Social Science Work Group

Meeting #5 – May 2, 2022

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Agenda

1:00 – 1:05	Welcome and share agenda
1:05 – 1:20	Recap past meetings and looking forward
1:20 – 1:35	Introduce 3 initial categories of social indicators and potential indicator options
1:35 – 1:45	Discussion about recap and indicator categories
1:45 – 1:50	BREAK
1:50 – 2:50	Discussion – digging into the indicators and data **Choose 3 indicators to pursue in 2022-2023**
2:50 – 3:00	Action items and next steps

Google doc for capturing key ideas to carry forward

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Summary of past meetings

Early 2021:

1. Set goals, outputs, outcomes of 2021 Social Science Work Group
2. Discussion Series – concept and framework, themes

July 2021: Tracking theme – define metrics for priority social data

November 2021: Introduced social science indicators with small group

Summary of past meetings

Social Science Work Group Goal

Advance the integration of current social science into environmental decision-making in the Narragansett Bay region.

Outcome

More environmental decisions in the Narragansett Bay region are meaningfully informed by social science data within the next 10 years.

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Summary of past meetings

Discussion Series concept

- Learn more about one another's work (lightening talks) to inform discussions
- Explore multiple issues, areas of expertise
- Drum up project ideas, collaborations, applied research questions (low commitment)
- Think about concrete outputs/outcomes that might be possible in 10 years
- Review what we've discussed/learned through this process

Discussion Series themes

- Advance the role of social science in the region
- Increase exchange/collaboration between social science researchers
- Strengthen integration from watershed to coastal to offshore
- Build exchange/collaboration between social science researchers and local groups
- Develop social science funding mechanisms
- Tracking (indicators and metrics)

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This is what “done” looks like

- **Define metrics** for priority social data for NBEP and others to use that can inform the status of the natural resource and future decisions under adaptive management (create one metric for each data type)
- Define **proven practical protocols** for collecting, integrating with natural sciences, and using social science data to inform environmental decision-making (select at least one method for each data type).
- **Other options**
  - NBEP might ask work group members to review grant proposals (e.g., have one social scientist on each review panel, even if the research is environmental science-focused)
  - NBEP posts info about ongoing/upcoming social science research in the Narragansett Bay region on its website to increase visibility
  - Creating networking opportunities between social and environmental scientists to increase engagement
  - Hold yearly or bi-yearly meetings to debrief on social science activities

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Tracking theme

Define metrics for priority social data for NBEP and others to use that can inform the status of the natural resource and future decisions under adaptive management (create one metric for each data type)

