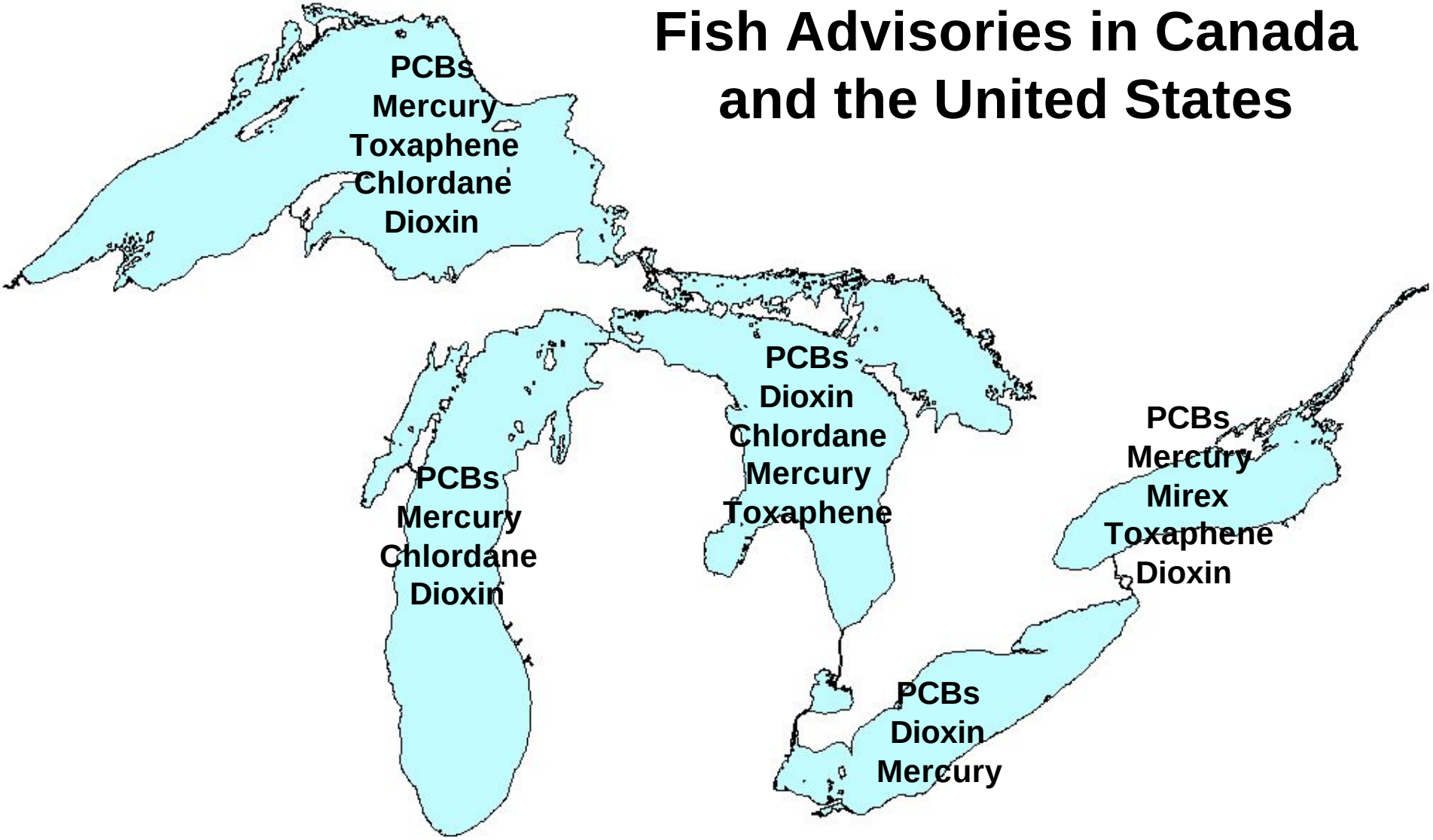
Great Lakes Fish Contaminants

Sandy Hellman

Contaminants that Cause Fish Advisories in Canada and the United States



Fish Contaminants Trend Data

- Great Lakes National Program Office, USEPA, Great Lakes Fish Monitoring Program, USGS BRD
- Lake Trout (600-700mm),Walleye in Lake Erie (400-500 mm)
- 50 fish collected from each site
- Samples are composites of five whole fish
- Extensive quality control to guarantee comparability over time
- Source of data through 1990 – DeVault et. al. Contaminant Trends in Lake Trout and Walleye From the Laurentian Great Lakes. 1996. J. Great Lakes Research
- Source of data post 1990 - GLNPO

