

**TEXAS**

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**WILDLIFE**

# Zebra Mussels in Texas



# Historical Perspective

- ◆ Zebra Mussels are native to the Black and Caspian Sea drainages
- ◆ First discovered in North America in 1988 in Lake St. Clair
- ◆ Introduced in ballast water of ocean-going ships from the Black Sea
- ◆ Zebra mussels have spread through the eastern and central U.S. and as far west as California

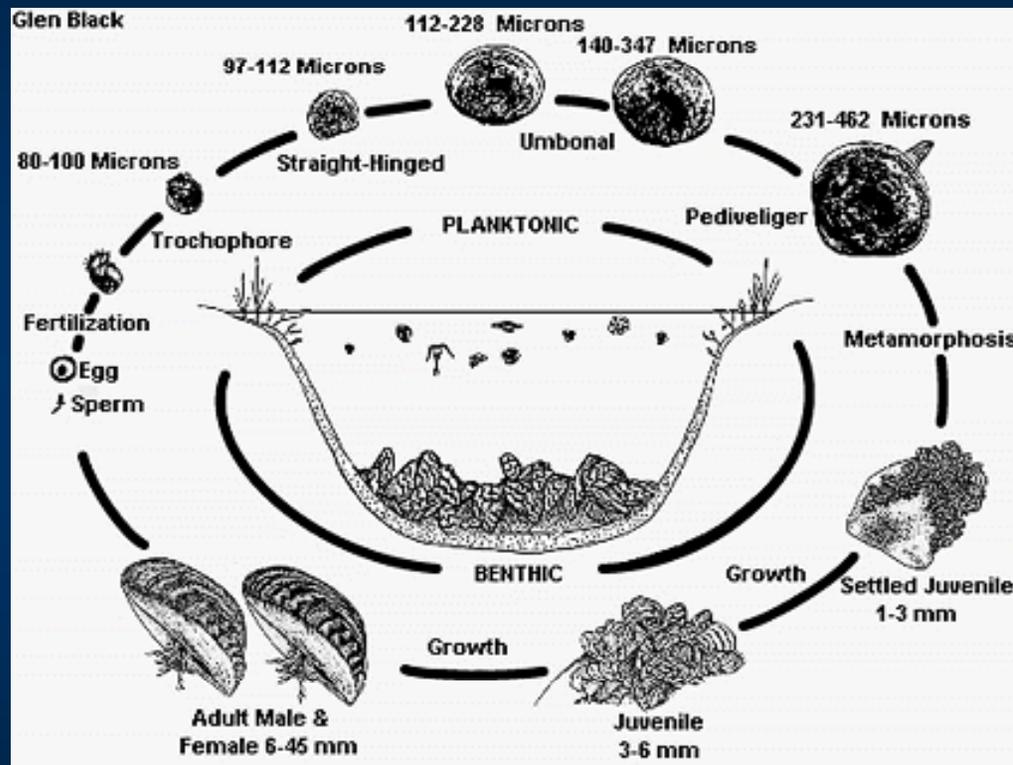
# Byssal Threads



**A one inch mussel may have up to 600 byssal threads holding it in place.**

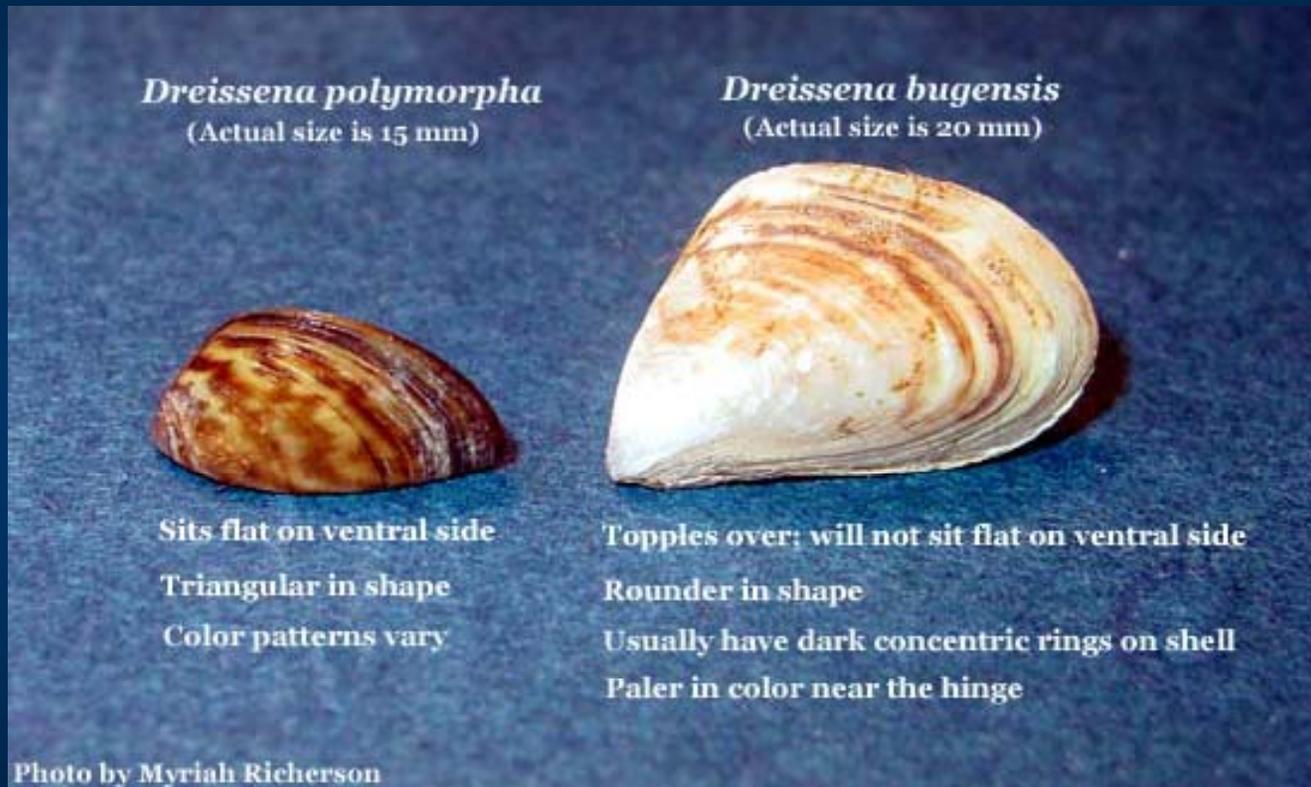
From UACOE website

# Life Cycle



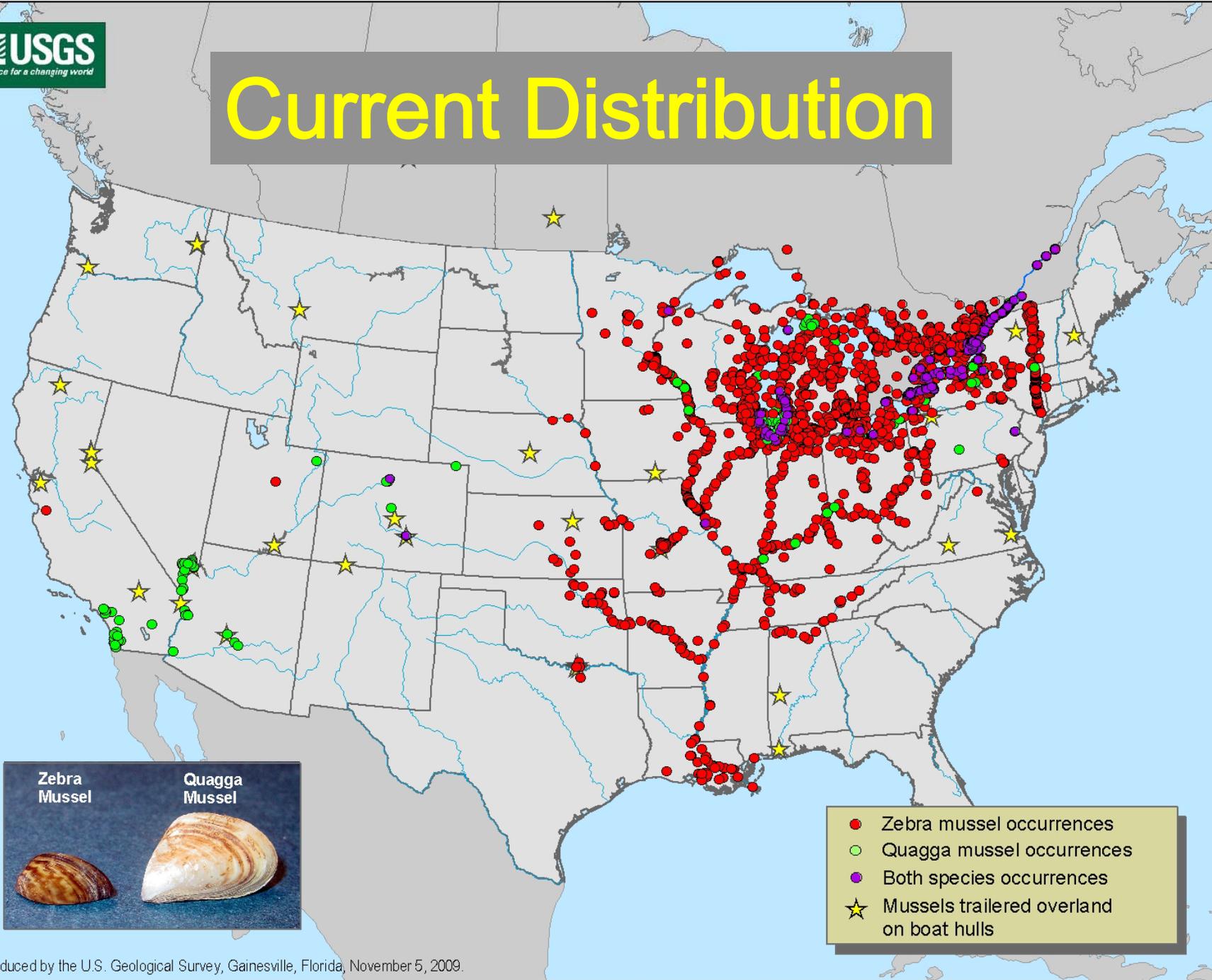
