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Public Comments Processing
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Re: Comments to Docket Number FWS-R9-FHC-2008-0015; 94410-1342-0000-N3 Injurious Wildlife Species; Review of Information Concerning Constrictor Snakes from *Python, Boa and Eunectes* genera [Fed. Reg. Volume 73, Number 21, Page 5784-5785, (Jan. 31, 2008)]

To whom it may concern:

On behalf of the more than 10 million members and constituents of The Humane Society of the United States (HSUS), the nation's largest animal protection organization, and its international arm, Humane Society International (HSI), we appreciate the opportunity to provide comments on the Notice of Inquiry published in the *Federal Register*, Volume 73, Number 21, 31 January 2008, by the U.S. Fish and Wildlife Service (USFWS) soliciting biological, economic and other data on constrictor snakes in the *Python*, *Boa* and *Eunectes* genera. This Notice is in response to a petition submitted by the South Florida Water Management District (SFWMD) requesting that Burmese pythons (*Python molurus*) be considered for inclusion in the list of injurious wildlife under the Lacey Act (18 U.S.C. 42).

The HSUS, in an October 25, 2006 letter, supported the petition the USFWS received from SFWMD. We applaud the USFWS for issuing the Notice of Inquiry and beginning the process of potentially adding several genera of constrictor snakes to the "Injurious Wildlife Species" list under the Lacey Act. We believe this action is warranted and should be facilitated as expeditiously as possible. Scientific evidence clearly demonstrates that constrictor snakes have been and are being released into the environment; are rapidly becoming established in certain local ecosystems; are causing significant adverse effects on the environment; pose an imminent and unnecessary threat to the survival of some threatened and endangered species and species of special concern; and threaten the health and safety of humans, domestic animals and wildlife in the United States.

State and federal agencies have made the development and implementation of Burmese python and other control programs in Florida a priority to prevent these species from expanding their range in the southeastern United States. Without importation and interstate transport restrictions, any efforts by state wildlife agencies to contain these species may prove futile because Burmese pythons and other constrictors continue to be legally imported in astonishing numbers and transported across the United States via the pet trade. Between 2002 and 2006, nearly one million pythons, boas and anacondas were imported into the United States – more than 500 a day (Table 1). Restricting the importation and interstate transport of constrictor species alone will not reduce or eradicate the established python population in Florida, but it will close a major introduction pathway and prevent the establishment of populations in other parts of the country.

I. Requested addendum to constrictor genera referenced in the Notice of Inquiry

According to the Notice of Inquiry, the USFWS is soliciting information on "Constrictor Snakes from *Python*, *Boa* and *Eunectes* genera." However, there are constrictor genera that are commonly referred to as pythons and boas, but are classified under other genera, including *Epicrates, Liasis* and *Morelia*. Even though the number of these animals imported into the United States is relatively low compared to species classified under the *Python*, *Boa* and *Eunectes* generas, we strongly recommend that the USFWS include these genera in any Proposed Rule to add these species to the "Injurious Wildlife Species" list.

The volume of a particular type of animal imported into the United States and/or transported across state lines is an important risk factor that may contribute to the establishment of feral snake populations and should be considered, along with many other factors, when determining whether to add a particular taxon to the "Injurious Wildlife Species" list. However, Reed (2005) maintains that in some cases, certain species imported in lower numbers may actually pose the most risk of establishing feral populations compared to species imported in higher numbers. He uses the carpet python (*Morelia spilota*) of Australia as an example.

Like many constrictors, *M. spilota* occupies temperate zones in their native habitat and, therefore, the geographic distribution of these animals ranges from tropical and temperate to arid regions where winter temperatures can plummet below freezing. Only 211 carpet pythons were imported into the United States between 2002 and 2006 (Table 1), but because this species is a generalist with respect to habitat preferences and is inherently fit to survive in a variety of different ecosystems, an abandoned or released carpet python could survive in a wide range of biomes and compete with native wildlife for available resources. Given the vast temperate-zone habitat in the United States, this species and other temperate-zone constrictors may pose a great risk of establishing feral populations throughout the continental United States.

For these reasons, we strongly encourage the USFWS to include the following genera in any Proposed Rule to list constrictors as "Injurious Wildlife Species":

Family *Boidae*

Subfamily *Boinae* (Boas)
Genera

- *Acrantophis*
- *Boa*
- *Candoia*
- *Corallus*
- *Epicrates*
- *Eunectes*
- *Sanzinia*

Subfamily *Erycinae* (Sand Boas)

Genera

- *Calabaria*
- *Charina*
- *Eryx*
- *Gongylophis*

Subfamily *Pythoninae* (Pythons)

Genera

- *Aspidites*
- *Antaresia*
- *Apodora*
- *Bothrochilus*
- *Leiopython*
- *Liasis*
- *Morelia*
- *Python*

II. Species survival capabilities

In his risk assessment of non-native constrictors, Reed (2005) observed that from an ecological standpoint alone, constrictors should be evaluated as potential invasive species "because they are medium-to-large bodied predators capable of reaching high densities in suitable habitat." He added that several ecological factors "predispose" constrictors as invasive species, including:

- Large clutch or litter sizes. Pythons are oviparous and recorded clutches for larger python species can exceed 90 eggs (Porter 1987) while boas, who give birth to live young, have been known to have litter sizes of over 80 young (Murphy and Henderson 1987).
- Gravid or pregnant wild-caught females are imported in large numbers for the pet trade, which increases the odds of abandoned or released animals reproducing successfully in the United States (Hoover 1998).
- Pythons and related species brood their eggs and regulate egg incubation temperatures via a behavior known as shivering thermiogenesis. Pythons are unusual among reptiles in that females of many species coil tightly around their eggs following oviposition and are able to raise their body temperature, and hence, that of the egg mass, by facultative endothermy or "shivering" (Harlow and Grigg 1984). Brooding behavior decreases nest depredation (and/or failure) while shivering thermiogenesis may allow snakes to

reproduce successfully in areas where "cool ambient temperatures would normally preclude embryonic development" (Reed 2005).

- Sperm storage in constrictors has not been well studied, but other female snakes have been shown to store sperm for multiple years. In this way, a single female who has not mated recently could still establish feral populations in the United States (Schuett 1992).
- Parthenogenesis (i.e. a lone female capable of successful reproduction) was recently reported in pythons (Groot et al. 2003).
- Some constrictors grow and mature rapidly, which results in increased rates of juvenile survivorship compared to other snake species (Shine et al. 1998).
- Constrictors characteristic skin colors/patterns and secretive behavior contribute to the species' ability to adapt and thrive in both rural and urban settings (Shine 1996).

Any one of these ecological traits and behaviors could contribute to the successful establishment of feral constrictor populations. The fact that most constrictors possess more than one of them, and in some cases, several of them should be a tremendous concern.

III. Species ability to spread geographically

An unknown number of constrictor snakes are released or abandoned or escape from their enclosures each year. Some have mistakenly argued that animals released into temperate and arid areas and survive are not capable of establishing and sustaining feral populations.

The U.S. Geological Survey (USGS) recently created "climate maps" that show where climates in the United States are similar to the Burmese python's native ecosystems, which range from Pakistan to Indonesia (USGS 2008). One map (Figure 1) shows geographic areas of the United States with climatic conditions that are <u>currently</u> similar to those of the pythons' native habitats, while another map (Figure 2) demonstrates the projected amount of similar climatic conditions that will be present at the end of the century based on global warming models. The potential habitat already covers about one-third of the United States, and it will increase further over the next few decades if current global warming trends continue.

According to the USGS maps, Burmese pythons could survive and establish sustainable populations in most of California, Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, and North Carolina. Factors other than climate, such as the availability of prey and cover, may also play a role in the ability of pythons to establish feral populations. However, given the sheer volume and variety of constrictor snakes imported into the United States every year (Table 1 and Table 2), the fact that many of these animals are known to be highly adaptable (Section II), and the fact that abandoned or released constrictors are discovered annually across the United States, we have a recipe for disaster.

As demonstrated by Reed with the carpet python (*Morelia spilota*) of Australia, many constrictors have an expansive range in their native lands that include tropical, temperate and arid zones (Section I.). Also, constrictors inherently possess several ecological traits and behaviors that help them adapt, and ultimately survive and thrive, in new environments (Section II).

For instance, the African rock python lives in the African savannah's rolling plains of tall grasses and scattered trees. The African savannah has a relatively constant, warm climate with an average temperature of 70°F with two seasons – summer and winter. Winter is the dry season – it begins in December and ends in February; summer starts in May and ends in December and is characterized by six to eight months of heavy rainfall. African rock pythons preferred habitat is near water and forest edges.

In December 2007, a group of hunters found a 7-foot African rock python at Metzger Marsh State Wildlife Area – approximately 13 miles from Toledo, Ohio. One hunter commented that the animal was sluggish due to the cold (it was 37°F and sleeting), but was still alive and even opened his or her mouth upon being touched.

Though climate in a snake's native range is an important risk predictor of whether the species would become established, one cannot assume that an animal will die based solely on native habitat characteristics. Habitat specialization may also influence whether or not a particular species poses a high risk of becoming established in various regions of the United States. Reed (2005) uses the water python (*Liasis fuscus*) of Australia to illustrate this potential invasive species risk scenario.

Water pythons are highly aquatic, prey on dense populations of dusky rats (*Rattus colletti*) in Australia and according to a personal communication between Reed and T. Madsen, may have a biomass that exceeds "1,000 kg per square kilometer of floodplain" (Reed 2005). Given this particular species' habitat requirements, it is reasonable to assume that water pythons abandoned or released in the United States could become established in the vast swamps and marshes of the southeastern United States and may reach population levels "capable of significantly impacting native species" (Reed 2005). Very few water pythons, if any, are imported into the United States every year but, as referenced by Reed, "The green anaconda (*Eunectes murinus*) is a similar species in terms of habitat use, but is imported in greater numbers and attains much larger body sizes." If the same potential risk scenario holds true for green anacondas, given the number imported every year, again, it is likely that abandoned or released anacondas could establish feral populations in the southeast United States and any other regions with similar habitat characteristics.

