FINAL REGULATORY FLEXIBILITY ANALYSIS FOR LISTING CONSTRICTOR SNAKE SPECIES AS INJURIOUS UNDER THE LACEY ACT

Reticulated Python (*Python reticulatus*), Green Anaconda (*Eunectes murinus*), Beni Anaconda (*Eunectes beniensis*), and DeSchauensee's Anaconda (*Eunectes deschauenseei*)

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Regulatory Flexibility Analysis for Listing Constrictor Snakes as Injurious Under the Lacey Act

Background

The Regulatory Flexibility Act of 1980 (Public Law 96-354) requires agencies to evaluate the potential effects of their proposed and final rules on small businesses, small organizations, and small governmental jurisdictions.

Section 603 of the Act requires agencies to prepare and make available for public comment a final regulatory flexibility analysis (FRFA) describing the impact of final rules on small entities. Section 603(b) of the Act specifies the content of a FRFA. Each FRFA must contain:

- A succinct statement of the need for, and objectives of, the final rule.
- A summary of the significant issues raised by the public comments in response to the IRFA, a summary of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments.
- A description of and an estimate of the number of small entities to which the rule will apply or an explanation of why no such estimate is available.
- A description of the projected reporting, record keeping, and other compliance requirements of the rule, including an estimate of the classes of small entities which will be the subject to the requirement and the type of professional skills necessary for preparation of the report or record.
- A description of the steps the agency has taken to minimize the significant adverse economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each of the other significant alternatives to the rule considered by the agency was rejected.

The initial regulatory flexibility analysis was conducted based on the proposed rule to list nine species of large constrictor snakes as injurious species (75 FR 11808; March 12, 2010) under the Lacey Act (18 U.S.C. 42, as amended). On January 23, 2012, we published a final rule (77 FR 3330) to list four of the nine proposed species (Burmese python, Northern African python, Southern African python, and yellow anaconda) with an economic analysis and a final regulatory flexibility analysis; five constrictor species remained under consideration. We are now finalizing the determination of the five remaining proposed species. This means that there is a second final rule, a second final economic analysis (U.S. Fish and Wildlife Service 2015a), and a second FRFA (this one) based on the draft documents from the proposed rule. This FRFA is also based on information and calculations from the second final economic analysis (U.S. Fish and Wildlife Service 2015a). Therefore, this FRFA should be considered in conjunction with the 2015 Final Economic Analysis. We note in this FRFA that four species were listed in 2012, and therefore, this FRFA is based on the five remaining species, unless otherwise noted. The alternatives we considered are based on the proposed rule, peer review of the proposed rule, information and comments received from the public during the public comment periods, and other available information.. Economic 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. There are no marketing data that estimate how consumer preference may change due to the listing thus changing the types of snakes that businesses sell. This analysis does not account for this type of substitution effect.

1. A succinct statement of the need for, and objectives of, the final rule.

The U.S. Fish and Wildlife Service is amending 50 CFR 16.15 to list four large constrictor snake species (Reticulated Python (*Python reticulatus)*, DeSchauensee's Anaconda (*Eunectes deschauenseei*), Green Anaconda (*Eunectes murinus*), and Beni Anaconda (*Eunectes beniensis*)) as injurious species. This listing will prohibit the importation into the United States and interstate transport within the United States of any live animal, gamete, viable egg, or hybrid of these four constrictor snakes. Information indicates that this action is necessary to protect the interests of wildlife and wildlife resources from the adverse effects that may result from the purposeful or accidental introduction and subsequent establishment of large constrictor snake populations in the ecosystems of the United States.

The regulations contained in 50 CFR part 16 implement the Lacey Act (18 U.S.C. § 42) as amended. Under the terms of the law, 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 aforementioned, 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 can be found at 50 CFR 16.11-15.

By adding four species of large constrictor snakes to the list of injurious wildlife, their importation into or transportation between States, the District of Columbia, the Commonwealth of Puerto Rico, or any territory or possession of the United States (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. Federal agencies that wish to import these four species for their own use must file a written declaration with the District Director of Customs and the U.S. Fish and Wildlife Service Inspector at the port of entry. None of these four species, progeny thereof, or viable eggs or gametes imported or transported under permit may be sold, donated, traded, loaned, or transferred to any other person or institution unless such person or institution has a permit issued by the U.S. Fish and Wildlife Service. Any regulation pertaining to the possession or use of the four large constrictor snake species within States continues to be the responsibility of each State.

The Lacey Act makes no provision for regulatory exemptions or alternative standards that will reduce the impact of a listing action on small entities. As explained in greater detail below, many of the entities breeding or selling the two species that are currently in trade are small businesses; to allow them to continue to engage in interstate commerce while prohibiting large entities from doing so will, from a practical standpoint, eliminate the benefits of listing the species as Injurious.

2. A summary of the significant issues raised by the public comments in response to the Initial Regulatory Flexibility Analysis (IRFA), a summary of the assessment of the agency of such

issues, and a statement of any changes made in the proposed rule as a result of such comments.

There were six significant comments on the proposed rule to list nine species of large constrictor snakes that affected the economic analysis section for this regulatory flexibility analysis. The changes we made to the economic analysis are summarized below.

The outcome of this final rule is that four large constrictor snake species (reticulated python (*Python reticulatus)*, DeSchauensee's anaconda (*Eunectes deschauenseei*), green anaconda (*Eunectes murinus*), and Beni anaconda (*Eunectes beniensis*)) are being listed as injurious to the wildlife and wildlife resources of the United States.

