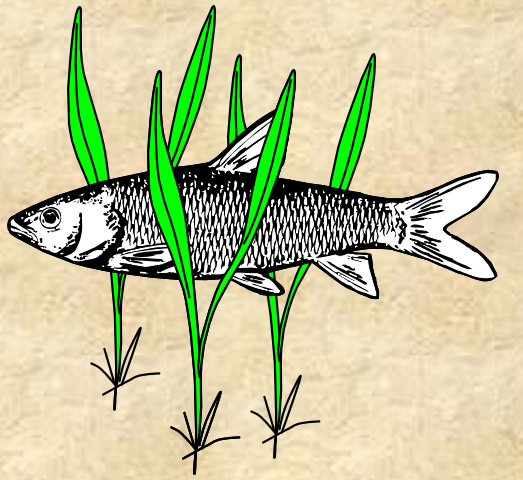
National Triploid Grass Carp Inspection and Certification Program Overview

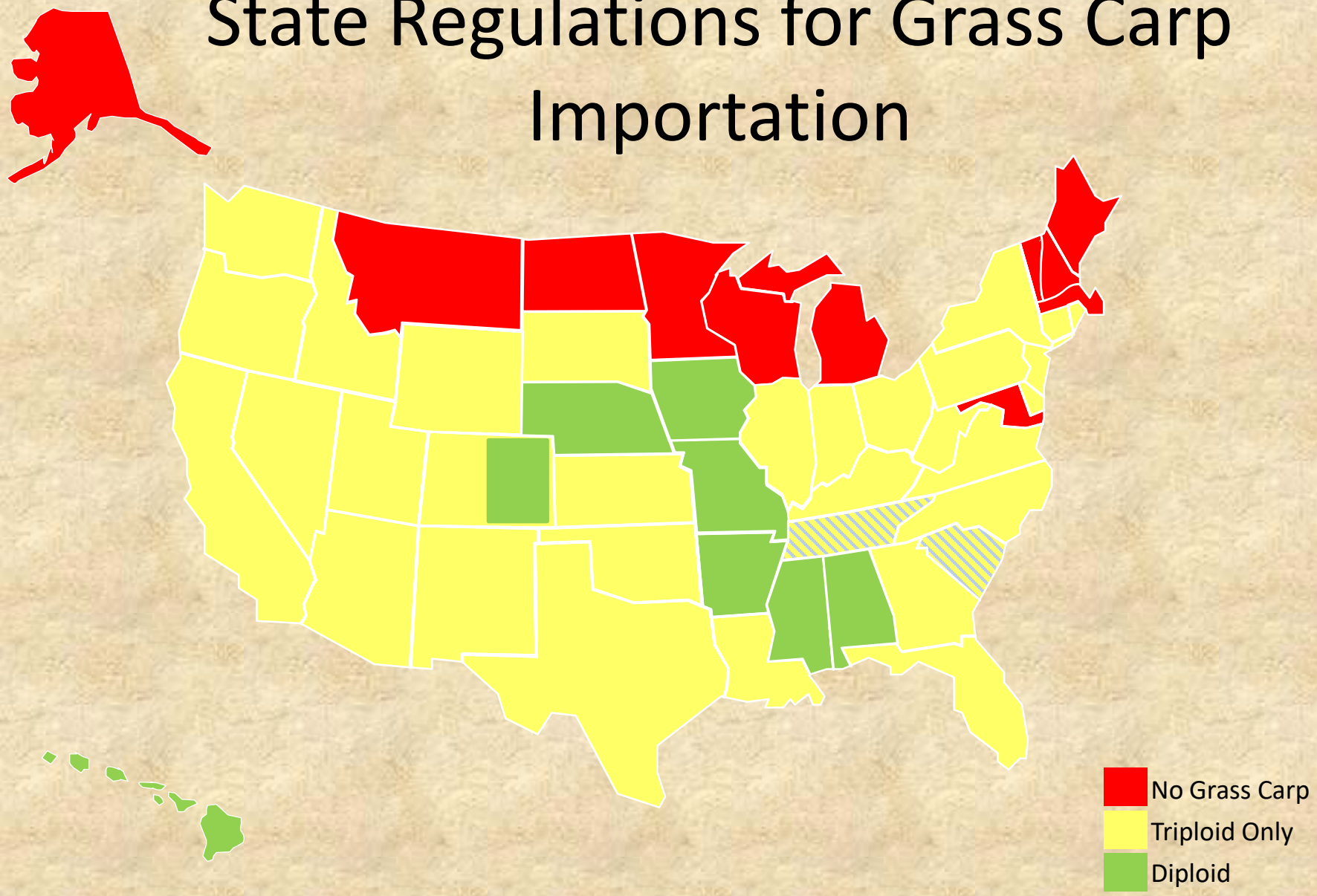
William Wayman
Warm Springs Fish Technology Center
Warm Springs, GA



