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- Young, L. M., J. P. Monaghan, Jr. and R. C. Heidinger. 1983. Food preferences, food intake, and growth of the F_1 hybrid of grass carp ♀ X bighead carp ♂. Transactions of the American Fisheries Society 112:661-664.
- Zolczynski, S. J. and B. W. Smith. 1980. Evaluation of white amur for control of Lyngbya in a 32 hectare public fishing lake. Proceedings of the Southern Weed Science Society 33: 196-206.
- Zonneveld, N. and H. Von Zon. 1985. The biology and culture of grass carp (*Ctenopharyngodon idella*), with special reference to their utilization for weed control. Recent Advances in Aquaculture 282:203-206.

APPENDIX 1

39-23.088 Regulations Governing Grass Carp.

(1) No person shall take, possess, sell or otherwise transfer, buy or otherwise receive, transport or stock any grass carp without first obtaining a permit therefore from the Commission. Any grass carp inadvertently taken must be immediately returned unharmed to the water.

(2) Permits for grass carp other than triploid grass carp:

Grass carp, other than triploid grass carp, may be possessed only as authorized by permit issued by the Commission for the production of triploid grass carp and subject to the following:

(a) Grass carp, other than triploid grass carp, held outdoors may only be held in a water body that has the lowest point of the top edge of its levee, dike or bank or tank at an elevation of at least one foot above the 100-year flood elevation determined by reference to elevation maps issued by the National Flood Insurance Program, U.S. Department of Housing and Urban Development. Such water body shall have no water discharge. Such water body shall be inaccessible to the public at all times by being securely enclosed by fences with locked gates or by the presence of the permittee or his agents guarding such water body and forbidding public access to such water body.

(b) Grass carp, other than triploid grass carp, held indoors may only be held in a container or tank having no water discharge or having a water

discharge through a closed drain system that terminates in a dry-bed, waste-water pond. Such dry-bed, waste-water pond shall not be contiguous to any natural water body nor discharge its waters to any other water body at any time.

(c) Grass carp, other than triploid grass carp, may not be possessed in any number exceeding the number authorized by the permit. Grass carp, other than triploid grass carp, that are produced in the production of triploid grass carp shall be destroyed, unless such grass carp that are produced as by-product do not cause the permittee to exceed the number of grass carp, other than triploid grass carp, that the permittee is authorized to possess by permit.

(3) Permits for triploid grass carp:

Triploid grass carp may be possessed, stocked, sold, transferred or transported only as authorized by permit issued by the Commission subject to the following:

(a) Triploid grass carp may be held outdoors only in a water body upon which is placed a structure installed in such a manner as to prevent escape of the triploid grass carp from the water body, or in a water body having a natural configuration that forecloses escape of such triploid grass carp. Such structure or configuration shall be maintained by the permittee as long as triploid grass carp remain in the water body.

(b) No person shall sell or otherwise transfer any triploid grass carp, except as authorized by permit from the Commission in addition to any license required for such transfer or sale by s.372.65, F.S. No person shall sell or otherwise transfer any triploid grass carp unless the recipient of such grass carp has a permit as provided by this section. A copy of such recipient's permit shall

be maintained in the transferor's records for a period of one year following such transfer and made available for inspection upon request of the Commission. Any grass carp sold or otherwise transferred shall be certified as triploid grass carp as provided in s.39-1.004 prior to such sale or transfer or prior to transporting such grass carp for such sale or transfer. The transferor shall furnish to the Commission a report within 30 days following each calendar quarter indicating the transferor's permit number; the name, address and permit number of each recipient of such triploid grass carp; the date of each sale or other transfer; and the number of triploid grass carp sold or transferred, for each sale or other transfer made during the calendar quarter.

(c) No person shall transport any triploid grass carp without having a copy of the Commission permit authorizing such transportation accompanying the shipment of triploid grass carp, and without such shipment containing only triploid grass carp, certified as provided in s.39-1.004, and the certificate shall accompany such shipment of triploid grass carp.

(d) The Commission may deny an application for a permit to stock triploid grass carp in any water body, other than a private pond, if such proposed stocking is inconsistent with the principal or planned use of the water body, the optimum sustained use by the public of the water body's living aquatic resources, or sound biological management principles.

(e) Notwithstanding the provisions of (3)(d) of this section, the Commission may grant an application for a research permit to possess or stock triploid grass carp for legitimate research purposes, subject to the following:

1. The research permit shall expire 12 months from the date of issuance.

2. A detailed research proposal shall accompany the application for the research permit. Such proposal shall state with particularity the research objectives and justifications, research project schedule, research methodology, and safeguards that shall assure that any detrimental effect upon the water body or its living aquatic resources will not be of a permanent or substantial nature.

