Working Waterfront Inventory Template

A Tool for Municipal Planning and Preservation of Working Waterfront

Tidal Bay
Consulting, LLC

MAINE COAST
FISHERMEN'S
ASSOCIATION

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Acknowledgements

List of Acronyms

ACCSP Atlantic Coastal Cooperative Statistics Program
ENOW Economics: National Ocean Watch
GMA Growth Management Act
MA DMF Massachusetts Division of Marine Fisheries
MCFA Maine Coast Fishermen's Association
ME DACF Maine Department of Agriculture, Conservation and Forestry
ME DMR Maine Department of Marine Resources
MHW Mean High Water

MLW Mean Low Water
MSA Magnuson-Steven Act
NAICS North American Industry Classification System
NEPA National Environmental Policy Act
NOAA National Oceanic and Atmospheric Administration
SLR Sea Level Rise
SMART Specific, Measurable, Attainable, Relevant, and Time-Based
SMPDC Southern Maine Planning and Development Commission

1 Background

1.1 Need

Of Maine's total population of approximately 1.3 million, over half (about 721,000) of the people live along the coast.[1] These coastal Maine communities have traditionally been home to commercial fishing businesses and other small businesses that drive the marine economy. These communities are also quickly gentrifying as more people retire to Maine, summer residents become year-round residents, and tourism increases and expands beyond the summer months. Many towns do not have the capacity or staff to manage the growing population, coastal conflicts, and planning necessary to balance preserving the working waterfront in light of these competing uses along the coast. Therefore, municipalities would benefit from support to adapt to the changing economy and climate while protecting community values, including those of the commercial fishing industry.

1.2 Purpose and Uses

One of the first steps to preserving working waterfront infrastructure and the businesses and culture it supports is to collect baseline information. To support towns in this data collection, the Maine Coast Fishermen's Association (MCFA)

and Tidal Bay Consulting developed tools to conduct a municipal working waterfront inventory. This *Working Waterfront Inventory Template* can be used in the marine resource section of a comprehensive plan, as part of a harbor management plan, or as a standalone document.

The purpose of this project is to provide a template for town planning, as well as a process to identify policies and prioritize funding for projects that preserve a resilient working waterfront. The inventory encourages collaboration and enhanced communication across municipal departments, committees, and the community. It also provides best practices and examples of how to make the working waterfront a priority in the community through ordinances and land use zoning. The authors hope that this common set of data points and measurements will help streamline the process for municipal staff and committees to inventory existing resources, prioritize community needs, and monitor changes over time. In addition, understanding the rate of change is important to funding and implementing actions and strategies identified in comprehensive plans, capital improvement plans, and ordinances that protect the working

waterfront. In the unfortunate case of a natural disaster, maintaining an up-to-date inventory will assist in assessing damages and obtaining funding for rebuilding.

To demonstrate the potential uses and benefits of completing a working waterfront inventory, consider how these data might be used to support a proposal to the Army Corps of Engineers to access federal funds for dredging. One example of this is the *Machiasport Harbor Management*

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1 https://coast.noaa.gov/states/maine.html#:~:text=Coastal%20Demographics,coastal%20portions%20of%20the%20state

Plan.[2] The Army Corps of Engineers recommended revising the *Machiasport Maritime Management Ordinance* in order for funds to be approved for a high priority dredging project to alleviate overcrowding in the harbor. In their Harbor Management Plan, the town created three maps of the federal navigation project to take stock of the existing mooring configuration and a proposed mooring configuration. By doing so, they were able to update their ordinance and satisfy the Army Corps of Engineer's recommendations to initiate the project.

Another example of how the inventory might be used in a town is to evaluate access to the coast through taking stock of all access points, from boat ramps, to moorings, slips at marinas, and even traditional access points to the intertidal for harvesting marine resources. Then a harbormaster or coastal resource manager can compare usage and waitlists around these access points with demand from the fishing and aquaculture sectors, as well as competing uses from recreational users, to assess future needs. In addition, land trusts in Maine have a record of conserving land to support access for commercial fishing and preserve the working waterfront.

With a more comprehensive inventory of public, private, and conserved lands, this information can be shared with land trusts to inform acquisition of new property and/or create easements through existing properties to maintain traditional uses along the coast. Beyond the inventory, the Accessing the Maine Coast website provides information to help waterfront users, coastal communities, and land owners address issues related to coastal access.[3]

An inventory that is specific and thorough will help towns understand the state of working waterfront in their community. Brunswick has an inventory of access points in their harbor management plan, although it was published in 2014. In addition to outdated records, some access inventories are more geared towards public access to the coast rather than commercial access, which may involve crossing private land (for shellfish harvesting). The towns of Georgetown, Arrowsic, Brunswick, Harpswell, and Yarmouth are working with Manomet (a nonprofit focused on coastal ecosystems) to map current and past access points to the intertidal for shellfish harvesting. The project is still underway, although preliminary findings indicate that many access

points for shellfish harvesting in these towns are through private land. Considering both public and private access points to the coast provides a more robust picture of commercial fishing access and allows towns to take action to protect high priority access points.

A final example is offered for commercial fishing and aquaculture. As a town considers updating their shoreland zoning ordinance, they may evaluate how fishing licenses and landings have changed, what current needs are for aquaculturists, and how these uses are balanced with any development in the shoreland zone, as well as recreational use. This may help inform the development of specific commercial fishing/maritime districts and provide a better understanding for future zoning protections. For example, the town of Harpswell has six districts within their shoreland zone: 1) Resource Protection, 2) Shoreland Residential, 3) Shoreland Business, 4) Commercial Fisheries I, 5) Commercial Fisheries II, 6) Mitchell Field Marine Business, and 7) Eagle Island Historic District. Each district has a unique set of prohibited and allowed land uses, which are detailed in Table 1 of Section 14 of the *Harpswell Shoreland Zoning Ordinance*.[4]

2 http://wccog.net/machiasport-harbor-management-plan.htm
3 http://www.accessingthemainecoast.com/
4 https://www.harpswell.maine.gov/vertical/sites/%7B3F690C92-5208-4D62-BAFB-2559293F6CAE%7D/uploads/SLZ_June_8_2021.pdf

2 Introduction

The scope of this project focuses on the intersections of commercial fishing, including intertidal harvesting, and aquaculture with the working waterfront. While it includes data on attributes related to other marine businesses, it is not inclusive of all marine sectors that operate on the waterfront, such as marine transportation, tourism, and recreation. In the future, it would be ideal to build information around other marine sectors into the inventory. This would require additional funding and partnerships with individuals and organizations in their respective marine industries.

2.1 Methods

There were several tasks leading up to the development of the *Working Waterfront Inventory Template*. In the initial task, Josee Stetich, a Resilience Corps fellow with the Greater Portland Council of Governments, reviewed comprehensive plans, harbor management plans, town reports, and economic development plans for six coastal towns in Maine. The towns included: Kennebunkport, Brunswick, Harpswell, Friendship, St. George, and Stonington, and they were selected based on several criteria. These criteria included: municipal staff capacity, geography, social vulnerability, and accessibility of informa-

tion. Ms. Stetich also interviewed town officials, including harbormasters, coastal resource managers, town managers, town planners, and environmental planners. This research and the associated interviews helped to enhance the understanding of commonalities and gaps in existing working waterfront inventories. In addition, each town received a preliminary inventory of their working waterfront, based on existing sources of information.

In the second task, Ms. Stetich reviewed all ordinances in the same coastal towns that intersect with the working waterfront, to gather information on how ordinances are used in developing goals and policies to preserve the working waterfront. From this review, we were able to provide case studies and best practices, which are included in Section 5.

The final deliverable built on these initial tasks, and also drew on existing research to inventory fishing ports and assess social vulnerability. We developed a set of commonly used data points and measurements that can be used by municipalities to inventory their working waterfront and evaluate change over time. In addition to drawing from data points in the working waterfront

inventories we reviewed, indicators and metrics we used are also compiled from several external sources, including:

1. *Port by Port: Profiles and Analysis of the Massachusetts Commercial Fishery (2021)*[5]
1. *National Oceanic and Atmospheric Administration (NOAA) Fisheries Social Indicators for Coastal Communities*[6]
2. *U.S. Census Data*[7]

Section 2.2 of this guidance document provides broader context around how to use this tool, how it aligns with Maine's coastal zone management policies, and provides a checklist to help navigate the process to develop the inventory.

Section 3.1 of this guidance document includes the following tables that compile the inventory. Depending on local capacity and priorities, a town may elect to only complete a few tables or all six:

A. *Coastal Waters and Access*
B. *Commercial Fishing and Aquaculture*
C. *Marinas, Moorings, Wharves, and Piers*
D. *Shoreside Support Infrastructure and Businesses*
E. *Social and Economic Data*
F. *NOAA's Social Vulnerability Index*

5 A report prepared by the Massachusetts Division of Marine Fisheries (DMF), the Urban Harbors Institute at the University of Massachusetts Boston, and the Cape Cod Fishermen's Alliance for the MA DMF (April 2021). Available: https://www.mass.gov/lists/port-profile-project#port-profile-report-
6 https://www.fisheries.noaa.gov/national/socioeconomics/social-indicators-coastal-communities
7 https://data.census.gov

Section 4 of this document offers other considerations, including the impacts of climate change and the changing demographics along the coast. Section 5 provides information on best practices for developing comprehensive plans and ordinances that prioritize the working waterfront. Section 6 provides concluding remarks and next steps.

A note about fishing terminology and gender inclusion through this document. In Maine, there is a cultural norm that both men and women are *typically* comfortable using the male-oriented terms, fisherman and lobsterman. This is in contrast to the gender neutral term, fisher, which is used more commonly in academic writing and research, or female-oriented terms, fisherwoman or lobsterwoman. In staying true to Maine's culture, this document uses several terms to describe the people that work in Maine's fishing industry. Sometimes both terms are used, for example, fishermen and women, or the gender-neutral term, harvester. However, when one term (fisherman or lobsterman) is used, it is in reference to all genders.

The primary audience for this document includes coastal municipalities in Maine, and all

the staff, consultants, and community members who support and contribute to comprehensive planning processes, as well as harbor management plans. Municipal planning, and the rules and ordinances that stem from them, are distinct processes from coastal resource conservation by tribal governments. While it is important for municipalities to understand and consider past and present tribal use of the coast and marine resources, this document does not directly address topics of colonialism, tribal sovereignty, and fishing rights.

The authors acknowledge that these coastal municipalities are located on the unceded tribal lands of the Wabanaki people, including the

Abenaki, Maliseet, Mi'kmaq, Passamaquoddy, and Penobscot Nations. We recognize the sovereignty of the Wabanaki Tribal Nations and we have gratitude for their stewardship of the land and waters. The Wabanaki people have been denied access to their ancestral lands and resources for hundreds of years, including displacement and continued exclusion from access to the coastal and fisheries. The authors encourage municipal leaders to learn about this history and consider strategies to promote equity and fairness in the comprehensive planning processes and in the development of the *Working Waterfront Inventory Template*.

Note: All of the data sources, website URLs, and instructions in this report are up-to-date through the time of publication. Over time, new data sets will be available and website URLs will be updated, and the authors intend to incorporate new information into future versions of this report.

2.2 Getting Started

To complete the inventory, it is expected there will be a collaboration between municipal committees (e.g., comprehensive planning, coastal waters, marine resources/shellfish, economic development, etc.), the harbormaster and/or marine resource officer, town planning staff, and perhaps consultants or students to assist with data collection. In addition, the regional economic development corporations or council of governments may be able to provide assistance.

Photo by Scott Gable ©

As mentioned previously, the tables in Section 3.1 were designed using a 'modular' approach to account for varying levels of capacity and differing priorities within municipalities in Maine. A town may collect data on all six tables, or focus on certain categories based on community priorities and limited staff or volunteer resources. For example, a town with a high proportion of lobstermen may choose to complete tables B and C, whereas a town with more shellfish license holders may complete tables A and B. In addition, the tables have a set number of data points, each with multiple suggested measurements. Some of these measurements will be easier to obtain than others, and it is the team's discretion to identify which measurements are important to their municipality.

