

Inclusion of all species of New Zealand geckos in the genus *Naultinus* in Appendix II

Proponent: New Zealand

Summary: *Naultinus* is a genus of lizards in the family Diplodactylidae endemic to New Zealand comprising eight described species, and an additional species, *Naultinus* “North Cape”, which is yet to be formally described. *Naultinus* spp. are characterized by ovoviviparity (live birth of young), low reproductive output (1-2 offspring per adult female per year), delayed maturity (2-4 years) and likely extreme longevity. Once widespread, their ranges are now highly fragmented due to habitat loss and modification. *Naultinus* populations continue to be affected by clearance of secondary shrublands for grazing and plantation forestry, predation from introduced mammals, illegal collection (at least in part to supply the international pet trade) and competition from introduced species for favoured food sources. Population sizes are extremely difficult to estimate, due in part to the geckos’ arboreal and cryptic behavior, extremely good camouflage and weather-dependent activity, although it has been suggested that most species probably have a global population somewhere between 5000 and 30 000. Difficulties in assessing population sizes and trends may mean species are less threatened than they appear. Conversely, declines may not be noticed until they are very advanced. Studies have found local population densities of up to 40 and, exceptionally, 500 individuals per hectare; however, it is thought that most populations are at much lower densities. As of 2012, all *Naultinus* species except *N. rudis* and *N. tuberculatus* were considered “At Risk” under the New Zealand Threat Classification System, with populations assessed as declining at a rate of at least 10% over three generations. *N. rudis* and *N. tuberculatus* were considered Nationally Vulnerable based on an estimate of 15 or fewer populations each with 500 or fewer individuals and an expected continued decline of 10-50% over the next three generations.

The species that features most frequently in international trade is *N. gemmeus*. This has a wide extent of occurrence (over 50 000 km²) but its distribution within this area is severely fragmented, with two main known populations, on the Otago and Banks Peninsulas, the former estimated at around 1400 individuals. An overall population estimate of 12 000-20 000 has been suggested; however, its status in tall forest canopies towards the western edge of its range is largely unknown. One *N. gemmeus* population on the Otago Peninsula has been well-studied; a severe decline with a 95% reduction in 14 years from 1994 to 2008 is estimated, attributed to mammalian predation, habitat loss and poaching. The species was assessed as Near Threatened by IUCN in 2010.

Both the Otago and Banks Peninsulas have apparently been targeted by poachers in recent years. It is estimated that 100-200 specimens of *N. gemmeus* were harvested from the Otago Peninsula in one year, corresponding to a 7-14% of the estimated population there. Between 2009 and 2012 New Zealand border control agencies intercepted 24 live *N. gemmeus* being smuggled from the country. Specimens intercepted, photographed and returned to the wild at their original location have since been identified as advertised for sale on internationally-hosted reptile websites, indicating repeated illegal collection at the same site. Gravid females have been disproportionately represented in consignments seized from poachers (likely due to greater value, larger size and emergence behaviour). The geckos evidently command high prices in consumer countries.

Other species have been offered for sale on internet sites including *N. elegans*, *N. grayii*, *N. manukanus*, *N. rudis* and *N. stellatus*, although it is not clear whether these are from captive sources. *N. manukanus* was assessed as Data Deficient by IUCN in 2010; *N. rudis* was assessed as Lower Risk/least concern in 1996 by IUCN although the assessment is noted as in need of updating.

All *Naultinus* species share characteristics that make them desirable among enthusiasts. Distinguishing between the different *Naultinus* species is also problematic, with field identification commonly based on location rather than morphological features.

The entire genus *Naultinus* has been protected under New Zealand’s Wildlife Act 1953 since 1981, prohibiting collection from the wild and commercial use. All endemic New Zealand gecko species were listed in CITES Appendix III on 28 May 2003. While legal trade in *Naultinus* has been minimal since CITES

listing, illegal trade in *Naultinus* spp. is a concern.

