



Assessing Estuaries with the National Coastal Condition Assessment

NWQMC 2019

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Agenda

- NARS Overview
- NCCA Background
- Review of Previous Results
 - Estuaries
 - Great Lakes
- NCCA 2015 Progress
- What's Next?



National Aquatic Resource Surveys

- A Partnership between EPA, States and Tribes
 - Assess nation's waters using indicators of condition and stress
 - Build/enhance state and tribal monitoring capacity
- The NARS Approach: National Consistency
 - Randomized design to report at National and Regional scales
 - Standard protocols
 - National QA and data management
 - Allows opportunities for population intensifications



National Coastal Condition Assessment

- Stratified random survey design
 - 725 estuarine sites
 - 225 Great Lakes sites
- Consistent ecological indicators across regions & periods
 - Biological Indicator
 - Eutrophication Index
 - Sediment Quality
 - Ecological Fish Tissue Contamination Index
- Introduced in 2015: Human health-related indicators
 - Microcystins
 - Enterococci
 - Mercury in Fish Filets

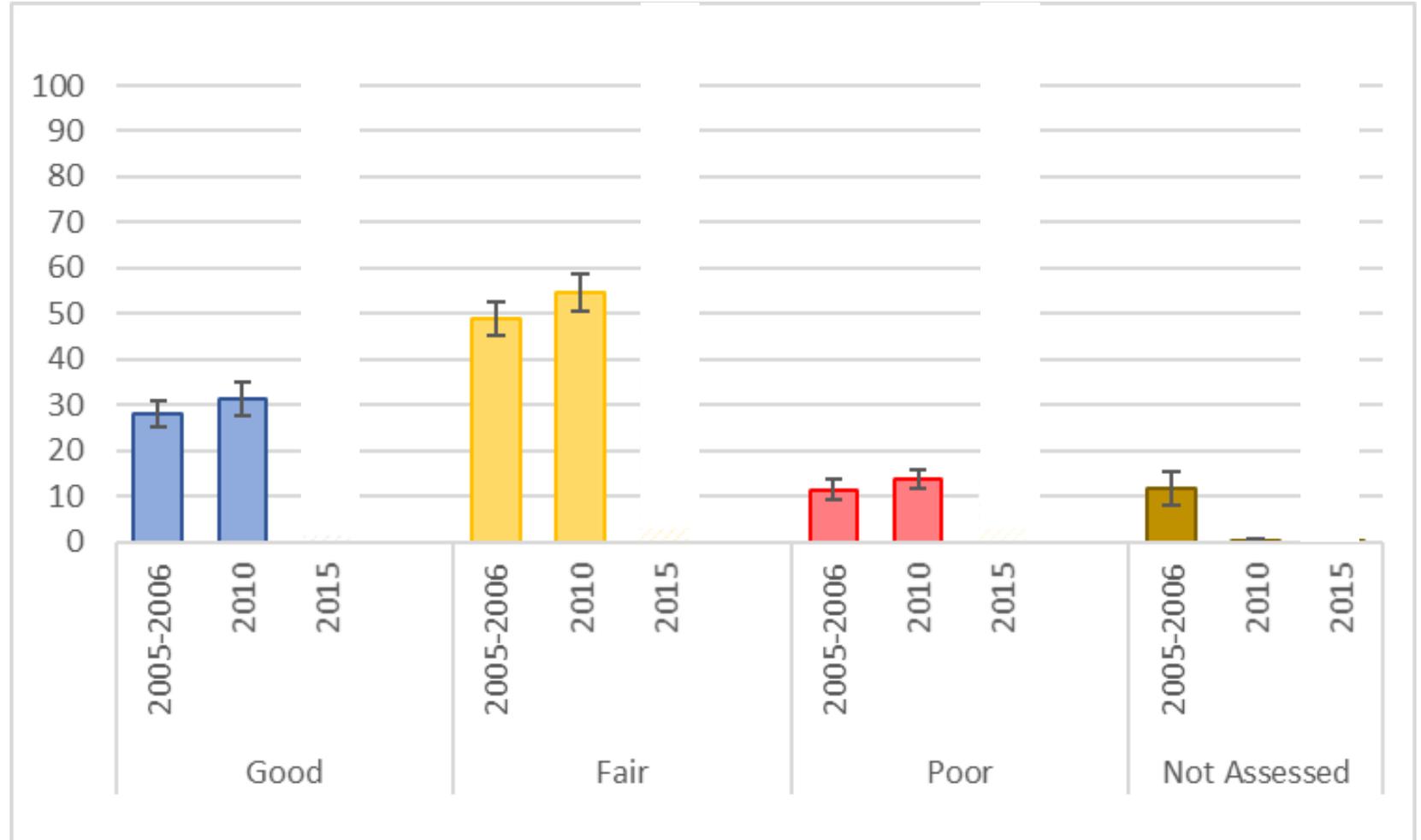
Estuaries

05-06 to 2010
Change
Results for
Biological
Condition



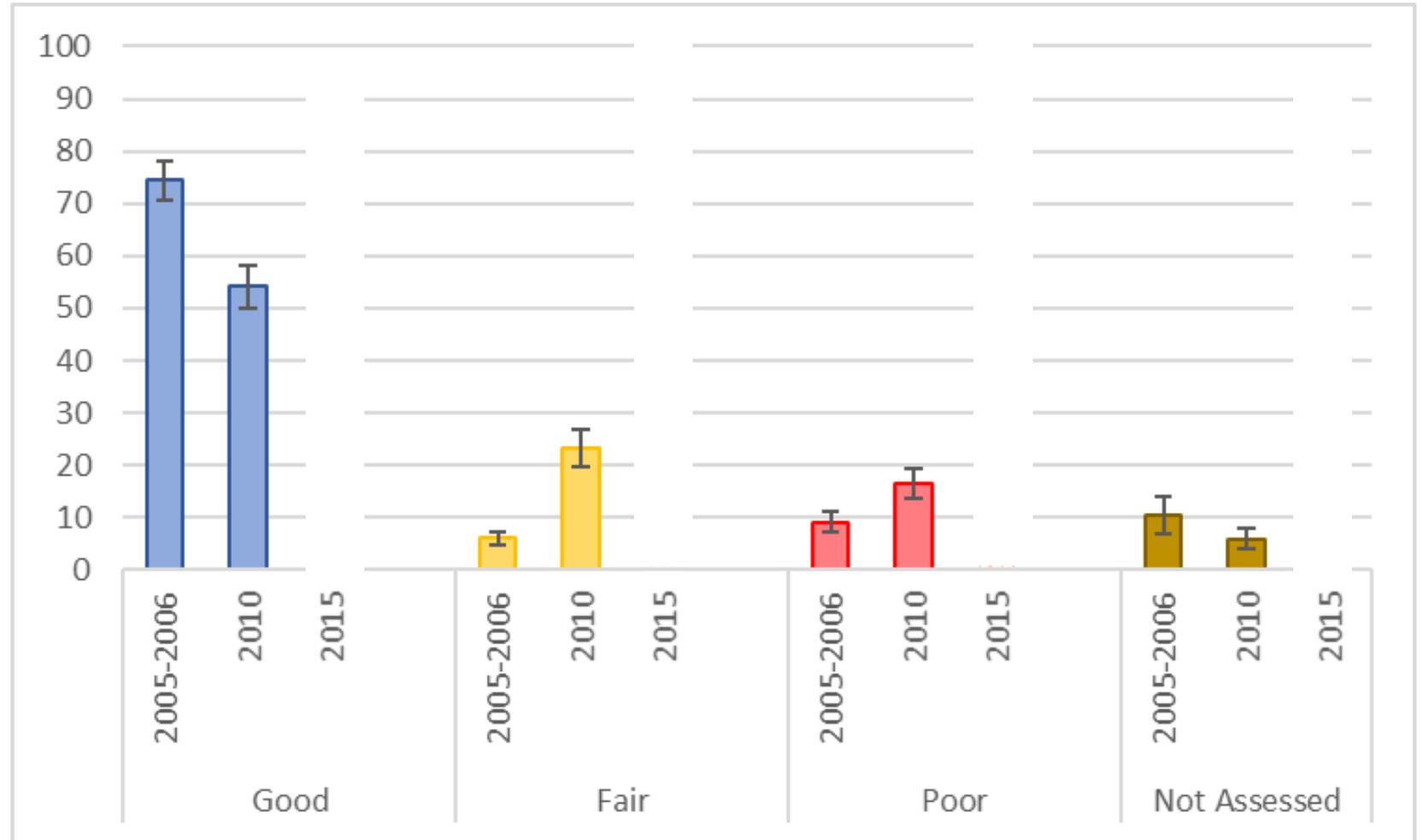
Estuaries

05-06 to 2010
Change
Results for
Eutrophication
Condition



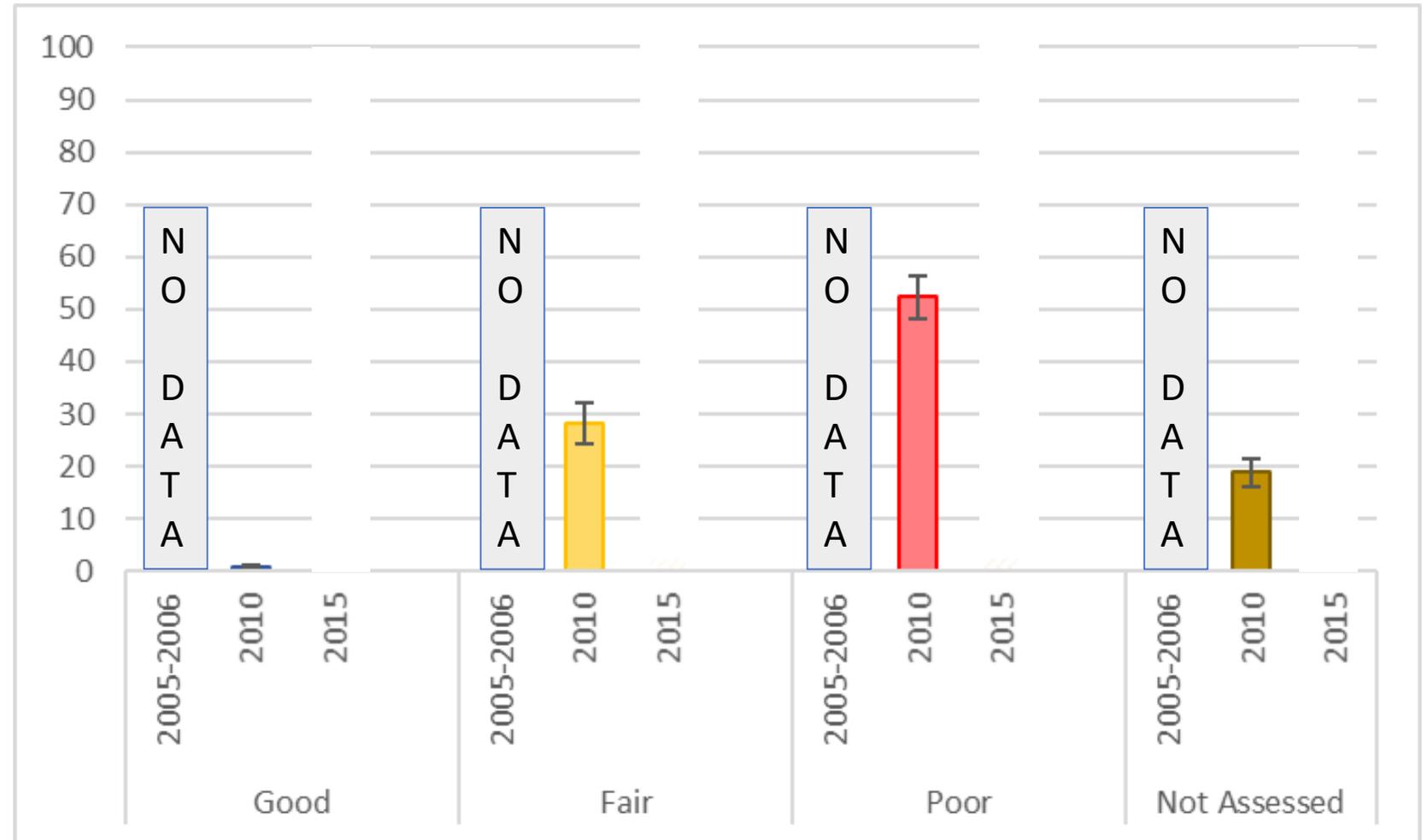
Estuaries

05-06 to 2010
Change
Results for
Sediment
Condition



Estuaries

2010 Results for Whole Fish Contaminant Condition



This indicator assesses the potential for adverse effects to wildlife resulting from eating whole fish. It does not assess risk to people.

