

how this proposal may affect you, or other relevant information. Your comments will be most effective if you follow the suggestions below. Explain your views and reasoning as clearly as possible:

- Provide solid information to support your views.
- If you estimate potential numbers or reports or costs, explain how you arrived at the estimate.
- Tell us which parts of the rule you support, as well as those with which you disagree.
- Provide specific examples to illustrate your concerns.
- Offer specific alternatives.
- Refer your comments to specific sections of the rule, such as the units or page numbers of the preamble, or the regulatory sections.
- Be sure to include the name, date, and docket number with your comments.

#### *B. How Do I Prepare and Submit Comments?*

Your comments must be written and in English. To ensure that your comments are correctly filed in the Docket, please include the docket number of this document in your comments.

Your comments must not be more than 15 pages long. (49 CFR 553.21.) We established this limit to encourage you to write your primary comments in a concise fashion. However, you may attach necessary additional documents to your comments. There is no limit on the length of the attachments.

Please submit two copies of your comments, including the attachments, to Docket Management at the address given above under **ADDRESSES**.

Comments may also be submitted to the docket electronically by logging onto the Docket Management System website at <http://dms.dot.gov>. Click on "Help & Information" or "Help/Info" to obtain instructions for filing the document electronically.

#### *C. How Can I be Sure that My Comments Were Received?*

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

#### *D. How Do I Submit Confidential Business Information?*

If you wish to submit any information under a claim of confidentiality, you should submit three copies of your

complete submission, including the information you claim to be confidential business information, to the Chief Counsel (NCC-30), NHTSA, at the address given above under **FOR FURTHER INFORMATION CONTACT**. In addition, you should submit two copies, from which you have deleted the claimed confidential business information, to Docket Management at the address given above under **ADDRESSES**. When you send a comment containing information claimed to be confidential business information, you should include a cover letter setting forth the information specified in our confidential business information regulation. (49 CFR Part 512.)

#### *E. Will the Agency Consider Late Comments?*

We will consider all comments that Docket Management receives before the close of business on the comment closing date indicated above under **DATES**. To the extent possible, we will also consider comments that Docket Management receives after that date. If Docket Management receives a comment too late for us to consider it in developing a final rule (assuming that one is issued), we will consider that comment as an informal suggestion for future rulemaking action.

#### *F. How Can I Read the Comments Submitted by Other People and Other Materials Relevant to this Rulemaking?*

You may view the materials in the docket for this rulemaking on the Internet. These materials include background information on the use of tires in landfills and written comments submitted by other interested persons. You may read them at the address given above under **ADDRESSES**. The hours of the Docket are indicated above in the same location.

You may also see the comments and materials on the Internet. To read them on the Internet, take the following steps:

- (1) Go to the Docket Management System (DMS) Web page of the Department of Transportation (<http://dms.dot.gov/>)
- (2) On that page, click on "search."
- (3) On the next page (<http://dms.dot.gov/search/>), type in the four-digit docket number shown at the beginning of this document. Example: If the docket number were "NHTSA-2000-1234," you would type "1234." After typing the docket number, click on "search."
- (4) On the next page, which contains docket summary information for the materials in the docket you selected, click on the desired comments. You may download the comments.

(5) To view the RMA comment, which responds to docket NHTSA-2001-10856, type 10856, click on "search," and click on Document Number NHTSA-2001-10856-9.

Please note that even after the comment closing date, we will continue to file relevant information in the Docket as it becomes available. Further, some people may submit late comments. Accordingly, we recommend that you periodically check the Docket for new material.

Issued on: July 22, 2002.

**L. Robert Shelton,**

*Executive Director.*

[FR Doc. 02-18996 Filed 7-25-02; 8:45 am]

**BILLING CODE 4910-59-P**

## **DEPARTMENT OF THE INTERIOR**

### **Fish and Wildlife Service**

#### **50 CFR Part 16**

#### **RIN 1018-A136**

#### **Injurious Wildlife Species; Snakeheads (family Channidae)**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

**SUMMARY:** The U.S. Fish and Wildlife Service proposes to amend 50 CFR 16.13 to add snakeheads (family Channidae) to the list of injurious fish, mollusks, and crustaceans. This listing would have the effect of prohibiting the interstate transportation and importation of any live animal or viable egg of snakeheads into the United States. The best available information indicates that this action is necessary to protect the wildlife and wildlife resources from the purposeful or accidental introduction and subsequent establishment of snakehead populations in ecosystems of the United States. As proposed, live snakeheads or viable eggs could be imported only by permit for scientific, medical, educational, or zoological purposes, or without a permit by Federal agencies solely for their own use; permits would also be required for the interstate transportation of live snakeheads or viable eggs currently held in the United States, for scientific, medical, educational, or zoological purposes.

**DATES:** Comments must be submitted on or before August 26, 2002.

**ADDRESSES:** Comments may be mailed or sent by fax to the Chief, Division of Environmental Quality, U.S. Fish and Wildlife Service, 4401 North Fairfax

Drive, Suite 322, Arlington, VA 22203, FAX (703) 358-1800. You may send comments by electronic mail (e-mail) to: *Snakeheads@fws.gov*. See the Public Comments Solicited section below for file format and other information about electronic filing.

**FOR FURTHER INFORMATION CONTACT:** Kari Duncan, Division of Environmental Quality, Branch of Invasive Species at (703) 358-2464 or *kari\_duncan@fws.gov*.

**SUPPLEMENTARY INFORMATION:**

**Background**

The purpose of this proposed rule is to prevent the accidental or intentional introduction of snakeheads (family Channidae) and the possible subsequent establishment of populations of these fish in the wild. The Fish and Wildlife Service is initiating this proposed rule based upon information we have obtained that indicates that snakeheads may be injurious to the wildlife and wildlife resources of the United States.

**Description of the Proposed Rule**

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 prohibit by regulation certain activities involving wild mammals, wild birds, fish (including mollusks and crustaceans), amphibians, reptiles, and the offspring or eggs of any of the foregoing, that are injurious to human beings, to the interests of agriculture, horticulture, or forestry, or to the wildlife or wildlife resources of the United States. The lists of injurious wildlife species are at 50 CFR 16.11-15. If snakeheads are determined to be injurious, 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, upon filing a written declaration with the District Director of Customs and the U.S. Fish and Wildlife Service Inspector at the port of entry. In addition, no live snakeheads, progeny thereof, or viable eggs acquired under permit could be sold, donated, traded, loaned, or transferred to any other person or institution unless such person or institution has a permit issued by the Director of the U.S. Fish and Wildlife Service. The interstate transportation of

any live snakeheads or viable eggs currently held in the United States for any purposes not permitted would be prohibited.

