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Injurious Species Listings Under the Lacey Act: A Legal Briefing

Kristina Alexander
Legislative Attorney

August 1, 2013

Congressional Research Service

7-5700

www.crs.gov

R43170

Summary

The Lacey Act addresses illegal wildlife trade to protect species at risk and bars importing species found to be injurious to the United States. The portion of the Lacey Act known as the injurious species provision is codified in the criminal code at 18 U.S.C. Section 42 rather than with the trade provision of the Lacey Act, which is codified in the conservation title, Title 16. Two bills before Congress, H.R. 996/S. 1153, address the effectiveness of the act, proposing deadlines to the regulatory process of adding injurious species. However, other issues, such as whether the act is effective at constricting the spread of unintended imports, such as mussels, remain.

Under the injurious species provision, it is illegal to import or ship between states any species listed under the act. The statute bans import and shipment of living creatures and their eggs, although the regulations also ban certain dead fish. Permits may be issued to import banned species for scientific, zoological, educational, or medical purposes. A violation is a Class B misdemeanor, punishable by no more than six months in jail and/or up to a \$5,000 fine for an individual, \$10,000 for an organization.

The list of banned species may be amended either by statute or by regulation issued by the Fish and Wildlife Service (FWS) of the Department of the Interior. In 1900, the list contained four species. Now it contains dozens, with most being added by regulation. Most recently, in March 2012, four python and an anaconda species were added to the list. In light of that addition, the 113th Congress is considering H.R. 2158, which would exempt certain snake export activities from the trade provisions of the Lacey Act to allow retailers to export listed snakes without violating the law. Also, Congress is considering adding the quagga mussel (*Dreissena rostriformis*) to the list of banned species (H.R. 1823).

The act does not authorize agencies to take any measures against injurious species already present in the United States unless part of interstate commerce, so once a species has entered the country, it may flourish. For example, in 1900 the Lacey Act prohibited importing English sparrows or starlings, yet populations of both prospered, and Congress removed the two species from the list in 1960 because of the futility of regulating them. Similarly, the 1990 listing of the zebra mussel appears to have done nothing to prevent the spread of the invasive species—likely because the species was never intentionally imported. The Eurasian mussel entered through the ballast water emptied into the Great Lakes and has moved to neighboring waterways. It made its way to nonconnected waterways by being transported on the hulls of commercial and recreational boats. The quagga mussel took the same route, and now is found as far west as Lake Mead, Nevada.

The regulation of invasive mussels has proved controversial, with FWS indicating that water transports between Oklahoma and Texas were in violation of the Lacey Act because zebra mussels would be moved across state lines with the water. The 112th Congress exempted those water transfers from the Lacey Act in P.L. 112-237, Section 5. If quagga mussels were banned, more interstate water transfers might be subject to Lacey Act enforcement. However, there is a legal question as to whether FWS's interpretation of the injurious species ban properly extends to transport, rather than only to import and shipment, as stated by the law.

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Introduction

The 1900 Lacey Act prohibited importing four species that Congress found injurious to the agricultural and horticultural interests of the United States: the mongoose, fruit bat, English sparrow, and starling.¹ That portion of the Lacey Act, known as the injurious species provision, has been amended several times, and is codified in the criminal code, 18 U.S.C. Section 42. The trade provisions of the Lacey Act, which restrict the trade of species protected by other laws, are codified in the conservation title, Title 16, and are not reviewed herein.² As Congress considers H.R. 996/S. 1153, issues, such as the act's effectiveness in blocking the spread of species that are well-established at the time of being listed, may arise.

The injurious species provision prohibits “the importation into the United States ... or any shipment between [the States]” of any listed animals, their offspring, or eggs.³ Some exceptions are allowed. For example, permits may be issued for importing creatures for “zoological, educational, medical, and scientific purposes.”⁴

The act is enforced by the Fish and Wildlife Service (FWS) of the Department of the Interior and the Customs Service and Border Protection (Customs Service) of the Department of Homeland Security. Violations are a Class B misdemeanor with a maximum jail time of six months and/or a maximum penalty of \$5,000 for an individual or \$10,000 for an organization.

Animals may be added to the list, which now totals dozens of species (some listed by genus or family), by congressional amendment or by regulatory action.⁵ Most animals added since 1900 have been added by regulation. (See **Appendix A**.) The regulatory listing process, however, has taken up to six years. Congress is considering legislation to alter the regulatory process, because delays can give species a chance to become well-established, making eradication difficult if not impossible. H.R. 996/S. 1153 would direct FWS to make quicker regulatory listings. Another bill, H.R. 1823, would add the quagga mussel (*Dreissena rostriformis*) to the injurious species list. Constrictor snakes banned by the Lacey Act are addressed in H.R. 2158, which would exempt exporting python and anaconda species from the definition of interstate commerce under the trade provisions of the Lacey Act, but does not address the shipping ban under 18 U.S.C. Section 42.

The act's success in preventing the spread of injurious species is under review. For example, when reviewing H.R. 1823, Congress may weigh the appropriateness of regulating accidental imports, such as quagga mussels, as a criminal offense, or consider whether the act is suitable to

¹ 31 Stat. 188 (1900).

² For information on the trade provisions of the Lacey Act, see CRS Report R42067, *The Lacey Act: Protecting the Environment by Restricting Trade*, by Kristina Alexander. To focus on plant issues, see CRS Report R42119, *The Lacey Act: Compliance Issues Related to Importing Plants and Plant Products*, by Pervaze A. Sheikh.

³ 18 U.S.C. §42(a)(1).

⁴ 18 U.S.C. §42(a)(3). Also, import and shipment of domesticated canaries, parrots, and all psittacine birds are not restricted. 18 U.S.C. §42(a)(4). For a discussion on invasive species in general, see CRS Report RL30123, *Invasive Non-Native Species: Background and Issues for Congress*, by M. Lynne Corn et al., which references other laws pertaining to invasive species.

⁵ A House report on the North Zebra Mussel Barrier Act of 2012 (H.R. 6007) states there are 236 species on the injurious species list. H.Rept. 112-657 (September 10, 2012). That number was provided to Congress by FWS, which is revising its total to more than 400 species, in large part due to listing the entire family Salmonidae. E-mail from Susan Jewell, FWS Injurious Wildlife Listing Coordinator, to the author (July 10, 2013).

prevent anything other than intentional imports. The act's origins indicate that Congress intended to require proof of knowledge to convict a carrier or the recipient, known as a consignee, rather than to impose a strict liability standard. (See "Penalties" below.)