3. A detailed annual report of research findings, which shall include a description of activities undertaken in the permit period, progress toward research project objectives and proposed activities to be undertaken in the ensuing months, shall be submitted prior to renewal of the research permit. Receipt and approval by the Commission is a condition precedent to renewal of the research permit.

(4) All places where grass carp are possessed shall be subject to inspection by Commission personnel at any time. Such inspection may include obtaining blood samples from grass carp for purposes of ascertaining ploidy.

(5) This rule shall take effect on July 1, 1992.

Specific Authority: Art. IV, Sec. 9, Fla. Const., 369.22, 372.021, F.S. Law

Implemented: Art. IV, Sec. 9, Fla. Const., 369.22, 372.26, F.S. History: New — 6-1-86; Amended — 7-1-89, 7-1-90, 7-1-92.

**FLORIDA GAME AND FRESH WATER FISH COMMISSION
APPLICATION TO POSSESS TRIPLOID GRASS CARP
FOR AQUATIC PLANT MANAGEMENT**

Please Print!!

1. County _____ 2. GFC FILE# _____
(For Office Use Only)
3. Name of Water Body _____ 4. Acreage _____
5. Principal Use of Waters _____
(Fishing, boating, retention, fish farming, irrigation, water conveyance, other)
6. Person requesting permit:
 - a. Name _____
 Homeowners Association _____
 Mailing Address _____
 City _____ State _____ Zip _____
 Home Phone (____) _____ Work Phone(____) _____
 Contact Person or Representative _____
 Site Address _____
 - b. List plants or describe problem _____

****IMPORTANT****

7. Provide a map with directions from a major thoroughfare which will allow the water body to be visited by someone unfamiliar with the area.
8. Mark points on map where water enters or leaves the water body.
9. If barriers are necessary, an additional form must be signed to complete this application. This form will be supplied by Commission personnel after inspection of your site.
10. Recommendations made by Commission employees for stocking grass carp to control or manage aquatic vegetation are made based on research and field observations.
11. Please check one of the following:
 - ____ (a) Lake owned by a single owner.
 - ____ (b) Lake owned and represented by Homeowners Association.
 - ____ (c) Lake owned by private multiple or divided interest owners (persons who own and pay taxes on the bottom of the water body).
 - ____ (d) Lake is public.

(Turn page over for Page 2 of application)

Appendix

PAGE 2/TGC APPLICATION

Complete either a, b, c or d below based on your response to Section 11.

- a. If you have checked 11(a), is your pond twenty acres or less in size, located entirely on your own property with no other owners?
Yes _____ No _____
- b. If you checked 11(b) please indicate name of Homeowners Association and have the president or other authorized representative of the Homeowners Association sign on the line marked Office of Association (below) and Section 12 (below).

Name of Homeowners Association _____

Officer of Association _____
(Signature) (Title)

Note: As an Officer of Association, you are signing that the Association at large which owns this water body, wants to stock triploid grass carp.

- c. If you checked 11(c) above, attach a list of all riparian owners, their addresses, and telephone numbers. Do you verify that you have notified all riparian owners and advised them of your intention to apply for a permit to stock triploid grass carp?
Yes _____ No _____. Do all riparian owners consent to the stocking of triploid grass carp in this water body? Yes _____ No _____.

Note: The Commission will not issue a permit to stock triploid grass carp until all riparian owners of multiple owner water bodies identified in this application agree to the use of triploid grass carp for aquatic vegetation management and control.

- d. Public waters may be eligible for stocking by the Florida Game and Fresh Water Fish Commission with public funds, if the Commission determines the use of triploid grass carp is a biologically sound management tool and in the best interest of the resource. Determination of public waters eligibility will be made during inspection of the water body and depends if public boat ramps, recreational areas, or picnic ground facilities which allow unrestricted public utilization of the water body are located on or adjacent to the water body. Are you requesting the water body be considered for stocking with public funds? Yes _____ No _____.

12. I, the undersigned, certify that the information contained within this document is correct and true to the best of my knowledge.