Comment 1: 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.
Response: We used industry responses to the 2008 Notice of Inquiry as 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 these associations are cited repeatedly in the report. We sought clarification of the data provided by a trade association with a representative of the association and the consultant who prepared the submission (Reaser 2009). This additional information was considered in the draft economic analysis.

Many industry commenters provided information about their situation or made quantitative assertions that, while informative, were anecdotal and could not be extrapolated to describe the industry as a whole. However, in the final economic analysis, we used some anecdotal individual and business information from the public comments to better depict the range of potential impacts.

Comment 2: The Service employs baseless assumptions to estimate the information it lacks.
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. Our analysis is transparent and our assumptions were modified based on information received during the public comment period. We received additional information, such as interstate sales from Florida, during the last 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 we could not find them available publicly, which necessitated that some assumptions be made in the economic analysis.

Comment 3: The economic analysis ignores wholesalers, transporters, and vendors of food and ancillary equipment.
Response: The economic analysis includes an input-output analysis that accounts for all of the industries that contribute to delivering the product to the consumer. We included wholesalers and equipment used in the production of snakes for sale in the input-output analysis based on retail sales. We obtained shipping cost information on individual sales after the publication of the draft economic analysis. We used this information to revise the economic analysis.

Comment 4: The Service also ignores pricing premiums for snakes, particularly for color morphs, dwarfs, etc.
Response: We found that the aggregate information available and provided by the trade associations was insufficient to segment the market for different classes of snakes for the draft economic analysis. From public comments, we learned that "pricing premiums reach up to 60 times the price of a 'normal' snake," (PIJAC, page 4; 2010). This suggests that there are at least two market segments for a species – one for 'normal' snakes and one for high-end collectible snakes. Therefore, we used this additional pricing information that more accurately depicts pricing premiums in the revised economic analysis.

Comment 5: The IRFA underestimates the economic impact on small entities.
R*esponse:* The FRFA published in 2012 was revised to incorporate new information acquired from the public comment periods since the proposed rule was published. We reviewed the report published by Georgetown Economic Services, Inc. (Collis and Fenili 2011) in conjunction with the third public comment period in 2014. We incorporated some of the estimates into our economic analysis to determine a potential upper range of impact. However, there was not specific information on the number of large constrictor snake distributors, retailers, and small businesses. They focused on the reptile industry as a whole, with a secondary discussion of the nine proposed snakes, so the PIJAC information submitted in earlier public comments is still the best available information to describe the number of large constrictor snake businesses impacted. We used Georgetown Economic Services' estimate for the percentage of revenue impacted for veterinary services and food and equipment suppliers. We are not required to conduct an industry survey. We compiled the best currently available economic data on the large constrictor snake industry to estimate potential impacts that are expected as a consequence of this rule.

Comment 6: The IRFA does not discuss significant alternatives.
Response: The IRFA describes the alternatives on page 5:

> "6. Description of any significant alternatives to the proposed rule
> A draft environmental assessment has been prepared under NEPA and is available for review at *www.regulations.gov*. The environmental assessment analyzes three alternatives to the proposed rule: (1) no action, (2) the listing of seven species as injurious wildlife, and (3) the listing of five species as injurious wildlife. None of these alternatives would be significant."

The draft environmental assessment was prepared under NEPA and has been available for review at *www.regulations.gov* since March 12, 2010 (Docket No. FWS-R9-FHC-2008-0015. The draft environmental assessment included the following Alternatives Not Considered For Detailed Analysis in section 6.2 (the text answers in quotes are from the final environmental assessment):

> *6.2.1) Federal Permitting System such as a Private Hobbyist Permit System Instead of Adding the Nine Large Constrictor Snakes*
>
> "This alternative is not within the authorities of the injurious wildlife provisions of the Lacey Act (18 U.S.C. § 42, as amended). The Lacey Act allows for the issuance of permits for zoological, educational, medical, and scientific purposes. In addition, while the exact number of these large constrictor snakes that are held as pets or by hobbyists is

unknown, there is strong evidence that they number in the hundreds of thousands. An alternative that relies on pet ownership permits would require an intricate and diverse system that would include importers, brokers, pet retail stores, and pet owners across the United States. In addition, the permitting system would need to be very responsive to activities that could occur on a daily basis, such as sales of animals at pet stores or death of pets. To adequately address the constantly changing situation and ensure that additional constrictors are not released into the wild, the Service might need to establish permitting offices across the United States. In addition, the cost of monitoring and enforcing the permitting system would require an increase in law enforcement officials. This would require a much greater level of resources than the Service currently has available. This type of permitting system would rely heavily on voluntary compliance to control the potential spread of these injurious species since it would be virtually impossible to monitor all transactions or interstate movement of specimens. An alternative that relies on monitoring and control by the Service once the snakes are brought into the country is not practical or feasible from an enforcement or economic standpoint to implement and these limitations present unacceptable risks for large constrictor snake introduction and spread."

6.2.2) State Legislative Initiatives such as a State Permitting Program Instead of Adding the Nine Large Constrictor Snakes

"An alternative similar to this, along with other measures, has been reconsidered since issuance of the draft EA, but the alternative was dismissed from further consideration for all but one species, the boa constrictor, because this alternative is generally not practical for the other four species. Few States address all introduction pathways and, because invasive species reproduce, spread, and are often moved by people, each State is hindered or helped by the quality of neighboring States' laws. As a result, State and local efforts depend on effective interstate collaboration. Despite amendments to State laws and regulations, States continue to apply different approaches to listing and prohibitions, generally making cooperative enforcement and management from State to State difficult (Environmental Law Institute 2010).

