

**REGULATORY FLEXIBILITY ANALYSIS FOR
LISTING BLACK CARP AS INJURIOUS UNDER THE LACEY ACT**

**U.S. FISH AND WILDLIFE SERVICE
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Regulatory Flexibility Analysis for Listing Black Carp 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. An initial regulatory flexibility analysis was prepared and made available for public comment during the August 30, 2005 to December 16, 2005 comment period (70 FR 51326 and 70 FR 61933).

Section 604 of the Act requires agencies to prepare a final regulatory flexibility analysis (FRFA) describing the impact of final rules on small entities. Section 604(a) of the Act specifies the content of a FRFA. Each FRFA must contain:

- A succinct statement of the objectives of, and legal basis for, the final rule;
- A summary of the significant issues raised by the public comments in response to the initial regulatory flexibility analysis, 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 final 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 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 one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.

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

The U.S. Fish and Wildlife Service is amending 50 CFR 16.13 to add live black carp to the list of injurious fish. This listing will prohibit the importation into the United States and interstate transport within the United States of live black carp, gametes and viable eggs. The best available 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 black carp 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, which are injurious to human beings, to the interests of agriculture, horticulture, or forestry, or to the wildlife or wildlife resources of the United States. The lists of injurious wildlife species are at 50 CFR 16.11-15.

By adding all forms of live black carp 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 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 who wish to import black carp 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. No live black carp, progeny thereof, or viable eggs 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. The interstate transportation of any live black carp, gametes or viable eggs currently held in the United States for any purpose is prohibited without a permit. Any regulation pertaining to the possession or use of black carp within States continues to be the responsibility of each State.

The Lacey Act makes no provision for regulatory exemptions or alternative standards that would reduce the impact of a listing action on small entities. As explained in greater detail below, many of the entities currently utilizing live black carp are small businesses; to allow them to continue to engage in interstate commerce while prohibiting large entities from doing so would, from a practical standpoint, eliminate the benefits of listing the species as injurious. Similarly, it might be theoretically possible to control the spread of black carp from aquaculture or interstate transportation operations by imposing regulations specifying engineering standards for ponds or shipping containers, or by establishing a manifest system similar to that currently imposed on entities that generate, store, transport, treat, or dispose of hazardous waste. Such standards, however, would likely prove prohibitively expensive to implement.

2. A summary of the significant issues raised by the public comments in response to the initial regulatory flexibility analysis, 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 five significant comments that impacted the economic analysis section for the regulatory flexibility analysis. Any changes made to the economic analysis are summarized below.

The outcome of the rule remains that all forms of live black carp are injurious to the wildlife and wildlife resources of the United States.

Comment 1: A number of comments stated that the data used for the economic analysis regarding the impact of trematodes and the prevalence of black carp on aquaculture farms was incorrect. In addition, the Small Business Administration (SBA) also commented that the economic analysis understated the proportion of aquaculture facilities using black carp in the U.S.

Response: The only study that analyzes a large percentage of catfish farms is the 2003 USDA Catfish Survey. The 2003 USDA Catfish Survey, with an 84 percent response rate, found that 4.1 percent of foodsize catfish operations stock black carp. This estimate is consistent with both the Mitchell (2001) estimate of 3.8 percent of water acreage (7,500 acres) stocking black carp and the 5 percent of Mississippi catfish farmers permitted to use black carp. While the 2003 USDA Catfish Survey reports that 4.1 percent of catfish farms stock black carp, it also reports that only 1.8 percent of foodsize farms use biological measures to control snails. Although there is this discrepancy, the estimate of 4.1 percent is employed because it is the only industry wide survey available and it is comparable with the two other data sources. The Terhune et al (2002) study found a 30 percent infection rate for Mississippi catfish farms. However, the sample design for the Terhune study did not lend itself to extrapolation to a national estimate. It focused on a small subset of catfish farms. In their comments on the economic analysis, the Catfish Farmers of Arkansas stated that the USDA Catfish Survey estimate of 4.1 percent of catfish farms using black carp should be used in the economic analysis. The Service agrees that the 2003 USDA Catfish Survey estimate should be used as a benchmark for the economic analysis. The economic analysis now presents two potential scenarios for the future prevalence of trematodes on aquaculture farms; no increase in black carp use and a 20 percent annual increase in black carp use.

Comment 2: SBA also asked the Service reconsider the alternative of listing only diploid black carp and implement a triploid certification program.