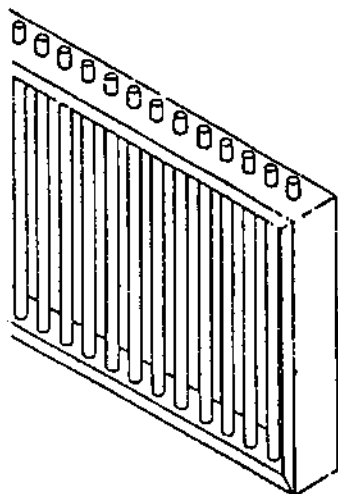
Signature of Applicant

Date

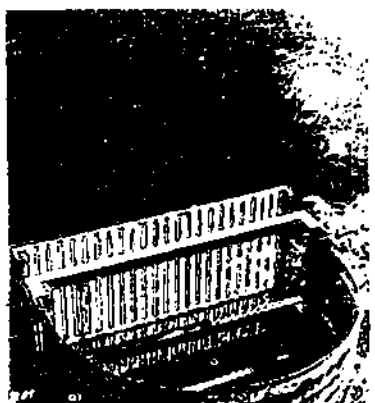
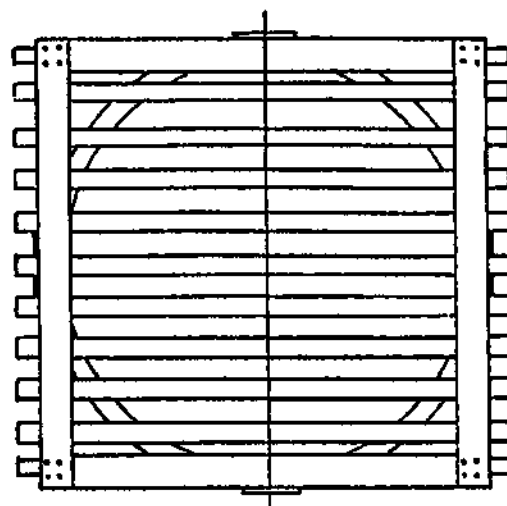
MAIL COMPLETED APPLICATION TO:

**DAVID EGGEMAN
GAME & FRESH WATER FISH COMMISSION
620 SOUTH MERIDIAN STREET
TALLAHASSEE, FLORIDA 32399-1600**

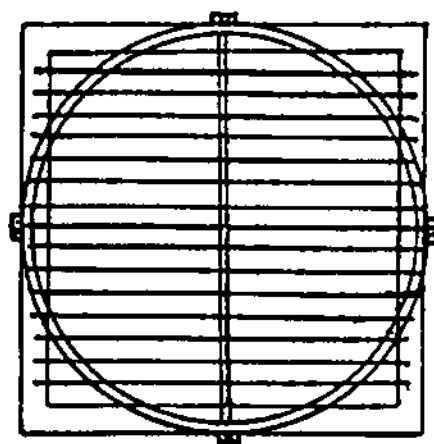
TYPICAL FISH BARRIER INSTALLATIONS



Typical Canal
Installation



Fish barrier constructed of a
single row of heavy PVC
(polyvinylchloride) pipe to
contain grass carp in agri-
cultural waterways



TRIPLOID GRASS CARP PERMIT INSPECTION FORM (RULE 39-23.088)

DATE: _____

GFC FILE #	
APPLICANTS NAME:	
MAILING ADDRESS:	
HOME PHONE: ()	WORK PHONE: ()
SITE ADDRESS:	
COUNTY OF LAKE:	
NAME OF LAKE:	
SITE (ACRES)	COVERAGE (ACRES)
MAJOR TARGET PLANT:	
PRIMARY WATER USE: (FISHING) (CONVEYANCE) (AESTHETIC) (OTHER)	
BARRIERS REQUIRED: Yes ___ No ___ BARRIERS RECOMMENDED: Yes ___ No ___	

RECOMMENDATIONS: APPROVED _____ NUMBER OF FISH _____

DISAPPROVED _____

OTHER MAJOR PLANT SPECIES

FLOATING _____

SUBMERSED _____

EMERGENT _____

IMPORT, POSSESS, AND RELEASE _____ TRIPLOID GRASS CARP INTO
_____ ACRE
_____ FISH PER SURFACE ACRE OR _____ FISH PER VEGETATIVE ACRE
COMMENTS:
INSPECTED BY:
BARRIER INSPECTED:

FLORIDA GAME AND FRESH WATER FISH COMMISSION

SUPPLEMENT TO APPLICATION TO POSSESS
TRIPLOID GRASS CARP - BARRIER VERIFICATION

GFC FILE #: _____

I verify that the barrier(s) required for my permit to possess triploid grass carp is (are) in place and ready for inspection. Furthermore, I agree to maintain this (these) barrier(s) as long as triploid grass carp are in the waters protected by this (these) barrier(s).