Once the working waterfront inventory is complete, it can be utilized to inform annual budgets and capital improvement plans, support proposals for federal, State or private funding, or update coastal ordinances and land use regulations. A town's inventory should be updated over time. While there is *suggested* guidance on how often a town should review and update this information to monitor change and shifting priorities, it will ultimately depend on capacity within a municipality.

Before a municipality begins the process of completing the inventory, the authors recommend reviewing preliminary steps outlined in this checklist:

✓ *Identify your team by assessing capacity and expertise of town staff, volunteer committee members, consultants, and other volunteers. Also, determine the responsible party for updating the inventory after it is completed.*

✓ *Develop a timeline to complete the inventory.*

✓ *Define what working waterfront means for your community. To develop a definition, you will want to engage with interested parties in your community to get feedback. This could entail holding public meetings, sending out a survey, or meeting with relevant coastal committees.*

✓ *Based on your definition of working waterfront, identify priorities for the inventory to guide which tables your team completes.*

✓ *Review your town ordinances specific to the coast and shoreland zone to familiarize yourself with existing goals and policies (e.g., coastal waters and floodplain management ordinances).*

✓ *Make sure to include information on all the Zip Codes and fishing ports within your municipality. This is especially important when compiling data on fisheries landings and permits,*

as well as census data and other social and economic data by Zip Code. For example, Bailey Island and Orr's Island are both part of Harpswell but have different Zip Codes.

✓ *Review consistency with Maine's coastal management policies (38 M.R.S.A. § 1801) (see Section 2.2.2).[8]*

✓ *Review consistency with Maine's Growth Management Act (GMA), and the minimum criteria in the marine resources checklist (30-A M.R.S.A. §§ 4312 - 4350).[9]*

✓ *Review Strategy E (Protect Maine's Environment and Working Lands and Waters) and other relevant strategies and recommendations in the Maine Won't Wait report to consider how to incorporate climate adaptation and planning for various sea level rise (SLR) scenarios in 2050 and 2100.[10]*

✓ *Consider the potential social and economic impacts of this planning on small businesses.*

✓ *Consider how other tools may aid in the development of the inventory. For example, the NOAA Office for Coastal Management's report, The Local Economic Contribution of Working Waterfronts: local estimation and case studies[11] and The Nature Conservancy's Coastal Resilience Explorer.[12]*

There have been a number of Statewide, as well as a few regional reports on the working waterfront in Maine, though many of these reports are 15- to 20-years old. Some of these reports may prove to be a helpful reference point for certain data points to update and build on, therefore a reference list of existing reports is provided in Appendix A.

2.2.1 Data Caveats and Confidentiality

This Section provides a foreword on the complexity and limitations with collecting certain types of fisheries data, census data, and social and economic data. More specific details on data caveats and confidentiality are also included in footnotes to the tables in Section 3.1.

Requesting and analyzing commercial fisheries data are complicated. For example, many fishermen have multiple fishing permits (from various federal and state authorities), some own more than one fishing vessel, and many fishing businesses are incorporated as a limited liability corporation or other entity that may not necessarily reflect the owner's name. Narrowing this information down to identify the number of unique fishermen in a town would require complex data reconciliation of federal, state, and local data sets.

Some harvesters live in the town they fish out of, but some do not. It is important to understand how many fishermen are residents versus how many non-residents use a town as their home port, and how that ratio changes over time. However, due to different levels of demographic data collected by state and federal licensing authorities, the inventory primarily focuses on town resident data points. Even if this information is not able to be quantified, it is important to note this distinction in a more qualitative context, for example, if a harbormaster knows the relative ratio of fishermen who are residents versus non-residents or the trend in recent years. There are financial and procedural justice considerations around this information because when fishermen live further from where they work, the cost of doing business goes up and they are unlikely to have the ability to vote on local issues pertaining to the waterfront, for example, on a town committee or town council. The nuances around this topic, including how coastal gentrification is affecting where fishermen live and work, are further considered in Section 4.2.

Further, some sources include port-level data, while others offer town-level data, so it is important that all relevant ports (and/or Zip Codes)

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8 https://legislature.maine.gov/statutes/38/title38sec1801.html
9 https://www.maine.gov/dacf/municipalplanning/docs/checklist.xls
10 https://climatecouncil.maine.gov/maine-wont-wait-online-flipbook
11 https://coast.noaa.gov/data/digitalcoast/pdf/working-waterfronts.pdf
12 https://maps.coastalresilience.org/maine/

in a town are included (e.g., Five Islands and Georgetown, instead of just Georgetown). The authors endeavored to simplify the data sources and process to request and/or query data from the State and federal governments. However, given the nuances and data confidentiality requirements, we are available for questions that may arise.

In addition, fisheries data have to adhere to strict data confidentiality requirements, typically referred to as the 'rule of three', where there has to be three or more dealers, harvesters, and/ or vessels before state or federal landings data are publicly released. Therefore, at a town level in Maine, much of the data are confidential. To address this, a town should consider 'rolling up' data to include similar species or the county level where possible to provide more meaningful information. For the complexities of data in Table B, Commercial Fishing and Aquaculture, it is possible a town may benefit from assistance from organizations with experience in these data sources, including Maine Sea Grant, Maine Department of Marine Resources (DMR), University of Maine, and/or local nonprofit organizations.

Finally, for many small towns in Maine, sometimes the simplest and best way of obtaining

certain fisheries information is to ask the harvesters, dealers, and harbormasters or coastal resource managers.

Regarding the geographic scale with which data are generally available, there are limitations that will likely result in many towns not being able to compile town-level (or Zip Code-level) data. For example, NOAA's Economics: National

Ocean Watch (ENOW) explorer that we reference in Table E is only available at the state or county level. In this case, while not ideal, county data can be used as a relative proxy for the economic impacts on a town. Where town- or Zip Code-level data are available, a town may alternatively consider rolling up to adjacent towns around a shared water body or region, for a slightly finer scale outlook than the county

Photo by Scott Gable ©

level. While the lack of certain local data for municipal planning is not ideal, fishing and other sectors within the marine economy are regional in nature when the entire supply chain is considered. For example, consider the multiplier effect with fishing, in that a lobsterman buys gear, and supplies like fuel, bait, and ice within their region. They may hire crew from surrounding communities, and when they sell to a seafood dealer, that business in turn sells to a number of other businesses, including restaurants, other distributors, or even through e-commerce. While the scope of this document does not expand to include this regional economic impact, municipalities will find that sometimes county data is the only scale available.

The economic census survey data provide information on businesses that have employees and a payroll. The census data portal website has data available at the Zip Code level for these businesses; however, due to confidentiality, much of the employment data cannot be displayed. In this case, we suggest rolling up from the number of employees, to the number of establishments (by the North American Industry Classification System [NAICS] code). However, in Maine, the majority of fishermen are self-employed, so these data also need to be collected. Self-employment census data are included as a separate category, Non-employer Statistics, which are not detailed by NAICS code. Therefore, self-employment data can be accessed through NOAA's ENOW explorer, although only at the county level, and the general category of "living resources." This category includes commercial fishing, seafood markets, seafood processing, fish hatcheries, and aquaculture. Self-employment data typically have a lag time of several years, and as of 2022, is available through 2019.

This challenge in accessing relevant and accurate local level data has been identified as a need to help small, rural communities guide local-level decision making. To address this need, economists at NOAA's Office of Coastal Management continue to work with Maine Sea Grant and the University of Maine to develop new methodologies. Estimating the Local Marine Economy is a set of data, stories, tools, and training that is available to help meet this need.[13]

2.2.2 Maine's Growth Management Act and Coastal Management Policies

Chapter 208 of the GMA (30-A M.R.S.A. §§ 4312 - 4350) establishes criteria for the Maine Municipal Assistance Planning Program within the Department of Agriculture, Conservation and Forestry (DACF) to review community comprehensive plans for consistency with the goals and guidelines of the GMA. The Marine Resources Section (3 [5: A-E]) provides requirements for minimum data and analyses to achieve an affirmative consistency status. To this end, DACF provides a planning data package every six months for towns developing or updating their comprehensive plans.[14] The marine resources folder in this package only contains data to help towns address the minimum criteria required by the GMA. At the time of publication, the marine resources folder includes a spreadsheet of State-issued fishing licenses by category, and the number and length of vessels for each town as well as information on the Working Waterfront Access Protection Program and Current Use Taxation Program for working waterfront.

In addition, for coastal communities, the GMA requires that a local comprehensive plan address Maine's coastal management policies, which are detailed on the next page. While comprehensive plans are no longer required by the State, many municipalities develop and update plans every 12-years to retain consistency with the GMA.

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13 https://coast.noaa.gov/digitalcoast/training/marine-economy.html
14 https://www.maine.gov/dacf/municipalplanning/comp_plans/planning_data.shtml

Having this determination has multiple benefits beyond being a best practice for planning and budgeting, including providing legal structure for place-based land-use planning and eligibility for certain State funding programs.

   The Legislature declares that the well-being of the citizens of this State depends on striking a carefully considered and well-reasoned balance among the competing uses of the State's coastal area. The Legislature directs federal, state and local agencies, as required by the United States Coastal Zone Management Act of 1972, PL 92-583, with responsibility for regulating, planning, developing or managing coastal resources, shall conduct their activities affecting the coastal area consistent with the following policies (38 M.R.S.A. § 1801 [2022]):

1. **Port and harbor development**. *Promote the maintenance, development and revitalization of the State's ports and harbors for fishing, transportation and recreation;*
2. **Marine resource management**. *Manage the marine environment and its related resources to preserve and improve the ecological integrity and diversity of marine communities and habitats, to expand our understanding of the productivity of the Gulf of Maine and coastal waters and to enhance the economic value of the State's renewable marine resources;*
3. **Shoreline management and access**. *Support shoreline management that gives preference to water-dependent uses over other uses, that promotes public access to the shoreline and that considers the cumulative effects of development on coastal resources;*
4. **Hazard area development**. *Discourage growth and new development in coastal areas where, because of coastal storms, flooding, landslides or sea level rise, it is hazardous to human health and safety;*
5. **State and local cooperative management**. *Encourage and support cooperative State and municipal management of coastal resources;*
6. **Scenic and natural areas protection**. *Protect and manage critical habitat and natural areas of State and national significance and maintain the scenic beauty and character of the coast even in areas where development occurs;*
7. **Recreation and tourism**. *Expand the opportunities for outdoor recreation and encourage appropriate coastal tourist activities and development;*
8. **Water quality**. *Restore and maintain the quality of our fresh, marine and estuarine waters to allow for the broadest possible diversity of public and private uses; and*
9. **Air quality**. *Restore and maintain coastal air quality to protect the health of citizens and visitors and to protect enjoyment of the natural beauty and maritime characteristics of the Maine coast. (PL 1985, c. 794, Pt. A, §11)*

   While the tables in the *Working Waterfront Inventory Template* include additional data and information collection than required by State law and policies, the authors feel this additional level of detail is critical to preserving the working waterfront in towns that are heavily economically and/or culturally dependent on fishing and other maritime industries.

3 Working Waterfront Inventory Template

3.1 Inventory Tables

Tables A-F in this section each cover one general category of the *Working Waterfront Inventory Template*. As described above, depending on the capacity and needs of an individual town, a town may elect to fill out one table, several tables, or all six. The authors recommend collecting data on both public and private infrastructure and businesses, as the fishing and aquaculture industries rely on both public and private resources. To support completing these tables, descriptions for each column title are provided below:

1. **Data points** *include specific elements that make up each overarching category. The more data points included, the more comprehensive the inventory will be.*
2. **Measurements** *list the specific information to describe and inventory the respective data point.*
3. **Improvements needed/maintenance status/meets demand** *include information on whether the infrastructure is well maintained, in need of maintenance, or in disrepair and needs replacement, as well as the type of repair or replacement needed, and the timing. Some data points request data*

on whether existing resources meet the demand. This information may not apply to all data points or measurements, and does not necessarily need to conform to the examples listed for each data point. Any information in this column could be used to help allocate funding and/or plan timelines in capital improvement plans. For physical working waterfront infrastructure and equipment, responses in this column should explicitly consider potential impacts from SLR, flooding, and storm surge, based on the State-recommended levels for 2050 and 2100 in Maine Won't Wait. It is assumed that other vulnerable coastal infrastructure will be assessed in separate sections of a comprehensive plan, a vulnerability assessment, or other documents guiding adaptation to climate change.