**Biology**

Two genera are currently recognized in the family Channidae. They are *Channa* (snakeheads of Asia, Malaysia, and Indonesia) and *Parachanna* (African snakeheads). Synonyms include *Bostrychoides*, *Ophiocephalus* and its misspelled form *Ophiocephalus*, and *Parophiocephalus*. Although 86 species and 4 subspecies have been described (Eschmeyer, 1998), current taxonomy is in flux with approximately 28 species recognized as valid (Musikasinthorn, 2001; Table 1). Because their morphology is very similar, it is very difficult to differentiate among species of snakeheads. Juvenile and adult color patterns are often quite different (Day, 1875; Lee and Ng, 1991, 1994), and some are quite variable in size and color, and may represent species complexes. A taxonomic revision of the family, expected to be published within the next two years, will likely result in additional species being recognized as valid and perhaps new species described.

TABLE 1.—CURRENTLY RECOGNIZED SPECIES OF THE FAMILY CHANNIDAE (AFTER MUSIKASINTHORN, 2000, 2001)

<i>Channa amphibeus</i> (McClelland, 1845)—no common name known
<i>Channa argus</i> (Cantor, 1842)—northern snakehead
<i>Channa asiatica</i> (Linnaeus, 1758)—Chinese snakehead
<i>Channa aurantimaculata</i> Musikasinthorn, 2000—no English common name; naga-cheng (Assam, India)
<i>Channa bankanensis</i> (Bleeker, 1852)—Bangka snakehead
<i>Channa baramensis</i> (Steindachner, 1901)—Baram snakehead
<i>Channa barca</i> (Hamilton, 1822)—barca snakehead
<i>Channa bleheri</i> Vierke, 1991—rainbow snakehead
<i>Channa cyanospilos</i> (Bleeker, 1853)—bluespotted snakehead
<i>Channa gachua</i> (Hamilton, 1822)—dwarf snakehead
<i>Channa harcourtbutleri</i> (Annandale, 1918)—Inle snakehead
<i>Channa lucius</i> (Cuvier, 1831)—splendid snakehead
<i>Channa maculata</i> (Lacepède, 1802)—blotched snakehead
<i>Channa marulius</i> (Hamilton, 1822)—bullseye snakehead
<i>Channa maruloides</i> (Bleeker, 1851)—emperor snakehead

TABLE 1.—CURRENTLY RECOGNIZED SPECIES OF THE FAMILY CHANNIDAE (AFTER MUSIKASINTHORN, 2000, 2001)—Continued

<i>Channa melanoptera</i> (Bleeker, 1855)—no common name known
<i>Channa melasoma</i> (Bleeker, 1851)—black snakehead
<i>Channa micropeltes</i> (Cuvier, 1831)—giant snakehead
<i>Channa nox</i> (Zhang, Musikasinthorn, and Watanabe, 2002)—no English common name
<i>Channa orientalis</i> Schneider, 1801—Ceylon snakehead
<i>Channa panaw</i> Musikasinthorn, 1998—no English common name; ng panaw (Myanmar)
<i>Channa pleurophthalmus</i> (Bleeker, 1851)—ocellated snakehead
<i>Channa punctata</i> (Bloch, 1793)—spotted snakehead
<i>Channa stewardii</i> (Playfair, 1867)—golden snakehead
<i>Channa striata</i> (Bloch, 1797)—chevron snakehead
<i>Parachanna africana</i> (Steindachner, 1879)—Niger snakehead
<i>Parachanna insignis</i> (Sauvage, 1884)—Congo snakehead
<i>Parachanna obscura</i> (Günther, 1861)—African snakehead

Snakeheads have distinctive morphological features as follows: Long, almost cylindrical body; long dorsal and anal fins, and all fins supported only by rays; large scales on head, somewhat similar to the large epidermal scales on the heads of snakes (hence the common name, snakeheads); eyes dorsolateral (back and side) and located on the anterior portion of the head; tubular, anterior nostrils; pectoral and caudal fin margins rounded; large mouth with protruding lower jaw; lower jaw always toothed, and prevomer and palatines often toothed; some lower jaw teeth canine-like, and canines present or absent on prevomer and palatines; most species with pelvic fins present; and ventral aorta typically divided into two portions, one serving the gills and the other the suprabranchial (above the gills) chambers. Suprabranchial chambers of *Channa* are non-labyrinthic (complex system of paths/tunnels), and made up of two plates, one formed by the first epibranchial (above the gills), the second from the hyomandibular; those of *Parachanna* consist of a single cavity with elements from the epibranchial of the first gill arch and hyomandibular absent.

Two larger snakehead species, *Channa marulius* and *C. maruloides*, superficially resemble the native bowfin, *Amia calva*, in that all three are elongated fishes, have long dorsal fins, tubular nostrils, and an ocellus

(eyespot) at the base of the upper portion of the caudal fin. The bowfin, however, has its pelvic fins in a more abdominal rather than thoracic or anterior-abdominal position, and the anal fin is not elongated. Moreover, the bowfin does not have a rosette (circular arrangement) of enlarged scales on top of the head.

Species and species complexes of the genus *Channa* are native from southeastern Iran and eastern Afghanistan eastward through Pakistan, India, southern Nepal, Bangladesh, Myanmar (Burma), Thailand, Laos, Malaysia, Sumatra, Indonesia, and China northward into Siberia. Of the currently recognized 25 species of *Channa*, 9 species and representatives of 4 species complexes occur in peninsular Malaysia, Sumatra, and/or Indonesia. Of the same 25 species, 16 species and members of 5 species complexes are tropical to subtropical; members of three species complexes are temperate; and one species is temperate to boreal and can live beneath ice in the northern portion of its range. The three species of *Parachanna* are native to Africa and are tropical.

Snakeheads are considered as non-ostariophysan primary freshwater fishes (Mirza, 1975, 1995), meaning they have little or no tolerance for seawater. Habitat preferences vary by species or species complex, with a majority occurring in streams and rivers. Others occur in swamps, rice paddies, ponds, and ditches. All can tolerate hypoxic (low oxygen) conditions because they are airbreathers from late juvenile stages. Where known, pH range, varies by species with one (*Channa bankanensis*) preferring highly acidic (pH 2.8–3.8) waters. At least three species are tolerant of a wide pH range; *C. gachua*, *C. punctata*, and *C. striata* survived for 72 hours at pH levels ranging from 4.25 to 9.4 (Varma, 1979).

Spawning seasons vary by species. While information on reproductive biology of many species is lacking, several conclusions can be drawn from those for which this information is available. Breeding in several species occurs primarily in summer months (June through August), and in at least two (the *Channa striata* species complex and *C. punctata*), breeding pairs can be found throughout the year. Some species spawn twice each year. Okada (1960) reported that female northern snakeheads, *C. argus*, are capable of spawning five times per year. There are several reports that when snakeheads pair, the pair remains monogamous for a spawning season, perhaps longer, but a pair may not mate for life.