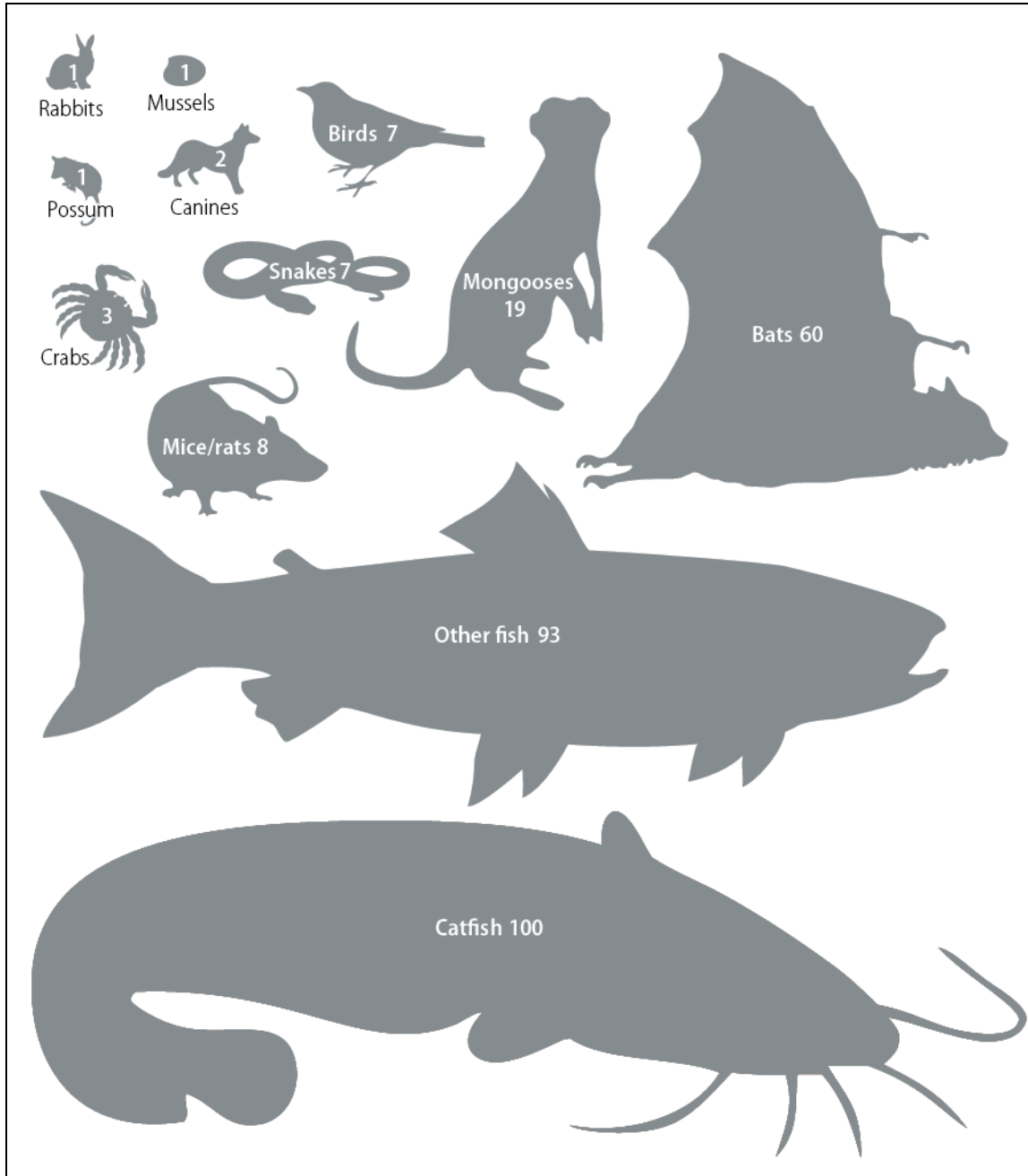
Another point of interest is whether FWS has appropriately interpreted the law as applying to any form of interstate transportation, including water piped between states. In 2012, in response to FWS action alleging illegal transport of zebra mussels in water pumped from Lake Texoma in Oklahoma to Texas, Congress acted to prevent the injurious species provision from applying (P.L. 112-237, §5). No court has considered the issue, but the legislative history suggests that, contrary to FWS's current interpretation, only import and shipping are violations of the act, rather than all forms of interstate movement. A court would have to decide whether the FWS interpretation is subject to appropriate deference. However, the interpretation that the act provides otherwise is bolstered by the plain language of the statute, which bars "importation into [the United States or its territories] or any shipment between [the states]," but also explicitly punishes the "importer or consignee" by destroying the prohibited species at their expense.⁶ Additionally, the 100-plus-year legislative history of this act consistently uses *shipment* or *common carrier*, when referencing injurious species, but uses *transport* only when prohibiting Lacey Act trade activities, which were segregated from Title 18 in 1981.⁷ If interpreted strictly as described above, the injurious species provision would be weakened because it would restrict enforcement actions to those involving import or commercial shipping.

⁶ 18 U.S.C. §42(a)(1).

⁷ 95 Stat. 1079.

Figure 1. Scaled Representation of Black-Listed Species

Sizes represent the number of species listed as injurious



Source: Congressional Research Service based on 50 C.F.R. Part 16.

Notes: Fish size is based on estimated 55 domestic salmon and trout species of the family *Salmonidae*, but not all of the hundreds of species within the family. It also includes 34 species of the snakehead genera *Channa* and *Parachanna*, and 4 species of Asian carp. 50 C.F.R. §16.13. Both Snake and Bird sizes include named subspecies. 50 C.F.R. §16.15 and 50 C.F.R. §16.12, respectively.

Background and History of the Lacey Act Injurious Species Provision

This report examines the Lacey Act provision that directs injurious species bans and is codified in the criminal code, Title 18.⁸ The injurious species provision addresses prohibited acts, exceptions, and penalties.

Prohibited Acts

The injurious species prohibitions consist of a list of banned species and restrictions on the import and shipment of those species.

White List v. Black List

In 1900, the original Lacey Act injurious species provision had two sections restricting such imports. The first forbade import of “any foreign wild animal or bird” absent a special permit issued by the Department of Agriculture.⁹ The second prohibited importing “the mongoose, the so-called ‘flying foxes’ or fruit bats, the English sparrow, [and] the starling.”¹⁰ The Member for whom the act is named, Representative John F. Lacey of Iowa, urged passage of the law to avoid another environmental disaster like the introduction of the sparrow, which he called “the ‘rat of the air,’ that vermin of the atmosphere.”¹¹ He said that the ban on imports was necessary because “There is a compensation in the distribution of plants, birds, and animals by the God of nature. Man’s attempt to change and interfere often leads to serious results.”¹²

Generally, laws that list banned species are known as “black list” laws. “White list” laws ban importing all species *except* those on an approved list. For decades, the Lacey Act was primarily a white list law—prohibiting importing “any foreign wild animal or bird” except under special permit, as well as banning all imports of the four species mentioned above.¹³

The 1949 amendments of the Lacey Act transformed the injurious species provision into a purely black list law, by excising the language that barred import of “any foreign wild animal or bird.”¹⁴ Instead, only listed species were banned, which included just the original four: mongoose, fruit bats, sparrows, and starlings.¹⁵

⁸ 18 U.S.C. §42(a)(1).

⁹ 31 Stat. 188, §2. In 1939, authority over the injurious species provision was transferred to the Department of the Interior. 53 Stat. 1433.

¹⁰ 31 Stat. 188.

¹¹ Congressional Record—House, at 4871 (April 30, 1900).

¹² 56 Cong. Rec. 4871 (April 30, 1900).

¹³ 31 Stat. 188.

¹⁴ 63 Stat. 89.

¹⁵ The 1949 amendments also added language prohibiting “transport[] [of wild animals and birds] under inhumane and unhealthful conditions.” 63 Stat. 89. While this section remains codified with the injurious species provision, in 18 U.S.C. Section 42(c), it is not part of the ban on injurious species and is outside the scope of this report.

The 1960 amendment to the injurious species provision of the Lacey Act addressed scientific concerns. It added scientific names for the mongoose and fruit bats, and stated that the ban applied not just to “animals and birds” but to mammals, birds, “fish (including mollusk and crustacea), amphibians, [and] reptiles.”¹⁶ The English sparrow and the starling were removed from the list. A Senate report discussed the removal: “We believe that no useful purpose would be served by continuing the specific prohibition against their importation. From introductions into this country prior to 1900, these birds have extended their range throughout the country and no feasible means for controlling their numbers or range has been devised.”¹⁷

The 1960 amendment also established that in addition to barring species that imperiled agricultural and horticultural interests, the FWS could ban species that would harm forestry, wildlife, and wildlife interests within the United States.¹⁸ The 1960 version of the injurious species provision remains the framework for the current law.

Subsequent amendments have added species without changing the substance of the law:

- In 1990, the zebra mussel;¹⁹
- In 1991, the brown tree snake;²⁰ and
- In 2010, the bighead carp.²¹

No species have been removed from the list by statute since 1960.²²

Import or Shipment

The Lacey Act injurious species provision has always restricted import of banned species. While it currently also prohibits interstate shipment of those animals, the language regarding shipping has changed over the act’s 113-year history. Because the injurious species provision and the trade provision were codified together until 1981, the amendments to the shipping provision of the injurious species provision relate to changes in the trade provision.

¹⁶ 74 Stat. 753. While the pre-1960 version separated birds from the animal kingdom, the current language completely omits insects, which comprise a heavy majority of all species on the planet. 18 U.S.C. §42(a)(1).

¹⁷ S. Rpt. 86-1883, *Importation of Injurious Mammals, Etc.*, Committee on the Judiciary (August 20, 1960).

¹⁸ 74 Stat. 753.

¹⁹ 104 Stat. 4772. For a summary of the spread of zebra mussels, see U.S. Geological Survey, <http://nas.er.usgs.gov/queries/factsheet.aspx?speciesid=5>.