Nonetheless, the boa constrictor presents a unique situation because of the large number of animals already imported into the United States, the large number of animals in captivity in the United States, the variety of individuals and entities that own boa constrictors and their use of the species, how broadly in geographic terms the species is located in captivity within the United States, the amount of domestic breeding, the risk of escape and establishment of the species, if and where individual snakes have been recorded or populations have become established in the wild in the United States, and the expressed interest by the Association of Fish and Wildlife Agencies (AFWA) and the Pet Industry Joint Advisory Council (PIJAC) in developing effective State and industry controls. The number of boa constrictors that have been imported and that are currently held in captivity, combined with reproduction from domestic breeding, likely comprise a significantly larger portion of the current trade than for any of the eight other constrictor species that were proposed for listing. In fact, captive boa constrictor numbers are likely higher than for all of the other eight large constrictor snake species combined. Thus, of

the nine large constrictor snakes evaluated by the Service, risk management measures by States and private entities such as the pet industry are particularly needed for the boa constrictor, especially where the risk of establishment is high, since States can regulate possession, use, and intrastate movement.

Therefore the Service has decided to withdraw the proposal to list the boa constrictor and has removed the species from further consideration. This means that the Service is taking no action on this species and the anticipated effects would be the same as those discussed under the No Action alternative, as applied solely to the boa constrictor. Please see the final rule for the full explanation of the Service's decision to withdraw the boa constrictor from consideration for listing."

Management of potentially invasive species within the live organisms-in-trade pathway is a much broader topic that the Service is pursuing with industry, the States, and others. For example, we are working with pet industry representatives to provide education and awareness of responsible pet ownership, such as the "Habitattitude" program. In addition, the Department of the Interior signed a Memorandum of Understanding (MOU) with the Pet Industry Joint Advisory Council on June 16, 2009 (before the proposed rule was written), to "create public awareness about the threat of invasive species and to promote responsible pet ownership practices to prevent the accidental release of invasive species by pet owners." This MOU demonstrates that the Service has been working with the pet industry to find ways to preclude the need for listing species as injurious that are part of the pet trade (although not limited to these four species of constrictor snakes).

Comment 7: Small Business Administration (SBA) suggests that, at a minimum, the Service publish a supplemental IRFA that fully addresses these issues.
Response: SBA's comments referred to the 2010 IRFA. In 2012, the Service published a FRFA for four of the species analyzed in the 2010 IRFA. In the notice to reopen the public comment period on the 2010 rule and supporting documents (77 FR 35719; June 24, 2014), we stated:

> "Before providing your comments, we recommend that you review the final rule listing the Burmese python, Northern and Southern African pythons, and yellow anaconda (77 FR 3330; January 23, 2012), particularly the section *Comments Received on the Proposed Rule*. This section extensively covers our responses to the public comments that we received during the first two comment periods (although focused on the four species listed in that final rule) and may address your issues. Also, the final economic analysis, final environmental assessment, and final regulatory flexibility analysis associated with that final rule can provide additional insight if you intend to submit new comments on the draft economic analysis, draft environmental assessment, and initial regulatory flexibility analysis."

The Service believes that SBA's substantive comments were addressed in the 2012 final Regulatory Flexibility Analysis, which carried over to the current FRFA. Therefore, an interim IRFA is not necessary.

<u>3. A description of and an estimate of the number of small entities to which the rule will apply or an explanation of why no such estimate is available.</u>

The Initial Regulatory Flexibility Analysis included a description of importers and breeders as entities that may be impacted by the rule. We expanded the Final Regulatory Flexibility Analysis to include impacts to wholesalers, retailers, hobbyists, and exhibitors as well.

Entities impacted by the listing include: (1) companies importing live snakes of the listed species; (2) companies with interstate sales of live snakes of the listed species (breeders, wholesalers, retailers, hobbyists, and exhibitors or trade shows); (3) entities selling reptile-related products and services (pet stores, veterinarians, and shipping companies); and (4) research organizations, zoos, and educational operations. While many entities may focus solely on a particular function (breeder, wholesaler, retailer, etc.), many others combine several functions. For example, a particular firm may import snakes, breed them, sell progeny over-the-counter or over the internet to consumers, and provide support services. Therefore, it is possible to double count the number of businesses impacted. Furthermore, determining the primary function of the businesses and, thus, determining the industry classifications and size standards for these businesses are complex. For more information pertaining to the retail value of imported and U.S. bred constrictor snakes, please refer to the Final Economic Analysis (U.S. Fish and Wildlife Service 2015a).

As a result of the final rule, impacts to the large constrictor snake industry will occur due to: (1) the elimination of imported snakes listed as injurious, and (2) elimination of interstate transport (both commercial and personal) of snakes listed as injurious. The extent of the economic impacts also depend on if consumers would substitute nonlisted species, thereby reducing economic impacts.

In addition to the impacts discussed below for each group, businesses will face the risk of fines or prison if caught importing or transporting the four listed snake species across State lines. The penalty for a Title 18 Lacey Act violation under the injurious wildlife provisions is not more than six 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.