Snakeheads build nests by clearing a generally circular area in aquatic vegetation, often weaving the removed vegetation around the centrally cleared area. This results in a vertical column of water surrounded by vegetation. One species (*C. punctata*) prepares elaborate tunnels through vegetation leading into the nest column. At time of spawning, the male and female move upward into the central region of the nest column. The male entwines his body around that of the female, with some species appearing to “dance” in the water column as eggs are released and fertilized (Breder and Rosen, 1966; Ng and Lim, 1990). Eggs are buoyant, rising to the surface of the nest column, where they are vigorously guarded by one or both parents. Snakeheads in two species complexes (*C. gachua* and *C. orientalis*) are mouthbrooders, with the male being the mouthbrooder of fertilized eggs and, later, fry. Most snakeheads, however, are not mouthbrooders, but one or both parents guard their young vigorously; one species (*C. micropeltes*) reportedly attacked and in some instances killed humans who approached the mass of young (Kottelat, 1993). Thus, parental care, whether by mouthbrooding or guarding, is a behavioral characteristic of snakeheads. Successful spawning in the absence of vegetation has also been reported for three species of snakeheads (Parameswaran and Murgesan (1976b).

#### *Fecundity and Early Development*

There is limited information on fecundity (capacity to produce offspring) except for those snakeheads of commercial importance. Nevertheless, that information shows a pattern that likely applies to the entire family Channidae. Smaller species, such as *Channa gachua* and *C. orientalis*, produce few oöcytes or unfertilized “eggs” (about 20 when sexual maturity is first reached and later up to 200; Lee and Ng, 1991, 1994). Both are considered to be “species complexes” and one or both “species” contain mouthbrooding adults; low fecundity is a general rule among mouthbrooding fishes (Breder and Rosen, 1966). Fecundity increases greatly in larger snakehead species and appears to follow increasing body length. For example, Quayyum and Quasim (1962) recorded fecundity ranging from 2,300–26,000 oöcytes for *C. striata*, increasing in number with increasing body length. The bullseye snakehead, *C. marulius*, the largest species of snakehead, has been reported to produce approximately 40,000 oöcytes (Jhingran, 1984). Frank (1970) reported that the northern snakehead, *C. argus*, produced approximately 50,000 oöcytes (Frank,

1970). Frank’s data came from Nikol’skiy (1956) who recorded fecundity of 22,000–51,000 in northern snakehead from the Amur basin. Dukravets and Machulin (1978) gave fecundity rates of 28,600 to a high of 115,000 for northern snakehead (probably from Yangtze River stock) introduced to the Syr Dar’ya basin of Turkmenistan/Uzbekistan. They also noted that, although the growth of northern snakehead is slower than that reported for this species from the Amur basin, growth rates from both stocks become equal once sexual maturity is reached.

Oöcytes, when released from the female parent, are small, ranging from approximately 1 mm to slightly over 2 mm in diameter, depending on species. Fertilization takes place by the male releasing milt (sperm) on the oöcytes (or eggs) as they emerge from the female. Eggs contain an oil droplet within the yolk mass, which causes them to rise to the surface. Development time to hatching varies with water temperature and, to a lesser extent, with the species involved. For example, hatching occurred in 54 hours at 16–26°C and 30 hours at 28–33°C in *Channa punctata* (Khan, 1924). In the northern snakehead, *C. argus*, eggs hatch in 28 hours at 31°C, 45 hours at 25°C, and 120 hours at 18°C.

#### *Early Life History*

In general, newly hatched fry, depending on species, are about 3.0–3.5 mm in length. Following yolk absorption, snakehead fry begin feeding on zooplankton. Fry typically remain together until they reach early juvenile stage, guarded by one or both adults, or until they can fend for themselves (Lee and Ng, 1994). Late juveniles of the giant snakehead, *Channa micropeltes*, school and feed in packs (Lee and Ng, 1991). Although there are few reports of early life history except for species of commercial importance, it appears that, as larval snakeheads mature to early juvenile stages, the diet changes to small crustaceans and insects, particularly insect larvae. Presence of phytoplankton, plant material, and detritus in the digestive system of young snakeheads, as well as adults, appears to occur from incidental ingestion.

#### *Respiration and Overland Migrations*

Snakeheads are highly evolved airbreathing teleostean (bony) fishes, and many are capable of overland migration by wriggling motions (Lee and Ng, 1991; Berra, 2001). They possess suprabranchial (above the gills) chambers for aerial respiration, and the ventral aorta is divided into two

portions to permit bimodal (aquatic and aerial) respiration (Das and Saxena, 1956; Graham, 1997). The suprabranchial chambers become functional during the juvenile stage of growth (Graham, 1997), following which some species of snakeheads are obligate (limited, bound to a restricted environment) and others are facultative (optional, ability to live under varied conditions) airbreathers. In *Channa*, the chambers open into the pharynx through inhalent openings. The chamber lining contains respiratory "islets" with vascular papillae. The chambers can be filled with air or water. In addition, in *C. striata*, there are also vascular structures in the mouth and pharynx that can be utilized for respiration; these, however, can be retracted into depressions to prevent damage when feeding (Munshi and Hughes, 1992).

Some channids, perhaps all, have a circadian rhythm in oxygen uptake. *Channa marulius*, for example, showed a peak in oxygen uptake at night. *C. striata* and *C. gachua* peaked in early night hours, and *C. punctata* at dusk (Munshi and Hughes, 1992). Munshi and Hughes (1992) attributed these rhythms to evolution in swamp ecosystems (i.e., the rhythm is a property of the ecosystem).

It is unknown how many species of snakeheads are capable of overland migrations, but several are known to do so. These migrations from drying habitats in search of those with water are probably driven by instinctive behavior. Overland migrations likely apply to those species whose native range is subject to seasonal dry/wet (or monsoonal) conditions (encompassing

much of western to southeastern Asia, where a majority of snakehead species exist).

*Hypoxic Survival*

Snakeheads are either obligate or facultative airbreathers. Therefore, survival in hypoxic waters is not problematic to these fishes. When prevented from access to the surface, adult snakeheads will drown due to lack of oxygen (Day, 1868, Lee and Ng, 1991). Moreover, snakeheads can remain out of water for considerable periods of time as long as they remain moist. Some snakeheads, especially *Channa striata*, can bury themselves in mud during times of drought (Smith, 1965). They are known to secrete mucus that helps to reduce desiccation and facilitates cutaneous breathing (Mittal and Banerji, 1975; Lee and Ng, 1991). Fishers in Thailand are aware of this habit and, during drought periods, will slice into the mud until they locate the fish (Smith, 1965).

For larger species of snakeheads such as *Channa marulius*, young are facultative airbreathers and adults are obligate breathers (Wee, 1982), but all species are airbreathers.

*Life Span*

No specific information on life span can be found in the literature. Nevertheless, one species (*C. marulius*) is reported to reach a total length of 1.8 meters in Maharashtra State, India (Talwar and Jhingran, 1992), indicating a relatively long life span. Smaller snakeheads, such as members of the *C. gachua* and *C. orientalis* species complexes, may not live for more than a few years. Most larger snakeheads are

reported to reach sexual maturity in two years, after which growth slows but fecundity increases with increasing size.