4. **Monitoring frequency** *intervals are provided as suggested guidance for how often each data point and measurement(s) should be reassessed and updated in the inventory.*
5. **Data/information source** *includes one or more resources to find or query the data points and measurements in a town. Frequently, it is suggested to review existing comprehensive plans or harbor*

management plans as a first step. Recognizing these documents may be dated, a second step often recommends working with the town harbormaster, town planner, or harvester who may have first-hand local knowledge. While some of the data points may not be recorded in past documents, many of them should be common knowledge among town staff and local residents who work and/or live along the coast. For those data sources where there are multiple avenues to get information, please use judgment on what sources are best for your town and capacity, based on staffing and other resources.

There is a separate Microsoft Word document of a fillable inventory template for all the tables available on the MCFA's website: https://www.mainecoastfishermen.org/working-waterfront-inventory.

(A) Coastal Waters and Access

Data points	Measurements	Improvements Needed/Maintenance Status	Monitoring Frequency	Data/Information Source
Water access points for boats	Number of water access points (for boats); use (e.g., commercial, recreational, mixed-use); ownership (public or private); all-tide or tidal; surface/type (e.g., hard/paved, gravel, hand-carry, landing facility, etc.); parking; ADA accessibility	Vulnerability to loss due to: conversion (for a separate land use), SLR, storm surge, or deferred maintenance; sufficient or insufficient parking	Annually	Review State and local boating access: https://www.maine.gov/dacf/parks/water_activities/boating/public_boat_launches/boat_sites.shtml Review marine resource section of current comprehensive plan or harbor management plan Contact harbormaster, shellfish license holders, and aquaculturists Discuss with coastal waters/harbor committee, and identify points on a map
Traditional walk-in access points (Intertidal marine resource harvesting, e.g., clams, worms, seaweed, periwinkles, etc.)	Number of shore access points (walk in); ownership (public, private, or paper street); type (e.g., walk down, drive down, etc.); surface/type (paved or gravel road, foot path, or beach); parking; confidentiality[15]	Vulnerability to loss due to: conversion (for a separate land use), SLR, storm surge, or deferred maintenance; number of historical access points lost to private property "no trespassing" signs posted; sufficient or insufficient parking	Biannually	Discuss with the shellfish/marine resource committee, and identify points on a map Contact shellfish license holders and other harvesters Review marine resource section in current comprehensive plan or harbor management plan
Harbor Area	Total acres and estimated breakdown of acres for intertidal, shallow and deep water; federal navigation channels (if applicable) - for each harbor area in a town	N/A	Every 3-5 years	Measurements can be taken from a NOAA nautical chart (see page 5 of *Brunswick's Harbor Management Plan* for an example of this method)[16] Measurements can also be taken using GIS maps and/or Google Earth (to access the extreme low water mark from 2016) Approximate acres can be assessed using the measuring tool in the Community Intertidal Data Portal's Balancing Intertidal Uses web map[17]

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15 Some traditional walk-in access points are shared among a small number of harvesters who have permission and relationships with the land owner. While it is important to not document or map these confidential access points in a public report, a town may choose to include them in an internal inventory, which would facilitate the potential for making these points permanent through deeds or easements, or providing tax incentives.
16 https://www.brunswickme.org/DocumentCenter/View/1050/Harbor-Management-Plan-PDF
17 Refer to the User Guide on the home page for more information on how to use the measurement tool, which is a ruler icon: https://community-intertidal-data-portal-gpcog.hub.arcgis.com/

Data points	Measurements	Improvements Needed/Mainte-nance Status	Monitoring Frequency	Data/Information Source
Dredging/ deep-water access	Number of areas with historical and/or current maintenance dredging and location	Maintenance status (existing channels), additional dredging needs	Every 3-5 year	U.S. Army Corps of Engineers - List of Maine navigation projects: https://www.nae.usace.army.mil/Missions/Navigation/Maine-Projects/ Review marine resource section of current comprehensive plan or harbor management plan
Water-de-pendent use zoning and/ or exclusive commercial fishing/mari-time districts	Number of different zones, type, and uses allowed/restricted for each district or zone within the shoreland zone	Sufficient or insufficient zoning and protections	Every 3-5 years	Review zoning maps and ordinances, specifically the shoreland zoning and flood-plain management ordinances Discussion with the planning/zoning committee Contact town planner or regional planning organization
Submerged lands	Number and location of any submerged lands leases or easements	Lease or easement renewal schedule	Every 5-10 years	Contact the Submerged Lands Program - Maine DACF Bureau of Parks and Lands: https://www.maine.gov/dacf/parks/about/submerged_lands.shtml
Open space/ conserved coastal land*	Number of acres, type, location	Threat of conversion (low, med, high)	Every 5 years	Review conserved lands GIS data in the Maine GeoLibrary Data Catalog: https://www.maine.gov/geolib/catalog.html[18] Review land use sections in current comprehensive plan Discuss with local/regional land trusts
Underwater/ intertidal cultural resources*	Location, type, national register status (e.g., undetermined, eligible, National Historic Land-mark)	Vulnerability to SLR, coastal flooding, or storm surge	Every 5-10 years	Review DACF's comprehensive planning data set (this is not necessarily exhaustive data): https://www.maine.gov/dacf/municipalplanning/comp_plans/planning_data.shtml Review the National Register of Historic Places: https://www.nps.gov/subjects/nationalregister/database-research.htm Review the Maine Historic Preservation Commission: https://www.maine.gov/mhpc/programs/national-register-of-historic-places Contact Tribal Historic Preservation Offices: https://www.mitsc.org/resource-topics/tribal-sites Contact local historical societies

18 Open the Maine conserved lands data layer, and zoom in to your town on the ArcGIS hub site or download the data layer: https://maine.hub.arcgis.com/datasets/a6797f12a07b4229bc2501d3741c98d4/explore?location=45.199304%2C-69.003000%2C7.97

*Notes: Open space/conserved land and cultural resources in general are likely to be included in the land use and cultural/historical resources inventory sections of comprehensive plans. Including these topics in the marine resources inventory would be limited specifically to coastal land and cultural resources. Alternatively, this information can be incorporated by reference to other sections in a comprehensive plan.

(B) Commercial Fishing and Aquaculture*

Data points	Measurements	Improvements Needed/Maintenance Status	Monitoring Frequency	Data/Information Source
Commercial fishing permits/ licenses operating from a town	Number of federal, State, and municipal permits/licenses by category (e.g., State: lobster/crab + class, scallop dragger, sea urchin diver, shellfish commercial, menhaden commercial, etc.; federal: northeast multispecies [groundfish], herring, ocean quahog; and local: commercial resident shellfish, etc.) held by owners operating from a town/port[19]	N/A	Biannually	**Federal:** NOAA Fisheries has a database of federally-permitted fishing licenses by home port state and city: https://www.greateratlantic.fisheries.noaa.gov/public/public/web/NEROINET/aps/permits/data/index.html[20] **State:** Maine DMR Licensing Division has compiled a spreadsheet that summarizes the number and type of State-issued commercial fishing licenses and standard aquaculture leases (but not experimental or LPAs) in a town. The spreadsheet for 2022 is available on MCFA's website: https://www.mainecoastfishermen.org/working-waterfront-inventory[21] **Local:** Town clerk (for municipal shellfish licenses and/or river herring leases, if applicable)
Commercial fishing vessels	Number of vessels and vessel length categories (if desired) in a town	N/A	Annually	**Federal, State, and local:** Maine DMR Licensing Division has compiled a spreadsheet that summarizes the number of commercial fishing vessels (by length in feet) in a town. The spreadsheet for 2022 is available on MCFA's website: https://www.mainecoastfishermen.org/working-waterfront-inventory[22]
Commercial fishing landings and aquaculture harvest[23]	Volume and value of landings by species, and number of harvesters and trips in a port by year(s)[24]	N/A	Biannually	**Federal, State, and local:** Maine DMR has a fisheries landings data portal. Please read the "About" page first to learn about the data caveats and confidentiality, how to use the portal, and who to contact with questions: https://mainedmr.shinyapps.io/Landings_Portal/ Then download data for ports in your town by following instructions in Appendix B.
Seafood dealers/ buyers	Number of businesses, name of business; type of license (federal - by species, and State - wholesaler, enhanced retailer, transportation, processor/by species, etc.); location	N/A	Biannually	**Federal:** NOAA Fisheries maintains a dealer permit database for federally-managed species: https://www.greateratlantic.fisheries.noaa.gov/public/public/web/NEROINET/aps/permits/data/index.html[25] **State:** Submit a data request to the DMR Licensing Division by filling out the dealer data request forms, which can be found online (and select all license types): https://www.maine.gov/dmr/commercial-fishing/licenses/index.html or call (207) 624-6550. The spreadsheets for 2022 are available on MCFA's website.

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19 Many fisheries, including lobster and scallops, have state and federally-managed components that require businesses/individuals to hold multiple licenses for each fishery. For this data point, all federal, State, and municipal licenses should be included.

20 Scroll down to 2022 Vessel Permits, then click on the desired file type (.pdf, .xls, .csv) to download the data file. Once downloaded, sort by "Home Port State" column, then sort by "Home Port City" column to get the list of federal fishing permits operating from a town. This data also includes the number and name of fishing vessels and owners.

21 Alternatively, submit a data request to the DMR Licensing Division by filling out the harvester request form, which can be found online - https://www.maine.gov/dmr/commercial-fishing/licenses/index.html - or by calling (207) 624-6550.

22 Alternatively, a similar spreadsheet may be accessed through the data packages that Maine DACF/Municipal Planning Assistance Program provides for comprehensive plans (https://www.maine.gov/dacf/municipalplanning/comp_plans/planning_data.shtml). Click on any town listed under the most recent year, and download the data package (zip file). Then open the marine resources folder, select the Excel spreadsheet, and click on the corresponding vessel worksheet, then find your town, and enter total vessel number and, if desired, length categories. DMR compiles these data on a biannual basis from the Inland Fisheries and Wildlife boater registration database, and it represents the vast majority of commercial fishing vessels that hold State and federal fishing licenses.

23 At the time of publication, species harvested on aquaculture leases are currently included in the Maine commercial landings, and are not separated out by mode of harvest. This reporting structure started in 2021, and aquaculture harvest may start to be separated from wild harvest species in 2023. When this change occurs, the data source for aquaculture harvest will be revised. Please note landings data for the most recent year are not typically available until March or April of the following year.

24 Due to data confidentiality limitations around the 'rule of three', landings volume and value for individual species may not be available in certain ports or towns if less than three dealers and harvesters are reporting landings from that port or town. Therefore, species data may be rolled up to the county level, or 'other species' level that combines species that would otherwise be confidential. Alternatively, ports in several adjacent towns (i.e., in a bay or peninsula) could be grouped together to allow for more species-specific landings data.

25 Scroll down to 2022 Dealer Permits, then click on the desired file type (.pdf, .xls, or .csv) to download the data file, and sort by "state" and "city." This provides information on dealers who are permitted to sell and/or process federally-managed species.