Abandonment and release of non-native constrictors may pose the single most significant risk factor that may ultimately enable these species to spread geographically and establish feral populations in the United States. The following are just a few published reports of constrictors that have been released or abandoned by their owners, or escaped from their enclosures, between 2004 and 2008 (See Appendix 1 for complete list):

<u>Reports of abandoned/escaped/released constrictors</u>

- April 2008 (Florida): A Burmese python approximately 8-feet long was found in the rafters of a Marco Island Executive Airport hangar.
  Source: *Naples Daily News*

- March 2008 (Maryland): A woman was surprised by a 3-foot python who slithered out from behind her media stand while she was watching television in her living room. She had lived in the apartment for two months. Officials believe the snake was left behind by a previous tenant. Source: WTOP News

- July 2006 (Hawaii): A 3.5-foot ball python was found by police and turned over to the Department of Agriculture. Snakes are illegal as pets in Hawaii, where they have no natural predators and pose a serious threat to the environment. Many species prey on birds and their eggs, and larger species can be a danger to the public and small pets, according to state officials. Source: Hawaii Department of Agriculture

- March 2006 (Colorado): An evicted renter abandoned a 7-foot constrictor snake in an apartment. Source: *Glenwood Springs Post Independent*

- September 2005 (Delaware): An 8-foot boa and three 4- to 6-foot boas were abandoned at an apartment complex after a tenant's eviction. The local animal shelter was helping place those snakes, plus a fifth one about 5-feet long who was seized the same week from a man walking in the street with the snake around his neck. Source: *The News Journal*

- June 2005 (Arkansas): Wildlife officials say there have been two sightings of yellow anacondas in the Wapanocca National Wildlife Refuge, one by a person fishing in 2004 and a recent sighting by a wildlife official. Source: KAIT8.com

- October 2004 (Hawaii): A 4- to 5-foot ball python was caught on a golf course. The animal was at least the third snake captured recently on Maui. Another ball python was caught in a garage, while a boa constrictor was caught after it was seen in a tree. Many other incidents have occurred with credible sightings but the snake was never found. Source: *The Maui News*

- August 2003 (Washington): A man found an escaped 7-foot python slithering through his yard. The week before, a park ranger found a similar-size python in a lake. The local animal shelter generally takes in about 10 loose snakes a year. Source: *The Seattle-Post Intelligencer*

- August 2003 (Arizona): Authorities took a 12-foot Burmese python from a yard. The mobile homes on the property seemed to be vacant, and the animal appeared to be abandoned. Source: *The Associated Press*

- July 2003 (Connecticut): A 3-foot boa constrictor was found outside a condominium complex. Source: *Connecticut Post*

- September 2002 (New Jersey): A 7-foot boa constrictor was found in a roadway. Source: *The Star-Ledger*

A ban on the import and interstate transport of constrictors is critical for the success of federal and state agencies' efforts to prevent the expansion of established non-native constrictor

populations to other areas of concern identified by the USGS. It also is essential to prevent the establishment of these snakes in other parts of the country.

IV. Species impacts on habitats and ecosystems

In his ecological risk assessment of non-native boas and pythons as potentially invasive species in the United States, to determine which species represented the highest risk of establishing feral populations and causing the types of negative ecological impacts observed with the brown tree snake in Guam, Reed (2005) developed a model with several predictions, or rules, based on recognized trade and ecological profiles of 23 species imported into the United States from 1989 to 2000 (Table 2).

As Reed (2005) notes, "the major problem with this type of risk analysis is that it is essentially an untestable hypothesis. The only sure way to determine if species would make the best invaders is to release multiple founder populations of each species into U.S. habitats and observe the results. This is obviously a fool's choice…" Instead, Reed believes the only options left in order to avoid a potentially devastating ecological disaster are to use a) case examples, such as the brown tree snake (*Boiga irregularis*), to support the need to prevent the establishment of feral populations in the continental United States, and b) models to predict, to the best of our knowledge, which species pose the highest risk of establishing feral populations in the United States, competing with native species for available resources, and introducing parasites and other pathogens into U.S. habitats.

For example, the brown tree snake (*B. irregularis*) was accidentally introduced to the U.S. territory of Guam shortly after World War II when an animal stowed away on military equipment bound for Guam (Fritts and Rodda 1995). The snake population soon reached densities of 100 snakes per hectare, and the ecological impact has been enormous. Within 50 years of being introduced to this formerly snake-free island, ten of Guam's 13 native bird species were lost, as were six of 12 lizard species and two of 3 bat species (Fritts and Rodda 1998).

With respect to the treat of the spread of pathogens from imported snakes to native snakes, the most significant is inclusion body disease (IBD), a disease that is consistently fatal and appears to be closely associated with a retrovirus. Retroviruses mutate rapidly and are capable of producing new strains and infecting different hosts. IBD has been referred to as one of the most important health problems of captive snakes in the world today and, therefore, presents a serious threat to native snakes in the United States. The pet trade brings together snakes of different species who would not typically come in contact with each other in the wild. This practice can facilitate the spread of disease.

According to Reed (2005):

> [IBD] is likely to be pathogenic for native boid snakes (*Charina*) in the western United States, and mutant strains could conceivably infect more distantly related snakes. Mutations of this sort may have already occurred, as evidenced by the observation of an IBD-like disease in captive pitvipers (Raymond et al. 2001)…The likelihood of this happening is increased by the common

> herpetological practice of keeping multiple species of snakes in close proximity, increasing the odds of each species being exposed to novel pathogens. Native species may escape or be released, allowing infection of natural populations. Furthermore, shipments of imported snakes often contain multiple species, further increasing the risk of cross-species pathogen transfer.

In some cases, the exotic parasites present on non-native reptiles may themselves carry pathogens. The recent ban on the importation and interstate transport of three species of African tortoises (*Geochelone pardalis*, *Geochelone sulcata* and *Kinixys belliana*) was put into place after researchers demonstrated that these tortoises can carry a variety of ticks – tropical bont tick (*Amblyomma variegatum*), the African tortoise tick (*Amblyomma marmoreum*) and ticks of the species *Amblyomma sparsum*) – known to carry heartwater disease in their native African ranges. Heartwater disease is an acute infectious disease of ruminants, which could decimate livestock and native wild ruminants in the United States. According to Reed, the disease was "estimated to potentially produce 60% or greater mortality rate in livestock and a 90% or greater mortality rate in white-tailed deer," indicating that the potential risk would be severe for both domestic and wild species.

Based on information discussed in Sections II and III, other predictors developed by Reed that he believes increases the potential risk of certain constrictors as invasive species include:

- Species of lower cost [i.e. ball pythons].
- Species that are imported in high numbers [i.e. ball/royal pythons (*Python regius*) and boa constrictors (*Boa constrictor*)] (Tables 1 and 2).
- Species of larger body sizes [i.e. Burmese pythons (*Python molurus*) and reticulated pythons (*Python reticulates*)] (Table 3).
- Species with higher fecundities [i.e. Burmese pythons (*Python molurus*) and reticulated pythons (*Python reticulates*)] (Table 3).
- Species with greater range of climatic tolerances [i.e. boa constrictor (*Boa constrictor*) and carpet pythons (*Morelia spilota*)] (Table 3).

Not surprisingly, Reed's models predicted that royal or ball pythons (*Python regius*) presented the highest risk of establishing feral populations in the United States. The relatively small-bodied python is imported into the United States in huge volumes (Table 1 and 3) at a price of approximately $10 per individual and usually retails for approximately $40 to $75 (Reed 2005). As such, these animals are often purchased by novices who may be more likely to abandon these animals. Moreover, royal or ball pythons have been classified as invasive species in their native range because the species has successfully adapted to farmland in Ghana where it is estimated to average over 2.34 individuals per hectare (Reed 2005). According to Reed, densities are thought to be even higher in these habitats than "predisturbance habitats" and for these reasons, he sees "no obvious reason to suspect that the species would not be similarly successful in much of

Florida, portions of Texas and California, and other warm locales with adequate rainfall" (Reed 2005).

V. Present and potential impact of *Python, Boa and Eunectes* species on state and federally threatened and endangered species

As some ecological factors predispose constrictors as potential invasive species, the characteristics of some species listed as threatened, endangered or a species of special concern in the United States may predispose them to being adversely impacted by establishment of non-native snakes.

According to Reed (2005), those of particular concern are listed species that may be potential prey for non-native snakes, or listed species that may compete directly with non-native snakes for available resources. Reed acknowledges that any discussion of which listed species are most likely to be affected by the establishment of non-native snakes is "speculative," but the list he created is still relevant because it is based on the geographic distributions of species listed as threatened and endangered in areas most likely to be colonized by non-native constrictors (Table 4). A review of the table shows that a number of ESA-listed mammals in Florida could be negatively impacted by the introduction of large-bodied constrictors and mammals of the Florida Keys may be especially vulnerable to these non-native snakes. As Reed states:

> …the presence of small (e.g., *Oryzomys*), medium (e.g., *Sylvilagus*), and large (e.g., *Odocoileus*) listed mammals in the Florida Keys imply that a large species of snake (e.g., *P. reticulates* or *P. molurus*) could conceivably prey on federally listed mammals from hatching through maturity. Potential risk to these species is increased by the observations that: (a) well over 500,000 reptiles are imported annually through Miami, Florida;(49) and (b) the northernmost Florida Keys are a scant 100 km from Miami, and are closer still to known established populations of *P. molurus*. Additionally, the introduction of novel pathogens associated with boas and pythons may represent a potential threat to indigo snakes (*Drymarchon couperi*). Because indigo snakes are wide-ranging active foragers, they tend to have large individual home ranges. Thus, an indigo snake may have increased opportunities to encounter exotic species and their pathogens, and, after infection, may have increased opportunities to transmit the pathogen to conspecifics.

Reed's stated concerns are not hypothetical. In April 2007, a 7.5 foot Burmese python (*P. molurus*) was captured on Key Largo. The animal was found by researchers tracking a Key Largo wood rat – an endangered species – fitted with radio-transmitter collar. The remains of two wood rats along with the radio transmitter were found inside the python (Wadlow 2007). Also, in September 2005, authorities in the Everglades found the body of another Burmese python (*P. molurus*) who tried to swallow an alligator. Exactly what happened remains a mystery, but with the Burmese python as a new top predator in the Everglades, each of the snake's potential prey species could be at risk.

