

Virginia's Triploid Grass Carp Program

by
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In Virginia, the use of biological controls for nuisance aquatic vegetation started in 1979 with the importation of 1,600 F₁ hybrid carp (female bighead carp, *Hypophthalmichthys nobilis*, and male grass carp, *Ctenopharyngodon idella*). These fish were produced by J. M. Malone in Lonoke, AR, and stocked into small lakes in the Shenandoah Valley and Piedmont regions of Virginia.

Regulation 23-6 (Virginia Game, Inland Fish and Boat Laws and Regulations) made it illegal to import, without a permit, certain nonindigenous fish species (piranha, walking catfish, and cichlid perch) as far back as 1973. In 1979, grass carp (*C. idella*) were added to this regulation. Prior to 1979, unknown numbers of grass carp (*C. idella*) were imported to Virginia by private pond owners. Based on staff conversations with landowners, it was determined that the Soil Conservation Service was recommending grass carp for aquatic weed control, and landowners were ordering the fish through trade magazines and journals.

In 1979, hydrilla (*hydrilla verticillata*) was misidentified as elodea and planted on the Virginia side of the Potomac River. Hydrilla has become widespread throughout Virginia since then.

In 1984, the Virginia Department of Game and Inland Fisheries (VDGIF) approved the use of the sterile triploid grass carp for weed control. Only triploid grass carp were allowed, and J. M. Malone and Leon Hill were the only approved distributors. Pond owners desiring grass carp were asked to contact one of the two approved distributors, make arrangements for delivery, and contact for a permit. No carp could be delivered without the VDGIF

permit. The recommended stocking rate in 1984 was 16 triploid grass carp/acre. This was revised to 16 triploids/vegetated acre in 1987.

In 1989, VDGIF formed a Grass Carp Committee that was comprised of State fisheries biologists. The Committee (a) produced an informative brochure about weed control and the use of grass carp for public distribution, and (b) revised stocking rates based on available literature and staff experience—two rates were established: one for controlling plants and one for eradicating plants, both depending on plant palatability. Current recommended stocking rates (number/vegetated acre) are as follows:

Food Selectivity	Control	Eradicate
Intermediate preference plants	16	32
Preferred plants	8	16

(c) began random ploidy testing of shipments from all distributors in 1990. Every dealer is required to carry 10 extra fish per shipment. Testing was done at Virginia Polytechnic Institute and State University. An effort is made to test 100 fish annually, and they are currently being tested at Virginia Commonwealth University. There are currently 10 approved grass carp distributors making deliveries in Virginia.

VDGIF issues approximately 547 permits requesting 9,000 triploid grass carp annually. However, not everyone issued a permit stocks grass carp. A statewide survey conducted in 1993 suggests that approximately 75 percent of permittees actually stock fish, making the actual stocking estimate 6,750 triploids/year. Currently, there is no charge for the grass

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carp permit. However, effective July 1994, VDGIF will charge \$10.00 for each application submitted.

VDGIF does not have a staff large enough to make site inspections of every application.