The genus *Naultinus* is proposed for inclusion in Appendix II. *Naultinus gemmeus* is proposed under the criteria in Annex 2 a paragraph B of *Resolution Conf. 9.24 (Rev. Cop15)*, with the other members of the genus proposed under look-alike criteria (Annex 2 b) on the basis that enforcement officers are unlikely to be able to reliably distinguish between the various *Naultinus* species, especially between the uniformly green morphs of *N. gemmeus* and other species. The Proponent suggests that some other species may also meet the criteria in Annex 2 a paragraph B of *Resolution Conf. 9.24 (Rev Cop15)*.

Analysis: *Naultinus* species are endemic to New Zealand where they are fully legally protected. The species, especially, *N. gemmeus*, are sought after in the international hobbyist trade and can command high prices in consumer countries. There is evidence of ongoing illegal trade in wild-caught animals. All species are believed to have fragmented distributions and populations that are slowly declining. The species have low productivity and there are some indications of at least local impacts from illegal collection. However, it is not clear what proportion of the population of any species is subject to such collection. Overall, there is insufficient information to determine whether regulation of trade (which is in any event illegal) is required to prevent any of the species becoming eligible for inclusion in Appendix I in the near future or whether harvest for trade is reducing any species to a level at which its survival might be threatened by continued harvesting or other influences.

The species resemble each other, and appear to be relatively easily distinguishable as a group from other geckos. If it were considered that any one of the species met the criteria for inclusion in Appendix II under Annex 2 a of *Resolution Conf. 9.24 (Rev. CoP15)* then the other species in the genus would appear to meet the look-alike criteria in Annex 2 b.

Supporting Statement (SS)	Additional information
<p><i>Naultinus</i> consists of eight described species and an additional species, <i>Naultinus</i> “North Cape”, which is yet to be formally described.</p> <p>New Zealand.</p> <p><i>Naultinus gemmeus</i>: Near Threatened. <i>Naultinus manukanus</i>: Data Deficient. <i>Naultinus rudis</i>: Lower Risk/least concern.</p>	<p style="text-align: center;"><u>Taxonomy</u></p> <p style="text-align: center;"> </p> <p style="text-align: center;"><u>Range</u></p> <p style="text-align: center;"> </p> <p style="text-align: center;"><u>IUCN Global Category</u></p> <p>Assessed 2010 (ver. 3.1). Assessed 2010 (ver. 3.1). Assessed 1996 (ver. 2.3) (needs updating).</p>