Moreover, between January 2003 and March 2006, Snow et al. (2007) captured 56 Burmese pythons (*Python molurus bivittatus*) in Everglades National Park (ENP) and analyzed the

contents of the snakes' stomach and lower intestines in an effort to determine the potential ecological impact of non-native snakes on native species. Among other findings, the results of the study showed that Burmese pythons had ingested two species – Limpkin (*Aramus guarauna*) and White ibis (*Eudocimus albus*) – listed by the state as species of special concern, and that large pythons had consumed or attempted to consume a bobcat an American alligator demonstrating "that almost any native species within ENP is vulnerable to predation" (Table 5).

Snow et al. add that:

> Native threatened and endangered species such as the Florida panther (*Puma concolor coryi*), Wood stork (*Mycteria Americana*), Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*) and Mangrove fox squirrel (*Sciurus niger avicennia*) have not been observed as prey to date but are of special concern. The distribution of *P. m. bivittatus* within ENP overlaps with all four of these species with a large number of sightings or captures occurring in close proximity to birding hot spots, including Wood stork rookeries (Snow, 2006). Another concern is the many federally listed endangered mammals that inhabit the Florida Keys (Reed 2005). This includes the Key Largo woodrat (*Neotoma floridana smalli*) and Key Largo cotton mouse (*Peromyscus gossypinus allapaticola*). To date there have been in excess of 14 pythons recovered along the 18 mile stretch leading to the Keys.

Though the analysis is based on animals consumed by Burmese pythons in Florida, it applies in other states should the snakes become established there. For example, wood storks are also endangered in Alabama, Georgia and South Carolina, and could be put at risk there, too.

VI. Impacts on public safety

One of the many reasons that pythons, boas, anacondas and their relatives are in high demand in the U.S. pet trade is because these animals may appear relatively docile compared to vipers, cobras and other venomous snakes. However, despite their calm demeanor and lack of venom, constrictors are still wild carnivores and, as such, are extremely unpredictable and dangerous.

As stated previously, constrictors are large, powerful animals who routinely escape from captivity and are difficult to locate and recover once they do. Although human fatalities caused by constrictors are not common, some of the larger species are capable of, and have been known to, occasionally kill humans and their companion animals. Since 1980, 10 people – most of them children or teens – have been killed by pet pythons, including two men with experience handling reptiles killed in 2006.

Ten people killed by pet pythons in the United States since 1980

- 2006 (Ohio): A man died at the hospital after being strangled by his pet python. Source: United Press International

- 2006 (Indiana): A 23-year-old man with experience handling reptiles was killed by his 14-foot reticulated python. A medical examiner determined that the death was consistent with asphyxiation caused by compression of the neck and chest. Source: MSNBC and *The Corydon Democrat*

- 2002 (Colorado): A man had his pet Burmese python wrapped loosely around his neck when the snake suddenly constricted. By the time rescue workers wrestled the animal off the man, it was too late and he later died. Source: *Rocky Mountain News*

- 2001 (Pennsylvania): An 8-year-old girl was strangled by her father's pet Burmese python. The child had been left home alone, and the snake broke through the top of the cage. Paramedics said she was not breathing when they arrived; she was taken to a hospital and placed on a ventilator until she was pronounced brain dead two days later. An autopsy showed the cause of death was compression of her neck and chest. Source: *The Augusta Chronicle* (Scripps) and *Pittsburgh Post-Gazette*

- 1999 (Illinois): A couple's 7.5-foot African rock python escaped from an enclosure and killed their 3-year-old son. A ball python previously kept in the same aquarium escaped and disappeared. Source: *St. Louis Post-Dispatch*

- 1996 (New York): A 13-foot python, kept as a pet by two teen-age brothers who hoped to have careers caring for reptiles, killed one of the brothers, possibly mistaking him for food. The 19-year-old was found by a neighbor with the snake coiled around his midriff and back. Source: *The New York Times*

- 1993 (Colorado): A 15-year-old was killed by his brother's 11-foot pet python. He had snake bites on his body, and an autopsy found he was suffocated. The 8-year-old snake had been a family pet since she was only a foot long. Source: The Associated Press

- 1983 (Missouri): A man was crushed to death by his 16-foot pet Burmese python. Source: The Associated Press

- 1982 (Nevada): An 8-foot python escaped from his cage, crawled into an adjoining bedroom, and killed a 21-month old boy in his crib. The snake belonged to an unrelated man who lived in the house. Source: United Press International

- 1980 (Texas): A 7-month-old girl was killed by her father's 8-foot pet reticulated python. The child died of asphyxiation and her head was covered with dozens of needle-like tooth marks. The snake had forced his way out of a covered 30-gallon aquarium and crawled into the baby's crib. Source: The Associated Press

The following are a few documented examples of people and domestic animals who have been injured or killed by constrictors who were their own pets or were abandoned or escaped pets.

Human injuries attributed to constrictor snakes

- November 2007 (Texas): A teenager's pet ball python escaped from a cage, coiled up around the teen's hand, and bit her. It took an emergency crew an hour to get the animal to let go. Source: KHOU.com

- July 2007 (North Carolina): A toddler was playing in a park when a four-foot long ball python wrapped around the boy's leg and bit him. Source: WCNC.com

- August 2005 (California): A 12-year-old boy awoke when he was bitten by a ball python clinging to his arm. The family had moved into the home two weeks before and did not know where the snake came from. Source: *The Fresno Bee*

- June 2004 (Kansas): A teenager was showing off the family's 15-foot pet python when the animal coiled around his arm and began to squeeze, turning the boy's arm blue. The snake bit the teen and his mother, and they called 911. Emergency crews used a fire extinguisher to get the snake to loosen his grip. Source: News4Jax.com

Domestic animal deaths attributed to constrictors

- August 2007 (Florida): A couple's pet bird was found dead next to a 4-foot ball python. The bird had apparently been fatally constricted by the snake. Source: *The Gainesville Sun*

- February 2006 (Florida): A man walking his dog – an 8-pound rat terrier – let the dog off his leash. A neighbor's pet python had gotten free and grabbed the dog by the head, wrapping around him. The man used a golf club to get the snake to release the dog, but the dog ran away and was found dead the next day with injuries consistent with constriction. Source: orlandosentinel.com (AP)

- October 2005 (Florida): A woman looking for her pet Siamese cat instead found a bulging Burmese python in her backyard. X-rays showed that the snake had eaten the cat. Source: NBC6.net

First responders also can be put in danger by these snakes. For example, firefighters responding to a warehouse fire in Florida in September 2007 found more than 100 snakes in the building, including 8-foot boa constrictors and pythons between 12- and 17-feet long. In May 2007, a firefighter found a large Burmese python in the basement of a New York home after a fire was doused. A California firefighter found a 6-foot anaconda alive among the debris after a fire gutted a music studio in 2006.

VII. Impacts on human health

As stated previously, exotic reptiles may pose zoonotic disease threats to humans. The best-documented zoonosis related to reptiles is salmonellosis. Like other reptiles, pythons, boas and anacondas carry the bacteria *Salmonella.* The Centers for Disease Control and Prevention (CDC), which considers reptile-associated Salmonellosis to be a public health concern, reports that reptiles and amphibians account for 6 percent of U.S. *Salmonella* cases – approximately 74,000 cases each year (CDC 2005). The CDC recommends keeping reptiles out of homes with children under five and people with weakened immune systems, who are most susceptible (CDC 2008a).

Most people infected with *Salmonella* develop diarrhea, fever and abdominal cramps lasting 4 to 7 days, and then recover. However, it may become severe, causing complications and even death. A small share of people infected with *Salmonella* will later develop Reiter's syndrome, which causes pains in the joints and can lead to chronic arthritis (CDC 2008b).

Even indirect contact with a reptile can spread the bacteria. In December 2001, a 3-month-old California infant was taken to an emergency department after a day of bloody diarrhea and fever caused by *Salmonella*. The infant's father was a high school biology teacher who often draped a large snake (i.e., a boa) over his shoulders in the classroom. He was careful to wash his hands – but not to change his clothing – before going home and holding his child. The snake was found to be the source of the child's *Salmonella* infection (CDC 2003).

In April 2001, a woman died in Oklahoma from septic shock and hemorrhage related to a *Salmonella* infection after obtaining a transfusion of blood platelets. The platelet donor's 9-foot pet boa constrictor was identified as the likely source of the *Salmonella*. The type of *Salmonella* found in a stool sample from the snake matched that found in the platelets. The man exhibited no symptoms at the time of his donation, but had been ill two weeks before and taken antibiotics. A second patient who received platelets from the man also contracted *Salmonella* but was healthier to begin with and lived (Jafari et al. 2002).

A letter to the editor published in the *Archives of Diseases in Childhood* (1997) described a case involving a 5-month-old boy admitted with symptoms and signs commonly associated with bacterial meningitis. Laboratory results confirmed that the child contracted *Salmonella* uzaramo. The child survived and was discharged following three weeks of treatment. Doctors later determined that the child contracted the disease from a snake – a Burmese python (Python morulus) and two royal pythons (*Python regius*) were kept in tanks in the family's dining room, were handled frequently and at times were permitted to roam freely throughout the home.

At least 38 potentially zoonotic strains of *Salmonella* have been isolated from apparently healthy reptiles (Johnson-Delaney 1997). According to Reed (2005):

> A number of other potential zoonotic pathogens have also been found on reptiles, including *Clostridium*, *Escherichia*, *Mycobacterium*, and *Staphylococcus*. Serious bacterial and viral zoonoses have been associated with live reptiles in the pet trade, including Q fever and western equine encephalitis. Parasite-medidated

diseases such as Lyme disease, tularemia, Siberian tick typhus, and tick-borne relapsing fever are associated with external parasites (especially ticks) found on some reptiles.

Many of the natural geographic boundaries that prevent introduction of these diseases to the United States may be negated by importation of live reptiles for the pet trade.

VIII. Impacts on animal welfare

The practice of keeping constrictors, large and small, as pets is not only a threat to human health and safety and the environment, but also to the welfare of the animals themselves. People often cannot meet the animals' complex dietary and habitat needs.