The large constrictor snake industry is not large enough to have major data collections and reporting requirements such as is required of the agricultural crop industry or the car manufacturing industry. Since the large constrictor snake market is below the commerce data threshold, only limited amounts of data are available. Import data are available from the Service's Office of Law Enforcement and Division of Management Authority. While a number of individuals and businesses stated that the size of the U.S. bred large constrictor snake industry is unknown, a few comments helped inform our estimates. On the whole, this information provides a general overview of the large constrictor snake market, including the number of snakes sold, a range of their retail value, an estimate of the number of businesses involved, and interstate sales. Information on business profiles to determine the percent of revenues affected by the rule are currently unavailable. We have considered all relevant information by conducting literature searches, internet searches, contacting the public, contacting academic experts in the economics of invasive species, and using public comments to approximate the impacts to the industry. Using the data available, we use reasonable assumptions to approximate the potential impact of the rule.

Due to limited data, the number of small businesses in the large constrictor snake industry is extrapolated by the North American Industry Classification System (NAICS) code. The U.S. Small Business Administration defines a "small business" as one with annual revenue that meets or is below the established size standard, which is $750,000 for "All Other Animal Production" businesses (NAICS 112990) and $20.5 million for "Pet and Pet Supplies Stores" businesses (NAICS 453910) (Small Business Administration 2014). The U.S. Census Bureau does not publish detailed data for NAICS 112990. The highest level of detail is the two-digit code for "Forestry, Fishing, Hunting, and Agriculture Support" (NAICS 11). The most recent data for NAICS 11 shows that about 85 percent of establishments qualify as small businesses (less than 10 employees) (U.S. Census Bureau 2012). The most recent data for "Pet and Pet Supplies Stores" (NAICS 453910) shows that about 60 percent of establishments qualify as small businesses (less than 10 employees) (U.S. Census Bureau 2012).

Overall Impacts

This section presents overall impacts of Alternative 2B of the final rule (see "5. **A description of the steps the agency has taken"** below). Unless stated otherwise, the numbers in this FRFA are based on the listing of the reticulated python, green anaconda, Beni anaconda, and DeSchauensee's anaconda (Alternative 2B). These impacts are analyzed on a more detailed level in latter sections. For more information regarding the overall impacts of the rule, please refer to the Final Economic Analysis (U.S. Fish and Wildlife Service 2015a).

Tables 1, 2, and 3 provide a summary of the overall potential economic impacts of Alternative 2B of the rule. Economic output is used here as a broad indicator of the overall impacts on the constrictor snake industry. We include information derived from Collis and Fenili (2011). Table 1 shows both the annual range of impacts in economic output from baseline conditions and the initial employment impacts of the rule (see Table 40 of the 2015 Final Economic Analysis). Although job losses would occur only during the first year of implementing a given alternative, job income would be lost over succeeding years when compared with baseline conditions.

Table 1. Decrease in Constrictor Snake Industry Economic Output and Related Employment

Total Annual Decrease in Economic Output (Millions of Dollars)	Decrease in Employment (Number of Jobs)
$5.3 - $11.4	49 – 105

Table 2 shows the annual decrease in constrictor snake industry economic impacts as a result of the rule as shown by retail value, economic output, job income and local, state and federal tax revenue (see Table 40 of the 2015 Final Economic Analysis). The impact categories cannot be added together since this will double-count the impacts. For example, economic output includes the direct effects of the loss of retail value. Similarly, both job income and tax revenue are derived from total economic output (aggregate sales).

Jobs and **job income** include direct, indirect and induced effects in a manner similar to economic output. Employment includes both full and part-time jobs, with a job defined as one person working for at least part of the calendar year, whether one day or the entire year. **Tax**

revenues[1] are shown for business taxes, income taxes, and a variety of taxes at the local, state and national level. Like output, employment and income, tax impacts include direct, indirect, and induced tax effects of constrictor snake related expenditures.

Table 2. Annual Decrease in Large Constrictor Snake Industry Economic Impacts (Dollars in Millions)

Retail value	Economic Output	Job Income	Tax Revenue
$1.9 - $4.1	$5.3 - $11.4	$1.9 - $4.1	$0.7 - $1.6

Table 3 shows an annual estimate of the impacts as a result of the rule associated with a reduction of shipping expenditures associated with a decline in constrictor snake sales (see Table 41 of the 2015 Final Economic Analysis).

Table 3. Annual Impacts on Shipping Expenditures (Dollars in Millions)

Shipping Expenditures	Economic Output	Employment	Employment Income
$0.3 – $0.6	$0.8 – $1.8	7 – 16	$0.3 – $0.6

Entities Importing Large Constrictor Snakes

Because all species in the genera Python, Boa, and Eunectes are not native to the United States, all were originally imported. In fact, many species of constrictor snakes have been imported into the United States for the last 50 years (PIJAC 2008, 2010). From 2004 to 2013, nearly 1.3 million live constrictor snakes of 13 species (genus Python, Boa, and Eunectes) were imported into the United States (U.S. Fish and Wildlife Service 2015a). *Python regius* (ball python), which was not proposed for listing as injurious, comprised a significant percentage (82) of these imports. Constrictor snakes of many genera are imported, mainly as part of the pet trade.

The draft economic analysis (U.S. Fish and Wildlife Service 2010) used the 3-year time frame (2006-2008), and the final economic analysis (U.S. Fish and Wildlife Service 2015a) used 2011-2013. The FRFAs were changed to the 3-year baseline to be consistent with the economic analyses. The 3-year time frame from 2011-2013 better characterizes the snake industry than the previously used 10-year time frame. Large constrictor snake imports and the number of businesses declined during this period. While the FRFA shows a smaller number of businesses are impacted with the 3-year time frame, the lost revenue per individual businesses is larger than the impacts in the IRFA because we used revised, higher retail prices. As a result of this change, potential impacts to individual businesses are actually larger than impacts in the IRFA.