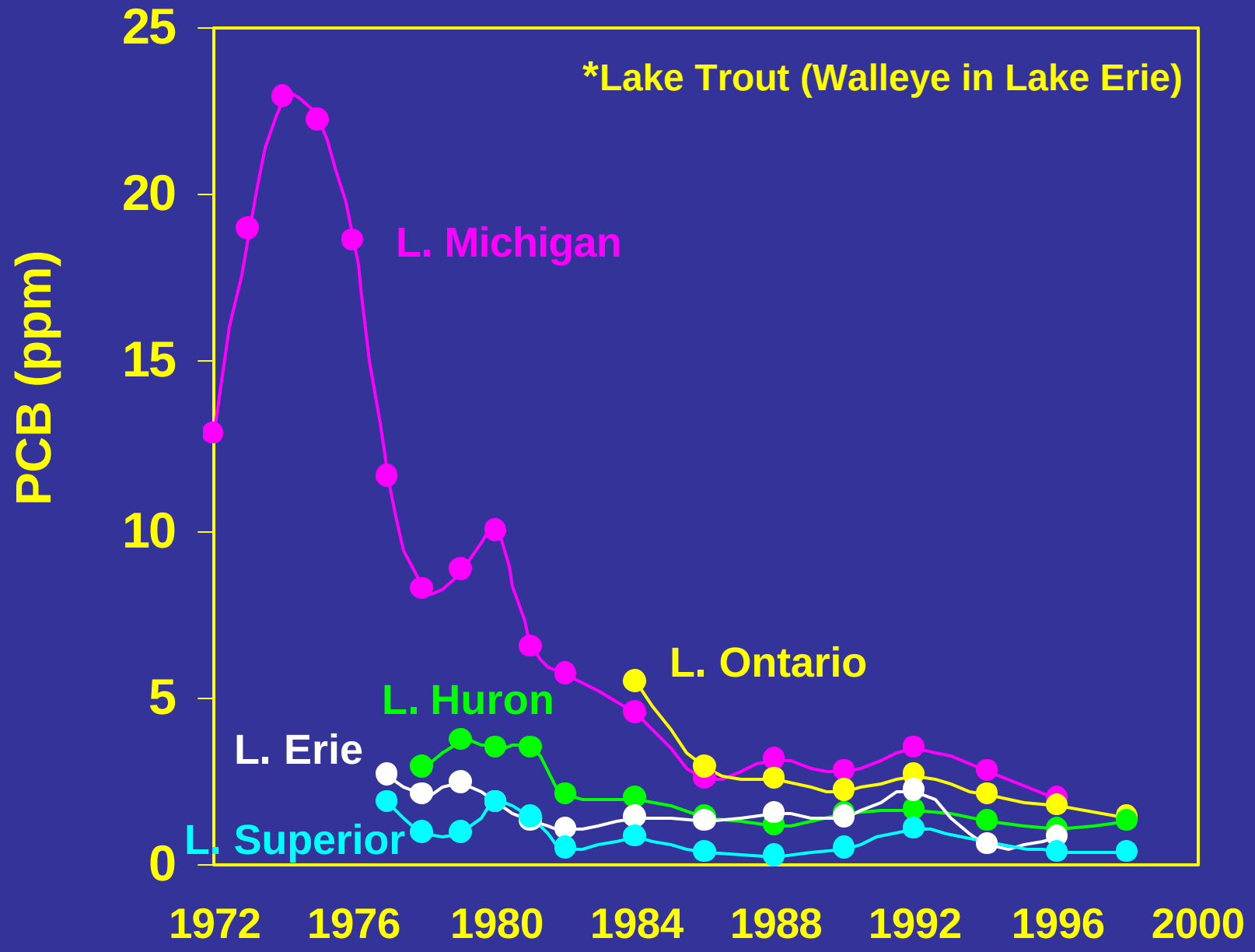
Fish Consumption Data

- Great Lakes National Program Office, USEPA, Great Lakes Fish Monitoring Program, USGS BRD, Great Lakes States
- Coho Salmon (3 years old)
- Samples are composites of 5 skin-on fillets
- 1998 data for each lake compared to monthly fish consumption limits for cancer and noncancer health endpoints

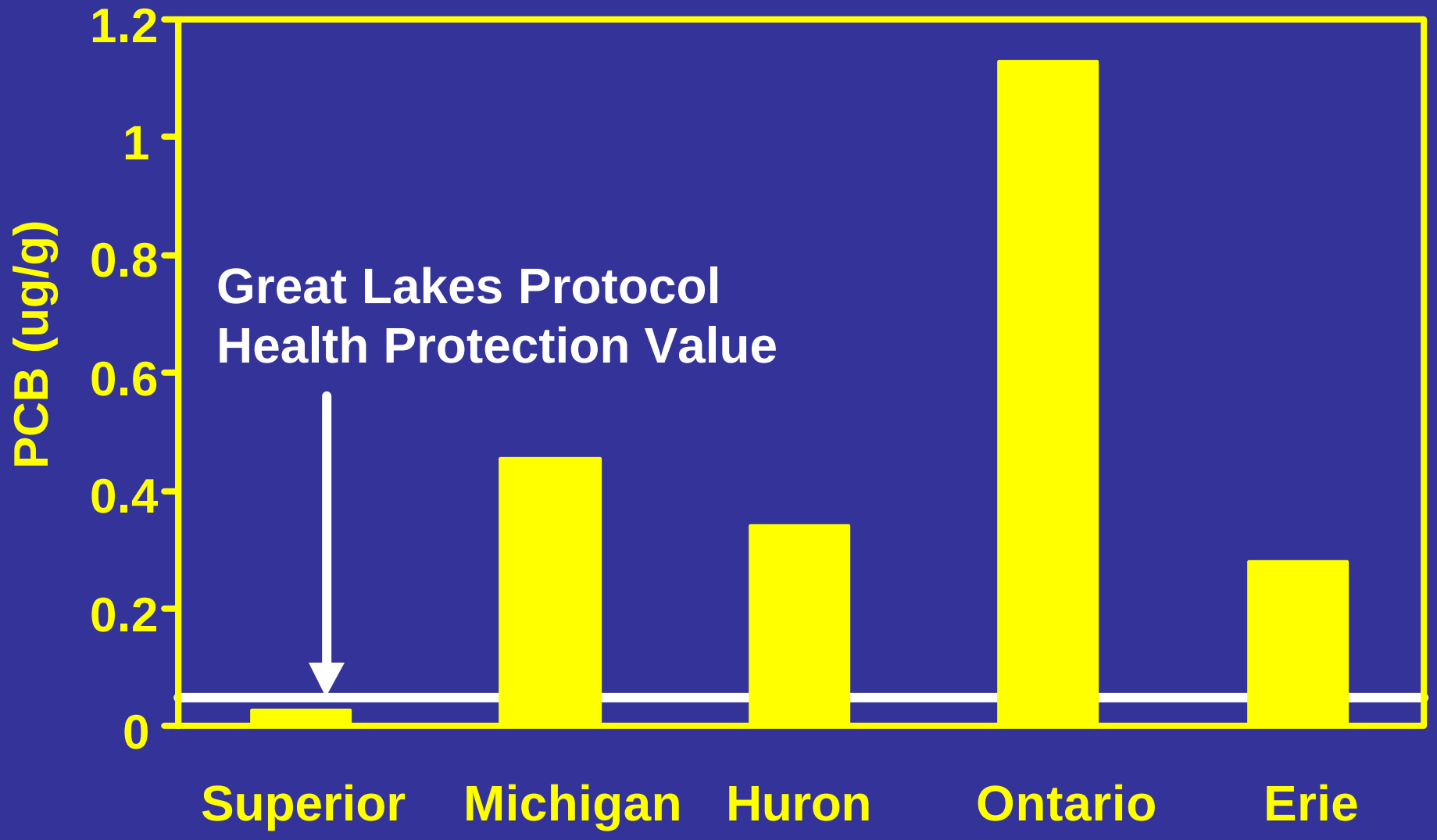
Fish Consumption Limits

- Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories. Volume 2: Risk Assessment and Fish Consumption Limits, Third Edition.
- Values are fish tissue concentrations that allow for unrestricted monthly consumption (>16 meals).
- Values are more conservative than what Great Lakes States use because they don’t account for cooking and cleaning and they use risk level of 1in 100,000

