



Reptiles and Amphibians of the  
Trans-Fly Region, New Guinea

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Survey**

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**Reptiles and Amphibians of the  
Trans-Fly Region, New Guinea**

Allen Allison

Pacific Biological Survey, Bishop Museum, 1525 Bernice Street  
Honolulu, Hawaii, 96817-2704, USA

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## 1. ABSTRACT

There are 102 species of reptiles and 25 species of frogs known from the Trans-Fly region. Twenty-nine of the reptiles and one of the frogs are of special conservation concern. Seven of these species are of high conservation concern: two turtles (*Chelodina parkeri* and *C. reimanni*), a monitor lizard (*Varanus salvadorii*), three snakes (*Cantoria annulata*, *Pseudechis rossignolli*, and *P. papuanus*) and one frog (*Litoria quadrilineata*). More field survey work is needed to determine the status of these and other species in order to guide and inform natural resource management action in the Trans-Fly region.

## 2. INTRODUCTION

In this report New Guinea refers to the entire island of New Guinea and its satellite islands, including the Aru Islands (which are politically part of Maluku); a broader term, New Guinea region, refers to New Guinea together with the Bismarck and Admiralty archipelagos to the north. The entire area from New Guinea to the Solomon Islands is called the Papuan region. The Trans-Fly region includes the savanna and associated forested areas of New Guinea that roughly lie below the area bounded by the mouths of the Fly River in the east to the Digul River in the west (Fig. 1).

There are a total of 102 species of reptiles recorded from or likely to occur in the Trans-Fly region of New Guinea (Appendix 1a). These include nine turtles, two crocodiles, 52 lizards, and 39 snakes. Fifty-eight of these species are shared with Australia: three turtles, one crocodile, 28 lizards, and 26 snakes (Appendix 1b). This latter group includes two species, *Nactus* sp. and *Cryptoblepharus* cf. *virgatus*, which are poorly characterized taxonomically. It is probable that the *Nactus* sp., which is sometimes listed as *Nactus* “*pelagicus*” (e.g., Wilson, 2005), is a single taxon that occurs in both New Guinea and Australia. This is less certain for the *Cryptoblepharus*. *Cryptoblepharus virgatus* is found along the coast of NE Australia from New South Wales to the tip of Cape York and the Torres Strait Islands. It, or, quite possibly a closely related taxon, inhabits the Trans-Fly region.

Forty-four of reptiles found in the Trans-Fly are not shared with Australia (Appendix 1c). Thirty-one of these species (30% of the Trans-Fly reptiles) are endemic to New Guinea (Appendix 1c) and three of these (3%) are endemic to the Trans-Fly region (Appendix 1d).

Thirteen of the Trans-Fly species that are indigenous to New Guinea do not occur in Australia (Appendix 1e). These include an Indo-Pacific skink (*Emoia caeruleocauda*), two species of widespread Indo-Pacific geckos; another gecko (*Gehyra vorax*) that occurs in the SW Pacific; four lizards that occur in the Bismarck and/or Admiralty archipelagos, a snake, *Aspidomorphus muelleri*, that is found in the Bismarck Archipelago as well as Maluku, two lizards and two snakes that are also found in Maluku.

More than half the Trans-Fly species that are shared with Australia have extensive geographic ranges in that country. This often includes the Cape York Peninsula and coastal areas along the north, extending for some species to Western Australia. However, at least two geckos, *Hemidactylus frenatus* and *Lepidodactylus lugubris* are widespread Indo-Pacific species that have recently colonized Australia, possibly through human transport, and have relatively localized distributions in northern Australia. Also, a poorly known species of gecko, *Gehyra baliola*, probably occurs in the Torres Strait Islands but does not seem to occur on the Australian mainland. In addition, a number of Trans-Fly skinks such as *Emoia atrocostata*, *E. longicauda* and *Eugongylus rufescens*; varanids, such as *V. doreanus*, and *V. prasinus*; an elapid snake, *Pseudechis papuanus*; and a python, *Leiopython albertisi*, are widespread in New Guinea and adjacent areas of the southwest Pacific but in Australia are restricted to the tip of the Cape York Peninsula or the Torres Strait Islands. However, further taxonomic studies of these taxa may alter this situation. *Leiopython albertisi*, for example, may be a composite species. If so, the name *Leiopython hoseae*, may apply to the Cape York population.

The status of the rough-scaled death adder, *Acanthophis rugosus*, is also uncertain. I am treating it as occurring in northern Australia and New Guinea, where it is restricted to the Trans-Fly. However, its range in northern Australia has yet to be determined and further taxonomic study may demonstrate that it is endemic to New Guinea.

Thirteen of the species endemic to New Guinea are widespread and 18 are restricted to southern regions. Of this latter group, at least ten are widely distributed along the south coast: *Elseya branderhorsti*, *Pelochelys bibroni*, *Cyrtodactylus papuensis*, *Carlia bicarinata*, *C. digulensis*, *E. aenea*, *E. aurulenta*, *E. tropidolepis*, *Sphenomorphus aruensis*, and *Pseudechis papuanus*. The remaining eight species are either endemic to the Trans-Fly region (*Chelodina reimanni*, *Cantoria annulata* and *Pseudechis rossignolii*), or they also occur just outside this region, i.e., other parts of the Fly River/Digul River drainage basin (*Chelodina novaeguineae*, *C. parkeri*, *Carlia aenigma*, *Carlia aramia*, and *Emoia brongersmai*).

There are 25 species of frogs known from the Trans-Fly region. These include 12 hylids, seven microhylids, four myobatrachids and two ranids (Appendix 2a). In addition the introduced toad, *Bufo marinus*, is found in the area. Twelve frog species are shared with Australia (Appendix 2b), with one of these, *Litoria rubella*, also occurring in Timor. The remaining 13 species are endemic to New Guinea (Appendix 2c). Five of these latter species are endemic to the south coast of New Guinea and one, *Litoria quadrilineata*, is endemic to the Trans-Fly area (Appendix 2d).

### 3. CONSERVATION STATUS AND SPECIES OF CONCERN

The skinks – which comprise 50% of the Trans-Fly lizards, are mostly small, insectivorous, heliothermic species with small home ranges. They are generally found in forest or savannah areas, often both. Although some of these species, such as *Ctenotus robustus* and *C. spaldingi*, have relatively small geographic ranges in New Guinea and appear to be uncommon in the Trans-Fly region, they have large ranges in Australia. In fact, as a general rule, species that are shared with Australia and have a restricted geographic range in the Trans-Fly, tend to have large geographic ranges in Australia. None of the species appears to be of conservation concern.

The varanids, represented in the Trans-Fly region by six species, are moderate to large-sized lizards that actively forage, preying on small vertebrates and carrion. One of them, *Varanus salvadorii*, has been documented to reach nearly 3 m in total length and there are unconfirmed (and rather doubtful) reports of some individuals exceeding four meters. All varanids are important to the pet trade and most are actively hunted for their skins (used for making drums) and for meat. Inasmuch as varanids are covered by CITES (Appendix 3) their conservation status is of heightened concern. The species of highest concern is *Varanus salvadorii*. Although this species has a large geographic range in New Guinea, it tends to be uncommon and is highly sought after by the pet trade. *Varanus doreanus* is known from only a few localities in New Guinea and northern Australia but because of this wide distribution is probably not in immediate conservation jeopardy. Its status in the Trans-Fly is unknown. *Varanus panoptes* occurs in savanna and grassland areas in northern Australia and New Guinea and is relatively common in the Trans-Fly. *Varanus indicus* is widely distributed and common in the Indo-Australian region, and is also found on some islands in the western Pacific (in some cases as a result of human introductions). It, and *Varanus prasinus*, a beautiful, arboreal species that is widespread in New Guinea, are the varanids of least concern. *Varanus similis* is a savanna species that is widespread in the Trans-Fly and a large part of Australia. It is a member of the *Varanus scalaris* group. The systematics of species in that group are quite unsettled and it is possible that *Varanus similis* is a composite species. Its population in New Guinea could represent an endemic species, but more probably represents a species shared with Australia but occupying a much smaller distribution than does *Varanus similis* in the broad sense. For this reason it is of special concern.

The agamids, pygopodids and geckos are generally all common in the Trans-Fly region, mostly in savanna-woodland areas. The only species of special concern is an agamid, *Chlamydosaurus kingii*, the frilled-neck lizard, which is highly sought after for the pet trade.

The Trans-Fly region is the richest area in New Guinea for snakes. There are currently 87 species of non-marine snakes known from New Guinea (including brackish water species). Thirty-nine of these occur in the Trans-Fly region and two of them, a homalopsine, *Cantoria annulata*, and an elapid, *Pseudechis rosignolli*, are endemic. *Pseudechis rosignolli*, formerly included within *Pseudechis australis*, a widespread Australian snake that previously was thought to reach southern New Guinea, was recently described from specimens collected around Merauke. Its status in New Guinea is unknown. A related species, *P. papuanus*, was once common in the savanna-woodland areas of the Trans-Fly, around Port Moresby and other savanna regions of the south coast, but is apparently now much less common, probably due to habitat loss but possibly because of the introduction and spread of the cane toad (Parker, 1982), which is poisonous if ingested. Both species of *Pseudechis* are of special concern.

*Cantoria annulata* is known only from a few areas in the Trans-Fly region. It doesn't appear to be facing any immediate threats but is apparently rare. Because of its rarity and restricted range it is considered a species of high conservation concern.

The pythons and boids are all listed in CITES (Appendix II) and are therefore of special concern. However, the Appendix II classification is generally used to reduce trade volume and to protect similar looking Appendix I species. All of the python species found in the Trans-Fly generally occupy large geographic ranges in New Guinea or Australia and don't appear to be of high

conservation concern, although two species, *Liasis fuscus* and *Antaresia maculosa*, which are widespread in Australia, are restricted in New Guinea to the Trans-Fly region and are therefore species of moderate conservation concern.

There are 11 species of non-marine turtles found in New Guinea. Nine of these occur in the Trans-Fly, making it the richest part of New Guinea for turtles. One of the most interesting species, *Carettochelys insculpta*, has a large geographic range along the south coast of New Guinea and also inhabits a few drainage basins in northern Australia. It is the sole living representative of the family Carettochelidae. This family has an extensive fossil record that suggests it may have once had a nearly worldwide distribution. *Carettochelys insculpta* is clearly relictual and has occurred in New Guinea since at least the Miocene (Glaessner, 1942). Although it is present in large numbers along the south coast of New Guinea, it is heavily exploited by coastal villagers for meat and eggs. In addition, it is a valuable species in the pet trade. For these reasons, and on account of its special taxonomic status, it is a species of special concern.

A distant relative, the trionychid, *Pelochelys bibroni*, is endemic to the south coast of New Guinea, mostly inhabiting large rivers with sandy bottoms. However, it sometimes ascends into small streams. It is generally uncommon but has an extensive range and doesn't appear to be of special conservation concern.