Signed: _____

You must notify this office when the barrier(s) is (are) ready for inspection by returning this form to the following address:

David Eggeman
Florida Game & Fresh Water Fish Commission
620 S. Meridian Street
Tallahassee, FL 32399-1600

Date: _____

barrier.rw
LIC 6-8

FLORIDA GAME AND FRESH WATER FISH COMMISSION

Don Wright	Quinton L. Hedgepeth, DDS	Mrs. Gilbert W. Humphrey	Joe Marlin Hillard	Ben Rowe
Orlando	Miami	Miccosukee	Clewiston	Gainesville

ROBERT M. BRANTLY, Executive Director
ALLAN L. EGBERT, Ph.D., Assistant Executive Director

FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, Florida 32399-1600



April 7, 1992

In Reply Refer To: MT-21-NW-92-1214

To Whom It May Concern:

This is to authorize Mr. John Doe, 1134 Lake Lane, Tallahassee, FL 32310 to import, possess and release up to 30 triploid grass carp into 2.0 acre Lake Doe (15 fish per surface acre) for aquatic vegetation control purposes, in accordance with Rule 39-23.088 of the Florida Game and Fresh Water Fish Commission and the permit provisions listed below:

- (1) Only triploid grass carp certified by the Florida Game and Fresh Water Fish Commission may be stocked.
- (2) A copy of this document must be on board any vehicle transporting the triploid grass carp authorized under this permit. No exchange, transfer or removal of triploid grass carp from the stocking site is allowed.
- (3) This permit will remain valid unless revoked by the Executive Director.
- (4) Triploid grass carp will be subject to seizure by Commission representatives if permit provisions or Commission rules are violated.

Colonel Robert M. Brantly
Executive Director

By: _____
Dennis E. Holcomb, Director
Division of Fisheries

DEH\rlw
barrier.pmt
LIC 6-8

cc: Mr. Dale Jones
Division of Fisheries

**FLORIDA GAME AND FRESH WATER FISH COMMISSION
TRIPLOID GRASS CARP SUPPLIERS
1 July 1993 - 30 June 1994**

The following alphabetized list of approved suppliers/producers of triploid grass carp is provided for your convenience. It is not an endorsement of either the suppliers/producers or their services/products.

Any transaction involving grass carp that are to be possessed, transported or stocked in Florida must comply with Rule 39-23.088.

Since names may be added to or deleted from this list, please contact the Division of Fisheries Office at (904) 488-4066 for an update if you do not stock your water area within one year of receiving your permit.

Mr. Clark Buford
Buford Bait Company
3301 S.E. 38th Ave.
Okeechobee, FL 33474
(813) 467-1575

Mr. Patrick Faehnle
Aquatic Systems & Resources
P.O. Box 1462
Palm City, FL 34990
(407) 286-9376

Ms. Angela Hodnett
Environmental Waterway Mgmt.
4075 L.B. McLeod Rd, Ste C
Orlando, FL 32811
(407) 843-7887

Mr. Julian Paul, Jr.
Paul Fish Farms
Rt. 2 Box 205W
Bonifay, FL 32425
(904) 547-2215

Mr. Ron Slay
Florida Fish Farms
9684 CR 705
Center Hill, FL 33514
(800) 962-3474 or (904) 793-4224

Mr. James L. Williams
The Lake Doctors, Inc.
150 State Road 419
Winter Springs, FL 32708
(800) 666-5253

Mr. Mike Freeze
Keo Fish Farm
Box 123
Keo, AR 72083-0123
(501) 842-2872 or (842)-2156

Mr. Eddie Parsons
Parsons Catfish Sales
380 S. Walker Road
Searcy, AR 72143
(501) 323-4664

Mr. James R. Chamberlain
Jim's Catfish Farm
Route 1 Box 854-B
Lawley, FL 32058
(904) 782-3558

Mr. Frank W. Gates
The Catfish Hatchery
724 W. Sherry Avenue
Blountstown, FL 32424
(904) 674-8302

Mr. Mark Litwiler
The Lake Doctors, Inc.
6371 Danner Dr.
Sarasota, FL 34240
(800) 444-5253

Mr. James Royal
Micannopy Fisheries
Rt. 1 Box 591
Micannopy, FL 32667
(904) 591-1650

Mr. Charles N. Thrash
Blue Lake Aqua Farm
Rt. 1 Box 2296
Chattahoochee, FL 32324
(904) 668-8185