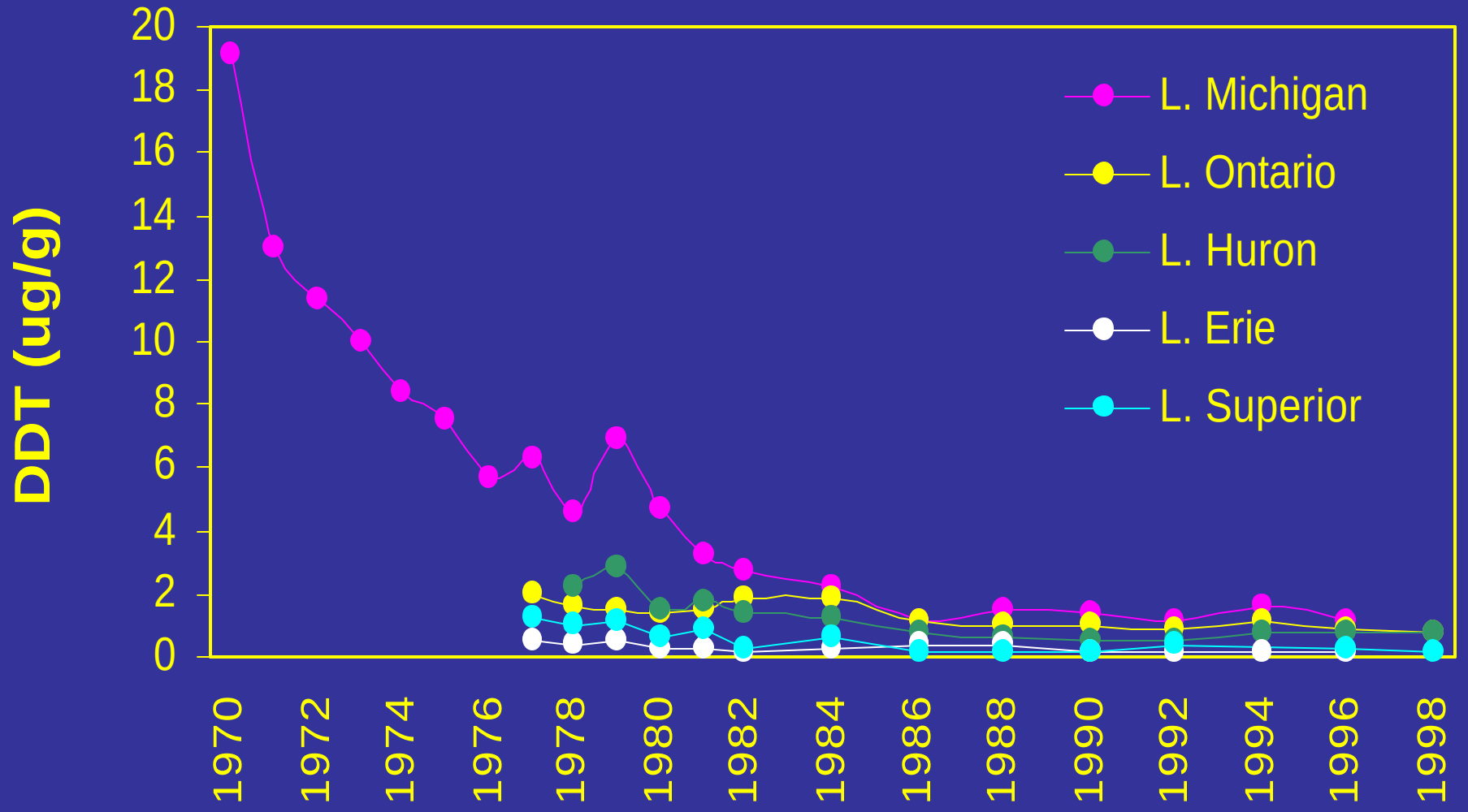
PCBs in Great Lakes Top Predator Whole Fish*