The remaining seven Trans-Fly turtles, are all members of the Chelidae, a family that is today restricted to South America and the Australia–New Guinea region (an outlying species occurs on Roti near Timor), suggesting that the family is of Gondwanan origin. Two species, *Emydura subglobosa* and *Chelodina rugosa* also occur in Australia. The rest are endemic to New Guinea and all but *Elseya novaeguineae* are endemic to southern New Guinea.

*Emydura subglobosa* inhabits slow-flowing rivers, lakes and swamps across much of southern New Guinea. It appears to be present in fairly high numbers in New Guinea and because of its large geographic range doesn't appear to be of immediate conservation concern. *Chelodina rugosa*, which inhabits *Melaleuca* swamps throughout the Trans-Fly region and occurs across much of northern Australia, appears to be fairly common throughout its extensive range.

*Chelodina novaeguineae*, which has previously been thought to also occur in Australia, is now regarded as endemic to New Guinea (McCord and Thomson, 2002). It inhabits coastal swamps and slow-flowing rivers throughout the Trans-Fly and extends westwards to at least the Lorentz River. Although *Chelodina novaeguineae* has a large geographic range, it appears to be relatively uncommon, a matter of possible conservation concern.

The four remaining species have rather limited geographic distributions and for this reason are of special concern. These include *Chelodina reimanni*, which is apparently endemic to the Trans-Fly region, inhabiting coastal swamps at the mouth of the Digul drainage and around Merauke and adjacent areas; *Chelodina parkeri*, which inhabits inland waters north of the Fly River and therefore has a limited distribution in the Trans-Fly region; and two species of *Elseya*, *E. novaeguineae*, which also occurs on the north coast, and *E. branderhorsti* which is restricted to the south coast of New Guinea, occurring from just inside the Papua New Guinea border in the east to



the Lorentz River in the west. *E. branderhorsti* primarily inhabits large rivers, lakes and freshwater swamps. *Elseya novaeguineae* has similar habitat preferences.

The two species of crocodiles, *Crocodylus porosus* and *C. novaeguineae*, are heavily exploited in New Guinea for meat and skins. For these reasons they are of special concern. Both Indonesia and Papua New Guinea have well-developed programs for managing crocodile populations.

Most of the species of frogs found in the Trans-Fly region are widely distributed and are of no immediate conservation concern. However, one species, *Litoria quadrilineata*, is endemic to the Trans-Fly, where it is known only from a small region around Merauke, Papua and is therefore a species of concern because of this restricted range. It is listed as vulnerable by the Global Amphibian Assessment. It is also important to keep in mind that some of the frogs that are shared with Australia, such as *Litoria rothii*, may with further taxonomic study, prove to be endemic to that continent. In this case the New Guinea populations would likely become endemic to the Trans-Fly region and would become species of concern. Three additional species of Trans-Fly frogs, *Litoria dorsalis*, *Rana novaeguineae*, and *Xenobatrachus bidens* are endemic to the south coast of New Guinea and a fourth species, *Litoria congenita*, is restricted to the south coast of New Guinea and the Aru Islands. Although *Xenobatrachus bidens* is thought to have a large range on the south coast, it is known by only a few specimens and could be a rare species. It was, however, regarded as a species of least concern by the Global Amphibian Assessment. The remaining seven species endemic to New Guinea are all widely distributed on that island.

To summarize, there are 30 species of reptiles and amphibians of special concern. These are listed in Table 1, together with reasons for concern and estimated threat level. Twelve of these appear to face low level threats, 11 face a moderate threat level, and seven are thought to be highly threatened. This latter group includes two species of turtles that are endemic or nearly endemic to the Trans-Fly region, three species of snakes that are endemic to the Trans-Fly, a goanna, *Varanus salvadorii*, which appears to be uncommon to rare throughout its wide range and a hyloid frog, *Litoria quadrilineata*, that is currently known only from around the Merauke area in the Trans-Fly.

### 3.1 Species Accounts – Species of High Concern (range maps are shown in Appendix 3)

#### ***Chelodina parkeri*** Parker's Snake-necked Turtle [Fig. 2]

One of four species of long-necked chelid turtles found in New Guinea, *Chelodina parkeri* occurs mainly in inland swamps and shallow water areas in the Trans-Fly, particularly within the tributaries of the Fly River (Iskandar, 2000; Georges et al., 2005). According to Iskandar (2000) the largest specimen measured 267 mm in carapace length and according to him this species feeds mainly on shrimp and fish. Together with *Chelodina rugosa* and several endemic Australian species it has a relatively broad head, long thick neck and narrow plastron, placing it within a group of ambush predators (Burbridge et al., 1974; Georges and Thomson, in press). It is listed as Vulnerable in the 2006 IUCN Redlist.

#### ***Chelodina reimanni*** Reimann's Snake-necked Turtle [Fig 3]

This species of long-necked chelid turtle is found in coastal and adjacent inland areas from Merauke to the mouth of the Digul River where it prefers muddy and swampy areas. Together with *Chelodina pritchardi* and *Chelodina novaeguineae* (which are endemic to New Guinea), two Australian species, and *Chelodina mccordi* from Roti (near Timor), this species has a relatively narrow head, short, thick neck and wide plastron and is thought to be an active carnivorous forager (Burbridge et al., 1974; Georges and Thomson, in press). According to Iskandar (2000) it “feeds exclusively on mollusks, crayfish and large insects.” Iskandar (2000) also reports a maximum carapace length of 210 mm. This species is categorized on the 2006 IUCN Redlist as Lower Risk/Near Threatened because of its restricted range. However, because of growing demand from the pet trade I believe that this should be a species of high concern.

***Varanus salvadorii*** Salvadori’s Monitor; Crocodile Monitor [Fig. 4]

The largest lizard in New Guinea and possibly the longest lizard in the world, *Varanus salvadorii* is thought to occur over a wide area of central and western New Guinea, although it has been documented from relatively few localities. It has been reported to reach lengths of 4.5 m (Cann, 1974) but the largest documented specimen is only 2.65 m in total length (Böhme and Ziegler, 1997). Coloration is variable but the dorsum is generally dark brown to black with bands of variable-sized yellowish ocelli. *Varanus salvadorii* has generally been reported from forest and forest-edge habitat but appears to also occur in more open woodland habitat within the Trans-Fly region. It is thought to be highly arboreal and to prey on birds and mammals in the wild, but its prey preferences are poorly known. Observations made on captive specimens demonstrate that males are highly aggressive towards one another. Captive females have produced clutches of 4-12 eggs (Horn, 2004). It is not included in the IUCN Redlist but appears to be uncommon to rare, and because of this, is a species of high conservation concern despite its extensive range.

***Cantoria annulata*** Banded Mangrove Snake [Fig. 5]

This rare snake was described from Sudarso Island (Fredrick Hendrick Island) in 1927 and has subsequently been found in Daru and Bobo Islands and at Abam on the Oriomo River (Parker, 1982). It is known from fewer than ten specimens, the largest of which is 62 cm in total length (Parker, 1982). The dorsum is dark brown to black with narrow reddish bands; the ventral coloration is variable, grey to brown, sometimes with yellowish blotches. It is found in mangrove areas and as with other homalopsine colubrid snakes is thought to bear living young. The conservation status of this species has not been assessed by the IUCN; it is treated herewith as a species of high concern because of its limited distribution and apparent rarity.

***Pseudechis papuanus*** – Papuan Black Snake [Fig. 6]

The highly venomous Papuan black snake was once common in savanna regions throughout the Trans-Fly and in Central Province. However, it is now extremely rare or extinct throughout most of its range, possibly because of the introduction of the cane toad which is toxic if ingested. Adult Papuan blacks can exceed two meters in length. The dorsum is uniform black and the venter is grey. The Papuan black snake is generally found in savanna and savanna-woodland habitat, often in somewhat swampy areas. It is an egg laying species. Little is known of the species in the wild

but they are thought to feed largely on frogs. It is not on the IUCN Redlist but is a species of high conservation concern because of declining numbers and local extinction.

***Pseudechis rossignolii*** New Guinea Pigmy Mulga Snake [Fig. 7]

This venomous snake attains a total length of about one meter. The dorsum is generally uniform light brown and the belly light cream-brown. It is an egg-laying species. *Pseudechis rossignolii* was formally named in 2000 and is currently known only from savanna regions around Merauke but very likely occurs in similar habitat in the Papua New Guinea portion of the Trans-Fly. Almost nothing is known of the species in its native habitat. Although it has not been assessed by the IUCN, it is herewith considered a species of high conservation concern because of its apparent restricted range, and also because there is some evidence that it is in demand by the pet trade. It should be emphasized that the systematics of *Pseudechis* are quite unsettled and it is possible that *Pseudechis rossignolii* may turn out to be conspecific with an Australian taxon.

***Litoria quadrilineata*** Striped Tree Frog [Fig. 8]

The only species of frog endemic to the Trans-Fly, *Litoria quadrilineata*, is currently known only from a small, low-lying, swampy area around Meruke in Papua Province. It is a small to moderate-sized frog with a pale brown dorsum and four highly distinctive longitudinal black stripes. The inside surfaces of the thighs are bright red and the throat is deep yellow. It produces a “low-pitched buzz-like call of approximately 2-3 seconds duration” (Tyler and Parker, 1974). It is considered to be Vulnerable in the 2006 IUCN Redlist on account of its restricted distribution.

#### 4. ECOLOGICAL STATUS OF THE TRANS-FLY HERPETOFAUNA

The four major types of habitat in the Trans-Fly region include forests (rain forest and monsoon forest), savanna-woodland (including grassland), freshwater (streams, lakes and swamps) and mangroves (brackish water). The ecological distribution of the herpetofauna is shown in Table 2. Seven species, including five turtles, a crocodile (*Crocodylus novaeguineae*) and a snake, (*Acrochordus granulatus*), are largely restricted to freshwater habitats. Five species, including a lizard (*Emoia atrocostata*) and four species of homalopsine snakes (*Cantoria annulata*, *Cerberus rynchops*, *Fordonia leucobalia*, and *Myron richardsoni*), are restricted to mangrove habitats. An additional seven species, mainly turtles and snakes, are found in both fresh and brackish water (mangrove) habitats. The remaining 77 species – all lizards and snakes – are restricted to forest and savanna regions. Fifteen species are found almost exclusively in savanna-woodland, 17 species are mostly restricted to forest and the rest are found in both habitats. This latter group includes a number of species that are generally found at the forest edge or in forest clearings and often at the interface between forest and savanna-woodland or forest and grassland.

The geographic distribution of reptile species richness in the Trans-Fly is shown in Figure 1, which demonstrates that reptile species richness is highest in the southeastern portion of the Trans-Fly. This is also where much of the human population is located and where access is easiest. It is quite possible that this map – which is still very preliminary – is an artifact of higher collecting effort in

the southeast. Certainly the relatively low species richness in the southwest Trans-Fly at least partially reflects low collecting effort in that area.