Supporting Statement (SS)	Additional information
<p>Biological and trade criteria for inclusion in Appendix II (Res. Conf. 9.24 (Rev. CoP15) Annex 2 a)</p>	
<p><u>B) Regulation of trade required to ensure that harvest from the wild is not reducing population to level where survival might be threatened by continued harvest or other influences</u></p>	
<p>The nine <i>Naultinus</i> species have ranges which abut but do not overlap. Once widespread throughout New Zealand, their ranges are now highly fragmented due to habitat loss and modification. They are found only on the mainland and a few of the largest, inhabited offshore islands, thus lacking the protection that remote and pest/mammal-free islands provide for many other New Zealand lizards.</p> <p>Population size is extremely difficult to estimate. Population monitoring has only occurred on a very local, short-term basis, and is made difficult by the geckos' arboreal and cryptic behaviour, extremely good camouflage and weather-dependent activity. Population status and trend estimates are typically provided with very large confidence intervals.</p> <p>The populations of all <i>Naultinus</i> species have been assessed as declining at a rate of >10% over three generations by a panel of herpetological experts as part of the New Zealand Threat Classification of reptiles.</p> <p>Studies have found local <i>Naultinus</i> population densities up to 40 and even 500 individuals per hectare. Given the relatively large ranges of most species, this would suggest populations of thousands to tens of thousands of individuals. However, the populations studied were in fragments of remnant habitat, which likely resulted in inflated population densities due to in-migration from surrounding areas. It is thought that most populations are at much lower densities. <i>Naultinus</i> species are at unknown but presumably low densities in the canopy of at least some types of tall forest.</p> <p>Illegal harvesting of <i>Naultinus</i> species, and especially <i>N. gemmeus</i>, for international markets constitutes a serious additional threat (particularly for species with small populations and ranges). All <i>Naultinus</i> species share characteristics that make them desirable among collectors. As well as being extremely colourful and attractive (often predominantly bright green, uniformly coloured or with contrasting coloured stripes or</p>	<p><i>The distribution of Naultinus species is considered to be less than 20% of their former range (Hitchmough, 2012). According to Knox in litt. (2012), all Naultinus species are sparsely distributed, very rare or extinct in many parts of the country (including many areas with suitable habitat), with populations generally small and probably in decline. Many Naultinus species do not have populations in protected areas with mammalian predator control, therefore long-term viability is uncertain. Populations of most Naultinus species are thought to be in the range of 5,000-30 000 individuals (Knox in litt., 2012). Jewell (2008) believes that the Naultinus populations of the Southland mainland have suffered a catastrophic decline and may be critically endangered, if not already functionally extinct.</i></p> <p><i>The lack of information on population sizes and trends is a key problem for New Zealand gecko conservation. The geckos' cryptic behaviour means that numbers and distribution are often underestimated, so species may be less threatened than they appear. On the other hand, declines may not be noticed until they are very advanced (Hitchmough, 2010).</i></p> <p><i>The 2012 revision of the New Zealand Threat Classification for reptiles assessed all Naultinus species, other than N. rudis and N. tuberculatus, as "At Risk: Declining". N. rudis and N. tuberculatus were afforded the higher threat status of "Threatened: Nationally Vulnerable" based on ≤15 populations of ≤500 individuals and an expected continued decline rate of 10-50% over the next three generations (Hitchmough et al., in press).</i></p> <p><i>Whitaker in litt. (2012) considers population densities of 40-500 individuals per hectare to be exceptional, highly-localised, and driven by features of the habitat alone. Densities in tall forest canopies are unknown due to a lack of sampling effort/ available sampling methodologies (Whitaker in litt., 2012).</i></p> <p><i>According to Hitchmough (2012), virtually all international trade in Naultinus species is in illegally-caught wild animals. Whitaker in litt. (2012) states that all Naultinus species are targeted by illegal collectors, but some (e.g. Naultinus stellatus and N. gemmeus) more so than others. Naultinus are slow-moving and may be particularly vulnerable to collection at certain times of the day, e.g. when basking openly on cool but sunny</i></p>