Every year, local animal control bureaus and other law enforcement agencies respond to complaints and cite or charge constrictor owners for cruelty to animals or neglect for failing to provide adequate care. Constrictor snakes suffer from starvation, dehydration, parasite infestations and other symptoms of neglect when owners cannot provide the care they need.

The following are some of the documented examples of the animals who have suffered from abandonment, abuse and neglect:

<u>Cruelty and neglect</u>

- March 2008 (California): A woman pleaded guilty to animal cruelty. A nearly 15-foot Burmese python was one of more than 200 animals found in her home, many of them malnourished and in need of veterinary care. Source: *The Sacramento Bee*

- February 2008 (Florida): A woman was arrested for animal cruelty after authorities found a Burmese python, 12 dogs, and a cat living in deplorable conditions in her home. The snake was kept in a small dog crate that was full of feces and shredded snake skins. Source: *St. Petersburg Times*

- June 2006 (Connecticut): Officials investigating a report of an alligator in an apartment also found 36 snakes including boas, pythons and an anaconda. The tenant had been evicted the previous day. There were two dead lizards and the remaining reptiles were left in extremely dirty and unhealthy conditions, with no food or water. Source: *2006 Annual Report*, State of Connecticut, Department of Environmental Protection, Division of State Environmental Conservation Police

- June 2003 (Maryland): A man was charged with animal cruelty following an investigation of conditions at a reptile wholesale business in a warehouse. Boa constrictors and 500 to 1,000 baby ball pythons were among the animals being housed in the facility; 199 animals were found dead. Source: *The Washington Post*

IX. Comments on Specific Questions for Supporting Data

(1) What regulations does your State have pertaining to the use, transport, or production of *Python, Boa* and *Eunectes* genera?

A number of states have enacted laws or regulations that prohibit or require permits for certain constrictor snakes, as shown in the examples below. Local governments also may adopt prohibitions and restrictions on possession of these snakes. Prohibiting importation and interstate commerce would complement and facilitate enforcement of these state and local laws. Without federal action, these snakes will become more prevalent and more likely to become established.

Examples of states that prohibit possession of certain constrictor snakes

- Hawaii prohibits all snakes. http://hawaii.gov/hdoa/admin-rules/subtitle-6-division-of-plant-industry/AR-71P.pdf

- Illinois prohibits "life-threatening reptiles" as pets. http://www.ilga.gov/legislation/ilcs/ilcs2.asp?ChapterID=53

- Iowa prohibits as pets: reticulated pythons, anacondas and African rock pythons. http://coolice.legis.state.ia.us/Cool-ICE/default.asp?category=billinfo&service=billbook&GA=82&hbill=SF564

- Massachusetts prohibits as pets: emerald tree boa, green tree python, African rock python, reticulated python and all anacondas. http://www.mass.gov/dfwele/dfw/regulations/regulations_exotic.htm

- Montana prohibits as pets: African rock python (*Python sebae*), amethystine python (*Morelia amethistina*), green anaconda (*Eunectes marinus*), Indian python - including the Burmese python (*Python molurus*) and reticulated python (*Python reticulatus*) http://fwp.mt.gov/wildthings/exotics/prohibited.html#reptiles

- New Jersey prohibits possession and sale of anacondas. www.nj.gov/dep/fgw/pdf/xotic_dealer_whlslapp.pdf

- New York prohibits as pets: Burmese python (Python m. bivittatus), reticulated python (Python reticulatus), African rock python (Python sabae), green anaconda (Eunectes maurinus), yellow anaconda (Eunectes notaeus), Australian amethystine python (Morelia amethistina and Morelia kinghorni), and Indian python (Python molurus) http://public.leginfo.state.ny.us/menugetf.cgi

Examples of states that require a permit for certain constrictor snakes

- Florida requires a permit and microchip for "reptiles of concern": Burmese python (*Python molurus*), African rock python (*Python sebae*), amethystine python (*Morelia*

amethystinus), reticulated python (*Python reticulatus*) and green anaconda (*Eunectes murinus*). http://myfwc.com/nonnatives/ruleregs.HTML

- Louisiana requires a permit for: constrictor snakes in excess of 12 feet, including but not limited to: *Apodora papuana* (Papuan python), *Liasis olivacea*, (olive python), *Morelia spilota* (carpet or diamond python), *Morelia kinghorni* (scrub python), *Morelia amethystina* (amethystine python), *Python natalensis* (southern African python), *Python sebae* (African rock python), *Python molurus* (Indian or Burmese python), *Python reticulatus* (reticulated python), any species of the genus *Boa* (boa constrictors), and any species of the genus *Eunectes* (anacondas). http://www.doa.la.gov/osr/lac/76v01/76v01.doc

:

- Texas requires a permit for: (i) African rock python (*Python sebae*); (ii) Asiatic rock python (*Python molurus*); (iii) green anaconda (*Eunectes murinus*); (iv) reticulated python (*Python reticulatus*); and (v) southern African python (*Python natalensis*). http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=5&ti=31&pt=2&ch=55&sch=J&rl=Y

(2) How many species in the *Python, Boa* and *Eunectes* genera are currently in production for wholesale or retail sale, and in how many and which States?

To our knowledge, no agency is currently required to gather, process and analyze that type of data.

(3) How many businesses sell *Python*, *Boa* or *Eunectes* species?

To our knowledge, no agency is currently required to gather, process and analyze that type of data.

However, our analysis of the USFWS' LEMIS data shows that at least 997,647 constrictors in the *Python*, *Boa*, *Eunectes*, *Morelia* and *Epicrates* genera were imported between 2002 to 2006 (Table 1), and presumably, the vast majority of these animals were imported to supply the U.S. pet trade. Approximately three-quarters of these snakes were ball pythons/royal pythons.

The 2007-2008 American Pet Products Manufacturers Association (APPMA) National Pet Owners Survey found that 4.8 million households in the United States keep a total of 13.4 reptiles as pets (http://www.appma.org/press_industrytrends.asp). According to the APPMA, 19 percent of reptile owners had snakes in 2006. This percentage has been relatively constant, ranging between 16 and 22 percent in the surveys conducted from 1996 to 2006.

(4) How many businesses breed *Python*, *Boa* or *Eunectes* species?

To our knowledge, no agency is currently required to gather, process and analyze that type of data.

(5) What are the annual sales for *Python*, *Boa* or *Eunectes* species?

To our knowledge, no agency is currently required to gather, process and analyze that type of data.

(6) Please provide the number of *Python*, *Boa* or *Eunectes* species, if any, permitted within each State.

See Question 1 above.

(7) What would it cost to eradicate *Python*, *Boa* or *Eunectes* individuals or populations, or similar species, if found?

Amphibians and reptiles introduced into the United States number about 53 species. All these non-indigenous species occur in relatively warm states – Florida is now host to 30 species and Hawaii to 12 (McCoid and Kleberg 1995; Lafferty and Page 1997). The negative ecological and economic impacts of several of these non-native species have been enormous. (See Section IV regarding the ecological impacts of the brown tree snake (*Boiga irregularis*) introduction on the U.S. territory of Guam).

For example, the devastating ecological impact the introduction of the brown tree snake had on Guam was matched by the economic impact. The snakes eat chickens, eggs, and caged birds and small farmers and pet owners reported major problems. The snakes are also capable of scaling trees up and utility poles and caused power outages on the island. In fact, one island-wide power outage caused by brown tree snakes cost the utility company more than $250,000 (Teodosio 1987). Local outages that affect businesses are estimated to cost from $2,000 to $10,000 per commercial customer (Coulehan 1987) and with about 86 outages per year (BTSCP 1996), Pimentel et al. (1999) estimated that the cost of snake-related power outages on Guam is conservatively one million dollars per year.

(8) What are the costs of implementing propagation, recovery, and restoration programs for native species that are affected by *Python, Boa* or *Eunectes* species, or similar snake species?

According to Pimental et al. (1999),

> The total costs of endangered species recovery efforts, environmental planning related to snake containment on Guam and other programs directly stemming from the snake's invasion of Guam reach more than $1 million per year; in addition, up to $2 million per year is invested in research to control this serious pest. The brown tree snake has also invaded Hawaii but thus far has been exterminated. Hawaii's concern about the snake, though, has prompted the federal government to invest $1.6 million per year in brown tree snake control (Holt 1997-1998). The total cost associated with the snake is therefore more than $5.6 million/yr.

In addition to the costs of recovery and restoration plans, consideration should be given to lost revenue in the tourism and agricultural industries should these snakes become established in additional parts of the country.

(9) What State-listed species would be impacted by the introduction of *Python, Boa* or *Eunectes* species?

See Section V.

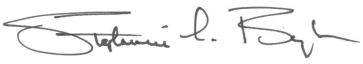
(10) What species have been impacted, and how, by *Python, Boa* or *Eunectes* species?

See Section V.

IX. Conclusion

The real and potential consequences that the continued importation and interstate transport of these reptiles pose to people, wildlife and the environment far outweigh any potential economic benefits to the small percentage of the general public who purchase, breed or sell these animals. Even if these snakes are listed as injurious, the Lacey Act provides responsible individuals in the zoological, educational, medical and scientific communities the opportunity to obtain these animals, when deemed appropriate, through a regulated permitting process developed to prevent the accidental or intentional release of non-native animals into the environment. Given the inherent risks of importing these animals into the United States and transporting them across state lines, The HSUS/HSI strongly recommend that the USFWS move quickly to add constrictor snakes in the *Python, Boa* and *Eunectes* genera, as well as related genera as noted in our comments, to the list of injurious wildlife under the Lacey Act.