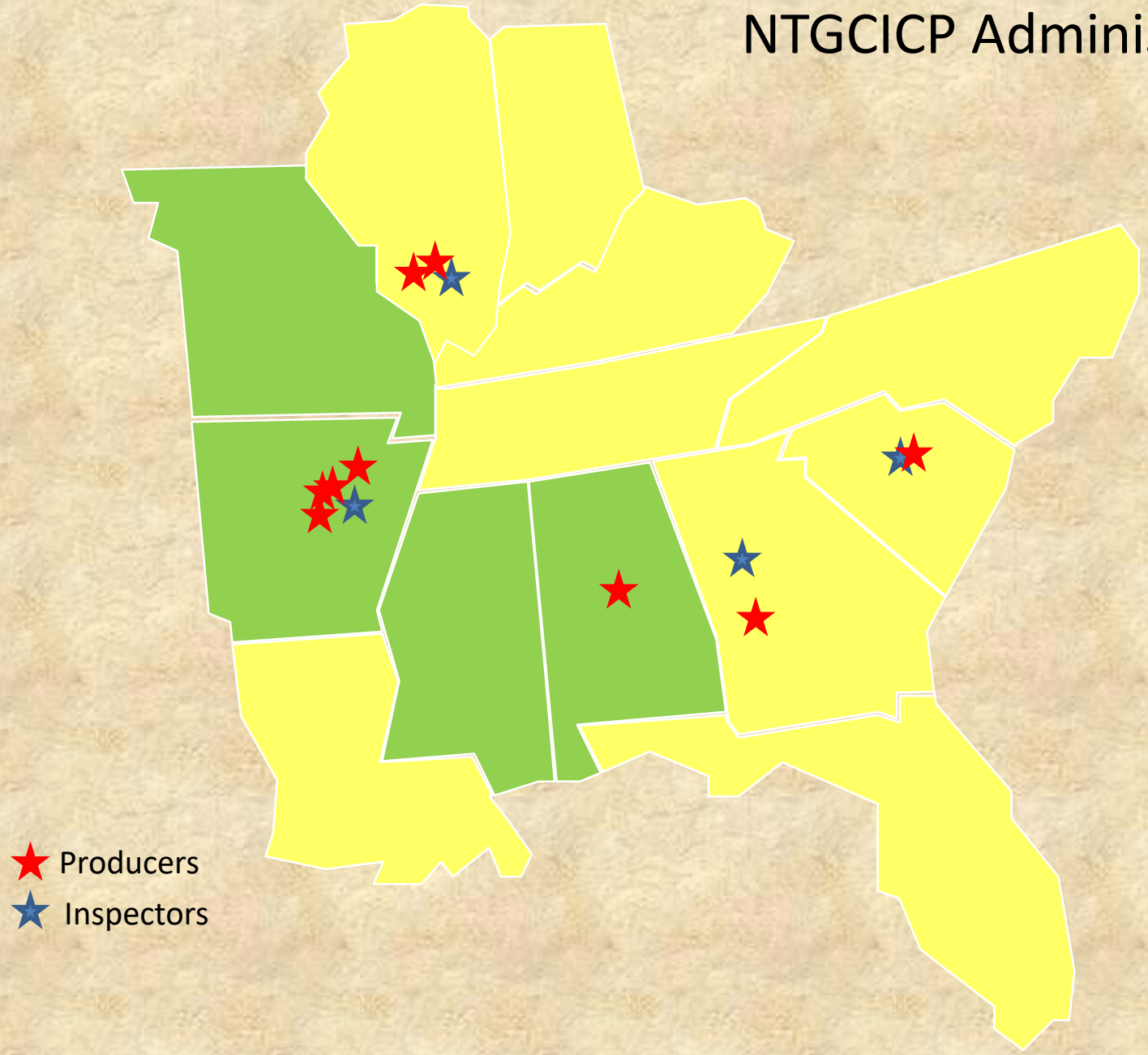
Purpose:

The U.S. Fish and Wildlife Service (USFWS) offers a triploid grass carp inspection service for natural resource agencies in the United States and in other countries, to help States and others protect their aquatic habitats. The inspection program is to provide assurance to these agencies, and others concerned about protecting aquatic resources, that shipments of grass carp alleged to be all triploid, do not, within the confidence limits of the inspection program, contain diploids.

State Regulations for Grass Carp Importation



NTGCICP Administration



The National Triploid Grass Carp Inspection and Certification Program (NTGCICP)

2008 workshop with USFWS inspectors and TGC-producers and states.

Workshop objectives:

1. **MOA with TGC-producers**
2. **State regulations & issues**
3. **Review of NTGCICP**

What assurances did yellow states want with the NTGCICP?

No diploids

No non-target organisms

Key to success is quality assurance

What assurances did triploid grass carp producers want with the NTGCICP ?

1. Eliminate crooked producers -- inside & outside MOA

2. Provide assistance to law enforcement and prosecute violators

3. Standards for states & shippers

Department of Interior legal counsel provided clear guidance:

-- “Reduce high $ fees”

-- “Focus on increased days of suspension for diploid failures”

-- “Do not focus on state regulatory aspects”

So… What is the MOA?

It is a formal agreement between the USFWS and a TGC-producer

USFWS will inspect and certify TGC, but only if producer follows prescribed QA/QC