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<p>spots), they are diurnal, long-lived and have unusual features such as bearing live young. In the past four years, there have been several incidents of poaching and smuggling involving <i>Naultinus</i> species, some of which have targeted gravid females.</p> <p>Illegal harvesting is known to have had a serious local impact on one well-studied population of <i>N. gemmeus</i>. Other <i>Naultinus</i> populations are not being monitored so closely, making it difficult to determine impacts at the species level. The SS suggests that, with rates of detected poaching incidents accelerating in recent years, impacts are likely to spread rapidly to other <i>Naultinus</i> populations and become a major agent of decline.</p> <p>All <i>Naultinus</i> species are characterised by delayed maturity (2-4 years) and low reproductive output (1-2 live offspring per adult female per year). These characteristics limit the ability of <i>Naultinus</i> populations to recover from poaching. Even low levels of trade may have significant effects on wild populations.</p> <p>Natural recolonisation is extremely unlikely at isolated sites where populations have been extirpated. Increased levels of localised inbreeding are also likely where populations have been fragmented by agricultural development.</p> <p>There has been minimal legal trade in specimens of New Zealand geckos, involving a maximum of 21 individuals of two species (<i>N. elegans</i> and <i>N. grayii</i>) since the Appendix III-listing. Since 2003, only 11 <i>Naultinus</i> geckos have been exported from New Zealand for scientific and law enforcement purposes, and up to 10 individuals have been legally traded elsewhere (between Canada, China, Germany and the USA).</p> <p>Over the past few years, New Zealand border control agencies have intercepted several individuals attempting to leave the country carrying illegally-harvested gecko specimens. Since 2009, seven individuals have been successfully prosecuted for attempting to smuggle New Zealand geckos and skinks. In a number of these cases, the geckos were destined for the European Union. Annex 1 to the Proposal shows that <i>Naultinus</i> geckos are available for Internet purchase in Europe, from between EUR1000 and 8500 per individual.</p> <p><i>Naultinus gemmeus</i> (specifically the populations of the Otago Peninsula and Banks Peninsula) has been particularly targeted by poachers in recent years.</p>	<p><i>mornings</i> (Hitchmough, 2012).</p> <p><i>The desirability of Naultinus geckos is discussed amongst reptile enthusiasts in online forums. In November 2012, specimens of N. grayii were being advertised for sale by several apparently EU-based sellers on two gecko trading websites (TRAFFIC Europe in litt., 2012).</i></p> <p><i>Some members of the New Zealand nocturnal gecko genus Hoplodactylus, which are the closest relatives of Naultinus geckos, have extreme longevity, e.g. up to 42 years in H. maculatus aff. Maculates 'Canterbury' (Lettink and Whitaker 2006).</i></p> <p>Range and population status: <i>N. gemmeus is endemic to the southeast of the South Island of New Zealand. Two main populations exist, on the Otago Peninsula and Banks Peninsula, but specimens may be found in the region linking these two areas (New Zealand Herpetological Society, 2006) and beyond these areas to the north and south (Whitaker in litt., 2012). The extent of occurrence is over 50 000 km² but its distribution within this area is severely fragmented, giving a much smaller inferred area of occupancy (IUCN Red</i></p>

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<p>The best-studied population of <i>N. gemmeus</i> (on the Otago Peninsula) is considered to be in severe decline: an estimated 95% reduction in 14 years from 1994 to 2008. Part of this decline results from mammalian predation; populations nearest to Dunedin city have disappeared progressively, with grazing concentrating rodents and geckos into the same remnants of high quality habitat. Poaching is also believed to have had serious impacts on this population (New Zealand herpetologists observe that illegal collection “appears to have been a major factor in the decline and imminent extinction of at least one gecko population on the Otago Peninsula”). Gravid females have been disproportionately represented in consignments seized</p>	<p><i>List Assessment; Hare and Hitchmough, 2010).</i></p> <p><i>In the 2012 revision of the New Zealand Threat Classification System, N. gemmeus was assigned the status of “At Risk: Declining” (i.e. no change from the previous 2009 assessment). Area of occupancy was estimated at >100 000 hectares, with unknown population density in much of this range and ongoing population decline (rate of >10% over the next three generations) (Hitchmough, 2012; Whitaker in litt., 2012). N. gemmeus was also assigned the qualifier of “Sparse” owing to its small and isolated populations (Whitaker in litt., 2012).</i></p> <p><i>Knox in litt. (2012) estimates the total N. gemmeus population at between 12 000 and 20 000 individuals. Populations away from the strongholds on the Otago Peninsula and Banks Peninsula tend to be small and localised (Whitaker in litt., 2012). Surveys carried out on the South Island mainland found populations numbering in the tens, or occasionally in the low hundreds of individuals, generally confined to tiny, poor quality habitat fragments subject to ongoing degradation (Hitchmough, 2012). Recent surveys at inland sites in Otago and Canterbury have found occasional geckos at a small number of sites, indicating very sparse distributions and low numbers (Knox in litt., 2012). Low population densities at these sites may be related to thermal limitations (severe winter frosts, 500-1000 m above sea level), in contrast to the milder maritime climate of the Otago Peninsula (Lettink in litt., 2012).</i></p> <p><i>All N. gemmeus populations are known from a small number of individual sightings spread over the last 30 years (Knox in litt., 2012). Across large areas, N. gemmeus has not been recorded in recent times despite historical records and the continued presence of apparently suitable habitat, e.g. the Southland region (Whitaker in litt., 2012). Several unsuccessful searches carried out on the South Island mainland indicate extinction of some populations (Hitchmough, 2012). There are no known populations of N. gemmeus on the mainland of the Southland region; in the central Otago region; or on Stewart Island (Knox in litt., 2012).</i></p> <p><i>Estimation of N. gemmeus populations is currently impossible in tall kānuka, broadleaf, podocarp, beech or other forest (Knox, 2011).</i></p> <p>Threats: <i>Introduced predators, exploitation for international trade and habitat degradation are having a detrimental effect on N. gemmeus populations (Hare and Hitchmough, 2010).</i></p> <p><i>Contrary to the information in the Supporting Statement, Knox in litt. (2012) states that it is the concentration of high densities of mammalian predators in rank grasses surrounding habitat fragments (e.g. following land-use changes such as the removal of livestock grazing) that is likely to result in unsustainable levels of predation and, therefore, continued population declines in N. gemmeus populations.</i></p>