From 2011 to 2013, 85 businesses imported an annual average of 100,952 live constrictor snakes of 10 species in the genera Python, Boa, and Eunectes (U.S. Fish and Wildlife Service 2015a).

[1] The overall tax rate is about 13.7 percent of economic output and includes direct, indirect and induced tax effects nationwide. The tax rate is calculated within the economic modeling software used to estimate economic impacts.

Thirty-three of these businesses (39 percent) imported an annual average of 935 snakes that are listed in the final rule.

We do not know whether companies importing the snakes will predominately breed snakes or whether they are for pet stores that directly sell the snakes. By extrapolating the size distribution from the U.S. Census Bureau employment data for NAICS 11 and NAICS 453910, we calculate that approximately 51 to 72 import companies (60 to 85 percent) qualify as small businesses (Table 4). Of these, 20 to 28 companies or individuals (39 percent) imported live constrictor snakes that are being listed as injurious (U.S. Fish and Wildlife Service 2015a).

Table 4. Estimated Number of Large Constrictor Snake Importers Affected by Listing Four Species

	Number of Large Constrictor Snake Importers	Number of Small Importers	Number of Affected Importers	Number of Affected Small Importers
3-Year Average (2011 - 2013)	85[1]	51 to 72	33[2]	20 to 28

Source: [1]U.S. Fish and Wildlife Service 2015a; [2] U.S. Fish and Wildlife Service LEMIS Import Data 2014

We employ three scenarios in the Final Economic Analysis (USFWS 2015a) to estimate the impact of the final rule. Scenario A uses import and U.S.-bred snake (PIJAC 2008, 2010; kingsnake.com 2010) data to estimate constrictor snake sales. This approach assumes that all or some portion of annual imports are sold and that all or some portion of the number of constrictor snakes bred in the U.S. annually are sold. The number of snakes actually sold consists of a percentage of imports (not all), a portion of U.S.-bred snakes (not all), and a portion of snakes that were neither imported nor bred that year, but were carry-overs from previous years (either imported or bred). Since the percentage of carry-over sales is unknown, we assume that all imports and all U.S.-bred snakes are sold, which to a certain extent, makes up for not explicitly estimating carryover sales. Scenario B uses information from USARK (2010) on high-end sales and their value (new information obtained through the public comment process). Scenario C uses information from a study by Georgetown Economic Services (GES), The Modern U.S. Reptile Industry (Collis and Fenili 2011). For more information pertaining to the three scenarios, please refer to the Final Economic Analysis (U.S. Fish and Wildlife Service 2015a).

In our Initial Regulatory Flexibility Analysis, we estimated the average annual retail value for the species that were included in the proposed rule. For this Final Regulatory Flexibility Analysis, we have expanded the analysis to show that some retail activity for imported large constrictor snakes that are not listed is likely to continue.

Table 5 shows the average gross revenue for imported large constrictor snakes ranges from $31.8 million to $68.9 million (Scenario A and Scenario C, respectively). The annual value of importing the two constrictor snakes that are being listed in this rule as injurious and that are in

trade ranges from $0.3 million (Scenario A) to $0.63 million (Scenario C). All import sales from live constrictor snakes listed in the final rule will be eliminated. The impacts will be distributed between the reticulated python (96 percent) and the green anaconda (4 percent). Beni anaconda and DeSchauensee's anaconda are not currently imported.

Impacts to importers as a whole will represent a 1 percent reduction in gross revenue. If impacts are distributed evenly among importers, then average annual revenue losses per business would be $8,900 to $19,100. However, individual businesses may face a range of impacts from closure to minimal revenue decrease. The number of import businesses that may close is uncertain. Impacts to individual businesses are dependent upon: (1) whether these businesses sell other snakes and reptiles as well, (2) if the listed snakes are more profitable than non-listed snakes or other aspects of the business, or (3) if consumers would substitute the purchase of other snakes that are not listed.

Table 5. Estimated Annual Impact on Large Constrictor Snake Import Sales

	Average Annual Retail Value of Imported Large Constrictor Snakes[a]	Average Annual Retail Value of Listed Snakes[b]	Percentage of Imported Retail Value Lost Due to Listing	Average Annual Losses per Business
Scenario A	$31.8 million	$0.3 million	1%	$8,900
Scenario B	$65.8 million	$0.61 million	1%	$18,500
Scenario C	$68.9 million	$0.63 million	1%	$19,100

[a] *Python* spp., *Boa* spp., *Eunectes* spp.

[b] *Python reticulatus*, *Eunectes murinus*, *E. beniensis*, and *E. deschaunseei*

Entities Breeding and Selling Large Constrictor Snakes of All Species

Entities that breed and sell large constrictor snakes (including species not proposed for listing as injurious) include distributors, retailers, breeders, hobbyists, and exhibitors. These entities will potentially be affected in two ways: (1) by eliminating interstate sales, entities will only be able to buy or sell constrictor snakes of the four species offered within their respective State; and (2) persons moving will not be able to transport their snake(s) across state lines. The impacted entities are described in detail below. These numbers include those entities that may have previously traded in one or more of three constrictor snakes listed as injurious in 2012 (one was not in trade) and that now may only be selling in-state or may have switched to other species.

Distributors: Distributors include firms and individuals that sell snakes to other businesses, either in lieu of or in addition to selling to consumers. PIJAC (2008, 2010) estimates there are 50 distributors of large constrictor snakes (from the three genera).