Program Standards

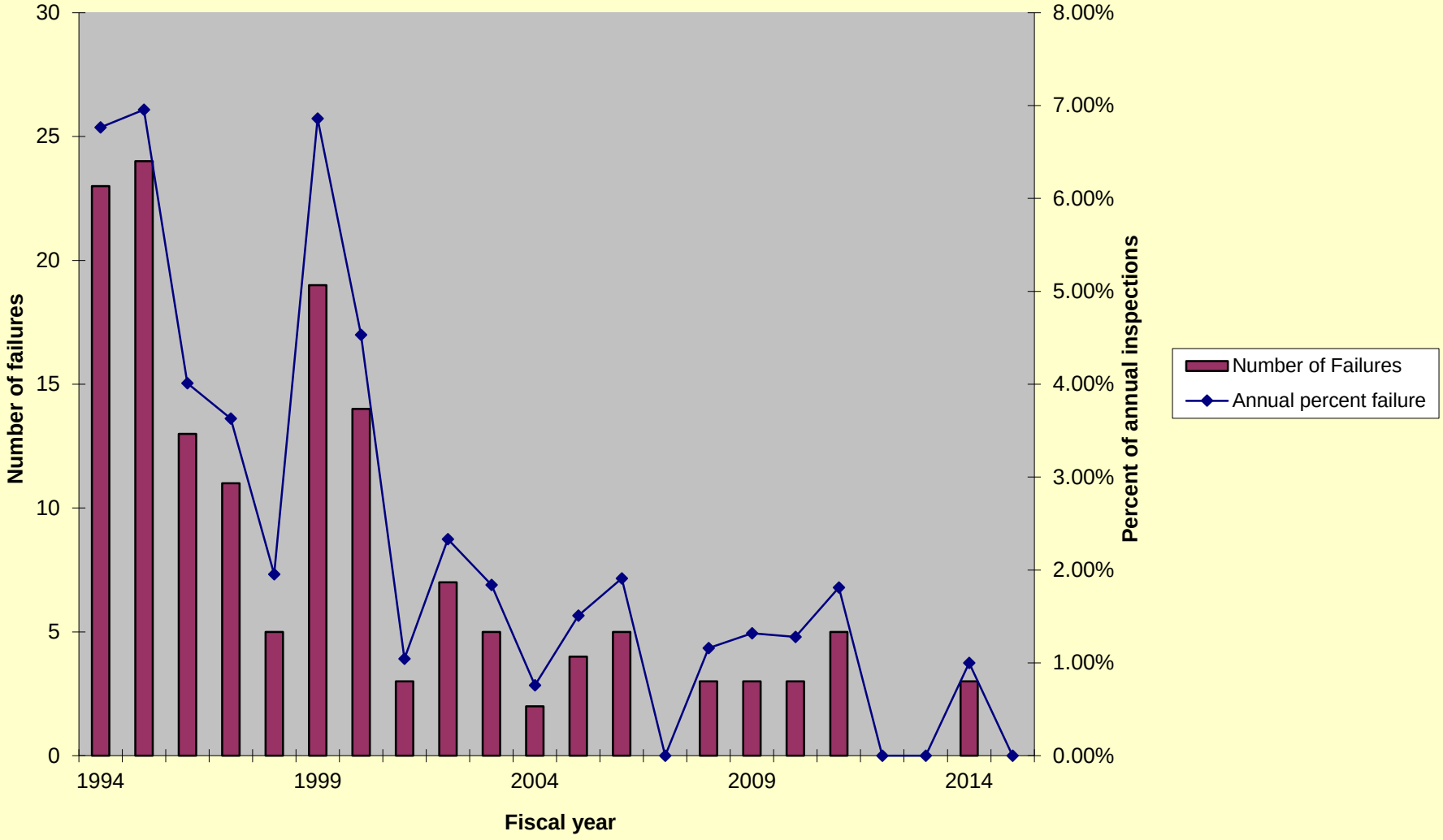
- Standards for Triploid Inspectors
- Standards for Grass Carp Producers
- Checklist for Inspectors and Triploid Grass Carp Producers
- Standards for Collection of Fees
- Standard Penalties and Fees for Program Non-Conformance

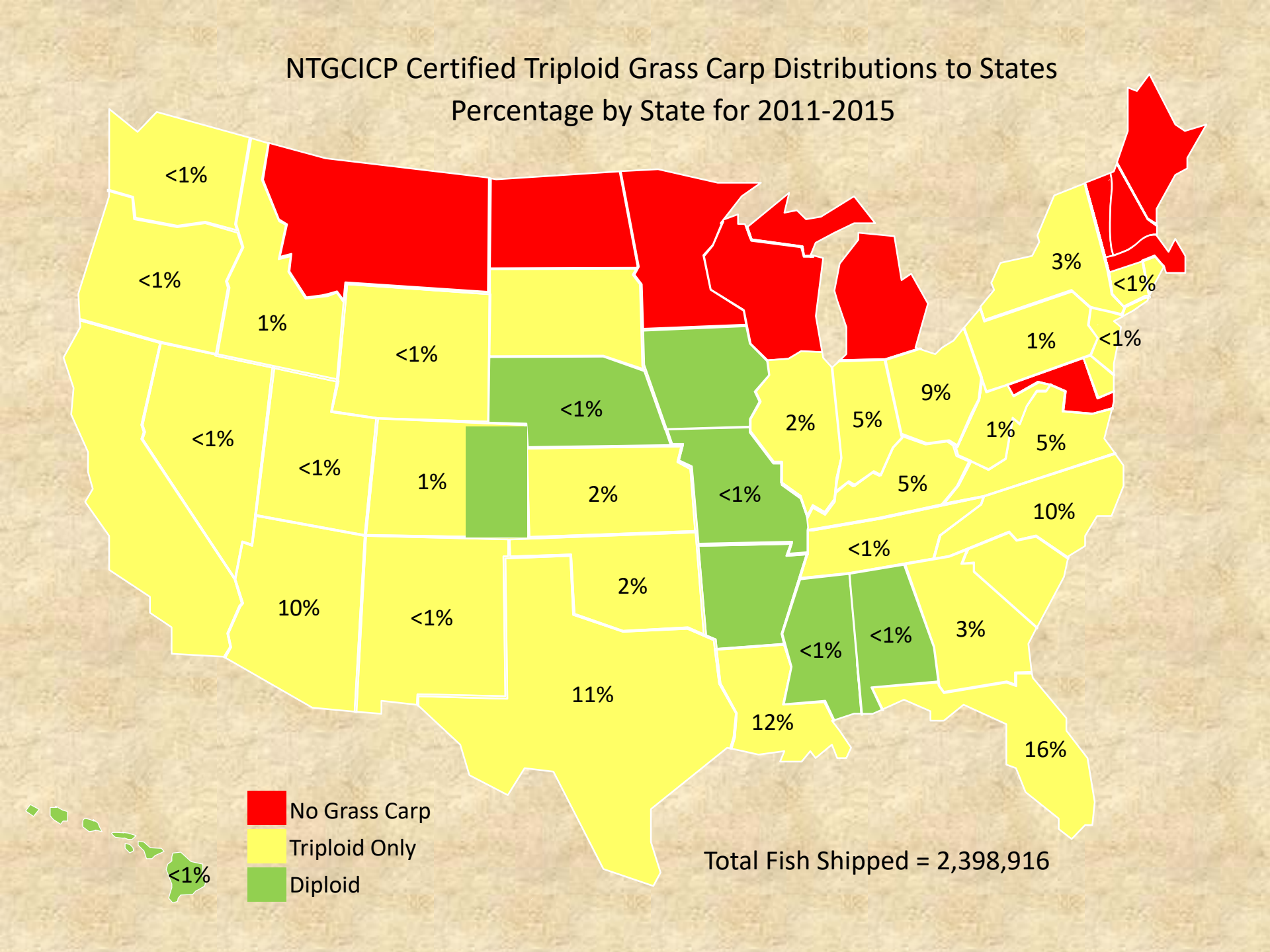
http://www.fws.gov/warmsprings/FishHealth/frgrscrp.html