*Feeding Habits*

There are few studies of feeding habits of snakeheads. For those species studied, following yolk-sac absorption, snakehead fry feed mostly on zooplankton. As juveniles, they feed on insect larvae, small crustaceans, and fry of other fishes (Munshi and Hughes, 1992). What is universal in reports of adult feeding habits is that snakeheads are predators with many species showing a preference for other fishes, although they may also consume crustaceans, frogs, smaller reptiles, and sometimes birds and small mammals. Under conditions of food deprivation, snakeheads can become cannibalistic on their own young. The piscivorous (fish-eating) nature of snakeheads has led to the use of some species (*C. striata* and *C. micropeltes* in particular) to control tilapia populations in aquaculture.

*Associated Diseases and Parasites*

Investigations of diseases and parasites of snakeheads concentrate on those species of importance in aquaculture. Bykhovskaya-Pavlovskaya et al. (1964) cited *Channa argus* as hosting 18 parasite species (Table 2). Two of the same parasites listed by Bykhovskaya-Pavlovskaya et al. (1964) were reported from the digestive tracts of northern snakeheads from Kyungpook Province, Korea, from 115 specimens collected between 1995 and 1997. The trematode *Azygia hwangtsinyi* was found in 47% of the samples and the nematode *Pingis sinensis* in 73%.

TABLE 2.—PARASITES OF NORTHERN SNAKEHEAD, CHANNA ARGUS

[Adapted from Bykhovskaya-Pavlovskaya et al. (1964)]

Parasite	Group	Host issues	Other fishes affected
<i>Myxidium ophiocephali</i> .....	Myxosporidia .....	gall bladder, liver ducts.	
<i>Zschokkella ophiocephalli</i> .....	Myxosporidia .....	kidney tubules.	
<i>Neomyxobolus ophiocephalus</i> .....	Myxosporidia .....	gill filaments.	
<i>Mysosoma acuta</i> .....	Myxosporidia .....	gill filaments .....	crucian carp.
<i>Myxobolus cheisini</i> .....	Myxosporidia .....	gill filaments.	
<i>Henneguya zschokkei</i> .....	Myxosporidia .....	gills, subcutaneous, musculature ..	salmonids (tubercle disease of salmonids).
<i>Henneguya ophiocephali</i> .....	Myxosporidia .....	gill arches, suprabranchial chambers.	
<i>Henneguya vovki</i> .....	Myxosporidia .....	body cavity.	
<i>Thelohanellus catlae</i> .....	Myxosporidia .....	kidneys.	
<i>Gyrodactylus ophiocephali</i> .....	Monogeneoidea .....	fins.	
<i>Polyonchobothrium ophiocephalina</i> .....	Cestoidea .....	intestine.	
<i>Cysticercus Gryporynchus cheilancristrotus</i> .	Cestoidea .....	gallbladder, intestine .....	cyprinids, perches.
<i>Azygia hwangtsiui</i> .....	Trematoda .....	intestines.	
<i>Clinostomum complanatum</i> .....	Trematoda .....	body cavity .....	perches.
<i>Pingis sinensis</i> .....	Nematoda .....	intestine.	
<i>Paracanthocephalus curtus</i> .....	Acanthocephala .....	intestine .....	cyprinids, esocids, sleepers, bagrid catfishes.
<i>Paracanthocephalus tenuirostris</i> .....	Acanthocephala .....	intestine.	

TABLE 2.—PARASITES OF NORTHERN SNAKEHEAD, *Channa argus*—Continued

[Adapted from Bykhovskaya-Pavolovskaya et al. (1964)]

Parasite	Group	Host issues	Other fishes affected
<i>Lamproglena chinensis</i> .....	Copepoda .....	gills.	

Literature on parasites of snakeheads includes numerous descriptions of new species, not detailed herein, but indicates that most studies concentrate on cultured fishes such as *Channa argus*, *C. punctata*, and *C. striata*. The potential threat of these parasites to native North American fishes has yet to be examined.

A disease that received broad attention is epizootic ulcerative syndrome (EUS) that causes high mortality in snakeheads, particularly *Channa striata* and *C. punctata* under intensive culture. EUS involves several pathogens, including motile aeromonad bacteria (eg., *Aeromonas hydrophila*, *A. caviae*, *Pseudomonas fluorescens*; Prasad et al., 1998; Qureshi et al., 1999), a fungus *Aphanomyces invadans* (considered a primary pathogen; Mohan et al., 1999; Miles et al., 2001), and perhaps a rhabdovirus (Kanchanakhan et al., 1999; Lio-Po et al., 2000). Another bacterium, *Aquaspirillum* sp., has also been implicated in the disease (Lio-Po et al., 1998). EUS may have originated in India in the 1980s, but has since been found in Pakistan, Thailand, and the Philippines with outbreaks reported from all these areas during the 1990s. Snakeheads are not the only fishes affected by this disease. It is also known to occur in airbreathing catfish (*Clarias*), the bagrid catfish genus *Mystus*, two cyprinid genera (*Cyprinus* and *Puntius*), mastacembalid eels (*Mastacembalus*), and the nandid genus *Nandus* in India (Mukherjee, 1998). In Thailand, it has been found in giant gourami (*Osphronemus gouramy*) and climbing perch (*Anabas testudineus*) during an outbreak in 1996–1997 (Kanchanakhan et al., 1999).

History of introduction in the United States: Four species of snakeheads (*Channa argus*, *C. marulius*, *C. micropeltes*, and *C. striata*) have been recorded from open waters of the United States (California, Florida, Hawaii, Maine, Maryland, Massachusetts, and Rhode Island), and two have become established as reproducing populations. At least 13 States prohibit possession of live snakeheads (Alabama, California, Colorado, Florida, Georgia, Idaho, Kentucky, Mississippi, Nevada, Oregon, Texas, Utah, and Washington) and there has been illegal activity, confiscations, citations issued, or investigations

initiated in six of those States within the past two years (Alabama, California, Florida, Kentucky, Texas, and Washington).

#### Florida

An established population of the bullseye snakehead, *Channa marulius*, was discovered in residential lakes and adjoining canals in Tamarac, Broward County, Florida, in 2001 (Florida Fish and Wildlife Conservation Commission, 2001). It is unknown how long this species has occupied these waters, perhaps several years, but both juveniles and adults have been collected, which indicates reproductive success. This species is the largest of snakeheads, with adults commonly reaching lengths of 120–122 cm (Talwar and Jhingran, 1992). It has been reported that in Maharashtra State, India, it can reach a length of 1.8 m and a weight of 30 kg (Talwar and Jhingran, 1992). A length of 30 cm can be reached in one year (Talwar and Jhingran, 1992). The pathway of the introduction to Florida is unknown. The species may have escaped from a fish farm (although there are none known in Tamarac), been purposefully introduced to establish a food or aquarium fish resource, or they may have been introduced by aquarists. Tamarac is located just east of Water Conservation Area II, north of Everglades National Park, and interconnected canal systems lead into this area. Nevertheless, there are water control structures on canals leading into Water Conservation Area II that would have to be open to allow this snakehead access to that area. It is likely that *C. marulius* will expand its range in peninsular Florida as its native range includes tropical to temperate climates. The bullseye snakehead is considered predacious (Jhingran, 1984; Talwar and Jhingran, 1992), especially on other fishes (Schmidt, 2001).