## 5. NEEDS AND RECOMMENDED ACTION

Most of the terrestrial species recorded from the Trans-Fly region are known from only a few specimens. For example, two widespread Australian lizards, *Ctenotus robustus* and *C. spaldingi*, that extend to the Trans-Fly, are documented from there by fewer than 15 museum specimens from about five localities. In addition, a chelid turtle, *Chelodina parkeri*, is an important species in the Indonesian pet trade (Yuwono, 1998) but apparently has not been documented with museum vouchers to occur in Indonesia's Papua Province, although local people apparently know it from there (Iskandar, 2000). In fact, most Trans-Fly reptiles have been documented from only five or fewer localities. The area south and SSE of Morehead is particularly poorly known as are the portions of the Trans-Fly occurring in Papua Province.

The status of the turtles in the Trans-Fly region was recently surveyed by Georges et al. (2005). This study, which documented habitat preferences, reproductive phenology and other life-history characteristics, provided a wealth of information useful for assessing the conservation threats facing these populations. This kind of survey represents a useful model that needs to be repeated for other species particularly those thought to be facing high-level conservation threats.

### Recommendations:

1. Many areas of the Trans-Fly have not been surveyed for amphibians and reptiles and the distributions of most species are poorly known. The areas in particular that should be surveyed include those portions in Indonesia's Papua Province and areas to the south and SSW of Morehead.
2. The current distributions and population status of *Pseudechis papuanus* and *P. rosignolii* should be assessed. The former species may be seriously threatened by the introduction of the cane toad; the latter species is poorly known and could be similarly threatened.
3. The distribution and population status of *Varanus salvadorii* should be assessed. This will likely require a multi-year study and would be an excellent study for a PhD student.
4. Crocodile populations in New Guinea are seriously threatened in some areas. Both species have been extensively studied in the Trans-Fly and it is very likely that those studies could provide a baseline for assessing the current status of populations.
5. The population status of Trans-Fly turtles should be monitored on an on-going basis to ensure that these populations are being sustainably harvested.
6. The impact of the pet trade in New Guinea is poorly documented. It is clear from anecdotal reports that large numbers of New Guinea reptiles may be illegally collected for the pet trade. The impact of the pet trade on the Trans-Fly herpetofauna should be carefully assessed.

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Table 01. Trans-Fly reptiles and amphibians of special concern, reasons for concern and estimated threat level

Taxon	Threat	Threat Level
<b>TURTLES</b>		
<b>Family Carettochelidae</b>		
<i>Carettochelys insculpta</i>	Exploited for meat, eggs, and the pet trade	Moderate
<b>Family Chelidae</b>		
<i>Chelodina novaeguineae</i>	May be uncommon	Moderate
<i>Chelodina parkeri</i>	Exploited for meat, eggs, and the pet trade; limited range	High
<i>Chelodina reimanni</i>	Exploited for meat, eggs, and the pet trade; limited range	High
<i>Chelodina rugosa</i>	Exploited for meat, eggs, and the pet trade	Moderate
<i>Eelseya novaeguineae</i>	Exploited for meat, eggs, and the pet trade	Low
<i>Eelseya branderhorsti</i>	Exploited for meat, eggs, and the pet trade; limited range	Moderate
<i>Emydura subglobosa</i>	Exploited for meat, eggs, and the pet trade; abundant	Low
<b>Family Trionychidae</b>		
<i>Pelochelys bibroni</i>	Exploited for meat and eggs; relatively common and widespread	Low
<b>CROCODILES:</b>		
<b>Family Crocodylidae</b>		
<i>Crocodylus novaeguineae</i>	CITES; Exploited for meat and skins	Moderate
<i>Crocodylus porosus</i>	CITES; Exploited for meat and skins	Moderate
<b>LIZARDS:</b>		
<b>Family Agamidae</b>		
<i>Chlamydosaurus kingii</i>	Exploited by the pet trade	Moderate
<b>Family Varanidae</b>		
<i>Varanus doreanus</i>	CITES; Exploited for meat, eggs, and the pet trade; abundance unknown	Moderate
<i>Varanus indicus</i>	CITES; Exploited for meat, eggs, and the pet trade; high abundance	Low
<i>Varanus panoptes</i>	CITES; Exploited for meat, eggs, and the pet trade; high abundance	Low

<i>Varanus prasinus</i>	CITES; Exploited for the pet trade; high abundance	Low
<i>Varanus salvadorii</i>	CITES; Exploited for food, eggs, and the pet trade; low abundance	High
<i>Varanus similis</i>	CITES; Exploited for the pet trade; abundance and taxonomic status uncertain	Moderate
SNAKES:		
<b>Family Colubridae</b>		
<i>Cantoria annulata</i>	Limited range	High
<b>Family Elapidae</b>		
<i>Pseudechis papuanus</i>	Imperiled by habitat loss and possibly by introduction of the cane toad	High
<i>Pseudechis rosignolii</i>	Status unknown; limited geographic range	High
<b>Family Boidae</b>		
<i>Candoia carinata</i>	CITES; abundant	Low
<b>Family Pythonidae</b>		
<i>Antaresia maculosa</i>	CITES; Exploited for the pet trade; uncommon but widely distributed	Moderate
<i>Apodora papuana</i>	CITES; Exploited for the pet trade; uncommon but widely distributed	Low
<i>Leiopython albertisii</i>	CITES; Exploited for the pet trade; common	Low
<i>Liasis fuscus</i>	CITES; Exploited for the pet trade; uncommon, poorly known	Moderate
<i>Morelia amethystina</i>	CITES; Exploited for the pet trade; widely distributed, relatively common	Low
<i>Morelia spilota</i>	CITES; Exploited for the pet trade; relatively common	Low
<i>Morelia viridis</i>	CITES; Exploited for the pet trade; widely distributed, abundant	Low
FROGS		
<b>Family Hylidae</b>		
<i>Litoria quadrilineata</i>	Limited range	High

Table 2. Habitat preferences of Trans-Fly reptiles. Species found exclusively in a single habitat type are indicated by “YE”; those occurring in more than one habitat type are indicated by “Y”.

TAXON	FOREST	SAVANNAH	FRESHWATER	MANGROVES
<i>Carettochelys insculpta</i>			YE	
<i>Chelodina novaeguineae</i>			YE	
<i>Chelodina parkeri</i>			YE	
<i>Chelodina reimanni</i>			Y	Y
<i>Chelodina rugosa</i>			Y	Y
<i>Elseya novaeguineae</i>			YE	
<i>Elseya blanderhorsti</i>			YE	
<i>Emydura subglobosa</i>			YE	
<i>Pelochelys bibroni</i>			Y	Y
<i>Crocodylus novaeguineae</i>			YE	
<i>Crocodylus porosus</i>			Y	Y
<i>Chlamydosaurus kingii</i>		YE		
<i>Diporiphora bilineata</i>		YE		
<i>Hypsilurus dilophus</i>	YE			
<i>Hypsilurus modestus</i>	YE			
<i>Lophognathus temporalis</i>		YE		
<i>Cyrtodactylus papuensis</i>	Y?	Y?		
<i>Gehyra baliola</i>	Y?	Y?		
<i>Gehyra dubia</i>	Y?	Y?		
<i>Gehyra mutilate</i>	Y	Y		
<i>Gehyra oceanica</i>	Y	Y		
<i>Gehyra vorax</i>	Y	Y		
<i>Hemidactylus frenatus</i>	Y	Y		
<i>Hemiphyllodactylus typus</i>	Y	Y		
<i>Lepidodactylus lugubris</i>	Y	Y		
<i>Lepidodactylus pumilus</i>	Y?	Y?		
<i>Nactus sp.</i>	Y	Y		
<i>Lialis burtonis</i>		YE		
<i>Lialis jicari</i>	Y	Y		
<i>Carlia aenigma</i>	Y	Y		
<i>Carlia aramia</i>	Y	Y		
<i>Carlia bicarinata</i>		YE		
<i>Carlia digulensis</i>	Y	Y		
<i>Carlia longipes</i>		Y		
<i>Carlia storri</i>		Y		
<i>Cryptoblepharus cf. virgatus</i>	Y	Y		
<i>Ctenotus robustus</i>		YE		
<i>Ctenotus spaldingi</i>		YE		
<i>Egernia frerei</i>	Y	Y		
<i>Emoia aenea</i>	YE			
<i>Emoia atrocostata</i>				YE
<i>Emoia aurulenta</i>	YE			

<i>Emoia brongersmai</i>	YE				
<i>Emoia caeruleocauda</i>	YE				
<i>Emoia kordoana</i>	YE				
<i>Emoia longicauda</i>	Y	Y			
<i>Emoia physiciana</i>	YE				
<i>Emoia tropidolepis</i>	YE				
<i>Eugongylus rufescens</i>	YE				
<i>Glaphyromorphus crassicaudis</i>	Y	Y			
<i>Glaphyromorphus nigricaudis</i>	Y	Y			
<i>Lygisaurus macfarlani</i>	Y	Y			
<i>Sphenomorphus aruensis</i>	YE				
<i>Sphenomorphus forbesii</i>	YE				
<i>Sphenomorphus simus</i>	YE				
<i>Sphenomorphus undulates</i>	YE				
<i>Tiliqua gigas</i>	Y	Y			
<i>Varanus doreanus</i>	Y				
<i>Varanus indicus</i>	Y	Y	Y		Y
<i>Varanus panoptes</i>		YE			
<i>Varanus prasinus</i>	Y	Y			
<i>Varanus salvadorii</i>	YE				
<i>Varanus similis</i>		YE			
<i>Acrochordus arafurae</i>			YE		
<i>Acrochordus granulatus</i>			Y		Y
<i>Candoia carinata</i>	YE				
<i>Boiga irregularis</i>	Y	Y			
<i>Cantoria annulata</i>					YE
<i>Cerberus rynchops</i>					YE
<i>Dendrelaphis calligastra</i>	Y	Y			
<i>Dendrelaphis punctulatus</i>	Y	Y			
<i>Enhydris polylepis</i>			Y		Y
<i>Fordonia leucobalia</i>					YE
<i>Myron richardsoni</i>					YE
<i>Stegonotus cucullatus</i>	Y	Y			
<i>Stegonotus diehli</i>	Y	Y			
<i>Stegonotus parvus</i>	Y	Y			
<i>Tropidonophis doriae</i>	YE?				
<i>Tropidonophis mairii</i>	Y	Y	Y		
<i>Tropidonophis multiscutellatus</i>	Y				
<i>Tropidonophis novaeguineae</i>	Y	Y	Y		
<i>Tropidonophis picturatus</i>	Y	Y	Y		
<i>Acanthophis laevis</i>	YE				
<i>Acanthophis rugosus</i>		YE			
<i>Aspidomorphus muelleri</i>		YE			
<i>Demansia vestigiata</i>		YE			
<i>Furina tristis</i>	YE				
<i>Micropechis ikaheka</i>	YE				
<i>Oxyuranus scutellatus</i>		YE			
<i>Pseudechis papuanus</i>		Y	Y		