Respectfully,



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APPENDIX 1

Python, Boa, and Anaconda Incidents Demonstrate Risks To Public Health and Safety, Animal Welfare, and the Environment

April 2008 (Oregon): A pet store owner reached into a cage to show a customer a 12-foot Burmese python when the snake bit her hand and coiled around her arm, throwing her to the floor. It took several emergency responders to unwrap the snake. Source: MSNBC (Associated Press)
http://www.msnbc.msn.com/id/24226224/

April 2008 (Florida): Deputy Secretary of the U.S. Department of the Interior Lynn Scarlett found an 8- to 9-foot Burmese python while hiking in the Everglades. Source: People, Land & Water, U.S. Department of the Interior
http://www.peoplelandandwater.gov/scienceandstewardship/nps_04-21-08_interior-deputy-secretary.cfm

April 2008 (Connecticut): A 6-foot python escaped from a home and was found two days later curled up in the yard. Source: *The News-Times*
http://www.newstimes.com/latestnews/ci_9069019

April 2008 (Florida): A Burmese python about 8-feet long was found in the rafters of a Marco Island Executive Airport hangar. Source: *Naples Daily News*
http://www.naplesnews.com/news/2008/apr/03/8-foot-burmese-python-rescued-marco-airport-hangar/

April 2008 (Illinois): Three Brazilian rainbow boas, a sand boa, a ball python, and a red-tail boa were among the animals who escaped when a car crashed into a home *and broke open their tanks. Most of the animals were recaptured. Source: Belleville* News-Democrat
http://www.bnd.com/homepage/story/300103.html

March 2008 (Maryland): A woman was surprised by a 3-foot python who slithered out from behind her media stand while she was watching television in her living room. She had lived in the apartment for two months. Officials believe the snake was left behind by a previous tenant. Source: WTOP News
http://www.wtopnews.com/?nid=715&sid=1373142

March 2008 (Kentucky): Authorities seized a boa constrictor and python, along with venomous snakes and other reptiles, from a man's home. At the time of the seizure, the owner of the animals was in the hospital having two fingers amputated because of a snake bite. Source: LEX 18 News
http://www.lex18.com/Global/story.asp?S=8095755&nav=EQlp

March 2008 (California): A woman pleaded guilty to animal cruelty. A nearly 15-foot Burmese python was one of more than 200 animals found in her home, many of them malnourished and in need of veterinary care. Source: *The Sacramento Bee*

http://www.sacbee.com/114/story/818645.html

February 2008 (Florida): A 4-foot python was found beneath a water heater in a newly rented home. Source: *Sarasota Herald-Tribune*
http://www.heraldtribune.com/article/20080212/BREAKING02/727631363

February 2008 (Florida): A 13-foot python was seen in a Wal-Mart parking lot. A rescue worker found the animal in a culvert more than two weeks later. Source: *Sarasota Herald-Tribune*
http://www.heraldtribune.com/article/20080206/NEWS/802060434

February 2008 (Florida): A woman was arrested for animal cruelty after authorities found a Burmese python, 12 dogs, and a cat living in deplorable conditions in her home. The snake was kept in a small dog crate that was full of feces and shredded snake skins. Source: *St. Petersburg Times*
http://www.sptimes.com/2008/02/09/Hernando/_Deplorable__discover.shtml

January 2008 (Montana): A man was driving with a 5-foot long Burmese python when the animal crawled out of a pillow case and into the van's duct system. Auto mechanics retrieved the snake. Source: *Great Falls Tribune*
http://www.greatfallstribune.com/apps/pbcs.dll/article?AID=2008801220312

December 2007 (Ohio): A 7-foot African rock python was found in the Metzger Marsh State Wildlife Area. The animal was alive though it was 37 degrees and sleeting. Source: *The Toledo Blade*
http://toledoblade.com/apps/pbcs.dll/article?AID=/20071211/COLUMNIST22/712110339/-1/SPORTS

December 2007 (Florida): A man mowing the lawn for the county ran over and killed a 16-foot python. An animal control officer said the snake was among the largest of the 20 large pythons or boas he has found in the past decade in Indian River County, comparable in size to one found two years before. Source: tcpalm.com
http://www.tcpalm.com/news/2007/dec/11/3016-foot-python-bushwhacked-by-roadside-mower/

November 2007 (Texas): A teenager's pet ball python escaped from a cage, coiled up around the teen's hand, and bit her. It took an emergency crew an hour to get the animal to let go. Source: KHOU.com
http://www.khou.com/news/state/stories/khou071110_tnt_pythonattack.1f8757a6d.html

October 2007 (Florida): A Summerland Key resident was cited for allowing the escape of captive wildlife and inadequate cage size for a reptile. The incident began after citizens saw a 14-foot python in the bushes along a public parking lot. The owners of the snake – who used the animal for photos with tourists – said the snake had escaped two days before. Source: Florida Fish and Wildlife Conservation Commission Field Operations Weekly Report
http://myfwc.com/law/Weekly/2007/WeeklyReport10-19thru10-25-2007.pdf

September 2007 (Florida): His barking dog alerted a man to the presence of an 11-foot Colombian red tail boa constrictor in a park. Source: local10.com
http://www.local10.com/news/14215843/detail.html

September 2007 (Florida): Officials removed a python from beneath the deck of a private residence in Collier County. Source: Florida Fish and Wildlife Conservation Commission Field Operations Weekly Report
http://myfwc.com/law/Weekly/2007/WeeklyReport9-14thru9-20-2007.pdf

September 2007 (Florida): An animal control officer was bitten twice by a 5-foot boa constrictor, on the back of the hand and on the finger. The snake was being removed from underneath a woman's car, where he had wrapped himself around coil springs in the wheel well. Source: abc3340.com
http://www.abc3340.com/news/stories/0907/454606.html

September 2007 (Florida): Firefighters responding to a Delray Beach warehouse found more than 100 snakes in the building, including 8-foot boa constrictors and pythons between 12- and 17-feet long. Several small snakes were killed in the fire. The owner says he sells the animals to retailers. Source: firstcoastnews.com
http://www.firstcoastnews.com/news/florida/news-article.aspx?storyid=91430

August 2007 (Ohio): A man brought a 10-foot python to a festival. The snake was killed by a boy who stomped on the animal's head. Source: 13abc.com
http://abclocal.go.com/wtvg/story?section=news/local&id=5596463

August 2007 (Florida): A couple's pet bird was found dead next to a 4-foot ball python. The bird had apparently been fatally constricted by the snake. Source: *The Gainesville Sun*
http://www.gainesville.com/article/20070812/LOCAL/708120315

August 2007 (Florida): Two large snakes were captured in Lee County: a 10-foot Burmese Python found by two maintenance workers at an apartment complex and a boa constrictor longer than 6 feet who was spotted in the middle of an intersection. Source: *Naples Daily News*
http://www.naplesnews.com/news/2007/aug/23/8foot_python_spotted_san_carlos_park_street/

July 2007 (North Carolina): A toddler was playing in a park when a four-foot long ball python wrapped around the boy's leg and bit him. Source: WCNC.com
http://www.wcnc.com/news/local/stories/wcnc-073107-krg-python.cdf83511.html#

July 2007 (Rhode Island): A man took a 6-foot boa constrictor to the police, claiming he found the snake along the road. The police discovered the snake belonged to the man, and he had tried to sell the animal to a pet store the day before. Though the store declined to buy the boa, the man purchased a small python even though he could no longer care for the larger snake. Source: *The Providence Journal*'s Daily News Blog
http://www.beloblog.com/ProJo_Blogs/newsblog/archives/2007/07/19/

July 2007 (Florida): A reticulated python approximately 15-feet long was found in a yard in a residential community. Source: WFTV.com
http://www.wftv.com/news/13688417/detail.html

June 2007 (Pennsylvania): Officials caught a 9 1/2-foot Burmese python, but a second large snake remained on the loose. That snake was thought to have killed a cat, a bird, and several kittens. Source: *Courier Times*
http://www.phillyburbs.com/pb-dyn/news/111-06152007-1363636.html

July 2007 (New York): Two Burmese pythons were found on the loose in Albany. An 8-foot snake had escaped from a second-floor pen and was claimed by the owner. No one had claimed the 4-foot snake. Source: *The Times Union*

May 2007 (New York): A firefighter found a large Burmese python in the basement of a home after a fire was doused. Source: *The New York Times*
http://select.nytimes.com/2007/05/19/nyregion/19about.html

April 2007 (Florida): A 7.5 foot Burmese python was captured on Key Largo. The animal was found by researchers tracking a Key Largo wood rat -- an endangered species -- fitted with radio-transmitter collar. The remains of two wood rats along with the radio transmitter were found inside the python. Source: keynoter.com
http://www.keynoter.com/articles/2007/04/27/news/news01.txt

April 2007 (New York): An employee's 3-foot ball python escaped in Google's Manhattan office. Source: USAtoday.com
http://www.usatoday.com/tech/news/2007-04-03-google-snake_N.htm

March 2007 (Alaska/Alabama): An Alaska woman took in an 8-foot Burmese python around 2002 after a landlord found the animal without food in an empty apartment, two weeks after the previous resident was evicted. The snake grew to 16 feet, outgrowing the home. The snake was shipped to an Alabama zoo, but during transport she spent many hours in cold temperatures in a small crate. The snake died four weeks later. Source: Anchorage Daily News and KTUU.com
http://www.ktuu.com/Global/story.asp?S=6223762

December 2006 (Ohio): A man died at the hospital after being strangled by his pet python. Source: United Press International
http://www.upi.com/NewsTrack/Quirks/2006/12/19/man_strangled_by_pet_python/8274/

December 2006 (Florida): A 14-foot, 14-year-old Burmese python being exhibited at an aquarium wrapped around the handler's arm and waist and bit her. A police taser was needed to get the snake to let go. The woman was treated at the hospital for wounds to her hands. Previously a man was bitten when feeding the snake. Source: *St. Petersburg Times*
http://www.sptimes.com/2006/12/31/Tampabay/Taser_finally_loosens.shtml

September 2006 (Indiana): A 23-year-old man with experience handling reptiles was killed by his 14-foot Reticulated python. A medical examiner determined that the death was consistent

with asphyxiation caused by compression of the neck and chest. Source: MSNBC and *The Corydon Democrat*
http://www.msnbc.msn.com/id/14683082/
http://www.corydondemocrat.com/1editorialbody.lasso?-token.folder=2006-09-05&-token.story=172354.112112&-token.subpub=

September 2006 (Montana): A man trying to enter Canada with five snakes turned them over to U.S. authorities rather than obtain the proper permits to export them. The two red-tail boa constrictors and three ball pythons were dehydrated and had mites. Source: *Great Falls Tribune*
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20060919.html