²⁰ 105 Stat. 1901. The December 1991 statute added the brown tree snake to the injurious species provision more than a year after the snake was listed via regulation effective May 25, 1990. 55 Fed. Reg. 17441 (April 25, 1990).

²¹ 124 Stat. 3282.

²² A regulation in 1965 effectively delisted the European hare by changing how it and the European rabbit were identified. Originally, the two species’ common and scientific names were given. 39 Fed. Reg. 1169 (August 13, 1952). The 1965 regulation instead worded the ban as follows: “any species of European rabbit of the genus *Oryctolagus*.” 30 Fed. Reg. 9641 (August 3, 1965). However, the genus *Oryctolagus* does not include the species known as the European hare. See Integrated Taxonomic Information System (ITIS), online at <http://www.itis.gov/servlet/SingleRpt/SingleRpt>. There is no indication whether the delisting was intentional.

For decades the Lacey Act prohibited two types of acts related to injurious species in two separate provisions: import, in the injurious species provision; and acts related to a carrier for shipping, in the trade provision. In the 1900 act, the injurious species provision, then known as Section 2, only prohibited import. Section 3 of the 1900 act, which became the trade portion of the Lacey Act, referenced the ban on injurious imports, prohibiting:

deliver[y] to any common carrier, or for any common carrier to transport ... any foreign animals or birds *the importation of which is prohibited....*” (emphasis supplied).²³

In essence, importing banned species was illegal, as was shipping those species by a common carrier. Section 2 of the 1900 act eventually was codified in 18 U.S.C. Section 42. Section 3 of the 1900 act was codified in 18 U.S.C. Section 43, before being moved to the conservation title.

The import ban was retained in the 1909 amendment, which slightly altered the shipping language in the trade provision as follows: “It shall be unlawful for any person to deliver to any common carrier for transportation, or for any common carrier to transport ... any foreign animals or birds, the importation of which is prohibited....”²⁴

In 1948, the injurious species provision, codified in Section 42, continued to bar importing those species.²⁵ The trade provision, however, was modified, removing from Section 43 the language that expressly banned delivering illegal imports, which included the import of injurious species, to common carriers.²⁶ As a result of Section 43 no longer applying to illegal imports, the Section 42 ban on importing became the only prohibition regarding injurious species.

The 1949 amendment did not change the prohibitions from the previous year, meaning that importing was the only prohibited act within the injurious species provision.²⁷

The 1960 amendment established the framework of the current version.²⁸ The invasive species provision prohibits “the importation into” or “any shipment between” the United States and its territories and possessions. *Shipment* is just one of many banned activities in the trade provisions of the 1960 amendments: *delivery, carrying, transporting, shipping by any means, or knowingly receiving for shipment*.²⁹ Because *shipment* is listed with *transport* in the trade provision, this suggests that Congress perceived them as two distinct activities at the time of the 1960 amendments. For more discussion on this, see “Did Congress Ban Transport as Well as Shipment?”, below.

²³ 31 Stat. 188.

²⁴ 35 Stat. 1137.

²⁵ 62 Stat. 687.

²⁶ Instead, the section made it a crime to “deliver[] or knowingly receive[] for shipment, transportation or carriage in interstate or foreign commerce, any wild animal or bird ... imported from any foreign country” if taken contrary to federal, state, or foreign law. 62 Stat. 687.

²⁷ The 1949 amendment added new language barring “transportation [of animals] to the United States, or any Territory or district thereof under inhumane or unhealthful conditions.” 63 Stat. 89. This section became 18 U.S.C. Section 42(c) of the Lacey Act, but is not analyzed in this report.

²⁸ 74 Stat. 754.

²⁹ 74 Stat. 754.

In 1981, the trade provision was codified under Title 16.³⁰ Subsequent amendments have not changed the prohibited acts under the injurious species provision.³¹

Exceptions

While the original Lacey Act injurious species provision prohibited importing “any foreign wild animal or bird except under special permit,”³² an exception existed for “museums or scientific collections” and for “certain cage birds, such as domesticated canaries, parrots, or such other species” as might be designated.³³ The exceptions were necessary because, prior to the 1949 amendment, the injurious species provision banned all foreign animals from import unless specifically permitted by the U.S. government.

The exceptions did not change until the 1960 amendment, which expanded the exception for importing black-listed species for “natural history specimens for museums or scientific collections” to allow exceptions found to be protective of the public interest and health for the import of “zoological, educational, medical, and scientific purposes of any mammals, birds, fish (including mollusks and crustacea), amphibia, and reptiles, or the offspring or eggs thereof, where such importation would be prohibited otherwise....”³⁴

The other change in 1960 was slight, adding “all other species of psittacine birds” to the description of the cage birds that may be brought into the country.³⁵ However, it is not clear why this was needed since the 1949 amendment had changed the injurious species provision to a black list law and had, consequently, eliminated the blanket ban on “any foreign wild animal or bird.” With a black list, it is not clear why there needs to be an exception for birds that are not on the black list.

Penalties

Until 1960, the prohibited acts of importing and shipping had separate penalty provisions. The 1900 law provided that any species imported contrary to the injurious species provision shall “be destroyed or returned at the expense of the owner.”³⁶ The 1909 version also provided for return or destruction of the injurious species.³⁷ Additionally, the trade provision was amended to include penalties for injurious species imports, fining the shipper, consignee, and carrier up to \$200.³⁸

³⁰ See the Lacey Act Amendments of 1981, P.L. 97-79; 95 Stat. 1079.

³¹ 18 U.S.C. §42(a)(1).

³² 31 Stat. 188.

³³ *Id.*

³⁴ 74 Stat. 754 §3; 18 U.S.C. §42(a)(3).

³⁵ 74 Stat. 754.

³⁶ 31 Stat. 188.

³⁷ 35 Stat. 1137.

³⁸ 35 Stat. 1138. Conviction of the consignee or carrier required showing a knowing violation.

In 1935, the fine was raised and jail time was added. The law penalized the shipper, carrier, or the consignee up to \$1,000 for trade violations, but knowing violations had to be proved against the carrier and the consignee.³⁹ In addition to, or instead of the fine, imprisonment of up to six months was authorized.⁴⁰ It left in place the injurious species language requiring the destruction or return of any injurious species upon arrival “at the expense of the owner.”⁴¹

Congress reduced the fine to \$500 in 1948, but left the jail time the same.⁴² A subsequent amendment in 1949 left the provision untouched, but the language requiring destruction of the illegally imported species was modified in 1960.⁴³ Until 1960, the act provided that the export or destruction of the contraband would be at the expense of the owner.⁴⁴ But the 1960 amendment added “or consignee,” which may tacitly acknowledge both the revision of prohibited acts to include shipping and/or that the recipient was not immune from prosecution.⁴⁵ The 1960 amendments are still in place, although due to the Alternative Fines Act, the current penalty is a maximum of \$5,000 for an individual and \$10,000 for an organization.⁴⁶

Regulatory Listing Process

Rulemaking

The act has always allowed an agency to designate species as injurious and bar their import. Originally the Department of Agriculture was the authorized agency, but in 1939 the regulatory authority was transferred to the Department of the Interior.⁴⁷ The regulatory listing is conducted via informal rulemaking under the Administrative Procedure Act (APA).⁴⁸ The listing process can be petitioned by a third party or by the agency.⁴⁹ If FWS decides to pursue listing, it issues a proposed rule, and then upon receiving and evaluating public comments, issues a final rule.⁵⁰

³⁹ 49 Stat. 381. According to the Consumer Price Index inflation calculator, \$1,000 in 1935 had the same buying power as \$17,003 in 2013. See http://www.bls.gov/data/inflation_calculator.htm.

⁴⁰ 49 Stat. 381.

⁴¹ *Id.*

⁴² 62 Stat. 687.

⁴³ 74 Stat. 754.

⁴⁴ 62 Stat. 687.

⁴⁵ 74 Stat. 754, §1; 18 U.S.C. §42(a)(1).

⁴⁶ 18 U.S.C. §3359(a)(7) (establishing that crimes with sentences of at least 30 days but not more than six months were Class B misdemeanors); and 18 U.S.C. §3371(b)(6) (establishing the maximum fines for Class B misdemeanors).

⁴⁷ 53 Stat. 1433.

⁴⁸ 5 U.S.C. §553.