<i>Pseudechis rosignolii</i>		YE	
<i>Rhinoplocephalus boschmai</i>		YE	
<i>Rhinoplocephalus nigrostriatus</i>	YE		
<i>Antaresia maculosa</i>	Y	Y	
<i>Apodora papuana</i>	Y	Y	
<i>Leiopython albertisii</i>	Y	Y	
<i>Liasis fuscus</i>	Y	Y	Y
<i>Morelia amethystina</i>	Y	Y	
<i>Morelia spilota</i>	Y	Y	
<i>Morelia viridis</i>	Y	Y	
<i>Ramphotyphlops leucoproctus</i>	Y	Y	
<i>Ramphotyphlops polygrammicus</i>	Y	Y	

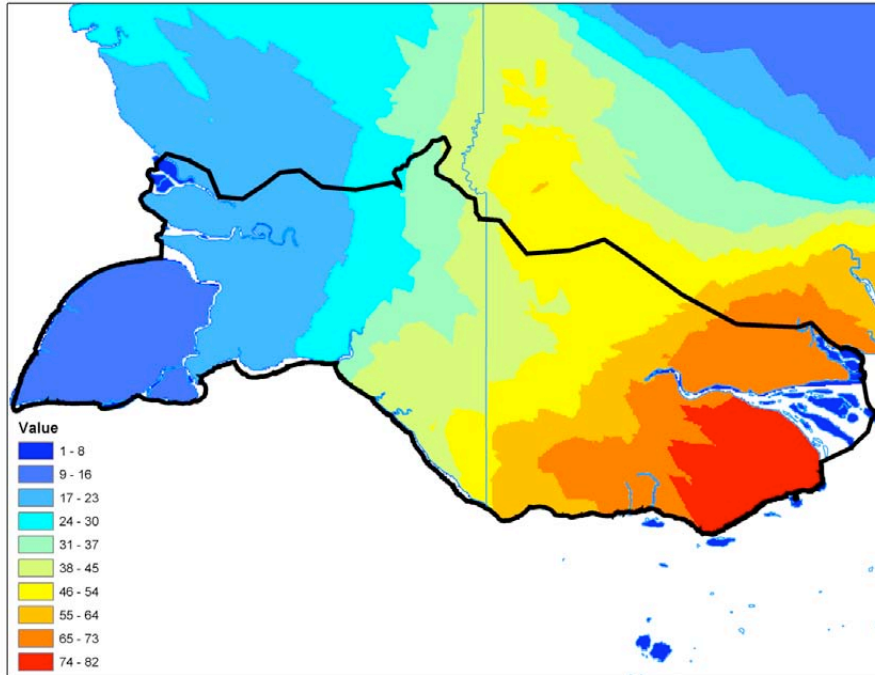
Table 3. Habitat preferences of Trans-Fly Frogs. Species found exclusively in a single habitat type are indicated by “YE”; those occurring in more than one habitat type are indicated by “Y”.

TAXON	FOREST	SAVANNAH	FRESHWATER	MANGROVES
<i>Asterophrys turpicola</i>	YE			
<i>Austrochaperina gracilipes</i>	YE			
<i>Crinia remota</i>		Y	Y	
<i>Hylophorbus rufescens</i>	YE			
<i>Lechriodus melanopyga</i>	Y		Y	
<i>Limnodynastes convexiusculus</i>		Y	Y	
<i>Litoria bicolor</i>		Y	Y	
<i>Litoria caerulea</i>	Y		Y	
<i>Litoria congenital</i>	Y	Y	Y	
<i>Litoria dorsalis</i>	Y		Y	
<i>Litoria infrafrenata</i>	Y		Y	
<i>Litoria nasuta</i>		Y	Y	
<i>Litoria nigrofrenata</i>		Y	Y	
<i>Litoria pygmaea</i>	Y		Y	
<i>Litoria quadrilineata</i>		Y	Y	
<i>Litoria rothii</i>	Y		Y	
<i>Litoria rubella</i>		Y	Y	
<i>Litoria thesaurensis</i>	Y		Y	
<i>Mantophryne lateralis</i>	YE			
<i>Rana daemeli</i>	Y		Y	
<i>Rana novaeguineae</i>	Y		Y	
<i>Sphenophryne cornuta</i>	YE			
<i>Uperoleia lithomoda</i>		Y	Y	



<i>Xenobatrachus bidens</i>	YE
<i>Xenorhina oxycephala</i>	YE

Figure 1. Species richness of reptiles in the Trans-Fly region. “Value” represents the number of overlapping species.



## APPENDIX 1a

**Preliminary Checklist of Reptiles of the Trans-Fly Region, New Guinea**

## TURTLES:

## Family Carettochelidae

*Carettochelys insculpta* Ramsay 1886 [Pig-nosed Turtle]

## Family Chelidae

*Chelodina novaeguineae* Boulenger, 1888 [New Guinea Long-necked Turtle]

*Chelodina parkeri* Rhodin and Mittermeier, 1976 [Parker's Snake-necked Turtle]

*Chelodina reimanni* Philippen and Grossmann, 1990 [Reimann's Snake-necked Turtle]

*Chelodina rugosa* Ogilby, 1890 [Northern Long-necked Turtle]

*Elseya branderhorsti* (Ouwens, 1914) [Southern New Guinea Snapping Turtle]

*Elseya novaeguineae* (Meyer, 1874) [New Guinea Snapping Turtle]

*Emydura subglobosa* (Krefft, 1876) [Red-bellied Short-necked Turtle]

## Family Trionychidae

*Pelochelys bibroni* Owen, 1853 [Southern New Guinea Giant Softshell Turtle]

## CROCODILES:

## Family Crocodylidae

*Crocodylus novaeguineae* Schmidt, 1928 [New Guinea Crocodile]

*Crocodylus porosus* Schneider, 1801 [Saltwater Crocodile]

## LIZARDS:

## Family Agamidae

*Chlamydosaurus kingii* Gray, 1825 [Frimled Lizard]

*Diporiphora bilineata* Gray, 1842 [Two-lined Dragon]

*Hypsilurus dilophus* (Duméril and Bibron, 1837) [Crowned Dragon]

*Hypsilurus modestus* (Meyer, 1874) [Lesser Forest Dragon]

*Lophognathus temporalis* (Günther, 1867) [Striped Dragon]

## Family Gekkonidae

*Cyrtodactylus papuensis* (Brongersma, 1934) [Papuan Gecko]

*Gehyra baliola* (Duméril, 1851) [Banana Gecko]

*Gehyra dubia* (Macleay, 1877) [Dubious Dtella]

*Gehyra mutilata* (Wiegmann, 1835) [Stump-toed Gecko]

*Gehyra oceanica* (Lesson, 1826) [Oceanic Gecko]

*Gehyra vorax* Girard, 1857 [Giant Banana Gecko]

*Hemidactylus frenatus* (Duméril and Bibron, 1836) [Asian House Gecko]

*Hemiphyllodactylus typus* Bleeker, 1860 [Indo-Pacific Gecko]  
*Lepidodactylus lugubris* (Duméril and Bibron, 1836) [Mourning Gecko]  
*Lepidodactylus pumilus* (Boulenger, 1885) [Slender-chained Gecko]  
*Nactus sp.* [Hook-toed Gecko]

#### Family Pygopodidae

*Lialis burtonis* Gray, 1834 [Burton's Snake-lizard]  
*Lialis jicari* Boulenger, 1903 [Jicar's Snake-lizard]

#### Family Scincidae

*Carlia aenigma* Zug, 2004 [Enigmatic Rainbow Skink]  
*Carlia aramia* Zug, 2004 [Aramia Rainbow Skink]  
*Carlia bicarinata* (Macleay, 1877) [Bicarinate Rainbow Skink]  
*Carlia digulensis* (Kopstein, 1926) [Digul River Rainbow Skink]  
*Carlia longipes* (Macleay, 1877) [Long-toed Rainbow Skink]  
*Carlia storri* Ingram and Covacevich, 1989 [Storr's Rainbow Skink]  
*Cryptoblepharus cf. virgatus* [New Guinea Striped Snake-eyed Skink]  
*Ctenotus robustus* Storr, 1970 [Eastern Striped Skink]  
*Ctenotus spaldingi* (Macleay, 1877) [Spalding's Striped Skink]  
*Egernia frerei* Günther, 1897 [Major Skink]  
*Emoia aenea* Brown and Parker, 1985 [Venus Forest Skink]  
*Emoia atrocostata* (Lesson, 1826) [Littoral Skink]  
*Emoia aurentata* Brown and Parker, 1985 [Golden Forest Skink]  
*Emoia brongersmai* Brown, 1991 [Brongersma's Forest Skink]  
*Emoia caeruleocauda* (de Vis, 1892) [Blue-tailed Skink]  
*Emoia kordoana* (Meyer, 1874) [Slender Tree Skink]  
*Emoia longicauda* (Macleay, 1877) [Long-tailed Tree Skink]  
*Emoia physicina* Brown and Parker, 1985 [Small Keel-scaled Skink]  
*Emoia tropidolepis* (Boulenger, 1914) [Southern Keel-scaled Skink]  
*Eugongylus rufescens* (Shaw, 1802) [Rufescent Shark Skink]  
*Glaphyromorphus crassicaudus* (Duméril and Duméril, 1851) [Stout-tailed Skink]  
*Glaphyromorphus nigricaudis* (Macleay, 1877) [Black-tailed Skink]  
*Lygisaurus macfarlani* (Günther, 1877) [Macfarlan's Litter Skink]  
*Sphenomorphus aruensis* (Doria, 1874) [Spotted Forest Skink]  
*Sphenomorphus forbesii* (Boulenger, 1888) [Slender Litter Skink]  
*Sphenomorphus simus* (Sauvage, 1879) [Common Forest Skink]  
*Sphenomorphus undulatus* (Peters and Doria, 1878) [Wavy-backed Forest Skink]  
*Tiliqua gigas* (Schneider, 1801) [New Guinea Bluetongue Skink]

#### Family Varanidae

*Varanus doreanus* (Meyer, 1874) [Blue-tailed Monitor]  
*Varanus indicus* (Daudin, 1802) [Mangrove Monitor]  
*Varanus panoptes* Storr, 1980 [Horn's Monitor]  
*Varanus prasinus* (Schlegel, 1839) [Emerald Monitor]  
*Varanus salvadorii* (Peters and Doria, 1878) [Salvadori's Monitor; Crocodile Monitor]  
*Varanus similis* Mertens, 1958 [Spotted Tree Monitor]

## SNAKES:

### Family Acrochordidae

- Acrochordus arafurae* McDowell, 1979 [Arafura File Snake]  
*Acrochordus granulatus* (Schneider, 1799) [Little File Snake]

### Family Serpentes: Boidae

- Candoia carinata* (Schneider, 1801) [New Guinea Tree Boa]

