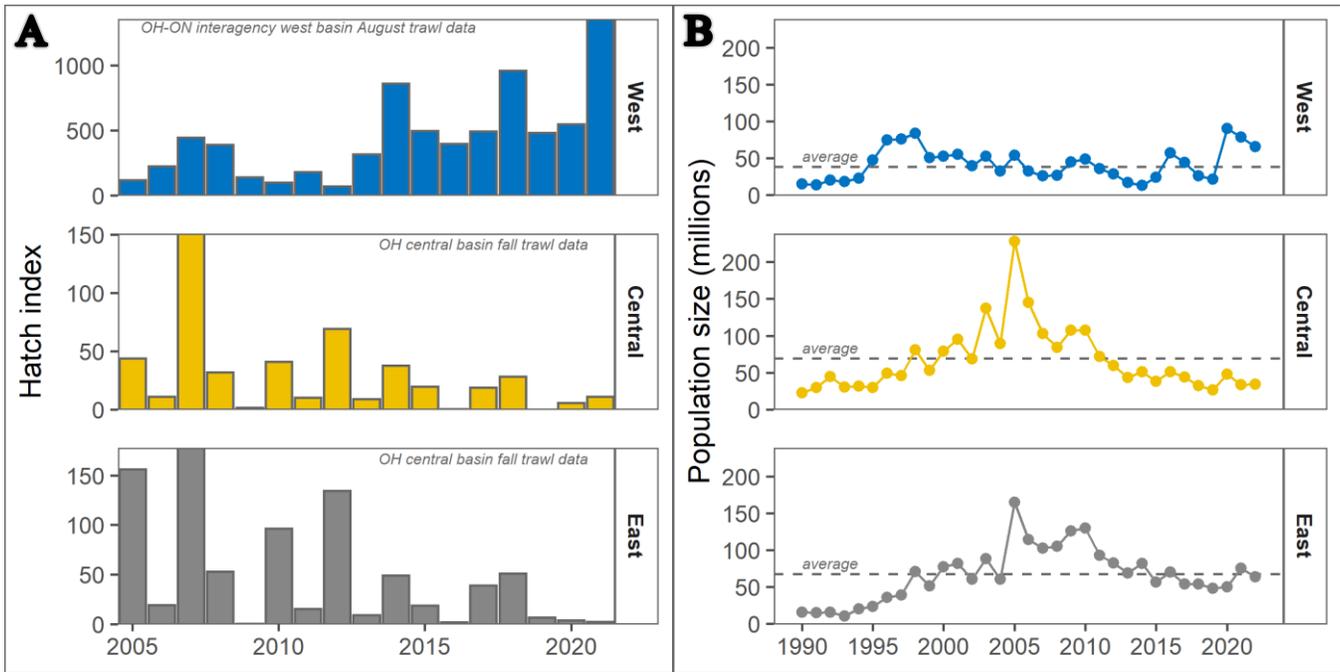




# Status of the Lake Erie Yellow Perch Fishery 2022

## Yellow Perch management

Lake Erie Yellow Perch (perch) are managed as four separate regional populations. In Ohio waters, perch are managed in three zones: the West Zone is the western basin, while the Central and East zones are in the central basin of the lake.



## Hatches

- **West Zone hatch has been average to very strong since 2014** (Fig. A). These hatches have maintained a healthy adult population and contributed to the recent abundance increase.
- **Central and East zone hatches have been poor since 2013** (Fig. A). The adult population has declined during this period compared to highs 15 years ago and will remain low until strong hatches return to the central basin.