The northern snakehead, *Channa argus*, is also reported from Florida waters. Two individuals were caught in the St. Johns River below Lake Harney, Seminole and Volusia counties, in 2000. Unconfirmed reports indicate three additional individuals having been caught nearby. An attempt to collect additional specimens by U.S. Geological Survey personnel by electroshocking was unsuccessful, but will be repeated

in 2002. Until reproduction has been confirmed, the species is considered present but not established. This species is not involved in the aquarium fish trade, but is sold in live food fish markets as a food fish. The most likely pathway is introduction of live food fish, perhaps to establish a local source. The northern snakehead is sold in live food fish markets and some restaurants in Boston and New York, where snakeheads are legal. Live *C. argus* were confiscated in Washington (100 individuals, alive on ice, destined for the international district of Seattle), a market in Houston, Texas (Howells et al., 2002), markets in Miami and Plantation, southeastern Florida, in 2001, and in Orlando, Florida, in March 2002, all indications of the availability of this species in States where possession is illegal. Moreover, a few U.S. aquarium fish retailers sell snakeheads via the Internet. USGS scientists purchased three species from a reputable dealer in Rhode Island, who first requested a copy of the State permit that allowed USGS to possess the fish in Florida. Private purchases can also be made through several Internet “chat rooms” where possession of permits is not discussed.

#### California

California Department of Fish and Game personnel collected a snakehead while electrofishing in a reservoir, Silverwood Lake, in 1997. Silverwood Lake is in the Mohave River drainage, east-northeast of Los Angeles and north of San Bernardino in the San Bernardino Mountains. The specimen was subsequently frozen and later discarded (Camm Swift, pers. comm.). It was identified as *Channa argus* (John Sunada, pers. comm. to W.R. Courtenay, Jr.). It is believed that the fish got in the lake from the California Aqueduct that runs from the San Joaquin River south of Stockton into Lake Silverwood, one of several reservoirs that serves Los Angeles.

#### Hawaii

The chevron snakehead, (*Channa striata*) has been established on Oahu, Hawaii, since the late 1800s and was introduced from southern China (Herre, 1924). For whatever reasons, it does not appear to have been introduced to other

waters of Hawaii and is confined to reservoirs on Oahu (Maciolek, 1984). In addition, the species is now being cultured as a food fish on Oahu. This species is regarded as carnivorous with a preference for other fishes (Moshin and Ambak, 1983; Conlu, 1986). Lee and Ng (1991) described it as a territorial ambush feeder. It is also used to control tilapia populations in the Philippines (Conlu, 1986).

#### Maryland

Two adults and eight juveniles of *Channa argus* were found in a pond in Crofton, Anne Arundel County, Maryland in late June and early July 2002. The adults are known to have over-wintered in the pond. The fish were purchased from a live food fish market in New York City, transported to Maryland, and kept in an aquarium, and two fish were released into the pond in 2000. This species appears to be the most common snakehead available in food markets and restaurants as a live food fish.

#### New England States

A specimen of the northern snakehead, *Channa argus*, was collected in October 2001 from Newton Pond, Sudbury, Worcester County, Massachusetts, by Massachusetts Department of Fish and Wildlife personnel. The likely source is from live food fish markets. It is capable of establishment in most fresh waters of the United States. Okada (1960) reported adults as voracious feeders, particularly on other fishes.

Specimens of the giant snakehead, *Channa micropeltes*, have been collected from open waters in Maine, Massachusetts, and Rhode Island (Courtenay et al., 1984; Fuller et al., 1999). This tropical/subtropical species could not become established in those temperate waters. Juveniles of the species are cardinal red with two dark stripes on either side of the body, and sold by aquarium fish retailers as red or redline snakeheads. Aquarist-oriented web sites note that this species requires much animal food and that growth is rapid. These sites often advise that, once these fish reach approximately 15–20 cm in length, no more than one individual should be kept in a single aquarium because they are aggressive predators. The pathway into these New England States was likely aquarists who released their “pets” when they grew too large for their aquaria and/or because it was too costly to feed them. Releases of this species into subtropical waters in southern Florida or Hawaii could lead to establishment of this snakehead, regarded as the most

predaceous channid and known to have attacked humans (Ng and Lim, 1990; Lee and Ng, 1991; Kottelat et al., 1993).

#### Uses

According to U.S. Fish and Wildlife Service Law Enforcement data, 16,554 individuals or 20,527 kilograms of all species of snakeheads were imported into the United States between 1997 and 2000 at a declared value of \$85,425 (records of imports report numbers of individual fish OR weight in kilograms). Importations of snakeheads into the contiguous United States do not appear to represent a significant portion of live fish imports at present. However, from the raw data, it is clear that the trend has been upward in recent years.

Snakeheads have been imported to the United States for two purposes: As aquarium fish and for use as food. In Southeast Asia, particularly in Thailand and Malaysia, and to a lesser extent in Japan, there are developing recreational fisheries for the larger snakehead species (see <http://www.fishingasia.com> as an example).

Several species of snakeheads are listed on aquarium fish websites. Some of these entries are for information purposes and a few others list fish for sale. The most popular species are, in order of importance and availability: *Channa micropeltes*, juveniles sold as red or redline snakehead; *C. marulius*, juveniles sold as cobra snakehead; *C. bleheri*, sold as rainbow snakehead; *C. barca* sold as barca or tiger snakehead; *C. gachua* sold under a variety of names; and *Parachanna africana*, juveniles sold as African snakehead. Some are cultured and others are captured from the wild. Rarely does one see listings for *C. asiatica*, *C. orientalis*, *C. pleurophthalma*, *C. punctata*, or *C. stewartii*. This is somewhat surprising because several are attractive aquarium fishes, and they can be purchased from dealers in southeast Asia via the Internet. *Channa bleheri*, *C. gachua*, and *C. orientalis* are small snakeheads, unlike *C. micropeltes* and *C. marulius* that grow quickly to large sizes. All but the smallest snakeheads are unsuitable for community tanks, and even they may kill other fishes in aquaria. Larger snakeheads require very large aquaria and must be kept alone. The number of aquarium hobbyists interested in keeping snakeheads appears to be small, and snakeheads represent a minor component in the aquarium fish industry (Marshall Myers, pers. comm. to J.D. Williams).

Conversely, use of snakeheads as food fishes is growing in the United States (Table 3). Live snakeheads of the larger species can be purchased in live food

fish markets and in some restaurants in States where these fishes are not prohibited, but they are also appearing in markets in States where possession is prohibited (Howells et al., 2002). Some restaurants display live snakeheads in aquaria, a common practice where these fishes are native, allowing customers to choose a fish to be prepared for a meal. This is reminiscent of many U.S. seafood restaurants where one can select a lobster to be cooked from an aquarium.

During FY 1999, the USDA Small Business Innovation Research Program funded a Phase II project to the Hawaii Fish Company of Waiialua, Hawaii, to develop commercial culture of the chevron snakehead, *Channa striata*. It is now being cultured in Hawaii as a food fish.