Mr. Ron Wise
Flying P Fish Farm
P. O. Box 132
Dunnellon, FL 32630
(904) 489-8939

Mr. Bob Hopper
Hopper-Stephens Hatcheries
5205 Hwy 31 South
Lonoke, AR 72086
(501) 676-2435 or 676-7776

Mr. Barry W. Smith
American Sportfish Hatchery
P. O. Box 20050
Montgomery, AL 36120
(205) 281-7703

Mr. John F. Dequine
Southern Fish Culturists
P. O. Box 490251
Leesburg, FL 34749-0251
(904) 787-1360

Mr. Ronald Gulau
Florida Aquaculture, Inc.
28605 Jones Loop Road
Punta Gorda, FL 33982
(800) GRO-FISH

Mr. Ralph D. Miller
R.M. Lakes Alive
1455 Lime Drive
Melbourne, FL 32935
(407) 259-8944

Mr. Joel Shireman
Shongaloo Fisheries
Star Route Box 120
Waldo, FL 32694
(904) 468-1251

Mr. Jeffrey A. Wilcox
Fossil Fish Farm
4495 Buttercup Way
Tallahassee, FL 32311
(904) 877-8373

Mr. William Easterling
Easterling's Fish Hatchery
Route 1 Box 576
Clio, AL 36017
(205) 397-4437

Mr. Jim Malone
Jim Malone & Son Enterprises
Box 158
Lonoke, AR 72068
(501) 676-2800 or 676-6554

Mr. Paul Williams
Owen & Williams Fish Farm
Route 1 Box 249
Hawkinsville, GA 31036
(912) 892-3144 or 783-2309

The U.S. Fish and Wildlife Service's Triploid Grass Carp Inspection Program

B.R. Griffin
U.S. Fish and Wildlife Service
Fish Farming Experimental Laboratory
Stuttgart, Arkansas 72160

As published in Aquaculture Magazine January/February, 1991

The U.S. Fish and Wildlife Service provides an inspection service to any who wish to purchase triploid Chinese grass carp (*Ctenopharyngodon idella*). The inspection is to verify that the fish are sterile, triploid grass carp.

HISTORY OF TRIPLOID GRASS CARP IN THE U.S.

Chinese grass carp (*Ctenopharyngodon idella*) were first brought to the United States and to the Fish Farming Experimental laboratory in 1963 as a possible means of controlling aquatic vegetation. Concerned environmentalists soon expressed misgivings about the effects of introducing this exotic species. Their concern was that the grass carp could become a nuisance fish similar to the common carp (*Cyprinus carpio*) and could seriously, perhaps irreversibly, change our streams and lakes.

Advocates of the use of grass carp for vegetation control promoted the idea that grass carp could not reproduce in U.S. streams and lakes. Grass carp, it was said, could reproduce only in peculiar environments in certain Asian or Russian rivers. Few people objected to that argument, and it has since been proven false.

Opposition to introduction of fertile grass carp gradually increased and fish producers responded by attempting to produce a monosex population to make reproduction impossible. Special feeding programs that involved use of certain hormones were known to yield a large proportion of fish of one sex or the other, but only a proportion, never 100%. This approach failed because of the absence of techniques for determining the sex of young fish.

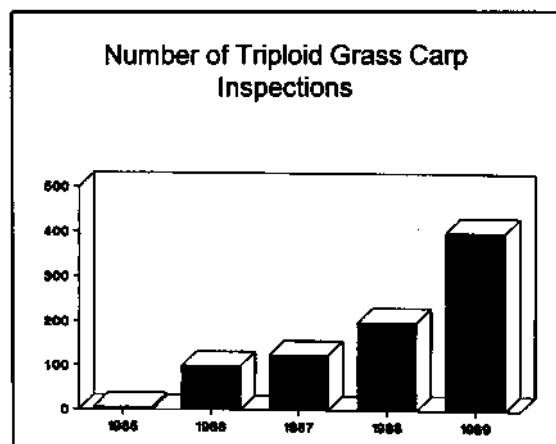
Fish producers then tried to hybridize carp by mating the male bighead carp (*Aristichthys nobilis*) with the female grass carp. Hybrid fish could be produced but the yields were low and the fish were inefficient in aquatic vegetation control.

