USGS
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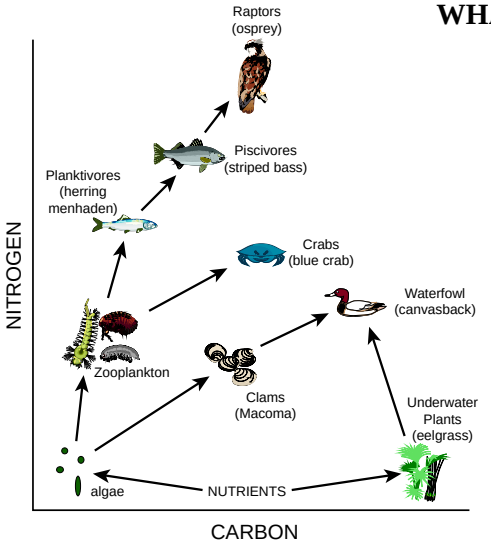
Patuxent Wildlife Research Center
UNDERSTANDING FOOD WEBS IN THE CHESAPEAKE BAY

Significant time and money are directed to conservation and restoration of aquatic resources of the Chesapeake Bay. Managers need a better understanding of the Bay's food web in order to successfully limit nutrient enrichment, habitat loss, and exotic species while increasing native stocks of underwater plants, shellfish, finfish, and waterbirds.

Habitats supporting fish and wildlife are declining in quality and quantity throughout the Chesapeake Bay region. Nutrient and suspended sediment inputs to coastal waters are the primary causes of poor water quality, water clarity and continued declines of underwater plants, a critical habitat for fish, crabs, and waterfowl. Bay managers are concerned about the implications of underwater plant losses on declining stocks of blue crabs, juvenile fish and many other valuable living resources.

WHY IS USGS CHESAPEAKE BAY RESEARCH IMPORTANT TO THE NATION?

- The Chesapeake Bay is the largest estuary in the United States
- The Bay supports commercial harvests of shellfish and finfish that are 3rd largest in the nation
- The Bay provides billions of dollars in annual revenue from recreational and commercial fishing, recreation associated with other wildlife, and shipping
- Partners in the Chesapeake Bay consortium have invested more than one billion dollars in Bay restoration and rely increasingly on scientific information to restore and understand living resources of the Bay and its watershed
- Science must provide information to test Bay models used for management decisions and assess the effectiveness of management actions



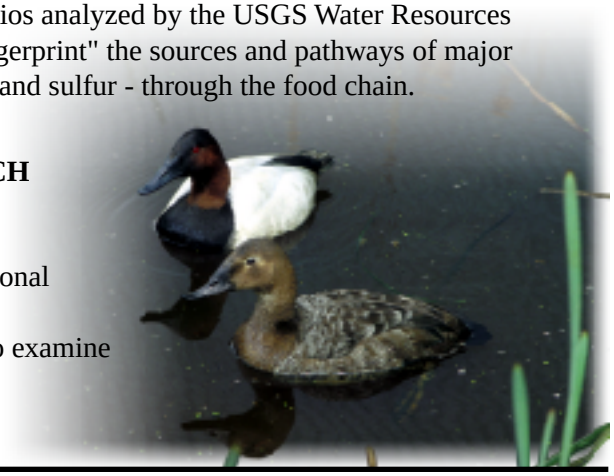
WHAT IS THE USGS DOING TO UNDERSTAND FOOD WEBS IN THE BAY?

USGS is a member of and seeks to meet the technical needs of the Chesapeake Bay Program, a consortium of state, federal, municipal, and private stakeholders of the Bay watershed.

In FY 1998, Patuxent Wildlife Research Center joined the other USGS Divisions in the Chesapeake Bay Place-Based Studies Program, which is working to document water quality and living resource responses to changes in nutrient inputs and natural variability. The Center's specific role is to investigate food web linkages in the underwater plant habitats of the Bay and contribute scientific knowledge of food web structure supporting critical living resources. Stable isotope ratios analyzed by the USGS Water Resources Division will be used to "fingerprint" the sources and pathways of major elements - carbon, nitrogen, and sulfur - through the food chain.

WHAT HAS USGS PATUXENT DONE TO MOVE BAY RESEARCH FORWARD?

- Established partnerships with other federal and state agencies and regional universities
- Developed project plans in coordination with other USGS Divisions to examine food web linkages and structure
- Conducted preliminary surveys of SAV beds and potential study sites



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