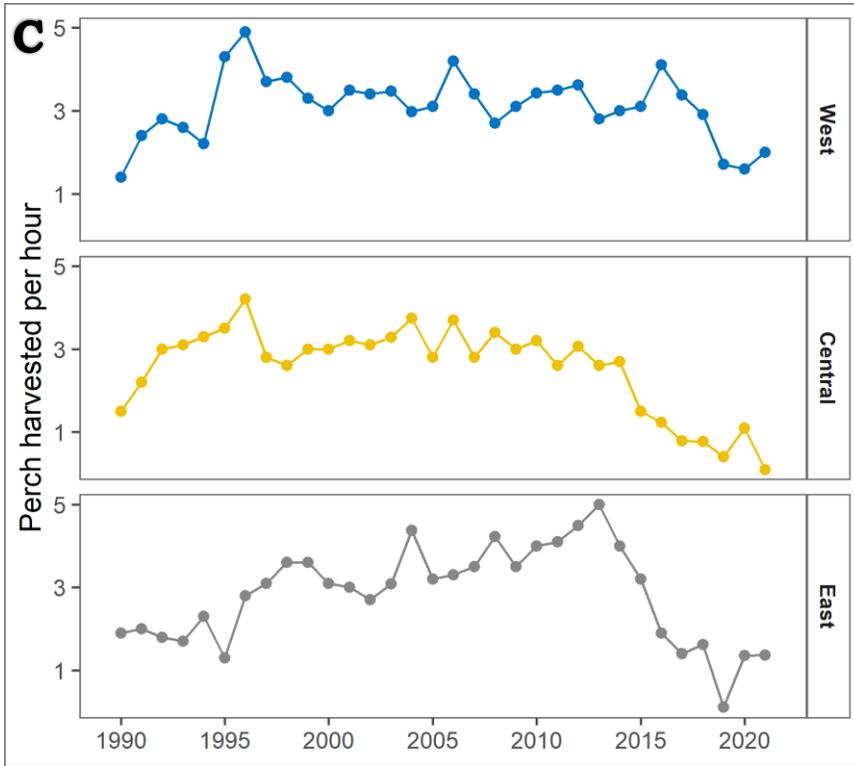
## Population trends

- The **West Zone population abundance projects to be above average in 2022**, bolstered by an influx of age-2 fish (Fig. B).
- The **Central Zone population abundance has declined since the mid-2000s** and remains below average (Fig. B). The **East Zone population is currently near average** but has also fallen since the mid-2000s.

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## Status of the Lake Erie Yellow Perch Fishery 2022

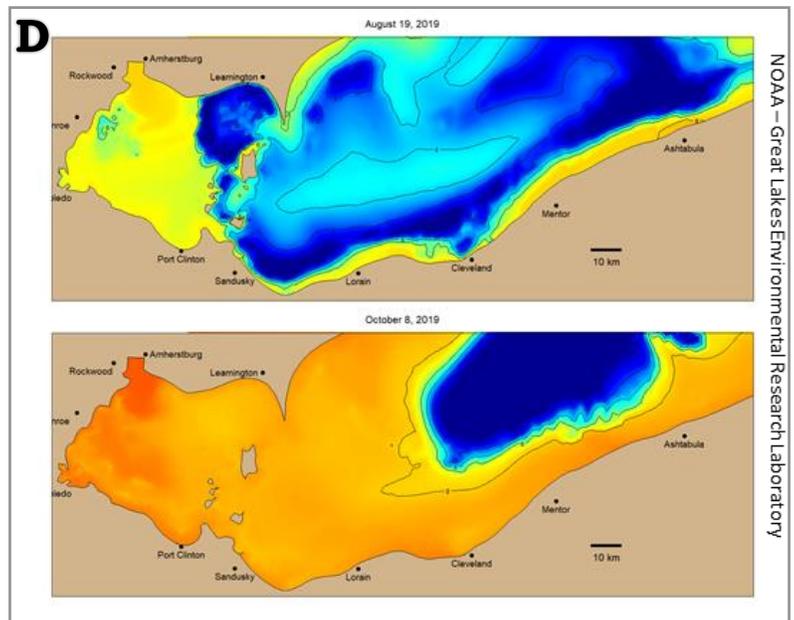


### Sport fishery harvest

- In the West Zone, **angler harvest rate** (number of perch harvested per hour) **improved slightly in 2021** but remains below historic harvest rates according to ODNR creel surveys (Fig. C).
- In recent years, **angler harvest rates have declined in the Central and East zones**. The Central Zone harvest rate was minimal in 2021, while the East Zone rate remains below expectations and historic harvest rates.

### Environmental conditions may affect where perch are found

- Seasonal **hypoxia** (i.e., areas of **low oxygen**; dark blue areas in Fig. D) occurs every summer through early fall near the bottom, especially in the central basin from Lorain to Conneaut (Fig. D).
- Also known as “dead zones”, fish locations may change based on the daily/hourly movement of hypoxic zones, **aggregating near the edges of water lacking oxygen** as they avoid the hypoxic water.