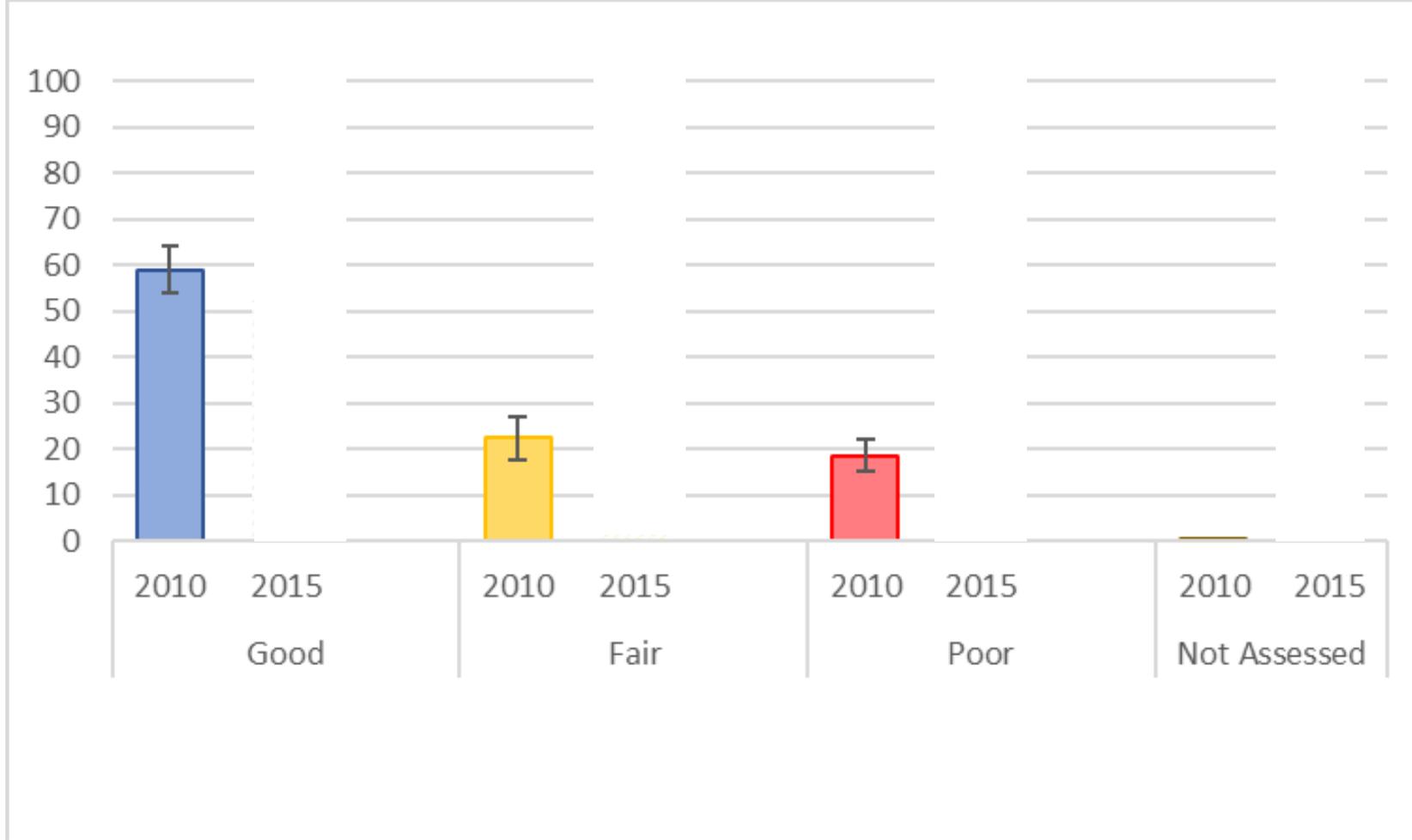
Great Lakes

2010 Results
for Biological
Condition

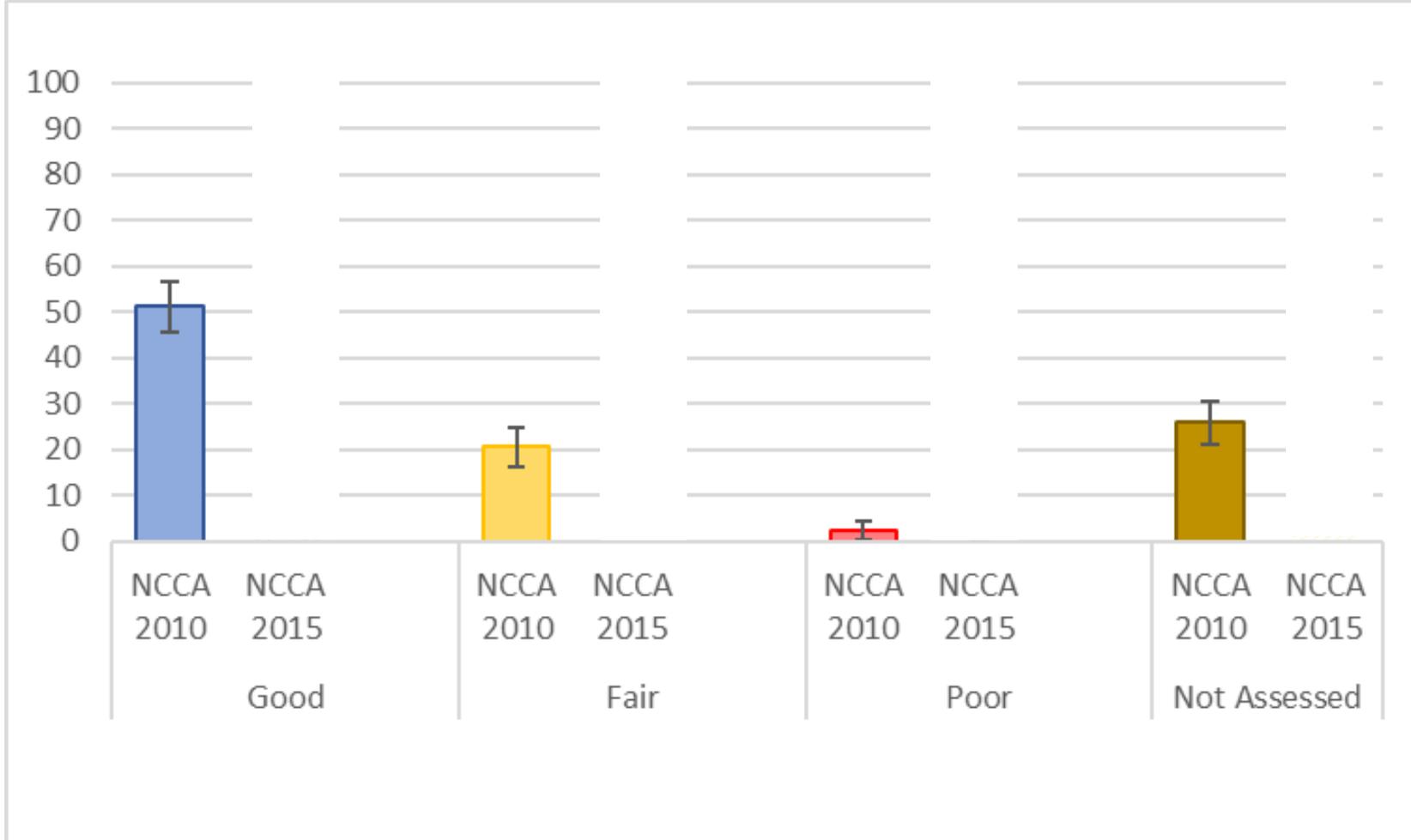


Great Lakes