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<p>from poachers, presumably because these animals are more valuable, larger and need to bask frequently to maintain high body temperature for foetal development. The loss of breeding females further exacerbates the deleterious effects of poaching and predation on this (and other) populations.</p> <p>An impact report submitted by a herpetofauna expert for a successful prosecution of an apprehended smuggler noted that an estimated 100-200 specimens of <i>N. gemmeus</i> may have been taken from the Otago Peninsula. At the regional scale, the removal of 100-200 geckos would correspond to a decline of 7-14% in the known <i>N. gemmeus</i> population.</p> <p>Specimens intercepted at the New Zealand border, photographed and returned to the wild have since been identified as advertised for sale on an internationally-hosted reptile website. This indicates they had been poached for a second time at the same site and that the poachers successfully avoided detection at the New Zealand, and offshore, borders.</p> <p>At least two other <i>N. gemmeus</i> populations on the Otago Peninsula are known to have been targeted by poachers, in some cases repeatedly.</p>	<p>Trade: According to Lettink in litt. (2012), 100-200 <i>N. gemmeus</i> specimens were taken from the Otago Peninsula during a one-year period from a regional population of approximately 1400 individuals.</p> <p><i>The impacts of illegal collection are localised (not all populations are targeted) but can be severe, with some small populations apparently wiped out by illegal collection (Whitaker in litt., 2012). A scientific reserve set up for the protection of N. gemmeus in Otago was neglected, mismanaged and targeted by poachers, apparently resulting in the disappearance of the entire population (Muller, 2010). The extent to which poaching contributed to this decline is difficult to assess; however at least 6 jewelled geckos are known to have been taken by poachers (Knox, 2009). These geckos were later found in Hamburg, Germany, and identified as being from the reserve due to their unique toe clips. Poaching is suspected to have occurred at the reserve due to the identification of the site in a published book (Knox, 2009).</i></p> <p><i>Reports from local residents on the Banks Peninsula, a reputed stronghold for N. gemmeus, suggest that the number of individuals is declining. Some are convinced that poaching is an issue on the peninsula, with reports of several people seeking precise locality data for the species (Jewell, 2008).</i></p> <p><i>Jewell (2008) considers that poaching is likely to be an ongoing problem, as N. gemmeus fetch as much as USD9000 each on the overseas black market.</i></p>

Inclusion in Appendix II to improve control of other listed species

A) Specimens in trade resemble those of species listed in Appendix II under Res. Conf. 9.24 (Rev. CoP15) Annex 2 a or listed in Appendix I