Penalties Chart

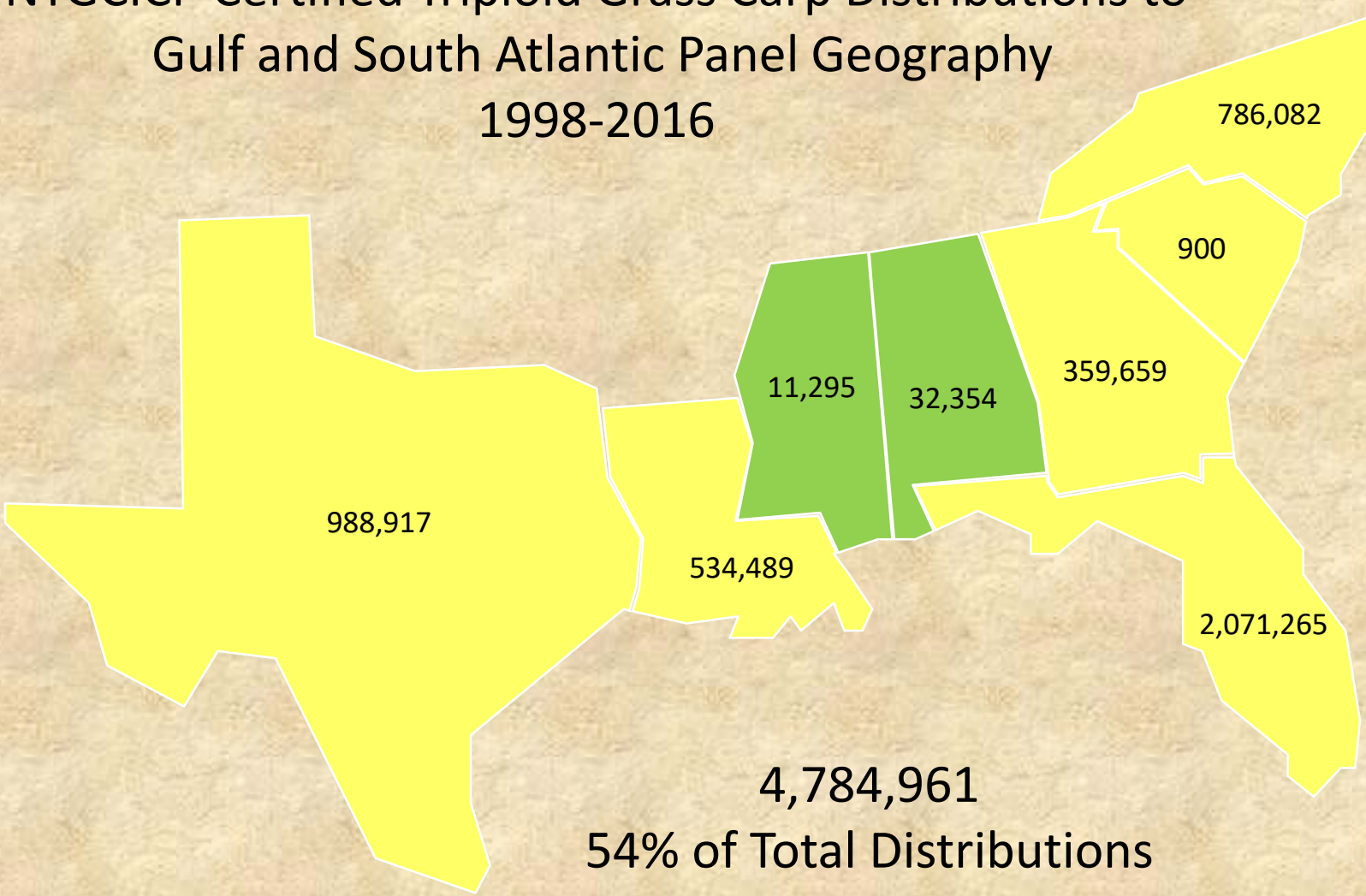
Quality Assurance Fees for MOA Non-Conformance by Participating Producers in NTGCICP								
Number	Type	Description	First violation	Second violation	Third violation	Fourth violation	Fifth violation	Provisional Status
1	Type A	Diploids found during a triploid grass carp ploidy verification Inspection	$ 500 & Letter of Concern	$ 500 & 2-day suspension or $2,000 Fee or use QA/QC credit	$1,000 & 10-day suspension or $5,000 fee or use QA/QC credit	$ 1,000 & 30 day suspension or $10,000 fee or use QA/QC credit	Provisional Status for remainder of MOA. $1000 fee and 30 day suspension. Or $10,000 fee See provisional status in standards.	$ 1,000 & 30 day suspension or $10,000 fee per violation. See provisional status in standards. QA/QC credits cannot be used when in provisional status
2	Type B	Non-functioning equipment prevents the completion of a scheduled triploid grass carp ploidy verification inspection.	$100 fee	$200 fee	$300 fee	$400 fee	$500, All violations above 5 in a year fined at $500.	
3	Type C	Certified triploid grass carp or alleged 100% individually producer tested triploid grass carp are not in isolated vat 100 feet from grass carp production ponds	* Letter of Concern, cancel inspection and $500.00 Fee	** Letter warning, cancel inspection, and $ 500 fee	** Letter warning, cancel inspection, and $ 500 fee	***Grounds for non-renewal of MOA		
7	**Type D**	**Producer selects the 120 fish sample for the ploidy verification inspection without the supervision/direction of the USFWS Inspector.**	*** Letter of Concern, cancel inspection and $500.00 Fee**	**** Letter warning, cancel inspection, and $ 500 fee**	**** Letter warning, cancel inspection, and $ 500 fee**	*****Grounds for non-renewal of MOA**		
10	**Type E**	**Producer is convicted of falsification of a ploidy Certificate, an inspector's embossment, or signature on a ploidy certificate.**	**Termination of MOA.**					