Grass carp diploid and triploid testing was begun in 1981 at the Fish Farming Experimental Laboratory to help local farmers and university researchers in their attempts to develop methods of inducing the triploid condition. The determination of genetic condition was made by visually comparing fish red blood cells in stained blood smears. To the experienced observer, the nuclei of red blood cells are distinctively larger in triploid grass carp than in diploid grass carp. This was, admittedly, a crude method for determining genetic condition, but it served the purpose and was the best Available technique at the time. By 1983, triploid grass carp were being produced with a process that involved changes in incubation temperatures after fertilization. Biologically, the process causes what is known as second polar body retention and results in the fish, of either sex, developing 3 sets of chromo-

somes rather than the standard 2 sets, thus being called triploid rather than diploid. This genetic alteration results in the production of nonfunctional eggs and sperm when the fish reach sexual maturity; in other words, they cannot reproduce.

In 1984, R.C. Wattendorf published results of his studies on the use of a particle sizer to measure the differences between red blood cell nuclei from diploid and triploid grass carp. Particle sizers are electronic instruments, sold by scientific supply companies and commonly used in medical laboratories, that can accurately measure the dimensions of blood cells and other very small objects. Modifications of the methods he described have become the standard in the triploid grass carp industry and are the basis of the triploid inspection program of today.

Producers were ready to put their sterile triploid grass carp on the market in 1985. That year, game and



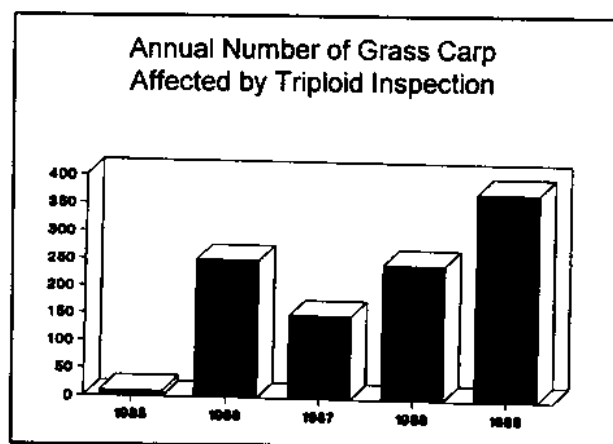
fish officials from Florida asked our lab for help in verifying that grass carp they purchased from Arkansas producers were all triploid. In short order, two more states asked for this assistance. In addition to Florida, there were North Carolina and California, and all three had different requirements for the number of fish to be inspected. North Carolina asked for an inspection of 100 fish from each shipment, California wanted 120 fish inspected, and Florida put the number at 20 fish per compartment on a truck. The Florida request normally involved 8 - 10 compartments on a truck or 160 - 200 fish per inspection. When requests began coming from other states, we decided to standardize the number of fish that

would be inspected. We settled on 120 fish per shipment. So far, everyone has accepted our decision on inspecting 120 fish per shipment. Several matters were considered before we decided when to do inspections. We thought of the needs of buyers, the capabilities of producers, the survival of the fish, the holding capacities of the producer's vats, and the number of inspections possible by one person. Because of these considerations and the time needed to transport the fish, we decided inspections on the date of shipment were not practical. The game and fish agencies in the receiving states agreed to allow 3 days between inspection and shipment.

Since 1985, 33 states adopted regulations controlling importation of grass carp, and 26 of these states require our inspection to verify that fish are triploid (see figures 1 and 2).

TRIPLOID TESTING AND INSPECTION

Triploid grass carp grow rapidly and can be harvested as early as 3 months of age for sale as 8" - 11" fish. Two sizes are commonly sold, 8" - 11" and 10" - 12", at different prices. Producers bring their fish from ponds into vats and each fish is tested individually to determine whether it is diploid or triploid. The fish are anesthetized during handling, and a precise routine of movement is followed to avoid mixing tested and untested fish. A small blood vessel just under the lower jaw is lanced and blood is collected with a capillary tube or a small probe. The tiny drop of blood is added to a solution that breaks open the outer membrane of red blood cells without disturbing the membrane around the cell nucleus. The



blood cells are analyzed with a particle sizer and a monitor reading is displayed. The display is a graphic representation of the dimensions of red blood cell nuclei and is usually adequate for determining diploid and triploid cells; however, an attached computer that sums individual readings into a profile curve or gives a numerical average can be used for determinations on questionable readings. Each instrument for these tests, even when properly standardized, can give readings that are slightly higher or lower than other instruments; however, the relative difference between diploid and triploid cells is always obvious. Therefore, blood cells from known diploid and triploid fish are used for comparison.