<p>Identification of <i>Naultinus</i> species can be difficult for non-experts. As species have largely parapatric distributions, field identification is commonly based on location rather than morphological features. There is also considerable colour variation between individuals.</p> <p>Domestic experience has indicated that enforcement officers who encounter specimens of CITES-listed species at the border are unlikely to be able to reliably distinguish between the various species of <i>Naultinus</i> geckos, especially between the uniformly green morphs of <i>N. gemmeus</i> and other species.</p>	<p><i>Even specialists may find it difficult to distinguish between the different colour morphs of the various Naultinus species (Towns in litt., 2012).</i></p> <p><i>Nearly all Naultinus species have been shown to hybridise to produce fertile offspring (Whitaker in litt., 2012, citing Meads, 1982). This compounds the problem of identification. Some animals offered for sale in Europe appear to be hybrid stock (Whitaker in litt., 2012).</i></p>
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<p>Other information</p> <p>Habitat loss/degradation and introduced mammalian predators are believed to be the key causes of declines in <i>Naultinus</i> populations. Clearance of New Zealand's primary forests largely ceased in the early 1990s; however, secondary shrublands are threatened by agricultural intensification, coastal development and exotic plantation forestry. New Zealand geckos also suffer from competition for favoured food sources from rodents, possums and introduced vespid wasps.</p> <p>Illegal collection for international trade poses a significant additional risk for many species which has accelerated dramatically in the last few years.</p>	<p>Threats</p> <p><i>Naultinus geckos primarily inhabit mainland rather than island sites (only five of the nine species have island populations and, for N. stellatus, there is only one small island with a sparse population) (Whitaker in litt., 2012). Numbers have therefore continued to decline through the combined effects of introduced predators, habitat loss and illegal harvest (Towns in litt., 2012).</i></p> <p><i>Knox in litt. (2012) attributes declines in Naultinus populations to the combined effects of habitat loss and modification, predation from introduced mammals, the genetic effects of isolation and poaching. While much attention has been given to the impact of larger mammals such as rats, cats and stoats on New Zealand lizards, Jewell (2008) notes that smaller mammals (mice, weasels, etc.) could have an even worse effect. For example, lizard numbers increased dramatically after mice were removed from Mana Island.</i></p>
<p>Conservation, management and legislation</p> <p>All eight described <i>Naultinus</i> species, and the undescribed <i>Naultinus</i> "North Cape", are considered "At Risk" under the New Zealand Threat Classification System.</p> <p>All <i>Naultinus</i> species have been absolutely protected under New Zealand's Wildlife Act 1953 since 1981. Before this date, both domestic and international trade were regulated but not prohibited. Herpetologists, collectors and hobbyists within New Zealand could legally take geckos from the wild; trade these with other hobbyists within New Zealand; and submit an application to the then Wildlife Service of the Department of Internal Affairs for authority to export to other countries. Nationally, geckos could be sold from pet shops.</p> <p>Since 1981, it has been illegal for live geckos of the genus <i>Naultinus</i> to be traded, or for them to be collected from the wild. Collection may be carried out only under permits issued by the Department of Conservation, but such permits have been issued rarely since 1981 and almost all were issued for research purposes. Export of captive-bred animals is a rare occurrence, such as for law enforcement and scientific purposes.</p> <p>New Zealand geckos (<i>Hoplodactylus</i> spp. and <i>Naultinus</i> spp.) have been listed in Appendix III of CITES since 28 May 2003. While the Appendix III listing has been adequate for controlling the legal trade of New Zealand geckos (which has been minimal), the level of protection has proven to be inadequate for addressing their</p>	<p><i>Prior to 1981, wild collection of Naultinus geckos was still prohibited in certain circumstances, e.g. removal from national parks or reserves. Since 1981, trade in both live and dead Naultinus geckos has been prohibited (Whitaker in litt., 2012).</i></p> <p><i>New Zealand's Wildlife (Smuggling Deterrence) Amendment Bill will increase the maximum penalty for smuggling of native animals such as geckos from 6 months' imprisonment or a USD100 000 fine to up to five years' imprisonment and/or a USD300 000 fine (Wilkinson, 2012).</i></p> <p><i>It appears that certain traders in the EU may be under the misapprehension that legal exports of Naultinus species were possible between 1994 and 1996 and that it is from these legal exports that a few breeding colonies were established in the EU (e.g. in Belgium and Germany) (Anon., 2012). Legal exports between 1994 and 1996 were only possible for the species Hoplodactylus maculatus and Hoplodactylus granulatus, to which full protection from domestic exploitation was only extended in 1996.</i></p> <p><i>As in the case of most CITES Appendix III-listed species, all species of Naultinus are currently listed in Annex C to Council Regulation (EC) No 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein. Regulation (EC) No 338/97 regulates the import and export of specimens of Annex C-</i></p>