⁴⁹ See generally, FWS Injurious Species listing process, http://www.fws.gov/injuriouswildlife/pdf_files/InjuriousWildlifeEvaluationProcessFlowChart.pdf.

⁵⁰ *Id.*

In addition to complying with the APA, the rulemaking must also comply with the National Environmental Policy Act (NEPA), which requires an agency to consider the impacts of proposed major actions on the environment, and, if significant, prepare an environmental impact statement.⁵⁸ FWS must also consider the listing in the context of Executive Order No. 12866⁵⁹ and other mandates directing regulatory efficiency.

To promote more efficient decisions, FWS is proposing to establish a categorical exclusion for injurious species regulatory listings under NEPA.⁶⁰ A categorical exclusion (CE) obviates the need to conduct an environmental review of the action under NEPA, barring extraordinary circumstances.⁶¹

APA Rulemaking: In Brief⁵¹

The APA requires agencies to provide the public with adequate notice of a proposed rule followed by a meaningful opportunity to comment on the rule's content.⁵² The adequate notice requirement is generally achieved by publishing a notice of proposed rulemaking in the *Federal Register*.⁵³

Once adequate notice is provided, the agency must provide interested persons with a meaningful opportunity to comment on the proposed rule.⁵⁴ While there is no minimum period of time for a comment period, courts have focused on whether the agency provided an "adequate" opportunity to comment—the length of the comment period is only one factor.⁵⁵

Once the comment period has closed, the agency must consider the relevant information and incorporate a basis and purpose into the adopted rule.⁵⁶ The final rule must be published in the *Federal Register* not less than 30 days before the rule's effective date.⁵⁷

Dozens of species are on the black list, most of which were added by regulation. The first rulemaking occurred in 1952, banning mynahs and starlings, as well as European rabbits and European hares.⁶² The most recent rulemaking added four python and one anaconda species.⁶³ Use of taxonomy on the black list is inconsistent. Animals are banned at the family, genus, species, and/or subspecies levels. For more on the legal inconsistencies with taxonomy, see "Taxonomic Consistency," below. A list of injurious species and the regulatory listing history prepared by FWS is available at **Appendix A**.

⁵¹ For more on the APA, see CRS Report R41546, *A Brief Overview of Rulemaking and Judicial Review*, by Todd Garvey and Daniel T. Shedd. This information is excerpted from their report.

⁵² 5 U.S.C. §553(b)-(c).

⁵³ 5 U.S.C. §553(b).

⁵⁴ 5 U.S.C. §553(c).

⁵⁵ Jeffrey S. Lubbers, *A Guide to Federal Agency Rulemaking*, p. 296 (4th ed. 2006) (citing *Fla. Power & Light Co. v. United States*, 846 F.2d 765, 772 (D.C. Cir. 1988)). However, Executive Order 12866, which provides for presidential review of agency rulemaking, states that the public's opportunity to comment, "in most cases should include a comment period of not less than 60 days." Exec. Order No. 12866, §6(a); 58 Fed. Reg. 51735 (October 4, 1993).

⁵⁶ 5 U.S.C. §553(c).

⁵⁷ Some exceptions exist. See 5 U.S.C. §553(d).

⁵⁸ 42 U.S.C. §4332.

⁵⁹ Exec. Order No. 12866 (September 30, 1992) (requiring federal agencies to analyze the costs and benefits of the proposed regulatory action to determine whether there is a compelling public need for the action).

⁶⁰ 78 Fed. Reg. 39307 (July 1, 2013).

⁶¹ 40 C.F.R. §1508.4 ("Categorical exclusion means a category of actions which do not individually or cumulatively have a significant effect on the human environment....")

⁶² 17 Fed. Reg. 7371 (August 13, 1952) (following a 15-day comment period).

⁶³ 77 Fed. Reg. 3330 (January 23, 2012). The listing also specified two subspecies of *Python molurus*, which are counted separately.

Criteria for Finding Injurious Species

While FWS has not employed notice and comment rulemaking procedures to adopt a regulatory definition of injurious species, or regulatory criteria for what factors must be evaluated to make that regulatory finding, FWS has developed informal guidance to direct its injurious species determinations. Species may be considered for the black list either by petition to FWS or by FWS under its own authority.⁶⁴ Based on the statute, FWS must find that a species is injurious to “agriculture, horticulture, forestry, or to wildlife or the wildlife resources of the United States.”⁶⁵ When evaluating whether a species is injurious, FWS may publish a notice in the *Federal Register* soliciting information.⁶⁶

According to a guidance document provided by FWS to CRS,⁶⁷ FWS conducts a risk analysis to assess the likelihood of escape, establishment, and eradication of a proposed injurious species. It also considers the likelihood and magnitude of the injurious species’ impact on species listed under the Endangered Species Act; humans; agriculture; horticulture; and forestry.⁶⁸ Economic and environmental impacts are considered.⁶⁹

H.R. 996/S. 1153 would establish a more formal petition process and allow any person to petition to list a species.⁷⁰ The bills would require petitions for listing species to include “adequate information” for the FWS to make its injurious species determination.⁷¹ This is similar to the requirement in the Endangered Species Act (ESA) that FWS determine whether a petition to list a species under that act presents substantial scientific information for the FWS to make a listing determination.⁷²

Shared Listing Authority

The shared listing responsibility between the FWS and Congress has had mixed results, with both redundant listings and unintentional delistings occurring, as discussed below.⁷³ In theory, Congress should be able to act faster than FWS to list a species because Congress does not have a formal APA process to follow. Thus, Congress could potentially use the legislative process to bar species before they became established. FWS, on the other hand, arguably is in a better position to evaluate the harm a species would cause, as it is required by the Lacey Act to make an injurious finding with respect to the species under consideration. While the shared listing

⁶⁴ See generally, FWS Injurious Species listing process, http://www.fws.gov/injuriouswildlife/pdf_files/InjuriousWildlifeEvaluationProcessFlowChart.pdf.

⁶⁵ 18 U.S.C. §42(a)(1). The original Lacey Act injurious species provision authorized the Secretary of Agriculture to designate species as “injurious to the interest of agriculture or horticulture.” 31 Stat. 188, §2.

⁶⁶ See, e.g., Review of Information Concerning Constrictor Snakes From Python, Boa, and Eunectes genera, 73 Fed. Reg. 5784 (January 31, 2008); Review of Information Concerning Brush-Tailed Possums of the Genus Trichosurus, 61 Fed. Reg. 1893 (January 24, 1996).

⁶⁷ See **Appendix A** for a copy of the FWS criteria for listing information.

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ H.R. 996/S. 1153.

⁷¹ H.R. 996, §4(b); S. 1153, §4(b).

⁷² 16 U.S.C. §1533(b)(3)(A).

⁷³ See “Taxonomic Consistency.”

responsibility appears to strike a balance between speed and science in barring injurious species, in practice, the efforts are not always coordinated. The brown tree snake, for example, was listed by regulation and statute. FWS completed the regulatory process for adding the snake in April 1990,⁷⁴ and Congress listed it in December 1991.⁷⁵

The bigger controversy is whether the speed by which the FWS identifies and bans injurious species is adequate. The act's premise is that injurious species will harm U.S. agricultural and/or wildlife interests if allowed into the country. Presumably, a lengthy process to ban injurious species would expose domestic plants and animals to harm. Quick, or preferably pre-emptive, bans on harmful species could limit damage. In H.R. 996/S. 1153, Congress is considering requiring FWS to make regulatory listings within 180 days.

Prior to passage of NEPA, regulatory listings took only a few months. For example, the regulation that added salmon, dioch, pink starling, Java sparrow, and the red-whiskered bul-bul, was proposed for listing on July 27, 1967, and a final notice was issued on December 21, 1967.⁷⁶ The walking catfish was proposed for listing on August 19, 1969, and a final notice was published on November 29, 1969.⁷⁷ After NEPA was enacted on January 1, 1970, the first subsequent listing took over six months from the proposed notice,⁷⁸ and over a year from when FWS published a notice that it intended to review the species.⁷⁹

Species added in the last decade have taken more time to list, on average. For example, a petition to list certain invasive carp species was received by FWS in October 2002.⁸¹ The final listing decision was issued five years later, with two other carp species included.⁸² Also in 2002, however, FWS listed snakehead fish in just three months, specifically identifying 28 of the 34 known species, which suggests that the administrative process was not the obstacle in listing carp.⁸³

While the act is intended to ban species to protect domestic plants and animals, banning a species may have negative economic effects

Asian Carp⁸⁰

According to the USGS, during the 1970s, bighead and silver carp were imported into the United States for use in aquaculture production of food fish and biological control of plankton in aquaculture ponds and sewage treatment lagoons. Within 10 years, the carp escaped confinement and spread to the waters of the Mississippi River basin and other large rivers. Today, the carp live in 23 states; their population numbers are increasing exponentially, and, in addition, they are close to entering the Great Lakes.

