DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 16

RIN 1018–AV68

[FWS–R9–FHC–2008–0015; FXFR13360900000N5–123–FF09F14000]

Injurious Wildlife Species; Listing Three Python Species and One Anaconda Species as Injurious Reptiles

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) is amending its regulations under the Lacey Act to add *Python molurus* (which includes Burmese python *Python molurus bivittatus* and Indian python *Python molurus molurus*), Northern African python (*Python sebae*), Southern African python (*Python natalensis*), and yellow anaconda (*Eunectes notaeus*) to the list of injurious reptiles. By this action, the importation into the United States and interstate transportation between States, the District of Columbia, the Commonwealth of Puerto Rico, or any territory or possession of the United States of any live animal, gamete, viable egg, or hybrid of these four constrictor snakes is prohibited, except by permit for zoological, education, medical, or scientific purposes (in accordance with permit regulation) or by Federal agencies without a permit solely for their own use. The best available information indicates that this action is necessary to protect the interests of human beings, agriculture, wildlife, and wildlife resources from the purposeful or accidental introduction and subsequent establishment of these large nonnative constrictor snake populations into ecosystems of the United States.

DATES: This rule becomes effective on March 23, 2012.

ADDRESSES: This final rule and the associated final economic analysis, regulatory flexibility analysis, and environmental assessment are available on the Internet at *http://www.regulations.gov* under Docket No. FWS–R9–FHC–2008–0015. Comments and materials received, as well as supporting documentation used in preparing this final rule, are available on the Internet at *http://www.regulations.gov* under Docket No. FWS–R9–FHC–2008–0015; they are also available for public inspection, by appointment, during normal business hours, at the South Florida Ecological Services Office, U.S. Fish and Wildlife Service, 1339 20th Street, Vero Beach, FL 32960–3559; telephone (772) 562–3909 ext. 256; facsimile (772) 562–4288.

FOR FURTHER INFORMATION CONTACT: Supervisor, South Florida Ecological Services Office, U.S. Fish and Wildlife Service, 1339 20th Street, Vero Beach, FL 32960–3559; telephone (772) 562–3909 ext. 256. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at (800) 877–8339.

SUPPLEMENTARY INFORMATION:

Previous Federal Action

On June 23, 2006, the Service received a petition from the South Florida Water Management District (District) requesting that Burmese pythons be considered for inclusion in the injurious wildlife regulations under the Lacey Act (18 U.S.C. 42, as amended; the Act). The District was concerned about the number of Burmese pythons (*Python molurus bivittatus*) found in Florida, particularly in Everglades National Park and on the District's widespread property in South Florida.

The Service published a notice of inquiry in the **Federal Register** (73 FR 5784; January 31, 2008) soliciting available biological, economic, and other information and data on the *Python, Boa,* and *Eunectes* genera for possible addition to the list of injurious wildlife under the Act and provided a 90-day public comment period. The Service received 1,528 comments during the public comment period that closed April 30, 2008. We reviewed all comments received for substantive issues and information regarding the injurious nature of species in the *Python, Boa,* and *Eunectes* genera. Of the 1,528 comments, 115 provided economic, ecological, and other data responsive to the 10 specific questions in the notice of inquiry. Most individuals submitting comments responded to the notice of inquiry as though it was a proposed rule to list constrictor snakes in the *Python, Boa,* and *Eunectes* genera as injurious under the Act. As a result, most comments expressed either opposition or support for listing the large constrictor snakes species and did not provide substantive information. We considered the information provided in the 115 applicable comments in the preparation of the draft environmental assessment, draft economic analysis, and the proposed rule.

On March 12, 2010, we published a proposed rule in the **Federal Register** (75 FR 11808) to list *Python molurus* (which includes Burmese and Indian pythons), reticulated python (*Broghammerus reticulatus* or *Python reticulatus*), Northern African python (*Python sebae*), Southern African python (*Python natalensis*), boa constrictor (*Boa constrictor*), yellow anaconda (*Eunectes notaeus*), DeSchauensee's anaconda (*Eunectes deschauenseei*), green anaconda (*Eunectes murinus*), and Beni anaconda (*Eunectes beniensis*) as injurious reptiles under the Act. The proposed rule established a 60-day comment period ending on May 11, 2010, and announced the availability of the draft economic analysis and the draft environmental assessment of the proposed rule. At the request of the public, we reopened the comment period for an additional 30 days ending on August 2, 2010 (75 FR 38069; July 1, 2010).

For the injurious wildlife evaluation in this final rule, in addition to information used for the proposed rule, we considered a wide range of information, including: (1) Substantive comments from two public comment periods for the proposed rule, (2) comments from five peer reviewers, and (3) new information acquired by the Service. From this information, we determined that four of the nine proposed species warrant listing as injurious at this time. In addition, we made improvements to the supplementary information to support and explain this decision.

We present a summary of the peer review comments and the public comments following the Lacey Act Evaluation Criteria section for four of the nine proposed species. The explanations in the sections on biology and evaluation of the four species will make many of the answers to the comments self-evident.

A major source of biological, management, and invasion risk information that we used for the proposed rule and this final rule was derived from the United States Geological Survey's (USGS) ''Giant Constrictors: Biological and Management Profiles and an Establishment Risk Assessment for Nine Large Species of Pythons, Anacondas, and the Boa Constrictor'' hereafter referred to as ''Reed and Rodda 2009.'' This document was prepared at the request of the Service and the National Park Service; it can be viewed at the following Internet sites: *http://www.regulations.gov* under Docket No. FWS–R9–FHC–2008–0015 and *http://www.fort.usgs.gov/Products/*

Publications/pub_abstract.asp?PubID=22691.

After full consideration of public comments and relevant factors, the Service is moving forward with publication of a final rule for the four species (Burmese python [including Indian python], Northern African python, Southern African python, and yellow anaconda. Five additional species (reticulated python, DeSchauensee's anaconda, green anaconda, Beni anaconda, and boa constrictor) are not being listed at this time and remain under consideration.

Background

Purpose of Listing as Injurious

The purpose of listing the Burmese python and its conspecifics (that is, belonging to the same species; hereafter referred to collectively as Burmese pythons unless otherwise noted), Northern African python (*Python sebae*), Southern African python (*Python natalensis*), and yellow anaconda (*Eunectes notaeus*) (hereafter, collectively the four large constrictor snakes) as injurious wildlife is to prevent the accidental or intentional introduction of and the possible subsequent establishment of populations of these snakes in the wild in the United States.

Why the Four Species Were Selected for Consideration as Injurious Species

The Service has had the authority to list species as injurious under the Act since the 1940s. However, we have been criticized for not listing species before they became a problem (Fowler *et al.* 2007). The Burmese python–the subject of the original petition here–is one example of a species that may not have become so invasive in Florida if it had been listed before it had become established. With this final rule, we are attempting to prevent the further spread of the Burmese python and the specified other large constrictor snakes into other vulnerable areas of the United States.

Furthermore, we have the authority under the Act to list wild mammals, wild birds, reptiles, amphibians, fish, mollusks, and crustaceans that are injurious even if they are not currently in trade or known to exist in the United States. Thus, we can be proactive and not wait until a species is already established. As noted in the National Invasive Species Management Plan (National Invasive Species Council 2008), ''prevention is the first line of defense'' and ''can be the most cost-effective approach because once a species becomes widespread, controlling it may require significant and sustained expenditures.'' This is why we are listing one species that is not yet found in the United States but which has the requisite injurious traits.

Two of the four largest snakes in the world (with maximum lengths well exceeding 6 m [20 ft]) are the Burmese python and Northern African python; both are present in international trade (although imports of the Burmese python are higher than those of the Northern African python). The Burmese python and the Northern African python are established in south Florida. The Northern and Southern African pythons are closely related and have similar appearances. While the Northern African python is documented on import records as being imported and the Southern African python is not, we believe that some snakes reported as Northern African pythons may have actually been Southern, and that importers may want to switch to the next most similar species (Southern) if the Northern African python became listed as injurious. Thus, we evaluated the Southern African python on its own traits.

None of the four species is native to the United States. The Service is striving to prevent the introduction and establishment of all four species into new areas of the United States, due to concerns about the injurious effects of all four species, consistent with 18 U.S.C. 42.

All four species were evaluated and found to be injurious because there is a suitable climate match in parts of the United States to support them; they are likely to escape captivity; they are likely to prey on and compete with native species (including threatened and endangered species); it would be difficult to prevent, eradicate, or reduce large populations; and other factors that are explained in the sections Factors That Contribute to Injuriousness for Burmese Python and for the other three species. All four species were placed in the highest category of overall risk in Reed and Rodda's report (2009) evaluating the risks of the nine proposed species.

Need for the Final Rule

Under the Lacey Act, the Secretary of the Interior is authorized to prescribe by regulation those wild mammals, wild birds, fish, mollusks, crustaceans, amphibians, reptiles, and the offspring or eggs of any of the foregoing that are injurious to human beings, to the interests of agriculture, horticulture, or forestry, or to the wildlife or wildlife resources of the United States, including the District of Columbia, the Commonwealth of Puerto Rico, or any territory or possession. We have determined that these four species of large constrictor snakes are injurious.

Thousands of Burmese pythons are now established in the Everglades and preying on many imperiled species and other wildlife. In addition, Northern African pythons are known to be established and breeding in South Florida. Yellow anacondas have also been reported in the wild in Florida. Burmese pythons, African pythons, and yellow anacondas have been reported in the wild in Puerto Rico. The Southern African python exhibits many of the same biological characteristics as the Northern African python that poses a risk of establishment and negative effects in the United States. The threat posed by the Burmese python and the three other large constrictor snakes will be explained in detail below under Factors That Contribute to Injuriousness for Burmese Python and each of the other species.

The USGS risk assessment used a method called ''climate matching'' to estimate those areas of the United States exhibiting climates similar to those experienced by the species in their respective native ranges (Reed and Rodda 2009). Considerable uncertainties exist about the native range limits of many of the giant constrictors, and a myriad of factors other than climate can influence whether a species could establish a population in a particular location. Nonetheless, this method represents the most accurate means to predict and anticipate where a nonnative species would be able to survive and establish populations within the United States.

Some interested parties, including other scientists such as Pyron *et al.* (2008), criticized Reed and Rodda's (2009) climate-matching method. In response, the authors published a clarification of how they used the model (Rodda *et al.* 2011). This paper more clearly explained Reed and Rodda's (2009) method and compared that method to Pyron *et al.'s* (2008) method for analyzing potential invasiveness for the Burmese python. We mention a few of Rodda *et al.'s* (2011) findings here:

- Pyron *et al.* (2008) incorrectly rejected many sites that are suitable for Burmese python invasion because their use of an excessive number of parameters actually ended up acting as filters. Using too many filters means that too many sites that are truly at risk of python introduction get filtered out.
- Additionally, in the new paper the authors eliminated four data points of blood pythons (a different species than Burmese pythons) that Pyron *et al.* (2008) used erroneously. This

significantly changed the area that Burmese pythons could invade, even using the MaxEnt computer program as Pyron *et al.* (2008) used it.

- Information theory suggests 10 parameters as the appropriate number to use in a study like this; the Pyron *et al.* (2008) model, however, used 60. With this number the parameters essentially become constraints, and skew the accuracy of the data so that the resulting model is not scientifically sound.
- The new USGS paper highlights the statistical dangers inherent in indiscriminately searching for correlations among a large number of possible parameters.
- Factors other than climate may limit a species' native distribution, including the existence of predators, diseases, and other local factors (such as major terrain barriers), which may not be present when a species is released in a new country. Therefore, the areas at risk of invasion often span a climate range greater than that extracted mechanically from the native range boundaries, as was done by Pyron *et al.* (2008).

The new paper does not change the previous USGS risk assessment, or the Service's interpretation of the USGS risk assessment, that Burmese pythons could find suitable climatic conditions in roughly a third of the United States.

While we acknowledge that uncertainty exists, these tools also serve as a useful predictor to identify vulnerable ecosystems at risk from injurious wildlife prior to the species actually becoming established (Lodge *et al.* 2006). Based on climate alone, many species of large constrictors are likely to be limited to the warmest areas of the United States, including parts of Florida, extreme south Texas, Hawaii, and insular territories. For a few species, larger areas of the southern United States appear to have suitable climatic conditions according to Reed and Rodda's (2009) climate-matching method.

The record cold temperatures in South Florida during January of 2010 produced the coldest 12-day period since at least 1940, according to the National Weather Service in Miami (NOAA 2010). A record low was set for 12 consecutive days with the temperature at or below 45 °F (7.2 °C) in West Palm Beach and Naples. Other minimum temperatures were broken in Moorehaven, tied in Fort Lauderdale, and the coldest in Miami since 1940. Despite the record cold, we know that many pythons survived in Florida. Large constrictors of several species continue to be present and to breed in south Florida. If thermoregulatory behavior or tolerance to cold is genetically based, we would expect large constrictor snake populations to persist, rebound, and possibly increase their genetic fitness and temperature tolerance as a result of natural selection pressures resulting from cold weather conditions such as those that occurred in south Florida in January 2010 (Dorcas *et al.* 2011).

Two studies by scientists from several research institutions, including the University of Florida, studied the effects of the 2010 winter cold weather on Burmese pythons. In Mazzotti *et al.* 2010, the authors noted that all populations of large-bodied pythons and boa constrictors inhabiting areas with cool winters, including northern populations of Burmese pythons in their native range, appeared to rely on use of refugia (safe locations) to escape winter temperatures. Pythons can seek such refugia as underground burrows, deep water in canals, or similar microhabitats to escape the cold temperatures. Those snakes that survived in Florida were apparently able to maintain body temperatures using microhabitat features of the landscape (Mazzotti *et al.* 2010).

Dorcas *et al.* (2011) studied the cold tolerance of Burmese pythons taken directly from the Everglades and placed in enclosures in South Carolina. While all of the snakes in this study died, the Service finds the risk to more temperate regions still of concern and a listing of this species as an injurious species is still warranted. The authors state that their results suggest that Burmese pythons from the population currently established in Florida are capable of withstanding conditions substantially cooler that those typically experienced in southern Florida, but may not be able to survive severe winters in regions as temperate as central South Carolina. They noted that some snakes currently inhabiting Florida could survive typical winters in areas of the southeastern United States more temperate than the region currently inhabited by pythons. The authors also noted that, if thermoregulatory behavior is heritable, selection for appropriate thermoregulatory behavior will be strong as pythons expand their range northward through the Florida peninsula. Consequently, future generations of pythons may be better equipped to invade temperate regions than those currently inhabiting southern Florida, particularly given the climate flexibility exhibited by the Burmese python in its native range (as analyzed through USGS' climate-matching predictions in the United States).

The Service and Everglades National Park asked USGS to assess the risk of invasion of nine species of snakes to assist in the Service's determination of injuriousness. Of the nine large constrictor snakes assessed by Reed and Rodda (2009) (Burmese python (which the authors refer to as Indian python), reticulated python, Northern African python, Southern African python, boa constrictor, yellow anaconda, DeSchauensee's anaconda, green anaconda, and Beni anaconda), five were shown to pose a high risk to the health of the ecosystem, including the Burmese python, Northern African python, Southern African python, yellow anaconda, and boa constrictor. The remaining four large constrictors—the reticulated python, green anaconda, Beni anaconda, and DeSchauensee's anaconda—were shown to pose a medium risk. None of the large constrictors that the USGS assessed was classified as low overall risk. A rating of low overall risk is considered as acceptable risk and the organism(s) of little concern (ANSTF 1996). See Lacey Act Evaluation Criteria below for an explanation how USGS assessed risk.

There is a high probability that the four large constrictors evaluated in this final rule, if released or escaped into the wild, will establish populations within their respective thermal and precipitation limits due to common life-history traits that make them successful invaders. These traits include being habitat generalists (able to utilize a wide variety of habitats) that are tolerant of urbanization and capacity to hunt and eat a wide range of size-appropriate vertebrates (reptiles, mammals, birds, amphibians, and fish; Reed and Rodda 2009). These large constrictors are highly adaptable to new environments and opportunistic in expanding their geographic range. Furthermore, since they are a novel (new to the system) predator at the top of the food chain, they can threaten the stability of native ecosystems by altering the ecosystem's form, function, and structure.

These four species are cryptically marked, which makes them difficult to detect in the field, complicating efforts to identify the range of populations or deplete populations through visual searching and removal of individuals. There are currently no tools available that would appear adequate for eradication of an established population of giant snakes once they have spread over a large area. Therefore, preventing the introduction into the United States and dispersal to new areas of these invasive species is of critical importance to the health and welfare of native wildlife.

For the purposes of this rule, a hybrid is any progeny from any cross involving parents of one or more species from the four constrictor snakes evaluated in this rule. Such progeny are likely to possess the same biological characteristics of the parent species that, through our analysis, leads us to find that they are injurious to humans and to wildlife and wildlife resources of the United States. Anderson and Stebbins (1954) stated that hybrids may have caused the rapid evolution of plants and animals under domestication, and that, in the presence of new or greatly disturbed habitats, some hybrid derivates would have been at a selective advantage. Facon *et al.* (2005) stated that invasions may bring into contact related taxa that have been isolated for a long time. Facon *et al.* (2005) also stated that hybridization between two invasive taxa has been documented, and that in all these cases, hybrids outcompeted their parental taxa. Ellstrand and Schierenbeck (2000) concluded that dispersal of organisms and habitat disturbance by humans both act to accelerate the process of hybridization and increase the opportunities for hybrid lineages to take hold.

Furthermore, snakes in general have been found to harbor ticks (such as the nonnative African tortoise tick) that cause heartwater disease (from the bacterium *Cowdria ruminantium*). Heartwater disease, although harmless to its reptilian hosts, can be fatal to livestock and related wild hoofed mammals, such as white-tailed deer. According to the USDA (March 2000), ''Heartwater disease is an acute, infectious disease of ruminants, including cattle, sheep, goats, white-tailed deer, and antelope. This disease has a 60 percent or greater mortality rate in livestock and a 90 percent or greater mortality rate in white-tailed deer.'' The ticks have been found in Florida. Agricultural agencies are trying to stop the spread of the ticks as a way of stopping the deadly disease. This rule will help to stop the spread into and around the United States of the ticks and other disease vectors that may be carried by these four species of nonnative constrictor snakes.

Listing Process

The regulations contained in 50 CFR part 16 implement the Act. Under the terms of the Act, the Secretary of the Interior is authorized to prescribe by regulation those wild mammals, wild birds, fish, mollusks, crustaceans, amphibians, reptiles, and the offspring or eggs of any of the foregoing that are injurious to human beings, to the interests of agriculture, horticulture, or forestry, or to the wildlife or wildlife resources of the United States. The lists of injurious wildlife species are found at 50 CFR 16.11–16.15.

In this final rule, we evaluated each of the four species of constrictor snake species individually and determined each species to be injurious. As of the effective date of the listing, therefore, their importation into, or transportation between, the States, the District of Columbia, the Commonwealth of Puerto Rico, or any territory or possession of the United States by any means whatsoever is prohibited, except by permit for zoological, educational, medical, or scientific purposes (in accordance with permit regulations at 50 CFR 16.22), or by Federal agencies without a permit solely for their own use, upon filing a written declaration with the District Director of Customs and the U.S. Fish and Wildlife Service Inspector at the port of entry. This rule does not prohibit intrastate (within State boundaries) transport of the listed constrictor snake species. Any regulations pertaining to the transport or use of these species within a particular State will continue to be the responsibility of that State.

We used the Lacey Act Evaluation Criteria as a guide to evaluate whether a species does or does not qualify as injurious under the Act. The analysis developed using the criteria serves as a basis for the Service's regulatory decision regarding injurious wildlife species listings. A species does not have to be established, currently imported, or present in the wild in the United States for the Service to list it as injurious. The objective of such a listing would be to prevent that species' importation and likely establishment in the wild, thereby preventing injurious effects consistent with 18 U.S.C. 42.

Introduction Pathways for Large Constrictor Snakes

For the four constrictor snakes analyzed in this final rule, the primary pathway for the entry into the United States is the commercial pet trade. In the last few decades, most introductions of large constrictor snakes have been associated with the international trade in reptiles as pets. This trade includes wild-caught snakes, captive-bred, or captive-hatched juveniles from areas within their native countries. In their native ranges, a species may be captured in the wild and directly exported to the United States or other destination country, or wild-caught snakes may be kept in the country of origin to breed for export of subsequent generations. The main ports of entry for constrictor snakes are Miami, Los Angeles, Dallas-Ft. Worth, Baltimore, Detroit, Chicago, San Francisco, and Houston. From there, many of the live snakes are transported to animal dealers, who then transport the snakes to pet retailers. Large constrictor snakes are also bred in the United States and sold within the country.

A typical pathway of a large constrictor snake includes a pet store. Often, a person will purchase a hatchling snake (0.55 meters (m) [(22 inches (in)]) at a pet store or reptile show for as little as $25. The hatchling grows rapidly, even when fed conservatively, so a strong escape-proof enclosure is necessary. All snakes are adept at escaping, and constrictors are especially powerful when it comes to breaking out of cages. In captivity, they are most frequently fed pre-killed mice, rats, rabbits, and chickens. A tub of fresh water is needed for the snake to drink and soak in. As the snake grows too big for a tub in its enclosure, the snake will need to soak in increasingly larger containers, such as a bathtub. Under captive conditions, pythons will grow very fast. After 1 year, a python may be 2 m (7 ft) and after 5 years it could be 7.6 m (25 ft), depending on how often it is fed and other aspects of husbandry. A Burmese python, for example, will grow to more than 6 m (20 ft) long, weigh 90 kilograms (kg; 200 pounds (lbs)), live more than 25 years, and must be fed rabbits and the like.

Owning a giant snake is a difficult, long-term, and somewhat expensive responsibility. This is one reason that some snakes are released by their owners into the wild when they can no longer care for them. Other snakes may escape from inadequate enclosures. This is a common pathway for large constrictor snakes to enter the ecosystem (Fujisaki *et al.* 2009). The trade in constrictor snakes is international as well as domestic. From 1999 to 2010, more than 1.9 million live constrictor snakes of 12 species were imported into the United States (U.S. Fish and Wildlife Service 2011). Besides the species proposed for listing, these included ball python (*Python regius*), a blood python (*P. curtus*), another blood python (*P. brongersmai*), Borneo python (*P. breitensteini*), Timor python (*P. timoriensis*), and Angolan python (*P. anchietae*), none of which have been proposed for listing as injurious. From 1999 to 2010, approximately 96,000 large constrictor snakes of four species listed by this rule were imported into the United States (Service's final economic analysis 2012). Of all the constrictor snake species imported into the United States, the selection of nine constrictor snakes for evaluation as

injurious wildlife in the proposed rule was based on concern over the giant size of these particular snakes combined with their quantity in international trade or their potential for trade. The world's four largest species of snakes (Burmese python, Northern African python, reticulated python, and green anaconda) were selected, as well as similar and closely related species and the boa constrictor. These large constrictor snakes constitute a high risk of injuriousness in relation to those taxa with lower trade volumes; are massive, with maximum lengths exceeding 6 m (20 ft; except for boas up to 4 m (13 ft)); and have a high likelihood of establishment in various habitats of the United States. The Southern African python and yellow anaconda exhibit many of the same biological characteristics associated with a risk of establishment and negative effects in the United States.

The strongest factor influencing the chances of these large constrictors establishing in the wild are the number of release events and the numbers of individuals released (Bomford *et al.* 2009; 2005). A release event is when a nonnative species is either intentionally or unintentionally let loose in the wild. With a sufficient number of either intentional or unintentional release events, these species will likely become established in ecosystems with suitable conditions for survival and reproduction. For nonnative species to cause economic or ecological harm, they must first be transported out of their native range and released within a novel locality, establish a self-sustaining population in this new location, and expand their geographical range beyond the point of initial establishment. Releases of large numbers of individuals should enable the incipient (newly forming), nonnative population to withstand the inevitable decreases in survival or reproduction caused by the environment or demographic accidents. The release of many individuals into one location essentially functions as a source pool of immigrants, thus sustaining an incipient population even if the initial release was of insufficient size (or badly timed) to facilitate long-term establishment. Natural disasters, such as Hurricane Andrew in 1992, may have provided a mechanism for the accidental release of snakes, especially in light of large numbers of juvenile pythons frequently held by breeders and importers prior to sale and distribution (Willson *et al.* 2010).

Large or consistent releases of individuals into one location should enable the incipient population to overcome behavioral limitations or other problems associated with small population sizes. This is likely the case at Everglades National Park, where the core nonnative Burmese python population in Florida is now located. Therefore, allowing unregulated importation and interstate transport of these nonnative species will increase the risk of these new species becoming established through increased opportunities for release. The release of large constrictor snakes at different times and locations improves the chance of their successful establishment.