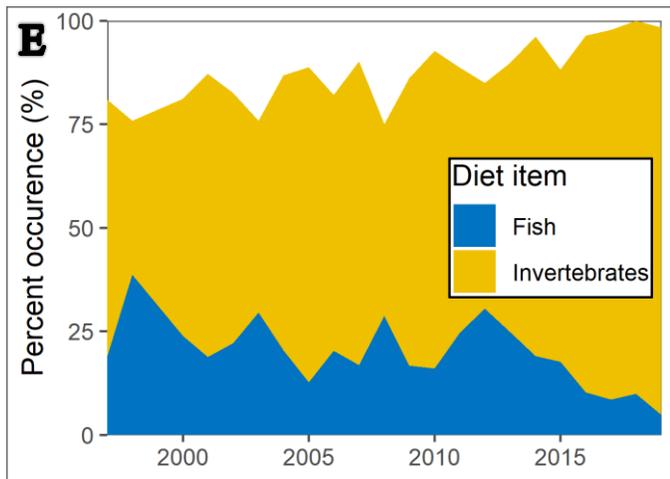
# ODNR - DIVISION OF WILDLIFE

Status of the Lake Erie Yellow Perch Fishery 2022



## Perch diets have shifted in the last 20 years

- Perch **diets have changed**. Perch continue to eat fewer fish and more invertebrates (Fig. E). Invertebrates now occur in nearly 100% of perch stomachs, while fish have shown up in fewer than 10% of diets since 2016.
- Invertebrate prey includes insects such as native midge larvae (AKA “muffleheads”) and zooplankton like the **invasive spiny water flea** (Fig. F).
- Perch may have shifted away from fish prey because **soft-rayed prey fish populations, such as Emerald Shiner, are low** across Lake Erie. Invertebrates may also be more abundant.
- These diet shifts may cause fish to **respond differently to lures**. Perch may be less responsive to traditional perch fishing rigs and baits.



## How might I catch more Yellow Perch?

- **Try fishing high abundance areas** in the West Zone between Toledo and Huron.
- **Try fishing different depths or times of day** as fish may suspend off-bottom when eating invertebrates.
- **Be aware of hypoxic zones**, which can push fish shallower or deeper than traditional hot spots. Use NOAA’s hypoxia predictor to avoid low oxygen zones while choosing your fishing spots, available free online: [www.glerl.noaa.gov/res/HABs\\_and\\_Hypoxia/hypoxiaWarningSystem.html](http://www.glerl.noaa.gov/res/HABs_and_Hypoxia/hypoxiaWarningSystem.html)
- **Try downsizing lures** to mimic the invertebrates found in diets (e.g., spiny water flea and muffleheads/midges).



Closeup of Spiny Water Flea  
Source: ODNR Fairport Harbor

# ODNR - DIVISION OF WILDLIFE

## Status of the Lake Erie Yellow Perch Fishery 2022



### How are perch quotas and limits determined in Ohio?

- U.S. and Canadian biologists across Lake Erie annually **pool data, estimate adult perch abundance, and determine sustainable harvest levels** for each zone.
- Total allowable catches (TACs) within zones are informed by Harvest Control Rules which **balance fishery performance with population status**. When population status declines, TACs are reduced to allow the population to rebound.
- Managers in each state and province must adjust fishery harvest quotas and limits to compensate for reduced TAC, **ensuring future sustainable harvest levels**.

### What about the commercial fishery?

- Ohio receives a portion of the TAC in each zone and **adjusts recreational limits and commercial quotas to ensure overharvest does not occur**. In most years, anglers receive 65% of Ohio's quota and the trap net fishery receives the remaining 35%.
- Recreational limits and commercial quotas are both reduced in low population years. **In 2021 and 2022, the Central Zone population was low; paired with several years of poor hatches, this caused managers to reduce the TAC** (Fig. G).
- In some years, recreational anglers were projected to harvest all the West Zone quota, causing managers to close the commercial fishery there (asterisks in Fig. G). Prior to 2008, Central and East zones were assigned a combined quota (shown in red).