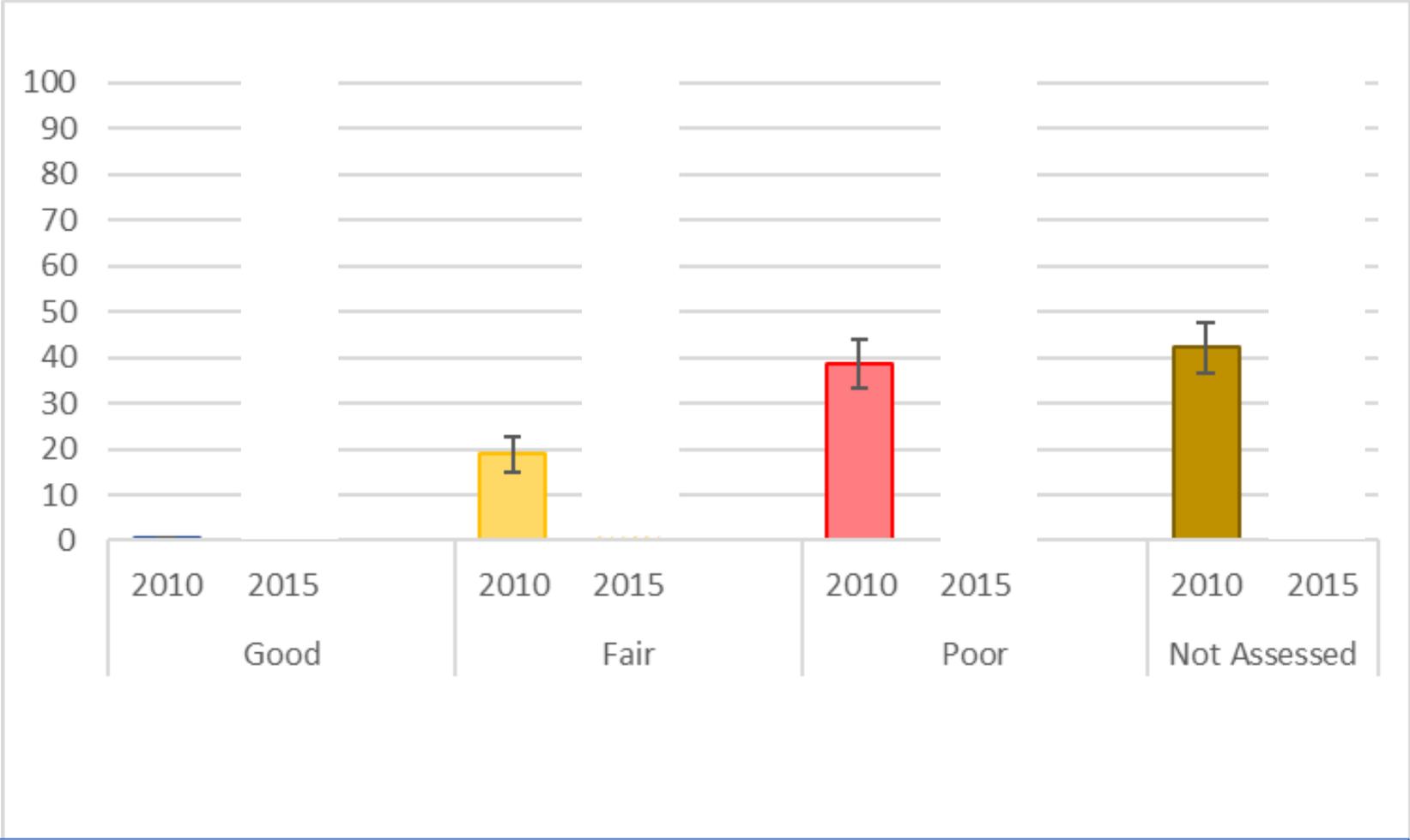
2010
Results
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Condition



2010
Results for
Sediment
Condition



2010
Results for
Whole Fish
Contaminants
Condition



This indicator assesses the potential for adverse effects to wildlife resulting from eating whole fish. It does not assess risk to people.