### Family Colubridae

- Boiga irregularis* (Merrem, 1802) [Brown Tree Snake]  
*Cantoria annulata* de Jong, 1927 [Banded Mangrove Snake]  
*Cerberus rynchops* (Schneider, 1799) [Bockadam]  
*Dendrelaphis calligastra* (Günther, 1867) [Northern Tree Snake]  
*Dendrelaphis punctulatus* (Gray, 1827) [Common Tree Snake]  
*Enhydryis polylepis* (Fischer, 1886) [Macleay's Water Snake]  
*Fordonia leucobalia* (Schlegel, 1837) [White-bellied Mangrove Snake]  
*Myron richardsoni* Gray, 1849 [Richardson's Mangrove Snake]  
*Stegonotus cucullatus* (Duméril, Bibron and Duméril, 1854) [Slaty-grey Snake]  
*Stegonotus diehli* Lindholm, 1905 [Diehl's Ground Snake]  
*Stegonotus parvus* (Meyer, 1875) [Common Ground Snake]  
*Tropidonophis doriae* (Boulenger, 1897) [Barred Keelback]  
*Tropidonophis mairii* (Gray, 1841) [Common Keelback]  
*Tropidonophis multiscutellatus* (Brongersma) 1948 [Many-scaled Keelback]  
*Tropidonophis novaeguineae* (van Lidth de Jeude, 1911) [New Guinea Keelback]  
*Tropidonophis picturatus* (Schlegel, 1837) [Painted Keelback]

### Family Elapidae

- Acanthophis laevis* Macleay, 1877 [Smooth-scaled Death Adder]  
*Acanthophis rugosus* Loveridge, 1948 [Rough-scaled Death Adder]  
*Aspidomorphus muelleri* (Schlegel, 1837) [Müller's Crowned Snake]  
*Demansia vestigiata* (de Vis, 1884) [Lesser Black Whipsnake]  
*Furina tristis* (Günther, 1858) [Grey-naped Snake]  
*Micropechis ikaheka* (Lesson) 1826 [Small-eyed Snake]  
*Oxyuranus scutellatus* (Peters, 1867) [Taipan]  
*Pseudechis papuanus* Peters and Doria, 1878 [Papuan Blacksnake]  
*Pseudechis rossignolii* (Hoser, 2000) [New Guinea Pigmy Mulga Snake]  
*Rhinoplocephalus boschmai* (Brongersma and Knaap van Meeuwen, 1961) [Carpentaria Snake]  
*Rhinoplocephalus nigrostriata* (Krefft, 1864) [Black-striped Snake]

### Family Pythonidae

- Antaresia maculosa* (Peters, 1873) [Spotted Python]  
*Apodora papuana* (Peters and Doria, 1878) [Papuan Python]  
*Leiopython albertisii* (Peters and Doria, 1878) [White-lipped Python]  
*Liasis fuscus* Peters, 1873 [Brown Water Python]

*Morelia amethystina* (Schneider, 1801) [Amethystine Python]

*Morelia spilota* (Lacépède, 1804) Carpet Python]

*Morelia viridis* (Schlegel, 1872) [Green Tree Python]

Family Typhlopidae

*Ramphotyphlops leucoproctus* (Boulenger, 1889) [White-tailed Blindsnake]

*Ramphotyphlops polygrammicus* (Schlegel, 1839) [Southern New Guinea Blindsnake]

APPENDIX 1b

### Reptiles Occurring in the Trans-Fly Region that are Shared with Australia:

*Carettochelys insculpta* Ramsay 1886 [Pig-nosed Turtle]

*Emydura subglobosa* (Krefft, 1876) [Red-bellied Short-necked Turtle]

*Chelodina rugosa* Ogilby, 1890 [Northern Long-necked Turtle]

*Crocodylus porosus* Schneider, 1801 [Saltwater Crocodile]

*Chlamydosaurus kingii* Gray, 1825 [Fringed Lizard]

*Diporiphora bilineata* Gray, 1842 [Two-lined Dragon]

*Lophognathus temporalis* (Günther, 1867) [Striped Dragon]

*Gehyra baliola* (Duméril, 1851) [Banana Gecko]

*Gehyra dubia* (Macleay, 1877) [Dubious Dтеля]

*Gehyra oceanica* (Lesson, 1826) [Oceanic Gecko]

*Hemidactylus frenatus* (Duméril and Bibron, 1836) [Asian House Gecko]

*Lepidodactylus lugubris* (Duméril and Bibron, 1836) [Mourning Gecko]

*Lepidodactylus pumilus* (Boulenger, 1885) [Slender-chained Gecko]

*Nactus* sp. [Hook-toed Gecko]

*Lialis burtonis* Gray, 1834 [Burton's Snake-lizard]

*Carlia longipes* (Macleay, 1877) [Long-toed Rainbow Skink]

*Carlia storri* Ingram and Covacevich, 1989 [Storr's Rainbow Skink]

*Cryptoblepharus virgatus* (Garman, 1901) [Striped Snake-eyed Skink]

*Ctenotus robustus* Storr, 1970 [Eastern Striped Skink]

*Ctenotus spaldingi* (Macleay, 1877) [Spalding's Striped Skink]

*Egernia frerei* Günther, 1897 [Major Skink]

*Emoia atrocostata* (Lesson, 1826) [Littoral Skink]

*Emoia longicauda* (Macleay, 1877) [Long-tailed Tree Skink]

*Eugongylus rufescens* (Shaw, 1802) [Rufescent Shark Skink]

*Glaphyromorphus crassicaudus* (Duméril and Duméril, 1851) [Stout-tailed Skink]

*Glaphyromorphus nigricaudis* (Macleay, 1877) [Black-tailed Skink]

*Lygisaurus macfarlani* (Günther, 1877) [Macfarlan's Litter Skink]

*Varanus doreanus* (Meyer, 1874) [Blue-tailed Monitor]

*Varanus indicus* (Daudin, 1802) [Mangrove Monitor]

*Varanus panoptes* Storr, 1980 [Horn's Monitor]

*Varanus prasinus* (Schlegel, 1839) [Emerald Monitor]

*Varanus similis* Mertens, 1958 [Spotted Tree Monitor]

*Acrochordus arafurae* McDowell, 1979 [Arafura File Snake]

*Acrochordus granulatus* (Schneider, 1799) [Little File Snake]

*Boiga irregularis* (Merrem, 1802) [Brown Tree Snake]  
*Cerberus rynchops* (Schneider, 1799) [Bockadam]  
*Dendrelaphis calligastra* (Günther, 1867) [Northern Tree Snake]  
*Dendrelaphis punctulatus* (Gray, 1827) [Common Tree Snake]  
*Enhydryis polylepis* (Fischer, 1886) [Macleay's Water Snake]  
*Fordonia leucobalia* (Schlegel, 1837) [White-bellied Mangrove Snake]  
*Myron richardsoni* Gray, 1849 [Richardson's Mangrove Snake]  
*Stegonotus cucullatus* (Duméril, Bibron and Duméril, 1854) [Slaty-grey Snake]  
*Stegonotus parvus* (Meyer, 1875) [Common Ground Snake]  
*Tropidonophis mairii* (Gray, 1841) [Common Keelback]  
*Acanthophis rugosus* Loveridge, 1948 [Rough-scaled Death Adder]  
*Demansia vestigiata* (de Vis, 1884) [Lesser Black Whipsnake]  
*Furina tristis* (Günther, 1858) [Grey-naped Snake]  
*Oxyuranus scutellatus* (Peters, 1867) [Taipan]  
*Rhinoplocephalus boschmai* (Brongersma and Knaap van Meeuwen, 1961) [Carpentaria Snake]  
*Rhinoplocephalus nigrostriata* (Krefft, 1864) [Black-striped Snake]  
*Antaresia maculosa* (Peters, 1873) [Spotted Python]  
*Leiopython albertisii* (Peters and Doria, 1878) [White-lipped Python]  
*Liasis fuscus* Peters, 1873 [Brown Water Python]  
*Morelia amethystina* (Schneider, 1801) [Amethystine Python]  
*Morelia spilota* (Lacépède, 1804) Carpet Python]  
*Morelia viridis* (Schlegel, 1872) [Green Tree Python]  
*Ramphotyphlops leucoproctus* (Boulenger, 1889) [White-tailed Blindsnake]  
*Ramphotyphlops polygrammicus* (Schlegel, 1839) [Southern New Guinea Blindsnake]

#### APPENDIX 1c

#### **Reptiles Occurring in the Trans-Fly that are *not* Shared with Australia [Species endemic to New Guinea marked with \*]**

*Chelodina novaeguineae* Boulenger, 1888 [New Guinea Long-necked Turtle]\*  
*Chelodina parkeri* Rhodin and Mittermeier, 1976 [Parker's Snake-necked Turtle]\*  
*Chelodina reimanni* Philippen and Grossmann, 1990 [Reimann's Snake-necked Turtle]\*  
*Elseya branderhorsti* Ouwens, 1914 [Southern New Guinea Snapping Turtle]\*  
*Elseya novaeguineae* (Meyer, 1874) [New Guinea Snapping Turtle]\*  
*Pelochelys bibroni* Owen, 1853 [Southern New Guinea Giant Softshell Turtle]\*  
*Crocodylus novaeguineae* Schmidt, 1928 [New Guinea Crocodile]\*  
*Hypsilurus dilophus* (Duméril and Bibron, 1837) [Crowned Dragon]  
*Hypsilurus modestus* (Meyer, 1874) [Lesser Forest Dragon]  
*Cyrtodactylus papuensis* (Brongersma, 1934) [Papuan Gecko]\*  
*Gehyra mutilata* (Wiegmann, 1835) [Stump-toed Gecko]  
*Gehyra vorax* Girard, 1857 [Giant Banana Gecko]  
*Hemiphyllodactylus typus* Bleeker, 1860 [Indo-Pacific Gecko]  
*Lialis jicari* Boulenger, 1903 [Jicar's Snake-lizard]  
*Carlia aenigma* Zug, 2004 [Enigmatic Rainbow Skink]\*  
*Carlia aramia* Zug, 2004 [Aramia Rainbow Skink]\*