Fish Contaminants in Great Lakes Coho Salmon Skin-On Fillets in 1998

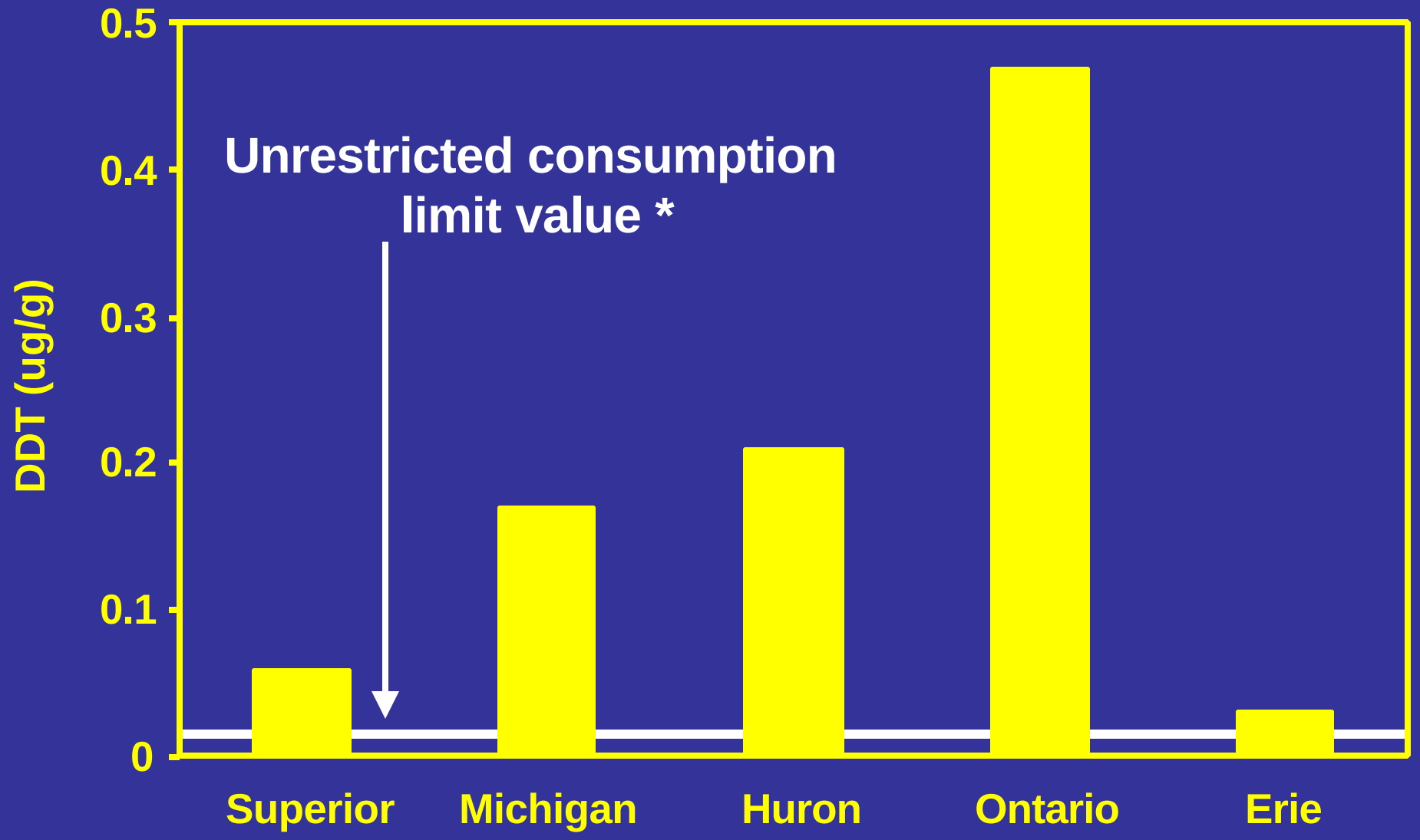


DDT in Great Lakes Top Predator Fish*



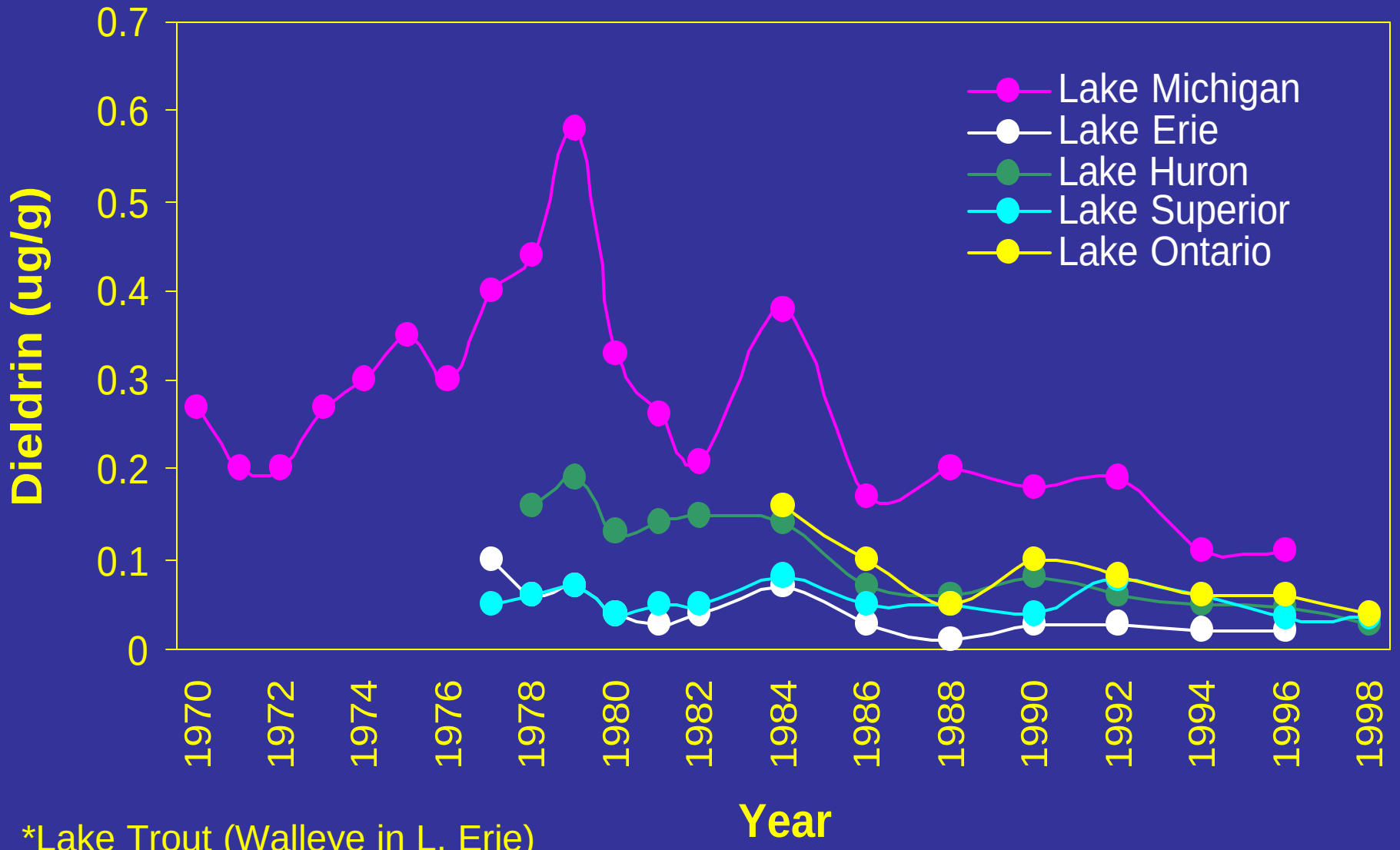
*Lake Trout (Walleye in L. Erie)

