

Gulf Pulse

June 2015

ESIP news

What is ESIP?

The EcoSystem Indicator Partnership (ESIP) is a committee of the Gulf of Maine Council on the Marine Environment (GOMC). We were created out of an identified need to better understand and convey information on status and trends in the Gulf of Maine ecosystem and the impacts of human use. We use biological, chemical, economic, and landscape indicators to assess the health of the Gulf of Maine. We draw on the input of over 150 experts and practitioners. More information including a video highlighting many of ESIP's activities is available at www.gulfofmaine.org/esip.



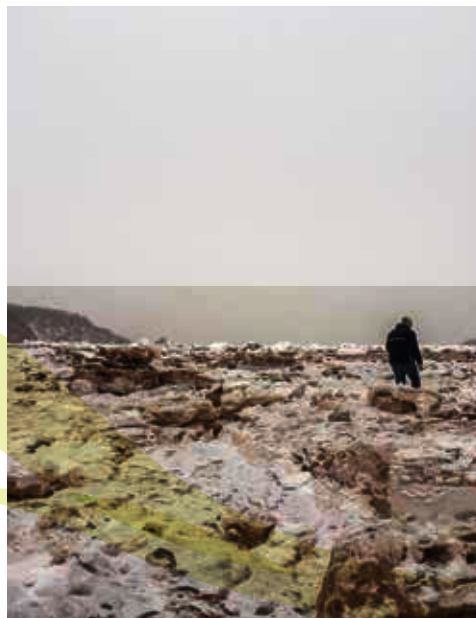
Addressing Data Gaps

ESIP works with other organizations to access information on over 20 indicators for the Gulf of Maine and Bay of Fundy. Analysis of this information shows if and where change is occurring.

For most indicators, we are able to knit together sets of data from Canada and the US through strong partnership efforts. When data sets are incomplete, we report the data gap.

In June 2012, we released the Eutrophication fact sheet, which stated that for several indicators of water quality, including water clarity and chlorophyll *a*, there were no data for the Canadian portion of the Gulf of Maine. Similarly, in June 2014, we released the Contaminants fact sheet and had to add the same disclaimer about information on sediment chemistry in Canada.

In partnership with Environment Canada's Gulf of Maine Initiative and in collaboration with partners including Eastern Charlotte Waterways Inc. and the Clean Annapolis River Project, a project has been undertaken to collect samples for water quality and sediment contaminants at various locations in the Bay of Fundy. To date, 60 sites have been sampled for water quality, and sediments have been collected from 17 sites for analysis of contaminants.



Status of Coastal Development in the Gulf of Maine

In the spring of 2015, we released our Coastal Development in the Gulf of Maine fact sheet, which summarized data for the Gulf of Maine with respect to three key indicators: human population size, percent of impervious surface in the watersheds, and point sources of contamination.

The fact sheet introduced the concept of these indicators as a means for tracking status and change. It also demonstrated the value of these indicators as a tool to better understand the wide range of effects being documented in the Gulf of Maine region and the Bay of Fundy. The fact sheet brought together data from numerous sources from both sides of the border. Our Coastal Development fact sheet is available at www.gulfofmaine.org/esip or directly at www.gulfofmaine.org/2/esip-fact-sheets/.

EcoSystem Indicator Partnership

Information on change in the Gulf of Maine

Coastal Development in the Gulf of Maine

The Gulf of Maine's beauty and rich natural resources have drawn people to the region for centuries. Indeed, the Gulf of Maine and Bay of Fundy continue to play a vital role for sectors such as fishing, harvesting of natural resources, shipbuilding, marine trade, energy and mining resources, construction, and tourism and recreation. In 2011, over 9 million people lived in the states and provinces that comprise the Gulf of Maine watershed, with over two-thirds located along the coastline. The current trend of migration from rural to urban centers, which are typically on the coast, is expected to continue and be accentuated by demand for new development.

Moreover, many of the region's coastal communities also experience a significant influx of seasonal visitors each year. This concentration of development at the coast can lead to conflicting uses of space and resources and affect the health of the ecosystem. Unless planned and managed in a sustainable way, coastal development can have negative impacts including increased runoff and flooding, decreased water quality, and a decline in suitable wildlife through fragmentation of habitats. In addition, coastal communities are faced with need to adapt development patterns to climate change along patterns in precipitation, flooding, and sea level.

Understanding the current status and trends in coastal development within the coastal counties of the Gulf of Maine is important for decision makers. With this understanding, coastal development can be planned and managed in such a way as to minimize negative impacts and to maintain the beauty and natural resources that support the people and economy of the Gulf of Maine.



The Gulf of Maine (GOM) is a physical body of water that stretches from Cape Cod, Massachusetts, to Narragansett, Nova Scotia. However, our work encompasses the GOM watershed, which includes the GOM and the Bay of Fundy, water bodies, the coast and watersheds that drain into them along with the associated coastal counties.

Why use indicators?

Indicators help monitor conditions in the Gulf of Maine and are one of the best tools for understanding and characterizing ecosystem changes. The resulting data can be used to assess the health of the system. They can be combined with other data to assess the health of the system. The EcoSystem Indicator Partnership (ESIP) has chosen these indicators to assess coastal development in the Gulf of Maine.

1. Population
2. Impervious surface
3. Point sources



Linking Upstream to Downstream

ESIP and the Environmental Protection Agency's Office of Research and Development have undertaken a new watershed project that aims to link upstream activities with downstream effects and conditions. The area of study ranges from Long Island Sound in the US at the southern limit, to the Annapolis River in Nova Scotia, Canada, as the northern limit. The project combines data on the embayments previously analyzed by our eutrophication subcommittee (www.gulfofmaine.org/2/esip-fact-sheets/) with datasets for the more southern areas along the US East Coast. As part of the project, the databases and the Indicator Reporting Tool on our website will be updated with more recent information from our monitoring partners. The project's first phase is nearly complete, with the bulk of the effort focused on bringing together appropriate datasets.



ESIP 2.0

With nearly all of the initial ESIP 1.0 indicators assembled, analyzed, and presented through our fact sheets and web tools, we are now turning to the next phase, ESIP 2.0, which will enhance interpretation of the information we provide through the use of more holistic indicators. These new indicators will provide information on ecosystem services and emerging issues. The framework we will utilize includes three types of ecosystem services:

- cultural
- regulating
- provisioning

ESIP will engage our community of over 150 scientists, managers, academics, and interested individuals to determine the best ecosystem service indicators for the Gulf of Maine and Bay of Fundy.

ESIP is always looking for new partners and participants. To become involved, please contact the program manager at ctilburg@securespeed.us.

ICUC App and Communications

ESIP continues to deliver information on priority indicators and activities in the Gulf of Maine through several products tailored to different specific user groups. Brief and timely news stories are available in the ESIP journal entries. More detailed information on specific indicators can be found in our fact sheets and by using our Indicator Reporting Tool.

Now, we are in the process of producing a smart phone app to bring this information to the palm of your hand. The ICUC app will allow you to obtain information from us about local monitoring efforts. It will also allow you to upload images of environmental changes, such as beach erosion or the presence of invasive species, that will help us create a photographic library.

There are currently over 14,000 monitoring locations accessible in our Monitoring Map. By linking users with this information, individuals in the region will be able to interact on a more personal level as they submit what they are seeing to the library. Users interested in participating in efforts in the region will easily find information about who is watching over the Gulf of Maine and how they can help.