*Carlia bicarinata* (Macleay, 1877) [Bicarinate Rainbow Skink]\*  
*Carlia digulensis* (Kopstein, 1926) [Digul River Rainbow Skink]\*  
*Emoia aenea* Brown and Parker, 1985 [Venus Forest Skink]\*  
*Emoia aurentata* Brown and Parker, 1985 [Golden Forest Skink]\*  
*Emoia brongersmai* Brown, 1991 [Brongersma's Forest Skink]\*  
*Emoia caeruleocauda* (de Vis, 1892)  
*Emoia kordoana* (Meyer, 1874) [Slender Tree Skink]  
*Emoia physicina* Brown and Parker, 1985 [Small Keel-scaled Skink]\*  
*Emoia tropidolepis* (Boulenger, 1914) [Southern Keel-scaled Skink]\*  
*Sphenomorphus aruensis* (Doria, 1874) [Spotted Forest Skink]\*  
*Sphenomorphus forbesii* (Boulenger, 1888) [Slender Litter Skink]\*  
*Sphenomorphus simus* (Sauvage, 1879) [Common Forest Skink]  
*Sphenomorphus undulatus* (Peters and Doria, 1878) [Wavy-backed Forest Skink]\*  
*Tiliqua gigas* (Schneider, 1801) [New Guinea Bluetongue Skink]  
*Varanus salvadorii* (Peters and Doria, 1878) [Salvadori's Monitor; Crocodile Monitor]\*  
*Candoia carinata* (Schneider, 1801) [New Guinea Tree Boa]  
*Cantoria annulata* de Jong, 1927 [Banded Mangrove Snake]\*  
*Stegonotus diehli* Lindholm, 1905 [Diehl's Ground Snake]\*  
*Tropidonophis doriae* (Boulenger, 1897) [Barred Keelback]\*  
*Tropidonophis multiscutellatus* (Brongersma) 1948 [Many-scaled Keelback]\*  
*Tropidonophis novaeguineae* (van Lidth de Jeude, 1911) [New Guinea Keelback]\*  
*Tropidonophis picturatus* (Schlegel, 1837) [Painted Keelback]\*  
*Acanthophis laevis* Macleay, 1877 [Smooth-scaled Death Adder]  
*Aspidomorphus muelleri* (Schlegel, 1837) [Müller's Crowned Snake]  
*Micropechis ikaheka* (Lesson) 1826 [Small-eyed Snake]\*  
*Pseudechis papuanus* Peters and Doria, 1878 [Papuan Blacksnake]\*  
*Pseudechis rosignolii* (Hoser, 2000) [New Guinea Pigmy Mulga Snake]\*  
*Apodora papuana* (Peters and Doria, 1878) [Papuan Python]\*

#### APPENDIX 1d

#### Reptile Species Endemic to the Trans-Fly Region

*Chelodina reimanni* Philippen and Grossmann, 1990 [Reimann's Snake-necked Turtle]  
*Cantoria annulata* de Jong, 1927 [Banded Mangrove Snake]  
*Pseudechis rosignolii* (Hoser, 2000) [New Guinea Pigmy Mulga Snake]

#### APPENDIX 1e

**Reptile Species Occurring in the Trans-Fly Region that are Indigenous to New Guinea and are not Found in Australia. Extra-limital distribution is shown in bold bounded by square brackets.**

*Hypsilurus dilophus* (Duméril and Bibron, 1837) [Crowned Dragon] [**Maluku**]



- Hypsilurus modestus* (Meyer, 1874) [Lesser Forest Dragon] [**Bismarck and Admiralty archipelagos**]
- Gehyra mutilata* (Wiegmann, 1835) [Stump-toed Gecko] [**Indo-Pacific**]
- Gehyra vorax* Girard, 1857 [Giant Banana Gecko] [**SW Pacific**]
- Hemiphyllodactylus typus* Bleeker, 1860 [Indo-Pacific Gecko] [**Indo-Pacific**]
- Lialis jicari* Boulenger, 1903 [Jicar's Snake-lizard] [**Bismarck Archipelago**]
- Emoia kordoana* (Meyer, 1874) [Slender Tree Skink] [**Bismarck and Admiralty archipelagos**]
- Emoia caeruleocauda* (de Vis, 1892) [Blue-tailed Skink] [**Indo-Pacific**]
- Sphenomorphus simus* (Sauvage, 1879) [Common Forest Skink] [**Bismarck Archipelago**]
- Tiliqua gigas* (Schneider, 1801) [New Guinea Bluetongue Skink] [**Maluku, possibly introduced populations found in Sumatra and Java**]
- Candoia carinata* (Schneider, 1801) [New Guinea Tree Boa] [**Maluku**]
- Acanthophis laevis* Macleay, 1877 [Smooth-scaled Death Adder] [**Maluku**]
- Aspidomorphus muelleri* (Schlegel, 1837) [Müller's Crowned Snake] [**Maluku; Bismarck Archipelago**]

## APPENDEX 2a

**Preliminary Checklist of Frogs of the Trans-Fly Region, New Guinea**

## Family Hylidae

- Litoria bicolor* (Gray, 1842) [Green Reed Frog]  
*Litoria caerulea* (White, 1790) [Green Tree Frog]  
*Litoria congenita* (Peters and Doria, 1878) [Savanna Tree Frog]  
*Litoria dorsalis* Macleay, 1878 [Dwarf Rocket Frog]  
*Litoria infrafrenata* (Günther, 1867) [White-lipped Tree Frog]  
*Litoria nasuta* (Gray, 1841) [Rocket Frog]  
*Litoria nigrofrenata* (Günther, 1867) [Black-faced Frog]  
*Litoria pygmaea* (Meyer, 1874) [Diminutive Tree Frog]  
*Litoria quadrilineata* Tyler and Parker, 1974 [Striped Tree Frog]  
*Litoria rothii* (de Vis, 1884) [Roth's Tree Frog]  
*Litoria rubella* (Gray, 1842) [Desert Tree Frog]  
*Litoria thesaurensis* (Peters, 1878) [Yellow-bellied Tree Frog]

## Family Microhylidae

- Asterophrys turpicola* (Schlegel, 1837) [Starred Ground Frog]  
*Hylophorbus rufescens* Macleay, 1898 [Red-sided Ground Frog]  
*Mantophryne lateralis* Boulenger, 1887 [Bicolored Ground Frog]  
*Sphenophryne cornuta* Peters and Doria, 1878 [Crowned Tree Frog]  
*Austrochaperina gracilipes* Fry, 1912 [Slender Frog]  
*Xenobatrachus bidens* (van Kampen, 1909) [Double-toothed Burrowing Frog]  
*Xenorhina oxycephala* (Schlegel, 1858) [Sharp-headed Burrowing Frog]

## Family Myobatrachidae

- Lechriodus melanopyga* (Doria, 1874) [Pig Frog]  
*Limnodynastes convexiusculus* (Macleay) 1878 [Marbled Frog]  
*Crinia remota* (Tyler and Parker, 1974) [Paperbark Frog]  
*Uperoleia lithomoda* Tyler, Davies, and Martin, 1981 [Stonemason Toadlet]

## Family Ranidae

- Rana daemeli* Steindachner 1868 [Papuan Wood Frog]  
*Rana novaeguineae* van Kampen 1909 [New Guinea Wood Frog]

## APPENDEX 2b

**Frogs Occurring in the Trans-Fly Region that are Shared with Australia:**

- Litoria bicolor* (Gray, 1842)  
*Litoria caerulea* (White, 1790) [Green Tree Frog]  
*Litoria infrafrenata* (Günther, 1867) [White-lipped Tree Frog]  
*Litoria nasuta* (Gray, 1841) [Rocket Frog]

*Litoria nigrofrenata* (Günther, 1867) [Black-faced Frog]  
*Litoria rothii* (de Vis, 1884) [Roth's Tree Frog]  
*Litoria rubella* (Gray, 1842) [Desert Tree Frog]  
*Austrochaperina gracilipes* Fry, 1912 [Slender Frog]  
*Limnodynastes convexiusculus* (Macleay) 1878 [Marbled Frog]  
*Crinia remota* (Tyler and Parker, 1974) [Paperbark Frog]  
*Uperoleia lithomoda* Tyler, Davies, and Martin, 1981 [Stonemason Toadlet]  
*Rana daemeli* Steindachner 1868 [Papuan Wood Frog]

## APPENDEIX 2c

### **Frogs Occurring in the Trans-Fly that are *not* Shared with Australia**

[All are endemic to New Guinea; those endemic to the south coast are marked with \*]

*Litoria congenita* (Peters and Doria, 1878) [Savanna Tree Frog]\*  
*Litoria dorsalis* Macleay, 1878 [Dwarf Rocket Frog]\*  
*Litoria pygmaea* (Meyer, 1874) [Diminutive Tree Frog]  
*Litoria quadrilineata* Tyler and Parker, 1974 [Striped Tree Frog]\*  
*Litoria thesaurensis* (Peters, 1878) [Yellow-bellied Tree Frog]  
*Asterophrys turpicola* (Schlegel, 1837) [Starred Ground Frog]  
*Hylophorbus rufescens* Macleay, 1898 [Red-sided Ground Frog]  
*Mantophryne lateralis* Boulenger, 1887 [Bicolored Ground Frog]  
*Sphenophryne cornuta* Peters and Doria, 1878 [Crowned Tree Frog]  
*Xenobatrachus bidens* (van Kampen, 1909) [Double-toothed Burrowing Frog]\*  
*Xenorhina oxycephala* (Schlegel, 1858) [Sharp-headed Burrowing Frog]  
*Lechriodus melanopyga* (Doria, 1874) [Pig Frog]  
*Rana novaeguineae* van Kampen 1909 [New Guinea Wood Frog]\*

## APPENDEIX 2d

### **Frogs Endemic to the Trans-Fly Region:**

*Litoria quadrilineata* Tyler and Parker 1974

## APPENDIX 3

Distribution Maps of species of high concern:

Figure 2. Distribution map of *Chelodina parkeri*

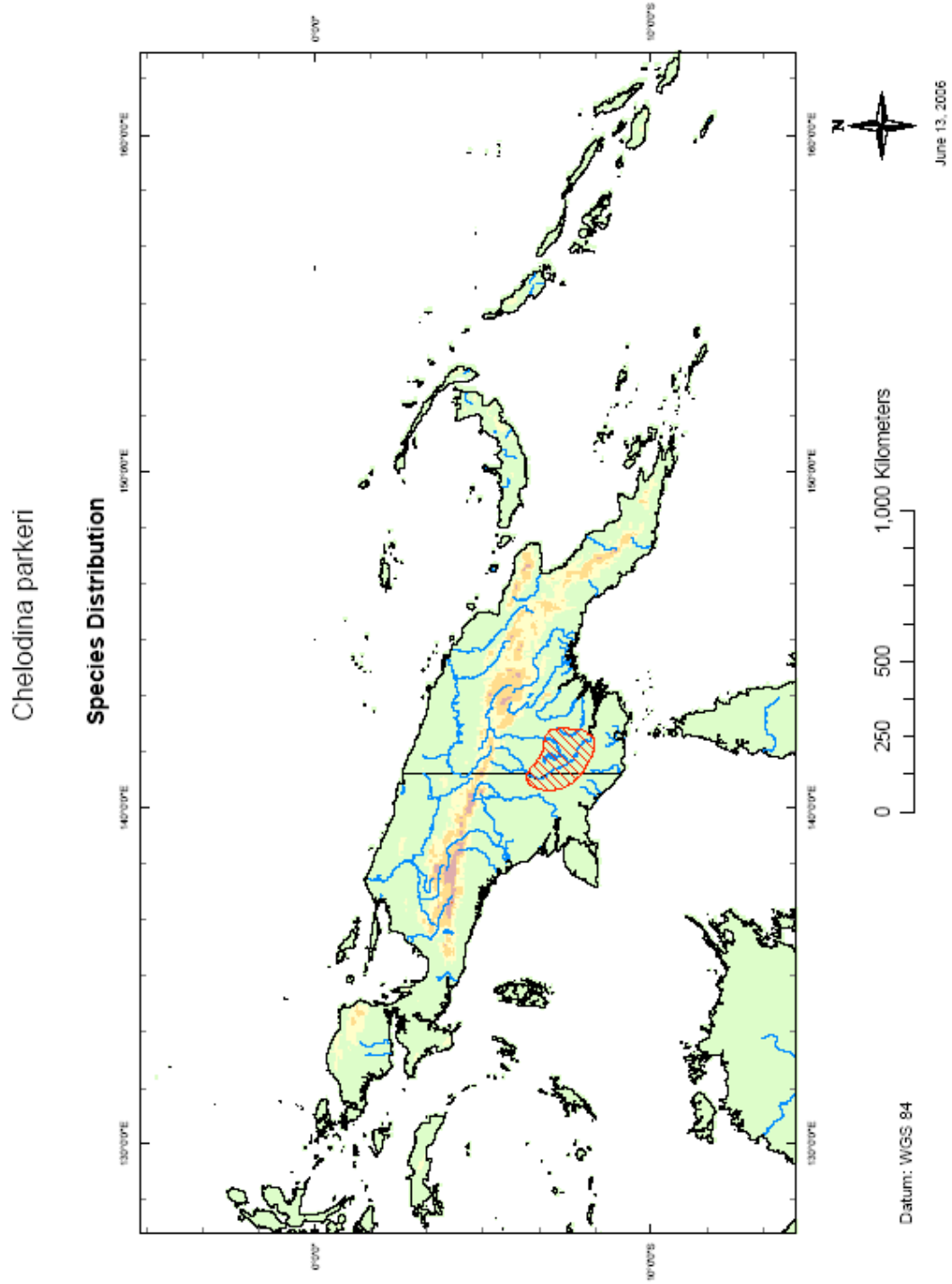


Figure 3. Distribution map of *Chelodina reimanni*

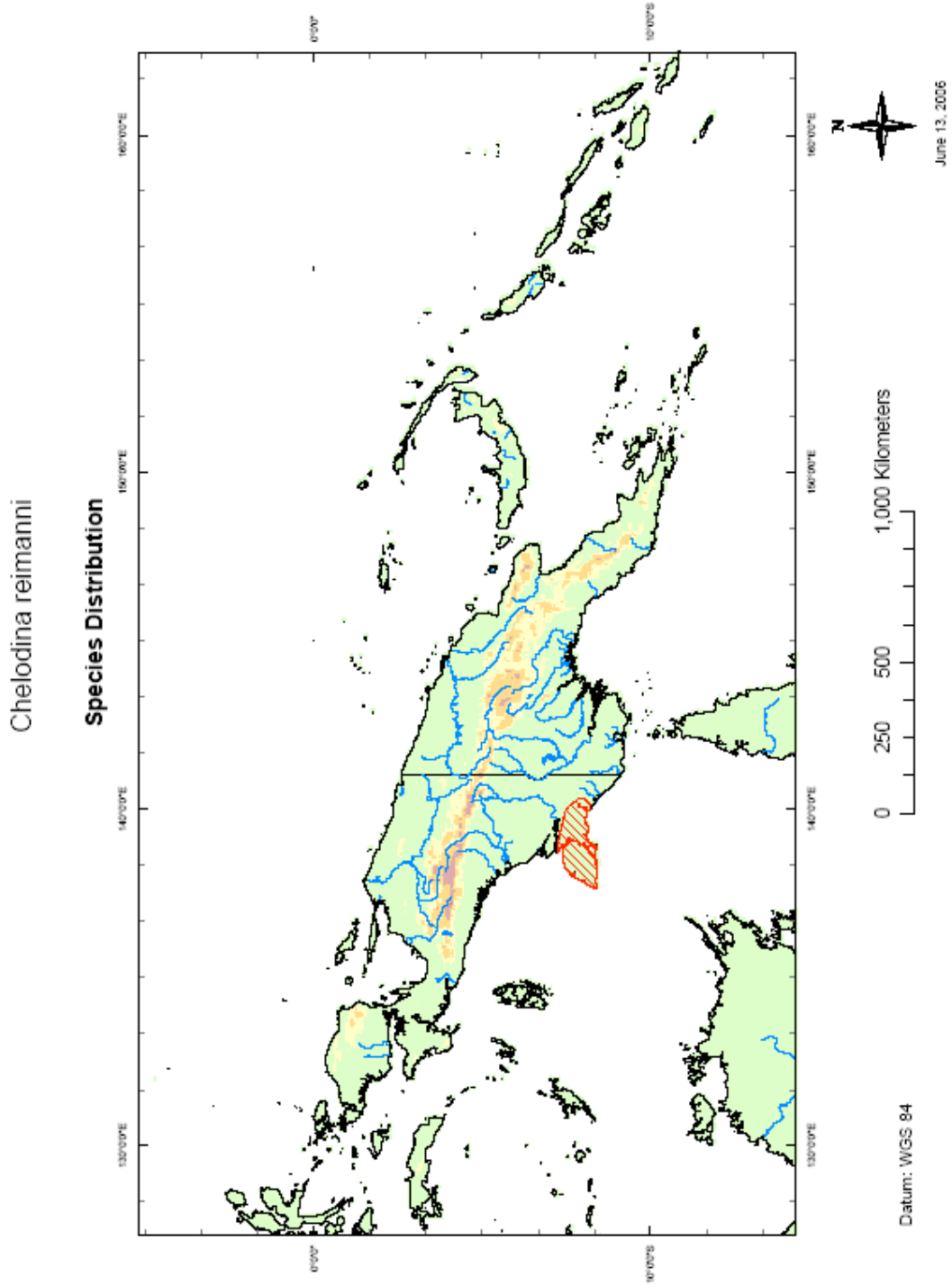


Figure 4. Distribution map of *Varanus salvadorii*

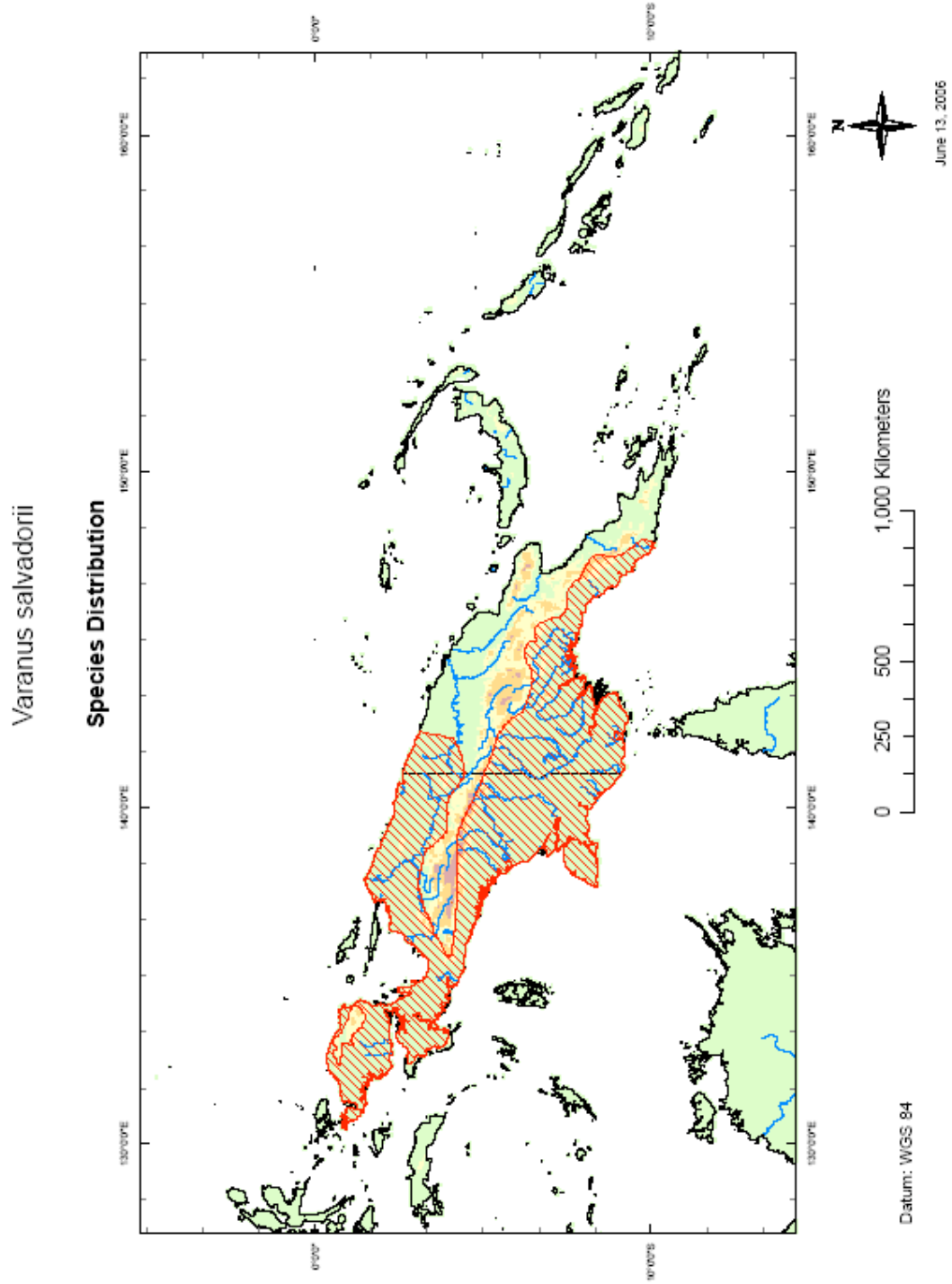


Figure 5. Distribution map of *Cantoria annulata*