Released snakes may be single snakes that eventually find other snakes of the same or opposite sex. As a first step in understanding the ecology of these snakes and their potential impact on the Everglades ecosystem, the National Park Service began tracking pythons using radio-telemetry in the fall of 2005. The radio-tagged pythons have since demonstrated that female pythons make few long-distance movements throughout the year, while males roam widely in search of females during the breeding season (December–April). These results indicate an ability to move long distances in search of prey and mates. Pythons have a ''homing'' ability: after being released far from where they were captured, they returned long distances (up to 78 kilometers (km); 48 miles (mi)) in only a few months. These findings suggest that pythons searching for a suitable home range have the potential to colonize areas far from where they were released (Snow 2008; Harvey *et al.* 2008).

A second factor that is strongly and consistently associated with the success of an invasive species' establishment is a history of the species successfully establishing elsewhere outside its native range. Burmese pythons have already become established in the United States (see *Current Nonnative Occurrences* for Burmese python below). Therefore, we know that Burmese pythons can become established outside of their native range. The Northern African python is established west of Miami, Florida, in the vicinity known as the Bird Drive Basin Recharge Area (see *Current Nonnative Occurrences* for Northern African python below). Therefore, we know that Northern African pythons can also establish outside of their native range.

A third factor strongly associated with establishment success is having a good climate or habitat match between where the species naturally occurs and where it is introduced. Exotic (nonnative) reptiles and amphibians have a greater chance of establishing if they are introduced to an area with a climate that closely matches that of their original range. Species that have a large range over several climatic zones are predicted to be strong future invaders. The suitability of a country's climate for the establishment of a species can be quantified on a broad scale by measuring the climate match between that country and the geographic range of a species. Climate matching only sets the broad parameters for determining if an area is suitable for a nonnative large constrictor snake to establish. These three factors have all been consistently demonstrated to increase the chances of establishment by all invasive vertebrate taxa, including the four large constrictor snakes in this final rule (Bomford 2008, 2009).

However, as stated above, a species does not have to be established, currently imported, or present in the wild in the United States for the Service to determine that it is injurious. The objective of such a listing is to prevent that species' importation and likely establishment in the wild, thereby preventing injurious effects consistent with 18 U.S.C. 42.

Species Information

Burmese Python (Python molurus, Including Indian Python)

Native Range

Before laying out the native range of the Burmese python, we need to clarify our position on the taxonomy and nomenclature of this species. The taxonomy has been debated for almost 100 years, some scientists arguing for full species status for the Burmese python and some placing it as a subspecies of the Indian python. Reed and Rodda (2009) stated that, at times, *Python molurus* has been divided into subspecies recognizable primarily by color. Please see our response to Peer Review comment 3 (*PR3*) below for a detailed explanation of the taxonomic debate and our rationale for using *Python molurus* to include Burmese and Indian pythons. For the reasons stated in that response, we have no basis to assume that the ecological behavior of Burmese python *P. m. bivittatus* is independent of that of Indian python *P. m. molurus.* Furthermore, even a finding of ecological independence of *P. m. bivittatus* would not appreciably alter either the likelihood of its establishment in the United States or the cold tolerance of the whole species *Python molurus,* which was the taxon analyzed in the risk assessment (Reed and Rodda 2009; G. Rodda, pers. comm. 2009). Therefore, for the purposes of this rulemaking, the Service has determined that the Burmese python

should be able to survive in relatively similar conditions as the Indian python.

The nomenclature of *Python molurus* varies somewhat as well. The most widely used common name for the entire species *P. molurus* is Indian python, with *P. molurus bivittatus* routinely distinguished as the Burmese python. Other common names include Indian rock python, Asian rock python, and rock python. Because the pet trade is composed almost entirely of *P. m. bivittatus,* most popular references simply use Burmese python. In addition, the subspecies *Python m. molurus* is listed as endangered in its native lands under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) under the common name of Indian python. *Python m. molurus* is also listed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) under Appendix I (which ''lists species that are the most endangered among CITES-listed animals and plants'') but uses no common name. Except for *Python m. molurus,* which, as just stated, is listed in Appendix I, all species and subspecies of *Pythonidae* are listed in CITES Appendix II (which ''lists species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled''). This rule lists all members of *Python molurus* as injurious under the Lacey Act. However, hereafter in this rule, we refer to the species as a whole under the common name of Burmese python (unless specifically noted as Indian), because of its occurrence in trade.

Python molurus ranges widely over southern and southeastern Asia (Reed and Rodda 2009). In its native range, the Burmese python occurs in virtually every habitat from lowland tropical rainforest (Indonesia and southeastern Asia) to thorn-scrub desert (Pakistan) and grasslands (Sumbawa, India) to warm, temperate, montane forests (Nepal and China) (Reed and Rodda 2009). This species inhabits an extraordinary range of climates, including both temperate and tropical, as well as both very wet and very dry environments (Reed and Rodda 2009).

Biology

The Burmese python's life history is fairly representative of large constrictors because juveniles are relatively small when they hatch, but nevertheless are independent from birth, grow rapidly, and mature in a few years. Mature males search for mates, and the females wait for males to find them during the mating season, then lay eggs to repeat the cycle. Female Burmese pythons do not need to copulate with males to fertilize their eggs. Instead, a female apparently can fertilize her own eggs with her own genetic material, though it is not known how often this occurs in the wild. Several studies of captives reported viable eggs from females kept for many years in isolation (Reed and Rodda 2009).

Like all pythons, the Burmese python is oviparous (lays eggs). In a sample of eight clutches discovered in southern Florida (one nest and seven gravid females), the average clutch size was 36 eggs, but pythons have been known to lay as many as 107 eggs in one clutch. Adult females from recent captures in Everglades National Park have been found to be carrying more than 85 eggs (Harvey *et al.* 2008).

The Burmese python is one of the largest snakes in the world, considering overall mass and length; it reaches lengths of up to 7 m (23 ft) and weights of over 90 kg (almost 200 lbs). Hatchlings range in length from 50 to 80 centimeters (cm) (19 to 31 inches (in)) and can more than double in size within the first year (Harvey *et al.* 2008). As with all snakes, pythons grow throughout their lives (Reed and Rodda 2009). Reed and Rodda (2009) cite Bowler (1977) for two records of captive Burmese pythons living more than 28 years (up to 34 years, 2 months for one snake that was already an adult when acquired).

Like all of the large constrictors, Burmese pythons are extremely cryptic in coloration. They are silent hunters that lie in wait along pathways used by their prey and then ambush them; they kill by wrapping their muscular bodies around their victims, squeezing tighter as the prey exhales until the victims suffocate. The snakes blend into their surroundings so well that observers have released marked snakes for research purposes and lost sight of them 5 feet away (A. Roybal, pers. comm. 2010).

With only a few reported exceptions, Burmese pythons eat a wide variety of terrestrial vertebrates (lizards, frogs, crocodilians, snakes, birds, and mammals). All constrictor snake species (especially the smaller-sized individuals) are capable of climbing trees to access roosting birds and bats. Many birds nest or feed on the ground, and these are easy prey for constrictor snakes. Special attention has been paid to the large maximum size of prey taken from python stomachs, both in their native range in Asia and in the United States. The most well-known large prey items include alligators, antelopes, dogs, deer, jackals, goats, porcupines, wild boars, pangolins, bobcats, pea fowl, frigate birds, great blue herons, langurs, and flying foxes; a leopard has even been reported as prey (Reed and Rodda 2009). To accommodate the large size of prey, Burmese pythons have the ability to grow stomach tissue quickly to digest a large meal (Reed and Rodda 2009). The methods of predation used by the Burmese python (whether sit-and-wait or actively hunting, or whether diurnal or nocturnal), as well as the other three species of large constrictor snakes in this final rule, work as well in their native ranges as in the United States.

Ectoparasites (including ticks of the genus *Amblyomma)* were collected from wild-caught, free-ranging exotic reptiles examined in Florida from 2003 to 2008 (Corn *et al.* 2011). This was the first report of collections of neotropical ticks from wild-caught Burmese pythons. From limited wild-caught, free-ranging exotic reptiles in Florida (including ball and Burmese pythons), ticks and mites were native to North America, Latin America, and Africa from reptiles native to Asia, Africa, and Central and South America. This study suggests the diversity of reptile ectoparasites introduced and established in Florida and the new host-parasite relationships that have developed among exotic and native ectoparasites and established exotic reptiles. Several studies (Burridge *et al.* 2000, Kenny *et al.* 2004, Reeves *et al.* 2006) have shown disease agents in the ticks that travel internationally on reptiles, which may serve in the introduction of disease agents that could impact the health of local wildlife, domestic animals, and humans (Corn *et al.* 2011).

Northern African Python (Python sebae)

Native Range

Python sebae and *Python natalensis* are closely related, large-bodied pythons of similar appearance found in sub-Saharan Africa (Reed and Rodda 2009). The most common English name for this species complex has been African rock python. After *P. sebae* was split from *P. natalensis,* some authors added ''Northern'' or ''Southern'' as a prefix to this common name. Reed and Rodda (2009) adopted Broadley's (1999) recommendations and refer to these snakes as the Northern and Southern African pythons; hereafter, we refer to them as Northern and Southern African pythons, or occasionally as African pythons or African rock pythons.

Northern African pythons range from the coasts of Kenya and Tanzania across much of central Africa to Mali and Mauritania, as well as north to Ethiopia and perhaps Eritrea; in arid zones, their range is apparently limited to the

vicinity of permanent water (Reed and Rodda 2009). In Nigeria, Northern African pythons are reported from suburban, forest, pond and stream, and swamp habitats, including extensive use of Nigerian mangrove habitats. In the arid northern parts of its range, Northern African pythons appear to be limited to wetlands, including the headwaters of the Nile, isolated wetlands in the Sahel of Mauritania and Senegal, and the Shabelle and Jubba Rivers of Somalia (Reed and Rodda 2009). The Northern African python inhabits regions with some of the highest mean monthly air temperatures identified for any of the large constrictors, with means of greater than 35 °C (95 °F) in arid northern localities (Reed and Rodda 2009).

Biology

Northern African pythons are primarily ambush foragers, lying in wait for prey in burrows, along animal trails, and in water. Northern African pythons are oviparous. Branch (1988) reports that an ''average'' female of 3 to 4 m (10 to 13 ft) total length would be expected to lay 30 to 40 eggs, while others report an average clutch of 46 eggs, individual clutches from 20 to ''about 100,'' and clutch size increasing correspondingly in relation to the body length of the female (Pope 1961). In captivity, Northern African pythons have lived for 27 years (Snider and Bowler 1992). As with most of the large constrictors, adult African pythons primarily eat endothermic (warm-blooded) prey (mammals and birds) from a wide variety of taxa. African pythons have consumed such animals as goats, dogs, and domestic turkeys.

Southern African Python (Python natalensis)

Native Range

The Southern African python is found from Kenya southwest to Angola and south through parts of Namibia and much of eastern South Africa. Distribution of the species overlaps somewhat with Northern African pythons, although the southern species tends to inhabit higher elevations in regions where both species occur (Reed and Rodda 2009).

Biology

Python sebae and *Python natalensis* are closely related, large-bodied pythons of similar appearance. In fact, taxonomists have lumped and split the species together several times since *Python natalensis* was described (Reed and Rodda 2009); see ''*Native Range''* section above under ''Northern African Python (*Python sebae*)'' for further explanation of the nomenclature.

Little is known about Southern African pythons, although we know that they are oviparous. As with most of the large constrictors, adult African pythons primarily eat endothermic prey from a wide variety of taxa. The Southern African pythons consume a variety of prey types that includes those listed for Northern African pythons.

Yellow Anaconda (Eunectes notaeus)

Native Range

The yellow anaconda (*Eunectes notaeus*) has a larger distribution in subtropical and temperate areas of South America than the DeSchauensee's anaconda and has received more scientific attention. The yellow anaconda appears to be restricted to swampy, seasonally flooded, or riverine habitats throughout its range. The primarily nocturnal anaconda species tends to spend most of its life in or around water. The yellow anaconda exhibits a fairly temperate climate range, including localities with cold-season monthly mean temperatures around 10 °C (50 °F) and no localities with monthly means exceeding 30 °C (86 °F) in the warm season (Reed and Rodda 2009).

Biology

The yellow anaconda bears live young (ovoviviparous). The recorded number of yellow anaconda offspring usually range from 10 to 37, with a known maximum of 56. In captivity, yellow anacondas have lived for more than 20 years. These anacondas are considerably smaller than the closely related green anaconda. Female yellow anacondas from Argentina measured a maximum length of 3.8 m (12.5 ft) and maximum weight of 29 kg (69.9 lbs); males reached 2.93 m (9.6 ft) and 10.5 kg (23.1 lbs) (Reed and Rodda 2009). The largest yellow anacondas found in the wild were about 4 m (13.1 ft). They have been reported to exceed those measurements in captivity.

Yellow anacondas appear to be generalist predators (able to prey on a wide variety of vertebrates). The anacondas in general, including this species, exhibit among the broadest diet range of any snake, including ectotherms (cold-blooded animals: lizards, crocodilians, turtles, snakes, fish) and endotherms (birds, mammals).

Summary of the Presence of the Four Constrictor Snakes in the United States

Of the four constrictor snake species that we are listing as injurious, three have been reported in the wild in the United States and two have been confirmed as reproducing in the wild in the United States (see *Current Nonnative Occurrences* below); three have been imported commercially into the United States during the period 1999 to 2010 (Table 1). Species ''reported in the wild'' are ones that have been found in the wild but without proof to date that they have reproduced in the wild. The greatest opportunity for preventing a species from becoming injurious is to stop a species from entering the wild; the second greatest opportunity is before a species becomes established in the wild (reported but not reproducing); and the smallest opportunity is when a species has become established (reproducing in the wild).

TABLE 1—FOUR SPECIES OF LARGE CONSTRICTOR SNAKES AND WHETHER THEY HAVE BEEN REPORTED IN THE WILD IN THE UNITED STATES, ARE KNOWN TO BE REPRODUCING IN THE WILD IN THE UNITED STATES, OR HAVE BEEN IMPORTED FOR TRADE (1999 TO 2010)

Species	Reported in the wild in U.S.?	Reproducing in the wild in U.S.?	Imported into U.S. for trade?*
Burmese python	Yes	Yes	Yes.
Northern African python	Yes	Yes***	Yes.
Southern African python	No	No	Unknown.**
Yellow anaconda	Yes	No	Yes.

* Data from Law Enforcement Management Information System (LEMIS; USFWS 2011).

** It is possible that this species has been imported into the United States incorrectly identified as one of the other species listed by this rule; however none have been reported.

*** Reed *et al.* 2010.

Lacey Act Evaluation Criteria

We use the criteria below to evaluate whether a species does or does not qualify as injurious under the Lacey Act, 18 U.S.C. 42. The analysis that is developed using these criteria serves as a general basis for the Service's regulatory decision regarding injurious wildlife species listings (not just for the four snake species being listed by this final rule). Biologists within the Service who are knowledgeable about a species being evaluated assess both the factors that contribute to and the factors that reduce the likelihood of injuriousness.

(1) Factors that contribute to being considered injurious:

- The likelihood of release or escape;
- Potential to survive, become established, and spread;
- Impacts on wildlife resources or ecosystems through hybridization and competition for food and habitats, habitat degradation and destruction, predation, and pathogen transfer;
- Impact to threatened and endangered species and their habitats;
- Impacts to human beings, forestry, horticulture, and agriculture; and
- Wildlife or habitat damages that may occur from control measures.

(2) Factors that reduce the likelihood of the species being considered as injurious:

- Ability to prevent escape and establishment;
- Potential to eradicate or manage established populations (for example, making organisms sterile);
- Ability to rehabilitate disturbed ecosystems;
- Ability to prevent or control the spread of pathogens or parasites; and
- Any potential ecological benefits to introduction.

To obtain some of the information for the above criteria, we referred to Reed and Rodda (2009). Reed and Rodda (2009) developed the Organism Risk Potential scores for each species using a widely utilized risk assessment procedure that was published by the Aquatic Nuisance Species Task Force, called ''Generic nonindigenous aquatic organisms risk analysis review process (for estimating risk associated with the introduction of nonindigenous aquatic organisms and how to manage that risk)'' (ANSTF 1996). The Aquatic Nuisance Species Task Force was created under the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA). Congress enacted NANPCA to provide a way for government agencies to develop a national program to reduce the risk of unintentional introductions, ensure prompt detection and response, and control established species.

The ANSTF (1996) procedure incorporates four factors associated with probability of establishment and three factors associated with consequences of establishment, with the combination of these factors resulting in an overall Organism Risk Potential (ORP) for each species. For the four constrictor snakes, the risk of establishment was high.

For the four constrictor snakes, the consequences of establishment range from medium (yellow anaconda) to high (Burmese python, Northern African python, and Southern African python). The overall ORP, which is derived from an algorithm of both probability of establishment and consequences of establishment, was found to be high for all four species.

Certainties were highly variable within each of the seven elements or factors of the risk assessment mentioned above, varying from very uncertain to very certain. In general, the highest certainties were associated with species unequivocally established in Florida (such as Burmese python and Northern African python) because of enhanced ecological information on these species from studies in both their native range and in Florida. The way in which these subscores are obtained and combined is set forth in an algorithm created by the ANSTF (Table 2).

TABLE 2—THE ALGORITHM THAT THE ANSTF (1996) DEFINED FOR COMBINING THE TWO PRIMARY SUBSCORES

[Reed and Rodda 2009].

Probability of establishment	Consequences of establishment	Organism Risk Potential (ORP)
High	High	High.
Medium	High	High.
Low	High	Medium.
High	Medium	High.
Medium	Medium	Medium.
Low	Medium	Medium.
High	Low	Medium.
Medium	Low	Medium.
Low	Low	Low.

Similar algorithms are used for deriving the primary subscores from the secondary subscores. However, the scores are fundamentally qualitative, in the sense that there is no unequivocal threshold that is given in advance to determine when a given risk passes from being low to medium, and so forth. Therefore, we viewed the process as one of providing relative ranks for each species. Thus, a high ORP score indicates that such a species would likely entail greater consequences or greater probability of establishment than would a species whose ORP was medium or low (that is, high > medium > low). High-risk species include the four species being designated as injurious by this rulemaking: Burmese pythons, Northern and Southern African pythons, and yellow anacondas. High-risk species, if established in this country, would put larger portions of the U.S. mainland and insular territories at risk, constitute a greater ecological threat, or are more common in trade and commerce.

Factors That Contribute to Injuriousness for Burmese Python

Current Nonnative Occurrences

The Burmese python has been captured in many areas in Florida (see Figure 5 in the final environmental assessment). In South Florida, more than 1,300 live and dead Burmese pythons, including gravid females, have been removed from in and around Everglades National Park in the last 11 years by authorized agents, park staff, and park partners, indicating that they are already established (National Park Service 2010). In the Commonwealth of Puerto Rico, the Burmese python has been collected or reported (eight individuals collected, including a 3-m (10-ft) albino) from the municipality of Adjuntas, the northern region of the island (Arecibo), the eastern region of the island (Humacao), and southeastern region of the island (Guayama) (A. Atienza, pers. comm. 2010; J. Saliva, pers. comm. 2009; USGS 2007).

Newspaper accounts from 1980 to 2010 report that numerous Burmese pythons have escaped captivity or were spotted in the wild in the following States (HSUS 2009; 2010): Arkansas, California, Georgia, Idaho, Illinois, Louisiana, Maryland, Michigan, Mississippi, Missouri, Montana, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, Tennessee, Utah, and Virginia. This illustrates that the potential for release or escape is not confined to Florida and Puerto Rico but could occur in many States. See the section ''Introduction Pathways for Large Constrictor Snakes'' for the explanation of how release events are relevant to the potential establishment of Burmese pythons.

Potential Introduction and Spread

The likelihood of release or escape from captivity of Burmese python is high as evidenced by the number of reports from Florida and Puerto Rico (National Park Service 2010; J. Saliva, pers. comm. 2009; HSUS 2010; USGS 2007). When Burmese pythons escape captivity or are released into the wild, many have survived and are likely to

continue to survive and become established with or without reproducing. For example, in the past 11 years, more than 1,300 Burmese pythons have been removed from just Everglades National Park and vicinity (National Park Service 2010), and others have been captured from other natural areas on the west side of South Florida, the Florida Keys (Higgins, pers. comm. 2009), and farther north on the peninsula, including Sarasota and Indian River County (M. Lowman, pers. comm. 2009; B. Dangerfield, pers. comm. 2010).

Moreover, released Burmese pythons would likely disperse to areas of the United States with a suitable climate. See ''Introduction Pathways for Large Constrictor Snakes'' section above for the explanation of how the snakes would spread. These areas were determined in the risk assessment (Reed and Rodda 2009) for all four constrictor snakes by comparing the type of climate the species inhabited in their native ranges to areas of similar climate in the United States (climate matching). Due to the wide rainfall tolerance and extensive semi-temperate range of Burmese python, large areas of the southern United States mainland appear to have a climate suitable for survival of this species. Areas of the United States that are climatically matched at present include along the coasts and across the south from Delaware to Oregon, as well as most of California, Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Florida, Georgia, and South and North Carolina. In addition to these areas of the U.S. mainland, the territories of Guam, Northern Mariana Islands, American Samoa, Virgin Islands, and Puerto Rico appear to have suitable climates. Areas of the State of Hawaii with elevations under about 2,500 m (8,202 ft) would also appear to be climatically suitable. Burmese pythons are highly likely to spread and become established in the wild due to common traits shared by the giant constrictors: Rapid growth to a large size with production of many offspring; ability to survive under a range of habitat types and conditions (habitat generalist); behaviors that allow escape from freezing temperatures; ability to adapt to live in urban and suburban areas; ability to disperse long distances (Harvey *et al.* 2008); and tendency to be well-concealed ambush predators.

Potential Impacts to Native Species (Including Threatened and Endangered Species)

As discussed above under *Biology,* the Burmese python grows to lengths greater than 7 m (23 ft) and can weigh up to 90 kg (200 lbs). This is longer than any native terrestrial predator (including bears) in the United States and its territories and heavier than most native predators (including black bears). Burmese pythons can be so large that they can prey on alligators, which are among the largest native predators in the Southeast (Harvey *et al.* 2008, Reed and Rodda 2009, National Geographic 2006).

In comparison with the Burmese python, the largest snake native to the continental United States is much smaller. The largest native snake is the indigo snake (*Drymarchon corais*), attaining a maximum length of about 2.5 m (8 ft) (Monroe and Monroe 1968). The endangered Puerto Rican boa's (*Epicrates inornatus*) maximum size is approximately 2 m (6.5 ft) (U.S. Fish and Wildlife Service 1986). A subspecies of the indigo snake is the eastern indigo snake (*D. corais couperi*), which grows to a similar maximum length. The eastern indigo snake inhabits Georgia and Florida and is listed as federally threatened by the Service.

Unlike prey species in the Burmese python's native range, none of our native species has evolved defenses to avoid predation by such a large snake. Thus, native wildlife anywhere in the United States would be very likely to fall prey to Burmese pythons (or any of the other six constrictor snakes). At all life stages, Burmese pythons can and will compete for food with native species; in other words, baby pythons will eat small prey, and the size of their prey will increase as they grow. Based on an analysis of their diets in Florida, Burmese pythons, once they are introduced and established, may outcompete native predators (such as the federally listed Florida panther, eastern indigo snake, native boas, hawks), feeding on the same prey and thereby reducing the supply of prey for the native predators.

Burmese pythons are generalist predators that consume a wide variety of mammal and bird species, as well as reptiles, amphibians, and occasionally fish. This constrictor can easily adapt to prey on novel wildlife (species that they are not familiar with), and they need no special adaptations to hunt, capture, and consume them. Pythons in Florida have consumed prey as large as white-tailed deer and adult American alligators. Three federally endangered Key Largo woodrats (*Neotoma floridana smalli*) were eaten by a Burmese python in the wild in the Florida Keys in 2007. The extremely small number of remaining Key Largo woodrats suggests that the current status of the species is precarious (U.S. Fish and Wildlife Service 2008); this means that a new predator that has been confirmed to prey on the endangered woodrats is a serious threat to the continued existence of the species. Dove *et al.* (2011) found 25 species of birds representing 9 avian orders from remains in digestive tracts of 85 Burmese pythons (*Python molurus bivittatus*) collected in Everglades National Park; this included the federally endangered wood stork and 4 species of State concern.

The United States, particularly the Southeast, has a diverse faunal community that is potentially vulnerable to predation by the Burmese python. Juveniles of these large constrictors will climb trees and rocks to remove prey from bird nests and capture perching or sleeping birds. Most of the South has suitable climate and habitat for Burmese pythons. The greatest biological impact of an introduced predator, such as the Burmese python, is the likely loss of imperiled native species. Based on the food habits and habitat preferences of the Burmese python in its native range, the species is likely to invade the habitat, prey on, and further threaten most of the federally threatened or endangered fauna in climate-suitable areas of the United States.