Retailers: Snake sales by retailers may include over-the-counter sales such as pet stores, internet-based sales and mail-order firms. PIJAC (2008, 2010) estimates the number of U.S. retail firms selling large constrictor snakes at 5,100 (from the three genera).

Hobbyist and Commercial Breeders: A number of pet snake owners also breed their snakes. Some owners may do so strictly for their own enjoyment with no intent to sell the snakes, while others may intend to sell in limited quantities to other pet owners or breeders. Commercial breeders run businesses that sell snakes to wholesalers, retailers, other breeders, zoos, research organizations and other entities. PIJAC (2008, 2010) estimates that there are between 2,000 and 5,000 hobbyists in the U.S. and between 2,500 and 5,000 individuals and businesses that breed large constrictor snakes (from the three genera).

Exhibitors: A number of individuals and firms attend reptile shows and exhibits nationwide. PIJAC (2008, 2010) estimates that about 25 individuals and hobbyists contribute to or organize 350 to 400 shows annually.

Table 6 summarizes the number of businesses that sell or breed large constrictor snakes. We determined the number of small businesses by extrapolating from NAICS 11 and NAICS 453910. The total number of businesses, both large and small, that sell or breed the listed four species is unknown. Overall, the retail value of the four species in this final rule represent 8 percent of all U.S.-bred large constrictor snake retail sales (Table 7). 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 8 percent of businesses sell or breed the listed snake species that are listed under the final rule.

Table 6. Estimated Number of Large Constrictor Snake Sellers/Breeders Affected by Listing Four Snake Species

	Number of Businesses*	Number of Small Businesses (60% to 85%)	Number of Affected Businesses (8%)	Number of Affected Small Businesses (60% to 85%)
Distributors	50	30 to 43	4	3 to 4
Retailers	5,100	3,060 to 4,335	408	258 to 430
Hobbyists	2,000 to 5,000	1,200 to 4,250	160 to 400	101 to 422
Breeders	2,500 to 5,000	1,500 to 4,250	200 to 400	127 to 422
Exhibitors	25	15 to 21	2	1 to 2
Total	**9,675 to 15,175**	**5,805 to 12,899**	**774 to 1,214**	**490 to 1,281**

*Source: PIJAC 2008, 2010.

Under the final rule, the interstate transport of four constrictor snakes will be discontinued. Thus, any revenue earned from this portion of business will be eliminated. Nationwide data pertaining to interstate sales are unavailable. However, according to the Florida Fish and Wildlife Conservation Commission, 85 percent of Florida's large constrictor snake sales are sold out of State (2010; the agency did not provide an update of this number in their 2014 public comments). Whether the trend in Florida represents the average nationwide trend is unknown. The Georgetown Economic Services report stated that 57 percent of all live reptile sales were

made to out-of-state consumers (Collis and Fenili 2011). Because their 57 percent estimate is based on the entire reptile industry, we present the 85 percent estimate as a conservative estimate which better represents the large constrictor snake industry.

Table 7 summarizes the overall and average impacts to U.S.-bred large constrictor snake sales. The average annual retail value for all U.S.-bred large constrictor snakes ranges from $16.1 million (Scenario A) to $34.6 million (Scenario C). The average annual retail value of U.S.-bred snakes that will be listed under the final rule is $1.6 million to $3.4 million. Only sales from the interstate transport of the listed snakes will be discontinued. Thus, the annual value of U.S.-bred live constrictor snakes sales that will be eliminated (85 percent) is $1.4 million (Scenario A) to $2.9 million (Scenario C). Impacts to this group of businesses as a whole will represent an 8 percent reduction in retail value.

If the revenue losses are distributed across the industry evenly, the average annual revenue losses per business (retail value of listed snakes that are sold out-of-State divided by the number of affected businesses) will be $1,100 to $3,700. However, individual businesses that breed or sell snakes listed as injurious will face a range of impacts from minimal revenue decrease to closure. Some businesses specialize in the sale of the listed snakes and predominantly sell to out-of-State customers (Delles 2010, Wall 2010, McCurley 2014). The breeding of large constrictor snakes is very specialized. The total number of small businesses that may close is uncertain. Impacts to individual businesses are dependent upon: (1) whether these businesses sell other snakes and reptiles as well, (2) if the species being listed are more profitable than non-listed snakes or other aspects of the business, or (3) if consumers would substitute the purchase of other snakes that are not listed as Injurious. There are no marketing data that estimate how consumer preference may change due to the listing thus changing the types of snakes that businesses sell. This analysis does not account for this type of substitution effect, thereby overestimating overall industry impacts to breeding and selling large constrictor snakes domestically.

Table 7. Estimated Annual Impact on U.S. Bred Listed Snake Sales

	Average Annual Retail Value of U.S. Bred Large Constrictor Snakes	**Average Annual Retail Value of Listed Snakes**	**Retail Value of Listed Snakes that are sold out of State (85%**	**Percentage of U.S. Bred Retail Value Lost Due to Listing**	**Average Annual Losses per Business (817 to 1,508 affected businesses)**
Scenario A	$16.1 million	$1.6million	$1.4 million	8%	$1,100 to $1,800
Scenario B	$33.3 million	$3.3 million	$2.8 million	8%	$2,300 to $3,600
Scenario C	$34.6 million	$3.4 million	$2.9 million	8%	$2,400 to $3,700

Entities Providing Support Services for Large Constrictor Snakes

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 non-food items), (3) veterinary care and other health-related items, and (4) shipping companies. In general, most of these types of companies provide services to other industries besides the large constrictor snake market.