August 2006 (Florida): A 9-foot Burmese python was found near the Tallahassee airport. After police initially captured and put the snake in a bag, the animal escaped from the back seat of the patrol car and had to be recaptured. Source: KHOU-TV Animal Attraction Blog
http://www.beloblog.com/KHOU_Animal_Attraction/2006/08/burmese-python.html

August 2006 (Michigan): A woman reported her 6- to 7-foot boa constrictor missing. Source: *The Macomb Daily* http://www.macombdaily.com/stories/080806/loc_boa001.shtml

July 2006 (Hawaii): A 3.5-foot ball python was found by police and turned over to the Department of Agriculture. Snakes are illegal as pets in Hawaii, where they have no natural predators and pose a serious threat to the environment. Many species prey on birds and their eggs, and larger species can be a danger to the public and small pets, according to state officials. Source: Hawaii Department of Agriculture
http://hawaii.gov/hdoa/copy_of_news-releases/2006/news-release-july-18-2006

July 2006 (Michigan): Two boa constrictors were on the loose in a matter of days. Source: WJRT-TV
http://abclocal.go.com/wjrt/story?section=news/local&id=4417969

June 2006 (Connecticut): Officials investigating a report of an alligator in an apartment also found 36 snakes including boas, pythons and an anaconda. The tenant had been evicted the previous day. There were two dead lizards and the remaining reptiles were left in extremely dirty and unhealthy conditions, with no food or water. Source: 2006 Annual Report, State of Connecticut, Department of Environmental Protection, Division of State Environmental Conservation Police
http://www.ct.gov/dep/lib/dep/enconpolice/reports/2006annualreport.pdf

June 2006 (Utah): A couple returned surprised to find a former roommate's pet 7-foot red-tailed boa possibly preparing to attack their pet cat. Source: KSL TV
http://www.ksl.com/?sid=314676&nid=148

April 2006 (California): A firefighter found a 6-foot anaconda alive among the debris after a fire gutted a music studio. The man who owned the studio and snake was arrested on suspicion of setting the fire. Source: *Orange County Register*
http://www.ocregister.com/ocregister/news/local/article_1118497.php

May 2006 (Kentucky): A man was surprised to find a 2-foot ball python inside a rental car. Source: washingtonpost.com (AP)
http://www.washingtonpost.com/wp-dyn/content/article/2006/05/28/AR2006052800230_pf.html

March 2006 (Florida): A man driving with his pet snake wrapped around his neck crashed his car into roadwork barricades after the snake began biting him. According to reports, when police first encountered the man, he had numerous small cuts on his body, and freshly dried blood on his forehead and right hand. Source: *Naples Daily News*
http://www.naplesnews.com/news/2006/mar/30/traffic_tip_week_dont_drive_pet_snake_around_your_/

March 2006 (Colorado): An evicted renter abandoned a 7-foot constrictor snake in an apartment. Source: *Glenwood Springs Post Independent*
http://www.postindependent.com/article/20060321/VALLEYNEWS/103210021/0/FRONTPAGE

February 2006 (Florida): A man walking his dog – an 8-pound rat terrier – let the dog off his leash. A neighbor's pet python had gotten free and grabbed the dog by the head, wrapping around him. The man used a golf club to get the snake to release the dog, but the dog ran away and was found dead the next day with injuries consistent with constriction. Source: orlandosentinel.com (AP)
http://blogs.orlandosentinel.com/features_lifestyle_animal/2006/05/what_is_a_dog_w.html

February 2006 (Idaho): After being missing for two weeks, a Burmese python was found in the bathroom ceiling of the apartment below the one she from which she escaped, apparently through a hole in the wall. Source: Foxnews.com (AP)
http://www.foxnews.com/story/0,2933,185840,00.html

December 2005 (Hawaii): A 4-foot boa constrictor was found in the laundry area of a home. The home was undergoing renovation and the door may have been left open during construction. Source: Hawaii Department of Agriculture
http://hawaii.gov/hdoa/copy_of_news-releases/2005/news-release-december-28-2005

November 2005 (Florida): A woman was washing dishes when she found a 2-foot ball python in the drain. She suspected the animal was left by a previous resident and had been living in the apartment for months. Source: *The Gainesville Sun*
http://www.gainesville.com/apps/pbcs.dll/article?AID=/20051107/LOCAL/51107011/1078/news

November 2005 (Georgia): A woman found a 7-foot Burmese python in a pillowcase in her backyard. Source: The Associated Press
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20051201_2.html

November 2005 (California): Two 5-foot boa constrictors were confiscated from a man who "performed" with them at San Francisco's Fisherman's Wharf. He would wrap the snakes around

his arms and neck, allowing people to pet them or take pictures. Source: The Associated Press
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20051123.html

October 2005 (Florida): A woman looking for her pet Siamese cat instead found a bulging Burmese python in her backyard. X-rays showed that the snake had eaten the cat. Source: NBC6.net
http://www.nbc6.net/news/5081607/detail.html

October 2005 (Florida): A 10-foot African rock python was found after crawling into a turkey pen and eating a turkey. The bulging snake was too large to slither back through the fence. Source: NBC6.net
http://abclocal.go.com/wtvg/story?section=news/bizarre&id=3528665

September 2005 (Delaware): An 8-foot boa and three 4- to 6-foot boas were abandoned at an apartment complex after a tenant's eviction. The local animal shelter was helping place those snakes, plus a fifth one about 5-feet long who was seized the same week from a man walking in the street with the snake around his neck. Source: *The News Journal*
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20050924.html

September 2005 (Florida): Captured in a now famous photograph, the body of a Burmese python who tried to swallow an alligator was found in the Everglades. Exactly what happened may remain a mystery, but with the Burmese python as a new top predator in the Everglades, each of the snake's potential prey species could be at risk. Source: *St. Petersburg Times*
http://www.sptimes.com/2005/10/06/State/Gator_vs_python_ends_.shtml
http://blogs.herald.com/dave_barrys_blog/2005/10/python_vs_gator.html
http://blogs.nationalgeographic.com/channel/blog/2006/09/explorer_python.html

August 2005 (California): A 12-year-old boy awoke when he was bitten by a ball python clinging to his arm. The family had moved into the home two weeks before and did not know where the snake came from. Source: *The Fresno Bee*
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20050831.html

August 2005 (Missouri): A UPS driver found a 9-foot Burmese python among packages in his truck. The teenager who ordered the snake instead received an empty box. The python was shipped in a plastic container that was taped shut and placed inside the box. The tape was intact but the container was cracked and the cardboard box had tears in it. Source: First Coast News (AP)
http://www.firstcoastnews.com/news/usworld/news-article.aspx?storyid=42112

July 2005 (California): A 15-foot Burmese python was discovered in a Sacramento warehouse. The animal belonged to a man who worked down the street. He had unknowingly poked a hole in the cage with a forklift. This was the snake's third escape. Source: *The Sacramento Bee*
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20050713.html

July 2005 (Pennsylvania): The owners of a 9-foot Burmese python turned the snake over to authorities. The animal was reportedly underfed and living in a cage that was too small. Source: *The Intelligencer Journal*
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20050802_2.html

June 2005 (Florida): Police responded twice in a month to reports of snakes roaming a neighborhood. A 13-foot Burmese python was recaptured, then got loose and was recaptured again. An 8-foot python (and five monitor lizards) remained at large. Source: News4Jax.com
http://www.news4jax.com/news/4771563/detail.html

June 2005 (Arkansas): Wildlife officials say there have been two sightings of yellow anacondas in the Wapanocca National Wildlife Refuge, one by a person fishing in 2004 and a recent sighting by a wildlife official. Source: KAIT8.com
http://www.kait8.com/Global/story.asp?S=3508015

February 2005 (Florida): A giant python was found sprawled across a busy street in Englewood. Source: *Venice Gondolier-Sun*
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20050220_2.html

November 2004 (Connecticut): A New Haven couple reported their 15-foot python was missing. Authorities responding did not find the python, but did find other animals the couple had illegally including an Argentinean boa. Source: WTNH
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20041104_2.html

October 2004 (Hawaii): A 4- to 5-foot ball python was caught on a golf course. The animal was at least the third snake captured recently on Maui. Another ball python was caught in a garage, while a boa constrictor was caught after it was seen in a tree. Many other incidents have occurred with credible sightings but the snake was never found. Source: The Maui News
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20041010.html

September 2004 (Mississippi): A 17-foot Burmese python missing for four days was lured out of hiding with a rabbit. The snake had escaped from the bathroom where she was being kept when the door was left open, and taken refuge underneath insulation in the attic of the apartment building. Source: The Sun Herald
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20040928.html

September 2004 (Michigan): A 6-foot boa constrictor escaped from a home. Source: cm-life.com
http://media.www.cm-life.com/media/storage/paper906/news/2004/09/22/Features/SixFoot.Boa.Constrictor.Missing.Owner.Offers.Reward.For.Information-2494618.shtml

August 2004 (Texas): Authorities searched for weeks for a large snake who was reported missing. A 7-foot python believed to be a different animal was caught the previous week at a landscaping company. The curator of the Houston Zoo's herpetology department said his department receives dozens of calls each week from people looking to turn over a snake to the

zoo -- 15 to 20 calls per week just on boas. Source: *Brenham Banner-Press* and The Associated Press
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20040805_4.html
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20040831_3.html

August 2004 (Florida): A green anaconda – who are the world's largest snakes – was collected from Big Cypress Swamp in Collier County. Source: U.S. Geological Survey Nonindigenous Aquatic Species Database
http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=2636

July 2004 (Florida): A 16-foot-long Burmese python was captured on a city street. An animal control officer said he had picked up dozens of loose Burmese pythons and boa constrictors over the years, but this was the largest. Source: cbsnews.com
http://www.cbsnews.com/stories/2004/07/26/national/main631934.shtml

June 2004 (Kansas): A teenager was showing off the family's 15-foot pet python when the animal coiled around his arm and began to squeeze, turning the boy's arm blue. The snake bit the teen and his mother, and they called 911. Emergency crews used a fire extinguisher to get the snake to loosen his grip. Source: News4Jax.com
http://www.news4jax.com/family/3563751/detail.html