Burmese pythons are also likely to decrease the populations of numerous potential candidates for Federal protection by hunting and eating them. Candidate species are plants and animals for which the Service has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act, but for which development of a proposed listing regulation is precluded by other higher priority listing activities.

The final environmental assessment includes lists of species that are federally or State threatened or endangered in some climate-suitable States and territories: Florida, Hawaii, Guam, Puerto Rico, and the Virgin Islands. Other States have federally or State threatened or endangered species that would be suitable prey for large constrictor snakes, including the Burmese python. These lists include only the species of the sizes and types that would be expected to be directly affected by predation by Burmese pythons and the other large constrictors. For example, plants and marine species are excluded. In Florida, 14 bird species, 15 mammals, and 2 reptiles that are threatened or endangered could be preyed upon by Burmese pythons or be outcompeted by them for prey. Hawaii has 34 bird species and 1 mammal that

are threatened or endangered that would be at risk of predation. Puerto Rico has eight bird species and eight reptile species that are threatened or endangered that would be at risk of predation. The Virgin Islands has one bird species and three reptiles that are threatened or endangered that would be at risk of predation. Guam has six bird species and two mammals that are threatened or endangered that would be at risk of predation.

Due to the wide rainfall tolerance and extensive semi-temperate native range of *P. molurus,* large areas of the southern U.S. mainland appear to have a climate suitable for survival of this species. Please refer to the Final Environmental Assessment for the climate suitability maps for each large constrictor snake species. U.S. areas climatically matched at present ranged up the east and west coasts and across the interior south from Virginia to California, and throughout most of California, Texas, Oklahoma, Arkansas, Louisiana, Mississippi, Alabama, Florida, Georgia, and South and North Carolina. In addition to the mapped areas of the United States mainland, the territories of Guam, Northern Mariana Islands, American Samoa, Virgin Islands, and Puerto Rico appear to have suitable climate. Areas of the State of Hawaii with elevations under about 2,500 m (8,202 ft) also appear to be climatically suitable. While we did not itemize the federally threatened and endangered species from California, Texas, and other States, there are likely several hundred species in those and other States that would be at risk from Burmese pythons. According to the climate suitability maps (Reed and Rodda 2009), threatened and endangered species from all of Florida, most of Hawaii, and all of Puerto Rico would be at risk from the establishment of Burmese pythons. In addition, Guam, the U.S. Virgin Islands, and other territories would have suitable habitat and climate to support Burmese pythons, and these also have federally threatened and endangered species that would be at risk if Burmese pythons became established.

The likelihood and magnitude of the effect on threatened and endangered species is high. Burmese pythons are thus highly likely to negatively affect threatened and endangered birds and mammals, as well as unlisted native species. Consistent with the language of the Lacey Act authorizing the listing of ''species'' and with prior administrative practice of listing only species or higher taxonomic units, we evaluated the species *Python molurus* as a whole, instead of evaluating the subspecies *Python molurus bivittatus* (Burmese python), which was the taxon originally petitioned for listing by the South Florida Water Management District. We determined that the species should be listed. As stated above under ''*Native Range,''* the cold tolerance for both subspecies is similar, so the climate match (one of the evaluation criteria) determined in Reed and Rodda (2009) (also G. Rodda, pers. comm. 2009) is as applicable to each subspecies as it is to the species as a whole.

Potential Impacts to Humans

The introduction or establishment of Burmese pythons may have negative impacts on humans primarily from the loss of native wildlife biodiversity, as discussed above. These losses would affect the aesthetic, recreational, educational, and economic values currently provided by native wildlife and healthy ecosystems.

Human fatalities from nonvenomous snakes in the wild are rare, probably only a few per year worldwide (Reed and Rodda 2009). Although attacks on people by Burmese pythons are improbable, they are possible given the large size that some individual snakes can reach. However, the only human deaths in the United States from Burmese pythons that we are aware of were from captive snakes (in Colorado, Florida, Missouri, and Pennsylvania; HSUS 2010).

Ectoparasites (including ticks in the genus *Amblyomma*) were collected from wild-caught, free-ranging exotic reptiles examined in Florida from 2003 to 2008 (Corn *et al.* 2011). This was the first report of collections of Neotropical ticks from wild-caught Burmese pythons, *Python molurus bivittatus.* The only known vectors capable of transmitting *Cowdria ruminantium* (which causes heartwater disease) are 13 species of ticks in the genus *Amblyomma* (Deem 1998). Heartwater disease is a devastating disease of livestock (including cattle, sheep, and goats) in Africa (Deem 1998). From limited wild-caught, free-ranging exotic reptiles in Florida (including ball and Burmese pythons), ticks and mites were native to North America, Latin America, and Africa from reptiles native to Asia, Africa, and Central and South America. These reports suggest the diversity of reptile ectoparasites introduced and established in Florida and the new host-parasite relationships that have developed among exotic and native ectoparasites and established exotic reptiles. Several studies (Burridge *et al.* 2000, Kenny *et al.* 2004, Reeves *et al.* 2006) have shown disease agents in the ticks that travel internationally on reptiles, which may serve in the introduction of disease agents that could impact the health of local wildlife, domestic animals, and humans (Corn *et al.* 2011). A potentially devastating impact to the nation's agriculture could occur if the deadly cattle disease heartwater or some other tick-borne disease were to become established in the United States and be transmissible through reptile ticks (Reed and Rodda 2009). African tick species that use pythons as hosts may be vectors of heartwater, and these ticks have been observed to transfer to other hosts, including other giant constrictors, other reptiles, and dogs. Because multiple python species are held captive together in the commercial trade, such transmission provides opportunities to occur prior to retail sales (Reed and Rodda 2009).

Factors That Reduce or Remove Injuriousness for Burmese Python

Control

No effective tools are currently available to detect and remove large constrictor populations. Traps with drift fences or barriers are the best option, but their use on a large scale is prohibitively expensive, largely because of the labor cost of baiting, checking, and maintaining the traps daily. Additionally, some areas cannot be effectively trapped due to the expanse of the area and type of terrain, the distribution of the target species, and the effects on any nontarget species (that is, they trap native wildlife as well). While the Department of the Interior, the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS), and State of Florida entities have conducted some research on control tools, there are currently no such tools available that would be adequate for eradication of an established population of large constrictor snakes, such as the Burmese python, once they have spread over a large area.

Efforts to eradicate the Burmese python in Florida have become increasingly intense as the species is reported in new locations across the State with ''python catch'' training sessions scheduled in locations necessary to keep the expansion to a minimum. Natural resource management agencies are expending scarce resources to devise methods to capture or otherwise control any large constrictor snake species. These agencies recognize that control of large constrictor snakes (as major predators) on lands that they manage is necessary to prevent the likely adverse impacts to

the ecosystems occupied by the invasive snakes.

The final economic analysis was prepared for the constrictor snakes (USFWS January 2012) and provides the following information about the expenditures for research and eradication in Florida, primarily for Burmese pythons, which provides some indication of the efforts to date. The Service spent about $600,000 over a 3-year period (2007 to 2009) on python trap design, deployment, and education in the Florida Keys to prevent the potential extinction of the endangered Key Largo woodrat (*Neotoma floridana smalli*) at Crocodile Lake National Wildlife Refuge. The South Florida Water Management District spent $334,000 between 2005 and 2009 and anticipates spending an additional $156,600 on research, salaries, and vehicles in the next several years. An additional $300,000 will go for the assistance of USDA, Wildlife Services (part of USDA Animal and Plant Health Inspection Service). The USDA Wildlife Research Center (Gainesville, Florida, Field Station) has spent $15,800 from 2008 to 2009 on salaries, travel, and supplies. The USGS, in conjunction with the University of Florida, has spent more than $1.5 million on research, radio telemetry, and the development, testing, and implementation of constrictor snake traps. Miami-Dade County Parks and Recreation Department, Natural Areas Management and Department of Environmental Resources Management have spent $60,875 annually on constrictor snake issues. The National Park Service has spent $317,000 annually on various programs related to constrictor snake issues in Everglades National Park. All these expenditures total $5.7 million from 2005 to approximately 2012, or roughly an average of $720,000 per year. Despite this investment, all of these efforts have failed to provide a method for eradicating large constrictor snakes in Florida.

Kraus (2009) exhaustively reviewed the literature on invasive herpetofauna. While he found a few examples of local populations of amphibians that had been successfully eradicated, he found no such examples for reptiles. He also states that, ''Should an invasive [nonnative] species be allowed to spread widely, it is usually impossible—or at best very expensive—to eradicate it.'' The Burmese python is unlikely to be one of those species that could be eradicated.

Eradication will almost certainly be unachievable for a species that is hard to detect and remove at low densities, which is the case with all of the four large constrictor snakes. They are well-camouflaged and stealthy, and, therefore, nearly impossible to see in the wild. Most of the protective measures available to prevent the escape of Burmese pythons are currently (and expected to remain) cost-prohibitive and labor-intensive. Even with protective measures in place, the risks of accidental escape are not likely to be eliminated. Since effective measures to prevent the establishment in new locations or eradicate, manage, or control the spread of established populations of the Burmese python are not currently available, the ability to rehabilitate or recover ecosystems disturbed by the species is low.

Potential Ecological Benefits for Introduction

While the introduction of a faunal biomass could potentially provide a food source for some native carnivores, species native to the United States are unlikely to possess the ability to hunt such large, camouflaged snakes and would not likely turn to large constrictor snakes as a food source. The risks to native wildlife greatly outweigh this unlikely benefit; however, juvenile constrictor snakes could fall prey to native wildlife such as alligators, raccoons, coyotes, and birds of prey (hawks, owls, eagles). In addition, a large constrictor snake could prey on other invasive, nonnative species, such as green iguanas, feral hogs, and black rats. However, the effect on the populations of these feral hogs, rats, and other such nonnative species is likely to be negligible. Conversely, the effect of predation on rare species is greater, because any decrease in populations of rare species makes it less likely for the population to rebound. Therefore, the small possible benefits of having large constrictor snakes as predators in the United States do not warrant encouraging their establishment.

There are no other potential ecological benefits for the introduction of Burmese pythons into the United States.

Conclusion

The Burmese python is one of the largest snakes in the world, reaching lengths of up to 7 m (23 ft) and weights of over 90 kg (almost 200 lbs). This is longer than any native, terrestrial animal in the United States, including alligators, and three times longer than the longest native snake species. Native fauna have no experience defending against this type of novel, giant predator. Hatchling Burmese pythons are about the size of average adult native snakes and can more than double in size within the first year. In addition, Burmese pythons reportedly can fertilize their own eggs and have viable eggs after several years in isolation. Even one female Burmese python that escapes captivity could produce dozens of large young at one time (average clutch size is 36, with a known clutch of 107). Furthermore, a healthy individual is likely to live for 20 to 30 years. Even a small number of pythons in a small area, such as one of the Florida Keys or insular islands, could cause unacceptable effects on federally threatened or endangered species. There are currently no effective control methods for Burmese pythons, nor are any anticipated in the near future.

Therefore, because Burmese pythons have already established populations in some areas of the United States; are likely to spread from their current established range to new natural areas in the United States; are likely to become established in disjunct areas of the United States with suitable climate and habitat if released there; are likely to prey on and compete with native species (including threatened and endangered species); are likely to be disease vectors for livestock or native wildlife; cannot be easily eradicated, prevented from establishing, or reduced from large populations or new locations; and are likely to disturb ecosystems beyond the point of recoverability, the Service finds the Burmese python and its conspecifics to be injurious to humans, agricultural interests, and to wildlife and wildlife resources of the United States.

Factors That Contribute to Injuriousness for Northern African Python

Current Nonnative Occurrences

Several Northern African pythons have been found in Florida and elsewhere in the United States—most of these are assumed to be escaped or released pets (Reed and Rodda 2009). From 2005 to 2009, adults and hatchlings have been captured, confirming the presence of a population of Northern African pythons along the western border of Miami, adjacent to the Everglades (Reed *et al.* 2010). From May 2009 to January 2010, four specimens were found by herpetologists and the Miami-Dade County Anti-Venom Response Unit, including hatchlings and adults collected from an area of about 2 km (1.6 mi) in diameter known as the Bird Drive Recharge Basin (Miami-Dade County) (Reed *et al.* 2010). In 2009, evidence pointed to the presence of a breeding population of Northern African pythons along the

western border of Miami adjacent to the Everglades. Recently, observations and removals of multiple adults, a gravid female, and hatchlings suggest the presence of a reproducing population of Northern African pythons (Reed *et al.* 2010). One Northern African python has also been collected on State Road 72 approximately 6.43 km (4 mi) east of Myakka River State Park, Sarasota County, Florida (K. Krysko, pers. comm. 2010).

In the Commonwealth of Puerto Rico, Northern African pythons have been found in the western region of the island (Mayaguez), the San Juan metro area, and the southern region of the island (Guayama) (J. Saliva, pers. comm. 2009).

Potential Introduction and Spread

Northern African pythons have escaped captivity or been released into the wild in Florida and Puerto Rico and are likely to continue to escape and be released into the wild. Based on Reed and Rodda (2009), extrapolation of climate matching from the native range of Northern African pythons and then mapped to the United States includes a large portion of peninsular Florida, extreme south Texas, most of Hawaii, and Puerto Rico. Northern African pythons are highly likely to spread and become established in the wild due to common traits shared by the giant constrictors, including rapid growth to a large size with production of many offspring; ability to survive under a range of habitat types and conditions (habitat generalist); behaviors that allow them to escape freezing temperatures; ability to live in urban and suburban areas; ability to disperse long distances; and ability to conceal themselves and ambush prey.

Potential Impacts to Native Species (Including Threatened and Endangered Species)

Northern African pythons are highly likely to prey on native species, including threatened and endangered species. As with most of the giant constrictors, adult African pythons primarily eat endothermic prey from a wide variety of taxa. Adverse effects of Northern African pythons on selected threatened and endangered species are likely to be moderate to high.

Please see *Potential Impacts to Native Species (Including Threatened and Endangered Species)* under Factors that Contribute to the Injuriousness for Burmese Python for a description of the impacts that Northern African pythons would have on native species. These impacts are applicable to Northern African pythons by comparing their prey type with the suitable climate areas and the listed species found in those areas; suitable climate areas and the listed species can be found in the final environmental assessment.

According to the climate suitability maps (Reed and Rodda 2009), threatened and endangered species and other native species from parts of Florida, most of Hawaii, and all of Puerto Rico would be at risk from the establishment of Northern African pythons. In addition, we assume that Guam, the U.S. Virgin Islands, and other territories would have suitable habitat and climate to support Northern African pythons, and these also have federally threatened and endangered species that would be at risk if Northern African pythons became established.

Potential Impacts to Humans

The introduction or establishment of Northern African pythons may have negative impacts on humans primarily from the loss of native wildlife biodiversity, as discussed above. These losses would affect the aesthetic, recreational, and economic values currently provided by native wildlife and healthy ecosystems. Educational values would also be diminished through the loss of biodiversity and ecosystem health. African pythons (both wild and captive-bred) are noted for their bad temperament and readiness to bite if harassed by people. Although African pythons can easily kill an adult person, attacks on humans are uncommon (Reed and Rodda 2009). We do not have any confirmed human fatalities in the United States from Northern African pythons.

Diseases borne by ticks could potentially impact U.S. agricultural industries. One serious possibility is heartwater disease, a potentially catastrophic disease of hoofed animals (including cattle) that is vectored by ticks found on African pythons (such as *Python sebae*), but the ticks are capable of transferring to other species of the genus *Python* in captivity (Reed and Rodda 2009). Northern and Southern African pythons are known hosts of some of these ticks, including *Amblyomma nuttalli, Amblyomma marmoreum, Amblyomma sparsum, Aponomma exornatum, Aponomma flavomaculatum,* and *Aponomma latum* (Burridge 2001).

Factors That Reduce or Remove Injuriousness for Northern African Python

Control

As with the other giant constrictors, once introduced into the wild, eradication, management, or control of the spread of Northern African pythons will be highly unlikely. Please see the *Control* section for the Burmese python for reasons why the Northern African pythons would be difficult to control, all of which apply to this large constrictor.

Potential Ecological Benefits for Introduction

While the introduction of a faunal biomass could potentially provide a food source for some native carnivores, species native to the United States are unlikely to possess the hunting ability for such large, camouflaged snakes and would not likely turn to large constrictor snakes as a food source. The risks to native wildlife greatly outweigh this unlikely benefit; however, juvenile snakes could fall prey to native wildlife such as alligators, raccoons, coyotes, and birds of prey (hawks, owls, eagles). In addition, a large constrictor snake could prey on other nonnative species such as green iguanas, feral hogs, and black rats. There are no other potential ecological benefits from the introduction into the United States or establishment in the United States of Northern African pythons.

Conclusion

Northern African pythons are long-lived (some have lived in captivity for 27 years). The species feeds primarily on warm-blooded prey (mammals and birds). Northern African pythons have been found to be reproducing in Florida. Therefore, they pose a risk to native wildlife, including threatened and endangered species. African pythons (both wild and captive-bred) are noted for their bad temperament and have reportedly also attacked humans.

Because Northern African pythons are likely to escape or be released into the wild if imported to the United States; are likely to spread from their current established range to new natural areas in the United States with suitable habitats; are likely to prey on native species (including threatened and endangered species); are likely to be disease vectors for livestock; and because it would be difficult to eradicate or reduce large populations, or recover ecosystems disturbed by the species, the Service finds the Northern African python to be injurious to humans, agricultural interests, and to wildlife and wildlife resources of the United States.

Factors that Contribute to Injuriousness of the Southern African Python

Current Nonnative Occurrences

Occurrences of the Southern African python in the United States are unknown.

Potential Introduction and Spread

Southern African pythons are large-bodied constrictors that are closely related to Northern African pythons. Because they are so similar to Northern African pythons, they possess the same traits that enable them to be likely to escape or be released into the wild if imported into the United States. Southern African pythons may be substituted for Northern African pythons in the pet trade because of these similarities.

The Southern African python climate match extends slightly farther to the north in Florida than the Northern African python and also includes Texas from the Big Bend region to the southeasternmost extent of the State, as well as parts of Puerto Rico and Hawaii. If Southern African pythons escape or are intentionally released, they are likely to survive or become established within their respective thermal and precipitation limits. Within these limits, Southern African pythons are highly likely to spread and become established in the wild due to common traits shared by the giant constrictors, including rapid growth to a large size with production of many offspring; are capable of surviving under a range of habitat types and conditions (habitat generalist); have behaviors that allow them to escape freezing temperatures; can live in urban and suburban areas; can disperse long distances; and are well-concealed ambush predators.

Potential Impacts to Native Species (Including Threatened and Endangered Species)

Southern African pythons are highly likely to prey on native species, including threatened and endangered species. As with most of the giant constrictors, adult African pythons primarily eat endothermic prey from a wide variety of taxa. Adverse effects of Southern African pythons on selected threatened and endangered species are likely to be moderate to high.

Please see *Potential Impacts to Native Species (Including Threatened and Endangered Species)* under Factors that Contribute to the Injuriousness for Burmese Python for a description of the impacts that Southern African pythons would have on native species. These impacts are applicable to Southern African pythons by comparing their prey type with the suitable climate areas and the listed species found in those areas; suitable climate areas and the listed species can be found in the final environmental assessment.

According to the climate suitability maps (Reed and Rodda 2009), threatened and endangered species and other native species from parts of Florida, Texas, Hawaii, and Puerto Rico would be at risk from the establishment of Southern African pythons. In addition, we assume that Guam, the U.S. Virgin Islands, and other territories would have suitable habitat and climate to support Southern African pythons, and these also have federally threatened and endangered species that would be at risk if Southern African pythons became established.

Potential Impacts to Humans

The introduction or establishment of Southern African pythons may have negative impacts on humans primarily from the loss of native wildlife biodiversity, as discussed above. These losses would affect the aesthetic, recreational, and economic values currently provided by native wildlife and healthy ecosystems. Educational values would also be diminished through the loss of biodiversity and ecosystem health.

African pythons (both wild and captive-bred) are noted for their bad temperament and readiness to bite if harassed by people. Although African pythons can easily kill an adult person, attacks on humans are uncommon (Reed and Rodda 2009).

Diseases borne by ticks could potentially impact U.S. agricultural industry. One serious possibility is heartwater disease, a potentially catastrophic disease of hoofed animals (including cattle) that is vectored by ticks found on African pythons (such as *Python sebae*), but the ticks are capable of transferring to other species of the genus *Python* in captivity (Reed and Rodda 2009). Northern and Southern African pythons are known hosts of some of these ticks, including *Amblyomma nuttalli, Amblyomma marmoreum, Amblyomma sparsum, Aponomma exornatum, Aponomma flavomaculatum,* and *Aponomma latum* (Burridge 2001).

Factors That Reduce or Remove Injuriousness for Southern African Python

Control

As with the other giant constrictors, once introduced into the wild, the eradication, management, or control of the spread of Southern African pythons will be highly unlikely. Please see the *Control* section for the Burmese python for reasons why the Southern African pythons would be difficult to control, all of which apply to these large constrictors.

Potential Ecological Benefits for Introduction

While the introduction of a faunal biomass could potentially provide a food source for some native carnivores, species native to the United States are unlikely to possess the hunting ability for such large, camouflaged snakes and would not likely turn to large constrictor snakes as a food source. The risks to native wildlife greatly outweigh this unlikely benefit; however, juvenile snakes could fall prey to native wildlife such as alligators, raccoons, coyotes, and birds of prey (hawks, owls, eagles). In addition, a large constrictor snake could prey on other nonnative species such as green iguanas, feral hogs, and black rats. There are no other potential ecological benefits from the introduction into the United States or establishment in the United States of Southern African pythons.

Conclusion

Southern African pythons are long-lived. This species feeds primarily on warm-blooded prey (mammals and birds). Therefore, they pose a risk to native wildlife, including threatened and endangered species. Their climate match extends slightly farther to the north in Florida than the Northern African python and also includes portions of Texas from the Big Bend region to the southeasternmost extent of the State. Because Southern African pythons are likely to escape or be released into the wild if imported to the United States; are likely to survive, become established, and spread if escaped or released in suitable habitats; are likely to prey on and compete with native species for food and habitat (including threatened and endangered species); are likely to be disease vectors for livestock; cannot be easily eradicated, prevented from establishing, or reduced from large populations or new locations; and are likely to disturb ecosystems beyond the point of recoverability, the Service finds the Southern African python to be injurious to humans, to agricultural interests, and to the wildlife and wildlife resources of the United States.

Factors That Contribute to Injuriousness for Yellow Anaconda

Current Nonnative Occurrences

An adult yellow anaconda was collected from Big Cypress National Reserve in southern Florida in January 2007, and another individual was photographed basking along a canal about 25 km (15.5 mi) north of that location in January 2008 (EDDMapS 2011). In 2008, an unnamed observer reportedly captured two anacondas that most closely fit the description of the yellow anaconda farther to the east near the Palm Beach, Florida, county line (EDDMapS 2011). In Puerto Rico, a few individuals of the yellow anaconda have been reported in the central region of the island (Villalba area). In Arkansas, two yellow anacondas were found in Wapanocca National Wildlife Refuge (P. Fuller, pers. comm. 2011).

Potential Introduction and Spread

Yellow anacondas have escaped or been released into the wild in Florida, Arkansas, and Puerto Rico, and are likely to escape or be released into the wild elsewhere. Yellow anacondas are highly likely to survive in subtropical areas of natural ecosystems of the United States. The yellow anaconda has a native-range distribution that includes highly seasonal and fairly temperate regions in South America. When projected to the United States, the climate space occupied by yellow anaconda translates to a fairly large area, including virtually all of peninsular Florida and a corner of southeastern Georgia (to about the latitude of Brunswick), as well as parts of southern and eastern Texas and a very small portion of southern California. Large areas of Hawaii and Puerto Rico appear to exhibit suitable climates, and additional insular United States possessions (Guam, Northern Marianas, American Samoa, and so on) would probably be suitable as well. Within the areas deemed suitable, however, the yellow anaconda would be expected to occupy only habitats with permanent surface water. If yellow anacondas are released into areas with suitable permanent surface water, they would likely disperse because of their propensity for rapid growth to a large size; high reproductive rate; ability to survive under a range of habitat types and conditions (habitat generalist); behaviors that allow them to escape freezing temperatures; ability to live in urban and suburban areas; ability to disperse long distances; and well-concealed, ambush-type of predatory behavior.

Potential Impacts to Native Species (Including Threatened and Endangered Species)

Yellow anacondas are highly likely to prey on native species, including select threatened and endangered species. The prey list suggests that yellow anacondas employ both ''ambush predation'' and ''wide-foraging'' strategies (Reed and Rodda 2009). The snakes forage predominately in open, flooded habitats, in relatively shallow water; wading birds are their most common prey. They have also been known to prey on fish, turtles, small caimans, lizards, birds, eggs, small mammals, and fish carrion (Reed and Rodda). Threatened and endangered species occupying flooded areas, such as the Everglades, would be at risk.