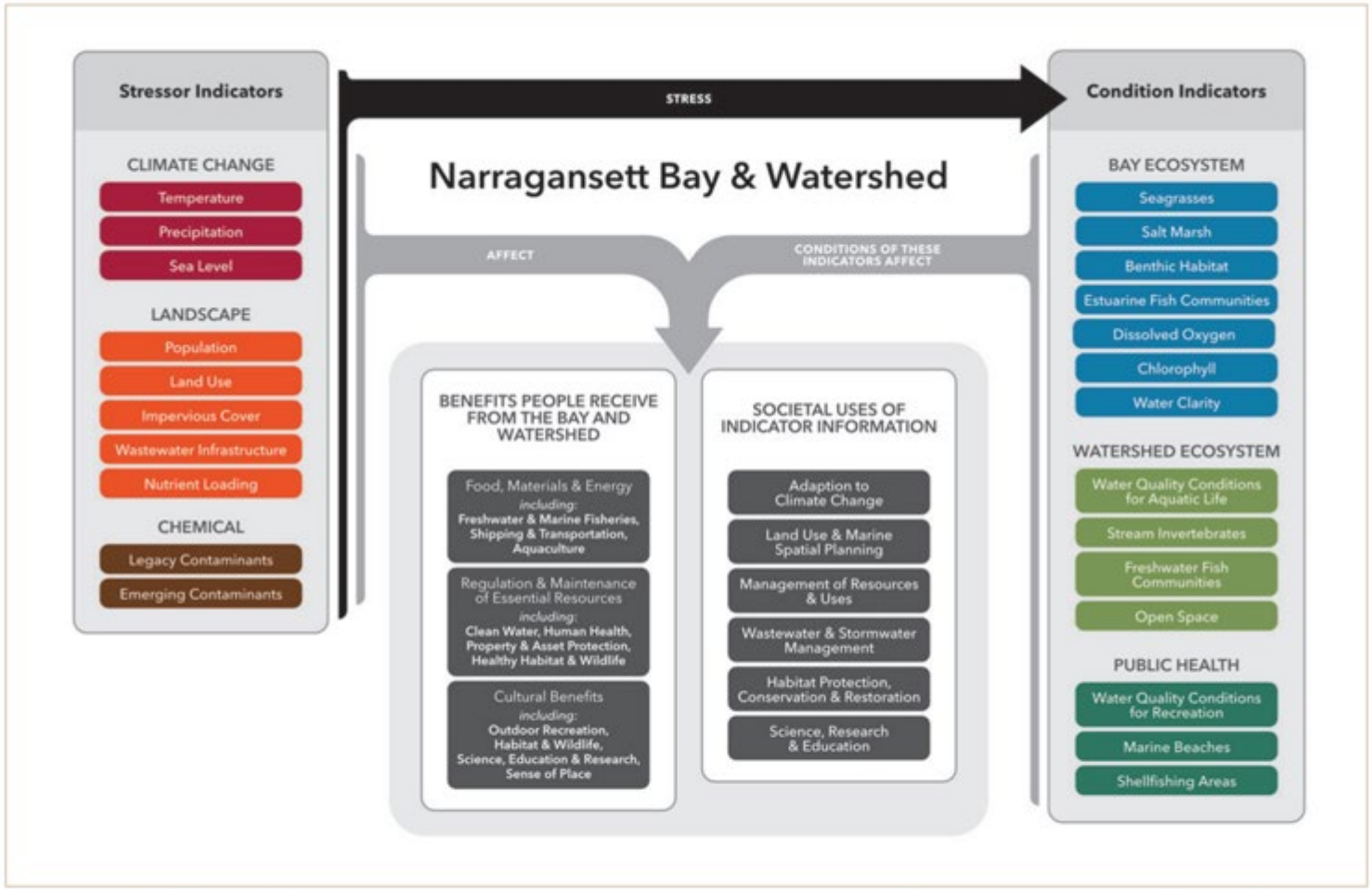


Figure 2. The 24 indicators described in this report are categorized as Stressor Indicators (left) or Condition Indicators (right). All of the indicators provide information about benefits that people receive from the Bay and its Watershed (center left), and the indicator information can be used in decision-making (center right).