Data points	Measurements	Improvements Needed/Maintenance Status	Monitoring Frequency	Data/Information Source
Acres of mudflats	Number of acres in the intertidal	N/A	Biannually	Review marine resource section of current comprehensive plan Community Intertidal Data Portal: Shellfish Conservation Map Viewer - use the measurement tool (select area measurement and acres) to measure approximate mudflats between mean high water (MHW) and mean low water (MLW)[26]
Water quality status of shellfish growing areas	Number of acres and classification (i.e., open/approved, conditionally approved, conditionally restricted, prohibited); if conditionally approved or restricted, note the reason	N/A	Biannually	DMR Public Health GIS map viewer (click on any growing area, and a pop-up window will identify the acreage, classification, and conditional area details): https://maine.maps.arcgis.com/apps/webappviewer/index.html?id=3b3450693fe54bf497004b153e536de8
Aquaculture leases and Limited Purpose Aquaculture (LPA) licenses	Number of leases; type of lease (Experimental Lease, Standard Lease, LPA license); # acres; species grown; location[27]	N/A	Biannually	DMR Aquaculture map and lease inventory (search map and/or interactive data tables by town): https://www.maine.gov/dmr/aquaculture/maine-aquaculture-leases-and-lpas/aquaculture-web-map
Working waterfront signage	If there is signage, indicate location and messaging	N/A	Every 5 years	Contact harbormaster
Recreational boats	Number of boats	N/A	Biannually	Contact Maine Department of Inland Fisheries and Wildlife Licensing Division to request data for all recreational vessels by town (specify # of boats registered to operate in "saltwater" and "both" [saltwater and freshwater]): (207) 287-8000
Recreational and non-commercial fishing licenses	Number of licenses by category (i.e.., recreational saltwater fishing operator, recreational saltwater registry, scallop non-commercial, lobster/crab non-commercial, and menhaden non-commercial)	N/A	Every 5 years	Maine DMR Licensing Division has compiled a spreadsheet that summarizes the number of fishing licenses by town. The spreadsheet for 2022 is available on MCFA's website (search for recreational and non-commercial licenses): https://www.mainecoastfishermen.org/working-waterfront-inventory[28]

26 https://community-intertidal-data-portal-gpcog.hub.arcgis.com/apps/local-shellfish-conservation-management/explore. Refer to the User Guide on the home page for more information on how to use the measurement tool, which is a ruler icon. The DACF Bureau of Parks and Lands website provides information on how to determine the MLW mark: https://www.maine.gov/dacf/parks/about/sublands_lowater.shtml

27 Aquaculture leases typically list more species than those actually grown, due to the lengthy process of amending an aquaculture lease. Depending on the number of leases, additional outreach with growers can help confirm the actual species grown.

28 Visit DMR's website for more information on recreational saltwater licenses: https://www.maine.gov/dmr/fisheries/recreational/licenses-registry/saltwater-recreational-fishing-registry-license

*Note: *Please refer to Section 2.2.1 for more information about data caveats, confidentiality, and other considerations for commercial fishing and aquaculture data.*

(C) Marinas, Moorings, Wharves, and Piers

Data points	Measurements	Improvements Needed/Mainte-nance Status/Meets Demand	Monitoring Frequency	Data/Information Source
Moorings	Number of mooring fields; # of moorings in each field; catego-ries, if applicable (e.g., resident, non-resident, commercial, recre-ational, etc.); fees; waitlist (y/n) - if yes, how many people, and priority list (y/n)	Insufficient or sufficient moorings for demand; are any moorings sited in navigation channels?; is the mooring field layout and/or equipment for-malized in a harbor ordinance?; are there eelgrass beds in the mooring field?	Every 3-5 years	Review comprehensive /harbor manage-ment plans Review coastal waters/harbor ordinances Contact harbormaster[29]
Boatyards/marinas	Number and name/location	N/A	Every 3-5 years	Online search Contact harbormaster
Recreational slips/ commercial berthing	Number slips for each private ma-rina and/or public wharf, and use (recreational, commercial, mixed-use)	Insufficient or sufficient slips and berthing for demand	Every 3-5 years	If privately owned, contact marina owners Review comprehensive/harbor management plans Contact harbormaster and fishing/lobster license holders
Wharves/piers	Number, name, location; ownership (public, private – co-op, fami-ly-owned, or dealer-owned); uses (e.g., gear storage, maintenance, loading/unloading, boat/skiff dock-ing, bait storage, lobster pound, social gathering place, etc.)[30]	Maintenance status – well main-tained, maintenance needed, or dis-repair/ replacement needed; type of repair or new construction (if need-ed), also include timing; vulnerability to SLR, flooding, and storm surge	Every 3-5 years	Satellite imagery (Google Maps/Earth) Review comprehensive /harbor manage-ment plans Contact harbormaster and fishing/lobster license holders Review town-approved wharfing out permits If privately owned, contact owners
Discreet working waterfront[31]	Number, name, location, ownership (if known), uses (see row above for details on each measurement)	N/A	Every 3-5 years	Contact fishing/lobster license holders and riparian landowners

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29 If the town utilizes OnlineMooring software, they should be able to query their database for this information.
30 See page 23 of the MCFA report, The State of Maine's Working Waterfront (2020), for more information on how to categorize working waterfront properties:
https://www.mainecoastfishermen.org/_files/ugd/01b480_e040273a8b644cc88fefcbc8862248a2.pdf
31 It is possible there will be overlap between the 'wharves and piers' data point and 'discreet working waterfront'; however, these are listed separately as to not diminish the importance of discreet working waterfront that may serve a fewer number of harvesters and/or may not be used as an access point or loading/unloading point. Try to reduce any redundancy by defining what wharves and piers would be classified as 'discreet' and only including these in this data point. For more information about discreet working waterfronts, refer to this article:
https://asbpa.org/publications/shore-and-beach/shore-beach-in-2022-vol-90/discreet-working-waterfronts-are-a-lifeline-for-maine-fishermen/

Data points	Measurements	Improvements Needed/Maintenance Status/Meets Demand	Monitoring Frequency	Data/Information Source
Anchorages	Number, location, and what portion (if any) is reserved for commercial use	N/A	Every 5-10 years	Review harbor/waterfront ordinances Contact harbormaster Review NOAA nautical charts for federal "Special Anchorage" areas
Broadside berthing (used for transient dockage and/or unloading)	Number; use (recreational, commercial, or mixed-use); ownership (public or private); estimated length of boat the dock can accommodate (or number of boats at one time)	Sufficient or insufficient berthing based on demand; maintenance status – well maintained, maintenance needed, or disrepair/ replacement needed	Every 3-5 years	Contact harbormaster Review comprehensive/harbor management plans
Marine travel lift	Number and location	Sufficient or insufficient lifts based on use; maintenance status – well maintained, maintenance needed, or disrepair/ replacement needed	Every 5-10 years	Contact harbormaster If privately owned, contact marina/wharf owners
Ground out for maintenance (area to beach/ ground boat to conduct maintenance)	Number; type (bulkhead, pilings, beach, etc.); location	Maintenance status – well maintained, maintenance needed, or disrepair/ replacement needed	Every 10 years	Contact harbormaster If privately owned, contact marina/wharf owners
Emergency boat landing (in the case of severe weather, e.g., hurricane, where boats may need to be hauled out)	Location; characteristics (boat ramp, marine travel lift, hoist, transmission lines); availability of boat/ gear storage	Sufficient or insufficient locations and/or storage	Every 5-10 years	Contact harbormaster
Harbor or bay management plan	Yes/No, local or regional, and year of publication	Plans to update or create a new plan?	Every 10 years	Contact harbormaster

(D) Shoreside Support Infrastructure and Businesses

Data points	Measurements	Improvements Needed/Maintenance Status/Meets Demand	Monitoring Frequency	Data/Information Source
Fishing Co-op	Number, name, # of fishermen participating	Building condition (if brick and mortar) or wharf condition	Every 3-5 years	Review comprehensive/harbor management plans Contact harbormaster or Co-op
Ice seller (specific to marinas, wharves, etc.)	Number, name of vendor, location	Sufficient or insufficient locations to buy ice	Every 3-5 years	Review comprehensive/harbor management plans Contact harbormaster or fishing/lobster license holders
Bait storage or other cold storage	Number, name, location, type (e.g., bait storage, shellfish storage, etc.)	Condition of building/refrigeration system, sufficient or insufficient storage space	Every 3-5 years	Review comprehensive/harbor management plans Contact harbormaster or fishing/lobster license holders and aquaculturists
Bait seller	Number, name, location, type (permanent structure or trucked in/delivered)	Sufficient or insufficient number of bait sellers	Every 3-5 years	Review comprehensive/harbor management plans Contact harbormaster or fishing/lobster license holders
Gear storage (lobster traps, fishing nets, line, aquaculture gear, etc.)	Space available, fees, year-round or seasonal	Sufficient or insufficient space for storing gear	Every 3-5 years	Contact fishing/lobster license holders and aquaculturists
Trash disposal (specific to marinas, wharves, etc.)	Number, location, fee	Sufficient or insufficient trash services	Annually	Contact public works department, harbormaster, or fishing/lobster license holders
Fueling station (marine gas/diesel)	Number, name, location, ownership (public or private), any dues	Sufficient or insufficient number of fueling stations	Every 3-5 years	Contact harbormaster or fishing/lobster license holders
Commercial offloading (areas designated for commercial fishing/aquaculture offloading)	Number, location	Sufficient or insufficient offloading space, needs extra equipment, condition of infrastructure, vulnerability to SLR	Every 3-5 years	Contact harbormaster, fishing/lobster license holders, and aquaculturists
Hoist	Number, location, ownership (public or private), fees	Maintenance status – well maintained, maintenance needed, or disrepair/ replacement needed	Every 3-5 years	Contact harbormaster If privately owned, contact marina/wharf owners

Data points	Measurements	Improvements Needed/Maintenance Status/Meets Demand	Monitoring Frequency	Data/Information Source
Crane	Number, location, ownership (public or private), fees	Maintenance status – well maintained, maintenance needed, or disrepair/ replacement needed	Every 3-5 years	Contact harbormaster If privately owned, contact marina/wharf owners
Utilities	Availability of water, sewer/septic, and electricity at key public and private wharves/marinas	Sufficient or insufficient; maintenance status – well maintained, maintenance needed, or disrepair/ replacement needed	Every 5 years	Contact public works department If privately owned, contact marina/wharf owners
Shore power (specific to aquaculture or commercial fishing)	Number, type, location, fees, sourced from renewable energy, electric boat/vehicle charging station	Sufficient or insufficient to meet demand	Every 10 years	Contact harbormaster If privately owned, contact marina/wharf owners
Pump out station	Number, location	Sufficient or insufficient to meet demand; maintenance status – well maintained, maintenance needed, or disrepair/ replacement needed	Every 10 years	Contact harbormaster If privately owned, contact marina/wharf owners
Parking (for marine-dependent uses, e.g., commercial fishing, aquaculture, etc.)	Identify # spaces (for any parking not already listed in Table A - access points); fee or resident/sticker requirements; designated spaces for commercial fishermen	Sufficient or insufficient parking	Annually	Count parking spaces Contact harbormaster or fishing/lobster license holders and aquaculturists Review comprehensive/harbor management plans
Vessel repair	Number, name, location	Sufficient or insufficient vessel repair businesses to meet demand	Every 3-5 years	Review comprehensive/harbor management plans Contact harbormaster
Boat building	Number, name, location	Sufficient or insufficient boat building businesses to meet demand	Every 3-5 years	Review comprehensive/harbor management plans Contact local business

(E) Social and Economic Data | Fishing and Marine Related Social and Economic Data*

Data points	Estimate	Monitoring Frequency	Data/Information Source
People employed in fishing (or number of fishing establishments)	Number of people employed in Fishing (NAICS code 11411) or number of establishments, if data confidentiality constraints # of people (see Appendix C for NAICS codes for other sectors and industries) [32] Include employment and self-employment data	Every 5-10 years	**By Zip Code:** Using the data at https://data.census.gov/cedsci/all, follow detailed instructions in Appendix D. [33] While not included in the instructions, data for the number of establishments can also be found using ArcGIS Business Analyst if a town or organization has an ArcGIS Business Analyst License. [34] **By County or State:** Build a custom report at https://coast.noaa.gov/quickreport/#!/index.html by following the instructions in Appendix D. This includes employment and self-employment data for the general 'living resources' category. [35] This data set may also be accessed at https://coast.noaa.gov/enowexplorer/#/. [36] The spreadsheet for self-employment data for 2019 by marine sector and county is available on MCFA's website: https://www.mainecoastfishermen.org/working-waterfront-inventory
Youth in fishing	Number of student licenses (shellfish) or apprentice licenses (lobster/crab)	Every 5 years	**State:** Maine DMR Licensing Division has compiled a spreadsheet that summarizes the number of fishing licenses by town, including lobster/crab apprentice. The spreadsheet for 2022 is available on MCFA's website: https://www.mainecoastfishermen.org/working-waterfront-inventory [37] **Town:** Contact town clerk for student shellfish licenses sold -OR- Review shellfish ordinance and/or license allocations [38]
Municipal marine staff capacity	Number of staff; type of position (e.g., coastal resource officer, harbormaster, shellfish/marine warden, etc.); and full-time or part-time	Every 5 years	Contact town manager
New residential building permits in commercial fishing/maritime activity zones/districts, if applicable	Number of new permits in the last year	Annually	Contact local code enforcement department

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32 Appendix C is the Economics: National Ocean Watch (ENOW) NAICS Crosswalk table that includes all marine sectors and industries, and their relevant NAICS codes. This table is included so a town could expand their inventory to include employment in other marine-related sectors that are important to their town.