DDT in Great Lakes Coho Salmon Skin-On Fillets in 1998



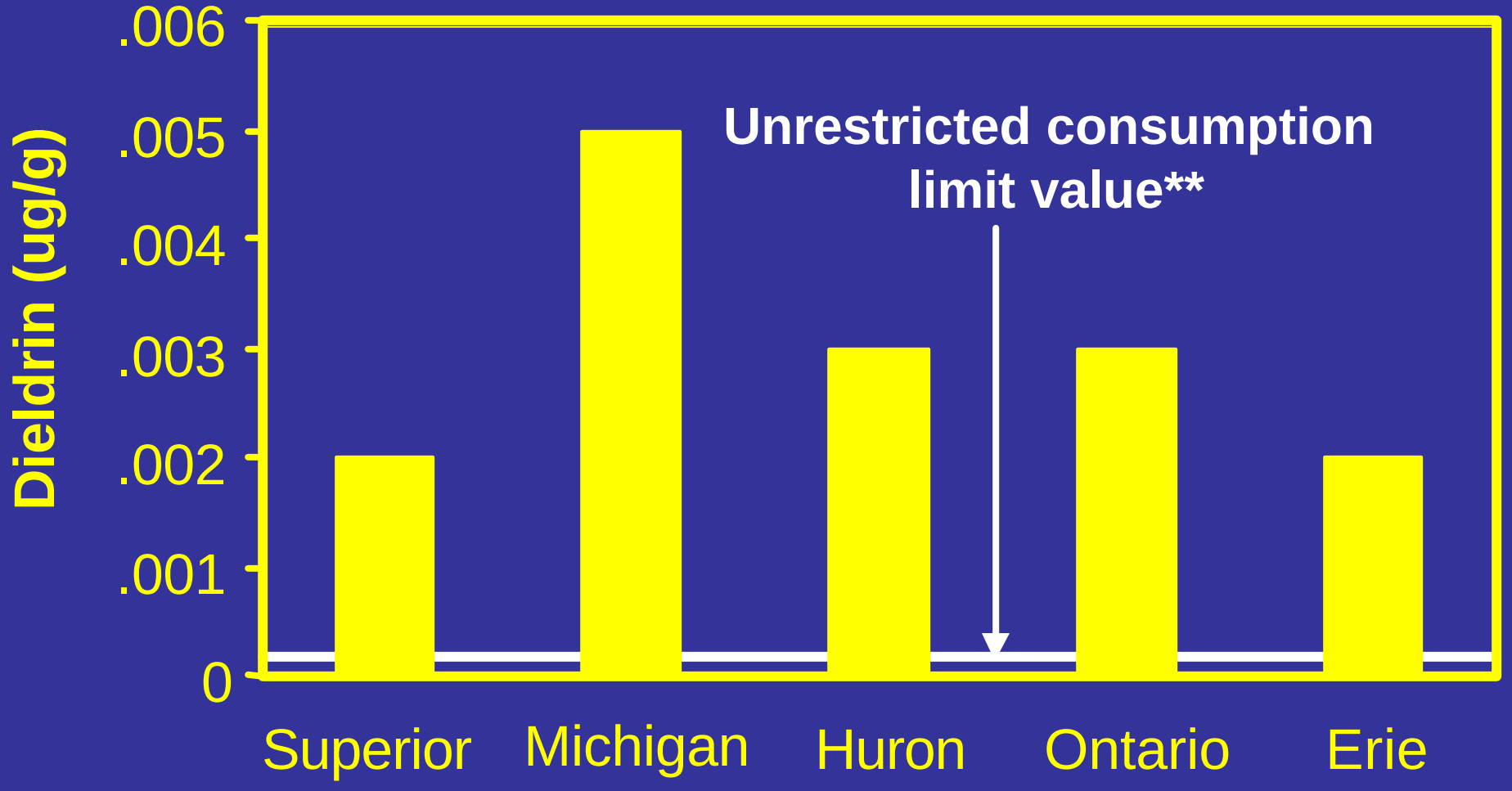
* Noncancer Health Endpoint

Dieldrin in Great Lakes Top Predator Fish*



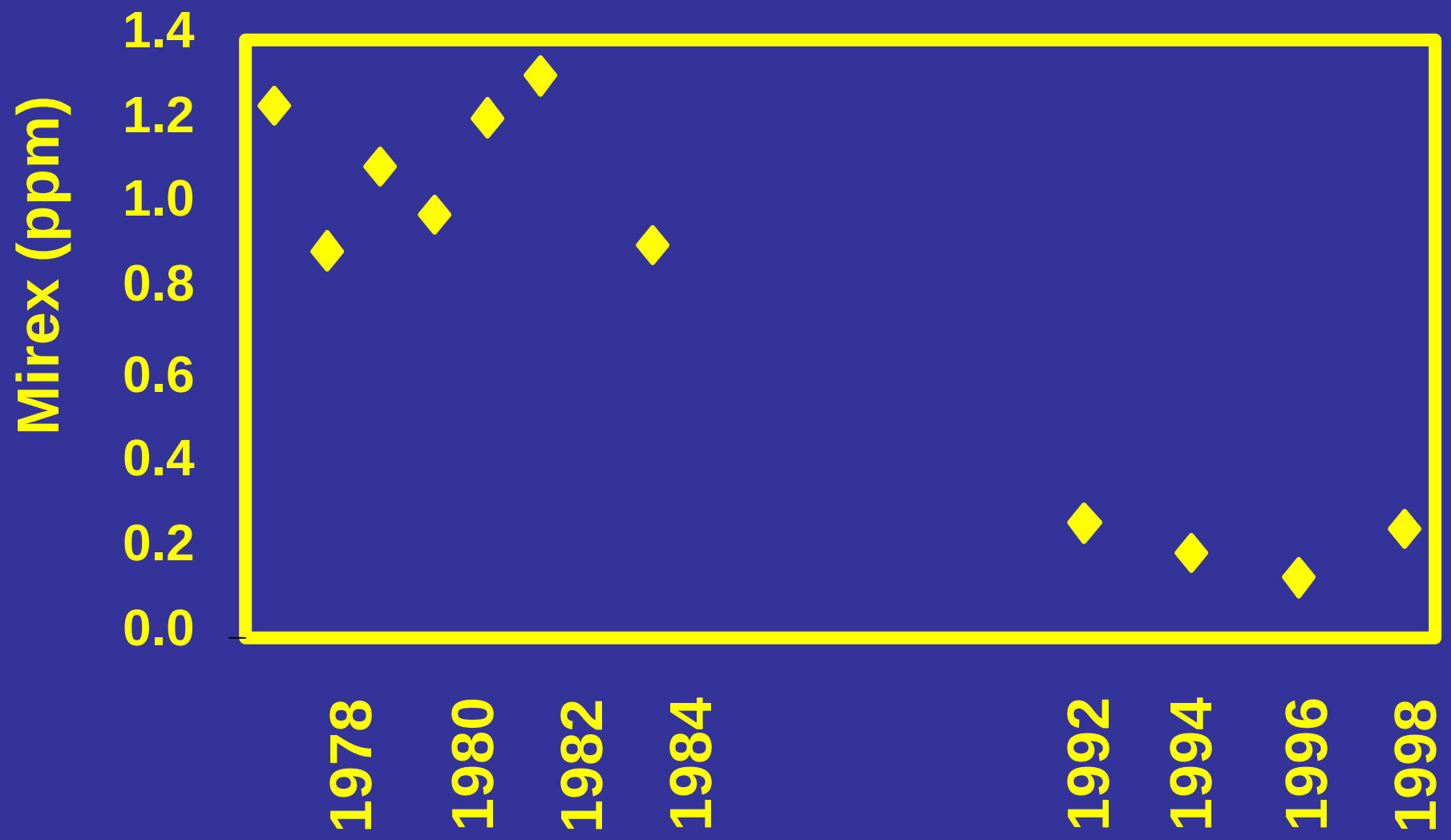
*Lake Trout (Walleye in L. Erie)