Response: These issues were also raised in the public comment periods and the Service has addressed these issues in the issue/response section of the final rule. Black carp, whether diploid or triploid, can live to be 15+ years old and have the potential to feed on large quantities of freshwater mussels and snails, including those that are considered threatened and endangered, and have negative impacts on local snail and mussel populations.

Comment 3: SBA also expressed concern over the calculation of the consumption rate of black carp.

Response: This issue was also raised in the public comment period. Black carp consumption of 3-4 pounds of mollusks per day was supported by research findings and therefore was used in the final economic analysis and the final environmental assessment.

Comment 4: SBA expressed concern that the Service overestimates the benefits to freshwater mussel populations from listing black carp as injurious.

Response: The freshwater mussels at risk are primarily of ecological value. Therefore, the economic analysis does not estimate potential commercial losses. The analysis does not estimate the cost of repopulating a waterbody due to a massive die off or kill. It only estimates the cost to replace the mussels potentially consumed by black carp. The

replacement costs outlined by the American Fisheries Society are composed of production costs, restocking costs, and administration costs. These relate to the costs of mussel propagation facilities to produce the mussels, transportation costs for the replacement mussels, and administrative costs to determine the extent of the mussel kill. In the Economic Analysis, only production costs are used to develop the range of impact estimates.

Comment 5: A number of comments stated that the hybrid striped bass and baitfish industries would be impacted by this rule.

Response: We agree that the hybrid striped bass and baitfish industries would be impacted by this rule. With the limited data available, the economic analysis now estimates potential impacts.

Comment 6: Aquaculture farmers in Arkansas will be impacted by this rule because they ship catfish across State lines for processing.

Response: We agree that aquaculture farmers in Arkansas will be impacted by this rule. However, it is beyond the scope of this analysis to estimate the number of potential incidences where farmers inadvertently ship black carp along with catfish for processing.

Comment 7: Mississippi does not produce black carp.

Response: We agree that Mississippi does not currently produce black carp. However, one Mississippi hatchery maintains a diploid population of about 20 black carp. If the need arises, this hatchery could have the capability to produce some amount of triploid black carp. Depending on future state regulations, it is possible that triploid black carp could be produced in-state in the future. The economic analysis now presents two potential scenarios including where Mississippi does not produce black carp in the future and where Mississippi does produce black carp in the future.

Comment 8: The 10-year average price for catfish is \$0.70 per pound.

Response: We agree that the price for catfish should be \$0.70 per pound. This estimate is now used in the economic analysis.

3. Description and estimate of the number of small entities to which the final rule will apply

Black carp are neither marketed as a food fish nor exported by U.S. farmers. Because domestic black carp brood stock are adequate, the aquaculture industry does not currently import black carp from sources outside the United States and most likely will not resume imports, unless brood stock supply is needed. Black carp are used as a biological control for the trematode yellow grub and white grub in the baitfish and hybrid striped bass industries and primarily for the trematode *Bolbophorus damnificus* in the catfish industry. Both trematodes require a snail and a fish as intermediate hosts, and a fish-eating bird as a final host. Infected fish may be more susceptible to disease, grow slowly, and may die if severely infected. Black carp aid in controlling the trematodes by feeding on the snails in aquaculture ponds.

Channel catfish, hybrid striped bass, and baitfish producers that use black carp will be affected if diploid and triploid black carp are listed as injurious. Not all businesses will be affected by this rulemaking. Affected businesses are limited to those that (1) use black carp and (2) are located in a State that permits the use of black carp and does not produce black carp. States that do not allow the possession of any black carp include: Alabama, Illinois, Indiana, Montana, New York, Ohio, and Tennessee. Businesses located in these States will not be affected. Furthermore, businesses located in Arkansas will not incur additional trematode impacts because of this rule because black carp are produced within the State. However, businesses will face the risk of fines or prison if caught transporting black carp across State lines. Farmers inadvertently shipping black carp could face penalties for Lacey Act violations. The penalty for a Lacey Act violation 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. It is beyond the scope of this analysis to determine the likelihood of a business inadvertently shipping black carp.

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 “Finfish Farming and Fish Hatcheries” businesses (NAICS 112511). The most recent data detailing business revenue for aquaculture farms is the 1998 Census of Aquaculture. The Census determined that approximately 89 percent of catfish farms, 97 percent of baitfish farms, and 91 percent of hybrid striped bass farms earned less than \$750,000 sales annually. These percentages are extrapolated to the year 2005 to determine the number of small businesses affected by the rule.