33 This method will show the number of establishments under chosen NAICS codes in chosen Zip Codes. Due to confidentiality constraints and the small size of many of these businesses, the exact number of employees may be unavailable. In this case, the number of establishments may be used as a relative proxy for employment.

34 https://www.esri.com/en-us/arcgis/products/arcgis-business-analyst/overview

35 This method only shows data at the county level, but will show the number of establishments, number of employees (or number of self-employed), wages, and gross domestic product for the selected year. As of the date of publication, 2019 data are the most recent available. The majority of fishermen and women in Maine are self-employed; therefore, these data are important to getting an accurate assessment of employment in the fishing industry.

36 There are multiple views in this dashboard. For this particular data point, the Employment tab will be most relevant. Total Ocean Economy data is available if multiple sectors are to be included in this data point, although the Living Resources tab will provide employment in commercial fishing (as well as fish hatcheries, aquaculture, seafood processing, and seafood markets). These data are only available at the "Living Resources" category, and not by NAICS categories. Graphics may be exported for use.

37 Alternatively, request data from the DMR Licensing Division by filling out the harvester data request forms (and select "Student, Apprentice Licenses"), which can be found online: https://www.maine.gov/dmr/commercial-fishing/licenses/index.html or by calling (207) 624-6550.

38 https://www.maine.gov/dmr/fisheries/shellfish/nearshore-marine-resources-program/general-shellfish-ordinance-information/general-town-shellfish-information

*Note: *There are some data points, like gender and age, that the authors would have liked to include; however, the lack of available data across federal, state and local management authorities limited the ability to include these data.*

(E) Social and Economic Data | General Social and Economic Data[39]

Data points	Estimate	Monitoring Frequency	Data/Information Source All data is from the Census Bureau unless otherwise stated: https://data.census.gov[40]
Population	Number	Every 10 years	Found at top of town profile
% of population over 65	Percent	Every 10 years	Found in Populations and People under Older Population
Median age	Number of years	Every 10 years	Found in Populations and People under Age and Sex
Median household income	Dollar ($) value	Every 10 years	Found in Income and Poverty under Income and Earnings
Poverty rate	Percent	Every 10 years	Found in Income and Poverty under Poverty
Employment rate	Percent	Every 10 years	Found in Employment under Employment and Labor Force Statistics
Median gross rent	Dollar ($) value	Every 10 years	Found in Housing under Financial Characteristics
Homeownership rate	Percent	Every 10 years	Found in Housing under Homeownership Rate
Housing stock	Number total units, # occupied, # vacant	Every 10 years	Found in Housing under Housing Units and Housing Occupancy

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39 This particular set of data points are important considerations for the working waterfront; however, these indicators may be included in a separate section of a comprehensive plan, and thus incorporated by reference. For a stand alone harbor management plan, these indicators provide important context for the fishing community and working waterfront.

40 This website provides easy access to demographic data at the town level. Enter the town's name in the search bar and select the town's profile to access the most recent data if it does not automatically access the town's profile.

Data points	Estimate	Monitoring Frequency	Data/Information Source All data is from the Census Bureau unless otherwise stated: https://data.census.gov
Median home price	Dollar ($) value	Annually	Maine State Housing Authority https://www.mainehousing.org/policy-research/housing-data/housing-affordability-indexes[41]
Affordable housing index	Value (if less than 1, housing is considered less afford-able)	Annually	Maine State Housing Authority https://mainehousing.org/policy-research/housing-data/housing-affordability-indexes
State of origin for town real estate (buyers)	Percent in-state buyers, % out-of-state buyers	Every 3-5 years	Contact local assessing and/or planning departments for real estate deeds and/or tax records
Workforce or affordable housing	Yes/No, # of units, wait list	Every 5 years	Contact local Planning Department Review land use sections of comprehensive plan

41 Use Homeownership Housing Facts and Affordability Index for Maine Cities and Towns. Select the relevant town and desired year.

The NOAA Social Indicators for Coastal Communities are intended to measure vulnerability to climate change, gentrification, or other disturbances. As of 2022, data are available from 2009 to 2019. Analyses conducted under the National Environmental Policy Act (NEPA), Magnuson-Stevens Act (MSA), and Executive Order 12898 (Environmental Justice) all utilize these indicators. Since many of these indicators alone would require a comprehensive analysis that many towns may not have the resources for, this dataset acts as a snapshot of environmental, social, and economic factors that may impact the working waterfront community. As data are updated, towns may be able to see big-picture socioeconomic trends in their community. For example, if a town finds that their "Housing Disruption" indicator changes from Low to High over several years, it could indicate a need for more affordable housing. More information on data sources can be found on the NOAA's website. Refer to Table E if data are needed at a finer scale.

In addition, The Nature Conservancy's Coastal Risk Explorer includes a social vulnerability index that is based on socioeconomic status, household composition and disability, minority status, and housing and transportation.[42]

(F) NOAA Social Indicators for Coastal Communities https://www.st.nmfs.noaa.gov/data-and-tools/social-indicators/[43]

Indicator	Measurement/Metric	Rank (High, Medium, or Low)
Commercial Fishing Engagement	Measures presence of commercial fishing through fishing activity as shown through permits, fish dealers, and vessel landings. A high rank indicates more engagement.	
Recreational Fishing Engagement	Measures the presence of recreational fishing through fishing activity estimates. A high rank indicates more engagement.	
Commercial Fishing Reliance	Measures the presence of commercial fishing in relation to the population size of a community through fishing activity. A high rank indicates more reliance.	
Recreational Fishing Reliance	Measures the presence of recreational fishing in relation to the population size of a community. A high rank indicates increased reliance.	
Poverty	Is expressed as those receiving assistance, families below the poverty line, and individuals older than 65 and younger than 18 in poverty. A high rank indicates a high rate of poverty and a more vulnerable population.	

42 https://maps.coastalresilience.org/maine/
43 This website is an interactive map where you select your town, relevant indicator(s), and year to get the relative ranking. This is intended to provide a snapshot of environmental, social, and economic factors that impact the working waterfront community. https://www.fisheries.noaa.gov/national/socioeconomics/social-indicators-coastal-communities

Indicator	Measurement/Metric	Rank (High, Medium, or Low)
Population Composition	Corresponds to the demographic makeup of a community including race, marital status, age, and ability to speak English. A high rank indicates a more vulnerable population.	
Personal Disruption	Captures unemployment status, educational attainment, poverty, and marital status. A high rank indicates less personal capacity to adapt to changes and thus a more vulnerable population.	
Sea Level Rise (SLR) Risk[44]	Signifies the overall risk of inundation from projected SLR between one to six feet over the next ~90 years. The indicator represents the possibility of inundation based upon the combined projections at each stage of SLR and could vary depending upon future circumstances. A high rank indicates a community more vulnerable to SLR.	
Storm Surge Risk	Refers to the overall risk of flooding from hurricane storm surge categories 1-5. The indicator represents the "worst-case" possibility of inundation based on the combined hurricane storm surge categories and could vary depending on future circumstances. A high rank indicates a community more vulnerable to a particular hurricane storm surge.	
Housing Characteristics	A measure of infrastructure vulnerability to coastal hazards including median rent and mortgage, number of rooms, and presence of mobile homes. A high rank means more vulnerable infrastructure and a more vulnerable population. On the other hand, the opposite interpretation might be that more affordable housing could be less vulnerable for some populations.	
Housing Disruption	Represents factors that indicate a fluctuating housing market where some displacement may occur due to rising home values and rents including change in mortgage value. A high rank means more vulnerability for those in need of affordable housing and a population more vulnerable to gentrification.	
Retiree Migration	Characterizes communities with a higher concentration of retirees and elderly people in the population including households with inhabitants over 65 years, population receiving social security or retirement income, and level of participation in the workforce. A high rank indicates a population more vulnerable to gentrification as retirees seek out the amenities of coastal living.	
Urban Sprawl	Describes areas experiencing gentrification through increasing population density, proximity to urban centers, home values and the cost of living. A high rank indicates a population more vulnerable to gentrification.	

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44 Sea Level Rise and Storm Surge Risk are listed as "Low" in most of Maine's coastal towns. While the risk of inundation may be lower when compared to a place like the Florida Keys, the authors recommend looking at finer-scale data sources to more accurately assess the impacts of climate change. Refer to Section 4.1 for additional resources to examine SLR in your community.

3.2 Creating a Narrative and Collecting Visual Data

In addition to completing these tables, it is important to include a narrative and have visual documentation through pictures and maps. A short narrative description for each table could provide the larger context around the category, and include cultural and/or social information that would not necessarily be included in an inventory table.

Many of these data points could also be displayed on maps using GIS software, Google Earth, or the Community Intertidal Data Portal. The Data Portal includes a web map, Balancing Intertidal Uses, which includes many GIS layers that can be turned on/off, including aquaculture leases, public boat ramps, docks (if located in Casco Bay; public, private and commercial docks are available), and others.[45] Once the geographic area and layers are selected, the map may be downloaded and/or printed.

3.3 Common Data Sources

While there are over a dozen online data sources in the inventory tables, this section lists some of the more common websites for completing the inventory.

Fishery Landings Data:
Maine DMR Landings Data Portal:
https://mainedmr.shinyapps.io/Landings_Portal/
ACCSP Data Warehouse:
https://www.accsp.org/what-we-do/data-warehouse/[46]

Fishery Licensing Data:
NOAA Vessel, Dealer, Operator and Tuna Permit Data:
https://www.greateratlantic.fisheries.noaa.gov/public/public/web/NEROINET/aps/permits/data/index.html
Maine DMR Commercial Fishing and Dealer Licenses:
https://www.maine.gov/dmr/commercial-fishing/licenses/index.html

Shellfish and Aquaculture Data:
Maine DMR Aquaculture Map and Data Tables:
https://www.maine.gov/dmr/aquaculture/maine-aquaculture-leases-and-lpas/aquaculture-web-map
Maine DMR Shellfish Closures and Monitoring Data Map:
https://maine.maps.arcgis.com/apps/webappviewer/index.html?id=3b3450693fe54bf497004b153e536de8

Social and Economic Data:
U.S. Census Data Explorer:
https://data.census.gov
NOAA Social Indicators for Coastal Communities:
https://www.st.nmfs.noaa.gov/data-and-tools/social-indicators/
NOAA's ENOW Data Explorer:
https://coast.noaa.gov/enowexplorer/#/employment/livingresources/2019/23005
NOAA's Quick Report Tool for Socioeconomic Data:
https://coast.noaa.gov/quickreport/#!/index.html

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45 https://community-intertidal-data-portal-gpcog.hub.arcgis.com/
46 While ACCSP is not listed as a data source in the inventory tables, a custom data request can be submitted through their Data Warehouse for non-confidential federal and state fisheries landings if a town is unable to query all desired data on the Maine DMR landings portal.