NCCA Reporting Redesign

- GOAL: More streamlined, simplified report format.
- Shorter and more graphic/image driven
- Estuarine and Great Lakes results reported separately
- Move some results to dashboard only
- Links to indicator definitions on NARS website rather than in-depth descriptions in the report.

Estuarine Biological Condition

The NCCA assesses biological condition using benthic macroinvertebrate indices. Benthic macroinvertebrates are ecologically important animals such as worms, mollusks and crustaceans that live on the floor of estuaries and the Great Lakes. They play an important role cycling carbon and nutrients in the water body, and are food for a wide variety of fish, mammals and birds. Benthic macroinvertebrates are ideal indicators of biological condition because they are easy to collect, relatively sedentary and very diverse, and the degree to which they are sensitive or tolerant to pollution and other disturbances differs from species to species.



The tubifex worms shown are examples of benthic organisms whose presence may indicate degraded biological condition at a sampling site.

What Is the Current Condition?

Nationally, over 70% of the nation's estuarine waters were in good biological condition, with just 7% rated poor. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Lorem ipsum dolor sit amet.



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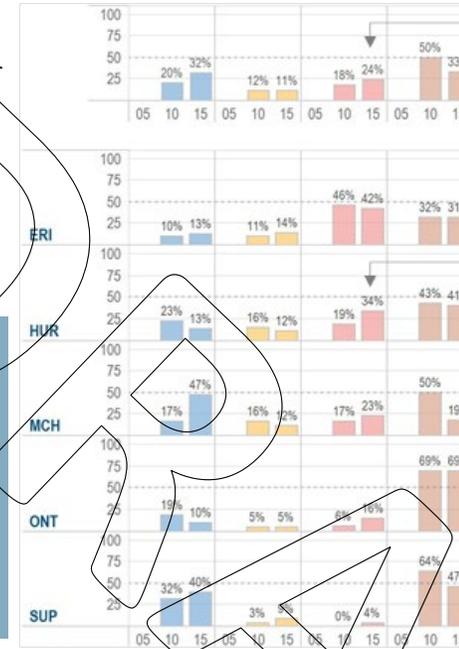
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Is the Condition Changing?

Biological quality has improved steadily over time in the estuaries surveyed. The NCCA has also demonstrated greater success in collecting samples, bolstering the validity of these results.

For a closer look at results, including individual parameters and additional subpopulations, please visit the NCCA Data Dashboard: <https://coastalcondition.epa.gov/>



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How Does the NCCA Collect Benthic Macroinvertebrates?

The NCCA collects organisms that live in the sediment on the floor of the estuaries or Great Lakes in water that can be more than 30 meters (100 feet) deep. Crew members lower a stainless-steel collection apparatus (or ponar) to the bottom estuarine floor. When it contacts the bottom jaws snap closed, taking a "bite" of sediment. The ponar is retrieved using a winch system, and the sediment is emptied onto a sieve and rinsed away, leaving the organisms behind. They are preserved for identification in a laboratory.

At left, a crew member on a research vessel in the Chuckchi Sea on the coast of Alaska prepares to collect a benthic sample.



What's next?

- NCCA 2015
 - Partner review in Summer
 - Final report expected in Fall
- NCCA 2020
 - Planning has begun
 - Site draw is complete and distributed to Regions/States
 - Research indicators: OA, Microplastics in sediment, and nitrogen source tracking

A photograph of two dolphins swimming in the ocean. The dolphins are light-colored with dark stripes along their sides. They are moving from left to right, creating a wake in the water. In the upper left corner, there is a large, light blue thought bubble with a white outline. Inside the bubble, the word "Questions?" is written in black, sans-serif font. Three smaller, solid light blue circles of decreasing size are arranged in a line from the bottom of the thought bubble towards the dolphins, suggesting a thought process or a question being asked.

Questions?

<https://coastalcondition.epa.gov/>

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