USFWS Certified Triploid Grass Carp Annual Failures Rates Stuttgart 1994-2015




NTGCICP Certified Triploid Grass Carp Distributions to States
Percentage by State for 2011-2015
<1%
<1%
1%
<1%
<1%
<1%
<1%
1%
2%
<1%
10%
<1%
2%
11%
12%
<1%
<1%
3%
16%
2%
5%
9%
1%
5%
5%
10%
3%
<1%
1%
<1%
<1%
No Grass Carp
Triploid Only
Diploid
Total Fish Shipped = 2,398,916

NTGCICP Certified Triploid Grass Carp Distributions to Gulf and South Atlantic Panel Geography 1998-2016



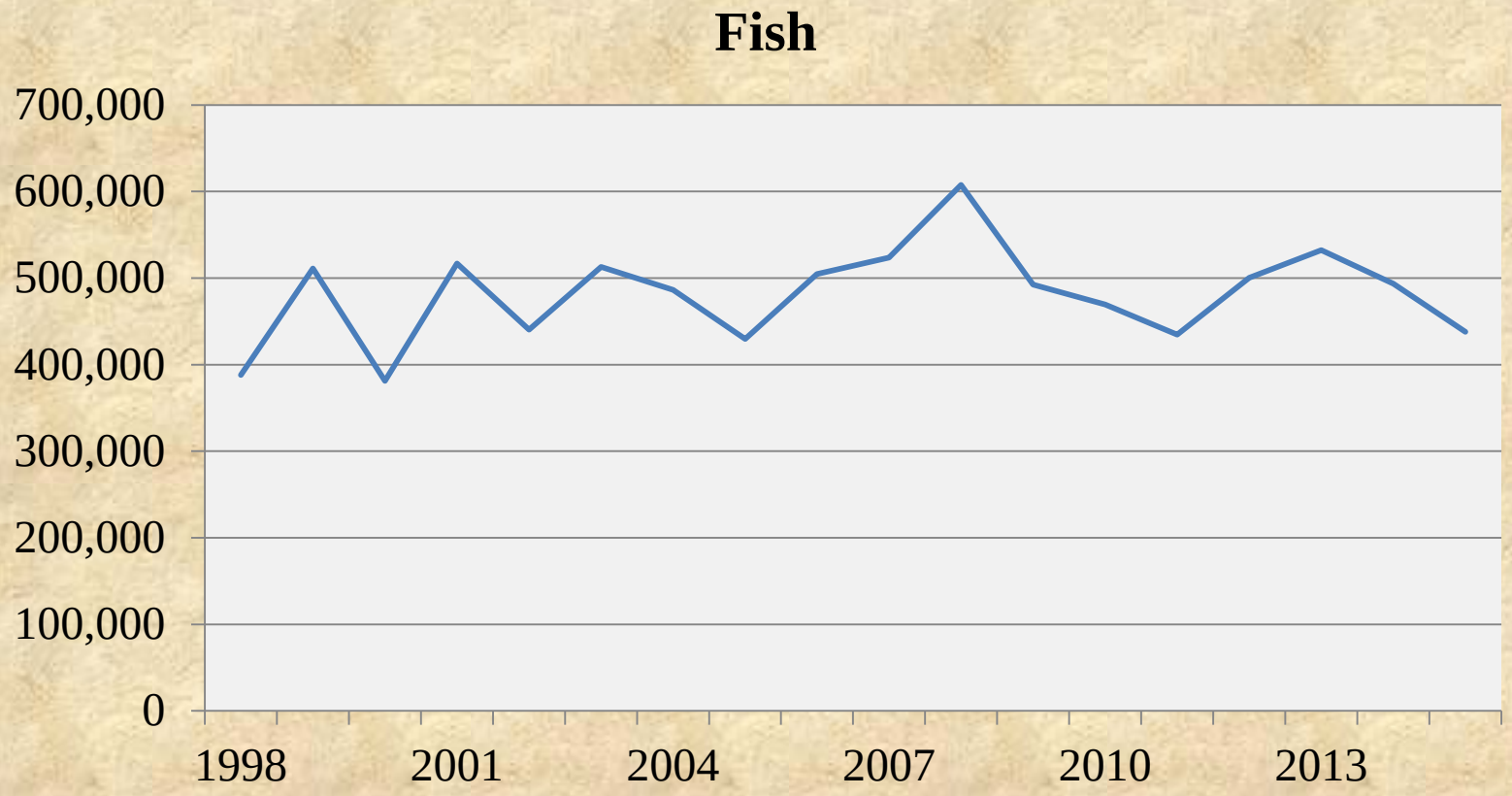
4,784,961

54% of Total Distributions

NTGCICP Certified Triploid Grass Carp Distributions (1998-2016)

Top 10 States		
Florida	2,071,265	24%
Texas	988,917	11%
Arizona	911,140	10%
Ohio	839,383	10%
North Carolina	786,082	9%
Louisiana	534,489	6%
Indiana	427,181	5%
Kentucky	423,258	5%
Georgia	359,659	4%
Virginia	315,740	4%

NTGCICP Program (1998-2016)
Total Fish Shipped = 8,806,840



An untested group of grass carp (90+ % triploid) is harvested from a production pond and transferred into a holding house.

The triploid grass carp producer must individually test every grass carp, and remove all diploids, prior to any USFWS inspection of that population.