Dieldrin in Great Lakes Coho Salmon Skin-On Fillets in 1998

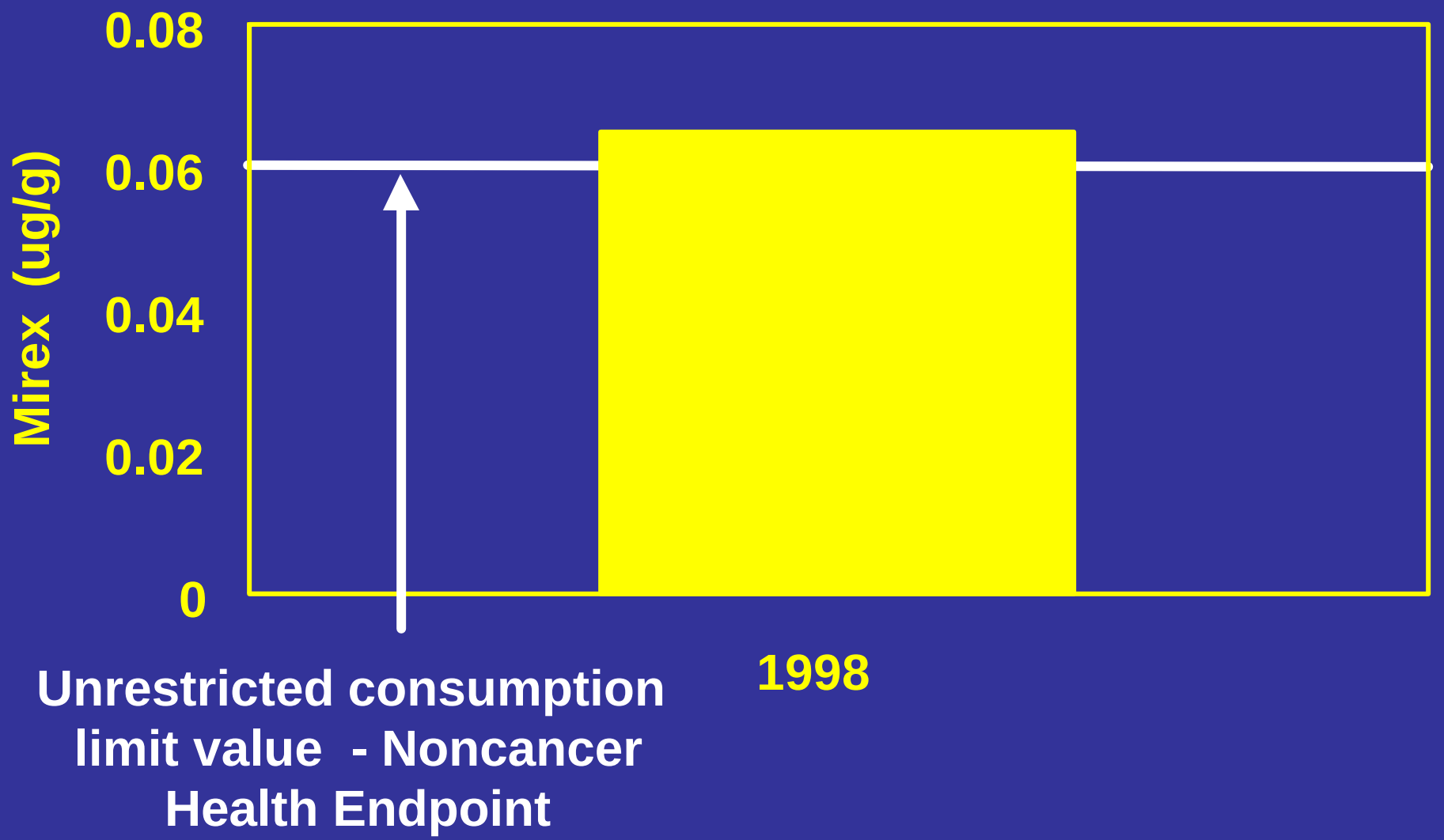


**Cancer Health Endpoint

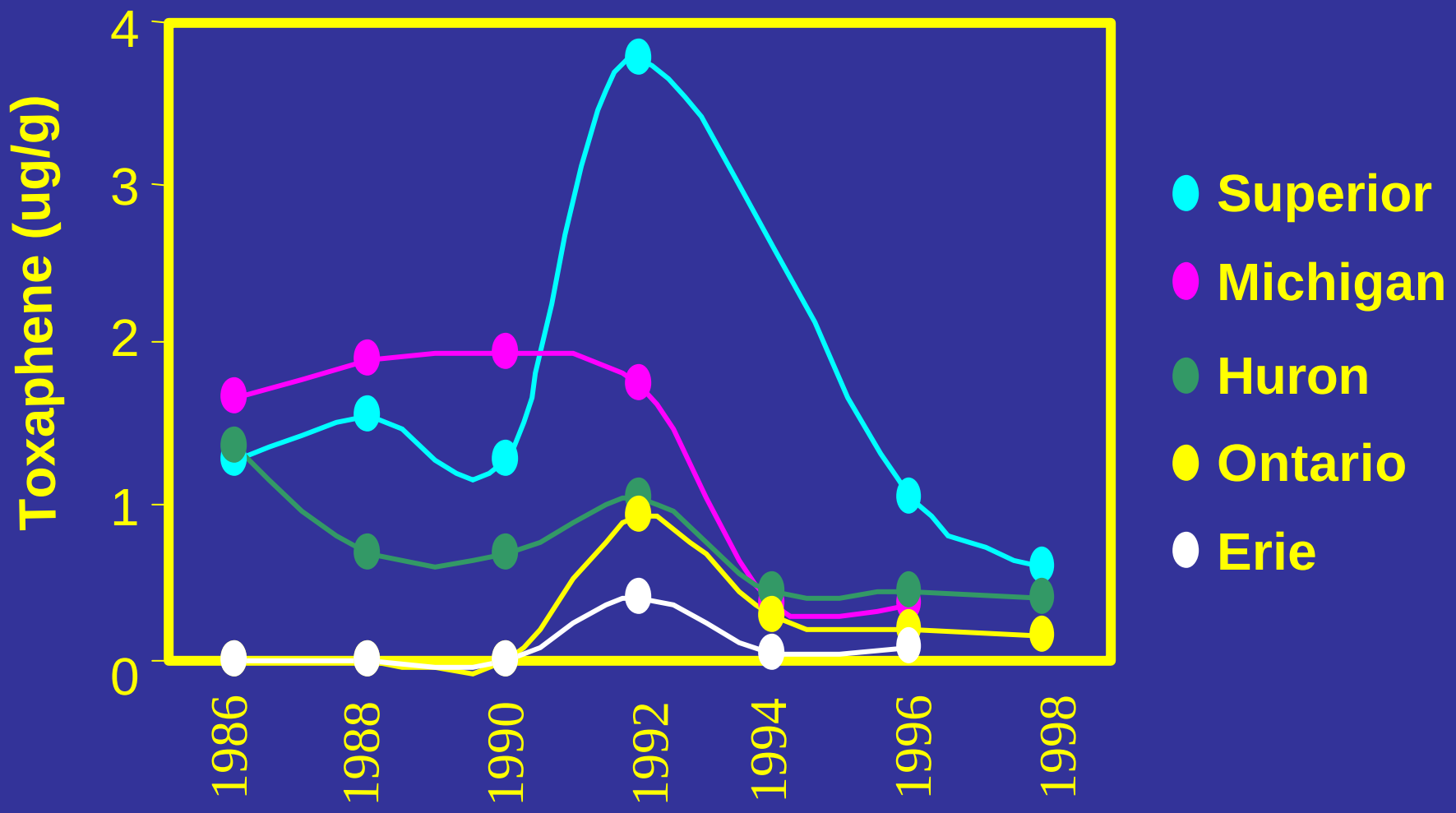