4 Other Considerations

Before, during, and after the working waterfront inventory is completed, there are many other considerations a town should factor into this overall effort. This Section highlights two of these considerations that are particularly important at this time.

4.1 Climate Change and the Environment

The state of fisheries in Maine is also dependent on measures taken to protect the environment along the shore and on the water. Since each town will face different challenges, examine what will be necessary to include in this inventory to illustrate the environmental health and progress towards climate adaptation. This may include documenting overboard discharge permits, mitigating stormwater runoff, or tracking septic tank maintenance in the shoreland zone.

It is becoming more common for municipalities in Maine to incorporate climate resilience more broadly into a comprehensive plan or separate climate action plan. Sea level rise and other impacts of climate change must also be factored in maintaining and constructing working waterfront infrastructure. While the inventory tables include identifying vulnerability to SLR, coastal flooding, and storm surge, not all towns have conducted these types of vulnerability or risk assessments.

As this inventory is centered on the working waterfront, the authors recommend conducting a separate resilience and vulnerability assessment for a broader scope of coastal climate resilience data. Here are a few tools that can help assess climate risk in your community:

- Maine Geological Survey's Coastal Bluffs and Landslide Hazards Map contains data assessing stability of sediment bluffs and erosion risk that is helpful for planning coastal development.[47]
- The Nature Conservancy's Coastal Risk Explorer assesses the effects of road inundation due to SLR up to six feet, including the cost of upgrading those roads and the number of addresses that would be inaccessible to emergency services.[48] It also includes a social vulnerability ranking.
- NOAA's Sea Level Rise Viewer is an interactive map displaying SLR scenarios for up to ten feet, as well as marsh migration, high tide flooding, and vulnerability.[49]
- The Federal Government's Climate Mapping for Resilience and Adaptation is a mapping tool that can be used to evaluate multiple climate hazards, including extreme heat, drought, wildfire, flooding, and coastal inundation in high or low emissions scenarios.[50]

4.2 Coastal Gentrification, Solastalgia, and the Fishing Community

While the coast of Maine continues to gentrify and the median home prices increase, many fishing families have had to move inland for more affordable housing. Some of these housing data points are included in the inventory tables; however, there is additional qualitative context to consider. As fishermen and women move out of the coastal towns where their boats are located or where they harvest intertidal marine resources, there are several adverse impacts.

One is that the further away they live from their work, the cost of business goes up due to additional fuel costs, gear storage, and gear transport, for example. On the other side of the equation, if a lobsterman lives in a community that is less familiar with commercial fishing activity, residents may not welcome seeing traps stored in the yard. Second, being a non-resident takes away your ability to serve on the town council/board of selectmen and committees that may make decisions about the waterfront or marine economy and coastal development. Therefore, the industry has less of a voice on issues that have the potential to impact their fishing businesses.

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47 https://www.maine.gov/dacf/mgs/pubs/digital/bluffs.htm
48 https://maps.coastalresilience.org/maine/
49 https://coast.noaa.gov/slr/
50 https://resilience.climate.gov/#top

Third, in the case of fisheries that are licensed by municipalities, like shellfish (e.g., clams, quahogs, and wild oysters) or leased, like river herring, many towns reserve the majority of licenses for residents. In this case, having to move from a coastal town takes away a harvesters' ability to earn their income and maintain this way of life unless they can obtain one of the few non-resident commercial licenses available. Some coastal communities have revised their shellfish or marine resource ordinances to change the definition of a 'resident commercial license holder' to address this issue by making the residency requirements more lenient. However, even if a harvester maintains their license, they may no longer be able to be a member of the shellfish conservation committee that makes decisions to manage and protect the shellfish populations.

Finally, it is important to acknowledge that the commercial fishing industry has a strong sense of place and belonging with the working waterfront. Many fishing families have been living and working in Maine for multiple generations. Any threat of conversion to, or loss of access to the working waterfront is inextricably linked to the culture and identity of the fishing community. In MCFA's report, *The State of Maine's Working*

Waterfront, the term solastalgia is introduced to describe the way many fishing families are feeling as they witness change in their communities.[51] Solastalgia is a newly coined term that describes the stress one feels when their environment is changed, particularly due to climate change impacts or severe storms. This term is also applicable to a fisherman that is nostalgic for his or her community because it has undergone major development and/ or loss of working waterfront. Solastalgia can elicit feelings of grief, anxiety, depression, and sadness. Therefore, the health and well-being of fishermen and their families is deeply affected by the decisions made by municipalities, private landowners, and businesses operating along the coast. The authors of this report kindly request this is considered as a town completes their working waterfront inventory.

To better understand fishing culture and sense of place, the authors encourage towns to talk to lobstermen, fishermen, aquaculturists, and shellfish harvesters who live and work in the community throughout the process of developing the inventory. There are many methods this outreach can be conducted: from simply showing up at working waterfront properties you would like to observe and learn about, to inviting harvesters

and growers to participate in the comprehensive planning committee, and hosting public meetings or listening sessions to talk about specific working waterfront topics. This outreach could also include a discussion around how gentrification is affecting the fishing community, economically, culturally, and socially.[52] If your town is interested in the history of the fishing industry, this may also be an opportunity to collect oral histories from fishermen.

51 https://www.mainecoastfishermen.org/_files/ugd/01b480_e040273a8b644cc88fefcbc8862248a2.pdf
52 https://www.urban.org/sites/default/files/publication/100135/guide_to_measuring_neighborhood_change_to_understand_and_prevent_displacement.pdf

5 Best Practices

Whether this inventory is included in a comprehensive plan or exists as a stand-alone document, it will be important to develop comprehensive plans and ordinances that support

the working waterfront by including effective strategies and policy goals. Although comprehensive plans are no longer required by the State of Maine, the goals and policies outlined within them can help towns obtain funding, shape zoning laws, and identify priorities for future projects. After a review of comprehensive plans and ordinances in six coastal Maine towns (see Section 2.1), the following best practices and case studies are recommended as part of the overall process to inventorying and preserving working waterfront. These best practices are offered as examples and do not represent an exhaustive list.

5.1 Defining Working Waterfront and Related Water-Dependent Uses

As mentioned in Section 2, it is necessary to develop a definition of working waterfront before completing an inventory. Solidifying this definition in a comprehensive plan and/or ordinances will allow committees and town staff to focus attention on the most relevant aspects of working waterfront in their town. Consider unique circumstances such as an abundance of harvestable mudflats that may not normally be included under traditional working waterfront infrastructure. A defined working waterfront will

help communities prioritize, fund, and implement projects tailored to their needs.

- One example from MCFA's report *The State of Maine's Working Waterfront (2020),* is the following:

  Working waterfront is often described as something that provides access to the water such as wharves or piers and is utilized for both recreation as well as commercial activities including aquaculture. It also pertains to marinas, boatyards, and other marine-related businesses that are reliant on waterfront for business activity.

- Another example of a definition is from Maine's Current Land Use Taxation programs and the Valuation of Certain Working Waterfront Land:

  For the purposes of current use taxation on working waterfront property, "Working waterfront land" means a parcel of land, or a portion thereof, abutting water to the head of tide or land located in the intertidal zone that is used primarily or used predominantly to provide access to or support the conduct of commercial fishing activities. (36 M.R.S. § 1132, et seq. [2022])[53]

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53 http://www.mainelegislature.org/legis/statutes/36/title36sec1132.html

Cape Porpoise, a fishing harbor in Kennebunkport, uses the *Kennebunkport Harbor and Waterfront Ordinance* to define the primary uses of Cape Porpoise Pier, to guide regulations and uses of the area going forward. By setting this precedent, a town can minimize conflicting uses in that area later on.

The Cape Porpoise Pier shall be managed by the municipal officers of the Town, or their designee, primarily used as a public fish pier for the berthing, servicing, loading, offloading, repair, and other needs of commercial fishing vessels. To the extent compatible with its primary use as a public fish pier, and to the extent permitted by the Town and the State of Maine, the pier shall also be available for use by other vessels, by members of the town and by members of the general public. (Section 61-3)[54]

Water-dependent uses are defined in State law and if a community is to support its working waterfront and commercial fishing heritage, these uses should be distinguished from water-enhanced uses. These are additional uses which need to be near, or on, the waterfront not because they are enhanced by that location but because they function in relation to water-dependent uses. Maine statute defines **Functionally water-dependent uses**, which:

…means those uses that require, for their primary purpose, location on submerged lands or that require direct access to, or location in, coastal or inland waters and that can not be located away from these waters. These uses include, but are not limited to, commercial and recreational fishing and boating facilities, finfish and shellfish processing, fish-related storage and retail and wholesale marketing facilities, waterfront dock and port facilities, shipyards and boat building facilities, marinas, navigation aids, basins and channels, shoreline structures necessary for erosion control purposes, industrial uses dependent upon water-borne transportation or requiring large volumes of cooling or processing water that can not reasonably be located or operated at an inland site and uses that primarily provide general public access to coastal or inland waters. Recreational boat storage buildings are not considered to be a functionally water-dependent use. (38 M.R.S. § 436-A [2022])

Machiasport's Harbor Management Plan provides an example of how classifying different types of coastal uses can be helpful to the planning and preservation process.[55] The town of Machiasport defines these uses as follows:

- **Water-dependent use** – A use which cannot be conducted or perform its intended purpose unless it is located or carried out in close proximity to water, such as docking or servicing of boats, unloading of fish, shipbuilding or the like.
- **Water-enhanced use** – A use which can be conducted or perform its intended purpose in any location but whose commercial function is enhanced by proximity to water such as a restaurant.
- **Water-related use** – A use which cannot be conducted or perform its intended purpose unless it is located or carried out near water although not necessarily directly adjacent to the shore such as a marine supply store.

5.2 Identify Working Waterfront Policies, Goals, and Objectives that are SMART

It is important that any goals and objectives in ordinances are – Specific, Measurable, Attainable, Relevant, and Time-Based (SMART) and support overarching policies. For example, in

54 https://ecode360.com/33968624
55 http://wccog.net/machiasport-harbor-management-plan.htm

Harpswell, their Comprehensive Plan from 2005 includes goals and action recommendations, but does not assign a responsible party or set a time frame.[56] One action recommended to promote marine economic activities is to "resolve title issues of public access points and develop adequate parking and maneuvering space at them." With no clear path forward, it will be difficult to implement these goals.

On the other hand, Kennebunkport has an appendix of specific goals, policies, and strategies in their most recent Comprehensive Plan draft:
- **Goal:** Ensure access to coastal waters necessary for commercial fishing, commercial mooring, dockings, and related facilities.
  - **Policy:** Reserve a sufficient number of moorings to meet the needs of the commercial fishing industry
    - **Strategy:** Maintain separate mooring lists for commercial and pleasure craft and continue to assign priority status to commercial fishermen for mooring spaces
    - **Responsible Party:** Harbormaster
    - **Timeframe:** Ongoing[57]

In order for effective follow through and implementation of policies, goals and strategies, a town should consider the best location for this information. Comprehensive plans and harbor management plans may only be updated every 10 years or more, while committees review ordinances more frequently. SMART Goals will also be helpful for completion and maintenance of this inventory.

5.3 Review Zoning Ordinances and Uses of the Coast

Some coastal municipalities prioritize commercial fishing and similar activities within their shoreland zoning ordinances. According to 38 M.R.S. §488 (2022), municipalities may establish Commercial Fishing and/or Maritime Activities zone(s) to prioritize those activities in certain areas. These zones limit or prohibit non-maritime uses such as residences, hotels, or other businesses. If your town does not have commercial fishing or maritime activity zoning, consider whether it is feasible to establish these. It may not be possible if working waterfront infrastructure is not concentrated in the same area or if the area is already developed for residential use.