Please see *Potential Impacts to Native Species (Including Threatened and Endangered Species)* under Factors that Contribute to the Injuriousness for Burmese Python for a description of the impacts that yellow anacondas would have on native species. These impacts are applicable to yellow anacondas by comparing their prey type with the suitable climate areas and the listed species found in those areas; suitable climate areas and the listed species can be found in the final environmental assessment.

While we did not itemize the federally threatened and endangered species from southern California, Texas, southeast Georgia, and other States, there are likely several hundred species in those and other States that would be at risk from yellow anaconda. According to the climate suitability maps (Reed and Rodda 2009), threatened and endangered species from parts of Florida, Hawaii, and Puerto Rico would be at risk from the establishment of yellow anacondas. In addition, Guam, the U.S. Virgin Islands, and other territories would have suitable habitat and climate to support yellow anacondas, and these also have federally threatened and endangered species that would be at risk if yellow anacondas became established.

Potential Impacts to Humans

The introduction or establishment of yellow anacondas may have negative impacts on humans primarily from the loss of native wildlife biodiversity, as discussed above. These losses would affect the aesthetic, recreational, and economic values currently provided by native wildlife and healthy ecosystems. Educational values would also be diminished through the loss of biodiversity and ecosystem health.

Factors That Reduce or Remove Injuriousness for Yellow Anaconda

Control

Once introduced into the wild, the eradication, management, or control of the spread of yellow anacondas will be highly unlikely. Please see the ''*Control''* section for the Burmese python for reasons why yellow anacondas would be difficult to control, all of which apply to this large constrictor.

Potential Ecological Benefits for Introduction

While the introduction of a faunal biomass could potentially provide a food source for some native carnivores, species native to the United States are unlikely to possess the hunting ability for such large, camouflaged snakes and would not likely turn to large constrictor snakes as a food source. The risks to native wildlife greatly outweigh this unlikely benefit; however, juvenile snakes could fall prey to native wildlife such as alligators, raccoons, coyotes, and birds of prey (hawks, owls, eagles). In addition, a large constrictor snake could prey on other nonnative species such as green iguanas, feral hogs, and black rats. There are no other potential ecological benefits from the introduction into the United States or establishment in the United States of yellow anacondas.

Conclusion

Yellow anacondas are highly likely to survive in the appropriate natural ecosystems of the United States. The species has a native-range distribution that includes highly seasonal and fairly temperate regions in South America. When projected to the United States, the climate space occupied by yellow anaconda maps to a fairly large area, including virtually all of peninsular Florida and a corner of southeastern Georgia (to about the latitude of Brunswick), as well as large parts of southern and eastern Texas and a small portion of southern California. Large areas of Hawaii and Puerto Rico appear to exhibit suitable climates, and additional insular U.S. possessions (such as Guam, Northern Marianas, American Samoa) would probably be suitable as well. Yellow anacondas are highly likely to spread to suitable permanent surface water areas because of their large size, high reproductive potential, early maturation, rapid growth, longevity, and generalist-surprise attack predation.

Because the yellow anacondas are likely to escape captivity or be released into the wild if imported to the United

States (note that the yellow anaconda has already been found in the wild in Florida and Arkansas); are likely to survive, become established, and spread if escaped or released; are likely to prey on and compete with native species for food and habitat (including threatened and endangered species); cannot be easily eradicated, prevented from establishing, or reduced from large populations or new locations; and are likely to disturb ecosystems beyond the point of recoverability, the Service finds the yellow anaconda to be injurious to humans and to the wildlife and wildlife resources of the United States.

Conclusions for the Four Constrictor Snakes

Burmese Python

The Burmese python is one of the largest snakes in the world, reaching lengths of up to 7 m (23 ft) and weights of over 90 kilograms (kg) (almost 200 pounds (lbs)). This is longer than any native, terrestrial animal in the United States, including alligators, and three times longer than the longest native snake species. Native fauna have no experience defending against this type of novel, giant predator. Hatchling pythons are about the size of average adult native snakes and can more than double in size within the first year. In addition, Burmese pythons reportedly can fertilize their own eggs and have viable eggs after several years in isolation; therefore, it is possible that a population of Burmese pythons could be established with only a small number of females. Burmese pythons are long-lived, with a life expectancy of 20 to 30 years. Thus, even a single python (especially a female) in a small area, such as one of the Florida Keys or insular islands, can devastate the population of a federally threatened or endangered species. There are currently no effective control methods for Burmese pythons, nor are any anticipated in the near future.

Therefore, because Burmese pythons have already established populations in some areas of the United States; are likely to spread from their current established range to new natural areas in the United States; are likely to become established in disjunct areas of the United States with suitable climate and habitat if released there; are likely to prey on and compete with native species (including threatened and endangered species); are likely to be disease vectors for livestock or native wildlife; are likely to damage ecosystems that would be difficult or impossible to recover; and are difficult or impossible to eradicate or control once established, the Service finds the Burmese python to be injurious to humans, agricultural interests, and to wildlife and wildlife resources of the United States. We have evaluated the species *Python molurus* as a whole (including Burmese and Indian pythons), and we have determined that it should be listed as injurious. Moreover, we note that each of its subspecies share the traits that make this species injurious.

Northern African Python

Northern African pythons are long-lived (some have lived in captivity for 27 years). The species feeds primarily on warm-blooded prey (mammals and birds). Northern African pythons now have an established self-sustaining breeding population west of Miami, Florida. This area is within the known distribution of Burmese pythons in Florida, and hybridization between these species is known in captivity. The likelihood of hybridization among introduced Florida populations is unknown, as are the implications of genetic admixture for control purposes (Reed and Rodda 2009). Therefore, they pose a risk to native wildlife, including threatened and endangered species. African pythons (both wild and captive-bred) are noted for their bad temperament and have reportedly also attacked humans.

Because Northern African pythons are likely to escape or be released into the wild if imported to or transported within the United States; are likely to survive, become established, and spread from their current established range to new natural areas in the United States with suitable habitats; are likely to prey on and compete with native species (including threatened and endangered species); and because it would be difficult to prevent, eradicate, or reduce large populations; control the spread to new locations; or to recover ecosystems disturbed by the species, the Service finds the Northern African python to be injurious to humans and to wildlife and wildlife resources of the United States.

Southern African Python

Southern African pythons are long-lived. This species feeds primarily on warm-blooded prey (mammals and birds). Therefore, they pose a risk to native wildlife, including threatened and endangered species. Their climate match extends slightly farther to the north in Florida than the Northern African python and also includes Texas from the Big Bend region to the southeasternmost extent of the State as well as parts of Puerto Rico and Hawaii.

Because Southern African pythons are likely to escape or be released into the wild if imported to or transported within the United States; are likely to survive, become established, and spread if escaped or released in suitable habitats; are likely to prey on and compete with native species for food and habitat (including threatened and endangered species); and because it would be difficult to prevent, eradicate, or reduce large populations; control spread to new locations; or recover ecosystems disturbed by the species, the Service finds the Southern African python to be injurious to humans and to the wildlife and wildlife resources of the United States.

Yellow Anaconda

Yellow anacondas are highly likely to survive in the appropriate natural ecosystems of the United States. The species has a native-range distribution that includes highly seasonal and fairly temperate regions in South America. When projected to the United States, the climate space occupied by yellow anaconda maps to a fairly large area, including virtually all of peninsular Florida and a corner of southeastern Georgia (to about the latitude of Brunswick), as well as large parts of southern and eastern Texas. Large areas of Hawaii and Puerto Rico appear to exhibit suitable climates, and additional insular U.S. possessions (such as Guam, Northern Marianas, American Samoa) would probably be suitable as well. Yellow anacondas are highly likely to spread to suitable permanent-surface-water areas because of their large size, high reproductive potential, early maturation, rapid growth, longevity, and generalist surprise-attack predation.

Because the yellow anacondas are likely to escape captivity or be released into the wild if imported to or transported within the United States (note that the yellow anaconda has already been found in the wild in Florida); are likely to survive, become established, and spread if escaped or released; are likely to prey on and compete with native species for food and habitat (including threatened and endangered species); and because it would be difficult to prevent, eradicate, or reduce large populations; control spread to new locations; or to recover ecosystems disturbed by the species, the Service finds the yellow anaconda to be injurious to humans and to wildlife and wildlife resources of the United States.

Summary of Risk Potentials

Reed and Rodda (2009) found that all of the four constrictor snakes pose high risks to the interests of human beings,

agriculture, wildlife, and wildlife resources of the United States. These risk potentials utilize the criteria for evaluating species as described by ANSTF (1996) (see Lacey Act Evaluation Criteria above). Based on the risks determined by Reed and Rodda (2009), substantive information submitted during the public comment periods and from the peer reviewers, along with the latest findings regarding the large constrictor snakes (in Florida, Puerto Rico, and elsewhere), the Service concludes that the four constrictor species should be added to the list of injurious reptiles under the Lacey Act.

Comments Received on the Proposed Rule

During the two public comment periods for the proposed rule, we received approximately 56,500 comments, including form letters, petitions, and post cards. We received comments from Federal agencies, State agencies, local governments, commercial and trade organizations, conservation organizations, nongovernmental organizations, and private citizens; all were in English with the exception of a few in Dutch, French, German, and Italian. The comments provided a range of views on the proposed listing as follows: (1) Unequivocal support for the listing with no additional information included; (2) unequivocal support for the listing with additional information provided; (3) equivocal support for the listing with or without additional information included; (4) unequivocal opposition to the listing with no additional information included; and (5) unequivocal opposition to the listing with additional information included.

To accurately review and incorporate the publicly provided comments in our final determination, we worked with researchers in the Qualitative Data Analysis Program at the University of Massachusetts Amherst and the University of Pittsburgh—developers of the *Public Comment Analysis Toolkit (PCAT)* analytical software. The PCAT enhanced our ability to review large numbers of comments, including large numbers of similar comments on our proposed listing, allowing us to identify similar comments as well as individual ideas, data, recommendations, or suggestions on the proposed listing. We are also responding to some comments that are out of the purview of this rule in a concerted effort to explain our rationale to the public.

Peer Review of the Proposed Rule

In accordance with peer review guidance of the Office of Management and Budget ''Final Information Quality Bulletin for Peer Review,'' released December 16, 2004, and Service guidance, we solicited expert opinion on information contained in the proposed rule (which was for nine species) from five knowledgeable individuals selected from specialists in the relevant taxonomic group and ecologists with scientific expertise that includes familiarity with alien herpetological introductions and invasions, predictive tools for risk assessment, and invasion biology. We posted our peer review plan on the Service's Region 4 Web site (*http://www.fws.gov/southeast/informationquality*), explaining the peer review process and providing the public with an opportunity to comment on the peer review plan. No comments were received regarding the peer review plan. The Service solicited independent scientific reviewers who submitted individual comments in written form. We avoided using individuals who had already expressed strong support for or opposition to the petition and individuals who were likely to experience personal gain or loss (financial, prestige, *etc.*) as a result of the Service's decision. Department of the Interior employees were not utilized as peer reviewers.

We received responses from five peer reviewers. Two peer reviewers found that, in general, the proposed rule represented a comprehensive and up-to-date compilation of the best scientific information known about the nine constrictor snake species and conclusions drawn from both published and unpublished sources were scientifically robust, and justified the proposed rule. Two peer reviewers expressed concern with the climate-matching methods and assumptions.

In addition, all peer reviewers stated that the background material on the biology, invasive potential, and potential tools for control of each snake species represented a solid compilation of available information. They further stated that the information as presented justified the conclusion that the snake species should be listed as injurious. All five peer reviewers concluded that the data and analyses we used in the proposed rule were appropriate and the conclusions we drew were logical and reasonable. Several peer reviewers provided additional insights to clarify points in the proposed rule, or references to recently published studies that update material in the rule.

Peer Review Comments

We reviewed all comments received from peer reviewers for substantive issues and new information regarding the proposed rule. We consolidated the comments and responses into key issues in this section. We refer to them as PR (Peer Reviewer) 1 through 5. We revised the final rule to reflect peer reviewer comments, where appropriate, and the most current scientific information, including the results of the new USGS climate match publication (Rodda *et al.* 2011), plus a number of new peer-reviewed journal articles. We have taken our best effort to identify the limitations and uncertainties of the climate-matching models and their projections used in the proposed rule. We have also taken our best effort to correct any grammatical or biological errors and clarify certain ambiguous statements.

Comment PR1: In regard to the USGS publication ''Giant Constrictors: Biological and Management Profiles and an Establishment Risk Assessment for Nine Large Species of Pythons, Anacondas, and the Boa Constrictor,'' which includes management profiles discussing colonization potentials with climate matching maps, there are very few details or data presented in the manuscript that would allow an independent test of the model, predictions, or assumptions. At a minimum, the threshold values that were used in the climate space model should be explicitly stated for each species. This would allow reviewers to evaluate the data and the assumptions used in the construction of the model.

Response PR1: This general critique is incorrect; all of the species-specific information used to assess risks is presented in the document mentioned. That this procedure cannot be reduced to mathematical certainty is the reason a risk assessment (rather than a calculation) was conducted. This specific critique is also incorrect. The requested threshold values are provided graphically for each of the species in Reed and Rodda (2009). For example, the *Python molurus* values are in Figure 4.3 (page 51) (heavy and dashed black lines), the *P. sebae* and *P. natalensis* values are in Figures 6.4 (page 118) and 6.5 (page 119), respectively (heavy black lines), and so forth.

For readers who want to duplicate the climate match results, the USGS has published a data series report with data used for modeling and the equations corresponding to these lines (*http://pubs.usgs.gov/ds/579/*) (Jarnevich *et al.* 2011), but the graphical representations in Reed and Rodda (2009) provide the same information with the precision that is appropriate for the use of these values. Use of these values with greater precision would not be appropriate given the conceptual and scientific

uncertainties that attend state-of-the-art implementation of climate matching.

Comment PR2: The data used for the risk assessment seems fair. This reviewer, however, was not convinced that the assignment of low, medium, and high establishment and consequence scores was sufficiently objective or transparent. There appear to be high levels of uncertainty involved in the process (pp. 253, 259: Reed and Rodda 2009). Though there is not really an alternative with the amount of data available, the approach would be more acceptable if it was transparent (what constitutes each level of certainty and how one decides on high, medium, or low for each contributing factor).

Response PR2: The risk assessment process allows for analyzing, identifying, and estimating the dimension, characteristics, and type of risk. By applying analytical methods while acknowledging the assumptions and uncertainties involved, the process allows the assessors to utilize qualitative and quantitative data in a systematic and consistent fashion. The assessment strives for theoretical accuracy while remaining comprehensible and manageable, and the scientific and other data compiled for each snake species in the bio-profiles is organized and recorded in a formal and systematic manner. The assessment provides a reasonable estimation of the overall risk. The authors were careful to ensure that the process clearly explained the uncertainties inherent in the process and to avoid design and implementation of a process that reflected a predetermined result. Quantitative and qualitative risk assessments should always be buffered with careful professional judgment. If every statement was certain, we would not need a risk assessment. The need to balance risks with uncertainty can lead assessors to concentrate more on the uncertainty than on known facts that may affect impact potential. Risks identified for nonnative invasive large constrictor species (and other nonnative invasive species besides large constrictors) in other regions often provide the justification in applying management measures to reduce risks in regions where the species have not yet been introduced. Thus, risk assessments should concentrate on evaluating potential risk.

Uncertainty, as it relates to the individual risk assessment, can be divided into three distinct types: (a) Uncertainty of the process—(method); (b) uncertainty of the assessor(s)—(human error); and (c) uncertainty about the organism—(biological and environmental unknowns). All three types of uncertainty will continue to exist regardless of future developments. The inferential estimation of organism risk can be rated using high, medium, or low. The biological and other information assembled under each element will drive the process. This forces the assessor to use the biological information as the basis for his or her decision. Thus, the process remains transparent for peer review. The high, medium, and low ratings of the individual elements contributing to the probability of organism establishment (such as organism with pathway, entry potential, colonization potential, and spread potential) cannot be defined or measured—they have to remain judgmental. This is because the values of the elements contained under ''Probability of Establishment'' are not independent of the rating of the ''Consequences of Establishment.'' Specific traits or biological characteristics were assessed for each snake species to arrive at each high, medium, or low rating. The strength of the analysis is not in the element-rating but in the detailed biological and other relevant information that supports them. Reed and Rodda (2009) followed the ANSTF 1996 (see Lacey Act Evaluation Criteria section above for explanation of this method) guidelines for combining scores and noting that certainty levels for each component of the process were followed by the risk assessors. The logic that was applied to develop every step of the risk assessment analysis can be found in Chapter Ten of Reed and Rodda (2009).

Comment PR3: Jacobs *et al.* (2009) elevated the Burmese python back to full species rank (that is, the form was historically described as *Python bivittatus,* then lumped with *P. molurus,* and then upon recent reevaluation, elevated back to full species rank). Climate data for *P. molurus* should, therefore, not have been used to project the area potentially suitable for *P. bivittatus,* a different species.

Response PR3: Jacobs *et al.* (2009) presented one side of an argument that has been debated for almost 100 years; they argued for full species status, but did not have the authority to declare their preference to be a fact. Other biologists reject that opinion (which depends not only on the unresolved definitions of species and subspecies, but on the biological and genetic facts pertaining to this specific population, which are not known). Jacobs *et al.* (2009) added new information on some insular forms but did not present new data on the key question being contested, which is whether genes are periodically or regularly exchanged between the populations usually described as *P. m. molurus* and *P. m. bivittatus.* In the absence of decisive information on that crucial question and on the question of competitive interactions between the two forms, it would be inappropriate to assume that the ecological behavior of *P. m. bivittatus* is independent of that of *P. m. molurus.* Furthermore, even a finding of ecological independence of *P. m. bivittatus* would not appreciably alter either the cold tolerance of the species or the likelihood of its establishment in the United States, which were the primary uses of this information in the risk assessment (Rodda *et al.* 2011). The assertion that the Burmese form shows less cold tolerance than the Indian form is not supported by the peer-reviewed literature.

Comment PR4: The Pyron *et al.* (2008) paper offers a more sophisticated and scientifically main-stream analysis that predicts virtually no expansion of the python population in Florida. The Pyron *et al.* (2008) paper very clearly and persuasively describes the flawed result in the Rodda *et al.* (2008) paper and offers a superior alternative analysis.

Response PR4: A paper by R. Alexander Pyron, Frank T. Burbrink, and Timothy J. Guiher, ''Claims of potential expansion throughout the U.S. by invasive python species are contradicted by ecological niche models,'' published in PLoS ONE online in August 2008, was published after the Rodda *et al.* (2008) paper. In a response to a complaint from the public to USGS, a panel composed of representatives from the USGS and the Service was convened to review an information quality appeal and address concerns about ''unwarranted assumptions and defective methodologies.'' The panel determined that the Rodda *et al.* (2008) paper met the requirements of independence, with two of the three peer reviewers coming from outside the USGS, as well as having an internal supervisory review. Based on this affirmation of peer review, the panel agreed that it was unlikely that there were ''unwarranted assumptions or defective methodologies.'' The panel considered the Rodda *et al.* (2008) and Pyron *et al.* (2008) papers as a good example of ''dueling models'' and agreed that such disagreements were well within the tradition of scientific dialog where different points of view could be worked through the scientific method. Such differences were not ''incorrect,'' rather they were critical to the evolution of scientific thought. Because a later-published paper (in this case Pyron *et al.* 2008) differs from a

previous paper (Rodda *et al.* 2008) does not mean the previous paper should be changed. A new paper published by the USGS (Rodda *et al.* 2011) continues the dialog and elucidates scientific concerns with Pyron *et al.* (2008). Rodda *et al.* (2011) demonstrate that the Pyron *et al.* (2008) result was largely a product of erroneous data input and incorrect use of the MaxEnt modeling program and that MaxEnt models based on climatic variables for Burmese pythons as used by Pyron *et al.* (2008) are highly unstable and statistically questionable. Please see ''Need for the Final Rule'' section above for more information on the differences between the two models.

Comment PR5: The term ''zoological'' is ambiguous and could lead to a potential loophole for those activities for which permitted importation could be allowed, hence, any activity pertaining to these snakes could be claimed to be ''zoological.''

Response PR5: This rulemaking addresses whether the identified species of large constrictor snakes qualify as injurious and, therefore, should be added to the list of injurious reptiles. The rule does not address under what circumstances a person may qualify for exception to the importation or interstate transportation prohibitions under the zoological purposes provisions. Therefore, this comment is outside of the scope of this rulemaking.

Public Comments

We reviewed all comments received from the public particularly for substantive issues and new information regarding the proposed rule to list the nine large constrictor snakes. We consolidated the following comments and our responses into key issues that are not in any particular order. We are also referring to only the four species in this final rule unless otherwise appropriate to include the other five species for the comments and our response to comments.

Health and Welfare of Human Beings

(1) *Comment:* Some people have been killed and more have been injured in the United States by nonnative large constrictor snakes that were kept as pets.

Our Response: One commenter submitted a list of 179 reports that included accounts of human injuries and fatalities from nonnative constrictor snakes, nonnative constrictor snakes that escaped or were spotted in the wild, and nonnative constrictor snakes kept in inhumane conditions that were reported in the media that occurred in the United States between 1980 and 2010. The accounts included reports of Burmese pythons, African (rock) pythons, reticulated pythons, boa constrictors, green anacondas, and yellow anacondas, and unidentified large constrictor snakes. The list contains accounts from 39 States, including Alaska and Hawaii. Of the 179 total reports, 21 were attacks on people, 13 of which resulted in human fatalities. Burmese pythons reportedly attacked eight of those people, resulting in four deaths. African (rock) pythons (not distinguished by species) reportedly attacked one person fatally. Pythons of undeclared species reportedly attacked seven people, with five resulting in death. One unidentified constrictor reportedly wrapped around a motorist's neck and caused an automobile crash. Another commenter sent an additional report of a pet python (not identified to species) that killed a child in Minnesota (date unknown).

We acknowledge that there have been reports of deaths and injury due to encounters with nonnative large constrictor snakes, but the accounts identified by the commenter involved snakes held in captivity. We do not know of any free-ranging nonnative large constrictor snakes that have injured or killed anyone in the United States. Human fatalities from nonvenomous snakes in the wild are rare (Reed and Rodda 2009). An indirect risk is that large snakes may stretch across roads to obtain heat from the pavement on cool days, posing a hazard to motorists who swerve to avoid hitting them (Snow *et al.* 2007; Harvey *et al.* 2008). Please see ''*Potential Impacts to Humans''* in each species above for further information.

(2) *Comment:* The actual physical danger that these snakes pose to humans and public safety has been grossly overstated, and there have only been 12 human fatalities attributed to these snakes since 1980, an average of 0.4 deaths per year are attributed. Those fatalities are usually a direct result of either improper care and handling of the animal, or feeding-related errors on the part of the keeper or pet owner.

Our Response: We agree that, while there have been 14 human deaths that we know of since 1980, this number is small relative to other causes of death. We do not wish to overstate the risk to public safety. We agree that the preeminent issue is not one of public safety, because we know of no large constrictor snake attacks in the United States from free-ranging snakes. We also note that, in their native ranges, reports of snake attacks on humans in the wild are rare, although they have occurred (Reed and Rodda 2009). However, the remoteness of the native ranges of the any of the species may preclude deaths from being reported. Reed and Rodda 2009 state that virtually all known human fatalities are associated with pet manipulation. However, Snow *et al.* (2007) and Harvey *et al.* (2008) also noted that large constrictors crossing roads could cause traffic accidents. In general, we agree that the risk to human safety is not in itself a substantial factor in listing any of these species as injurious.

(3) *Comment:* Boa constrictors should be removed from the rule. These snakes have never killed their keepers, nor have they killed anyone else. There has never been a documented human death by a boa constrictor.

Our Response: Taking full account of public comments and relevant factors, we have not listed boa constrictors at this time. We will address this comment in more detail when we publish a determination of whether this species should be listed as injurious.

Large Constrictor Snakes as Pets and Hobby

(4) *Comment:* Most people in the reptile hobby who choose to own these larger species are very responsible and do well in keeping their pets and investments healthy and safe, and this includes preventing their escape. It does not stand to reason that the actions of this very limited amount of negligent owners should affect millions of responsible pet owners.

Our Response: While we do not dispute that most constrictor snake owners try to be responsible, the volume of imports and domestically bred snakes is so large (averaging 49,941 annually for the nine proposed species and 12,741 for the four species in this final rule; see our Final Economic Analysis, Table 8) that accidents may happen resulting in snakes escaping or snakes could be intentionally released. Shipping containers may be damaged—and live snakes able to escape—anywhere between the port of import and the destination of the pet owner's home. In that case, the problem could arise before the pet owners acquire the animals.