Mirex in Lake Ontario Whole Lake Trout



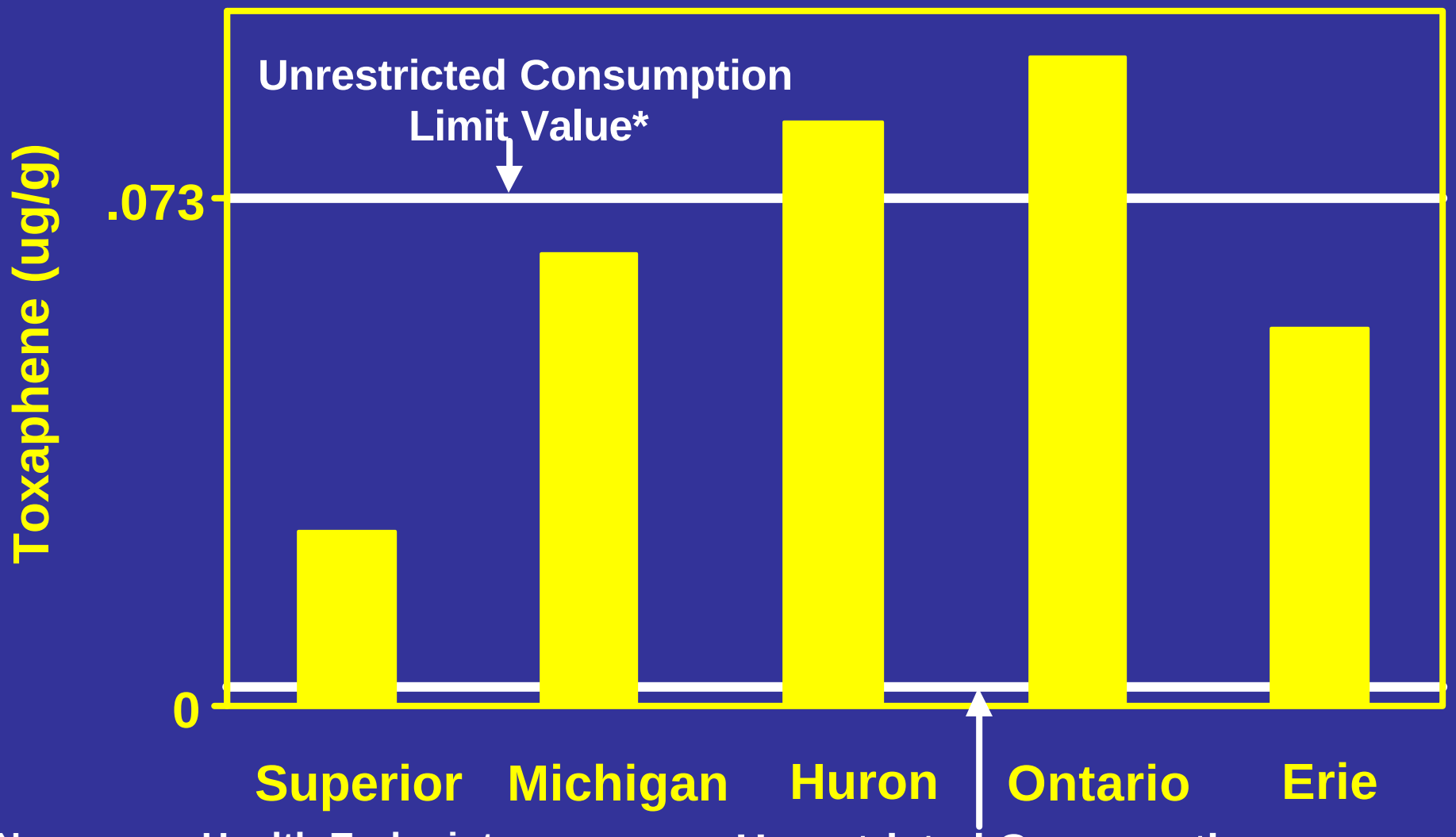
Mirex in Lake Ontario Coho Salmon Skin-on Fillets