While some towns may allow for a variety of uses in shoreland zones and fishing/maritime districts with a permit from the Code Enforcement Officer or Planning Board, other towns are more restrictive. For example, in St. George, residential dwellings, motels/hotels, and government buildings are not allowed in their Commercial Fisheries/Maritime Activities zones. In addition to local permitting, a submerged lands lease may be required from the State for certain coastal infrastructure.

Beyond coastal zoning, a town may classify its coastal waters according to their primary use. Harpswell developed a classification system in their *Coastal Waters Management Plan* to define the character of the shoreland, clarify land uses, and describe activities in the water to facilitate management, development, and access amongst multiple uses.[58] They were laid out on a map of Harpswell, and the classifications are as follows:
- **Type 1 Waters or Low Intensity Use Areas** are less developed shorelines typically in Resource Protection or residential zones.
- **Type 2 Waters or Multi-purpose Waters** support both commercial and recreational activities.
- **Type 3 Waters or High Intensity Boating Areas** contain large mooring fields and access points used by both commercial and recreational interests.

56 https://www.harpswell.maine.gov/index.asp?Type=B_BASIC&SEC=%7B0B291E61-705B-4A6D-950C-FB44DBAAEBAF%7D
57 https://kennebunkportcp.info/wp-content/uploads/2022/06/KPTCompPlan_Vol2_AppendixA_Goals-Policies_Strategies.pdf
58 https://digitalcommons.library.umaine.edu/cgi/viewcontent.cgi?article=1515&context=towndocs

• **Type 4 Waters or Commercial and Recreational Harbor Areas** support the maximum variety of uses in a small area.

Including such classifications in an inventory may be helpful to tracking changes in primary uses over time. While this may not change much from year to year, recording changes as they occur will be easier to manage than realizing a decade later.

5.4 Adopt Ordinances that Support the Working Waterfront

While reviewing ordinances that intersect with the working waterfront, consider which ordinances could be strengthened to further protect the working waterfront. This Section highlights examples of effective ordinances for supporting marine resources and coastal infrastructure. While there is not a separate section for a floodplain management ordinance, this a key ordinance to mitigating risk to the working waterfront and planning for SLR. Every town has its own unique circumstances due to geography and demographics, so these are not intended to be suggestions that are transferable to every coastal town.

The Southern Maine Planning and Development Commission (SMPDC) developed another useful resource that towns may reference when reviewing and updating their coastal ordinances. SMPDC's website includes more information on this initiative, and links to model coastal resilience ordinances that offers Maine's coastal municipalities and their residents increased protection from threats posed by climate change such as SLR, flooding, coastal erosion and storm surge.[59]

5.4.1 Moorings and Harbor Ordinances

With growth and development on the coast, moorings are in short supply but high demand. Some towns ensure moorings are awarded to commercial fishermen by creating a priority list. The town of Friendship can be seen as an example that prioritizes moorings in the following order in Section 6 of their *Coastal Waters Management Ordinance*:

1. To owners of riparian lots
2. Friendship resident owners of commercial fishing watercraft
3. Friendship resident owners of recreational vessels and other commercial vessels, without distinction
4. To Friendship residents or entities owned by residents for service or rental moorings

5. To Friendship residents for an aquaculture site
6. To nonresident owners of recreational watercraft
7. To non-residents or entities owned by non-residents for rental moorings
8. For an additional mooring or for a mooring site relocation
9. To non-residents or entities owned by non-residents for an aquaculture site[60]

Kennebunkport goes a step further in their *Harbor and Waterfront Ordinance* by specifying that commercial moorings must comprise at least 60% of all moorings in Cape Porpoise. With effective ordinances that prioritize commercial uses for moorings, future inventory data are less likely to indicate a decrease in commercial moorings over time or increase in waitlists.

5.4.2 Shellfish and Marine Resource Management Ordinances

Towns use a shellfish or marine resource ordinance to determine shellfish/marine resource committee activities and member eligibility. Some towns, such as Stonington, only allow year-round, full-time residents to serve on their committee due to the influx of seasonal residents in the summer. However, considering issues

59 https://smpdc.org/index.asp?SEC=EB353312-031E-4651-8CE5-4B482BABB42A&DE=610B6C36-DB91-4ED7-BD39-96F98BC9EE91
60 http://friendship.maine.gov/wp-content/uploads/2021/04/DOC042921-04292021100840.pdf

mentioned in Section 4.2, it may not be in a town's best interest to do so if they find many of their fishermen are moving out of town. When completing and updating this inventory, examine the unique circumstances of your town to determine who shall serve on a committee. Committees with diverse representation from the community, including various sectors, genders, ages, race, ethnicity, and other factors will be more informed.

Smaller communities or those that share bodies of water with other communities may find it beneficial to form a joint shellfish/marine resource committee. For example, the Frenchman Bay Regional Shellfish Committee is a joint committee for the towns of Ellsworth, Franklin, Hancock, Lamoine, Sorrento, Sullivan, and Trenton.[61] Together they manage shellfish conservation measures and licensing for the Frenchman Bay region. Coming together increases capacity and helps neighboring towns work towards common goals. This inventory could also be completed jointly if neighbors share resources. However, there are benefits and drawbacks to this regional management approach that should be weighed carefully.

To ensure that waterfront infrastructure is properly maintained and updated, sufficient funds must be allocated. If these funds reside in a general reserve fund created by the town, they may be subject to approval by a select board or town council. In Stonington, their *Fish Pier, Harbor and Waters Ordinance* specifies that funds collected from operation of Fish Pier are collected in a dedicated 'Fish Pier Reserve' fund and shall only be used for capital improvements, management, operation, and maintenance of the Fish Pier, as recommended by the Harbor Committee (and without the need for town council approval).[62] This allows dedicated funds to maintain the working waterfront infrastructure without fear of fees going to a general fund. Using this inventory will allow communities to better prioritize future projects and set aside funds accordingly.

5.4.3 Noise Ordinances

While reviewing noise ordinances was not a priority for this project, the authors understand this is a current topic in the Maine legislature with respect to airboat noise and limiting decibel levels during certain times of the day. The temporary regulations for airboats (PL 2021 c. 585 § 1 [AMD]), are precedent setting for the commercial fishing industry in Maine, and there is concern about a slippery slope, specifically around additional regulations on noise from commercial fishing boats and other operations.

5.4.4 Right-to-Fish and Farm Ordinances

The Maine Agricultural Protection Act, also known as a "right-to-farm" lawn shields farmers and ranchers from nuisance complaints pertaining to noise, odor, or other aspects of regular operations.[63] All 50 states have enacted some form of a "right-to-farm" law.[64] Although commercial fishing also contributes to the local and global food system, there is not currently a similar law pertaining to the fishing industry. Maine statutes on Crimes (17 M.R.S § 2807 [2022]) also addresses this topic with respect to commercial fishing activity:

2. **Private nuisance actions limited.** A private nuisance action may not be maintained against a person engaged in a commercial fishing activity or commercial fishing operation so long as the activity or operation is undertaken in compliance with applicable licensing and permitting requirements and other applicable statutes, rules and ordinances. (PL 2001, c. 99, §1)

61 https://www.ellsworthmaine.gov/wp-content/uploads/2017/04/ord57_Shellfish.pdf
62 https://www.stoningtonmaine.org/docs/final-harbor-ordinance-amendments-05-6-21.pdf?1669998813
63 https://legislature.maine.gov/statutes/7/title7sec153.html
64 https://nationalaglawcenter.org/state-compilations/right-to-farm/

At the municipal level, a "right-to-fish" ordinance was suggested in a 2004 Cundy's Harbor report. While it has not been adopted, this approach is worth consideration as more people unfamiliar with fishing communities are moving to the coast. This right-to-fish language "permits some 'nuisance' like conditions due to fishing related activities."[65]

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65 https://www.harpswell.maine.gov/vertical/sites/%7B3F690C92-5208-4D62-BAFB-2559293F6CAE%7D/uploads/%7BBD810B7A-B157-45C6-B961-C0699C6B7F45%7D.PDF

6 Conclusion and Next Steps

This version (1.0) of the *Working Waterfront Inventory Template* is the initial version of this document. In the next phase of the project, which is dependent on funding, the authors are hoping to partner with an academic institution or regional economic development organizations. Through this collaboration, we would work with a cohort of students or volunteers to support interested municipalities in completing their inventories. During this phase, we plan to continue compiling feedback and updating any data sources and references that may become available. The most recent version of the template will always be available on MCFA's website.[66]

Once a town completes the template categories that are a priority, the authors recommend that they identify one staff person or committee chair to oversee the next steps in the process.

This could include distributing copies to all town committees who have jurisdiction over coastal waters, shellfish, zoning, or harbors so they may consider their working waterfront inventory as they revise and update relevant ordinances. The town manager, planner, sustainability coordinator, and harbormaster should also have a copy so it can be used to inform zoning, capital improvement plans, climate action planning, and general budgeting and grant writing to address infrastructure that may need maintenance or replacement.

A town's inventory should be reviewed and updated on a regular basis, utilizing the timeframes in the 'Monitoring Frequency' column as a guide. Some data points are suggested to be monitored every year or every 3-5 years, and others are updated with census data every 10 years. Further, a town's implementation plan for their comprehensive plan can include recommendations about when the inventory should be updated, and by whom. Given the role of the harbormaster in developing and maintaining the inventory, one suggestion would be to have the harbormaster review the inventory on an annual basis with the coastal waters and marine resource committee, and/or the town planner review it with the land use/zoning committee.

Last, but not least, when a town has prioritized their working waterfront initiatives, and are looking for funding for planning and implementation, there are many State resources for various types of funding, federal funding opportunities, as well as options for partnering with local organizations, including the following:

- The Governor's Office of Policy, Innovation, and the Future (GOPIF) Community Resilience Partnership: https://www.maine.gov/future/climate/community-resilience-partnership
- **Maine DMR, Maine Coastal Program:**
  - Shore and Harbor Planning Grants: https://www.maine.gov/dmr/programs/maine-coastal-program/grants-and-rfps
  - Resources for providing commercial fishing access: https://www.maine.gov/dmr/programs/maine-coastal-program/coastal-access

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66 https://www.mainecoastfishermen.org/working-waterfront-inventory

- **Maine DACF:**
  - Municipal Planning Assistance Program, Coastal Community Grants: https://www.maine.gov/dacf/municipalplanning/financial_assistance.shtml
  - Land for Maine's Future, Working Waterfront Access Protection Program: https://www.maine.gov/dacf/lmf/funds/wwapp.shtml
  - Land for Maine Future, Public Access to Maine Waters Fund: https://www.maine.gov/dacf/lmf/funds/water-access.shtml
  - Bureau of Parks and Land, Boating Facilities Fund: https://www.maine.gov/dacf/parks/grants/boating_facilities_fund.html
- **Maine Department of Transportation:**
  - Small Harbor Improvement Program: https://www.maine.gov/mdot/pga/ship/
  - Boat Infrastructure Grant Program: https://www.maine.gov/mdot/pga/
- Navigating the Federal Funding Landscape: A guide for communities (New England Finance Center): https://neefc.org/wp-content/uploads/2022/01/Navigating-Federal-Funding-Landscape.pdf
- Partnering with local, regional or statewide land trusts

In closing, the authors intend for the *Working Waterfront Inventory Template* to be a living document that will be updated over time, and the scope may expand to other sectors in the marine economy. We welcome any feedback about the utility of this tool, and ease of use, especially during the initial pilot year (2023). In addition to assisting towns as they inventory and preserve their working waterfront, we hope this project has a statewide impact as well. Ultimately, when there are standardized data and metrics for many coastal communities in Maine, this tool should streamline the creation of updated statewide inventories and reports of the working waterfront. This could help inform priority areas for State funding and technical assistance.

Notes

APPENDICES

Photo by Scott Gable ©

Appendix A

Previously Published Working Waterfront Reports

The source of the following table is: Britsch, M. 2022. *Resources for Preserving Commercial Fishing Access*. Maine Coastal Program, Maine Department of Marine Resources.