February 2004 (Florida): A 14-foot Reticulated python escaped. Source: Local6.com
http://www.local6.com/news/2853583/detail.html

October 2003 (New Jersey): Pythons, boa constrictors, and an anaconda were among the 180 reptiles authorities took into custody when their caretaker had not been seen for a week. The man was in the hospital being treated for a venomous snake bite. Source: *The Star-Ledger*

September 2003 (Virginia): A Burmese python about 12 feet long was found after being on the loose for more than three weeks. The snake had pushed open a window to escape. Source: *The Virginian-Pilot*

September 2003 (Florida): A teenager took his 9.5 foot Burmese python into the backyard and the animal disappeared. He found the snake 20 hours later in the neighborhood. Source: *The News-Press*

September 2003 (Florida): A couple walking their dogs spotted a boa constrictor. They called rescue workers who picked up the animal. Source: *St. Petersburg Times*

August 2003 (Washington): A man found an escaped 7-foot python slithering through his yard. The week before, a park ranger found a similar-size python in a lake. The local animal shelter generally takes in about 10 loose snakes a year. Source: *The Seattle-Post Intelligencer*

August 2003 (Illinois): A man was doing plumbing work at home when he heard that a snake had gotten loose in the area. Two days later, after driving many miles, he found the 6-foot boa constrictor under the hood of his van. Source: *Chicago Daily Herald*

August 2003 (Arizona): Authorities took a 12-foot Burmese python from a yard. The mobile homes on the property seemed to be vacant, and the animal appeared to be abandoned. Source: The Associated Press

August 2003 (Florida): A 12-foot Burmese python escaped from a Florida home and was on the loose. Source: United Press International

July 2003 (Rhode Island): A 14-foot Burmese python escaped from his tank and through a window screen. Source: The Associated Press
http://www.redorbit.com/news/oddities/6245/14footlong_python_on_loose_in_ri_town/

July 2003 (Connecticut): A 3-foot boa constrictor was found outside a condominium complex. Source: *Connecticut Post*

July 2003 (Florida): A man reported his 12-foot Burmese python was missing and had not eaten for a week. A neighbor found the snake the next day. The python had a bulge in his stomach but it was unclear what he had eaten. Source: *The Bradenton Herald*

June 2003 (Florida): A 13-foot Burmese python escaped from a home. The mother of the snake's owner found the snake in the yard wrapped around her 3-year-old Mountain Feist dog. She was able to free the dog, but the snake wrapped then around her leg. Rescue workers freed her and return the snake to his cage. Source: Florida Today

June 2003 (Maryland): A man was charged with animal cruelty following an investigation of conditions at a reptile wholesale business in a warehouse. Boa constrictors and 500 to 1,000 baby ball pythons were among the animals being housed in the facility; 199 animals were found dead. Source: *Washington Post*

June 2003 (Florida): More than 100 snakes were stolen from a breeder, including 10 boa constrictors. Other snakes were left crawling loose in a room, including one who was found crawling out a broken screen. Source: *Tampa Tribune*

May 2003 (California): Authorities removed a red-tailed boa constrictor from a home, along with 100 to 200 mice, about three dozen rats, and a cat. They found debris piled in the house, which smelled of animal waste. Source: *San Jose Mercury News*
http://cwapc.org/news/IncidentDescription.asp?FileName=incident_20030530.html

October 2002 (California): A 6-foot boa constrictor was spotted on a fence and captured a day later. Source: City News Service

September 2002 (Ohio): A 10-foot Burmese python escaped and was on the loose about three weeks. The snake was found in a vacant home being renovated, with a telltale bulge in its middle. X-rays showed the snake had eaten a small canine, possibly a fox or stray dog. Source: The Associated Press

September 2002 (Tennessee): A Burmese python about 8- to 10-feet long escaped – for the second time. The first time the snake was at large for about a month. Source: *Knoxville News-Sentinel*

September 2002 (New Jersey): A 7-foot boa constrictor was found in a roadway. Source: *The Star-Ledger*

July 2002 (Texas): A landlord in southwest Houston found reptiles including three Burmese pythons in a house he owns. The reptiles were in cages and had been abandoned for at least two months. None of the cages had water and the animals were dehydrated. Source: KSBW.com http://www.ksbw.com/news/1586359/detail.html

July 2002 (Maine): A sheriff's deputy investigating an abandoned SUV was startled to discover a 5-foot-long boa constrictor in the back seat and another snake coiled in a terrarium. Source: *Portland Press Herald*

July 2002 (Louisiana): A 12-foot Burmese python escaped and was recaptured a week later. Source: *Times-Picayune*

June 2002 (North Carolina): A 12-foot pregnant Burmese python escaped and was on the loose for two days. Source: *News & Record* (Greensboro)

May 2002 (Florida): Six snakes ranging in length from 9 to 20 feet escaped from a woman's apartment. Two were found curled up in a friend's apartment, but authorities were looking for four large Burmese pythons. Source: Florida Today

April 2002 (Florida): An 18-foot Burmese python who had been living for at least a year near a service plaza on Florida's Turnpike was captured. A state crew mowing the grass in the area had reported seeing the animal a year before, and there had been several sightings since. Source: *Orlando Sentinel*

February 2002 (Michigan): A 4-foot ball python brought to a middle/high school by a student teacher escaped from a glass tank. Except for one sighting by a school custodian the day he disappeared, the snake has not been seen since. Source: *Grand Rapid Press*

February 2002 (Colorado): A man had his pet Burmese python wrapped loosely around his neck when the snake suddenly constricted. By the time rescue workers wrestled the animal off the man, it was too late and he later died. Source: *Rocky Mountain News*

December 2001 (California): A 3-month-old infant was taken to an emergency department after a day of bloody diarrhea and fever caused by *Salmonella*. The infant's father was a high school biology teacher who often draped a large snake (i.e., a boa) over his shoulders in the classroom. He would wash his hands – but not change his clothing – before going home and holding his child. The snake was found to be the source of the child's Salmonella. Source: U.S. Centers for Disease Control and Prevention
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5249a3.htm

August 2001 (Pennsylvania): An 8-year-old girl was strangled by her father's pet Burmese python. The child had been left home alone, and the snake broke through the top of the cage. Paramedics said she was not breathing when they arrived; she was taken to a hospital and placed on a ventilator until she was pronounced brain dead two days later. An autopsy showed the cause of death was compression of her neck and chest. Source: *The Augusta Chronicle* (Scripps) and *Pittsburgh Post-Gazette*
http://chronicle.augusta.com/stories/111501/biz_124-2035.shtml
http://www.post-gazette.com/regionstate/20011025mountain1025p3.asp

April 2001 (Oklahoma): A woman died from septic shock related to a Salmonella infection after obtaining a transfusion of blood platelets. The platelet donor's 9-foot pet boa constrictor was identified as the likely source of the Salmonella. The type of Salmonella found in a stool sample from the snake matched that found in the platelets. The man exhibited no symptoms at the time of his donation, but had been ill two weeks before and taken antibiotics. A second patient who received platelets from the man also contracted Salmonella but was healthier to begin with and lived. Source: *The New England Journal of Medicine*
http://content.nejm.org/cgi/content/full/347/14/1075

August 1999 (Illinois): A couple's 7.5-foot African rock python escaped from an enclosure and killed their 3-year-old son. A ball python previously kept in the same aquarium escaped and disappeared. Source: *St. Louis Post-Dispatch*

October 1996 (New York): A 13-foot python, kept as a pet by two teen-age brothers who hoped to have careers caring for reptiles, killed one of the brothers, possibly mistaking him for food. The 19-year-old was found by a neighbor with the snake coiled around his midriff and back. Source: *The New York Times*
http://query.nytimes.com/gst/fullpage.html?res=990DE1D6153EF933A25753C1A960958260

1993 (Colorado): A 15-year-old was killed by his brother's 11-foot pet python. He had snake bites on his body, and an autopsy found he was suffocated. The 8-year-old snake had been a family pet since she was only a foot long. Source: The Associated Press
http://query.nytimes.com/gst/fullpage.html?res=9F0CE1DC113CF931A15754C0A965958260

1983 (Missouri): A man was crushed to death by his 16-foot pet Burmese python. Source: The Associated Press

August 1982 (Nevada): An 8-foot python escaped from his cage, crawled into an adjoining bedroom, and killed a 21-month old boy in his crib. The snake belonged to an unrelated man who lived in the house. Source: United Press International

November 1980 (Texas): A 7-month-old girl was killed by her father's 8-foot pet Reticulated python. The child died of asphyxiation and her head was covered with dozens of needle-like tooth marks. The snake had forced his way out of a covered 30-gallon aquarium and crawled into the baby's crib. Source: The Associated Press

Compiled by The Humane Society of the United States

Table 1. Common and scientific names of snake species and the total number of live individuals imported from 2002 through 2006 (*HSI Analysis of U.S. Fish and Wildlife Service data*).