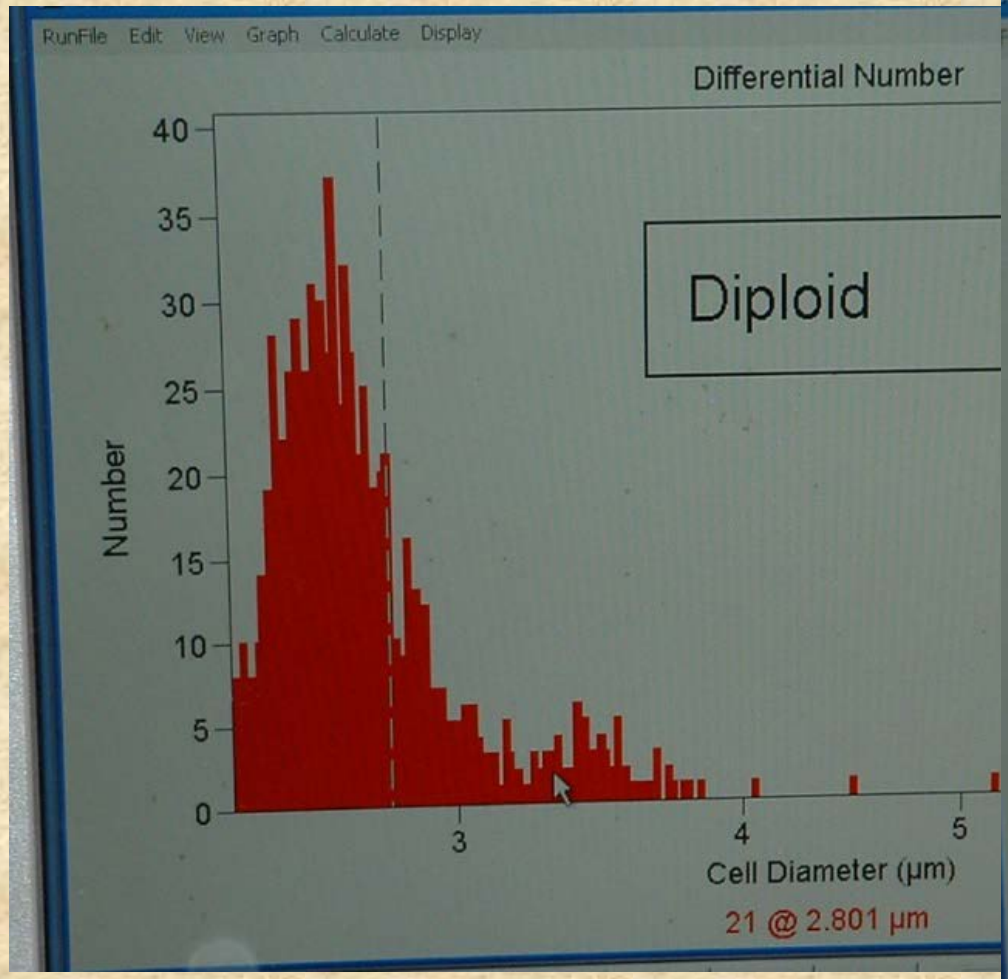
Untested grass carp are tranquilized and sized, prior to initial blood testing at farm site

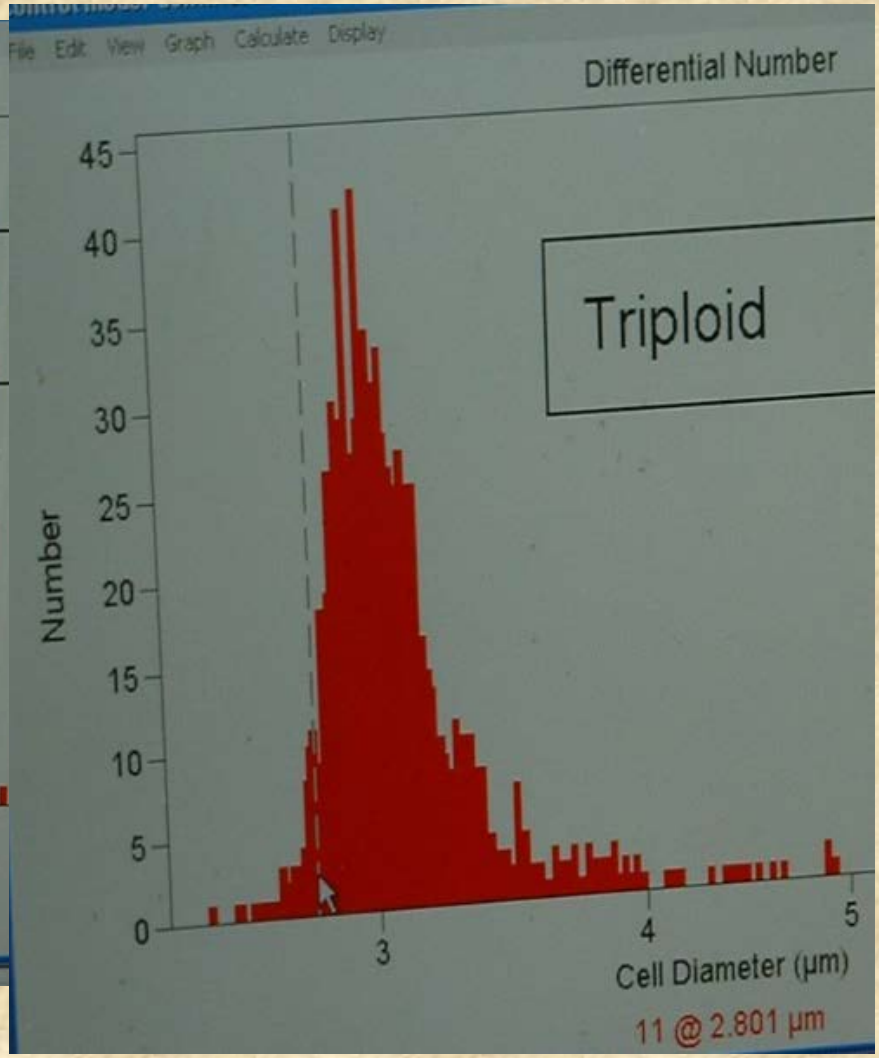
Each fish is individually pricked with a needle to draw a blood sample.