The carp are in direct competition with native aquatic species for food and habitat. Their rapid population increase is disrupting the ecology and food web of the large rivers of the Midwest, including the Missouri River.

⁷⁴ 55 Fed. Reg. 17441 (April 25, 1990) (to take effect May 25, 1990).

⁷⁵ 105 Stat. 1901 (December 31, 1991).

⁷⁶ 32 Fed. Reg. 20656 (December 21, 1967).

⁷⁷ 34 Fed. Reg. 19030 (November 29, 1969).

⁷⁸ 47 Fed. Reg. 21892 (May 20, 1982) (proposed); 47 Fed. Reg. 56362 (December 16, 1982) (final).

⁷⁹ 46 F.R. 58348 (December 1, 1981).

⁸⁰ This text is a quotation from the USGS Columbia Environmental Research Center: Invasive Carp Research Program, <http://www.cerc.usgs.gov/Branches.aspx?BranchId=40>. For details on Asian carp, see CRS Report R41082, *Asian Carp and the Great Lakes Region*.

⁸¹ See 72 Fed. Reg. 37459 (July 10, 2007).

⁸² 72 Fed. Reg. 59019 (October 18, 2007).

⁸³ 67 F.R. 48855 (July 26, 2002) (proposed); 67 Fed. Reg. 62193, 62203 (October 4, 2002) (final). Congress added a fourth species of carp to the injurious species list in 2010. 124 Stat. 3282 (2010) (bighead carp). See **Appendix A**.

on those who find the animal useful.⁸⁴ That conflict may influence the length of the listing process. Just as carp has a beneficial use for catfish farmers, pythons were favored by the pet trade and pet owners. Both the carp and the constrictor snake petitions took years, and Congress considered legislative bans while those rulemakings were pending. For example, the petition to ban importing the Burmese python was received in June 2006.⁸⁵ The final rule was issued in 2012.⁸⁶ During that six years, Congress introduced legislation to ban constrictor snakes, S. 373 and H.R. 2811 (111th Congress), but neither bill was voted on by its respective house. Similarly, while the carp regulatory ban was pending, Congress did not vote on S. 1402 or H.R. 3049 (109th Congress), which could have added four carp species to the black list in 2005, seven years before the regulation took effect.⁸⁷

H.R. 996/S. 1153 would establish deadlines for listing, requiring the agency to publish a final determination within 180 days of publishing the proposed listing notice.⁸⁸ The bill does not reference NEPA.

Burmese Python

The Burmese python, and possibly other large constrictor snakes, are invasives in south Florida. According to the National Park Service (NPS), from 2000 to 2012, 1,950 Burmese pythons were removed from the Everglades National Park and environs. “Exotic snakes found in the park are often the result of accidental and intentional release by pet owners. These introductions can have devastating consequences to [the] ecosystem.”⁸⁹

Introduction of any type of plant or animal into a national park is illegal under 36 C.F.R. Section 2.1.⁹⁰ Even though the regulation was promulgated in 1983, it has not stopped the introduction or expansion of pythons in the park.⁹¹ Scientists found the first python nests in 2006, although pythons were present in the park at least since the 1990s.⁹² According to the National Park Service, “Florida now ranks as having the largest number of established non-indigenous reptile species in the entire world...”⁹³

According to a study published by the National Academy of Sciences, the Burmese python is linked to a severe decline in the mammal populations of the Everglades National Park.⁹⁴ For example, night drives through the park revealed a greater than 98% decrease in raccoons, and no rabbits.⁹⁵

⁸⁴ See, e.g., Greenwire, “Snake owners seething about new restrictions” (January 10, 2011) <http://www.eenews.net/greenwire/stories/1059943838/search?keyword=python> (“The ban is infuriating snake owners and breeders as well as zoologists and some conservationists, all of whom could stand to lose financially”).

⁸⁵ See 73 Fed. Reg. 5784 (January 31, 2008).

⁸⁶ 77 Fed. Reg. 3330 (January 23, 2012).

⁸⁷ 77 Fed. Reg. 3330 (January 23, 2012).

⁸⁸ H.R. 996, §4(d); S. 1153, §4(d).

⁸⁹ NPS, Everglades National Park, Burmese Pythons, <http://www.nps.gov/ever/naturescience/burmesepythonsintro.htm>.

⁹⁰ 36 C.F.R. §2.1(a)(2) “Except as otherwise provided in this chapter, the following is prohibited.... Introducing wildlife, fish or plants, including their reproductive bodies, into a park area ecosystem.”

⁹¹ 48 Fed. Reg. 30282 (June 30, 1983).

⁹² NPS, Everglades National Park News Release, *Frequently Asked Questions about Burmese Pythons* (January 11, 2013), p. 2, <http://www.nps.gov/ever/parknews/loader.cfm?csModule=security/getfile&pageid=466932>.

⁹³ NPS, Everglades National Park News Release, *Frequently Asked Questions about Burmese Pythons* (January 11, 2013), p. 1, <http://www.nps.gov/ever/parknews/loader.cfm?csModule=security/getfile&pageid=466932>.

⁹⁴ Michael E. Dorcas, et al., *Severe Mammal Declines Coincide with Proliferation of Invasive Burmese Pythons in Everglades National Park*, Proceedings of the National Academy of Sciences (December 2011), <http://www.pnas.org/content/109/7/2418.full>.

⁹⁵ *Id.*

Legal Issues Before Congress

As Congress evaluates bills to overhaul the regulatory process and add new injurious species, several issues may arise. One issue is the taxonomic consistency of the injurious species list and whether only certain classifications should be used. Other issues are whether listing the quagga mussel would unduly burden interstate water deliveries to the extent that the mussels are transported with the water, or whether the law is an effective tool in preventing unintentional imports or shipments of species.

Did Congress Ban Transport as Well as Shipment?

The injurious species provision clearly bans import and shipment.⁹⁶ However, virtually every publication by FWS on injurious species indicates that import and *transport* are barred.⁹⁷ FWS has no rulemaking harmonizing its interpretation with the statute. No court has considered the issue. This leaves open the question as to whether the FWS interpretation is consistent with congressional intent.

Under the U.S. Supreme Court ruling in *Chevron v. Natural Resources Defense Council*,⁹⁸ a reviewing court must provide deference to an agency's interpretation of an ambiguous statutory provision. First, the court must determine whether the statute is ambiguous. If the court determines that the statutory text is clear, the agency and the court must give effect to Congress's expressed intent.⁹⁹ However, if the court determines that the statute is ambiguous, the court must accept the agency's interpretation if it is a permissible construction of the statute.¹⁰⁰ Therefore, if a court finds that 18 U.S.C. Section 42 is clear and bans only import and shipment as stated, the FWS's interpretation to include *transport* would be rejected. However, if the reviewing court determines the language was ambiguous, then it would uphold FWS's interpretation that the law also bans *transport* of listed species, if the court determines that the interpretation was reasonable.

The issue of whether the injurious species provision pertains to transport as well as shipment primarily arises in the case of zebra mussels, although the interstate movement of carp unintentionally included in catfish transports also may be at stake.¹⁰¹ If the law applies to transport and not just shipment, more actions would be covered.

⁹⁶ 18 U.S.C. §42(a)(1). The words *shipment* and *transport* have distinct meanings. Definition *Ship*: To send (goods, documents, etc.) from one place to another, esp. by delivery to a carrier for transportation. Definition *Transport*: To carry or convey (a thing) from one place to another. Bryan A. Garner, ed., *Black's Law Dictionary* (8th ed. 2004).

⁹⁷ See, e.g., FWS, Fish and Aquatic Conservation: Injurious Species, <http://www.fws.gov/injuriouswildlife/> ("Under the Lacey Act (18 U.S.C. 42), the Secretary of the Interior is authorized to regulate the importation and transport of species ...").