Scientific name	Common Name	2002	2003	2004	2005	2006	TOTALS	Countries of Origin
Boa constrictor	Boa constrictor	14,259	18,582	24,787	23,014	21,709	**102,351**	Guyana Suriname
Epicrates anguilfer	Cuban tree boa	16	10	0	0	0	**26**	Czech Republic Canada
Epicrates cenchria	Rainbow boa	642	927	503	447	463	**2,982**	Guyana Suriname
Epicrates fordii	Hispaniola rainbow boa	0	28	0	0	0	**28**	Haiti
Epicrates gracilis	Haitian vine boa	0	9	0	0	0	**9**	Haiti
Epicrates maurus	Columbian rainbow boa	32	81	25	43	70	**251**	Guyana
Epicrates striatus	Hispaniola and Bahama boa	0	23	226	88	0	**337**	Haiti
Eunectes murinus	Green Anaconda	834	856	814	590	817	**3,911**	Guyana Suriname
Eunectes spp.	Anaconda	0	3	16	2	108	**129**	Venezuela
Eunectes notaeous	Yellow anaconda	394	1,623	7,455	4,117	10,484	**24,073**	Argentina Paraguay
Morelia amethistina	Amethistine python	253	210	265	164	213	**1,105**	Indonesia
Morelia boeleni	Black python	19	0	42	0	9	**70**	Indonesia
Morelia spilota	Carpet python	58	22	31	30	70	**211**	Indonesia
Python brongersmai	Malayan short-python	0	0	50	395	2,007	**2,452**	Indonesia
Python breitensteini	Boreno short-tailed python	0	0	0	58	133	**191**	Indonesia
Python curtus	Blood python	4,514	3,994	3,729	3,603	518	**16,358**	Indonesia
Python molurus	Burmese/Indian python	14,391	8,165	6,306	3,907	1,510	**34,279**	Vietnam
Python regius	Ball/Royal python	181,105	154,095	126,423	175,052	132,225	**768,900**	Ghana, Togo, Benin, Niger
Python reticulatus	Reticulated python	5,051	7,560	1,817	7,285	13,208	**34,921**	Indonesia, Myanmar, Benin, Ghana, Togo, Senegal, Indonesia, Taiwan, Canada
Python sebae	African rock python	1,011	1,123	956	813	706	**4,609**	Togo, Ghana, Tanzania, Benin
Python spp.	Python	80	225	55	4	90	**454**	Indonesia
TOTAL		**222,659**	**197,536**	**173,500**	**219,612**	**184,340**	**997,647**	

Source: HSI Analysis of U.S. Fish and Wildlife Service data.

Table 2. Common and scientific names of snake species included in risk-assessment analyses, with the total number of live individuals imported during the period 1989 through 2000 (Reed 2005).

Scientific Name	Common Name	Number Imported
Apodora papuana	Papuan python	146
Boa constrictor	Boa constrictor	115,131
Candoia aspera	Viper boa	812
Candoia bibroni	Solomon Islands tree boa	369
Candoia carinata	Pacific boa	4,815
Corallus caninus	Emerald tree boa	3,330
Corallus hortulanus	Common tree boa	6,542
Epicrates cenchria	Rainbow boa	1,391
Epicrates gracilis	Haitian vine boa	238
Epicrates striatus	Hispaniola and Bahama boa	177
Eunectes murinus	Green anaconda	1,418
Eunectes notaeus	Yellow anaconda	790
Leiopython albertisii	White-lipped python	1,551
Liasis mackloti	Freckled python	552
Morelia amethistina	Amethistine python	873
Morelia boeleni	Black python	173
Morelia spilota	Carpet python	309
Morelia viridis	Green tree python	493
Python curtus	Blood python	11,135
Python molurus	Burmese/Indian python	12,466
Python regius	Ball/Royal python	366,808
Python reticulatus	Reticulated python	27,992
Python sebae	African rock python	8,245

Note: Species were included if >100 individuals were imported during this time; see text for details.

Table 3. Values for variables used in risk-assessment models (Reed 2005).

Species	Maximum Total Body Length (m)	Maximum Clutch/Litter Size	Maximum Elevation (m)	Maximum Latitude	Temperature (°C)	Mean # Snakes Imported/Year	Average $ Value
Epicrates striatus	2.4	51	400	24	8.50	15	3.38
Epicrates gracilis	1.3	10	400	19	11.25	20	19.50
Corallus hortulanus	2.1	12	1000	26	12.42	545	19.50
Candoia carinata	1	80	1525	11	13.15	401	19.75
Python regius	1.8	15	400	11	13.40	30,567	21.00
Candoia aspera	1.2	20	1000	10	13.45	68	28.00
Candoia bibroni	1.95	20	700	12	16.99	31	33.00
Python sebae	6.75	94	1400	33	17.19	687	41.50
Boa constrictor	4.2	60	1000	33	17.80	9,594	53.50
Morelia amethistina	6	19	1600	18	17.94	73	66.00
Epicrates cenchria	2	20	1400	29	19.08	116	71.00
Eunectes murinus	8.1	82	200	25	19.08	118	74.00
Python curtus	3.1	32	500	6	19.44	928	76.25
Leiopython albertisii	3	15	1600	11	20.93	129	84.00
Liasis mackloti	2.25	20	250	9	21.33	46	91.50
Python reticulatus	8.4	103	800	26	21.93	2,332	97.00
Eunectes notaeus	4.3	30	250	31	21.93	66	102.00
Corallus caninus	1.85	18	1000	16	23.35	245	111.50
Morelia spilota	4	43	1750	35	24.30	26	117.50
Python molurus	7.1	107	1500	30	24.77	1036	118.50
Apodora papuana	4.27	35	400	10	24.77	12	238.50
Morelia viridis	1.5	17	2000	13	24.77	41	283.50
Morelia boeleni	2.7	25	2800	10	25.48	14	784.00

Note: See text for additional description of variables. Average $ value is the midpoint of mean and median values in U.S. dollars.

Table 4. Vertebrates native to the United States and listed as threatened or endangered under the U.S. Endangered Species Act that are most likely to be impacted by the establishment of feral populations of boas or pythons (Reed 2005).

Common Name	Latin Name	Geographic Location
A. Listed Species Likely to Experience Predation by Introduced Boas and Pythons:		
Lower Keys marsh rabbit	*Sylvilagus palustris hefneri*	Florida Keys
Silver rice rat	*Oryzomys palustris natator*	Florida Keys
Florida salt marsh vole	*Microtus pennsylvanicus dukecampbelli*	Gulf Coast of Florida
Key Largo woodrat	*Neotoma floridana smalli*	Florida Keys
Key deer	*Odocoileus virginianus clavium*	Florida Keys
Florida scrub jay	*Aphelocoma coerulescens coerulescens*	Central Florida
Everglade snail kite	*Rosthrhamus sociabilis plumbeus*	South Florida
Light-footed clapper rail	*Rallus longirostris levipes*	Southern California
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	South Florida
Florida grasshopper sparrow	*Ammodramus savannarum floridanus*	South Florida
B. Listed Species Likely to Experience Competition or Exposure to Pathogens from Boas, Pythons, and Relatives:		
Eastern indigo snake	*Drymarchon corais couperi*	Southeast United States

Note: This list was compiled by comparing geographic ranges of ESA-listed species with areas most likely to be colonized by invasive snakes.

Table 5. Prey ingested by 56 *Python molurus bivittatus* recovered in or adjacent to Everglades National Park, Florida, between January 2003 and March 2006. 1 This python (386 cm total length) died consuming an *A. mississippiensis*.* Indicates species listed by Florida Game and Freshwater Fish Commission as special concern species. (Snow et al. 2007).

Prey	No. of records	% of sample
Mammals	**38**	**70.37**
Sylvilagus (Cottontail rabbit)	9	16.67
Rodentia (species uncertain)	6	11.11
Sigmodon (Cotton rat)	5	9.26
Peromyscus gossypinus (Cotton mouse)	3	5.56
Sciurus (Tree squirrel)	3	5.56
Felis (Cat)	2	3.70
Procyon (Raccoon)	2	3.70
Rattus (Old World rats)	2	3.70
Unidentifiable remains	2	3.70
Didelphis (Large American opossums)	1	1.85
Felis rufus (Bobcat)	1	1.85
Neofiber (Round tailed musk rat)	1	1.85
Oryzomys (Rice rat)	1	1.85
Birds	**15**	**27.78**
Aves (uncertain identity)	9	16.67
Podilymbus podiceps (Pied-billed grebe)	2	3.70
Aramus guarauna (Limpkin)*	1	1.85
Eudocimus albus (White ibis)*	1	1.85
Fulica american (Coot)	1	1.85
Troglodytes aedon (House wren)	1	1.85
Reptiles	**1**	**1.85**
Alligator mississippiensis (Alligator)[1]	1	1.85

Figure 1. Areas of the continental United States with climate matching that of the pythons' native range in Asia. USGS image.

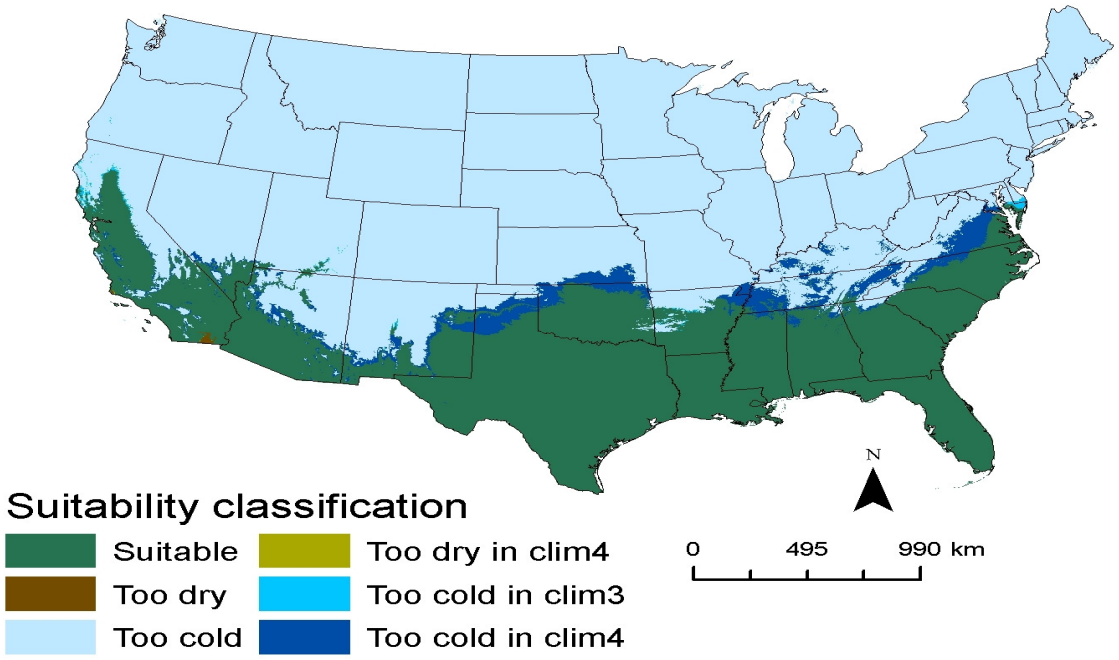

Figure 2. Projected climate in the continental United States in the year 2100, based on global warming models, that matches climate in the pythons' native range in Asia. USGS image.