



FLATHEAD CATFISH (*Pylodictis olivaris*)



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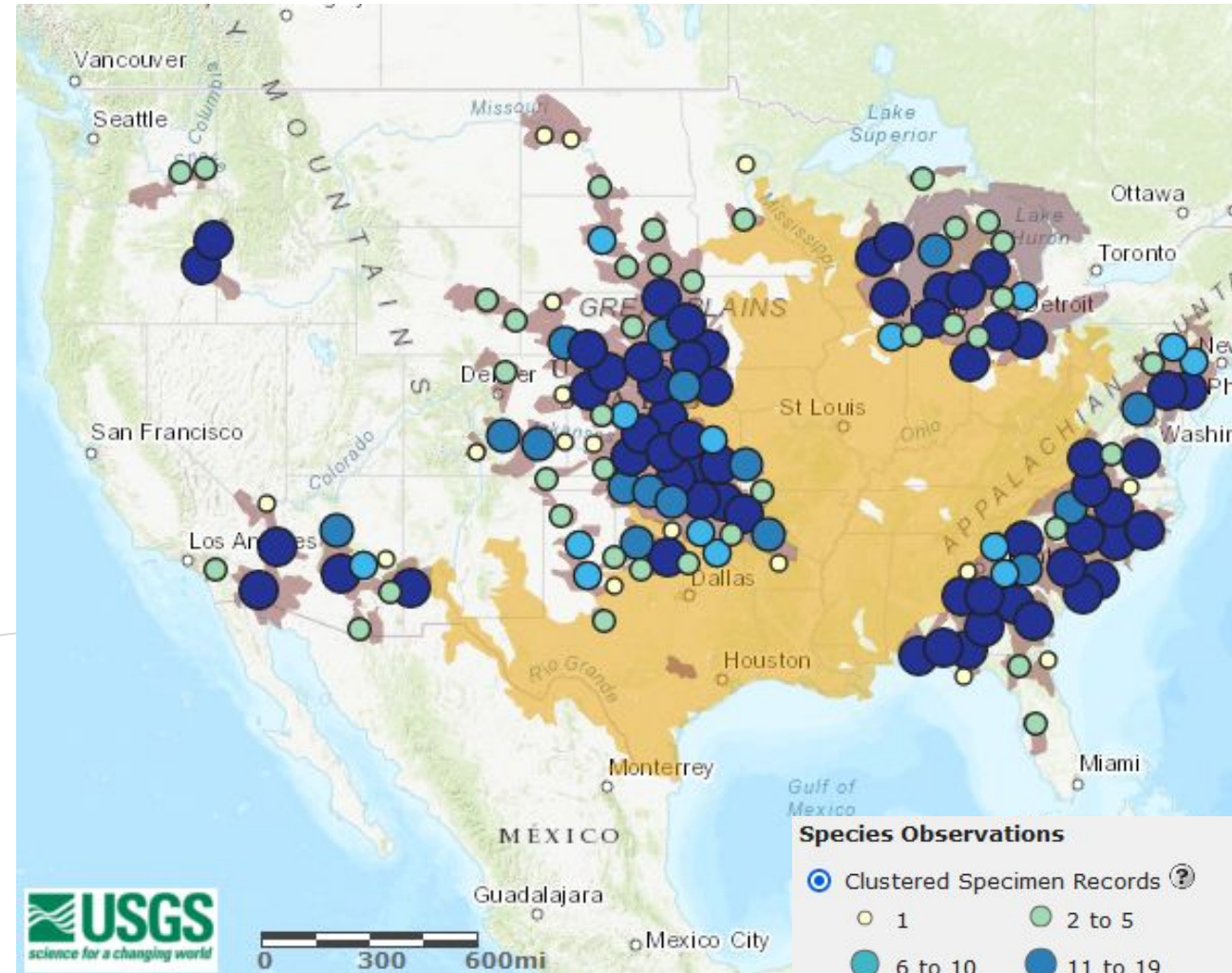
ISG: Case Study

10/29/2021



Flathead Catfish Range

- Native to Central United States:
 - Mississippi River, Mobile River, and Rio Grande River
 - Also native to some parts of Mexico
- Introduced and established in many systems (Fuller et al. 2021)
 - Chesapeake Bay Region
 - James River 1965-1977 (MDNR 2016)
 - Other introductions likely in region
- Can be found in a wide range of freshwater habitat types
 - Can take around 10-15 years to become established (Smith et al. 2021)
- Reach sizes >1000mm and >50kg (Brown et al. 2005)
 - Maximum life span: 28 years