Catfish Producers

As discussed in the *Economic Analysis*, it is estimated that 4.1 percent of catfish farmers use black carp to control snail populations in catfish ponds. Applying this percentage to the number of small businesses would mean that 28 small businesses are impacted in 2007 (Table 1). However, the impacts on the catfish industry are based on the assumption that the demand for black carp will increase by 20 percent annually as farmers become more familiar with trematodes. Therefore, the number of businesses impacted will increase over the 10-year time period of the analysis. Assuming a 20 percent annual increase over 10 years would mean that 146 small catfish farmers will be impacted in 2016. The 10-year average for the number of impacted small businesses is 73. Over the last 10 years, there has been a downward trend in the number of catfish producers. Therefore, this analysis may overestimate the number of small businesses impacted by this rule.

Table 1. Estimated Number of Catfish Farmers Affected by Listing Black Carp (Excluding Arkansas and Alabama)

Year	Number of Catfish Farms	Number of Small Catfish Farms	Number of Affected Catfish Farms	Number of Affected Small Catfish Farms
2007	775	690	32	28
2016	775	690	164	146
10-Year Average	775	690	82	73

The degree to which these small businesses may be impacted is variable. For foodsize catfish ponds that experience a trematode outbreak, 38.5 percent of ponds lose less than 200 pounds, 53.8 percent of ponds lose between 200 to 2,000 pounds, and 7.7 percent of ponds lose more than 2,000 pounds (U.S. Department of Agriculture 2003). We estimate that individual small businesses would lose from \$2,652 to \$54,601 in total sales and from \$699 to \$14,394 in net revenue annually (Table 2). This estimate does not incorporate the possibility of using chemical snail control techniques, assuming that pond conditions may be conducive for some ponds, or other native fish, that may not be as effective as black carp in controlling snails, but could reduce infestations. Thus, the impact on some catfish farms may be overestimated. The estimated impacts are presented in nominal dollars.

Depending on the severity of the infestation, there is potential that some catfish farms may close if they cannot use black carp to control losses. This analysis assumes that 7.7 percent of ponds will face severe infestations without the use of black carp. Catfish farms with severe infestations may not be able to cover the costs of production. Already, farms have closed due to severe trematode infestations. The number of farms that may close as a result of listing black carp is uncertain.

Table 2. Estimated Annual Impact on Sales and Net Revenue by Affected Small Catfish Farmers

	Low Estimate	High Estimate
<i>Sales Losses</i>		
Total Annualized Industry Sales Loss	\$217,466	\$4,477,256
Sales Impact per Business	\$2,652	\$54,601
<i>Net Revenue Losses</i>		
Total Annualized Industry Net Revenue Loss	\$57,331	\$1,180,337
Net Revenue Impact per Small Business	\$699	\$14,394

Hybrid Striped Bass Producers

As noted earlier, the most recent data detailing business revenue for aquaculture farms is the 1998 Census of Aquaculture. This Census is also the most recent estimation of the number of hybrid striped bass producers. From 1998 to 2004, hybrid striped bass production has increased by 22.5 percent (NMFS 2005). Assuming that production is directly correlated with the number of producers, 275 businesses in 1998 would correlate to 337 businesses in 2004. Thus, we estimate that 327 hybrid striped bass producers (97 percent) are small businesses. Not all small businesses will be impacted. Only those businesses using black carp and located in States without production of black carp will be impacted. Current industry statistics by State, with the exception of North Carolina, are unavailable so this analysis does not subtract small businesses located in Arkansas, Alabama, Illinois, Indiana, Montana, New York, Ohio, or Tennessee. Therefore, the number of small businesses that are impacted by this rule are most likely overestimated.

The number of hybrid striped bass farms using black carp is unknown. Therefore, the *Economic Analysis* presented three scenarios of 10 percent, 26 percent, and 50 percent. Table 3 shows that between 33 and 163 small hybrid striped bass farmers will be impacted by this rule. The analysis is based on short run impacts from 2007 to 2011 and long run impacts from 2012 to 2016. In the short run, the annual impact will be about \$5,857 per farm. In the long run, the annual impact will be about \$16,279 per farm. The estimated net revenue impacts are presented in nominal dollars. Depending on the severity of the infestation, there is potential that some hybrid striped bass farms may go out of business. The number of hybrid striped bass farms that may close is uncertain.