From UACOE website

# Quagga versus Zebra



From USGS website

# Current Distribution



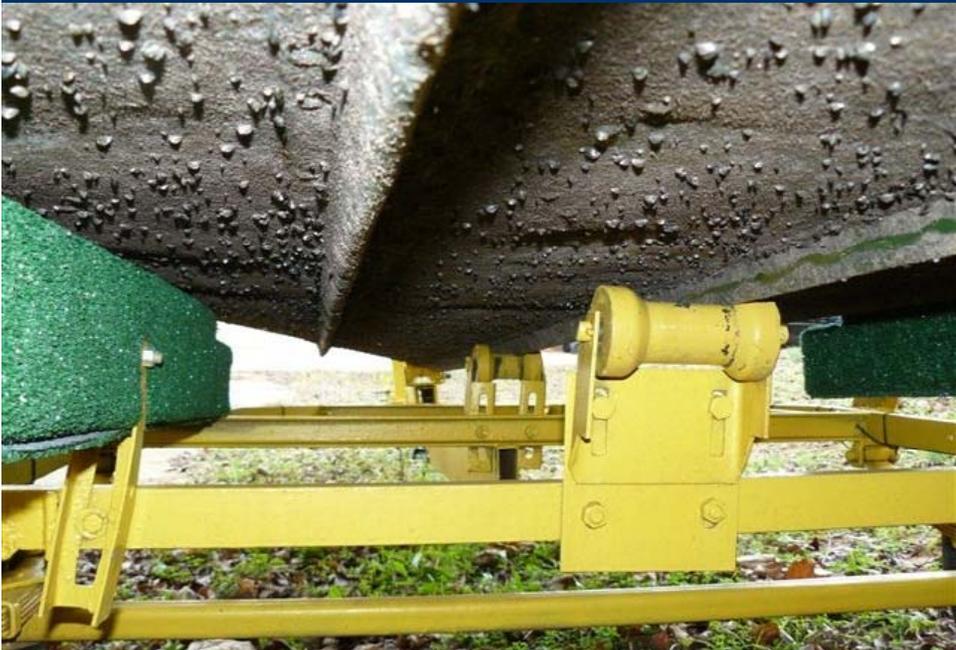
# Ecological Impacts

- ◆ Increased water clarity
- ◆ Decreased productivity
- ◆ Changes in fish community
- ◆ Increased vegetation
- ◆ Biomagnification of pollutants
- ◆ Native mussels