TABLE 3.—SPECIES OF THE FAMILY CHANNIDAE CURRENTLY KNOWN TO BE CULTURED FOR FOOD AND/OR AQUARIUM FISH TRADE

<i>Channa argus</i> **
<i>Channa maculatus</i>
<i>Channa marulius</i>
<i>Channa micropeltes</i> ***
<i>Channa punctata</i>
<i>Channa striata</i> *
<i>Parachanna africana</i>
<i>Parachanna obscura</i>

\* Species most widely cultured for food. Also being cultured in Hawaii.

\*\* Second most important species cultured for food.

\*\*\* Appears to be the most important species cultured for the aquarium fish trade.

Although several snakehead species may be found for sale alive in live food fish markets, the most available species is the northern snakehead, *Channa argus*. It is being sold in Boston and New York City, where snakeheads are legal. Through confiscation by State fish and game personnel in 2001, it has also been found in the live food fish trade of three States (Florida, Texas, and Washington) where possession of snakeheads is prohibited. The northern snakehead is able to tolerate a considerable temperature range, from warm temperate to boreal climates, where this species can live under ice. Additionally, its airbreathing capabilities enhance its transport and marketing. Marketing and customer preferences, however, are not synonymous. For example, persons of southeastern Asian descent prefer chevron snakehead, *C. striata*, above any other species. It is currently being cultured in much of southeastern Asia, the Philippines, and Hawaii.

### Potential Range

Temperature is the most important environmental factor that would determine potential range of snakeheads in the United States. Because there are few data providing thermal tolerance ranges for snakeheads, potential range must be inferred from distribution within native ranges. The family Channidae contains nine species that are strictly tropical, and if introduced, would survive in the warmest waters such as extreme southern Florida, perhaps parts of southern California, Hawaii, and certain thermal spring systems and their outflows in the American west. Another four can be considered tropical to subtropical, indicating a similar potential range of distribution as for tropical species but with a greater likelihood of survival during cold winters and more northward limits. One is subtropical. Another 12 (4 of which appear to be species complexes) snakeheads can tolerate tropical or subtropical to warm temperate conditions, indicative of species that could survive in most southern States. One is warm temperate, and another warm temperate to cold temperate (*Channa argus* with a temperature range of 0–>30° C).

In summary, there are few waters in the United States or territories of the United States that, based on temperature, would preclude some member(s) of the family Channidae from becoming established.

### Need for Proposed Rule— Environmental Consequences

#### Factors That Contribute to Injuriousness

The likelihood of release or escape of snakeheads is high. One species, *Channa striata*, was released and became established in waters of Oahu, Hawaii, before 1900. It was likely introduced as a food fish. A second species, *Channa marulius*, is a recent introduction to southeastern Florida (Broward County) and has also become established. The pathway for this introduction was release of either food or aquarium fish. Two specimens of *Channa argus* were caught in the St. Johns River near Sanford, Florida, and three more were alleged to have been caught at or near the same location. This species is available only through live food fish markets. The same species was captured from a pond in central Massachusetts in October 2001. The snakehead captured in Lake Silverwood, California, was also *C. argus*. Two adults and eight juveniles of *C. argus* were collected from a pond in Crofton, Maryland, in June and July 2002.

Individual specimens of *Channa micropeltes* were caught in Maine, Massachusetts, and Rhode Island in past years, the source of which were most likely aquarium fish releases. Those New England States are temperate and could not support establishment of this tropical/subtropical snakehead.

Escape from culture has resulted in establishment of other nonindigenous fishes. If, however, these fish are being shipped to markets in other States, release of live food fish becomes a viable pathway for introduction of this species and they could become established from Florida to or above the U.S.-Canadian border and in many territories of the United States.

If snakeheads escaped, or were released into the wild, the likelihood that they would survive and/or become established with or without reproduction is dependent upon the species of snakehead involved and the location of the release. Waters of southern Florida, Hawaii, the Caribbean territories, and certain thermal springs in the western United States are suitable for survival and establishment of probably all tropical/subtropical to warm temperate snakehead species. That *Channa striata* has been established for over a century in Hawaii and, more recently, *C. marulius* has become established as a reproducing population in southeastern Florida is indicative of the likelihood of survival and potential for establishment of snakehead fishes. Although *C. striata* is largely confined to reservoirs on Oahu, *C. marulius* has ample opportunity to expand its range in southeastern Florida through the large network of interconnected canals and Water Conservation Areas to the west of the metropolitan areas. The native range of this species extends above 30° N.

The availability of *Channa argus* in live food fish markets raises the probability that this species will be released into open water. Moreover, its native range extends from the Yangtze basin in central China northward into the Amur basin and some of its northern tributaries. Its lower thermal limit is 0° C. That two documented specimens were captured by angling from the St. Johns River near Sanford, Florida, and another taken by electrofishing in a pond in central Massachusetts is evidence that this fish is being released.

The likelihood and magnitude of spread would be high for all species within their thermal limits. Both the northern snakehead, *Channa argus*, and, to a somewhat lesser extent, the blotched snakehead, *C. maculata*, expanded their ranges of distribution from sites of initial introduction in

Japan. Since introduction of the northern snakehead into the Aral Sea basin in the 1960s, there has been a dramatic range expansion in waters of Kazakhstan, Turkmenistan, and Uzbekistan. Range expansion also occurred in the Philippines following introduction of the chevron snakehead, *C. striata*. As discussed above in the Biology section, there are few waters in the United States or territories of the United States that, based on temperature, would preclude some member(s) of the family Channidae from becoming established.

At all life stages, snakeheads will compete for food with native species. As discussed above in the Biology section, snakehead fry feed on zooplankton; juveniles feed on insect larvae, small crustaceans, and fry of other fishes; and adults are predators, feeding on other fishes, crustaceans, frogs, smaller reptiles (snakes, lizards), and sometimes birds (particularly young waterfowl) and mammals. Through predation, ecosystem balance could be modified drastically should snakeheads become established in waters with low diversity of native fishes and low abundance or absence of native predatory species.

While the potential for snakeheads to transfer pathogens to native wildlife is largely unknown, all snakehead species examined are host to at least several species of parasites. At least two snakehead species, *Channa punctata* and *C. striata*, are susceptible to epizootic ulcerative syndrome (EUS), a disease believed to be caused by several species of bacteria, a fungus, and perhaps a retrovirus, under intensive culture conditions. EUS is not specific to snakeheads and has affected other fishes, such as clariid catfishes, bagrid catfishes, two cyprinid genera, mastacembalid eels, and a nandid fish in India; in Thailand, it has been found in giant gourami and climbing perch. There have been no studies undertaken to examine transfer of parasites or diseases to native North American fishes.