Another consideration is the risk involved with transporting large, powerful snakes. While keeping a snake in a sedentary home cage may be not in itself be a difficult task, the situation may change when a 20-ft (6-m) snake weighing 200 pounds (91 kg) is transported in a car to a veterinarian. Unless the snake is transported in an escape-proof cage from the house to the automobile to the veterinarian, snakes may find more opportunities for escape. Conversely, small snakes may escape

more easily than large ones because they are more likely to be transported casually, such as carried for show. For example, a boa constrictor that was transported around on its owner's neck on a Boston subway escaped and survived for a month on the heated train in January 2011 before being captured (Associated Press 2011).

We have based our determination on our evaluation of injuriousness to wildlife and wildlife resources and the likelihood that any of the four large constrictor snakes could escape, become established, and cause harm.

(5) *Comment:* These snakes are not injurious wild animals. They are domesticated pets.

Our Response: We recognize that many snakes are kept in captivity with no negative incidences and that they seem tame. However, the fact that various species of wildlife may be kept as pets does not remove these species from the scope of U.S. wildlife laws. Under the injurious wildlife provisions of the Lacey Act (18 U.S.C. 42), all four of these species are wild. Therefore, we have the authority to list all of the four species of constrictor snakes once we determine that they are injurious. We base our determination as injurious on their effect on any one of the following: the interests of human beings, agriculture, horticulture, forestry, wildlife, or wildlife resources of the United States.

(6) *Comment:* I have kept more of these animals than anyone you will ever meet, and I can assure you, they are not injurious in any way.

Our Response: We recognize that there are various meanings of ''injurious.'' However, under the Service's authority, the Lacey Act (18 U.S.C. 42), and for the purpose of this rule, injurious wildlife are wild mammals, wild birds, amphibians, reptiles, fish, crustaceans, mollusks, and their offspring or gametes that are injurious to the interests of human beings, agriculture, horticulture, forestry, wildlife or wildlife resources of the United States. A wildlife species does not need to be injurious to all of the above interests to be listed. If a species is injurious to wildlife or wildlife resources of the United States (including its territories and insular possessions), we have the authority to list that species.

(7) *Comment:* We agree that ownership of certain animals should be restricted; however, we feel that banning the species *Boa constrictor* fails to address current concerns, is unnecessarily restrictive, and counter-productive. This species also represents the largest portion of the nine species listed in the proposed rule.

Our Response: Taking account of public comments and relevant factors, we have not listed *Boa constrictor* at this time. We will address this comment in more detail when we publish a determination of whether this species should be listed as injurious.

(8) *Comment:* This rule will destroy the ability of animal hobbyists, who are our future biologists and conservationists, to explore and learn about these specific animals, thus limiting exposure to the natural world at large.

Our Response: The commenters did not explain how the rule will destroy the ability of animal hobbyists to learn about these animals. Hobbyists will still be allowed to keep their snakes and offspring and to acquire additional ones within their State (and consistent with their State's own laws). The long lives of these species improve the chances that the hobbyists will have their pets for one or more decades, generally much longer than amphibian and tropical fish hobbyists. Hobbyists still have many other species of snakes and other reptiles to choose from that are not listed as injurious. We hope that, with this rule, future biologists and conservationists will learn about the ecological role of these species in their native lands and in lands where they become invasive.

Unprecedented Regulation

(9) *Comment:* It is unprecedented that a ban be placed on a group of animals that is so prevalent in the pet industry and kept by so many hobbyists.

Our Response: We agree that we have never listed any species that is so prevalent in the pet industry as some of these large constrictor snakes. However, the Lacey Act does not preclude listing a species that is prevalent in the pet industry, provided that the species meets the criteria of injuriousness. In addition, this regulation is not a ban on possessing any of the species. States, however, independently from this rule, may have their own restrictions, and these restrictions may be more stringent than this Federal rule. In other words, individual States may ban possession of any of these species. This final rule only establishes a prohibition against importation and interstate transportation of listed species without a permit. Furthermore, only one of the species that we are listing (Burmese python) is common in the pet trade; the other three constrictor species are rarely or not traded. Lastly, the most commonly imported constrictor snake in the pet industry by far—the ball python (*Python regius;* 78.6 percent of the constrictor snake species reviewed in our economic analysis)—is not being listed as injurious.

Other Animals More Injurious

(10) *Comment:* A better argument based on safety and health statistics could be made to ban horses or dogs, as the average American is more likely to be injured or killed by either of those animals than any reptile. Certainly there are other species such as feral cats, dogs, rats, pigeons, starlings, and pigs, that each cause more damage to the environment of South Florida.

Our Response: As the commenter correctly points out, many species of feral domesticated animals are considered invasive and have caused harm to humans and natural resources in south Florida and other parts of the United States. However, the agency has only the authority to list ''wild'' birds and ''wild'' mammals as injurious wildlife where, under section 42(a)(2) of 18 U.S.C., the term ''wild'' is specific to any animals that, whether or not raised in captivity, are normally found in a wild state. Dogs, cats, and horses are considered domesticated animals under 50 CFR 14.4 regulations and, therefore, cannot be listed as injurious wildlife.

This rule is in response to a petition to list one of the largest constrictor snakes in the world. Based on the best available information, we have found that the four species covered by this final rule are injurious to human beings, to the interests of agriculture, or to the wildlife or wildlife resources of the United States. This does not mean that we believe these snakes to be the most injurious of all wild animals.

Effort to Ban Pets

(11) *Comment:* This snake ban opens the door to many other animals being banned. If this rule is passed, then next it will be foreign reptiles all together, followed closely by a different ban, followed by an eventual ban on reptiles, period. Next it will be cats, dogs, fish, and birds.

Our Response: This rule does not ban possession of any species. As stated above in the **SUMMARY**, the rule prohibits only the importation and interstate transportation. This is the only authority provided to the Secretary of the Interior by Congress under the injurious wildlife provisions of the Lacey Act (18 U.S.C. 42). Three of the four species of large constrictor snakes are already in captivity in the United States and are available for acquisition within each State (unless otherwise regulated by your State's laws). In addition, any species under

consideration for listing as injurious is evaluated on a case-by-case basis, using all available information relevant to whether it is or is not injurious. Therefore, this rule does not set up a trend to ban ownership of any particular species or groups of species. Second, the Lacey Act does not provide the authority to list domesticated mammals and birds as injurious. Section 42(a)(1) of the Lacey Act specifies that we may list only ''wild mammals'' and ''wild birds,'' as opposed to domesticated mammals and domesticated birds. This means that we cannot list domestic dogs, cats, horses, certain species of birds, and so on. However, all reptiles are considered wild and can be considered injurious wildlife if they meet the listing criteria (see ''Lacey Act Evaluation Criteria section'' above for explanation). Domesticated animals are defined in 50 CFR 14.4.

Effect of Rule on Welfare of Large Constrictor Snakes

(12) *Comment:* This rule change basically represents a death sentence for millions of reptiles in the United States. Many of these snakes will be abandoned and set free where they will surely suffer and die.

Our Response: We disagree that this rulemaking will result in the death of millions of reptiles currently being held in captivity. We have been clear that all owners of any of the snakes listed as injurious will be allowed to keep them under this rule. For animals already in the United States, this rule only restricts shipment between States. We emphasize that it will be lawful for pet owners to keep their pets (if allowed by State law). We have no reason to believe that responsible, caring owners will kill or release them into the wild because they can keep them. Breeders may still be able to export through a port in their own State (see response to Comment 47 for exporting explanation). For breeders who can no longer export, they may find buyers in their own State. For information on how to find a home for a snake that a person can no longer keep, we posted some suggestions on *http://www.regulations.gov* at the time the proposed rule was published on March 12, 2010 (separate file ''Questions and Answers''). We explained:

''If you are in a position where you must give up your pet [large constrictor snake], and zoos and humane societies have declined your efforts to donate the animal, you should contact either your State fish and wildlife agency or your local U.S. Fish and Wildlife Service office. These two government agencies are the legal authorities that co-manage fish and wildlife in this country, and they can help you to resolve this issue. The U.S. Fish and Wildlife Service is working with States around the country and the pet and aquarium industry through a campaign called Habitattitude™ to help pet owners adopt environmentally responsible actions for surrendering their pets, such as:

- Contacting the retailer for proper handling advice or for possible return;
- Giving or trading with another pet owner;
- Donating to a zoo, humane society, nature center, school, or pet retailer; and
- Contacting a veterinarian or pet retailer for guidance on humane disposal of animals.''

For those pet owners who move to another State, we also suggest contacting a local herpetology club or a national reptile organization with local members to find someone to adopt those constrictor snakes.

(13) *Comment:* What would happen to the businesses operated by thousands of families in the industry with this rule? It is doubtful that those animals would be humanely euthanized (due to finances and ethical objections), so those animals would either be subjected to inhumane practices or become liabilities to those persons who have them. It would be a cruel irony that the animal rights agenda of eliminating these animals from the pet trade would result in the destruction of millions of animals that have proven to be nondangerous.

Our Response: Family businesses will still be able to operate, provided they either sell within their State or have a port of export directly from their State (see response to Comment 47 for exporting explanation). Businesses may switch to other species of snakes that are not listed. Please see our response to Comment 12 on alternatives for disposing of animals that you can no longer keep. Owners are encouraged to find legal alternatives, such as trading species with someone in their own State who has a species that is not listed and who is able to keep a listed species in that State. We emphasize that it will be lawful for pet owners to keep their pets (if allowed by State law) but unlawful to release them or transport them across State lines.

Regarding the statement that these snakes are nondangerous, we emphasize that we distinguish between ''nondangerous,'' which we assume the commenter means ''does not harm people,'' and ''injurious,'' which has a different meaning under the Lacey Act. We agree that these four species of snakes pose only a small risk of harm to people; however, we are listing them for their injuriousness.

(14) *Comment:* Thousands of snakes' lives will be spared because the majority of reptiles die during capture from the wild or subsequent transport or within the first year of captivity. Banning the importation of these species will ensure that many snakes will not fall victim to the harsh conditions of being shipped overseas.

Our Response: From the Service's Law Enforcement Management Information System (LEMIS) data, we estimate that approximately 96,000 snakes of the four species were imported from 1999 to 2010. Some were probably captured from the wild. Imported snakes are then usually sent to animal dealers before being shipped to pet retailers. Finally, the snakes are typically acquired at a pet retailer and transported to a home or other location. Large constrictor snakes may become ill, injured, or die during transport. Since this listing would place prohibitions on importation and interstate movement of the four species, it is reasonable to assume that fewer animals will therefore die from importation and interstate transport. Although animal welfare is regulated by the Federal government for some taxa (that is, primarily warm-blooded species) under such laws as the Animal Welfare Act, this was not a factor considered in our injurious wildlife evaluation and did not influence our final determination.

Benefits of Having Large Constrictor Snakes in the United States

(15) *Comment:* While the Burmese pythons do consume native species such as wading birds, waterfowl, muskrats, rabbits, opossum, raccoons, and even bobcats and white-tailed deer, they are probably just as likely to prey upon the more common exotic species, such as feral cats and dogs, nonnative rats and mice, starlings, pigeons, collared doves, spiny-tailed iguanas, green iguanas, cattle egrets, and muscovy ducks.

Our Response: We agree that large constrictor snakes, such as Burmese pythons in the Everglades, can potentially prey on other nonnative species, and that this could be beneficial to native wildlife. Snow *et al.* (2007) reported that domestic cats, Old World rats, domestic chickens, and domestic geese have been found in Burmese python digestive systems in Florida. However, of greater conservation and management concern are the effects that invasive species pose to native populations of wildlife and wildlife resources—in particular, those that are threatened and endangered or otherwise

at risk of extinction (Clavero and Garcia-Berthou 2005). Reed and Rodda (2009) listed a total of 64 State-listed threatened or endangered species at risk from Burmese pythons or other large constrictors in Florida alone. This includes the highly endangered Key Largo wood rat, which has been found in the stomachs of Burmese pythons, and whose population may number only in the hundreds. As demonstrated in our injurious wildlife evaluation, we believe that the risks posed by large constrictor snakes to native wildlife and wildlife resources far outweigh the possible benefits they may have as predators of nonnative wildlife in the United States. We do not have information on what the other feral constrictor snakes have eaten. The negative effect of predation on rare species is greater than the effect on exotic species because any decrease in populations of rare species makes it less likely for those populations to rebound.

(16) *Comment:* Some commenters own boa constrictors from regions of Brazil that no longer have boa constrictors due to deforestation. Many of the reptiles present in captive collections are representative of vanishing bloodlines of wild populations of these species. They are conserving wild species.

Our Response: One subspecies covered under this listing is known to be significantly imperiled: the Indian python (*Python molurus molurus*), which is granted a higher level of protection under CITES than most other constrictor species or subspecies (all species in the family Pythonidae are listed in at least Appendix II; several are listed in Appendix I). Indian python (*Python molurus molurus*) is listed as endangered under the U.S.'s Endangered Species Act (ESA) because it is endangered in its native range. Listing these species as injurious will not impact legitimate conservation efforts that U.S. breeders can carry out for species that may be negatively impacted by natural and man-made events within their native range. In general, the Service supports ex-situ conservation efforts, such as captive breeding, when done in a scientific manner for the conservation of a species within its native range. The Act also still allows export of listed species that could be used in re-introduction activities or other in-situ conservation efforts. The Act allows for the issuance of permits authorizing interstate movement or imports for scientific or zoological purposes, including conservation breeding operations.

(17) *Comment:* Many keepers I know are concerned about the worldwide decline of species, and a distributed network of determined keepers may prove the only hope for the survival of several of the species addressed. For example, the natural population of the Burmese python has been on a steady decline due to habitat loss.

Our Response: The Service strongly supports ex-situ conservation programs that are scientifically designed to provide conservation benefits to species in their native range. The listing of these species as injurious will not prevent conservation breeding programs run by dedicated herpetologists and hobbyists from providing a conservation benefit to any of these species (see our response to Comment 16).

State Issue (Not Federal Government)

(18) *Comment:* The constrictor snakes should be listed by individual States, not by the Federal Government.

Our Response: Many commenters suggested that we should not list any of these species and we should allow the States to regulate these species as they see fit. The Service is responsible for implementing and enforcing laws such as the Lacey Act, under which authority we are listing these species. We believe implementation of the injurious wildlife provisions reflects the shared State-Federal governance of invasive species challenges facing the United States as originally intended by Congress. Since these snakes have been found to be injurious to human beings and to wildlife and wildlife resources, we believe federally regulating movements of these four species of constrictors into the United States and between States and territories is an important step in limiting their effects. The States and other jurisdictions within the United States retain the ability to regulate these species as they determine appropriate within their boundaries.

(19) *Comment:* Mere presence of a species does not equate the threat of harm, especially when individuals are cited in environments in which they cannot establish. If this is solid justification for listing a species as injurious, the Service will need to list every organism that has ever—and is ever—spotted outside of captivity in the United States.

Our Response: The Service undergoes a rigorous evaluation before determining that any species is injurious. Mere presence does not qualify a species as injurious. The Service evaluates each species based on numerous criteria (see ''Lacey Act Evaluation Criteria'' section above). We also consider the potential to survive, become established, and spread; likelihood of release or escape; impact to threatened and endangered species and their habitats; and so on. We have determined that the four species of large constrictor snakes covered by this rule are injurious.

Rule Will Not Be Effective

(20) *Comment:* This regulation change will not make the established population of Burmese pythons in Florida disappear.

Our Response: We agree that this rule alone may not reduce the population of Burmese pythons in Florida and certainly not eliminate it. Similarly, it may not reduce or eliminate the populations of northern African pythons in Florida. We do not expect that. However it should reduce the populations of those species in conjunction with control or management programs. Furthermore, we do believe the rule will be effective in other ways. See also our responses to Comments 21 and 22.

(21) *Comment:* Such a rule change disallowing the interstate trade of these species is counter-intuitive and a non sequitur to ban trade between every other State in the Union.

Our Response: From our evaluation of each species (under section ''Factors That Contribute to Injuriousness for Burmese Python'' and the other species above), we believe that prohibiting the interstate trade of these species along with prohibitions of further importations will reduce the risk of them becoming more widespread to new areas of the United States, including the territories and insular possessions. Please also see ''Need for the Final Rule'' section above.

(22) *Comment:* The Lacey Act has never stopped the introduction or eradicated the feral populations of any invasive species, which makes it wholly ineffective in this case.

Our Response: The commenter is correct that no eradication of established feral populations has been accomplished merely by the listing of a species as injurious, but we did not expect that result. Merely preventing introductions of new individuals will not result in the eradication of existing populations (Burmese python and Northern African python). The most likely way for the injurious listing provisions to be successful is if they are applied before a species is present in the United States or in vulnerable parts of the United States. The two other constrictor snake species listed as injurious may be prevented from becoming established in Florida, as well as other vulnerable areas of the country. Furthermore, the purpose of listing the four species in all areas of the country is to prevent any areas of the country

that do not currently have the four species (see ''Potential Introduction and Spread'' sections for each species above) from becoming invaded. Fowler *et al.* (2007) discuss the effectiveness of the Lacey Act listings by looking at all of the species that are currently listed as injurious. They state that, ''None (0%) of the 7 species that were absent from the country at the time of listing have subsequently established populations, and two of the taxa that were present only in captivity (raccoon dog and brushtail possum) did not establish wild populations. [T]wo taxa that were established outside captivity at the time of the listing (European rabbit and Java sparrow) have not spread between states since listing.'' If the rule can prevent introductions to any vulnerable parts of the country, it will be effective.

Educational Use Curtailed

(23) *Comment:* The rule will impact educational outreach at zoos. Educators travel to neighboring States. Burmese pythons are a flagship species for these outreach education activities. Their impressive size and docile disposition make them ideal to provide the basis for explaining complex ecosystems. Providing an opportunity for children to closely view these animals is a tremendous opportunity for snakes and other wildlife, and helps break the cycle of persecution that has caused declines in many snake populations throughout the world. The Act as currently written requires strict and uninterrupted double containment for injurious species. The inclusion of these four taxa of snakes on the list of injurious wildlife will make the use of any of these forms in interstate education programs virtually impossible.

Our Response: Zoos around the country commonly use live animals at the zoo and off-site. The listing of the four species will not prevent such use within the home State of the zoo since these species, such as Burmese pythons, can continue to be used for education in the home State with no permit necessary and no containment requirements (unless there are State requirements).

However, if zoo personnel want to travel across State lines with one of the listed species, the Act would come into effect. The Act requires that the zoo obtain a permit to carry out any interstate movement of a listed species and the specimens being moved would need to be in double-escape-proof containers. Permit applications to carry out interstate movement of listed species for educational purposes can be submitted to the Service, along with an application fee of $25. This is a similar procedure used by zoological and educational institutions to obtain permits for threatened and endangered species, so the institutions may already be familiar with the process.

The commenter is correct that the double-escape-proof container is a requirement of the permit. Moreover, this requirement applies not only when the snake is being transported outside the zoo, but applies within the zoo as well. However, we have found that most zoos that are already permitted for other injurious species can easily comply with the requirements for a minimal extra cost over the standard housing requirements for the species. However, the containment of any injurious species is consistent with the preventative measures of the injurious wildlife provisions of the Lacey Act.

(24) *Comment:* The cost of specimen replacement to zoos will increase dramatically.

Our Response: The commenter provided no evidence that costs will increase dramatically or even at all. Most of the listed species are available by breeders in most States and can be obtained without a permit. If importation is needed, zoos may obtain an importation permit. The cost of a permit is $100 for importation, which covers the whole shipment, even for multiple species and individuals. The cost is $25 for a permit to transport or move animals from one exhibit to another within a permitted institution or between institutions that are already permitted to maintain the same injurious species. The commenter did not explain how often zoos replace specimens, so we do not know how much the cost will increase. Since most of these species have lifespans in captivity of 20 to 30 years (see ''*Biology*'' section of each species), we expect this will not be a frequent need. As for the cost of the snakes, the commenter provides no information that this will increase, nor do we know whether the price of these species on the market will increase, decrease, or remain unchanged. Furthermore, zoos may become a primary beneficiary of constrictor snakes from owners who decide to give up their pets because they are moving out-of-State or for another reason.

(25) *Comment:* The rule will impact our non-outreach collection, the permit preparation time, administrative costs, permit fees, and time delays will be a major hindrance to continuing the management of these species as part of the broader zoo network within the Association of Zoos and Aquariums (AZA). This will make replacing specimens in a timely fashion extremely difficult for our zoo and others. Ultimately, these species may have to be eliminated from our collections.

Our Response: As stated earlier, the rule does not affect intrastate movement of these species nor does it restrict ownership or even captive breeding. It is anticipated that most zoos that already have these species have the capacity to either breed animals already held at the zoo or obtain additional specimens within their State. Zoos may become a primary beneficiary of constrictor snakes from owners who decide to give up their pets because they are moving out-of-State or for other reasons. If this is not sufficient, the Act does have provisions for obtaining specimens from other States or even from foreign sources. The Service recognizes that the permitting process imposes some increased administrative costs and is committed to exercising available flexibilities under its Lacey Act permitting authority to minimize permit application preparation and processing times and to reduce administrative costs. For example, we will do so by issuing permits that authorize multiple interstate movements for educational purposes over extended periods. The Service is committed to finding ways to minimize the time it takes for facilities to obtain authorization for interstate transport or importation so zoos can continue their active management of these species. We do not believe that this listing would result in any zoo having to eliminate these species from their collections.

(26) *Comment:* With my collection, I do school and library visits to give kids who generally do not get the chance to see these animals up close the experience to see them. This in my mind is one step needed in educating people on wildlife conservation as well as responsible pet keeping. I take large snakes and lizards to the kids from all over the world where they would normally never be able to see them. If you ban these reptiles, my life dream will be ruined and I will not be able to continue my life mission to show people these amazing creatures up close.

Our Response: We recognize that many people present large and small live animal programs in communities all over the country. We agree that such programs are important to teach conservation and the value of wildlife. However, this new rule will not prevent these programs from occurring. Providing no State lines are crossed, you can continue your educational programs without the need for a permit from the Service. Furthermore, educators may apply to the Service for a permit to

transport these species across State lines for educational purposes. Lastly, educators can also teach conservation principles by using snake skins, photos, and other tools to teach people about the problems of releasing nonnative species in the United States. We believe conservation can be taught without the exact live specimens of every animal being discussed.

(27) *Comment:* This rule will eliminate a reptile culture for future generations to share in.

Our Response: The commenter did not explain how the reptile culture would be eliminated. This rule will not result in the elimination of reptile ownership or interest in reptiles. The listing does not prohibit ownership of these species or any other reptile species. While the listing will probably result in fewer specimens of these species being available commercially because the listing would reduce the economic incentive for some current breeders from continuing to breed the species, we do not believe that all captive breeding would stop. It is an unfortunate aspect of the need to protect our native wildlife and ecosystems by listing these species as injurious that some people or organizations that currently possess these species would be affected.

Violations and Penalties

(28) *Comment:* If enacted, this rulemaking would have the unprecedented effect of putting as many as a million American citizens in possession of injurious wildlife and subject to potential felony prosecution under the Lacey Act. It could effectively create a new class of criminal out of law-abiding American citizens. This regulation would turn hobbyists' current activities into a Federal crime.

Our Response: These listings under the Lacey Act will have no effect on the majority of owners of these four species. Pet owners who keep their snakes within their own State will not be affected. Examples of owners who will be affected: (1) People who take their pets to a veterinarian in another State; (2) people who wish to transport their pets across a State line, such as if the owners are moving; and (3) people who keep large constrictor snakes as a business and sell to other States. However, many States have laws against possessing wild animals, and these snakes may not be allowed into those States by State law anyway. Examples are Hawaii (all snakes), Florida (for Burmese python, Northern and Southern African pythons, and other species), Iowa (North African python and all *Eunectes* spp.), and New York (Burmese and North African pythons) (see our Final Environmental Assessment 2012). State laws may be more stringent than Federal laws and should not be confused with Federal laws. Our response to (1) above is that pet owners are free to locate a veterinarian in their own State. The pet industry and veterinary organizations could work together to help the owners of the four species to locate willing veterinarians within a reasonable driving distance. Our response to (2) above is that people who are moving should seek alternatives such as those suggested in our response to Comment 29.