Diploid and triploid fish are kept separate after the determinations are made. When there is any doubt

about whether an individual fish is diploid or triploid, the questionable fish is considered diploid and is not included in the triploid group. Buyers of diploid fish usually don't mind triploids, but buyers of triploid fish absolutely don't want diploids.

After the fish have been tested, producers store the fish in vats until a sale is made or until a sufficient number has been tested to fill an order. Then an inspection is scheduled with the U.S. Fish and Wildlife Service inspector. We ask grass carp producers to contact us when they schedule fish for delivery and to give us 2 days notice for an inspection. This is not always possible; however, the producers generally honor this request.

Inspections are done by a trained inspector who travels to the fish farm and observes a farm crew carry out the described triploid testing on 120 fish. The fish are selected, with the inspector's attention, from the vat or vats alleged to contain only triploid grass carp. Each of the 120 fish is then retested, under the inspector's review, and if all 120 fish tested are triploid, the inspection is completed. If a diploid is encountered, the inspection is not completed and the fish must all be retested before a second inspection will be conducted at a later date.

When the inspection is successfully completed, the necessary paperwork is done. Four copies of an inspection certification are made. This certification lists the name of the producer, the buyer, the state for which the fish are destined, the dealer, and the date of the inspection. One copy is mailed to a designated official in the receiving state. The truck driver, representing the dealer, is given a copy for his protection in transporting the fish and to verify the contents of his truck. The producer and inspector each keep copies. Finally, information about the results of the inspection, the number, origin, and destination of the fish are phoned to the designated official in the receiving state.

The U.S. Fish and Wildlife Service's triploid grass carp inspection program is administered from the Warm Springs National Fish Hatchery in Warm Springs, Georgia. The U.S. Fish and Wildlife Service now has trained people for grass carp triploid inspections in all areas of the U.S. where triploid grass carp may be produced.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

FISH FARMING EXPERIMENTAL LABORATORY
POST OFFICE BOX 860
STUTTGART, ARKANSAS 72160
(501) 673-4483

TAKE
PRIDE IN
AMERICA

SPECIMEN

Grass Carp Ploidy Release Authorization

Authority is hereby given to the U.S. Fish and Wildlife Service grass carp ploidy inspector to release the results of the ploidy determination of grass carp to the State of _____. This concerns a shipment of _____ triploid grass carp on or about _____. One hundred and twenty randomly selected fish from an alleged 100% triploid lot were inspected for ploidy on a farm site particle sizer. Uniform polystyrene beads, diploid controls, and an oscilloscope or a mean particle size numerical read-out were used to insure proper readings from the equipment. Observations showed _____ triploids and _____ diploids.

(Distributor)

(Fish Producer or Representative)

(Business Name)

(Inspecting Official, USFWS)

(Date)

Comments: _____

FLORIDA GAME AND FRESH WATER FISH COMMISSION
TRIPLOID GRASS CARP STOCKING REPORT

Permit #: _____

Permittee's Name: _____

Permittee's Phone #: _____

Date stocked with triploid grass carp: _____

Number of grass carp stocked: _____

Size of grass carp: _____

Triploid grass carp distributor that supplied these fish:

Name: _____

Location (City & State) : _____

Phone: _____

I verify that the above information is true to the best of my knowledge.

Signature: _____

Date: _____

MEMORANDUM

December 20, 1991

TO: Bonnie S. Hosay, Purchasing Agent II

FROM: C. L. Phillippy, Biological Administrator II

SUBJECT: Bid Specifications for Triploid Grass Carp for Mountain Lake (630), Richloam Hatchery (800), Lake Sears (246) and Lake Thomas (73). Total Number of Fish Required 1749.

The following specifications are to bid out triploid grass carp:

1. All fish must be certified 100 percent triploid.
2. Length of fish: minimum 10-inch total length with 14-inch maximum.
3. All fish to be delivered to lake site. See Attachment "A" and "B" for tentative listing.
4. The actual stocking sites are subject to revision due to changes in biological conditions. If delivery sites on Attachment "B" are substituted by the Commission, extra mileage will be paid from the nearest site (on Attachment "B") to the new stocking site. This mileage fee will be \$1 per mile and extra mileage charges will be reimbursed to vendor. Ploidy should be checked, and cost of incurred by the vendor prior to delivery. The Commission reserves the right to mandate a second checking of ploidy at the Richloam Fish Hatchery. If this option is chosen, a rate of \$1 per mile per truck will be reimbursed to the vendor.
5. Vendor required to guarantee live delivery of all triploid grass carp purchased under terms of the bid. All fish dying within the 10 day period following stocking must be replaced without charge to the Commission.
6. Vendor required to use the following treatments and specifications for hauling triploid grass carp:
 - a. 4 ml. of Oxytetracycline with 50 mg/ml active ingredient/100 gallon water (200 mg active/100 gallon water).
 - b. 4 lbs. NaCl/100 gallon water.
 - c. Anaesthetize w/MS222 or other registered product.
 - d. Add CaCl_2 and mg SO_4 if total hardness is less than 150 ppm to bring total hardness up to 150 ppm.
 - e. Transport should not have less than 8 ppm of DO and not more than 12 ppm.