Toxaphene in Great Lakes Top Predator Fish*



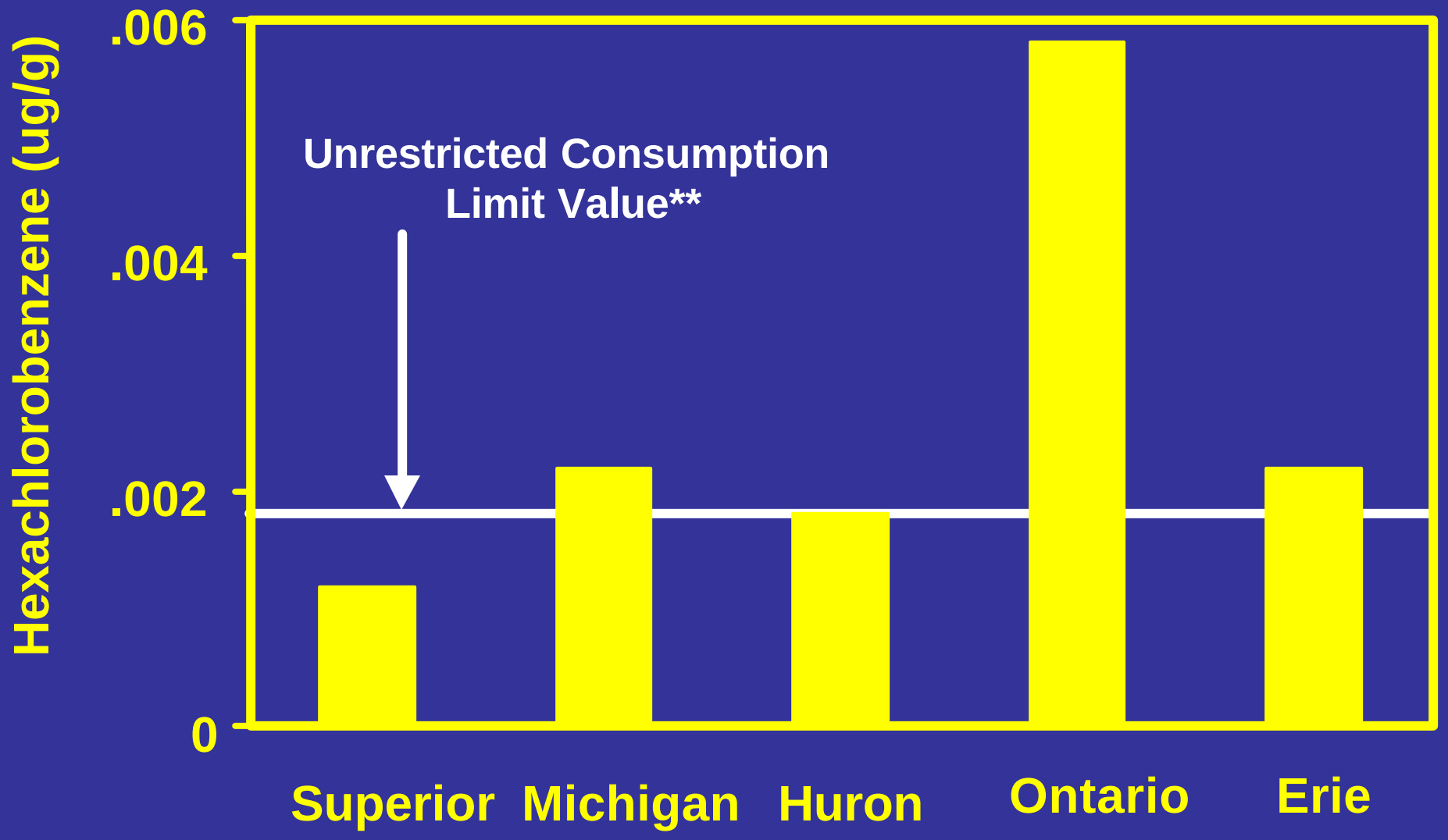
Toxaphene in Great Lakes Coho Salmon Skin-On Fillets in 1998

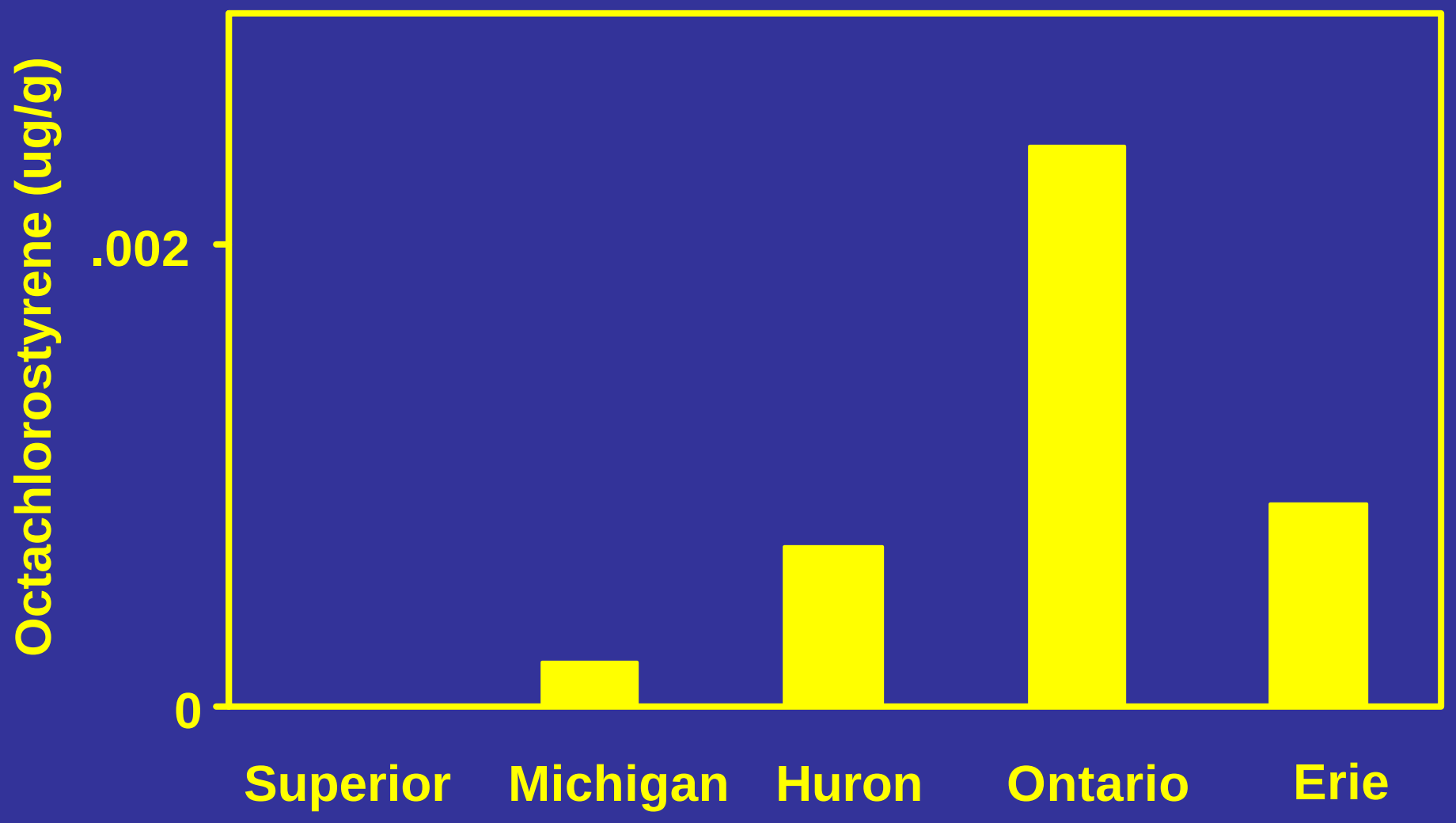


*Noncancer Health Endpoint

**Cancer Health Endpoint

Hexachlorobenzene in Great Lakes Coho Salmon Skin-On Fillets in 1998



**Cancer Health Endpoint

Octachlorostyrene in Great Lakes Coho Salmon Skin-On Fillets in 1998