The subject of violations under the Lacey Act has frequently been misunderstood and caused undue consternation among animal owners. We will explain here how the Lacey Act will address the new injurious listings. A person would violate the injurious wildlife provisions of the Lacey Act (18 U.S.C. 42) if he or she did one of the following with any one of the four constrictor species listed as injurious: (1) Transported between the States, the District of Columbia, Hawaii, the Commonwealth of Puerto Rico, or any territory or possession of the United States by any means whatsoever; or (2) imported into the United States from another country. In either case, notwithstanding there may be other laws being broken by the action that we are not considering here, these violations are considered misdemeanors and carry penalties of up to 6 months in prison and a $5,000 fine for an individual or a $10,000 fine for an organization under 18 U.S.C. 42. If, however, another law was also broken, the violation could become a felony under 16 U.S.C. 3372, which carries higher penalties. For example, if the owner of a Burmese python in Florida didn't have a permit as required by Florida State law, and that person transported the snake to another State, then the fact that the State law was broken in the process of transporting it across State lines makes it a title 16 violation. Therefore, while it may put as many as a million American citizens in possession of injurious wildlife, none will be in violation of the Lacey Act automatically. Furthermore, unless these people break laws under title 16, they would not be subject to potential felony prosecution under the Lacey Act. Hobbyists' current activities would not become crimes provided their snakes stayed in-State or were exported directly out of the country from a designated port within their State's borders.

Unintended Consequences

(29) *Comment:* Pet owners will release their snakes and the problem will be worse. The Lacey Act will do nothing to help the problem; if anything, it would have an adverse effect on the environment. Snake breeders who had been fully responsible beforehand may release their now worthless investments into the wild in retaliation of the rule change. Caring snake owners that cannot move across State lines with their beloved pets may instead release them as a means of avoiding forced euthanasia. The trust of responsible snake owners would be debilitated, and a large portion of snake owners deliberately becoming irresponsible poses a much larger risk than a few isolated irresponsible owners.

Our Response: Many commenters stated that responsible owners would release or euthanize their snakes if this rule passed. We do not believe that this would be the case since pet owners will still be allowed to keep their snakes and sell or give them away within their State. We have posted some suggestions on *http://www.regulations.gov* at the time the proposed rule was published on March 12, 2010 (see separate file ''Questions and Answers''), for how to find a home for a snake that a person can no longer keep. Please see our response to Comment 12, where they are repeated.

With social networking so available on the Internet, a person moving to another State could possibly find a reptile enthusiast in their current State to adopt the pet. When the person moved to the new State, the person could contact reptile enthusiasts in the new State to see if any snakes were available for adopting. While that is not the same as keeping the same snake, it does present a responsible alternative.

We believe that most people will choose to keep their snakes and also, of those owners who can't because they are moving to another State or similar situation, they have options as presented above. While some misinformed pet owners or breeders might release their snakes, we do not believe that this will be widespread. The Service believes that the potential illegal conduct of a few irresponsible pet owners should not cause us to refrain from listing species that we have determined to be injurious.

(30) *Comment:* This rule will create a lucrative black market in the trade of these nine species that will cost billions in tax dollars to enforce. Ultimately the animals will suffer. There will always be unscrupulous dealers who will take advantage of prohibition.

Our Response: The commenter provides no supporting evidence that a black market will be created. Therefore, we assume that the commenter is basing the statement on historical events with other species. We do not know if a black market will be created. We agree that there will always be unscrupulous dealers who will take advantage of people. However, we believe that the pet owners prefer to be law-abiding citizens and would find legal ways of dealing with new situations. We should note that this comment, as all others, was based on the proposed rule with nine species of constrictor snakes.

(31) *Comment:* This rule will cause airlines to embargo snakes. They will refuse to transport them.

Our Response: We hope that this rule does not influence airlines to implement an unnecessary embargo on transporting snakes within the injurious wildlife provisions of the Lacey Act (that is, intrastate or with a permit). It is our understanding that, unrelated to this rule or any injurious wildlife listing, there are some carriers that have declined to transport live animals or specific dangerous animals. Shippers with the appropriate Federal permits, specifying how the animals should be transported in escape-proof containers, should be able to find a carrier.

Environmental Threat

(32) *Comment:* The peer-reviewed research (''Giant Constrictors: Biological and Management Profiles and an Establishment Risk Assessment for Nine Large Species of Pythons, Anacondas, and the Boa Constrictor'') quantified the ecological risk that nine species of large constrictor snakes pose to the United States, looking at both the probability that the snakes would become established and the resulting consequences. Burmese pythons will eat a wide variety of reptiles, birds, and mammals of all sizes, and can deplete vulnerable species.

Our Response: We agree that there is an environmental threat to native species in the United States, including the territories and possessions. We have explained this threat in our Environmental Assessment and in the sections *''Potential Impacts to Native Species (Including Threatened and Endangered Species''* for each species above). We concur that this threat is part of the justification for listing the four species as injurious.

(33) *Comment:* The Burmese python invasion is an ecological calamity in progress. It is directly undermining the multibillion-dollar, nationally supported Everglades restoration project because the monitoring and success of that project are tied to measures of native wildlife ''indicator'' populations, which are now being consumed and reduced by these human-introduced predators. Had the Service considered the risk of the Burmese python under its Lacey Act listing authority 20 years ago, the agency might have prevented this invasion.

Our Response: The South Florida Water Management District petitioned us to list the Burmese python in 2006 because the species was undermining their Everglades restoration effort. We agree that, if we had listed the species 20 years ago, the current problem might have been averted. This evidence gives further support to list the other three species of large constrictor snakes before this situation happens with other species or with Burmese pythons in other parts of the country.

Political Pressure

(34) *Comment:* Politics is running the process. This entire movement is driven by animal rights extremists with deep pockets and a political agenda, and not science and reason. It is designed to end the trade in nonnative wildlife.

Our Response: We disagree that politics is involved in this determination. We received a petition from the South Florida Water Management District in 2006 to list the Burmese python. They were concerned about the ecological danger posed by Burmese pythons to the health of the Everglades. In our effort to address this petition, we realized that other species of large constrictors were becoming increasingly commonly found in Florida, and, therefore, we expanded our evaluation to include other species. The Service has been criticized in the past for being too late in listing species as injurious. We took a proactive approach to prevent future problems.

The regulatory process to list the four species was guided by biologists. We received peer-reviewed scientific documentation (the risk assessment) from a separate bureau (see Response to Comment 35 on USGS politics). We also received comments from five independent peer reviewers on the proposed rule and supporting documents. This rule is an action to regulate the importation and interstate transport of four species of large constrictor snakes that have been found to be injurious. Much of the trade in these species of snakes can continue legally (except where States have their own prohibiting laws). We received tens of thousands of comments from both animal rights supporters and pet trade supporters. We considered the comments of all submitters equally.

(35) *Comment:* It is not hard to understand why the USGS and biologists would be strongly interested in seeing more species added to the Injurious Wildlife List. They have decades of experience getting funding for injurious snake research; they are expert at it. Because of this history and the fiscal incentives involved, there exists a tangible potential for bias, impropriety, and a lack of impartiality. Due to the obvious possibility of conflict of interest and bias, the USGS should have recused itself from the contract and funding to create this report. So far, the USGS ''report'' provides the only scientific evidence (if one can actually call it scientific) that would justify any Federal regulatory action regarding these nine tropical snake species.

Our Response: The Service, the National Park Service, and the USGS carefully segregated their roles in this rulemaking process so that policy objectives did not bias scientific results. USGS does not undertake any regulatory efforts associated with injurious wildlife so that it may concentrate specifically on the science of the issues. The Service and the National Park Service contracted with USGS to prepare the report on risk assessment because of USGS's extensive expertise on the subject. Part of this expertise comes from their similar work on brown tree snakes, listed by Congress as injurious in 1990. The risk assessment on the constrictor snakes provided an extensive review of the literature of the species, and while this information was used by the risk assessment authors to provide measures of risk on each species, the extensive literature review was also used separately by the biologists who wrote the rule. Therefore, the rule and the risk assessment were developed from independent scientific papers from authors all around the world.

In addition, the peer reviewers of the proposed rule and supporting documents state that the rule is scientifically justified and an appropriate step to protect native wildlife in the United States from the risks posed by the nine large constrictor snakes. The 2011 USGS document entitled ''Challenges in Identifying Sites Climatically Matched to the Native Ranges of Animal Invaders'' also underwent peer review before it was published. Please see also Comment 67 on the USGS peer review process.

(36) *Comment:* The rule was steered by the USGS.

Our Response: The USGS's role was to prepare one of the supporting documents (''Giant Constrictors: Biological and Management Profiles and

an Establishment Risk Assessment for Nine Large Species of Pythons, Anacondas, and the Boa Constrictor''). The rule was written by the Service, using the risk assessment document for its excellent summaries of the biology of the four species, as well as for its assessment of the risks. However, the Service uses the criteria set forth by the Aquatic Nuisance Species Task Force (ANSTF 1996) to determine risks and its own injurious wildlife evaluation criteria to determine which species should be listed. The Service seriously considered each species, using biological information compiled by the USGS risk assessment authors and other available information. Because the risk assessment authors did such a thorough job of comprehensively compiling literature (more than 600 references) on the nine species, we were able to utilize the report extensively for our own injurious wildlife evaluation of the four species in this rule. This compilation of references in one location greatly facilitated our evaluations but should not be construed that USGS influenced our determinations.

Misinterpretation of the Rule

(37) *Comment:* The government does not have the right to ban animals that are so widely kept as pets. It's unconstitutional. It is my constitutional right to be able to express myself and I do that through reptiles.

Our Response: Many commenters believed that the rule will ban possession of the four species of constrictor snakes. This is not true. An injurious wildlife designation prohibits importation into the United States and transport across State lines (including the District of Columbia and U.S. territories and possessions). Pet owners will be allowed to keep their pets, sell them, or give them away within their own State, if allowed by State law. No constitutional rights are being violated.

Confusion With S 373 (Senate Bill 373)

(38) *Comment:* S 373 should (or should not) be enacted.

Our Response: Many commenters cited S 373 as the action they were commenting on. We assume these commenters were referring to Senate bill 373, which was introduced by Senator Bill Nelson of Florida in February 2009. The bill passed a committee vote but received no further action in Congress and was not passed into law. The Service was called to testify at a hearing regarding this bill and to present background information. The bill is a separate but parallel action to the Service's rule to list the constrictor snakes. We can only address comments regarding our specific rule. To ensure their comments on S 373 are heard, the public should submit those comments to their Federal legislators. There are also two companion bills in the House: HR 2811 to ''include constrictor snakes of the species Python genera as an injurious animal,'' and HR 511 to add large constrictors to the ''injurious wildlife'' list under the Lacey Act (title 18 U.S.C. 42(a)(1)).

More Burdens on Service

(39) *Comment:* This proposal will most likely create more burdens on the already taxed Office [Division] of Management Authority and enforcement sections of the Service.

Our Response: Both the Division of Management Authority and the Office of Law Enforcement are fully prepared to handle any increase in work that may result from this rule. We anticipate that the rule will not generate a significantly large increase in permit applications being submitted or increase in inspections at the ports. Currently, the Division of Management Authority receives more than 6,000 applications and issues more than 20,000 permits annually. Based on other listing activities involving species that are traded more frequently than the listed constrictors, the Division of Management Authority anticipates an increase of no more than one or two percent annually.

While the listing of species as injurious that are already widely kept and sold as pets will present unique law enforcement challenges with respect to interstate transport, the interception of injurious wildlife to prevent both entry into the United States and spread of such species once they are in the country constitutes an investigative priority for Service Law Enforcement when such transport represents a threat to U.S. wildlife resources and habitat. The fact that this listing would create additional work for enforcement officers does not outweigh the ecological importance of addressing the problems created by the continued import and interstate transport of these snakes.

(40) *Comment:* Will the Department of the Interior properly fund this rule change when more pressing and immediate crises to the environment are happening?

Our Response: This comment is outside of the scope of the rule. The funding to support this rule change after it takes effect would be in the form of law enforcement and permit processing. Please see our response to Comment 39, which addresses those subjects.

(41) *Comment:* At our zoo, we are concerned that the permit process will be affected by causing a backlog of permit applications.

Our Response: The Service's Division of Management Authority recently conducted an extensive reorganization to specifically address how it is handling its workload. While processing time for any application can vary due to completeness of the application, current workload being handled by the Division, or seasonal variations resulting from climatic factors, the Division is committed to processing any injurious wildlife application in the most timely and efficient manner possible. We anticipate that there would be fewer than 100 applications (if nine species listed) requesting authorization to conduct activities under this rule, and applications would typically be completed within 30 days. Since any permit issued for interstate transport of a listed species is valid for 1 year or more and covers a specific geographic range where activities could occur, we do not anticipate that a 30-day processing time would result in any significant impacts to a zoo's ability to carry out educational work outside their State of operation.

Predecisional Proposed Rule

(42) *Comment:* The proposed rule is predecisional. It is prejudicially constructed and telegraphs a predetermined end.

Our Response: By the nature of a proposed rule (in general for all agencies), the agency publishes what it is proposing to be the regulation. Therefore, all proposed rules indicate the agency's position on a particular situation. A final rule may differ from what an agency proposes, but it may be exactly the same as the proposed rule. The purpose of the proposed rule is to obtain additional information, give the public notice of the proposal, and give the public the opportunity for comment. We review all the comments for new information and evaluation of our proposal, as we did for this rule. In this case, we received no information that changed our evaluation of the four constrictor species. We clearly stated in our proposed rule that ''We are evaluating each of the nine species of constrictor snakes individually and will list only those species that we determine to be injurious.'' Thus, we made it clear that we left it open for us to list fewer than nine species, or none at all, if none was determined to be injurious based on new information. The five other species in the proposed rule (reticulated python, DeSchauensee's anaconda, green anaconda, Beni anaconda, and boa

constrictor) remain under consideration for listing as injurious.

If an agency feels that it could benefit from additional information before proposing a rule, it may publish an advanced notice of proposed rulemaking (a Notice of Inquiry; NOI) to gather more information. The new information is used to develop a proposed rule. We published such a notice on January 31, 2008 (73 FR 5784), from which we received more information to apply to the proposed rule.

(43) *Comment:* The Service failed to make a good faith effort to gather new information.

Our Response: The Service provided ample notice and opportunity to comment on the proposed action. Here are examples of the opportunities provided by the Service to the public and stakeholders:

• The Service published a Notice of Inquiry in the **Federal Register** on January 31, 2008 (73 FR 5784), as an advanced notice of proposed rulemaking. It explained why we were considering listing the genera *Python, Boa,* and *Eunectes* (which included more species than the four that we are listing in this final rule), what information we needed, and how the public could submit information to us. We provided a 90-day comment period (ending April 30, 2008), which is a standard length of time.

• On February 29, 2008, we participated in a panel discussion arranged by the pet industry. Representatives of the Pet Industry Joint Advisory Council (PIJAC) were present. Our representative opened the discussion by stating: ''This Notice of Inquiry is an information gathering process. I really want to stress that this is NOT a proposed rule or action. As part of processing the petition we received to list Burmese pythons as injurious, we opened up this comment period to gather information on especially which species, particularly snakes such as the Burmese python, within these three genera might be a threat to native wildlife and wildlife resources. If there is a snake that has not yet been imported into the United States that might pose a threat to native wildlife, this information would be very useful. By the way, we worked with PIJAC in addressing some of the concerns, and we answered a short set of Q&As with Reptiles Magazine. Please take a look when you get a chance—*http://www.reptilechannel.com/reptile-news/conservation-and-legal/pijac-constrictor-regulations.aspx.*''

• We participated in several chatrooms with stakeholders on *http://www.pethobbyist.com* in February or March 2008.

• The Service was interviewed by PIJAC about the NOI, and the interview was posted by ReptileChannel.com in 2008 (*http://www.reptilechannel.com/reptile-news/conservation-and-legal/pijac-constrictor-regulations.aspx*). The Service explained why we were considering action, what information we were seeking, and how the public could provide their information. This interview is still posted as of this writing. When we were asked ''Why are you also requesting economic information?'' we answered, ''We currently have little information about the value of domestic trade in these species, and it is our responsibility as part of this process to gather a range of information on the species of interest. This includes economic data.''

• The Service was interviewed for a story on the constrictor snake NOI, and the story published in REPTILES magazine (Vol. 16, No. 5; May 2008).

• On March 12, 2010, we published in the **Federal Register** (75 FR 11808) the proposed rule to list nine species of large constrictor snakes, all of which were included in the genera from the NOI, and for which we asked for new information. We provided a 60-day comment period for the public (ending on May 11, 2010), also a standard length of time. We provided the proposed rule, draft economic analysis, draft environmental assessment, and risk assessment to the public on *http://www.regulations.gov.*

• The Service met with the Small Business Administration (SBA) on April 20, 2010, to discuss what information the SBA needed and what we needed. This meeting was within the public comment period for the proposed rule.

• The Service met with SBA on April 21 for a roundtable meeting with pet industry, zoo, and medical research representatives. This meeting was within the public comment period for the proposed rule.

• Because of several requests for an extension of the comment period, we added another 30-day comment period from July 1 to August 2, 2010 (75 FR 38069; July 1, 2010).

• We met with the SBA again on January 13, 2011, to discuss issues raised by SBA during the public comment periods.

In summary, the public has known since January of 2008 that we were considering listing these three genera, or species from them, as injurious. We provided a total of 180 days for receiving public information and comment and participated in several meetings with stakeholders. We believe that we have made a good faith effort to gather information from the public.

Inconsistent Use of Injurious Wildlife Listings

(44) *Comment:* The manner in which the Service has handled invasive species has been inconsistent. For example, in Western Colorado, feral ''wild'' horses and ring-necked pheasants are afforded wildlife protection status. Both are nonindigenous, introduced, or invasive species that compete with endemic species.

Our Response: It is correct that some nonnative species, such as feral (wild) horses and ring-necked pheasants may receive protection under other laws. The protection for wild horses comes from the Wild Free-Roaming Horses and Burros Act of 1971 (Pub. L. 92–195). Congress gave authority to the Secretary of the Interior under this public law to manage and protect wild horses on lands managed by the Bureau of Land Management and the Secretary of the Department of Agriculture for Forest Service lands. As for the pheasants, we agree that pheasants compete with native species. However, it is not correct that the Service affords them protection. In fact, the ring-necked pheasant is specifically not protected under the Migratory Bird Treaty Act and is also exempt from the Wild Bird Conservation Act. Individual States, however, such as Colorado, may provide their own protections under State laws.

Permitting

(45) *Comment:* The Service should support a law for reptiles modeled after the Wild Bird Conservation Act of 1992. Such a law would limit the importation of wild reptiles into the USA while allowing captive breeding of species currently in the United States, and allowing the interstate and international transportation of captive-bred animals.

Our Response: The comment is referring to the Wild Bird Conservation Act of 1992 (WBCA), which allows for obtaining a permit for personal pets under 50 CFR 15.25. The WBCA was enacted on October 23, 1992, to ensure that native populations of exotic bird species are not negatively impacted by international trade to the United States. The Service may issue permits to allow import of listed birds for scientific research, zoological breeding or display, or personal pet purposes when the applicant meets certain criteria (such as a personally owned pet of an individual who is returning to the United States after being continuously out of the country for a minimum of 1 year, except that an individual may not import more

than two exotic birds under this paragraph in any year). The Service was given this authority by Congress. However, the Service does not have a similar authority from Congress under the Lacey Act (18 U.S.C. 42). If, by the words ''support a law,'' the commenter is asking us to write a final rule that includes a permit process for pets, we cannot do that under our current authority. By statute, we can approve permits only for zoological, educational, medical, or scientific purposes.

(46) *Comment:* If the permitting process is not made considerably more efficient and flexible, individuals and institutions engaging in these purposes are likely to be negatively impacted.

Our Response: We agree that the permitting process must be an efficient and effective process to ensure that activities that are allowable under the Act are authorized in a timely manner. The Division of Management Authority, which is responsible for the permitting process under the Act, has recently undergone a significant restructuring and organization. We do not anticipate that the number of permit applications that will be generated due to this listing would be significant. However, we believe that the restructuring of the Division will allow for a more efficient and effective permitting process for all permit applications received by the Division, not only the ones requesting authorization for activities otherwise prohibited under this Act.

Economic Effect

(47) *Comment:* Families dependent on reptile breeding businesses will lose their businesses.

Our Response: Most commenters who claimed an expected loss of business did not explain why this would occur. However, some did explain that they sell one or more of the proposed species mainly or entirely out-of-State or out of the country. Some stated which species they sell, and some did not specify. However, those breeders who specialize in breeding only the species listed by this rule as injurious and who sell mainly or entirely out-of-State or out of the country, we agree that this rule will greatly affect them. However, those breeders who live in the States with designated ports (Alaska, California, Florida, Georgia, Hawaii, Illinois, Kentucky, Louisiana, Maryland, Massachusetts, New Jersey, New York, Oregon, Tennessee, Texas, and Washington) may continue to export through the designated port in their State, although they may not continue to ship to other States. For those breeders of other reptiles, this rule will not affect them. Those breeders who supply skins of the listed species for the designer clothing industry, such as for boots and belts, will still be able to ship skins across State lines, export them, and import them.

(48) *Comment:* The rule will ruin a $3 billion industry.

Our Response: This comment was based on the proposed rule, and the boa constrictor, reticulated python, and three anaconda species were included in the economic calculations. The commenters did not explain how they arrived at the $3 billion figure. While the Service is not sure of the basis of this dollar amount, this figure was used by USARK in a report to OMB on March 1, 2010: ''The trade in high quality captive-bred reptiles is a $3 billion dollar [*sic*] annual industry. The animals potentially addressed by rule change make up approximately ⅓ of the total dollar value trade annually.'' Another significant dollar figure was identified in an article in ''The Economist'' (Feb. 11, 2010): ''Revenue from the sale of boas and pythons amounts to around $1.6 billion–1.8 billion each year.'' We point out that the category of the ''sale of boas and pythons'' did not specify what species were included, but most likely would include ball pythons, which makes up by far the largest segment (78.6 percent) of the three genera of constrictor snakes that were imported into the United States from 2008 to 2010 (see USFWS Final Economic Analysis 2011) and are a very large segment of the domestic reptile trade. However, the same article in ''The Economist'' states, ''The recession, however, has hurt what used to be a lucrative hobby. Fewer people want to splurge on snakes that cost thousands, if not tens of thousands, of dollars. According to Brian Barczyk, a snake-breeder, demand for ''pet-grade'' snakes, which cost under $50, has sunk even more than demand for ''investment-grade'' ones, because the average person is hesitant to buy a new pet.'' We also note that part of the snake breeding industry is for the sale of snake skins, and this part of the industry should not be affected (dead snakes or parts thereof are not listed as injurious).

We agree that our rule will negatively affect some aspects of the reptile industry, but we have no evidence to suggest that the prohibition on importation and interstate transportation of four species of snakes will cause the ruin of a $3 billion industry or even to the extent of $1.6 billion. On the contrary, our final economic analysis shows the estimated potential annual retail value losses associated with all four listed species, plus the five species for which the decision is deferred, as $14.7 to $30.1 million and a total annual decrease in economic output as $42.0 to $86.2 million.

We brought these high dollar figures of ''The Economist'' and others to the attention of the Small Business Administration on April 20, 2010, and with SBA and the reptile industry (with pet industry, zoo, and medical research representatives) on April 21, 2010, at a roundtable meeting (at which the representative of USARK was present). We specifically asked the reptile industry representatives for information on how the dollar figures were derived. We received no explanation then or after. We do not know if that figure includes other species besides the nine covered in the proposed rule, or if it includes indirect effects. However, we did locate some information on USARK's Web site: ''USARK Reptile Industry Economic Summary for the Office of Management & Budget RE: USFWS Proposed Rule Change to Injurious Wildlife List of the Lacey Act; March 1, 2010.'' This report, available to the public but not directly provided to the Service, itemizes the captive breeding trade, for a total of $1.8 billion. Much of that sum is not specifically for the nine species in the proposed rule. For example, the $240,000 annual equipment sales could easily be used for other nonlisted snake species, or even other reptiles, amphibians, small mammals, or fish. The ''Annual high end animal sales $60 million'' is a separate line item from the ''Present Asset Value of approximately 2 million breeding age animals—$800,000,000.'' It is not clear why these are not included with the breeding age animals.

As stated above, our final economic analysis shows an annual retail value decrease ranging from $14.7 to $30.1 million and an economic output decrease of $42.0 to $86.2 million for the nine species that we proposed to list (USFWS Final Economic Analysis 2011). While this is not insignificant, it is a small fraction of the $1.8 billion cited above. In addition, we note that the importation of constrictor snakes of the genera *Python, Boa,* and *Eunectes* declined steadily from the peak in 2002 (the three genera = 233,705; 9 species = 48,006 snakes) to the low in 2010 (the three genera = 83,940; 9 species = 15,792 snakes; Fig. 1, USFWS Final Economic Analysis 2011). The decline in imports started well before we received the petition in 2006 that initiated our regulatory process. It is unlikely that the reduced imports were due to our impending rule. The decline in imports could be due to decreased availability of captive-bred or wild-

caught snakes in the export countries, the decreased demand in the United States, or the availability of domestically bred species. Thus, the existing decline in importation seems to be unrelated to our regulatory process, and future declines should not necessarily be attributed to the listing of the four species.