Due to the highly predatory nature of snakeheads, the likelihood and magnitude of effect on threatened and endangered species is high. Of all the taxa listed as endangered or threatened in U.S. aquatic habitats, 16 amphibians, 115 fishes, and 5 of the 21 crustaceans (the surface-dwelling crayfish and shrimp) would be the most likely to be affected. Based on habitat requirements and life history, fishes are more likely to be affected by introduced snakeheads than amphibians and the surface-dwelling crustaceans. Nonetheless, the possibility of an additional nonindigenous predator in the aquatic

community with any listed amphibian or crustacean would constitute a threat.

In the western United States, habitat requirements of listed fishes range from steep-gradient, coldwater mountain streams, lower-gradient large desert rivers, to thermal (warm) springs in desert areas. Eastern fishes likewise occupy a variety of habitats, including springs, creeks, large rivers, and the Great Lakes. One or more species of snakeheads would be capable of living in any of the above habitats. Since all snakehead species prey on fish, to a greater or lesser extent, all of the fishes listed as endangered or threatened would be vulnerable to predation at some stage in their life history. The degree of threat would vary from extremely high for any species of snakeheads introduced in relatively small, isolated habitats, such as desert thermal springs and their outflows in the American southwest, to somewhat less in steep-gradient coldwater mountain streams. Based on the food habits and habitat preferences of snakeheads, it is likely to invade the habitat, feed on, and further threaten Federally listed freshwater fishes. Snakeheads are likely to also further threaten numerous other potential candidates for Federal protection.

The likelihood that one or more species may be placed in danger of extinction or become endangered within the foreseeable future as a result of introduction/establishment is high. The introduction of a small number of individuals (<5) into isolated spring habitats could result in the extinction of endemic spring-adapted fishes or crustaceans. The snakeheads would not have to establish a reproducing population to reduce or eliminate a fish or crustacean species confined to a small section of a stream or isolated spring habitat. A small number of snakeheads introduced, but not established, in a stream or lake would likely have less of an impact. However, any snakehead that becomes established in a water body would represent a significant threat and could potentially put any listed amphibian, fish, or crustacean at risk of extinction.

The likelihood and magnitude of ancillary wildlife resource damage due to control measures is high. Chemical control using rotenone or other similar toxins would likely be damaging to non-target organisms.

Only one species of snakehead, *Channa micropeltes*, a tropical/subtropical species, is reported to have attacked human beings. There have been reports of human deaths as a result. All such incidents apparently happened when humans approached a nest or

group of young, and attacks were perpetrated by guarding adults. Therefore, the likelihood and magnitude of direct impacts on human beings is low.

#### **Factors That Reduce or Remove Injuriousness**

The ability and effectiveness of measures to prevent escape or establishment of snakeheads are low. As discussed above, the pathways for introduction include intentional and unintentional releases from the live food fish trade and aquarists. All but the smallest snakeheads are unsuitable for community tanks, and even they may kill other fishes in aquaria. Some outgrow their tanks, and the tendency of aquarium hobbyists has been to release fish into open waters rather than killing a pet (Courtenay and Hensley, 1980; Courtenay and Stauffer, 1991; Courtenay and Williams, 1992; Courtenay, 1993; OTA, 1993). The availability of live snakeheads increases the probability of introductions to create localized sources of live fish for live food fish markets and probably encourages some entrepreneurs to consider culturing these species within the continental United States. Additionally, the likelihood of individuals traveling relatively short distances over land or being swept into other water bodies by flooding is high.

The ability to eradicate or control snakehead populations depends on where they are found. If established in large lakes or river systems, eradication and/or control is expected to be nearly impossible, and they would likely become permanent members of the fish community. Control in smaller water bodies depends upon the amount of vegetation, the accessibility to the water body, and the effectiveness of the control methods. When a population is discovered, it is typically too late for removal unless the population is isolated. Additionally, controlling the spread of pathogens once they have been introduced in the wild is practically impossible.

There is no known method of removing all snakeheads following introduction. Piscicides work by preventing fish from removing oxygen from the water. Chemical control using rotenone and similar toxins would likely be ineffective to airbreathing snakeheads and damaging to nontarget organisms except in closed situations. Electrofishing and netting may provide some level of control of snakehead populations; however, eradication using these methods would be too selective on size classes to remove a population of snakeheads.

Since effective measures to eradicate, manage, or control the spread of snakeheads once they are established are not currently available, the ability to rehabilitate or recover ecosystems disturbed by the species is low. Significant risks associated with snakehead release relate to endangerment and extinction of native amphibians, fishes, and crustaceans. Re-establishment of extirpated populations, if biologically possible, would be labor and cost intensive and would depend on eradication of snakeheads within those habitats.

Because snakeheads are likely to escape or be released into the wild; are likely to survive or become established if they escape or are released; are likely to spread since there are no known limiting factors; are likely to compete with native species for food; may transmit parasites to native species; are likely to feed on native species, which will negatively affect native fishes, amphibians, crustaceans, birds, small reptiles, and small mammals; and because it will be difficult to prevent, eradicate, manage, or control the spread of snakeheads; and because it will be difficult to rehabilitate or recover ecosystems disturbed by the species, the Service finds snakeheads to be injurious to the wildlife and wildlife resources of the United States.

#### **Required Determinations**

##### **Paperwork Reduction Act**

Currently we have approval from OMB to collect information under OMB control number 1018-0092. This approval expires July 31, 2004. We may not conduct or sponsor, and a person is not required to respond to, a collection of information unless we display a currently valid OMB control number.

##### **Regulatory Planning and Review**

In accordance with the criteria in Executive Order 12866, the Office of Management and Budget has determined that this rule is not a significant regulatory action.

(a) This rule will not have an annual economic effect of \$100 million or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government. A cost-benefit and economic analysis is not required.

The net economic effect of prohibiting the importation of snakeheads is difficult to determine because of the minimal amount of data available for a relatively new species to the import trade. There is a trade-off between damage avoided by not letting snakeheads get into U.S. water bodies



and the economic benefits received by fish markets and aquarium owners who want to own the species. Since only \$85,000 worth of snakeheads were imported during the four-year period between 1997 and 2000, and the potential damage that could be done by snakeheads if they get into U.S. waters would be in the millions of dollars from the loss of native species, including threatened and endangered species, this rule will have a net positive benefit. The dollar amount of imported value is not the net economic value of this fish, but the relatively small amount of imported value compared to environmental damage avoided by prohibiting these species is convincing that this rule will not have a major negative economic effect.

(b) This rule will not create inconsistencies with other agencies. This rule pertains only to regulations promulgated by the Fish and Wildlife Service under the Lacey Act. No other agencies are involved in these regulations.

(c) This rule will not materially affect entitlements, grants, user fees, loan programs, or the rights or obligations of their recipients. This rule does not affect entitlement programs. This rule is aimed at regulating the importation and movement of non-indigenous species that have the potential to cause significant economic and other impacts on natural resources.

(d) This rule does not raise novel legal or policy issues. No previous listings of wildlife as injurious have raised legal or policy concerns.

