Commercial Bait and Ornamental Fish Certification Program: Listed Aquatic Nuisance Species

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Introduction

This booklet provides photographs and descriptions of the aquatic nuisance species (ANS) listed in the Official Standards for the Certification of Commercial Bait and Ornamental Fish in Arkansas, Regulations on Aquaculture in Arkansas, Circular 21, Arkansas State Plant Board. It is designed for use by certifiedfish producers and by farm inspectors. It is important to remember that many native

species of plants, mollusks and fish may resemble these ANS species, so use this guide only as a means to identify suspect organisms for later identification by experts approved by the Plant Board.



University of Florida / Photo by Vic Ramsey



University of Florida / Photo by Ann Murray

Eurasian watermilfoil Myriophyllum spicatum

A submersed, rooted aquatic plant, with long slender, smooth reddish-brown to whitish pink stems which branch several times. Feathery leaves are up to two inches long and divided into pairs of threadlike leaflets. Each olive-green leaf has 14 to 24 or so very slender segments on each side of the leaf axis. Leaves rarely above water. Very small, pink to reddish flowers

on a spike above the water. Found in Arkansas in Lakes Hamilton and Ouachita. Could be confused with other watermilfoils, or with coontail Ceratophyllum demersum which is native, non-rooted submersed plant. For a comparison with similar plants, see University of Idaho fact sheet CIS 1108.



USDA-NRCS PLANTS Database / USDA NRCS. Wetland flora: Field office illustrated guide to plant species. USDA Natural Resources Conservation Service.



University of Florida / photo by Vic Ramsey

Giant salvinia Salvinia molesta

Giant salvinia is a floating aquatic fern that grows rapidly and forms large dense mats. It appears to have roots, which are actually modified leaves. It has horizontal stems below the water surface. The leaves are paired and upper surfaces covered with rows of stiff white hairs. Each hair has four branches, which in undamaged condition join at the tips to form a shape like an eggbeater. In the initial stages of an infestation, the leaves are small and flat on the water. It has not been found in Arkansas as yet (April 2007) but has been found in Louisiana, Texas and Mississippi. It can withstand cold temperatures (e.g., two days at 27 F) but not prolonged freezing conditions or ice formation.



U.S. Geological Survey / photo by Colette Jacono

Hydrilla Hydrilla verticillata

A submersed, rooted aquatic plant with long stems and profuse branching near the water surface. Loose fragments can also be found. Small, narrow pointed leaves in whorls of 3 to 8. Leaves (5/8" long) have serrated (11-39 sharp teeth per cm) margins, with one or more sharp teeth under the midrib. Feels coarse and rough when stroked. Appearance varies with location and growing conditions. Forms small yellowish tubers in the

sediment. Found in Arkansas in Lakes Ouachita, Hamilton and DeGray. May be confused with elodea Elodea canadensis (leaves in whorls of 3) or egeria Egeria densa (leaves in whorls of 4 to 5). For more information, see fact sheet at: http: //plants.ifas.ufl.edu/hydcirc.html



University of Florida Photo by Vic Ramsey



University of Florida



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Zebra mussel Dreissena polymorpha

Small, triangular shaped bivalves with zebra stripe banding; color patterns vary and may be all light or dark. Typically less than 1 1/2 inches in size, often found in clumps attached to hard surfaces by threads. Sits flat on ventral side. Disperse through a free-swimming larval stage called a veliger. Unlikely to thrive in stagnant ponds in Lonoke during summer months,

as it prefers water cooler than 77 F, with a low probability of colonization at temperatures above 82 F. Also unlikely to thrive at dissolved oxygen concentrations below 4 mg/L. Found in Arkansas in the Arkansas and lower White Rivers.



U.S. Geological Survey



Photos by D.L. Gustafson

New Zealand mud snail Potamopyrgus antipodarum

A tiny, gray, brown or black snail with an operculum (plate covering entrance). Snails average 1/8 inch in size, but can be as small as a sand grain. Western U.S. forms are rarely over 0.2 inches in length. Shells have 5 to 6 whorls. A live bearer, developing young are found within a brood pouch inside the first whorl. The New Zealand mud snail has a temperature tolerance of 32 - 77 F with an optimum of 66 F, so it is unlike-

ly to survive summers in ponds in central Arkansas. Not found in Arkansas as yet (April 2007). Populations are essentially all female, so breaking open the first whorl and checking for young (see photos; most obvious in the summer and fall) is a way to differentiate it from many other freshwater snails (there are a few other livebearers). For more pictures of the NZ mud snail and other identification information: http://www.esg.montana.edu/ai m/mollusca/nzms/id.html