Table 3. Estimated Impact on Small Hybrid Striped Bass Farmers for 3 Potential Scenarios

	10 percent	26 percent	50 percent
<i>Estimated Number of Hybrid Striped Bass Farms Using Black Carp</i>			
HSB Farms Using Black Carp	34	88	169
Small HSB Farms Using Black Carp	33	85	163
<i>Annual Net Revenue Loss per Farm</i>			
Short Run (2007-2011)	\$5,857	\$5,857	\$5,857
Long Run (2012-2016)	\$16,279	\$16,279	\$16,279
10-Year Average	\$11,068	\$11,068	\$11,068

Baitfish Industry

Adequate data for the baitfish industry were not available to estimate the impact of listing black carp. The number of baitfish farms that use black carp for biological control and the impacts of trematode infestations are unknown, so impacts on small baitfish businesses cannot be estimated. Depending on the severity of the infestation, there is potential that some baitfish farms may go out of business. The number of baitfish farms that may close is uncertain.

4. A description of the projected reporting, record keeping, and other compliance requirements for small entities

There are no record keeping requirements for this rule, except when meeting the requirements of a zoological, educational, medical, or scientific purposes permit under 50 CFR 16.22. For more information see

<http://www.fws.gov/permits/overview/overview.shtml> or
<http://www.fws.gov/international/permits/location.htm>

5. A description of the steps the agency has taken to minimize the significant 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 one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected

The Service has funded research into other forms of biological control using native mollusk-eating fishes and chemical methods. The intent of funding this research was to identify alternatives to black carp to reduce the impact of this rulemaking on small entities. These actions may reduce the impact to small entities by providing alternative methods for controlling trematodes in aquaculture farms in the future. The reduced impact to small entities is unknown because the research is ongoing and the results are not yet finalized.

The U.S. Fish and Wildlife Service published a final rule to add black carp to the list of injurious wildlife under the Lacey Act. Three alternatives were developed for consideration. These alternatives included: No Action Alternative (Baseline); Alternative 1 – Add diploid black carp to the list of injurious wildlife; and Alternative 2 (Preferred Alternative) – Add diploid and triploid black carp to the list of injurious wildlife. The alternatives are summarized below.

No Action Alternative (Baseline) – The risk assessment conducted by the U.S. Geological Survey resulted in a finding that Organism Risk Potential of the black carp is high. The species is a risk to escape from aquaculture facilities and a risk to establish self-sustaining populations in the Mississippi River basin as has grass carp, bighead carp, and silver carp. Not listing black carp as injurious will allow the continued importation and interstate transport of black carp, which carries with it unacceptable risks to imperiled native mollusk populations and the species that rely on them.

Alternative 1 - Add diploid black carp to the list of injurious wildlife –Listing only diploid black carp as injurious was considered, but not proposed for action because: 1) the interstate shipment of triploid black carp would continue and these long-lived fish are likely to have considerable impacts on imperiled mollusk populations 2) enforcement of listing only diploid black carp would be practically impossible; and 3) additional diploid black carp would be introduced to the natural waters of the United States.

Alternative 2 (Preferred Alternative) – Add diploid and triploid black carp to the list of injurious wildlife – This Alternative was chosen as the preferred alternative.

Table 4. Summary of Alternative Actions

	Baseline (No Action)	Alternative 1 List Diploid Black Carp	Alternative 2 List all Black Carp (Proposed Action)
Prohibit the importation of black carp	No	No	Yes
Prohibit the interstate transport of black carp	No	No	Yes
Reduced risk of escapement of diploid black carp into the wild	No	Yes	Yes
Reduced risk of escapement of black carp into the wild	No	No	Yes
Impacts	No additional costs to the aquaculture industry would be incurred. If one black carp escapes, freshwater mussel replacement costs could range between \$209,636 and \$326,733. Impacts would be greater if an established black carp population results.	Aquaculture farms would face the potential risk of violating the Lacey Act (\$5,000). Freshwater mussel populations would still be at risk. The risk to freshwater mussel populations would be reduced because it would be less likely that a black carp population would become established.	The aquaculture industry would incur costs ranging from \$3.2 million to \$25.8 million. Aquaculture farms would face the potential risk of violating the Lacey Act (\$5,000). The risk to freshwater mussel populations would be greatly reduced. Benefits ranging from \$209,636 to \$326,733 represent the avoided costs of freshwater mussel replacement.

References Cited

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