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<p>illegal trade. For example, not all countries have domestic legislation that penalises international trade in specimens in Appendix III that have been exported or re-exported in violation of the laws of the country of origin.</p> <p>Active reintroduction of endemic New Zealand lizards onto pest/mammal-free offshore islands has been used to mitigate declines. The gradual eradication of introduced mammals on many offshore islands has allowed some populations to recover naturally. Benefits to <i>Naultinus</i> populations are, however, limited as they are naturally absent from most small islands with seabird dominated ecologies.</p> <p>Predator-free offshore islands are also not available for some species (e.g. <i>N. rudis</i>, <i>N. tuberculatus</i>).</p> <p>Benefits of intensive predator management/pest eradication on the New Zealand mainland and offshore islands have not yet been demonstrated for <i>Naultinus</i>, mainly due to the difficulties associated with monitoring its populations.</p> <p>Detailed long-term regional lizard conservation work plans have been formulated for most areas of New Zealand.</p>	<p><i>listed species, but does not regulate any further activity inside the European Union. The listing of the genus Naultinus in Appendix II and in Annex B of Regulation (EC) No 338/97 would change the legal situation in the EU as intra-Community trade would be regulated by Article 8(5) of Regulation (EC) No 338/97. Consequently, EU enforcement bodies would be enabled to initiate further actions to check the legality of such trade (Böhmer in litt., 2012).</i></p> <p><i>Whitaker in litt. (2012) considered that Naultinus population increases resulting from the removal of predators have been restricted to infinitesimal areas in relation to the widespread trend of habitat loss and degradation, and the impacts of introduced predators and competitors.</i></p>
<u>Captive Breeding/Artificial Propagation</u>	
<p>Before New Zealand gecko species became absolutely protected under national legislation, domestic export permits were available upon application. Small captive populations of New Zealand geckos were established at this time, for example in Europe, and some may still exist today. However, if they do exist, the genetic diversity of these populations may be limited.</p> <p>Within New Zealand, several hundred private individuals and some zoological gardens and similar institutions hold individuals or populations of <i>Naultinus</i> under permit on a non-commercial basis. For most species, reproduction only slightly exceeds mortality. The total captive population across all species is likely to be less than 1000 in New Zealand. The predominant species held are the North Island <i>Naultinus</i> species (<i>N. elegans</i>, <i>N. grayii</i> and <i>N. punctatus</i>). There are also smaller populations of some of the South Island <i>Naultinus</i> species. These species all have satisfactory reproductive rates if well-managed in semi-natural conditions in outdoor enclosures. However, species and even populations can vary widely in terms of the ease with which they can be kept and bred in captivity.</p> <p>In New Zealand, a captive population exists of <i>N. gemmeus</i> descended from Banks Peninsula animals collected before 1981. However, the morphologically distinct</p>	<p><i>There are records of a number of professional institutes within New Zealand, the USA and the UK breeding various Naultinus species up until 1997 (Slavens and Slavens, 2002).</i></p> <p><i>Although not covering all holders, the most recent New Zealand Herpetological Society census (for 2010) lists fewer than 600 geckos across eight of the Naultinus species (Whitaker in litt., 2012).</i></p>

Supporting Statement (SS)	Additional information
Otago Peninsula population on which most poaching has focussed now has very few if any animals in captivity in New Zealand, despite a captive population existing in the 1970s-80s.	

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