Photos by D.L. Gustafson



Photo by Drew Mitchell

Red-rimmed melania Melanoides tuberculata

Snails with tower-like elongate cone-shaped shells. Typically with 5 whorls, up to a maximum of 10. Vertical ribs on middle and upper whorls. Live snails have an operculum (plate covering entrance). Typically 3/4 to 1 inch long, up to 3 inches. Shell light brown with rusty spots which may form a spiral row. Active at night. A tropical snail, it is unlikely to become

established in the Lonoke area. It has a temperature range of 63 to 90 F but can withstand temperatures 3 to 6 F above and below this range for two to three weeks. Found in Florida, Louisiana and Texas. For an online manual to Florida freshwater snails, see: http://www.flmnh.ufl.edu/natsci/ malacology/fl-snail/snails1.htm



U.S. Geological Survey / photo by Noel Burkhead

Sticklebacks Family Gasterosteidae

Sticklebacks are small fish (typically 2 to 4 inches) easily recognized by the presence of two or more stout dorsal spines that are not attached to the fin (free spines). The ventral fins are spines with only a few rays. Scaleless fish, several species have bony plates on their sides. Species commonly considered as nuisances are the three-spine and four-spine. The brook stickleback has five spines, and there is also a ninespine stickleback. Not native to Arkansas, sticklebacks are often mixed in with shipments of wild fathead minnows. Sticklebacks are a prohibited species in Arkansas.



U.S. Geological Survey / photo by Noel Burkhead

Rudd Scardinius erythrophthalmus

Native to Europe, the rudd is very similar in appearance to the golden shiner, only the fins are reddish to blood red, especially the ventral fins. In contrast, golden shiners have clear to golden colored fins. The rudd can also be distinguished by the presence of scales on the ventral keel (bottom of fish, between the pelvic fins and the anus),

while the golden shiner keel is scaleless. There is also a golden colored rudd, Rudd were imported into Arkansas in the 1980s and raised as a baitfish. When it was determined that rudd could cross with golden shiners, they were prohibited as a baitfish in Arkansas and in many other states.



Photo by Steffen Zienert



Photo by Robin Rhudy http://www.fishpondinfo.com/orfe.htm

Orfe Leuciscus idus

The orfe or ide comes in two color forms, silver and gold. The orfe resembles other minnows. but has red in the fins, especially the anal and paired fins. It typically grows up to 12 to 17 inches but can obtain a larger size. The mouth is small and terminal (at tip of snout), and the snout blunt. A golden form is orange to light yellow, sometimes with dark areas. Orfe may

have been present in Arkansas as an ornamental species but are not currently raised here. However, it is still sold as an ornamental fish in some other states. Goldfish could be mistaken for the golden form; ide have a short dorsal fin (8 rays) while goldfish have a long dorsal fin (15 to 19 rays) with a stout spine-like ray at the front.



Goldfish / University of Arkansas at Pine Bluff



Photo by Nathan Stone

Silver carp Hypophthalmichthys molitrix

Young silver carp appear similar to the gizzard and threadfin shads but lack the dark spot behind the operculum and have a larger mouth and more pointed snout. Also, the shads have a long filament at the end of the dorsal fin (last ray). Silver carp small scales, no teeth and a sharp ventral keel, running from the anal fin up to the throat. In

contrast, the ventral keel on the bighead ends at the pelvic fins. The color is silver, shading to a light gray on top, without the dark blotches that are often found on the bighead. Silvers can reach a large size, in excess of 70 lbs. They are an excitable fish when crowded and are known for their jumping, especially in response to motor boats. Silver carp are not cultured as a food fish in Arkansas. Silver carp will not reproduce in ponds.



Alberta Agriculture and Food / photo by Dan Watson



Photo by Nathan Stone



U.S. Geological Survey / photo by Noel Burkhead

Bighead carp Hypophthalmichthys nobilis

Bighead carp have a relatively large eye when young, distinguishing it from other minnows. The eyes are slightly forward and lower than in most fish, giving the bighead a "looking down" appearance. Young are silver, while adults may be mostly silver shading to darker towards the top of the fish, or white underneath with dark dorsal blotches and speckles. As

their name implies, bighead have a relatively large head, as well as no teeth and relatively small scales. There is a food fish market for bighead carp, and some are raised in polyculture with catfish. Bighead can grow to a large size, 50 to 80 lbs, although cultured fish are commonly sold when 6 to 12 lbs. Bighead have a ventral keel that runs from the anal fin to the pelvic fins only, while the keel on silver carp continues on up to the throat. Bighead are



Photo by Nathan Stone

hardy, temperate fish and thrive in Arkansas fishponds. Bighead carp will not reproduce in ponds.

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