endemic to New Zealand, have unusual characteristics such as bearing live young and are long lived. They are slow to mature to reproductive age (2-6 years) and have a low reproductive output (0.5-2 offspring per adult female per annum), making them particularly vulnerable to collecting pressure. It is for these reasons that the entire group is proposed for listing.

3.1 National legislation

Prior to 1981 geckos were not protected by legislation outside reserves or National Parks. In 1981 all geckos were protected except *H. maculatus* and *H. granulatus* but protection was extended in October 1996 to include all species of gecko, pursuant to the Wildlife Act 1953. Prior to protection, trade both domestically and internationally, although regulated, was not prohibited. Prior to protection herpetologists, collectors and hobbyists within New Zealand could legally take geckos from the wild, trade these with other hobbyists within NZ and make application to the Department of Conservation for authority to export these reptiles to other countries. Nationally, geckos could also be sold from pet shops, thereby legalising the domestic trade.

Since October 1996, no live animals can legally be collected from the wild (unless for conservation purposes) and, to avoid fuelling the market, overseas export permits for captive-bred animals are likely to be declined.

3.2 Legal international trade

Small captive populations of New Zealand geckos were established in Europe prior to their protection and some still exist today. For a time export permits were available upon application and large numbers of geckos are known to have been legally exported to Europe - Belgium and Germany in particular – between 1994 & 1996. In October 1996 all New Zealand gecko species became totally protected and export from that time was tightly controlled. Captive colonies established in Europe prior to 1996 provide a legitimate source of geckos for trade. However, the actual number available from these sources is believed to be small because the husbandry practices reported have led to a high attrition rate of animals and species are generally difficult to breed in captivity.

Gecko trade primarily supports the European and United States pet markets, where these species are in high demand and are fetching high prices.

3.3 Illegal trade

Information from wildlife agents tracing illegally caught animals and anecdotal information have demonstrated that a large proportion of these species found on the international market have come from animals smuggled illegally from New Zealand. Demand for New Zealand geckos, particularly from the USA, has increased dramatically and it is clear that those arriving on the international market since 1996 have not been wholly sourced from existing captive stock in Europe.

In the latter part of 1997 and into 1998 wildlife crime authorities within New Zealand began to receive intelligence about the apparent increase of illegal trade in New Zealand geckos to Germany. Subsequently, allegations concerning the presence of New Zealand geckos in the Czech Republic also surfaced. Using various investigative techniques, the New Zealand wildlife crime authorities were able to establish beyond doubt that *Naultinus* spp geckos were indeed available on the black market in both Germany and the Czech Republic– in fact both *N. elegans* and *N. grayii* were later sighted and handled by a New Zealand wildlife crime investigator at a dealer's premises in Germany in 2000. The dealer freely admitted that all the *Naultinus* geckos in his possession had been smuggled into Germany. Additionally, *Naultinus* spp were sighted in Prague, Czech Republic by sources closely aligned to New Zealand law enforcement agencies and simultaneously *Naultinus* spp were being offered in the USA for USD 3000 – USD 5000 a pair.

In 1998 a German national resident in New Zealand was prosecuted pursuant to the Wildlife Act 1953; following a lengthy investigation, for illegally exporting *N. grayii* to Germany. In February 2001 another German national, this time a visitor to New Zealand, was convicted and fined NZD 12000 for attempting to illegally export *N. grayii* to Germany.

Since February 2001 wildlife crime authorities in New Zealand have become aware of the presence of *N. gemmeus* and *H. rakiurae* in Germany. These geckos were previously unheard of in Germany and are not believed to have been part of any legal export prior to 1996; they are believed to have been smuggled out of New Zealand in the early part of 2001.

In May 2001 New Zealand wildlife crime authorities became aware that a German national was advertising *H. rakiurae* for USD 15000 each, *N. elegans* for USD 2500 each, *N. grayi*i for USD 2000 each and *H. granulatus* for USD 800 each on the US market.

The New Zealand wildlife crime authorities firmly believe that because New Zealand geckos are attracting high prices on the black market that the demand for the species will increase. Existing captive stocks cannot meet such demand thereby putting more pressure on vulnerable populations.

Once CITES listed, the need for a non-detriment finding would mitigate against trade in illegally obtained specimens. It is the primary aim of this proposal to complement New Zealand's domestic measures to prevent trade of individuals taken illegally from New Zealand.

3.4 Actual or potential trade impacts

At present, trade impacts on New Zealand gecko species are thought to be less of a concern than impacts of mammalian predators. However, ongoing collection from some populations will undermine New Zealand's efforts to protect and restore these animals *in situ*. An obvious example is *N. gemmeus* in a reserve at Otago Penninsula, where poaching has been detected and populations declined. Further, populations currently considered secure due to the high level of protection from other threats, are now facing the new threat of collection as demand rises.