Economic Analysis

(49) *Comment:* The rule will have a detrimental economic impact on breeders and hobbyists, food producers, and caging and accessories producers.

Our Response: The Service recognizes that the rule will curtail imports and interstate trade in the four snake species. The supporting documentation accompanying this rule—the final Economic Analysis and the Final Regulatory Flexibility Analysis—estimates the impacts on small businesses, as required by the Small Business Regulatory Enforcement Fairness Act (SBREFA), and the benefits and costs of the rule, as required by Executive Orders (E.O.) 13563 and 12866. This analysis uses a regional input-output model to determine the impacts on supporting industries, such as snake-related care and food suppliers.

(50) *Comment:* The Service does not possess the information needed to do a credible benefit-cost or regulatory flexibility analysis on rules regarding constrictor snakes.

Our Response: The data needs for conducting a comprehensive analysis of any industry are very intense. Most commenters agreed with our conclusion that there is very little reliable public information available about the snake industry. E.O. 12866 states that ''Each agency shall base its decisions on the best reasonably obtainable economic information'' (Section 1.b.7). The Regulatory Flexibility Act allows that the initial and final regulatory flexibility analyses may contain ''more general descriptive statements if quantification is not practicable or reliable'' (5 U.S.C. 607). We received information during the public comment period that we used to prepare the final economic analysis. While other information was also received, it tended to be anecdotal, describing impacts to a specific firm or individual, which is insufficient to describe industry-wide impacts. However, we used some anecdotal information to better describe how some firms or individuals will be impacted. The Service believes the analysis is based on the best reasonably obtainable information at this time.

(51) *Comment:* The Service ignored information submitted by industry participants and trade associations in response to its 2008 Notice of Inquiry. In addition, the Service misused the information it was provided by respondents to the notice.

Our Response: Industry responses to the 2008 Notice of Inquiry (73 FR 5784; January 31, 2008) were a primary source of information for the economic analysis. Trade association data were the only source for most of the sales and price information in the economic analysis, and the associations are cited repeatedly in the report. The Service sought clarification of the data provided by a trade association with a representative of the association and the consultant who prepared the submission. The additional information obtained from the conversations was applied in the draft economic analysis.

Many industry participants provided anecdotal information about their situation or made quantitative assertions. While informative, we cannot extrapolate anecdotal data about individuals or businesses to describe the industry as a whole. However, in the final economic analysis, some anecdotal information from the public comments is used to better depict potential impacts.

(52) *Comment:* The Service employs baseless assumptions to estimate the information it lacks.

Our Response: Using informed assumptions for reasonable ranges to fill data gaps is a well-recognized economic technique. By applying a range of prices and quantities, the economic analysis derives the approximate scale of retail sales from the partial information available. The analysis is transparent and the assumptions can be easily replaced with more reliable information when it becomes available. Additional information, such as interstate sales from Florida, was received during the most recent public comment period. This information was used to revise the draft economic analysis to more accurately depict the impact to industry. Industry profiles were not submitted during public comment and are not publicly available. Therefore, some assumptions are still necessary in the economic analysis.

(53) *Comment:* The economic analysis ignores wholesalers, transporters, and vendors of food and ancillary equipment.

Our Response: The economic analysis includes an input-output analysis that takes into account all of the industries that contribute to delivering the product to the consumer. Wholesalers and equipment used in the production of snakes for sale are included in the input-output analysis based on retail sales. Shipping cost information on individual sales has been obtained since the availability of the draft economic analysis. This information was used to revise the economic analysis.

(54) *Comment:* The Service also ignores pricing premiums for snakes, particularly for color morphs, dwarfs, *etc.*

Our Response: The aggregate information available and provided by the trade associations was insufficient to segment the market for different classes of snake for the draft economic analysis. The knowledge that ''pricing premiums reach up to 60 times the price of a 'normal' snake,'' (PIJAC, 8/2/2010, FWS–R9–FHC–2008–0015–4531.1, page 4) suggests that there are at least two market segments for a species—one for 'normal' snakes and one for high-end collectible snakes. We received additional pricing information that more accurately depicts pricing premiums, and we used it in the revised economic analysis.

(55) *Comment:* The Initial Regulatory Flexibility Analysis (IRFA) underestimates the economic impact on small entities.

Our Response: We revised the IRFA to incorporate new information submitted during the course of the public comment period.

(56) *Comment:* The IRFA does not discuss significant alternatives.

Our Response: The subject of this proposed rule is adding species to the list of injurious species under the Lacey Act, at 50 CFR 16.15. Management of feral snake populations is a much broader topic that the Service is vigorously pursuing but that is not within the purview of this rulemaking. Therefore, the alternatives considered in the environmental assessment are the only relevant choices.

(57) *Comment:* The draft economic analysis fails to quantify the benefits of the proposed rule.

Our Response: The benefits of the rule include both avoided costs of extirpating feral snake populations and maintained ecological services from areas that might have been harmed by released snakes. There is little information available about either of these sources that would allow the quantification of benefits. OMB Circular A–4, guidance for implementing E.O. 12866, recognizes that benefits are rarely fully quantified and recommends a qualitative discussion of the sources of benefits. We added this discussion to the Final Economic Analysis.

(58) *Comment:* The draft economic analysis lacks clarity in its exposition.

Our Response: The draft economic analysis made available with the proposed rule published in the **Federal**

Register (75 FR 11808; March 12, 2010) is only a small précis of a much larger study. Per public comments received, the Service has added additional clarification to the Final Economic Analysis. Please refer to the full revised final economic analysis and regulatory flexibility analysis, which are available in the docket for this rule (at *http://www.regulations.gov* under Docket No. FWS–R9–FHC–2008–0015).

Biological

(59) *Comment:* With the exception of predation by a *Python molurus bivittatus* on endangered Key Largo woodrats (*Neotoma floridana smalli*), there is no evidence of significant adverse environmental, human health, or economic impacts by these feral populations.

Our Response: We found ample occurrences of adverse effects by pythons. Burmese pythons are large generalist predators that consume a wide variety of vertebrates in their native range. Examination of the stomach contents of Burmese pythons from in and around Everglades National Park has yielded 455 prey items composed of 340 mammals, 107 birds, 8 crocodilians, and one unidentified sample. These prey items included 60 individual round-tailed muskrats (*Neofiber alleni*), a native species that researchers and National Park Service biologists have not observed in Everglades National Park for years and worry may be becoming extirpated.

In congressional testimony, Dr. Frank Mazzotti, University of Florida, reported on declines in marsh rabbit abundance and round-tailed muskrats. He stated, ''In Everglades National Park the presence of pythons has been related to the absence of marsh rabbits and Florida muskrats. We are very concerned about impacts of pythons on Everglades fauna, and the difficulties involved in removing a large cryptic predator from a large expansive wetland wilderness area'' (Mazzotti 2010).

In addition, two federally endangered species, the Key Largo woodrat and the wood stork (*Mycteria americana*), have been found in Burmese python stomach samples. The limpkin (*Aramus guarauna*) and white ibis (*Eudocimus albus*), which are State-listed species of special concern in Florida, have also been identified in stomach contents of Burmese pythons. Dove *et al.* (2011) found 25 species of birds representing 9 avian orders from remains in digestive tracts of 85 Burmese pythons (*Python molurus bivittatus*) collected in Everglades National Park; this included the federally endangered wood stork and 4 species of State concern.

Based upon what we know of the diet of Burmese pythons and other large constrictor snakes in their native ranges and in Florida, we believe that federally protected species, such as the Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*), Florida panther (*Felis concolor coryi*), and American crocodile (*Crocodylus acutus*) are at risk of predation by these constrictors. Reed and Rodda (2009) lists a total of 64 State-listed threatened or endangered species at risk from Burmese pythons or other giant constrictors in Florida. Please read the response to comment number 65 below for economic costs (impacts).

(60) *Comment:* The majority of these species have never been documented as being introduced into new environments. Despite having been detected in the vicinity of the Everglades since the 1970s, Burmese pythons are still limited to that general area.

Our Response: Of the four species addressed in this rule, one is not yet reported in trade and another is involved in trade in very minor amounts. Thus, their listing is intended to prevent their establishment in the wild through escapes or releases. The remaining species, the Burmese python, is clearly established in southern Florida and has been observed in the wild in 15 Florida counties and several other States with suitable climates for its establishment. Although individual pythons had been regularly observed in the Everglades region since the mid-1990s, it was not until 2006 that a reproducing population was documented to be present there. By that time, the population had become well established over a sizeable area.

(61) *Comment:* The Burmese python population in south Florida was significantly reduced by the 2009–2010 winter cold weather.

Our Response: The comment is referring to two combined issues. One is the fact that snakes are ectothermic (cold-blooded), meaning that their body temperature adjusts to be approximately what the surrounding air temperature is. Thus, when the air temperature falls, a snake's body temperature drops—unlike humans, who maintain a nearly constant body temperature. This biologic effect is true for native snakes as well as the large constrictor snakes.

The second issue is the record cold temperatures during January of 2010. In fact, according to NOAA National Weather Service from Miami, January 2 to 13, 2010, was the coldest 12-day period since 1940 or earlier (NOAA 2010). A record was set for 12 straight days with the temperature at or below 45 °F (7.2 °C). Other minimum temperatures were broken. It has been 70 years since there were such sustained low temperatures.

We explain here why the observation that most of the large constrictors perished from the January 2010 unusually cold weather event in South Florida is misleading and speculative. In the months since that unusual cold-weather event, hundreds of adults and 24 Burmese python hatchlings were found alive and captured in Everglades National Park. During 2010, 322 Burmese live or recently dead pythons were captured or removed from in and around Everglades National Park, of which 67 were removed from October 18 to December 31, 2010, which is many months after the cold spell ended. The number of Burmese pythons found dead in 2010 (322) is only a 10 percent reduction from numbers removed in 2009 (367 total). A multi-agency effort is under way to survey for and capture the Northern African python, another of the constrictor snake species proposed for listing as injurious that is now established west of Miami, before its range expands farther up the Florida peninsula.

Reliable population estimates of any of the large constrictor snake species in south Florida before the cold temperatures occurred are nonexistent, and scientists do not have any population estimates since the cold spell. Therefore, it will be difficult to judge the demographic impact of the cold temperatures. Subjectively, the freeze appears to have had a greater effect on pythons in the shallow marsh habitats, where underground and deep water refuge was absent. It is known that pythons can seek locations such as underground burrows, deep water such as in canals, or similar microhabitats to escape the cold temperatures. In a study conducted in the Everglades, nine of ten radio-tracked snakes in shallow marsh habitat perished either from the cold temperatures or from complications experienced as a consequence of the cold (individuals were removed from the wild at that point, which may have induced additional stress). However, many live snakes were observed while conducting walking surveys for the radio-tracked snakes. These snakes were apparently able to maintain body temperatures using microhabitat features of the landscape (Mazzotti *et al.,* 2010).

Large numbers of Burmese pythons in the heart of the Everglades survived, as evidenced by a mating aggregation of four adults found in March 2010 and several large adults found in April 2010. A gravid (pregnant) female northern

African python was captured in the Bird Drive Basin Recharge area west of Miami in January 2010 immediately after the freeze. This snake was captured only after an unprecedented mass effort of more than 50 searchers looking for her as she escaped repeatedly into a deepwater canal. Later (December 2010 to January 2011) multi-agency efforts led to the capture of several Northern African pythons. Thus, the large constrictors of several species continue to be present and to breed in south Florida. Surveys will be conducted in the next several years to begin quantifying the distribution and abundance of the population, but in the absence of comparable statistics from before the cold temperatures, assessments of the cold weather impacts will only be indirect and will involve considerable speculation. Despite the record cold, we know that many pythons and boas survived. If thermoregulatory behavior or tolerance to cold is genetically based, we would expect large constrictor snake populations to persist, rebound, and possibly increase their genetic fitness and temperature tolerance as a result of natural selection pressures resulting from the unusually cold weather conditions in south Florida in January 2010.

(62) *Comment:* There is no scientific information indicating that large body size increases the likelihood that a species will become invasive. In fact, the opposite is likely the case since large-bodied animals are more readily evident and thus more likely to be removed from the environment before they can establish a viable population.

Our Response: The list of traits shared by the giant constrictors includes many of the traits that either increase the severity of their probable ecological impacts or exacerbate the challenge of controlling or eradicating them. The cryptic coloration of these snakes is a common form of camouflage where the snake is similar to its surroundings, making them very difficult to detect and be removed from the environment. Burmese pythons have established viable populations partly because they are hard to detect, have high reproductivity, and occupy a variety of habitat types. Thus, in comparison to potential invaders lacking these traits, this group of snakes constitutes a particularly high risk. A large body size would be a disadvantage for an animal whose size sets it off from its surrounding environment, such as a bear, which stands 1–1.2 m (3–4 ft) above ground level. Even the largest constrictors extend only a foot above ground level, easily concealed by ground vegetation. A large body size would also be a disadvantage for predators that hunt actively on a regular basis, because they would stand out more. Neither of these situations is true for the large constrictors, which are primarily sit-and-wait predators and which move along very low to the ground. These attributes, combined with the fact that these snakes have no similar ecological equivalents in the United States with respect to size of prey items they can consume, will make them a novel predator on naïve wildlife that may otherwise not even have native predators (such as Florida panther).

(63) *Comment:* Which of the nine species of constrictor snakes are definitely reproducing in the wild in the United States?

Our Response: Of the four large constrictor snakes included in this final rule, those confirmed breeding in the wild in the United States or its territories include the Burmese python and the Northern African python.

The Burmese python has been captured in many areas in Florida. In South Florida, more than 1,334 live and dead Burmese pythons, including gravid (pregnant) females, have been removed from in and around Everglades National Park in the last 10 years by authorized agents, park staff, and park partners, indicating that they are already established.

Evidence of reproduction for Northern African python in the area known as the Bird Drive Basin Recharge Area west of Miami includes multiple size classes of adult snakes of both sexes, at least 3 reproductive females, two hatchlings in 2009, and a freshly shed skin from a hatchling in 2010 plus recent captures also in the Bird Drive basin (December 2010 to January 2011) indicating survival after the cold weather in 2009 to 2010. These observations represent overwhelming evidence for an established reproducing population of *Python sebae* in Florida (Reed *et al.,* 2010). Please see the final environmental assessment for the current status of verified observations, removals, and establishment of the large constrictor snakes in the wild from the USGS collection information in the United States and insular territories, and the Early Detection and Distribution Mapping System, University of Georgia, in Florida.

(64) *Comment:* Neither the State nor the Federal Government has made substantial investments in strategic programs for the eradication or control of Burmese python on the lands they manage. In South Florida, the cost of eradication of the Burmese python has been relatively small.

Our Response: The Fish and Wildlife Service (Service), in partnership with many different organizations, has organized and facilitated several multi-stakeholder workshops to address the threats posed by pythons and help prioritize and coordinate management efforts. Goals for python management include preventing their spread, eradication in select local areas, a public awareness campaign focusing on responsible pet ownership, and overall reduction or containment of invasive snake populations.

Currently, a number of activities are being conducted by various agencies and entities under limited budgets (that is, National Park Service (Everglades National Park), the Service, U.S. Department of Agriculture, South Florida Water Management District, U.S. Geological Survey, Florida Fish and Wildlife Conservation Commission, University of Florida, county governments, nongovernmental organizations, and others) to reduce the potential of the population increasing or spreading further. These actions include but are not limited to, capture and removal; public education and awareness; spatial ecology and movement studies using radio telemetry, satellite and GPS technology; diet (stomach content analysis); thermal biology (implanted data loggers); trap development and trials; impacts analysis; pilot studies: genetics, salinity tolerance; and potential use of unmanned aerial vehicles with thermal infrared cameras to detect pythons in the field.

The Service has spent $604,656 over a 3-year period (2007 to 2009) to design python traps, deploy and maintain them, and educate the public in the Florida Keys to prevent the potential extinction of the endangered Key Largo woodrat at Crocodile Lake National Wildlife Refuge. The South Florida Water Management District has spent $334,000 between 2005 and 2009 and anticipates spending an additional $156,600 on research, salaries, and vehicles in the next several years. An additional $300,000 will go for the assistance of the U.S. Department of Agriculture's Wildlife Services, the animal damage control arm of USDA (part of USDA Animal and Plant Health Inspection Service). The USDA Wildlife Research Center (Gainesville, Florida, Field Station) has spent $15,800 in 2008–2009 on salaries, travel, and supplies. The USGS, in conjunction with the University of Florida, has spent more than $1.5 million on research; radio telemetry; and the development, testing, and implementation of constrictor-snake traps. Miami-Dade

County Parks and Recreation Department, Natural Areas Management and Department of Environmental Resources Management have spent $60,875 annually on constrictor snake issues. The National Park Service has spent $317,000 annually on various programs related to constrictor snake issues in the Everglades National Park. All these expenditures total $5.7 million from 2005 to approximately 2012, or roughly an average of $720,000 per year. Many people have also volunteered their time to search for and capture snakes when funding was not available.

Although the agencies mentioned above would prefer to eradicate these invasive snakes, they recognize that eradication is unlikely. As explained in the ''*Control''* section of Factors That Reduce or Remove Injuriousness for Burmese Python, Kraus (2009) found no examples of local populations of reptiles that had been successfully eradicated.

(65) *Comment:* The most effective and least costly methods would focus on preventing establishment of any potentially invasive species and would include early detection and rapid response (EDRR). Eradication of established populations is very rarely effective and always costly.

Our Response: We agree that EDRR programs can be of benefit once prevention options have been exhausted or proven to be ineffective. Sometimes considered the ''second line of defense'' after prevention, EDRR is a critical component of any effective invasive species management program. When new invasive species infestations are detected, a prompt and coordinated containment and eradication response can reduce environmental and economic impacts. This action results in lower cost and less resource damage than implementing a long-term control program after the species is established. Early detection of new infestations requires vigilance and regular monitoring of the managed area and surrounding ecosystem. An EDRR system will provide an important second line of defense against invasive animals that will work in concert with Federal efforts to prevent unwanted introductions such as an injurious wildlife listing under the Lacey Act. Prevention is why two of these large constrictor snakes not yet found to be reproducing in the United States or territories are included in this final rule.

(66) *Comment:* Two papers published in the journal *Biological Invasions,* one by USDA wildlife researchers and another authored by scientists at several research institutions including the University of Florida, have concluded that Burmese pythons can't survive for any length of time outside south Florida unless they have the ability to find appropriate burrows or cavities to allow hibernation for several months during the winter. Given that this snake is primarily a tropical and subtropical species, it may not have evolved the behavior or physiology to successfully hibernate.

Our Response: The winter of January 2010 was one of the coldest on record in southern Florida. Burmese pythons were documented to tolerate these conditions. In the USDA study (Avery *et al.* 2010), two of nine (22 percent) of the Burmese pythons survived the cold spell. This study was conducted in Gainesville, Florida, 400 km (248.5 mi) north of the known range where they are currently reproducing; this region of Florida also experienced record cold weather. The Mazzotti *et al.* (2010) study, which was conducted within the Everglades region, found that 1 of 10 telemetered Burmese pythons survived (10 percent) and 59 of 99 (60 percent) of nontelemetered pythons survived. Subsequently there have been sightings and recent removals of Burmese pythons and Northern African pythons in south Florida, including a mating aggregation of Burmese pythons with one gravid female and four males (Snow 2010). Therefore, despite the coldest winter on record since at least the 1940s (NOAA 2010), south Florida still has reproducing populations of nonnative large constrictor snakes. While the abundance of pythons clearly declined during this record cold winter, the population has recovered rapidly in south Florida, where the average female reaches reproductive maturity within 3 years and can subsequently produce more than 30 (but up to 107) eggs per clutch annually or biennially (Harvey *et al.* 2008).

Dorcas *et al.* (2011) published another study in *Biological Invasions.* They relocated 10 Burmese pythons from the Everglades to an outdoor research setting in South Carolina. The following January, they all died. However, they had not had a chance to acclimate to a milder winter before getting hit with record cold. Dorcas *et al.* (2011) concluded: ''Some pythons in our study were able to withstand long periods of considerably colder weather than is typical for South Florida, suggesting that some snakes currently inhabiting Florida could survive typical winters in areas of the southeastern United States more temperate than the region currently inhabited by pythons. Moreover, our results are specific to translocated pythons from southern Florida. Burmese pythons originating from more temperate localities within their native range may be more tolerant of cold temperatures and would presumably be more likely to successfully become established in temperate areas of North America. The susceptibility to cold we observed may reflect a tropical origin of the Florida pythons or acclimatization of snakes to warm southern Florida winters early in life.'' Given the climate flexibility exhibited by the Burmese python in its native range (as analyzed through USGS' climate-matching predictions in the United States), we would expect new generations within the leading edge of the population's nonnative range to become increasingly adaptable and able to expand to colder climates.

(67) *Comment:* The ''Reed and Rodda Report'' was only subject to an internal review process. Any policy changes or legislation that will have an effect on the freedoms of American citizens should be based on sound scientific evidence as well as the merit of a true scientific peer review process.

Our Response: Dr. Susan Haseltine, Associate Director for Biology, USGS, responded to a press release issued by a reptile-trade organization and an accompanying letter by a group of veterinarians and other scientists regarding the USGS peer review process. She said, ''The USGS provides unbiased, objective scientific information upon which other entities may base judgments. To ensure objectivity, independent scientific review is required of every USGS publication. Standards require a minimum of two reviews, and adequacy of the author's responses to reviews is assessed by both research managers and independent scientists within the USGS. The authors went well beyond the requirements by soliciting reviews from 20 reviewers (18 of them external to the USGS). Reviewers comprised a large portion of the global expertise on both the biology of giant constrictor snakes and the management of invasive snakes.''

The USGS follows mandatory fundamental science practices for peer review, which can be read at the following Internet site: *http://www.usgs.gov/usgs-manual/500/502-3.html.* This policy establishes the requirements for peer review of USGS information products and applies to all USGS scientific and technical information, whether it is published by the USGS or an outside entity.

Other

(68) *Comment:* The Service has not thoroughly considered the full implications of the rule regarding effects on the pet industry.

Our Response: We understand that the implications of this rule are complex. We have endeavored to consider the need to list the four species as injurious, as well as alternatives using the best available information. Please see ''Alternatives to Listing'' below for an explanation of the alternatives that we considered. We have also made every effort to consider all of the indirect effects.

(69) *Comment:* Because the addition of any species to the Lacey Act results in the nationwide ban of that species, a nationwide impact study should be performed.

Our Response: As explained above, this rule does not create a nationwide ban. The commenter did not explain what type of nationwide impact study should be performed. We did, in fact, develop two nationwide impact studies, an economic analysis and an environmental assessment, drafts of which we posted on *http://www.regulations.gov* on March 12, 2010, with the proposed rule, and final versions of which are also available at *http://www.regulations.gov* under Docket No. FWS–R9–FHC–2008–0015. We used the best available information and we believe these impact studies are sufficient. We are not required to do additional surveys ourselves, because our standard is to use the best available information. We believe we made a good-faith effort to locate information (see also response to Comment 43).

(70) *Comment:* We requested a 90-day extension of the comment period for the proposed rule to provide our members much needed time to provide comments, data, and analysis that will be instrumental to the Service's final decision.

Our Response: We received several requests for an extension of the public comment period for up to 90 days. We granted an additional 30 days to the existing 60 days, for a total of 90 days for the proposed rule's comment period. We believe that amount of time was sufficient, even for a complex rule, considering we were seeking similar information to that for the 2008 notice of inquiry (73 FR 5784; January 31, 2008) and that for the second comment period ended on August 2, 2010—nearly 90 days after the first comment period ended.

(71) *Comment:* One commenter referred to a memo written in 2007 by a former Service Assistant Director and Chief of Law Enforcement. The comment quoted the memo, ''The injurious species provisions of the Lacey Act were clearly not designed to deal with a species that is already a significant part of the pet trade in the United States'' and ''It could, however, make a felon out of a reptile enthusiast in Wisconsin who sells one python to an individual in Minnesota.'' The commenter stated that the Service has not made a case for the rule.

Our Response: The memo that the commenter referred to was an information memorandum to the Service's Director regarding the petition to list the Burmese python from the South Florida Water Management District in 2006. The memo described various options that the Service and others could consider. The statements quoted by the commenter are verbatim. However, at the time the memo was written, the USGS risk assessment (Reed and Rodda 2009) had not yet been completed. No decision had been made by the Service at the time of the memo. The Service's memo acknowledges, ''We expect to have the risk assessment—an essential first step in any evaluation for injurious designation—completed in approximately one year.'' That was, however, an underestimation of the time it would take to prepare such a thorough document and have it extensively peer-reviewed. Once that risk assessment was completed, it became clear that all nine species should be evaluated by the Service for possible listing as injurious.