Map: Fuller et al. 2021



Flathead Catfish Introduction in Maryland

- Currently not very widespread in the Chesapeake Bay but range is expanding (Personal comm. Dr. Joe Love, MDNR)
- Studied by Maryland Department of Natural Resources since 2012
- Became established in the Potomac River in the last 10 years
- Unknown when first established in Susquehanna and Conowingo Reservoir (>10 years)
 - First document in PA Susquehanna in 2002 (Smith et al. 2021)





Ecological Implications

- Considered apex predator in Chesapeake Bay system (Schmitt et al. 2019)
- Most carnivorous catfish species (Brown et al. 2005; Schmitt et al. 2019)
 - Feed on only fish at small sizes (~100mm)
 - Not gape- limited (Slaughter and Jacobson 2008)
- Simulations predict up to 50% decline of native species (Pine et al. 2007)
- Observed declines of other important recreational fishes (Smith et al. 2021)
 - (i.e. redbreast sunfish, largemouth bass)





Ecological Implications

- **Common Prey:**

- Alosine species* (shad and river herring)
- White Perch
- White catfish
- Largemouth Bass
- Gizzard Shad

- **Rare Prey:**

- Striped Bass*
- Sturgeon*

- Alosine species return to freshwater systems in the spring to spawn

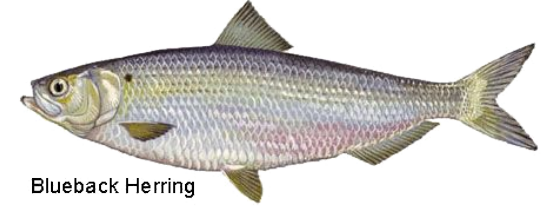
- Susceptible to predation during migration