Food and Equipment Suppliers

Food and equipment suppliers generally provide products and services to the greater reptile industry. The U.S. Small Business Administration noted that during its roundtable, one particular company, Zoo Med Labs, would experience substantial losses due to the final rule (SBA 2010, 2014). Zoo Med Labs, which provides products for reptile care, states that the final rule will reduce sales by $5.157 million (30 to 40 percent) and potentially represent the types of losses that food and equipment suppliers may face as a result of the final rule. (SBA 2010, 2014; Bagnall 2010). Collis and Fenili (2011) report that 11 percent to 57 percent of revenues from ancillary products and services related to the listed snakes would be lost. The impact to individual businesses would depend on whether these businesses serve other animals as well, or if consumers would substitute the purchase of other snakes that are not listed as Injurious. The number of businesses that supply food and equipment to the large constrictor snake market is unreported.

Veterinary Services

The U.S. Small Business Administration established size standard for veterinarian services is $7.5 million (Veterinary Services NAICS 54194) (Small Business Administration 2014). The most recent data for NAICS 54194 shows that about 60 percent of establishments qualify as small businesses (less than 10 employees) (U.S. Census Bureau 2012). The number of veterinary businesses that provide services for large constrictor snakes is unreported, although the Small Business Administration states that only a handful of veterinarians have the expertise to treat large constrictor snakes (SBA 2010, 2014). These entities may be adversely affected because pet owners will no longer be able to transport their snakes across State lines for treatment. Collis and Fenili report that 28 percent of veterinary costs generated by treating the listed snakes would be lost (2011). The impact to individual businesses would depend on whether these businesses serve other animals as well, or if consumers would substitute the purchase of other snakes that are not listed as Injurious.

Shipping Companies

The decline in constrictor snake sales will affect shipping expenditures. Since shipping expenditures are usually the responsibility of the buyer, these impacts are estimated separately from impacts to the constrictor snake industry (shipping costs are not usually included in the sales price). Since shipping costs are not based on a per snake basis but typically by weight, putting shipping costs on a per snake basis is problematic. However, in compiling price data via the Internet, a majority of the shipping costs for a purchase were in the range of $35 - $50 per shipment. Consequently, for a conservative estimate of shipping costs, the $50 figure is used to estimate shipping costs and impacts. The decline in shipping expenditures is estimated to range between $0.3 and $0.6 million.

The U.S. Small Business Administration established size standard for shipping companies is $7.5 million (Postal Service NAICS 491110) (Small Business Administration 2014). The U.S. Census Bureau does not publish detailed data for NAICS 491110. The highest level of detail is the two-digit code for "Transportation and Warehousing" (NAICS 48-49). The most recent data for NAICS 48-49 shows that about 72 percent of establishments qualify as small businesses (less than 10 employees) (U.S. Census Bureau 2012). In general, the types of businesses that ship live animals are large businesses such as FedEx and Delta Airlines. The number of businesses that provide shipping services for live snakes is unreported. Thus, we do not know the impact to individual businesses.

Research organizations, zoos, and educational operations

Businesses that would import or transport across State lines live large constrictor snakes for zoological, educational, medical, or scientific purposes are exempt by permit under the Lacey Act (in accordance with permit regulations at 50 CFR 16.22). If these entities choose to import or transport across State lines, then they can apply for a permit. One permit can cover multiple individuals and species in a shipment. However, each separate shipment requires a permit. For travelling educational programs, only one permit will be required for a set period for specific animals. The educational operation will not need a new permit each time they travel. (They will need to amend their permit, however, if they were to add new animals or remove others from the permit). Provided that the educational, zoological, medical, or scientific operations can meet the issuance criteria, permits can be issued. Permit costs are either $25 (transportation permits) or $100 (acquisition and import permits.) The length of time it takes for an applicant to complete a permit application averages about 1 hour. In general, permit applications are processed within 30 to 90 days.

4. Description of the projected reporting, record keeping, and other compliance requirements of the rule, including an estimate of the classes of small entities which will be the subject to the requirement and the type of professional skills necessary for preparation of the report or record.

The final rule will prohibit the importation and interstate transport of four species of live constrictor snakes, hybrids, and viable eggs. No reporting, record keeping, or other compliance requirements are necessary to comply with the regulation, unless a permit is requested for the exceptions (scientific, educational, medical, or zoological purposes). The types of small entities that will be affected by the need to obtain permits include researchers, zoos, and educational operations. The permit application is OMB No. 1018-0093, and no professional skills are required to prepare the application. We are not aware of any Beni anacondas or DeSchauensee's anacondas that have been imported since 1999, so they are not likely bred in the United States, unless they were imported under another name.

5. A description of the steps the agency has taken to minimize the significant adverse economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each of the other significant alternatives to the rule considered by the agency was rejected.

The U.S. Fish and Wildlife Service is publishing a final rule to add four large constrictor snakes to the list of injurious wildlife under the Lacey Act (18 U.S.C. 42 as amended; Lacey Act). Four alternatives were developed for consideration in the Final Environmental Assessment. These alternatives included: Alternative 1 (Baseline) – no action; Alternative 2A – Add five large constrictor snake species to the list of injurious wildlife (reticulated python, green anaconda, boa constrictor, Beni anaconda, and DeSchauensee's anaconda); Alternative 2B – Add four large constrictor snake species to the list of injurious wildlife (not list the boa constrictor); Alternative 3 – Add three large constrictor snake species to the list of injurious wildlife (not list Beni and DeSchauensee's anacondas); and Alternative 4 – Add one large constrictor snake species to the list of injurious wildlife (boa constrictor). For more information pertaining to the alternatives analyzed, please refer to the Final Environmental Assessment (USFWS 2015b). The alternatives are summarized below.