The memo's statement, ''The injurious species provisions of the Lacey Act were clearly not designed to deal with a species that is already a significant part of the pet trade in the United States'' is true in that the pet trade was not established to the degree it is today when the Lacey Act was passed by Congress in 1900. That does not, however, mean that the injurious species provisions cannot be an effective tool in invasive species management. The reason that the four species are being listed is that there are still vulnerable parts of the country where the listing of each of the species may prevent their establishment. In addition, three of the species are not currently a significant part of the constrictor pet trade, and the fourth species (Burmese python) comprises only 2.6 percent of total constrictor snake imports (for the genera *Python, Boa,* and *Eunectes*) for 2008 to 2010. Therefore, taking the proactive step to list them as injurious species now will reduce the likelihood that their numbers will increase in the United States and pose a risk to native wildlife in the future.

As for the comment from the memo, ''It could, however, make a felon out of a reptile enthusiast in Wisconsin who sells one python to an individual in Minnesota,'' that statement was also quoted correctly and is correct under certain situations. However, those situations are more representative of worst-case scenarios. There are a variety of other laws that are often violated when people engage in illegal wildlife trafficking, some of which are Federal felonies. However, a stand-alone violation of the interstate transport or import prohibitions under 18 U.S.C. 42 is a misdemeanor, not a felony. Please also see our response to Comment (28) for an explanation of the misdemeanor and felony violations.

Alternatives to Listing

(72) *Comment:* This is a summary of the alternatives suggested through the public comment process. Where noted, they are explained further in the text of the rule above.

A. List some or all of the nine species, but:

1. Exempt color and pattern genetic mutations of these snakes from the listing as albinos, leucistics, *etc.*

Our Response: The commenter explains that albinos and leucistic (having reduced pigmentation) snakes have a far lesser chance of survival in any wild environment. Not listing these color and pattern mutations would have a smaller financial impact on the industry and no financial impact on the government. The commenter may be correct that such color variations may have a lesser chance of survival in the wild. However, the survival differential is unknown, so we have determined that all color variations are at least the same risk to the welfare of wildlife or wildlife resources of the United States. Furthermore, if snakes escape to the wild, their offspring may not have the same obvious color pattern and may perpetuate normally patterned populations given gene dominance, expression, and mutation.

2. Exempt hybrids.

Our Response: We realize that hybrids often are worth significantly more money than the parent species separately. Allowing hybrids would preserve more of the income of some breeders. However, we have determined that hybrids are at least the same risk as the parent species are to the welfare of wildlife or wildlife resources of the United States. The Wildlife Society commented, ''Hybrids between two invasive species are also invasive themselves and must be listed as injurious along with the exotic parental species. Hybrids maintain many of the characteristics of the parent species; this means that hybrids will retain an ability to reach the large sizes and continue the voracious dietary habits of the parental species, and they will cause as much damage to native threatened and

endangered species and the environment as pure species ancestors. Many closely related constrictor species are known to hybridize, and it is likely that many of the invasive constrictors noted in the proposed rule have this same ability. Some hybrid combinations may result in sterile offspring, however, some do remain fertile, which several reptile breeders themselves attest to on their Web sites (*i.e., http://www.highendherps.com*). Furthermore, each individual snake still has the capability of causing extensive damage within its lifetime. One potentially destructive invasive species is the African rock python (*Python sebae*), which has been captured in the wild west of Miami, Florida. In its native range, this snake can reach lengths up to 20 feet, and it is known to attack humans and farm animals. While this snake has the potential to cause serious damage, it also poses an additional threat because of its ability to hybridize successfully with Burmese pythons (*Python molurus*), a species which has already established a sizable and growing population in Florida.''

3. Do not list the species *Boa constrictor.*

Our Response: We have not listed the species at this time. We will address this comment when we publish a determination of whether this species should be listed as injurious.

4. List regionally only where there is a climate match.

Our Response: Creating this type of geographical restriction or exemption (or both) under the Lacey Act would make enforcement of the regulations by the Federal Government, in cooperation with the affected States, virtually impossible.

The authority to list regionally is unclear and untested. Moreover, it would create a host of law enforcement complications.

5. Allow for the interstate travel for captive-bred animals.

Our Response: Please see our response to Comment (45).

6. Remove the status of the Port of Miami as an agricultural port and a port of entry. Move the port of entry north, maybe to one of the New England ports where the weather will eradicate anything that would be lost or illegally released.

Our Response: This alternative is beyond the scope of this rulemaking. Furthermore, it is outside the authority of the Service. In addition, it is highly impractical. While Miami is the port with the most imports of the nine species of large constrictor snakes in the proposed rule (75.4 percent from 1999 to 2007 and 86.7 percent from 2008 to 2010; USFWS Final Economic Analysis 2011), two other warm-weather southern ports (Los Angeles and Dallas-Fort Worth) also received imports of thousands of some or all of the nine species. These three ports account for 98 percent of all imports of the nine species. Los Angeles and Dallas are within the climate match range of the Burmese python. For the four species now being listed, the number of imports are fewer.

7. The Service should consider paying restitution to or compensating these people for their losses, by buying the animals and the businesses that will no longer exist, suddenly made worthless, at fair market value, and then debating the question on how to dispose of those animals.

Our Response: This rule does not affect people's ability to own, possess, or transport snakes within States, if allowed by State law. Neither the Service nor the Department of the Interior has programs or authorities to compensate people for losses that may be related to this injurious wildlife listing. The Service can work with the affected States and industry, and offer technical assistance to provide environmentally risk-free approaches to disposing of constrictor snakes that businesses or pet owners are no longer able to keep. Please also see our response to Comment 12 where we provide options for people to dispose of snakes responsibly.

B. Do not list any of the species. Instead:

8. Let the States regulate their own captive wildlife, such as following FWC's comprehensive approach in Florida.

Our Response: Please see our response to Comment (18).

9. Allow the industry to self-regulate and educate with the Internet, *etc.;* United States Association of Reptile Keepers best management practices; State and local risk assessment industry best management practices (BMPs) as suggested by Dr. Frank Mazzotti; and Habitattitude™.

Our Response: We fully support all of these suggestions and look forward to working with all entities that endorse them. However, they are voluntary actions and there is no guarantee that people will cooperate. These efforts have been available for many years, and while they are useful in many cases, we believe that both voluntary and regulatory actions are necessary to safeguard our ecosystems with more assurance.

10. Issue permits and registrations, require microchipping, apply severe fines and criminal charges, *etc.,* for the miskeeping or release of these animals in any State.

Our Response: These alternatives do have potential for preventing accidental and intentional escapes. However, the Service does not have the authority to issue permits for pets or for any use of injurious species other than for medical, zoological, educational, or scientific purposes.

C. PIJAC offered to discuss options with the Service in detail including developing a comprehensive, State-led prevention and early detection and rapid response program.

Our Response: Industry and State partnerships are very important to the Service and Department of the Interior in our efforts to manage invasive species. As examples, the Department signed a Memorandum of Understanding with PIJAC in 2009 to create public awareness—through such public campaigns as Habitattitude™—about the threat of invasive species and to promote responsible pet ownership practices to prevent the accidental or intentional release of invasive species by pet owners. The Service also partners with States to develop a national aquatic invasive species program, and we support many State management actions through cost-share grants for implementation of State Aquatic Nuisance Species Management Plans. These partnerships with industry and States are essential aspects of managing the invasive species problem facing the nation. Also important is the Federal Government's authority to regulate importation and interstate transport of species found to be injurious wildlife under 18 U.S.C. 42. This authority is one important aspect of an overall national strategy to reduce the risks from introduction and spread of harmful nonnative species (Lodge *et al.* 2006).

Required Determinations

Regulatory Planning and Review

The Office of Management and Budget (OMB) has determined that this rule is significant under Executive Order (E.O.) 12866. OMB bases its determination upon the following four criteria:

(1) Whether the rule will have an annual effect of $100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government.

(2) Whether the rule will create inconsistencies with other Federal agencies' actions.

(3) Whether the rule will materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients.

(4) Whether the rule raises novel legal or policy issues.

Executive Order 12866 Regulatory Planning and Review (U.S. Office of Management and Budget 1993) and a subsequent document, Economic Analysis of Federal Regulations under Executive Order 12866 (U.S. Office of Management and Budget 1996), identify guidelines or ''best practices'' for the economic analysis of Federal regulations. With respect to the regulation under consideration, an analysis that comports with the Circular A–4 would include a full description and estimation of the economic benefits and costs associated with implementation of the regulation. These benefits and costs would be measured by the net change in consumer and producer surplus due to the regulation. Both producer and consumer surplus reflect opportunity cost as they measure what people would be willing to forego (pay) in order to obtain a particular good or service. ''Producers' surplus is the difference between the amount a producer is paid for a unit of good and the minimum amount the producer would accept to supply that unit. Consumers' surplus is the difference between what a consumer pays for a unit of a good and the maximum amount the consumer would be willing to pay for that unit (U.S. Office of Management and Budget 1996, section C–1).''

Large constrictor snakes are commonly kept as pets in U.S. households, displayed by zoological institutions, used for science and research, and used as educational tools. Because none of the four species listed by this rule is native to the United States, the species are obtained by importing or breeding in captivity. We provided a draft economic analysis to the public at the time the proposed rule was published (on *http://www.regulations.gov* at Docket No. FWS–R9–FHC–2008–0015) and offered two public comment periods totaling 90 days. Using the comments we received on the draft economic analysis and new information we acquired, we revised the economic analysis and provided the final version on *http://www.regulations.gov* at Docket No. FWS–R9–FHC–2008–0015. We provide a summary here.

In the context of the regulation under consideration, the economic effects to three groups would be addressed: (1) Producers; (2) consumers; and (3) society. With the prohibition of imports and interstate shipping, producers, breeders, and suppliers would be affected in several ways. Depending on the characteristics of a given business (such as what portion of their sales depends on out-of-State sales or imports), sales revenue would be reduced or eliminated, thus decreasing total producer surplus compared to the situation without the regulation. Consumers (pet owners or potential pet owners) would be affected by having a more limited choice of constrictor snakes or, in cases where species were not available within their State, no choice at all if out-of-State sales are prohibited. Consequently, total consumer surplus would decrease compared to the situation without the regulation. Certain segments of society may value knowing that the risk to natural areas and other potential impacts from constrictor snake populations is reduced by implementing the regulation. In this case, consumer surplus would increase compared to the situation without the regulation. If comprehensive information were available on these different types of producer and consumer surplus, a comparison of benefits and costs would be relatively straightforward. However, information is not currently available on these values so a quantitative comparison of benefits and costs is not possible.

The data currently available is limited to the number of constrictor snake imports each year, the estimated number of constrictor snakes bred in the United States, and a range of retail prices for each constrictor snake species. Using data for the three genera *Python, Boa,* and *Eunectes,* we provide the value of the foregone snakes sold as a rough approximation for the social cost of this final rulemaking. We provide qualitative discussion on the potential benefits of this rulemaking. In addition, we used an input-output model in an attempt to estimate the secondary or multiplier effects of this rulemaking—job impacts, job income impacts, and tax revenue impacts (discussed below).

With this rule, the importation and interstate transport of four species of large constrictor snakes (Burmese python, Northern African python, Southern African python, and yellow anaconda) will be prohibited from importation and interstate transport, except as specifically permitted. The annual retail value losses as a result of this rule are estimated to range from $3.7 million to $7.6 million.

The broad indicator of the economic impacts of the alternatives, economic output or aggregate sales, includes three types of effects: direct, indirect, and induced. The direct effects are the changes in annual retail value due to the implementation of a given alternative. ''Indirect effects result from changes in sales for suppliers to the directly affected businesses (including trade and services at the retail, wholesale and producer levels. Induced effects are associated with further shifts in spending on food, clothing, shelter and other consumer goods and services, as a consequence of the change in workers and payroll of directly and indirectly affected businesses'' (Weisbrod and Weisbrod 1997). The indirect and induced effects represent any multiplier effects due to the loss of revenue. These cost estimates include the various potential scenarios we considered.

Businesses or individuals shipping listed species across State lines could face penalties for Lacey Act violations. The penalty for a Lacey Act violation is not more than 6 months in prison and not more than a $5,000 fine for an individual, and not more than a $10,000 fine for an organization.

Under this final rule, the probability of large constrictor snakes establishing populations outside of their current U.S. locations should decrease compared to the no action alternative. The change in probability is unknown.

Alternatives Considered

The draft economic analysis considered two other alternatives, in addition to listing all (Alternative 2) or none (Alternative 1) of the nine species under consideration. Alternative 3 would list the seven species known to be in trade in the United States (that is, all but the Beni and DeSchauensee's anacondas). Alternative 4 would list the five species judged to have a high ''overall risk potential'' in the USGS evaluation (Reed and Rodda 2009), while excluding the four species judged to have a medium overall risk potential (that is, the two nontraded species, plus the green anaconda and reticulated python).

For the final economic analysis, we split Alternative 2 into 2A (the nine species proposed for listing) and 2B (the four species addressed in this final rule). This allows the Service to move forward with the listing of four species, while the other five remain under consideration.

Compared to the alternative of listing all nine species (2A), Alternative 3 would have no effect on current sales revenues or indirect economic impacts from the loss of such revenues, since there are currently no sales revenues from these two species. It would, however, allow consumers to substitute these two species (in addition to the many other substitute species already available) for the purchase of the prohibited species, thus reducing

economic impacts to the degree that there would be substitute purchases of these two species. However, the possibility of substitute purchases is itself a potential problem in that the two currently nontraded species are so similar in appearance to the green and yellow anacondas that it would be difficult for enforcement officials to distinguish green or yellow anacondas that were mislabeled as Beni or DeSchauensee's anacondas. In addition, acting to prevent the importation of these two species before trade in them emerges means that environmental injury from them can be prevented, which is far more effective than waiting until after injury has already occurred to act to limit it.

Alternative 4 (listing only the five species determined to have a high ''overall risk potential'' in Reed and Rodda (2009)) would limit the rule to the species with the greatest potential for environmental injury. Of the four species that would not be listed under this alternative, two are not currently in trade in the United States, and one (the green anaconda) is in very limited trade (less than half a percent of imported constrictor snakes of the genera *Python, Boa,* and *Eunectes*). Of the four that would not be listed, only the reticulated python is the subject of noticeable trade, and that is less than 4 percent of imported constrictor snakes of the genera *Python, Boa,* and *Eunectes.* The economic impact of the five-species alternative (Alternative 4) would be less than the nine-proposed-species alternative (2A) primarily because of the exclusion of the reticulated python; less than the seven species in Alternative 3, primarily because of the exclusion of the reticulated python; but greater than the four species in Alternative 2B, primarily because the boa constrictor is included. The relative level of risk associated with each species is determined by the criteria specified in the section Lacey Act Evaluation Criteria above. Even in the case of those species with medium risk, the particular areas where the climate match occurs are notable for the number of endangered species found there (*e.g.,* Hawaii, southern Florida, and Puerto Rico). That fact, the potential that yellow anacondas would be difficult for enforcement officials to distinguish if mislabeled as DeSchauensee's anacondas, and the fact that the opportunity to act preventively before most of these species became established would be lost under this alternative, and all of these factors argued against its adoption.

Regulatory Flexibility Act

Under the Regulatory Flexibility Act (as amended by the Small Business Regulatory Enforcement Fairness Act [SBREFA] of 1996) (5 U.S.C. 601 *et seq.*), whenever a Federal agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (that is, small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies that the rule would not have a significant economic impact on a substantial number of small entities. Thus, for a regulatory flexibility analysis to be required, impacts must exceed a threshold for ''significant impact'' and a threshold for a ''substantial number of small entities.'' See 5 U.S.C. 605(b). SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule would not have a significant economic impact on a substantial number of small entities. A Final Regulatory Flexibility Analysis, which we briefly summarize below, was prepared to accompany this rule. See **ADDRESSES** or *http://www.regulations.gov* under Docket No. FWS–R9–FHC–2008–0015 for the complete document.

This rule lists four constrictor snake species: (Burmese python, Northern African python, Southern African python, and yellow anaconda) as injurious species under the Lacey Act. Entities impacted by the listing would include: (1) Companies importing live snakes, gametes, viable eggs, and hybrids; (2) companies (breeders and wholesalers) with interstate sales of live snakes, gametes, viable eggs, and hybrids (3) entities selling reptile-related products and services (pet stores, veterinarians, and shipping companies); and (4) research organizations, zoos, and educational operations. Importation of the four constrictor snakes would be eliminated, except as specifically authorized. Impacts to entities breeding or selling these snakes domestically would depend on the amount of interstate sales within the constrictor snake market. Impacts also are dependent upon whether or not consumers would substitute the purchase of an animal that is not listed, which would thereby reduce economic impacts.

For businesses importing any of the four large constrictor snakes in this final rule, the maximum impact of this rulemaking would result in 14 to 19 small businesses (20 percent) having a reduction in their retail sales of 3 percent.

In addition to companies that import snakes, entities that breed and sell large constrictor snakes will also be impacted. These entities include distributors, retailers, breeders and hobbyists, and exhibitors and trade shows. We do not know the total number of businesses, large or small, that sell or breed the listed four species domestically. However, we know approximately the number of businesses that sell or breed large constrictor snake species of the genera *Python, Boa,* and *Eunectes* and that overall, the nine listed species originally proposed represent 58 percent of all U.S.-bred large constrictor snake sales of those three genera. Because we do not know exactly how many businesses sell the listed species, we extrapolated the percentage of sales to determine the number of affected businesses. Thus, we assume that 16 to 22 percent of businesses sell or breed the four snake species in this final rule and that approximately 62 to 85 percent of these entities would qualify as small businesses. Therefore, approximately 979 to 2,874 small businesses would be affected. Impacts to this group of businesses as a whole could represent a 16 to 22 percent reduction in retail value.

In addition to snake sales, ancillary and support services comprise part of the snake industry. Four major categories include: (1) Food suppliers (such as for frozen or live rats and mice), (2) equipment suppliers (such as for cages, containers, lights, and other nonfood items), (3) veterinary care and other health-related items, and (4) shipping companies. The decrease in constrictor-snake-industry economic output and related employment from baseline conditions is $10.7 to 21.8 million for the four species. This estimate includes impacts to the support service businesses. The number of businesses that provide these services to the large constrictor snake market is unreported. Thus, we do not know the impact to these types of individual businesses.

Under the final rule, the interstate transport of the four constrictor snakes will be discontinued, except as specifically permitted. Thus, any revenue that would be potentially earned from this portion of the business will be eliminated. The amount of sales impacted is completely dependent on the percentage of interstate transport. That is, the impact depends on where businesses are located and where their customers are located.

Therefore, this final rule may have a significant economic effect on a small number of small entities as defined under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*).

Small Business Regulatory Enforcement Fairness Act

This rule is not a major rule under 5 U.S.C. 804(2), the Small Business Regulatory Enforcement Fairness Act. This rule:

a. Would not have an annual effect on the economy of $100 million or more. According to the final economic analysis (USFWS 2011), the annual retail value losses for the four constrictor snake species in this final rule are estimated to range from $3.7 million to $7.6 million. In addition, businesses would also face the risk of fines if caught transporting these constrictor snakes, gametes, viable eggs, or hybrids across State lines. The penalty for a Lacey Act violation under the injurious wildlife provisions is not more than 6 months in prison and not more than a $5,000 fine for an individual and not more than a $10,000 fine for an organization.

b. Would not cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions. Businesses breeding or selling the listed snakes would be able to substitute other species and maintain business by seeking unusual morphologic forms in other snakes. Some businesses, however, may close. We do not have data for the potential substitutions and therefore, we do not know the number of businesses that may close.

c. Would not have significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of United States-based enterprises to compete with foreign-based enterprises.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

This proposed rule would not impose an unfunded mandate on State, local, or tribal governments or the private sector of more than $100 million per year. This proposed rule would not have a significant or unique effect on State, local, or tribal governments or the private sector. A statement containing the information required by the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*) is not required.

Takings

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), the rule does not have significant takings implications. A takings implication assessment is not required. This rule would not impose significant requirements or limitations on private property use. Any person who possesses one or more snakes from the four species can continue to possess, sell, or transport them within their State boundaries.

Federalism

In accordance with E.O. 13132 (Federalism), this rule does not have Federalism implications. This rule would not have substantial direct effects on States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government. The rule does not have substantial direct effects on States because it: (1) Imposes no affirmative obligations on any State, (2) preempts no State law, (3) does not limit the policymaking discretion of the States, (4) requires no State to expend any funds, and (5) imposes no compliance costs on any State. Executive Order 13132 requires Federal agencies to proceed cautiously when there are ''uncertainties regarding the constitutional or statutory authority of the national government,'' but there are no such uncertainties here. The statutory authority of the Fish and Wildlife Service to designate injurious species pursuant to the Lacey Act is clear, and the constitutional basis for the Lacey Act (a statute that has been in effect since 1900) is equally clear, limited as it is to the regulation of international and interstate commerce. The Executive Order also encourages early consultation with State and local officials, which the Service has done. Indeed, this rulemaking was initiated by petition from an agency of the State of Florida. Therefore, in accordance with Executive Order 13132, we determine that this rule does not have Federalism implications or preempt State law, and therefore a Federalism summary impact statement is not required.

Civil Justice Reform

In accordance with Executive Order 12988, the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Executive Order. The rule has been reviewed to eliminate drafting errors and ambiguity, was written to minimize litigation, provides a clear legal standard for affected conduct rather than a general standard, and promotes simplification and burden reduction.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose new recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. OMB has approved the information collection requirements associated with the required permits and assigned OMB Control No. 1018–0093. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act

We have reviewed this rule in accordance with the criteria of the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*) and the Departmental Manual in 516 DM. This action is being taken to protect the natural resources of the United States. A final Environmental Assessment and a Finding of No Significant Impact (FONSI) have been prepared and are available for review by written request (see **ADDRESSES**) or at *http://www.regulations.gov* under Docket No. FWS–R9–FHC–2008–0015. The final environmental assessment was based on the nine proposed species of snakes and revised based on comments from peer reviewers and the public. By adding Burmese python, Northern African python, Southern African python, and yellow anaconda to the list of injurious wildlife, we intend to prevent their new introduction, further introduction, and establishment into natural areas of the United States to protect native wildlife species, the survival and welfare of wildlife and wildlife resources, and the health and welfare of human beings. If we did not list these constrictor snakes as injurious, the species are more likely to expand in captivity in States where they are not already found in the wild; this would increase the risk of their escape or intentional release and establishment in new areas, which would likely threaten native fish and wildlife, and humans. Burmese pythons and Northern African pythons are established in southern Florida. Releases of the four constrictor snakes into natural areas of the United States are likely to occur again, and the species are likely to become established in additional U.S. natural areas such as national wildlife refuges and parks, threatening native fish and wildlife populations and ecosystem form,

function, and structure. The reticulated python, green anaconda, Beni anaconda, DeSchauensee's anaconda, and boa constrictor remain under consideration for listing.

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. We have evaluated potential effects on federally recognized Indian tribes and have determined that there are no potential effects. This rule involves the importation and interstate movement of three live python species and one live anaconda species, gametes, viable eggs, or hybrids. We are unaware of trade in these species by tribes.

Effects on Energy

On May 18, 2001, the President issued Executive Order 13211 on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This rule is not expected to affect energy supplies, distribution, and use. Therefore, this action is a not a significant energy action, and no Statement of Energy Effects is required.

References Cited

A complete list of all references used in this rulemaking is available on the Internet at *http://www.regulations.gov* under Docket No. FWS–R9–FHC–2008–0015.

Authors

The primary authors of this rule are the staff members of the South Florida Ecological Services Office (see **ADDRESSES**).

List of Subjects in 50 CFR Part 16

Fish, Imports, Reporting and recordkeeping requirements, Transportation, Wildlife.

Regulation Promulgation

For the reasons discussed in the preamble, the U.S. Fish and Wildlife Service proposes to amend part 16, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as follows:

PART 16—[AMENDED]

■ 1. The authority citation for part 16 continues to read as follows:

Authority: 18 U.S.C. 42.

■ 2. Amend § 16.15 by revising paragraph (a) to read as follows:

§ 16.15 Importation of live reptiles or their eggs.

(a) The importation, transportation, or acquisition of any live specimen, gamete, viable egg, or hybrid of the species listed in this paragraph is prohibited except as provided under the terms and conditions set forth in § 16.22:

(1) *Boiga irregularis* (brown tree snake).

(2) *Python molurus* (including *P. molurus molurus* (Indian python) and *P. molurus bivittatus* (Burmese python).

(3) *Python sebae* (Northern African python or African rock python).

(4) *Python natalensis* (Southern African python or African rock python).

(5) *Eunectes notaeus* (yellow anaconda).

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Dated: January 10, 2012.

Eileen Sobeck,

Acting Assistant Secretary for Fish and Wildlife and Parks.

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