3.5 Captive breeding for commercial purposes

Within New Zealand, commercial captive breeding was permitted for some species prior to 1996. A subsequent change in legislation has protected all gecko species and breeding for commercial purposes has been totally prohibited within New Zealand since 1996.

Internationally there is limited captive breeding for commercial purposes; most is focused in Europe. However the difficulty in keeping some of these species in captivity has limited the breeding stock.

4. Conservation and Management

4.1 Legal status (national and international)

4.1.1 Domestic measures

All gecko species are totally protected under New Zealand's Wildlife Act 1953. See Section 3 for further details. Additionally the Conservation, National Parks, Reserves, and other related Acts protects habitat and animals on land administered by the Acts. Although most species will be present on both private and conservation land, most species populations are represented, at least partially, on conservation land. *H.* n.sp. "Mt Roy" and *H.* n.sp. "Open Bay Island" are the only species found exclusively on private land and are afforded protection under the Wildlife Act.

Since 1953, export of geckos has required prior permits from New Zealand's Department of Conservation (Wildlife Act). Since 1996, internal policy only allows export of geckos (parts or derivatives) if there is direct benefit for the conservation of the species.

4.1.2 International measures

The species are not protected outside New Zealand's border.

4.2 Species management

4.2.1 Population monitoring

New Zealand has an unusually diverse reptile fauna (at least 70 species, many undescribed), all endemic at the generic or higher level. This fauna has been heavily impacted by human activity, including habitat destruction and modification, and, most importantly, introduced mammalian predators. Molloy & Davis (1994) listed 28 reptile species (57% of the then known fauna) in categories A-C (the three highest priority categories for conservation management in New Zealand), and additional rare species have been discovered since this list was produced. More recently Molloy *et. al.* (2001) listed two species of gecko nationally

critical, ten species in gradual decline, twelve species sparse, six species range restricted and two species data deficient.

4.2.2 Habitat conservation

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4.2.3 Management measures

Active reintroduction of geckos onto mammalian free offshore islands has been used increasingly in recent years as a management tool to mitigate the declines on the mainland. Additionally many species are naturally represented on offshore islands and, with the gradual eradication of introduced mammals on many of these islands, populations have been able to naturally recover to reach high densities. It is likely that more reintroductions will occur as islands have predators eradicated and the island ecosystems are restored. These offshore populations usually reach high densities.

Intensive predator control and/or predator exclusion fences are being used at some mainland sites. The number of mainland sites may be increased as technology and resources permit. A number of detailed long term work plans have been formulated for a range of other gecko species (e.g. West Coast Lizard Action Plan).

4.3 Control measures

4.3.1 International trade

There is no control of movement across international borders outside New Zealand's border.

4.3.2 Domestic measures

The New Zealand Wildlife Act 1953 prohibits the collection of any wild geckos. The Acts protecting geckos are effective; they have provisions that make non-compliance an offence and have appropriate penalties. A number of government officers have power to enforce the Act(s) ranging from New Zealand Police to Department of Conservation officers. A specialised Wildlife Enforcement Group is a targeted wildlife crime unit and continues to investigate illegal activity relating to wildlife. A large proportion of their time is devoted to investigating wildlife crimes is targeted at illegal collection of geckos.

5. Information on Similar Species

Within *Hoplodactylus* and *Naultinus,* identification to species level can be very difficult. However, the genera are distinct from other geckos and each other. All species of both genera will be protected under this proposal so confusion with other species is unlikely.

6. Other Comments

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7. Additional Remarks

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8. References

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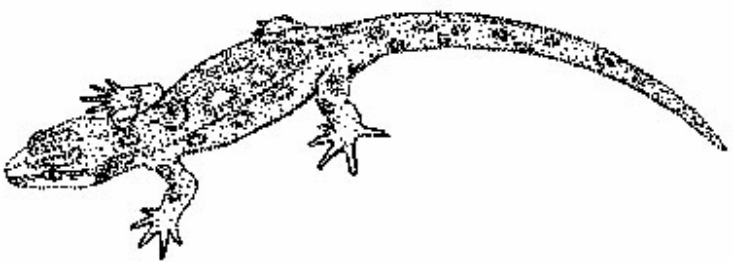
Whitaker, A. (in prep.) West Coast Lizard Action Plan. West Coast Conservancy, Department of Conservation, Hokitika.

D. Range states responses cited

N/A, New Zealand is the only range state. No other countries have been consulted.



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