⁹⁸ 467 U.S. 837 (1984).

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ To the extent that species are banned under state law, the trade provision of the Lacey Act may restrict their transport, if part of interstate commerce. 16 U.S.C. § 3372(a)(2).

It could be interpreted that the statute's ban on shipment of injurious species does not constitute a broader ban on transporting or carrying injurious species. Congress limited the injurious species provision to *shipment*, whereas in other parts of the full Lacey Act, it used different terms. For example, in 18 U.S.C. Section 42(c), which is part of the Lacey Act, but not the injurious species provision, Congress addresses the conditions for *transportation* of species to the United States and does not reference *shipment*.¹⁰² A second example is found in the trade provision, which at the time of the 1960 amendments adding *shipment* to 18 U.S.C. Section 42(a), was still codified with the injurious species provision (as 18 U.S.C. §43). After prohibiting only import and shipment in the injurious species provision of Section 42, Congress prohibited in former Section 43 three distinct actions related to wildlife trade: carry, transport, or ship.¹⁰³ That language was amended in 1981 to apply to import, export, and transport.¹⁰⁴ Under general rules of statutory construction, "where Congress includes particular language in one section of a statute but omits it in another ... it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion."¹⁰⁵ This suggests that it may be meaningful that with regard to injurious species, only the acts of import and shipment are prohibited, while under the trade provision, the acts of carry and transport are prohibited.

Under a separate canon of statutory construction, it is fair to interpret *shipment* as meaning the act of shipping, rather than as a synonym for transport: As the Supreme Court has stated: "A term appearing in several places in a statutory text is generally read the same way each time it appears."¹⁰⁷ Therefore, *shipment* in 18 U.S.C. Section 42(a) would not mean both shipment *and* transport, because those are identified as separate prohibited acts in 18 U.S.C. Section 42(c) and former Section 43 (now 16 U.S.C. §3372). It could be argued that if Congress had meant for the injurious species provision to apply to shipping and transport, it would have included the term *transport* explicitly in the text, as it did in the other two times it is used.

Lake Texoma¹⁰⁶

In 1989, the Corps of Engineers granted an easement and permit to the North Texas Municipal Water District to construct and operate an intake/pumping station at Lake Texoma. The pump station was designed to transfer up to 125 million gallons per day of water from Lake Texoma directly to Lake Lavon via a pipeline that discharges into a tributary of Lake Lavon. The massive intake structure cost over \$100 million to construct.

As a result of boundary renegotiations that took effect in August 2000, a portion of the North Texas Municipal Water District intake facility is now located in the state of Oklahoma. Zebra mussels have been identified as being in Lake Texoma since 2009. This has raised concerns that this invasive species could be transferred across state lines to Texas via the water transfer. Lake Texoma comprises 28% of the total water supply needs for North Texas residents or enough water for 500,000 people.

In December 2010, FWS advised the water district that because of the revised boundary delineation, the use of the pump station would constitute an interstate transfer of water and a violation of the Lacey Act because invasive zebra mussels would be transported across state lines.

In December 2012, Congress exempted the water transfer from the Lacey Act in P.L. 112-237, Section 5.

¹⁰² 74 Stat. 754. See footnote 13 for more on 18 U.S.C. §42(c).

¹⁰³ *Id.*

¹⁰⁴ 95 Stat. 1074; 16 U.S.C. §3372. *Transport* is defined by the trade provision as "move, convey, carry, or ship by any means, or deliver or receive for the purpose of movement, conveyance, carriage, or shipment." 16 U.S.C. §3371(k).

¹⁰⁵ *Keene Corp. v. United States*, 508 U.S. 200, 208 (1993) (quoting *Russello v. United States*, 464 U.S. 16, 23 (1983)).

¹⁰⁶ This summary is taken from H.Rept. 112-657.

¹⁰⁷ *Ratzlaf v. United States*, 510 U.S. 135, 143 (1994).

There appears, however, to be no discussion in the legislative history of why shipment was added to the injurious species provision (Section 42) in 1960. When discussing Section 42, the Senate report¹⁰⁸ refers only to import, and similarly, refers to transportation only when referring to trade. According to the Senate report, the change in the trade provision was made to recognize that wildlife taken in violation of other laws was shipped not only by rail and water, but also by air and truck.¹⁰⁹ Accordingly, there is no indication in the legislative history that using the word *shipment* in Section 42 was intended to expand the definition of prohibited activities to any form of transport.

It is also worth noting that the 1960 amendment changed the parties responsible for costs of returning or destroying the banned species from “importer” to “importer or consignee.”¹¹⁰ The term *consignee* appears to suggest commercial shipping, and not the more general term, transporting. The current language of the injurious species provision still refers only to an importer or consignee, and does not refer to a transporter.¹¹¹

If the injurious species provision were narrowly interpreted, it appears possible that the FWS would enforce the law differently. Under such interpretation, a reviewing court may find that incidental transport of species across state lines did not violate the law because only the commercial act of shipping would violate the act. Intentionally imported and commercially traded pythons would still violate the law. Imports including species that have not established themselves in the United States, such as fruit bats and meerkats, would still be stopped at ports. However, the incidental and probably unintentional transport of zebra mussels, via water systems, appears not to violate the injurious species provision. It is not clear whether restricted enforcement would impact the spread of already established injurious species such as the zebra mussel, Asian carp, or Burmese pythons, however.

A narrow interpretation of the injurious species provision, however, would not preclude other federal action to address injurious species that are unintentionally transported via water, as the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) appears to apply to such situations. In NANPCA, Congress acknowledged that zebra mussels are not intentionally imported or shipped. NANPCA states: “The zebra mussel was unintentionally introduced into the Great Lakes”,¹¹² and “aquatic nuisance species are unintentionally transported and introduced into inland lakes and rivers by recreational boaters, commercial barge traffic, and a variety of other pathways.”¹¹³ It authorizes the Coast Guard to issue regulations regarding their control.¹¹⁴

It could be argued that Congress devised a two-part system for aquatic invasive species: where those species were intentionally imported or shipped, FWS and Customs would block their import under the injurious species provision of the Lacey Act; where those species were unintentionally imported or transported, the Coast Guard would have authority under NANPCA. This may

¹⁰⁸ S. Rept. 1883 (86th Congress) *Importation of Injurious Mammals, Etc.*, Committee on the Judiciary (August 22, 1960).

¹⁰⁹ S. Rept. 1883 (86th Congress), p. 2.

¹¹⁰ 74 Stat. 754.

¹¹¹ 18 U.S.C. §42(a)(1)

¹¹² NANPCA §1002(a)(3); 16 U.S.C. §4701(a)(3).

¹¹³ NANPCA §1002(a)(14); 16 U.S.C. §4701(a)(14).

¹¹⁴ 16 U.S.C. §4701(b), referencing *Secretary*, which is defined in 16 U.S.C. §4702(12) as “the Secretary of the department in which the Coast Guard is operating.”

suggest that injurious species conveyed unintentionally through water transfers were not intended to be within the FWS injurious species authority.

Limits on Law's Effectiveness

The injurious species provision bans the intentional import of injurious species of animals (such as fruit bats to California). The law appears designed to prevent injurious species from being introduced into the United States and provides for their destruction when discovered. The act, however, appears to have had a limited impact on species that have already become established in the United States, such as the English sparrow, the zebra mussel, or the Burmese python likely because it does not authorize eradication or other control of species in the wild.

It is difficult to assess enforcement of the act. CRS has not found any published court decisions regarding prosecutions under the act. FWS has provided nine examples of recent enforcement.¹¹⁵ There is no indication from these examples whether the defendants contested either the charges or the fines.

The injurious species provision is silent as to the extent a defendant's knowledge of the action must be shown to prove a violation. Prosecuting unintentional violations, that is, imposing strict liability, raises enforcement challenges. The question of intentional violations parallels the analysis of shipping versus transporting to some extent. Shipping can be seen as an intentional act, whereas transporting may be accidental. While commercial interstate shipping, for example, of listed pythons, would leave records that could lead to enforcement action (such as bills of lading, receipts, etc.), other transport appears extremely difficult to monitor. While recreational boaters who incidentally transport mussels when towing their boats would present evidence of the crime on the boats' hulls, the intent to commit an offense is less easy to demonstrate. The difficulty in restricting interstate shipments or transport is compounded by the fact that the two enforcement agencies, FWS and Customs, maintain permanent enforcement presences only at designated international airports.¹¹⁶ Restricting the act to knowing violations, and/or to shipping, may be seen as matching the enforcement abilities of the agencies with the language of the statute.