- Have declined in recent years

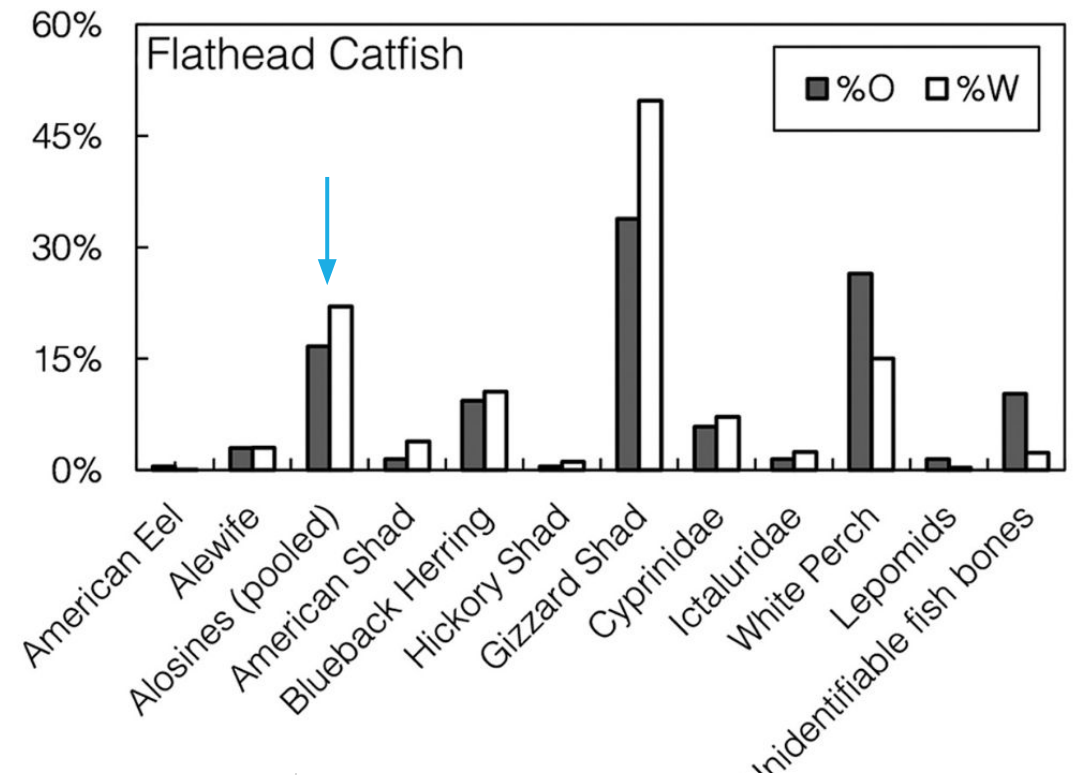
- Potential risks for further decline



Alewife



Blueback Herring



Schmitt et al. 2017



Recreational Fishery for Flathead Catfish

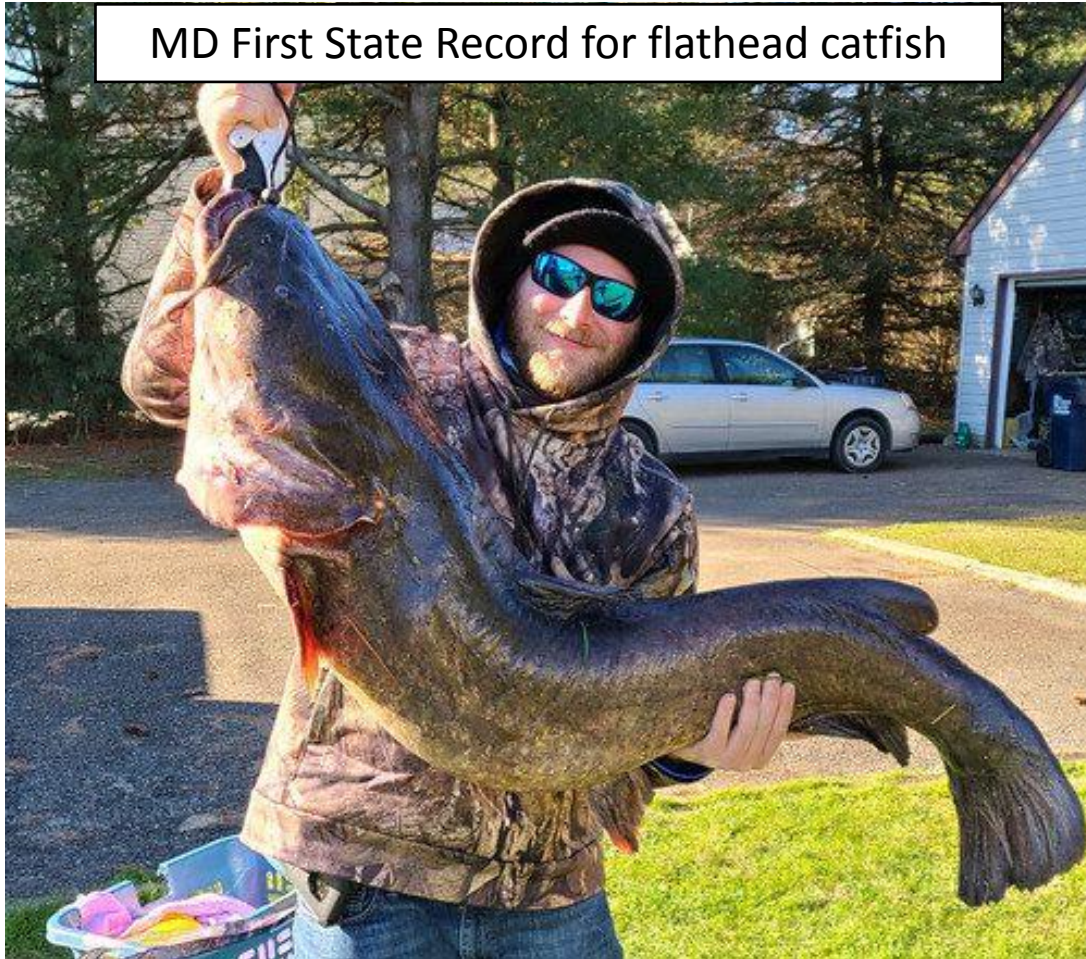


Photo: Coastal Angler Mag

- Popular sport fish in Maryland
 - Large sizes, Good fight, sometimes to eat
- “It’s an adrenaline rush...it’s like the trip of a lifetime. We’ll probably never catch a fish like that again.”
 - -Riley Kraemer, Baltimore Sun 2021
- No commercial fishery because of where this species is found
- Encouraged to be harvested/killed by anglers
 - Many anglers catch-and-release
- Popularity amongst recreational anglers likely led to further introductions into other systems (Personal comm. Dr. Joe Love, MDNR)



Current Management In Maryland

- Managed by the Maryland Dept. of Natural Resources
 - Catfish Management Plan (2016)
 - Managed with Blue Catfish
- “no transport list”
- Ask anglers to report catches, especially in new systems (Personal comm. Dr. Joe Love, MDNR)
 - email to fishingreports.dnr@maryland.gov
 - USGS non-indigenous aquatic species database
- Currently DNR is managing spread and increasing biological understanding
- Catfish removal at Conowingo Dam