f. Triploid grass carp delivered under this bid will be tempered according to the following information.

Tempering Table

Temperature difference between tank truck and stocking site	Time required to increase or lower temperature of fish in tanks prior to stocking
0-5 degrees F.	20 minutes
5-10 degrees F.	30 minutes
10-20 degrees F.	45 minutes
20-35 degrees F.	90 to 120 minutes

7. Triploid grass carp must be subjected to a 25.0 ppm formalin treatment for control of ecto-parasites prior to delivery.

8. A total of five fish from each truck load delivered under the terms of the bid will be subjected to an autopsy by the U.S. Fish and Wildlife Service or other reputable agency or firm to identify parasites and diseases that might be present in fish purchased under this bid. The Commission will be presented with a copy of the Parasite and Disease Inspection Report prior to actual stocking of fish.

9. Delivery of fish to be completed within 30 days of issuance of purchase order. (See Attachment "A" for county of stocking sites, lake names and number of fish to be stocked in each site.)

10. Attachment "A" indicates the county, name of lake, and number of fish to be purchased under this bid. Attachment "B" (map) indicates the lake name and county location of sites to be stocked under the bid.

We have enclosed a list entitled "FLORIDA GAME AND FRESH WATER FISH COMMISSION TRIPLOID GRASS CARP SUPPLIERS" for a listing of prospective vendors.

CLP/clp PRO 2-1

Attachments A and B

cc: Mr. Dennis Holcomb

Mr. Robert Wattendorf

Mr. Thomas L. Vaughn



FLORIDA GAME AND FRESH WATER FISH COMMISSION



MRS. GILBERT W. HUMPHREY JOE MARLIN HILLIARD J. BEN ROWE JULIE K. MORRIS QUINTON L. HEDGEPEETH, DDS
 Miccosukee Clewiston Gainesville Sarasota Miami

ROBERT M. BRANTLY, Executive Director
 ALLAN L. EGBERT, Ph.D., Assistant Executive Director

FARRIS BRYANT BUILDING
 620 South Meridian Street
 Tallahassee, FL 32399-1600
 (904) 488-1960
 TDD (904) 488-9542

To Whom It May Concern:

August 20, 1992

This special letter permit is to authorize the following person:

Mr. John L. Doe, 1413 Sandpiper Way, Orlando, FL 33418

to take grass carp from Lake Fishinghole, GFC File #MT-07-CR-89-365, located in Orange County, using hook and line or rod and reel provided they possess a valid Florida Fish License and are in compliance with rules and regulations of the Commission and special provisions listed below:

- (1) Grass carp caught under the provisions of this permit may not be kept alive, transported alive, or stocked in another body of water.
- (2) All grass carp caught and removed from Lake Whippoorwill must be reported by the individual listed above on a monthly basis by mail or phone to:

Mr. Bruce Jagers, Biological Scientist II
 Florida Game and Fresh Water Fish Commission
 P.O. Box 1903
 Ruston, FL 32727-1903 \ (904) 357-6631

- (3) Non-permitted individuals may take grass carp under the terms of this permit and under supervision of the permittee. Permittee is responsible for any violations by the individual(s) under his supervision.
- (4) All grass carp caught and removed from Lake Whippoorwill by individuals fishing under supervision of permittee must be reported on the permittee's monthly log.
- (5) This permit will expire June 30, 1993 unless otherwise authorized by the Executive Director.

Colonel Robert M. Brantly
 Executive Director

By: _____
 Dennis E. Holcomb, Director
 Division of Fisheries

LIC 6-8
 whippoor.pri
 cc: Lt. Col. Robert Butler
 Mr. Robert Wattendorf
 Mr. Thomas Vaughn
 Mr. Lowell Trent
 Inspector Randy Hopkins

1943 - 1993
 50 YEARS AS STEWARD OF FLORIDA'S FISH AND WILDLIFE

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