It could be argued that the easiest way to make the law work is to focus on banning the intentional import of species prior to their presence in the country. That would allow enforcement at the port of entry. It would not assist in removing established invasives or help block unintended imports.

Different legislation would be needed for those species that do not fit the narrow reach of the injurious species provision. But even as more state laws address ballast water contamination to fend off zebra and quagga mussels and other aquatic nuisances, preventing the spread seems futile without a large enforcement presence. As illustrated by the case of Asian carp, whose import was intentional, even if their release was not, enforcement is slippery. A member of the U.S. Geological Survey has stated: "Even if 95 percent of people hate the carp with a passion, it

¹¹⁵ Five examples available online at U.S. Fish and Wildlife, Office of Law Enforcement, <http://www.fws.gov/le/pdf/FWSOLEInvasiveSpeciesEnforcement.pdf>. Other examples are available from the author as transmitted via e-mail from Kevin Garlick, Special Agent in Charge, Investigations, U.S. FWS, to the author (July 10, 2013). The dates of the actions were not available.

¹¹⁶ See FWS Law Enforcement, Designated Ports, <http://www.fws.gov/le/designated-ports.html>.

just takes one percent of people, or even one person, to move them around. We don't want people to do so and it is illegal to do so. But it is awfully hard to catch someone doing that.”¹¹⁷

Creature Limits

While the Lacey Act applies to many animal species, it does not apply to them all (notably, it does not apply to insects, microbial parasites, or disease vectors).¹¹⁸ The Department of Agriculture, Animal and Plant Health Inspection Service (APHIS) is responsible for protecting plant and animal resources from domestic and foreign agricultural pests and diseases.¹¹⁹

The Lacey Act injurious species provision appears to apply only to live animals, their offspring and eggs, referring only to dead animals with respect to an exception for museums or scientific collections.¹²⁰ FWS, however, has used its injurious species regulatory authority to stop the import of dead salmon species unless there is proof that the fish are virus-free.¹²¹

As the only example of FWS barring import of a dead species under the injurious species provision, it is worth noting that FWS is using the ban as a tool, not to prevent salmon imports, which are not invasive when dead, but to bar diseases they can carry.

It is also worth noting that Congress is free to add via statute any species it wants, including plants. Accordingly, it could add insects or bacteria to the black list. However, there is a question whether the injurious species provision bans function effectively as to species that are not intentional imports. See “Limits on Law’s Effectiveness,” above.

Taxonomic Consistency

Another difficulty in interpreting the black list is the variations of language used to describe the listed animals. Common names are used and sometimes scientific names as well. Also, while the statute strongly indicates that only species are to be listed, both Congress and FWS have listed animals at other taxonomic levels. For example, in the case of the mongoose, the statutory ban is on “the mongoose of the species *Herpestes auropunctatus*,” which would ban one species, but the regulation bans “any species of mongoose or meerkat of the genera *Atilax*, *Cynictis*, *Helogale*, *Herpestes*, *Ichneumia*, *Mungos*, and *Suricata*,” which would block 19 species from import.¹²² Similarly, the zebra mussel ban reads “Live mollusks, veligers [juveniles], or viable eggs of zebra mussels, genus *Dreissena*.” While there are two species in genus *Dreissena*,¹²³ only the zebra mussel is banned under FWS regulations.¹²⁴ The listing of python includes redundant common

¹¹⁷ USGS, CERC News: *The Crusade Against Asian Carp—Where Does It Go Now?* (February 28, 2012) (quoting Duane Chapman, Asian carp expert, U.S Geological Survey), online at <http://www.cerc.usgs.gov/NewsItems.aspx?NewsItemId=163>.

¹¹⁸ Examples of *animal* parasites and disease vectors can be found on the injurious species black list. For example, some bats are considered parasites, and salmon were banned because they were vectors.

¹¹⁹ USDA, *About APHIS*, http://www.aphis.usda.gov/about_aphis/.

¹²⁰ 18 U.S.C. §42(a)(4).

¹²¹ 50 C.F.R. §16.13(a)(3).

¹²² 50 C.F.R. §16.11(a).

¹²³ See Interagency Taxonomic Information System (ITIS) database, online at <http://www.itis.gov>.

¹²⁴ 50 C.F.R. §16.13(a)(2)(iii).

names and identifies two subspecies, but not all subspecies, suggesting some are not covered.¹²⁵ The family Salmonidae includes hundreds of species. Accordingly, a precise number of species on the black list is unavailable.

Redundancy in listing is less of a problem than omission, but there are examples of where regulation may have unintentionally delisted a species. At one point, in the 1950s, both the European rabbit (*Lepus cuniculus*) and the European hare (*Lepus europaeus*) were listed species. By regulation, FWS switched to the genus (*Oryctolagus*), but the scientific name of the European hare did not change, and it is not now of the genus.¹²⁶ It is unclear if FWS planned to delist the species. Similarly, both mynahs and starlings were black-listed by regulation in 1952, which listed them by genera: “*Acridotheres* and *Sturnus*.”¹²⁷ A notice described as a clarification was published in 1954, indicating only *Acridotheres* was black-listed.¹²⁸ When Congress removed starlings, *Sturnus*, from the list in 1960,¹²⁹ *Acridotheres* also dropped off the regulatory list.¹³⁰

¹²⁵ 50 C.F.R. §§16.15(a)(3)-(4).

¹²⁶ See ITIS database, <http://www.itis.gov>.

¹²⁷ 17 Fed. Reg. 7371 (August 13, 1952).


¹²⁸ 19 Fed. Reg. 3687 (June 25, 1954).

¹²⁹ 74 Stat. 753. H. Rept. 86-1953, at 2 (August 22, 1960) (“Reference to the starling and the English sparrow would be eliminated from the section by our suggested review.”).

¹³⁰ The last reference found in *Federal Register* to *Acridotheres* on the injurious species list is September 1, 1960, the day before the 1960 amendments to the injurious species provision were enacted. 25 Fed. Reg. 8407 (September 1, 1960).

Appendix A. Injurious Species

Table of Black-Listed Species

 Species Listed as Injurious Wildlife under the Lacey Act (50 CFR 16)						
	Family, Genus, or Species	# of Species	Final Rule <i>Federal Register</i> publication date	Date listed (effective)	Authority	Pre-proposed Rule and Proposed Rule <i>Federal Register</i> publication date
Mammals						
Flying fox or fruit bats	<i>Pteropus</i>	60	N/A	May 25, 1900	Congress	
Mongoose or meerkat	<i>Atilax</i> , <i>Cynictis</i> , <i>Hologale</i> , <i>Herpestes</i> , <i>Ichneumia</i> , <i>Mungos</i> , and <i>Suricata</i>	19	N/A	May 25, 1900	Congress	
European rabbit	<i>Lepus cuniculus</i>	1	August 13, 1952 17 FR 7371	Immediately? No date given	Lacey (FWS)	Rulemaking process was simpler—public hearing > comments addressed > final rule.
European hare	<i>Lepus europeus</i>	1	August 13, 1952 17 FR 7371	Immediately? No date given	Lacey (FWS)	Rulemaking process was simpler—public hearing > comments addressed > final rule.
Wild dog, red dog, or dhole (genus)	<i>Cuon</i>	1	August 3, 1965 30 FR 9640	January 1, 1966	Lacey (FWS)	Proposed rule Apr. 13, 1965 30 FR 4721
Multimammate rat or mouse	<i>Mastomys</i>	8	August 3, 1965 30 FR 9640	January 1, 1966	Lacey (FWS)	Proposed rule Apr. 13, 1965 30 FR 4721
Raccoon dog	<i>Nyctereutes procyonoides</i>	1	Dec. 16, 1982 47 FR 56360	January 17, 1983	Lacey (FWS)	Proposed rule May 20, 1982 47 FR 21892
Brush-tail possum	<i>Trichosurus vulpecula</i>	1	June 11, 2002 67 FR 39865	July 11, 2002	Lacey (FWS)	November 2, 1999 64 FR 59149
Subtotal		92				