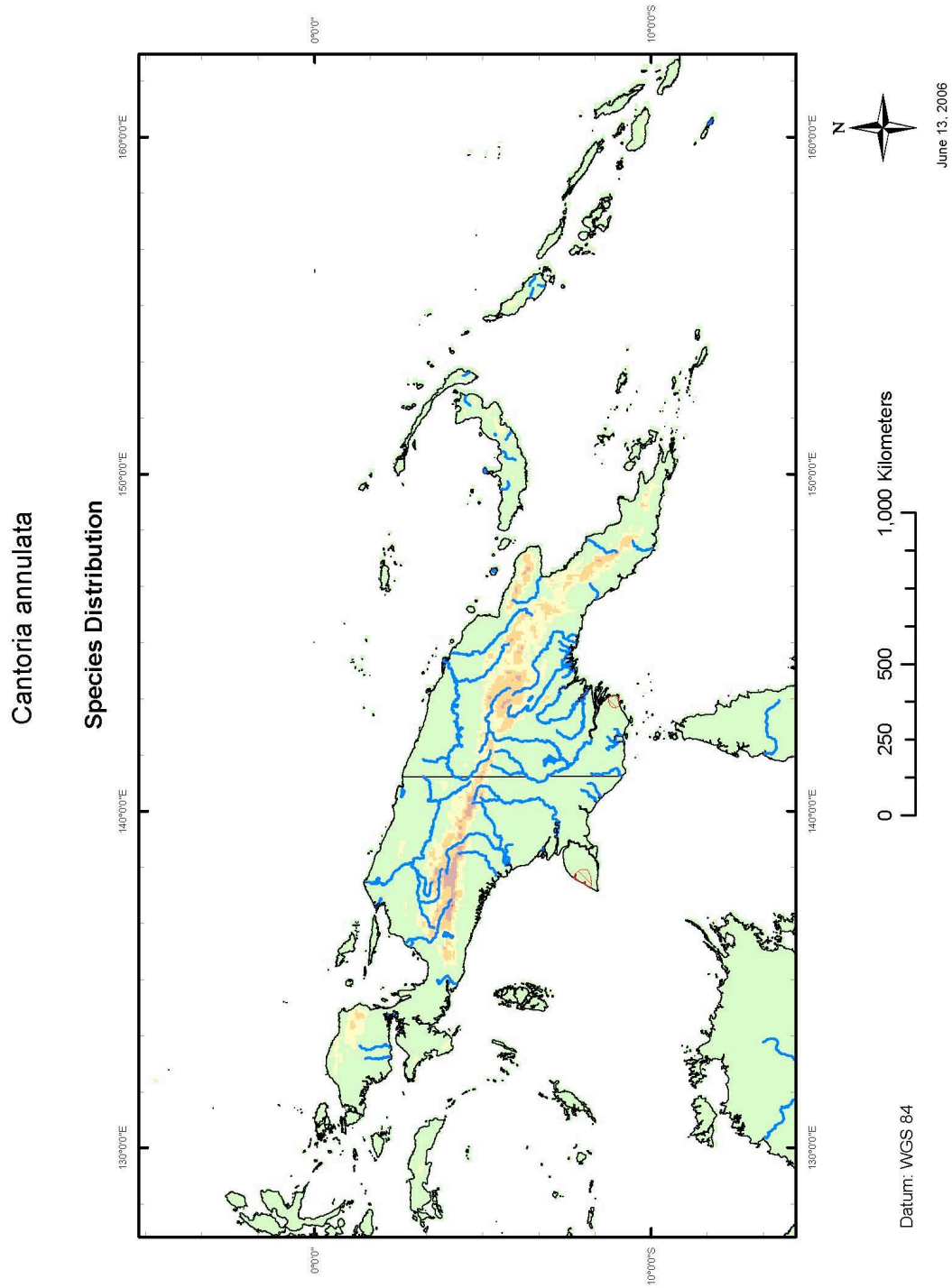




Figure 6. Distribution map of *Pseudechis papuanus*

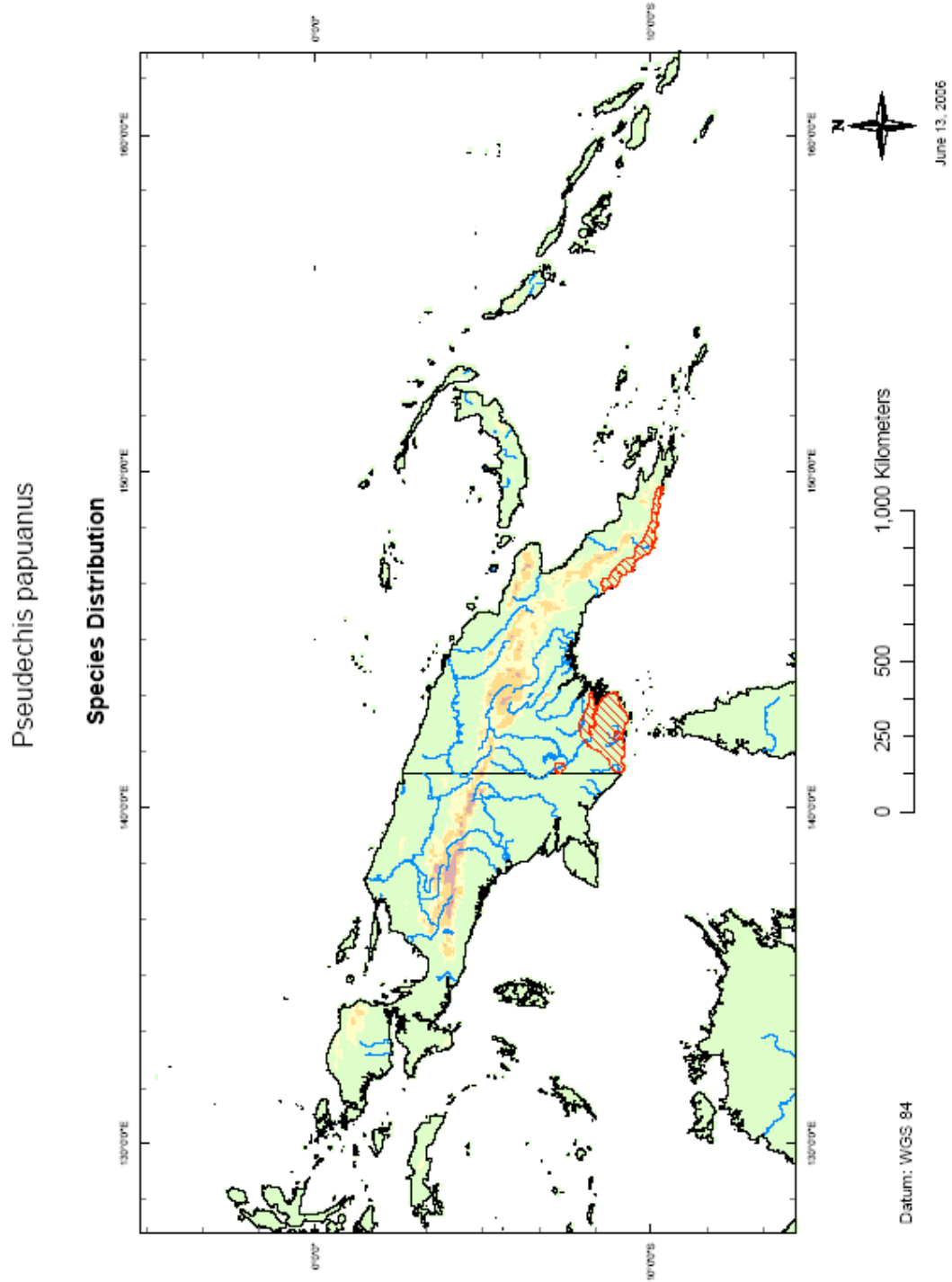


Figure 7. Distribution map of *Pseudechis rosignolii*

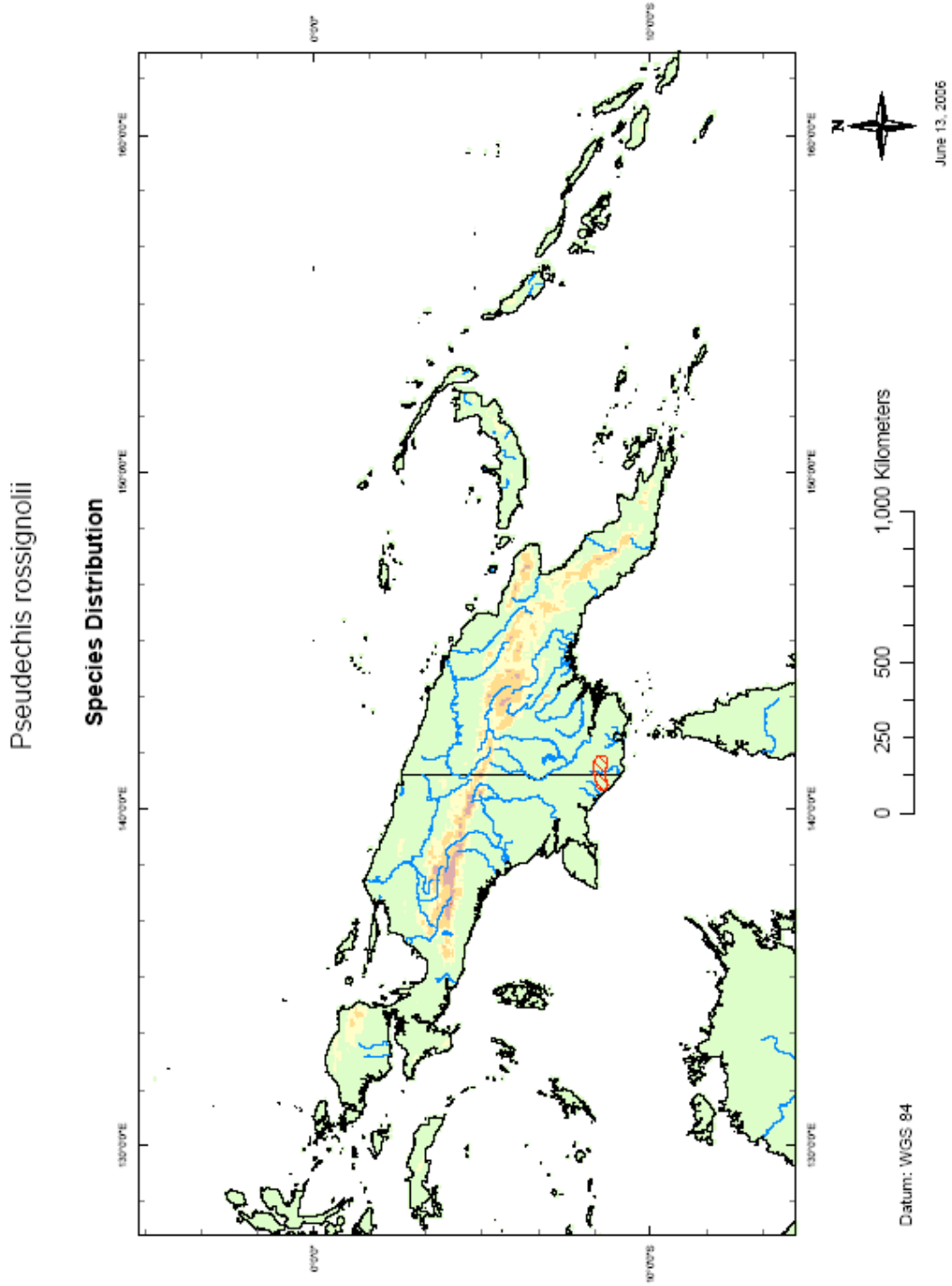


Fig. 8. Distribution map of *Litoria quadrilineata*