Tracking theme

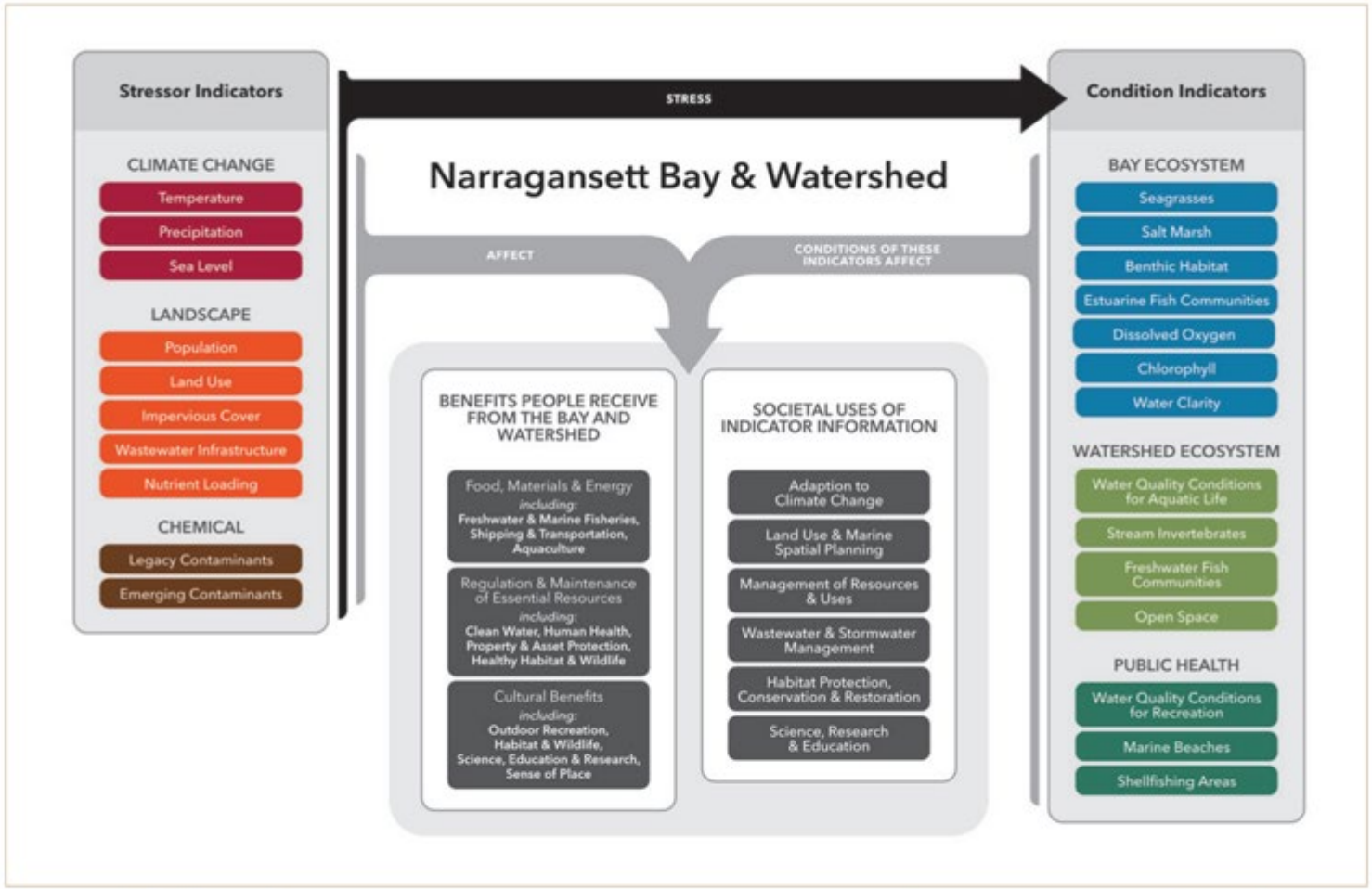
Stressor indicators

Condition indicators

Reflect the status/condition of the environment/resource

Social/economic indicators

Reflect whether and how the resource is being used by people



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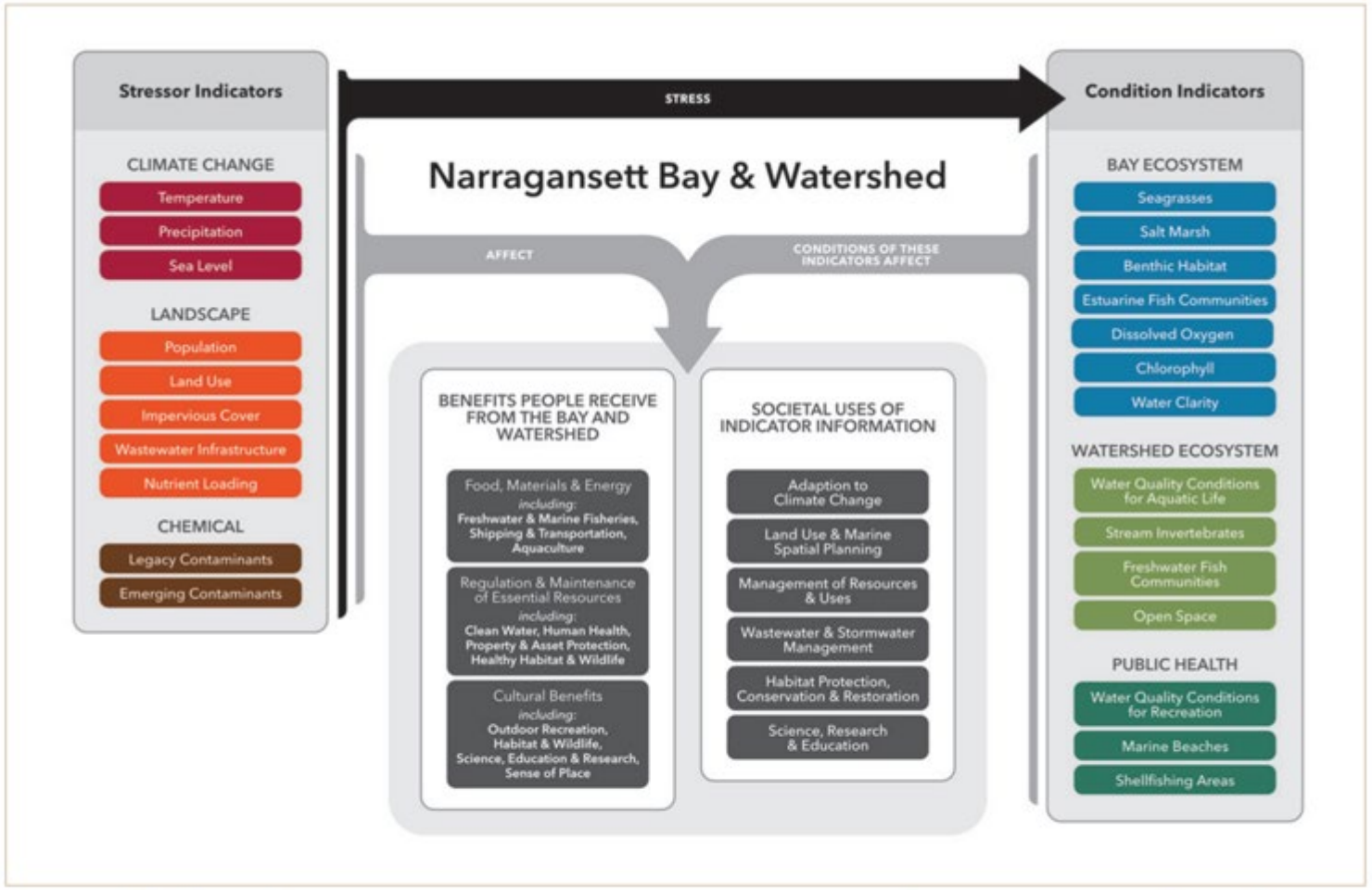
Looking forward…

Choosing ~2 Indicators to pursue for 2024

2022-2023, help NBEP identify:

- Sources of data
- Data synthesis options
- Reporting/communication options

2022-2023, NBEP and SocSci Working Group draft indicators and present for larger discussion



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Comments?

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Social Science Indicator Categories

Public Access

- Identified as important by Vision 2032 Work Groups
- Could be defined several ways using a variety of datasets

Public Health

Managing climate change impacts to human and natural systems is one of the goals outlined in the 2012 CCMP

Economy

Several options are relevant to the focal themes of this WG, such as ensuring just and equitable prioritization and allocation of resources

Potential Indicators

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Social Science Indicator Categories

Public Access

- Number of access points
- Distance to parks and public spaces
- Transportation to access points

Public Health

- Heat islands
- Number of days above 90 degrees
- Number of municipalities participating in resiliency programs
- Heat-related hospital visits

Economy

- Cost of beach closures
- Commercial fish landings
- Ratio of seasonal workers salary to cost of living/affordability

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Goal: Choose 3 Indicators to pursue for 2024 Status and Trends Report

Thoughts?