Invasive Fish from Conowingo Dam Donated to Food Banks, Science

May 13, 2021

Maryland Public-Private Partnership Puts Invasive Fish to Good Use

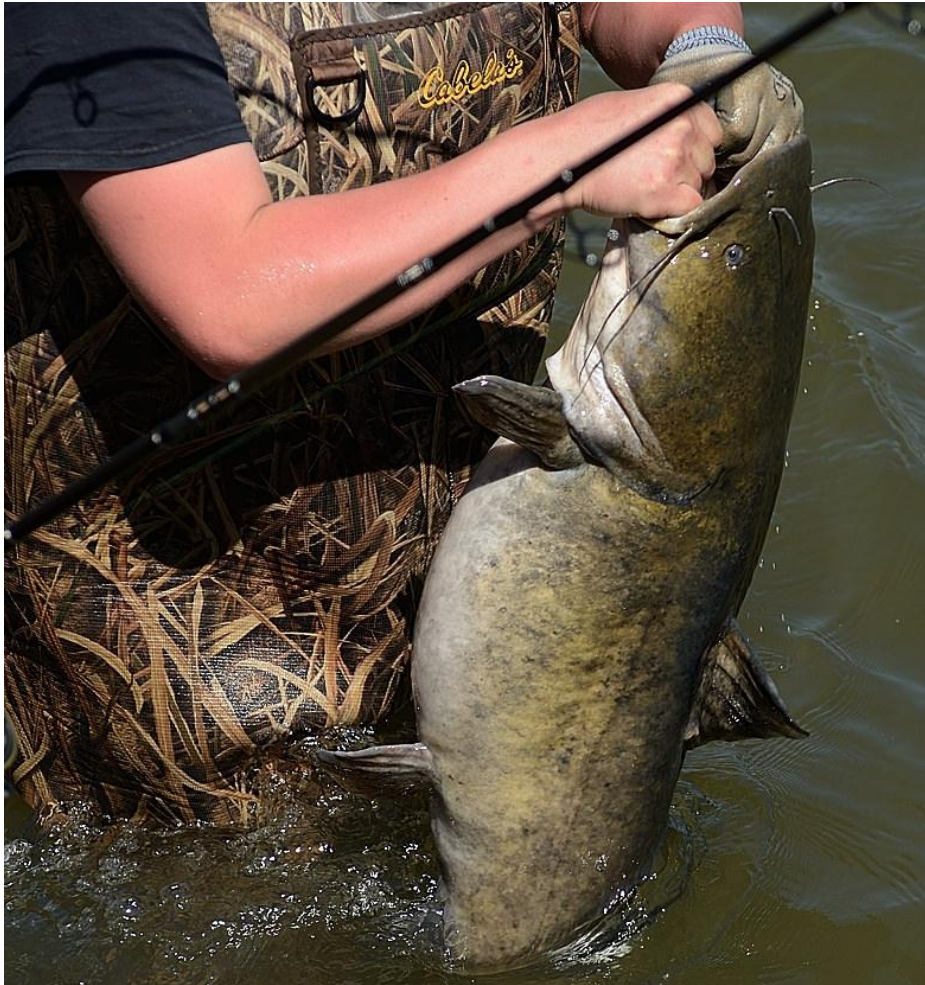
The Conowingo Dam employs fish lifts to help migrating fish species navigate the Susquehanna River to their spawning grounds, but the lifts also catch unwelcomed fish – invasive catfish and snakehead. Through a public-private partnership between the Maryland Department of Resources (DNR), dam owner Exelon Corp., the Maryland Department of Agriculture (MDA), and local seafood wholesaler, JJ McDonnell and Co., the invasive fish pulled from the Conowingo are going to local food banks and scientific research, while reducing the number of destructive species in the Chesapeake Bay watershed.

“This initiative serves multiple goals, including controlling invasive fish species by harvesting them to minimize their impacts on the Chesapeake Bay ecosystem and providing protein-rich meals to those in need,” DNR Secretary Jeannie Haddaway-Riccio said. “We will also improve our





Management Challenges



- Stakeholder conflict (Personal comm. Dr. Joe Love, MDNR):
 - 1 – Anglers hope for increased opportunity to fish for flathead catfish
 - 2 – Scientists/Conservationist hope to reduce spread and minimize impacts to native system
- Intentional introductions to other systems by anglers within Chesapeake Bay Region
- Still not a lot known about the impacts in Maryland

Photo: Bob Cammarata



Knowledge gaps

- Limited information on the impact in Maryland
 - Impact on native catfish species unknown
- MDNR is focusing studying
 - Predatory impacts
 - Habitat use
 - Distribution in MD
- Few studies in the Chesapeake Bay focus on Flathead Catfish
 - Many prioritize blue catfish (Schmitt et al. 2019)
 - Can be a challenge long-term because of the impacts of Flathead Catfish
 - i.e. trophic position in system



Photo: Maryland Biodiversity Project



Conclusions

- Flathead catfish have become popular among anglers
- Ecological consequences regarding this species introduction are still being explored
- Need for more species specific research in the Chesapeake Bay/Maryland
- Most important steps to preventing spread
 - Education, outreach and monitoring (Personal comm. Dr. Joe Love, MDNR)



QUESTIONS?



PHOTO: FLORIDA MUSEUM OF NATURAL HISTORY



References

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