	Family, Genus, or Species	# of Species	Final Rule <i>Federal Register</i> publication date	Date listed (effective)	Authority	Pre-proposed Rule and Proposed Rule <i>Federal Register</i> publication date
Birds						
Starling*		1		May 25, 1900	Congress	Removed from list for unknown reason
House Sparrow*		1		May 25, 1900	Congress	Removed from list for unknown reason
Mynas and starlings *	(<i>Acridotheres</i> spp. and <i>Sturnus</i> spp.)		August 13, 1952 17 FR 7371	Immediately? No date given	Lacey (FWS) ¹	Removed from list for unknown reason
Pink starling	<i>Sturnus roseus</i>	1	August 3, 1965 30 FR 9640	January 1, 1966	Lacey (FWS)	Proposed rule Apr. 13, 1965 30 FR 4721 ; also mentioned in 32 FR 10982 and 32 FR 20655
Dioch (including subspecies)	<i>Quelea quelea</i>	1	Final Rule Dec 21, 1967 32 FR 20655	July 1, 1968	Lacey (FWS)	Proposed Rule July 27, 1967 32 FR 10982
Java sparrow	<i>Padda oryzivora</i>	1	Final Rule Dec 21, 1967 32 FR 20655	July 1, 1968	Lacey (FWS)	Proposed Rule July 27, 1967 32 FR 10982
Red whiskered bul-bul	<i>Pycnonotus jocosus</i>	1	Final Rule Dec 21, 1967 32 FR 20655	July 1, 1968	Lacey (FWS)	Proposed Rule July 27, 1967 32 FR 10982
Subtotal		6+				
Fish, Mollusks, Crustaceans						
Walking catfish family	Clariidae	100	November 29, 1969 34 FR 19030	January 1, 1970	Lacey (FWS)	Proposed rule August 19, 1969 34 FR 13373
Mitten crabs	<i>Eriocheir</i>	3	May 23, 1989 54 FR 22286	June 22, 1989	Lacey (FWS)	November 14, 1988 53 FR 45784
Zebra mussel	<i>Dreissena polymorpha</i>	1	November 7, 1991 56 FR 56592 Correction: June 13, 2000 65 FR 37062	December 9, 1991	Congress	No proposed rule
Snakehead family	Channidae	28	October 4, 2002 67 FR 62193	October 4, 2002	Lacey (FWS)	Proposed rule July 26, 2002 67 FR 48855

	Family, Genus, or Species	# of Species	Final Rule <i>Federal Register</i> publication date	Date listed (effective)	Authority	Pre-proposed Rule and Proposed Rule <i>Federal Register</i> publication date
Silver carp	<i>Hypophthalmichthys molitrix</i>	1	July 10, 2007 72 FR 37459	August 9, 2007	Lacey (FWS)	Proposed Rule Sept. 5, 2006 71 FR 52305
Largescale silver carp	<i>Hypophthalmichthys harmandi</i>	1	July 10, 2007 72 FR 37459	August 9, 2007	Lacey (FWS)	Proposed Rule Sept. 5, 2006 71 FR 52305
Black carp	<i>Myiopharyngodon piceus</i>	1	Final Rule October 18, 2007 72 FR 59019	November 19, 2007	Lacey (FWS)	Proposed Rule July 30, 2002 67 FR 49280
Bighead carp	<i>Hypophthalmichthys nobilis</i>	1	Final rule March 22, 2011 76 FR 15857	Dec. 14, 2010	Congress	Notice of inquiry Sept. 17, 2003 68 FR 54409
Salmonids**		NA	Final Rule May 4, 1968 33 FR 6827	July 1, 1968	Lacey (FWS)	Proposed Rule August 17, 1989 54 FR 33947
			Final Rule Nov. 5, 1993 58 FR 58976	Dec. 6, 1993		Proposed Rule July 7, 1992 57 FR 29856
Subtotal		135				
Reptiles						
Brown tree snake	<i>Boiga irregularis</i>	1	April 25, 1990 55 FR 174390	May 25, 1990	Lacey (FWS)	Proposed rule Jan. 19, 1990 55 FR 1851
Burmese python, Northern African python, Southern African python, yellow anaconda***	<i>Python molurus</i> , <i>Python sebae</i> , <i>Python natalensis</i> , <i>Eunectes notaeus</i>	4	Final Rule January 23, 2012 77 FR 3330		Lacey (FWS)	Notice of inquiry Jan. 31, 2008 73 FR 5784 Proposed rule 03/12/2010 75 FR 11808 Reopen comment period July 1, 2010 75 FR 38069
Subtotal		5				
Total		239+				

	Family, Genus, or Species	# of Species	Final Rule <i>Federal Register</i> publication date	Date listed (effective)	Authority	Pre-proposed Rule and Proposed Rule <i>Federal Register</i> publication date
Amphibians						
Subtotal		0				
Total*		236+				

*3 early listings subsequently disappeared from list
 ** Not applicable (it is not the species that are listed, but it is a listing action)
 *** Still under review for listing: boa constrictor, green anaconda, Beni and DeSchauensee's anacondas, and reticulated python.
 current as of February 21, 2012

Source: Prepared by FWS. Available at http://www.fws.gov/injuriouswildlife/pdf_files/Current_Listed_IW.pdf.

Appendix B. FWS Criteria for Making an Injurious Species Determination

The following document is produced by FWS.

Source: U.S. Fish and Wildlife Service, via e-mail from Craig Johnson, Chief, FWS Branch of Aquatic Invasive Species to the author (June 26, 2013).

BASIS FOR DETERMINATION Please provide a written justification/summary for the criteria listed below. Several criteria will receive a High/Low ranking. A separate ranking spreadsheet is attached. If the criteria does not apply to the species being evaluated, please indicate by writing not applicable.

Factors that contribute to injuriousness

- A. Likelihood and magnitude of release or escape, including pathway(s):
- B. Likelihood and magnitude of survival and establishment (with or without reproduction) if released or escaped, including “acceptable” thresholds):
- C. Likelihood and magnitude of spread:
- D. Likelihood and magnitude of adverse impacts on native wildlife, wildlife resources, ecosystem balance, including what native species other than ESA listed species are or are likely to be affected?
 - a. Potential for hybridizing or inter-breeding
 - b. Competition for food and habitats
 - c. Potential to cause habitat degradation and/or destruction
 - d. Predation of native wildlife
 - e. Potential to transfer pathogens
 - f. Additional adverse impacts on native wildlife, wildlife resources, and ecosystem balance.
- E. Likelihood and magnitude of effect on:
 - a. Threatened and Endangered species. Please provide number of species.
 - b. Designated critical habitats of Threatened or Endangered species
 - c. Candidate species
- F. Likelihood that one or more species may be placed in danger of extinction or endangered within the foreseeable future as a result of introduction/establishment:
- G. Likelihood and magnitude of ancillary wildlife resource damages due to control measures (including, but not limited to, damage from equipment/chemicals used, increased risk of reinvasion due to ineffective treatment, or disturbance caused by removal):
- H. Likelihood and magnitude of impact on (*high/low ranking not required*):
 - a. Human beings
 - b. Agriculture
 - c. Horticulture
 - d. Forestry

- I. Additional considerations that contribute or are likely to contribute to injuriousness:

Measures that reduce or remove injuriousness

- J. Ability and effectiveness to: *(high responses indicate a low risk)*
- a. Prevent escape and establishment, including crisis management/rapid response
 - b. Eradicate
 - c. Manage established populations
 - d. Control spread to new locations
 - e. Prevent and control the spread of pathogens
 - f. Rehabilitate and recover ecosystems disturbed by the species
- K. Potential ecological benefits for introduction: *(high/low ranking not required)*

Are there additional measures (i.e., triploidy, sterility) that reduce or remove or are likely to reduce or remove injuriousness? *(high/low ranking not required)*

Author Contact Information

Kristina Alexander
Legislative Attorney
kalexander@crs.loc.gov, 7-8597

Acknowledgments

The author would like to thank Dr. M. Lynne Corn, CRS Specialist in Natural Resources Policy, for her extensive help with species identification and consistency. Also, credit for the graphic chart is to Amber Wilhelm, CRS Graphics Specialist.