Alternative 1 (Baseline) – The risk assessment conducted by the U.S. Geological Survey (Reed and Rodda 2009) resulted in finding that Organism Risk Potentials of the nine large constrictor species are high or medium. The species are a risk for establishing self-sustaining populations in vulnerable ecosystems. Not listing the five constrictor snake species as injurious will allow the continued importation and interstate transport of these species, which carries with it unacceptable risks to select ecosystems and the species that rely on them. We note that four of the nine proposed species were listed as injurious in 2012, and therefore, Alternative 1 is based on not listing the remaining five species.

The areas at risk of invasion often span a climate range greater than the climate match. For example, factors other than climate may limit a species' distribution in its native range, 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 area. Regarding the necessity for a nationwide listing (which regulates only importation and interstate transport), 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. Creating 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. We believe federally regulating movements of large constrictors into the United States and between States and territories, under most circumstances, is a necessary and important step in limiting their effects.

Please also see our response to Comment 6 above regarding a Federal permitting system.

Alternative 2A - Add five large constrictor snake species to the list of injurious wildlife (the Reticulated Python, Boa Constrictor, DeSchauensee's Anaconda, Green Anaconda, and Beni Anaconda) –By prohibiting the importation and interstate transportation of all five large

constrictor snakes, Alternative 2A will likely do the most to protect wildlife and wildlife resources from negative impacts due to large constrictor snake introductions in the absence of effective State control measures. None of the five species of constrictor snakes is native to the United States. All are injurious. Therefore, preventing the introduction into the United States or spread of an already introduced wildlife species into a U.S. ecosystem where it has not previously occurred cannot have a significant harmful effect on the environment. This alternative (listing all five species as injurious) will most reduce the risk of establishment of the five large constrictor snakes in the wild, especially if the States take no further action. It will minimize the likelihood that the species already present will spread beyond their current locations into other natural areas of the United States, including the insular territories. These five large constrictor snakes have been imported or could be imported into the United States. All could escape or be released into natural and developed areas (some already have), all are likely to survive and become established, all are likely to spread if introduced, and all are likely to prey on native wildlife species and compete with native species for food. In addition, it will be difficult to prevent, eradicate, manage, or control the spread of large constrictor snakes, and it will be difficult to rehabilitate or recover ecosystems disturbed by these species. Furthermore, because of the predatory behavior of the five species, the negative effects to threatened and endangered species could be permanent. This alternative will provide the greatest opportunity to prevent the importation of species not yet established in the United States.

The risk assessment conducted by USGS (Reed and Rodda 2009) concluded that the organism risk potential, which is calculated based on the probability and consequences of establishment, was "high" for the boa constrictor and "medium" for four species (reticulated python, DeSchauensee's anaconda, *g*reen anaconda, and Beni anaconda). None of the five species was determined to be a low risk.

Alternative 2B –Add four constrictor snake species to the list of injurious wildlife (reticulated python, green anaconda, Beni anaconda, and DeSchauensee's anaconda).

This alternative withdraws the boa constrictor from consideration for the reasons explained in the final rule under the section **Withdrawal of the Boa Constrictor from Consideration as an Injurious Species**. By withdrawing the boa constrictor, the agency is taking a step that also serves to minimize the economic impact on small entities. All of the risks discussed under Alternative 2A apply for the four species being listed under this alternative.

Alternative 3 – Add three large constrictor snake species to the list of injurious wildlife (the reticulated python, boa constrictor, and green anaconda) – Listing only these three large constrictor snake species as injurious was considered but not selected for action. This is, in part, because listing these three snakes would allow the importation and interstate transport of two other large constrictor snakes that have not yet been imported into the United States. Therefore, fauna in ecosystems of the United States would still be at risk from large constrictor snake introductions of these two species and, if introduced, would still likely have extensive negative impacts locally on native wildlife populations through predation. Listing three of the five large constrictor snakes as injurious would result in the continued risk of introduction of two other snakes into States or insular territories where they are not currently traded or owned.

Alternative 4 – Add one large constrictor snake species to the list of injurious wildlife (*boa constrictor*) – Listing only one large constrictor snake species as injurious was considered, but not selected for action. This is because listing only the one remaining snake species that was rated as "High" risk in the USGS risk assessment (Reed and Rodda 2009) would allow the continued importation and interstate transport of four other large constrictor snakes rated as "Medium" risk. Therefore, fauna in ecosystems of the United States will still be at risk from large constrictor snake introductions, although those States and Territories where the large constrictor snakes are currently present already face this risk. Listing only one of the five large constrictor snakes as injurious would result in the continued risk of introduction of four other snakes of medium risk into States or insular territories where they are not currently traded or owned. Interstate transport of large constrictor snakes would still occur with the potential for accidental or intentional introduction even in States or insular territories that do not permit their use. See the discussion in the final rule and section "*6.2.2) State Legislative Initiatives such as a State Permitting Program Instead of Adding the Nine Large Constrictor Snakes*" of this analysis for why the high-risk boa constrictor is uniquely qualified for not listing while we have decided to list the four medium-risk species.

Potential economic impacts for each alternative are available in the Final Economic Analysis (U.S. Fish and Wildlife Service 2015a).

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