# Recreational Impacts

- ◆ Boats and motors
  - ◆ Foul hulls; Plug water systems
- ◆ Colonize hard structures (docks, piers, bouys, bridges, etc.) and beaches



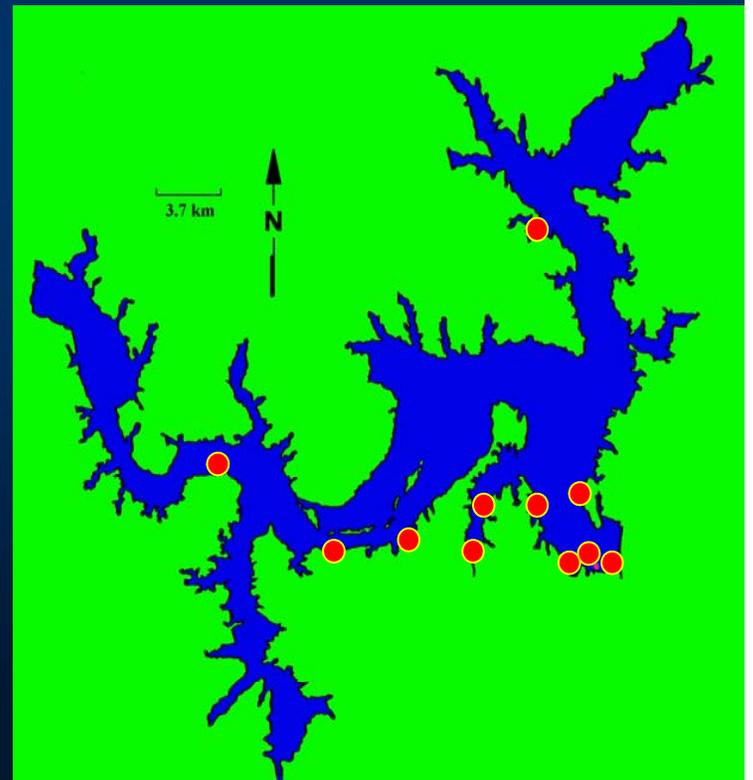
# Economic Impacts

- ◆ **Cleaning of clogged intake structures and pipelines**
- ◆ **Increased pumping expenses**
- ◆ **Increased maintenance and repairs**



# Lake Texoma

- ◆ First documented case in 2006 on a boat from Minnesota
- ◆ Four additional boats from out-of-state have been intercepted and sanitized
- ◆ In April 2009, first live specimen found in TX waters
- ◆ Range and density continued to increase (red dots)



# Lake Lavon

- ◆ In July, zebra mussels were found near the North Texas Municipal Water District (NTMWD) intake structure on Lake Texoma
- ◆ In August, staff found three specimens downstream of the NTMWD outfall area on West Prong Sister Grove Creek
- ◆ Three subsequent surveys have found no additional mussels

# Outlook

- ◆ **Can slow but not stop the spread**
- ◆ **Economic impacts due to biofouling**
- ◆ **Aquatic habitat and nuisance vegetation problems**
- ◆ **More impacts in standing than flowing waters**
- ◆ **Native mussels are at higher risk**
- ◆ **Fish communities will be impacted**
  - ◆ **Adjust management strategies**

# TPWD Response

- ◆ Collaborative efforts among Inland Fisheries, Law Enforcement and Communications
- ◆ Working closely with water districts, river authorities, USACOE, USFWS and others



**HELLO  
INVASIVE  
SPECIES.  
GOODBYE  
TEXAS LAKES.**

**Zebra mussels** kill fishing, clog pipes that supply drinking water, and have sharp edges that make water recreation hazardous. They cling to boat hulls, piers and docks, and you can spread them when you enter other lakes.

**SO CLEAN YOUR  
BOAT, TRAILER  
AND GEAR!**



STOP AQUATIC  
HITCHHIKERS!  
[www.texasinvasives.org](http://www.texasinvasives.org)

# TPWD Response

- ◆ **Monitoring in lakes Texoma, Lavon, Ray Hubbard, Granbury, Whitney and Waco**
- ◆ **Staff watch for zebra mussels any time they visit a water body**
- ◆ **Developing a Prevention and Response Plan**
- ◆ **Interbasin water transfers**



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