Each blood sample is placed into a separate accuvette of diluent in a coded accuvette tray.

At this point particle sizing equipment
(as per Coulter Counter, et al)
is used to read reference standards :
latex beads or diploid blood

Coulter Counter displays graph of channelized grass carp blood standards with 2.8 µm cutoff





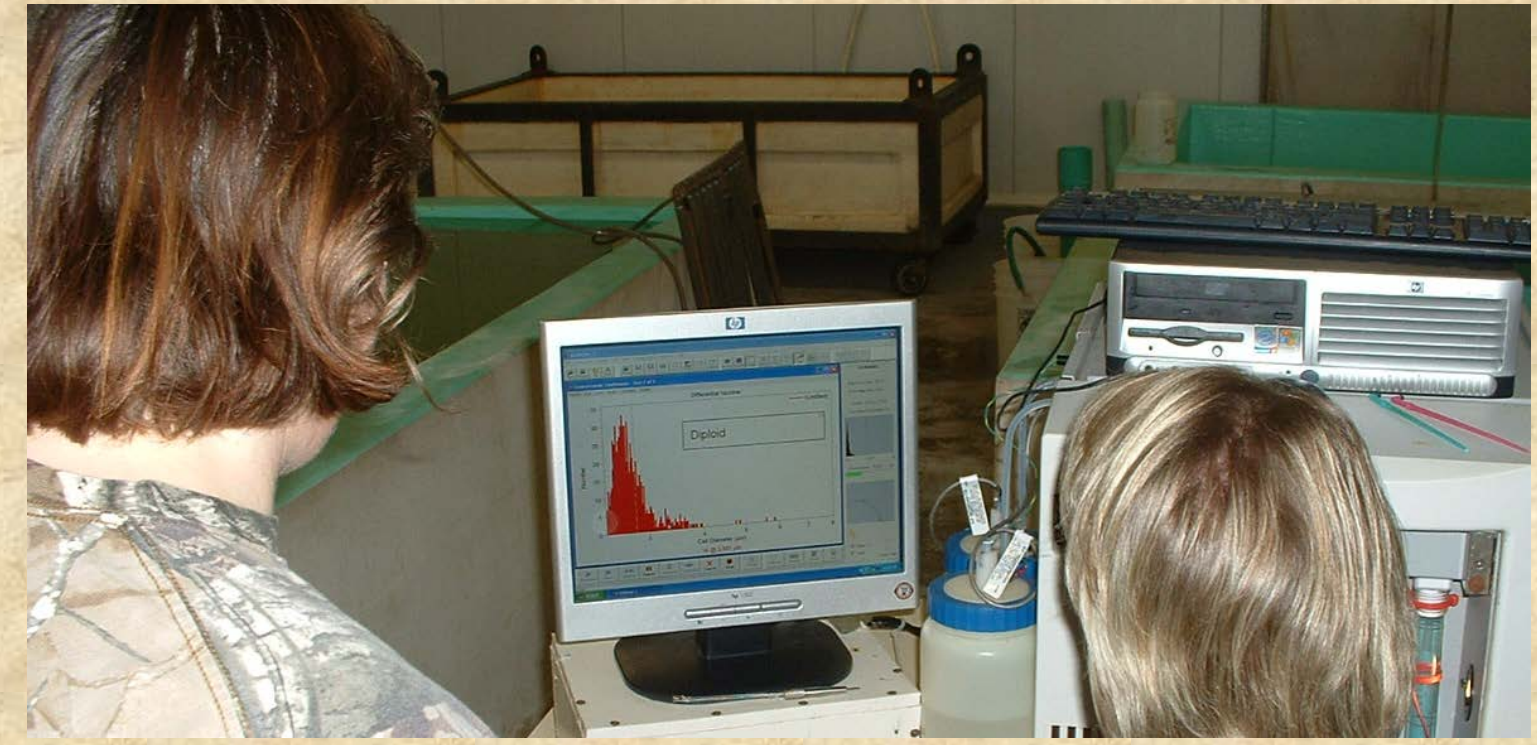
During individual testing, if a diploid fish is identified, the accuvette position on the tray is marked with a red accuvette.

The tray is taken to the corresponding color coded floating frame, and the identified diploid fish is removed.

Tanks of producer-tested, alleged 100% triploid grass carp, must be maintained in strict compliance with national standards: isolation, MOA-signage, water clarity, biosecurity, and poke-marks.