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Number of Access Points

- Reflects the availability of public open spaces (e.g., parks, beaches) to residents and visitors
- RI CRMC has a goal to designate at least one public right-of-way for each mile of shoreline
- Can be defined as the number access points, number of parks/beaches, or number of acres of open space within [distance] of an individual's residence OR density of any of the above per unit area (e.g., watershed, municipality, state)
- It is worth considering quality of the points to be accessed (e.g., consider if a beach is frequently closed)

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Number of Access Points

How do you measure trends?

- Track changes in the number of residents per park.
- Track changes the acres of parkland per 1,000 residents.
- Track changes in the number of parks in region.
- Track changes in the percentage of land used for parks in the region.
- Track changes in number and/or quality of access points.

Available data

- RI CRMC Rights-of-Way and Public Access
- The Trust for Public Land (TPL) ParkServe reports access data by city (e.g., how many parks in a city).
- RI DEM Outdoor Recreation Map
- Public Access to the Waters of Massachusetts
- MA DCR Inland Beaches
- CT Coastal Access Guide

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Distance to Parks & Public Spaces

- Physical proximity to open space is an important measure of access.
- It is worth considering quality of the open space?

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Distance to Parks & Public Spaces

How do you measure trends?

- Track changes in the ParkServe “10-minute walk” - identified walkable service areas using a nationwide walkable road network dataset provided by Esri. The analysis identifies physical barriers such as highways, train tracks, and rivers without bridges, and chooses routes without barriers.
- Track changes in the road/path distances required for residents to access parks via any method.
- Identify new barriers or removed barriers.

Available data

- The National Recreation and Park Association provides performance reviews for regional parks and recreation agencies (e.g., number of residents per park).
- The Trust for Public Land (TPL) ParkServe reports access data by city (e.g., percentage of residents within a 10 min walk of a park).
- RI DEM Outdoor Recreation Map and RIGIS
- MassGIS
- CT DEEP Land Conservation and Outdoor Recreation

Heat Islands

A measure of the extent to which urban areas re-emit solar energy more than natural landscapes and outlying areas with fewer structures and more greenery.

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Heat Islands

How do you measure trends?

- "Assessments focused primarily on **energy-related impacts** of heat islands typically compare the temperature in the overall urban area with the temperature in the surrounding rural area to determine how much additional energy demand is caused by the urban heat island" (https://www.epa.gov/heatislands/measuring-heat-islands).
- "Assessments focused on **health-related impacts** of heat islands typically focus on assessing the differences in air temperatures among different locations within the city (i.e., identifying hot spots)" (https://www.epa.gov/heatislands/measuring-heat-islands).

Available data

All related to characterizing the existence of heat islands, not the impacts

- NASA's Moderate Resolution Imaging Spectroradiometer (MODIS) (surface temp)
- NOAA's Advanced Very High Resolution Radiometer (AVHRR) (surface temp)
- Landsat Thematic Mapper and Enhanced Thematic Mapper Plus provide thermal infrared imagery (can be used to calculate surface temp and urban heat island)
- NOAA Centers for Environmental Information - daily maximum and minimum temps
- The National Weather Service stations - local weather statistics for temperature
- The NCEP/NCAR Reanalysis Project –surface & air temp data from 1948 to the present

Number of Days Above 90ºF

- This indicator describes extreme heat events.
- A similar metric is “heat waves” and is defined as “a period of two or more consecutive days when the daily minimum apparent temperature (the actual temperature adjusted for humidity) in a particular city exceeds the 85th percentile of historical July and August temperatures (1981–2010) for that city.” (EPA Heat Wave)
- RI, MA, and CT define ”heat waves” or “extreme heat” as a period of 3 or more consecutive days above 90

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Number of Days Above 90ºF

How do you measure trends?