#### **Regulatory Flexibility Act and SBREFA**

This rule will not have a significant economic effect on a substantial number of small entities as defined under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). A Regulatory Flexibility Analysis is not required. Accordingly, a Small Entity Compliance Guide is not required. The rule is not a major rule under 5 U.S.C. 804(2), the Small Business Regulatory Enforcement Fairness Act. This rule will not have an annual effect on the economy of \$100 million or more, and does not have significant adverse effects on competition, employment, investment productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises.

No individual small industry within the United States will be significantly affected if snakehead importation and interstate transport are prohibited. Live food fish markets, restaurants, and aquarium hobbyists are the entities most likely to be affected by this rule. The number of aquarium hobbyists

interested in keeping snakeheads appears to be small, and snakeheads represent a minor component in the aquarium fish industry (Marshall Myers, pers. comm. to J.D. Williams). With only 16,554 individual snakeheads imported over four years and most of these going to restaurants for human consumption, the number of entities engaging in selling and buying these fish is very small. There is no recreational fishery for these species. The number of entities involved in the trade of these species is not known, but it is assumed to be very small because of the small number of these fish imported. This rulemaking will have the indirect effect of protecting native fishes, amphibians, and crustaceans from the intentional or accidental introduction of snakeheads into U.S. water bodies. The snakeheads would likely devastate many native wildlife populations if introduced into a waterway. It is very unlikely that this rulemaking will affect a substantial number of small entities and those entities affected will not be significantly affected because of the very small numbers of these fish imported. This rulemaking, by protecting the environment from the spread of a nonnative species that would devastate native fishes, amphibians, and crustaceans, will indirectly work to sustain the economic benefits enjoyed by numerous small establishments engaged in the recreational fishing industry, among others.

This rule will not cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions. This rulemaking will not affect costs or prices for any fish species other than snakeheads. If the species are found injurious, and importation and interstate movement are banned, the maximum loss would be approximately \$22,000 per year to the few entities that deal in these species.

#### **Unfunded Mandates Reform Act**

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), the rule will not "significantly or uniquely" affect small governments. A Small Government Agency Plan is not required. The Service has determined and certifies pursuant to the Unfunded Mandates Reform Act that this rulemaking will not impose a cost of \$100 million or more in any given year on local or State governments or private entities; will not produce a Federal mandate of \$100 million or greater in any year and therefore, is not a "significant regulatory action".

#### **Takings**

In accordance with Executive Order 12630, the rule does not have significant takings implications. A takings implication assessment is not required. This rule will not impose significant requirements or limitations on private property use.

#### **Federalism**

In accordance with Executive Order 13132, the rule does not have significant Federalism effects. A Federalism assessment is not required. This rule will not have substantial direct effects on States, in the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 13132, we determine that this rule does not have sufficient Federalism implications to warrant the preparation of a Federalism Assessment.

#### **Civil Justice Reform**

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

#### **NEPA**

We have reviewed this rule in accordance with the criteria of the National Environmental Policy Act and our Departmental Manual in 516 DM. This rule does not constitute a major Federal action significantly affecting the quality of the human environment. An environmental impact statement/assessment is not required. The action is categorically excluded under the Department's NEPA procedures (516 DM 2, Appendix 1.10), which apply to policies, directives, regulations, and guidelines of an administrative, legal, technical, or procedural nature; or the environmental effects of which are too broad, speculative, or conjectural to lend themselves to meaningful analysis and will be subject later to the NEPA process, either collectively or on a case-by-case basis.

#### **Tribal Consultation**

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal

Governments" (59 FR 22951), Executive Order 13175, and 512 DM 2, we have evaluated potential effects on Federally recognized Indian tribes and have determined that there are no potential effects. This rule involves the importation and interstate movement of live snakeheads.

#### Effects on Energy

On May 18, 2001, the President issued Executive Order 13211 on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. Because this proposal is intended to prevent the accidental or intentional introduction of snakeheads and the possible subsequent establishment of populations of these fish in the wild, it is not a significant regulatory action under Executive Order 12866 and is not expected to significantly affect energy supplies, distribution, and use. Therefore, this action is not a significant energy action and no Statement of Energy Effects is required.

This notice solicits economic, biological, or other information concerning snakeheads of the family Channidae. The information will be used to determine if this family of fishes is a threat, or potential threat, to those interests of the United States delineated above, and thus warrants addition to the list of injurious fish in 50 CFR 16.13.

#### Public Comments Solicited

Please send comments to Chief, Division of Environmental Quality, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Suite 322, Arlington, VA 22030. Comments may be hand delivered or faxed to (703) 358-1800. If you submit comments by e-mail, please submit comments as an ASCII file format and avoid the use of special characters and encryption. Please include "Attn: [RIN 1018-AI36]" and your name and return address in your e-mail message. Please note that this

email address will be closed at the termination of this public comment period.

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the rulemaking record, which we will honor to the extent allowable by law. In some circumstances, we would withhold from the rulemaking record a respondent's identity, as allowable by law. If you wish us for to withhold your name and/or address, you must state this prominently at the beginning of your comment. However, we will not consider anonymous comments. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Due to the highly predatory nature of these fishes and the inability to control them and therefore the need for rapid regulatory action, the public comment period has been limited to 30 days.

#### Clarity of the Rule

Executive Order 12866 requires each agency to write regulations that are easy to understand. We invite your comments on how to make this rule easier to understand including answers to questions such as the following: (1) Are the requirements in this rule clearly stated? (2) Does the rule contain technical language or jargon that interferes with the clarity? (3) Does the format of the rule (grouping and order of sections, use of headings, paragraphing, etc.) aid or reduce its clarity? (4) Is the description of the rule in the **SUPPLEMENTARY INFORMATION** section of the preamble helpful in understanding the rule? What else could we do to make the rule easier to understand?

Send a copy of any written comments about how we could make this rule

easier to understand to: Office of Regulatory Affairs, Department of the Interior, Room 7229, 1849 C Street NW., Washington, DC 20240. You may also e-mail comments to *Exsec@ios.doi.gov*.

#### References Cited

A complete list of all references cited in this rule is available upon request from the Division of Environmental Quality (see **FOR FURTHER INFORMATION CONTACT** section).

#### List of Subjects in 50 CFR Part 16

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

Accordingly, we propose to amend part 16, subchapter B, of Chapter I, Title 50 of the Code of Federal Regulations as set forth below.

#### PART 16—[AMENDED]

1. The authority citation continues to read as follows:

**Authority:** 18 U.S.C. 42.

2. Amend § 16.13 by revising paragraph (a)(2) to read as follows:

#### § 16.13 Importation of live or dead fish, mollusks, and crustaceans, or their eggs.

(a) \* \* \*

(2) The importation, transportation, or acquisition of any live fish or viable eggs of the walking catfish, family Clariidae; live mitten crabs, genus *Eriochei*, or their viable eggs; live mollusks, veligers, or viable eggs of zebra mussels, genus *Dreissena*; and any live fish or viable eggs of the snakehead, Family Channidae, is prohibited except as provided under the terms and conditions set forth in § 16.22.

\* \* \* \* \*

Dated: July 22, 2002.

**Paul Hoffman,**

*Assistant Secretary for Fish and Wildlife and Parks.*

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