

Report on the Environment

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Coastal Fish Tissue

Contaminants in fish not only affect the fish's own health and ability to reproduce, but also affect the many species that feed on them. Contaminants also may make fish unsuitable for human consumption (U.S. EPA, 2000).

The data for this indicator are from probabilistic surveys conducted as part of EPA's National Coastal Condition Assessment (NCCA) and presented in EPA's 2015 National Coastal Condition Assessment report (U.S. EPA, 2021). These statistically based surveys are designed to provide nationally comparable information about the condition of the nation's coastal waters. During the summer of 2015, EPA and its partners sampled 699 sites throughout the coastal waters of the contiguous United States. They used consistent sample collection guidelines, including regionally-calibrated target specimens for tissue analysis, standard size specimens, and a single analyzed species per sampled site. Comparable data were collected two times: 2010 and 2015. Data are sufficient to show differences in fish tissue condition over time for four regions: Northeast Coast, Southeast Coast, Gulf Coast, and West Coast.

Fish tissue was analyzed in a laboratory to measure concentrations of 13 widespread contaminants of concern. EPA used the results to evaluate whether contaminant concentrations in fish tissue pose a potential risk to predatory fish and fish-eating birds and mammals (the receptor groups of concern). Contaminant concentrations in whole body fish tissue were compared with ecological risk-based thresholds for multiple contaminants or contaminant groups for mammal, bird, and fish receptor groups. This means the indicator focuses on potential harm to wildlife, not people. To be conservatively protective, the lowest observed adverse effect level (LOAEL) for the most sensitive receptor within each group was selected to evaluate measured contaminant concentrations.

For this indicator, each site received an index score of "high" (indicating a high level of contamination) if at least one measured contaminant concentration exceeded the LOAEL for two or more receptor groups. A site was rated as having moderate contamination if at least one measured contaminant concentration exceeded the LOAEL for one receptor group. Sites where none of the measured contaminant concentrations exceeded the LOAEL for any receptor group were given a low contamination score.

What the Data Show

Nationwide, during the most recent survey in 2015, 15 percent of coastal area showed low levels of fish tissue contamination, 20 percent had moderate contamination, and 55 percent exhibited high contamination (U.S. EPA, 2021). Fish tissue contamination varied widely by region (Exhibit 1). The percentage of sites with high contamination in 2015 ranged from 24 percent in the West Coast to 74 percent along the Gulf Coast. None of the regions had more than 25 percent of sites with low contamination. The West Coast and Northeast Coast are missing data for 28 and 16 percent of sites, respectively, because crews were unable to collect target fish at some sampling sites (U.S. EPA, 2021). Contamination levels remained fairly similar between 2010 and 2015, except for increases in the high and moderate categories in the Northeast.

Limitations

- Comparable data have not been collected over the same timeframes in Alaska, Hawaii, or U.S. territories.
- This is a sensitive indicator used to assess potential harm to wildlife, not people. A high contamination

rating here does not equate to a human health risk.

- Samples are collected during the summer, and the indicator is only representative of this time period. It is unlikely, however, that contaminant levels vary substantially from season to season.

Data Sources

This indicator is based on an analysis published in EPA's 2015 National Coastal Condition Assessment Report (U.S. EPA, 2021). These data are available on EPA's website at

<https://www.epa.gov/national-aquatic-resource-surveys/data-national-aquatic-resource-surveys>.

References

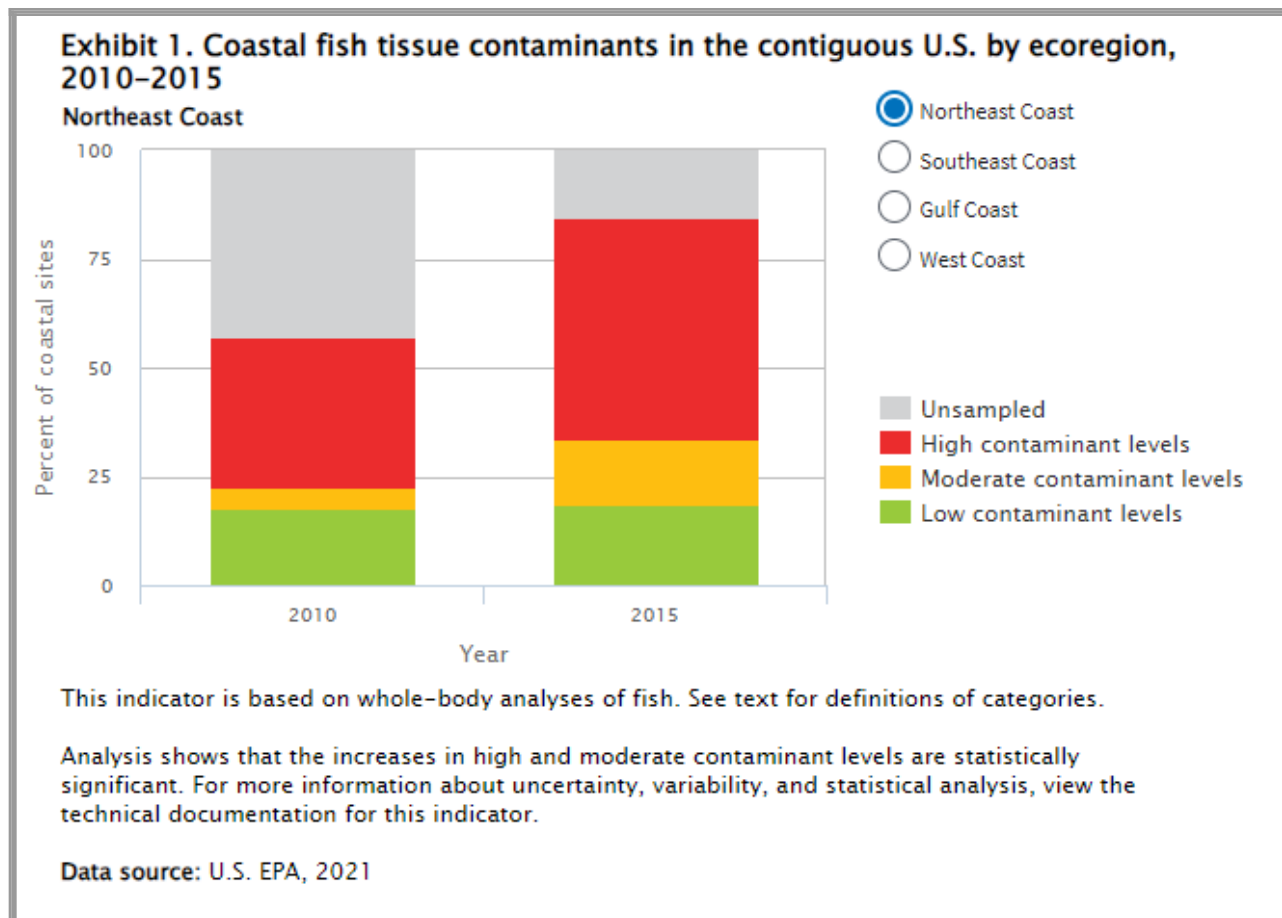
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U.S. EPA. 2000. Guidance for assessing chemical contaminant data for use in fish advisories.

EPA/823/B-00/008. November 2000.

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