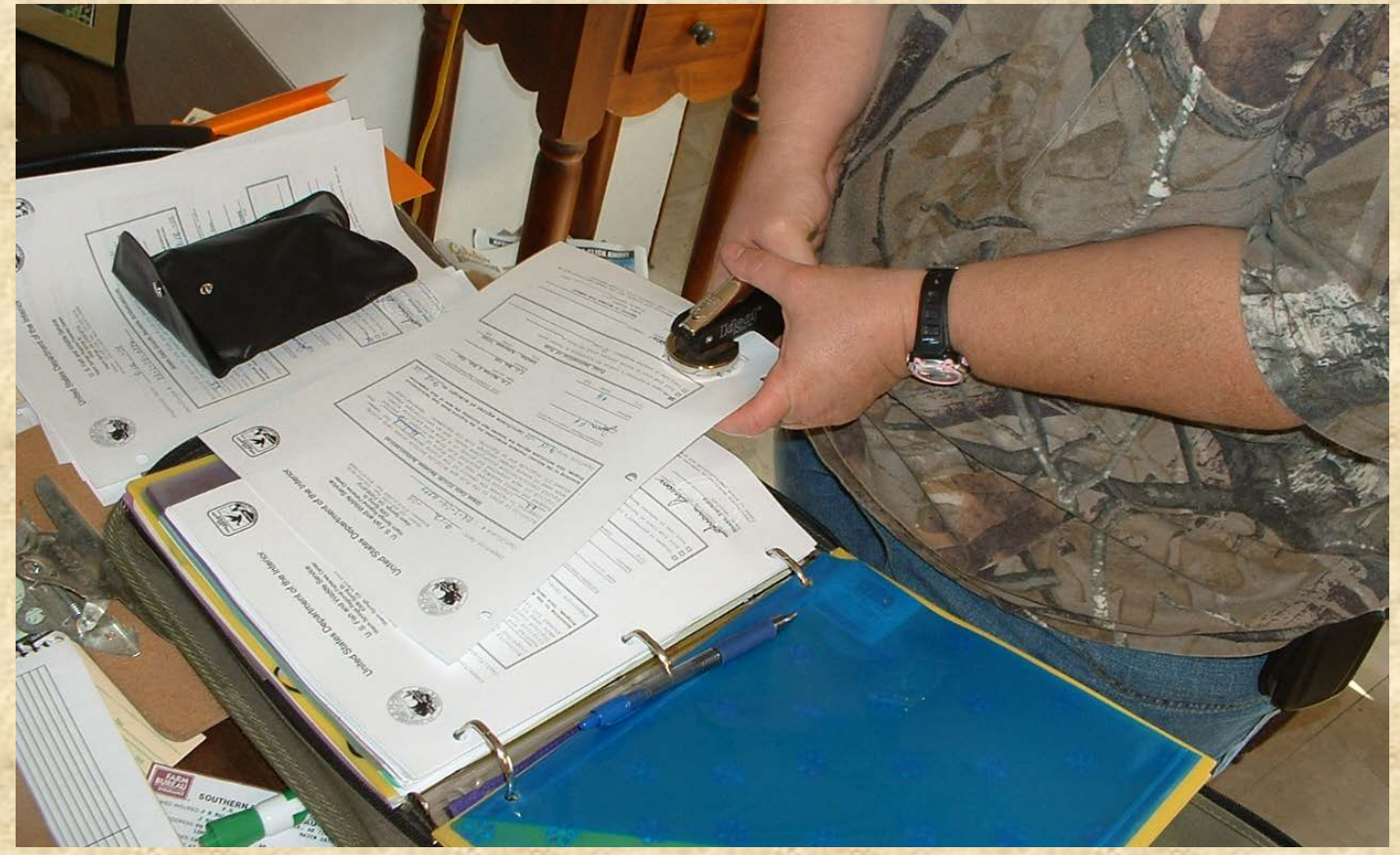
USFWS inspector checks fish and supervises the selection of 120 alleged 100% triploid grass carp from producer lot to be inspected.

USFWS inspector supervises the channelization of blood samples verifying the ploidy readings.



If all fish pass inspection, the USFWS inspector prepares written certificates for shipments of “USFWS-Certified” triploid grass carp

Each certificate is numbered. The USFWS inspector embosses her signature on the original certificate that is also signed and dated by the producer. Two copies are made – for producer and inspector.

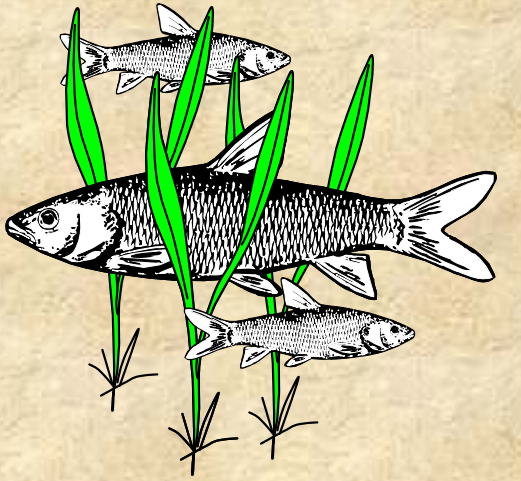


After all fish are loaded for shipment the customer/hauler receives an invoice and the original embossed USFWS certificate, for legal transport.

The truck containing USFWS certified triploid grass carp departs for destination.

The USFWS inspector formally contacts (FAX, Email) the receiving State's triploid grass carp coordinator. The certificate expires six calendar days from the date of inspection. Certified fish must enter the receiving State prior to the certificate's expiration.

Authorization



The inspection service was addressed by the Senate and House of Representatives of the United States of America, in the 104th Congress, assembled in Washington, DC, November 1, 1995 through Public Law 104-40 - “A bill to authorize the collection of fees for expenses for triploid grass carp certification inspections, and for other purposes.”

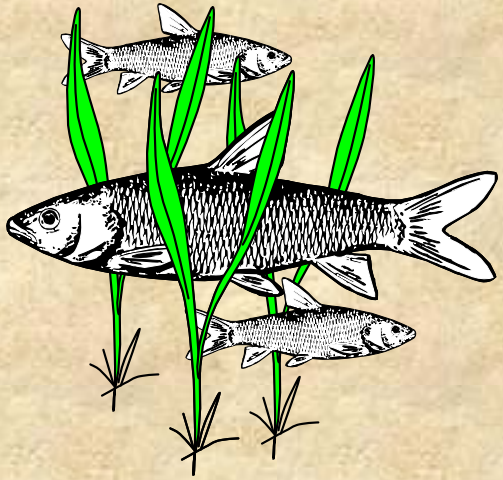
“The Secretary of the Interior, acting through the Director of the U.S. Fish and Wildlife Service, may charge reasonable fees for expenses to the Federal Government for triploid grass carp certification inspections requested by a person who owns or operates an aquaculture facility."

Rulemaking

USFWS is in the process of developing a set of federal rules to oversee the NTGCICP program

Will be very similar to the current MOA process

Will give the USFWS better legal standing when dealing with violators of the program.



Hypergeometric Distribution

describes the probability of a # successes in known # of draws, *without* replacement, from a finite population of known size that contains a known number of successes, wherein each draw is either a success or a failure.

We use (1 – the probability of finding 0 successes in a sample), which equates to finding at least 1 successes

Confidence of finding at least 1 diploid in 120 fish sample at various lot sizes