This indicator examines trends over time in four key characteristics of heat waves in the United States:

- Frequency: the number of heat waves that occur every year.
- Duration: the length of each individual heat wave, in days.
- Season length: the number of days between the first heat wave of the year and the last.
- Intensity: how hot it is during the heat wave.

Available data

- NOAA Centers for Environmental Information provides daily maximum and minimum temperatures.
- The National Weather Service stations can provide local weather statistics for temperature.
- The NCEP/NCAR Reanalysis Project uses an analysis/forecast system to perform data assimilation using past data from 1948 to the present. The data set provides 4-times daily, daily, and monthly values for surface and air temperature.

Number Municipalities Participating in Resiliency Programs

The number of municipalities participating in a climate resiliency or mitigation program would illustrate a regions' need and/or desire to prepare for the impacts of a changing climate. This indicator may be skewed toward coastal municipalities that are likely to see the biggest and most direct impacts of climate change.

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Number Municipalities Participating in Resiliency Programs

How do you measure trends?

Tracking the number of regional municipalities participating in the programs over time would show how the impacts of climate change are becoming accepted or realized. Some of these changes may be complicated by local politics, but the general pattern would demonstrate at the very least the need to have a planned response to potential climate-related emergencies.

Available data

- Directly contacting the municipalities
- Rhode Island Infrastructure Bank's Municipal Resiliency Program
- Massachusetts' Municipal Vulnerability Preparedness (MVP) program
- Massachusetts Coastal Zone Management administers Massachusetts Coastal Resilience Grant Program which would have a record of the municipalities participating in the program

Cost of Beach Closures

This indicator characterizes the lost revenue or societal value due to pathogen-related beach closures.

It relies on beach visitation data to determine the change in beach visits on a closed day versus an open day.

The cost portion would consider actual dollars spent (Tourism Revenue), modelled societal value (Non-market value), or both types combined.

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Cost of Beach Closures

How do you measure trends?

- Although the economic portion of this indicator is critical to understanding the cost of beach closures, the primary factor is the number of beach closures.
- The revenue (both market and non-market) and visitations can be difficult to quantify and/or have significant error estimations, but beach closures are consistently tracked across the region.

Available data

- Recent SNEP analysis of a subsample of RI/MA beaches – upper Narragansett Bay vs. lower
- Beach visitation data is not consistently collected
- EPA ACESD models to predict beach visitations based on cell phone location data
- Beach closure data – RI Department of Health, MA Department of Public Health, and EPA's BEACON 2.0
- Tourism Revenue - NOAA's ENOW Explorer and on the National Ocean Economics Program
- Non-market value estimations - National Ocean Economics Program website and EPA ACESD (N. Merrill, K. Mulvaney, and M. Mazzotta - Valuing Coastal Beaches and Closures Using Benefit Transfer: An Application to Barnstable, Massachusetts, 2018)

Commercial Fish Landings

This indicator would solely quantify the amount of fish caught (in pounds) without considering the effort involved to try to capture the broad scale economic impact while diminishing other factors like environmental conditions.

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Commercial Fish Landings

How do you measure trends?

Plot annual landings (in pounds) for one or more of the following:

- All species
- Finfish
- Shellfish
- Indicator species

Available data

- The Atlantic Coastal Cooperative Statistics Program (ACCSP) Data Warehouse
- NOAA Fisheries Annual commercial landings statistics
- RI DEM Commercial Reporting
- MA DMF commercial fish landings

Discussion

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Social Science Indicator Categories

Public Access

- Number of access points
- Distance to parks and public spaces *(include water access points)*
- Transportation to access points

Public Health

- Heat islands
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Wrap up and next steps

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