Title	Year	Author	Link (If Applicable)
Maine Port Development Study: Port Facility Inventory and Evaluation	1985	MeDOT	Accessible through the Maine State Library[A]
The Last 25 Miles	1989	Maine State Planning Office and Maine Coastal Program	
The Right Tack: Charting your Harbor's Future	1995	Hancock County Planning Commission for the Maine State Planning Office and Maine Coastal Program	https://maineharbormasters.org/wp-content/up-loads/2016/03/CZIC-tc224-m2-r54-1995.pdf
The Waterfront Construction Handbook: Guidelines for the Design and Construction of Waterfront Facilities	1997	Maine Coastal Program and Maine Department of Economic and Community Development	
Maine Port Facilities Inventory and Analysis	1998	Southern Maine Regional Planning Commission and Eastern Maine Development Corporation	Accessible through the Maine State Library[B]
Coastal Water Access Priority Areas for Boating and Fishing	2000	Maine State Planning Office and Maine Coastal Program	Accessible through the Maine State Library[C]
Preserving Commercial Access: A Study of Working Waterfronts in 25 Maine Communities	2002	Coastal Enterprises, Inc. for Maine State Planning Office and Maine Coastal Program	Preserving_Commercial_Access_-_A_Study_of_Working_Waterfronts_in_25_Maine_Communities.pdf
Paths and Piers: A Study of Commercial Fishing Access in Downeast Maine Coastal Communities	2003	Sunrise County Economic Council	https://seagrant.umaine.edu/wp-content/uploads/sites/467/2019/05/2006-maine-waterfront-access-scec-paths-and-piers.pdf
Tracking Commercial Fishing Access: A Survey of Harbormasters in 25 Maine Coastal Communities	2004	Coastal Enterprises, Inc. for Maine State Planning Office and Maine Coastal Program	https://seagrant.umaine.edu/wp-content/uploads/sites/467/2019/05/2006-maine-waterfront-access-cei-mcp-tracking-commercial-fishing-access.pdf

A https://ursus.maine.edu/search~S1?/XMaine+Port+Development+Study%3A+Port+Facility+Inventory+and+Evaluation+&searchscope=1&SORT=D/XMaine+Port+Development+Study%3A+Port+Facility+Inventory+and+Evaluation+&searchscope=1&SORT=D&SUBKEY=Maine+Port+Development+Study%3A+Port+Facility+Inventory+and+Evaluation+/1%2C4%2C4%2CB/f
B https://ursus.maine.edu/search/?searchtype=X&SORT=D&searcharg=The+Waterfront+Construction+Handbook&searchscope=1
C https://ursus.maine.edu/search/?searchtype=X&SORT=D&searcharg=Coastal+Water+Access+Priority+Areas+for+Boating+and+Fishing&searchscope=1

Previously Published Working Waterfront Reports (Continued)
The source of the following table is: Britsch, M. 2022. *Resources for Preserving Commercial Fishing Access*. Maine Coastal Program, Maine Department of Marine Resources.

Title	Year	Author	Link (If Applicable)
The Contribution of Working Water-fronts to the Maine Economy	2004	Colgan, C. S. for Maine's Working Waterfront Coalition	https://seagrant.umaine.edu/wp-content/uploads/sites/467/2019/05/2006-maine-waterfront-access-colgan-contribution-working-waterfronts.pdf
Saving Working Waterfronts: Mapping the Maine Coast's Economic Future	2005	Island Institute	
Access to the Waterfront: Issues and Solutions Across the Nation	2007	Maine Sea Grant	https://caseagrant.ucsd.edu/sites/default/files/Waterfront_Access_ME_SG.pdf
Mapping Maine's Working Water-front: A Statewide Inventory by the Island Institute	2007	Island Institute	
The Last 20 Miles: Mapping Maine's Working Waterfront	2008	Island Institute	https://www.islandinstitute.org/wp-content/uploads/2020/09/TheLast20Miles_web.pdf
Public Shoreline Access in Maine: A Citizen's Guide to Ocean and Coastal Law	2016	Maine Sea Grant and Wells Reserve	https://seagrant.umaine.edu/wp-content/uploads/sites/467/2019/03/2016-public-shoreline-access-in-maine-standard.pdf
The State of Maine's Working Water-front	2020	Maine Coast Fishermen's Association	https://www.mainecoastfishermen.org/working-waterfront
The Critical Nature of Maine's Working Waterfronts and Access to the Shore	2021	Island Institute	https://www.islandinstitute.org/wp-content/uploads/2021/11/WWF-Report_web.pdf

Appendix B - Maine DMR Landings Portal Instructions

Step 1: Go to the website https://mainedmr.shinyapps.io/Landings_Portal/

Step 2: Click on "Filters" in the top pane. Type or select from the drop-down menu which Port(s) you want to view. Be sure to include all ports in your town. In the Species filter, leave the default (all species). Specific species may also be typed or selected from the drop-down menu. Move slider to select years. You may select the most recent year, the last 5 years, or as far back as 2008.
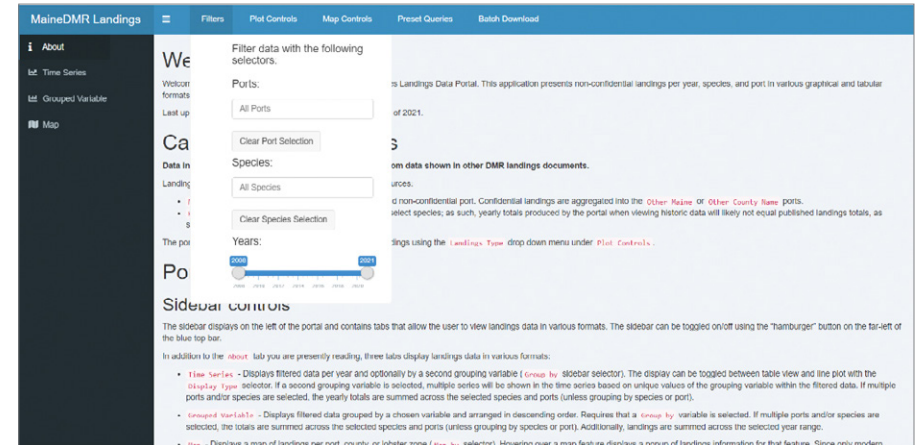
Step 3: Click on "Plot Controls" in the top pane. Under Landings Type, leave the default (modern) Under Display Type, select table. This will display data on total weight (lbs), total value ($), total trips, and total harvesters. Under Group By, select species. The Plot Series may be left as the default (total weight) when displaying by table; however, if you display by plot, you will need to select individual Plot Series and download each data file separately.
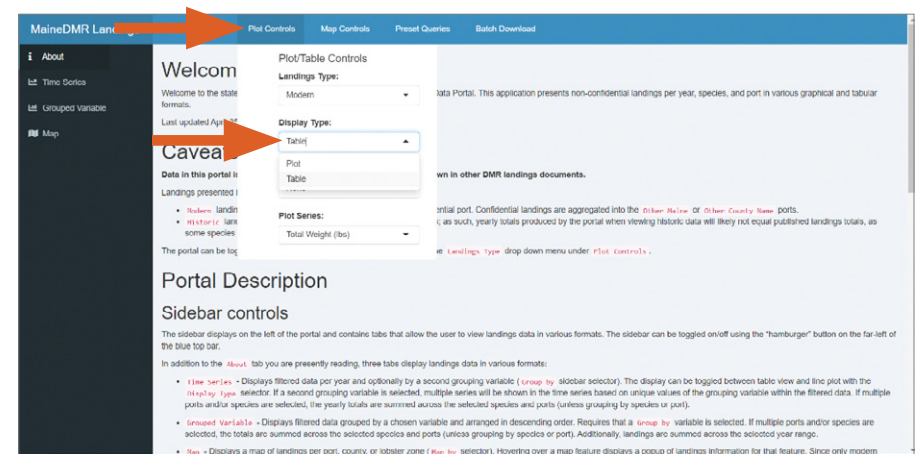
Step 4: On the left-hand side pane, click on "Grouped Variable" (pictured below) if only one year of data is selected. If you selected multiple years of data, the "Time Series" option (pictured to the right) would be the preferred display. A table should appear with the selected inputs from Steps 2 and 3.
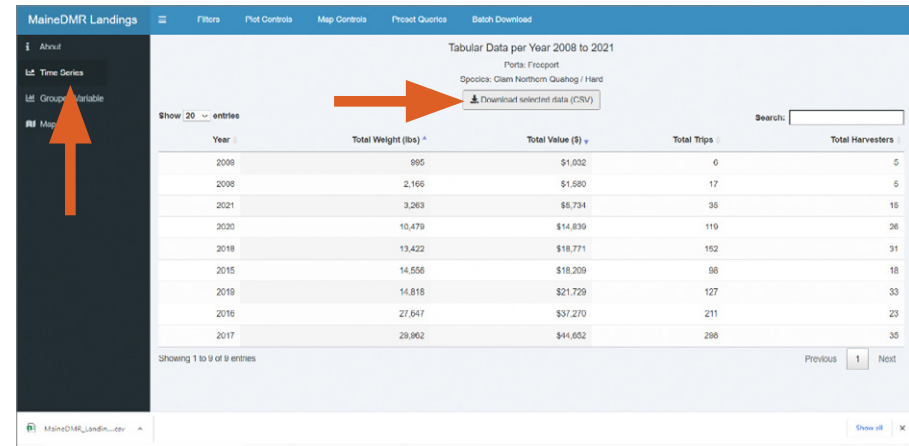
Step 5: To download selected data, simply click on download selected data (CSV). The file will appear on the bottom of your browser. On a PC, you can locate the file in the file explorer under the downloads folder, and on a Mac, you can locate the file in finder. The name of the file starts with MaineDMR_Landings_Time_Series_Data, and it is downloaded as a .csv file; however, if you have a Microsoft Excel license, you can right click the file, and open with Excel.
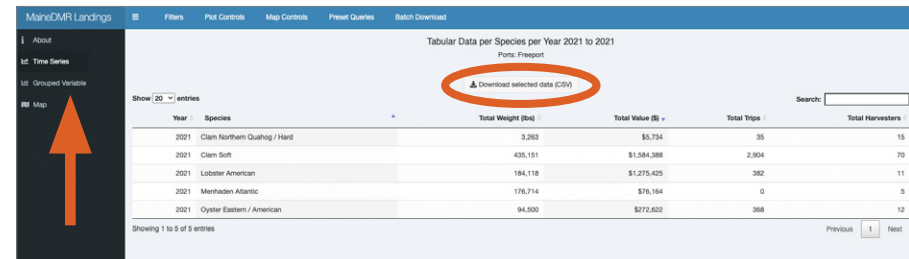
Please Note: If data are not populating in the plot at all or for certain species, it is due to confidentiality rules (i.e., there needs to be at least three harvesters and three dealers reporting landings from a particular town for data to be public). To address this, you can add ports in surrounding towns to the filter and/or add more years of data. For general landings information, as well as historical data, visit:
https://www.maine.gov/dmr/fisheries/commercial/landings-program/historical-data

Appendix C - ENOW NAICS Crosswalk

Ocean and Great Lakes Economy Sectors and Industries by NAICS Codes

Sector	Industry	NAICS	NAICS Industry (2012 NAICS)
Living Resources	Fish Hatcheries and Aquaculture	112511	Finfish Farming and Fish Hatcheries
		112512	Shellfish Farming
		112519	Other Aquaculture
	Fishing	114111	Finfish Fishing
		114112	Shellfish Fishing
		114119	Other Marine Fishing
	Seafood Processing	311710	Seafood Product Preparation and Packaging
	Seafood Markets	445220	Fish and Seafood Markets
Marine Construction	Marine Related Construction	237990	Other Heavy and Civil Engineering Construction

Ocean and Great Lakes Economy Sectors and Industries by NAICS Codes (Continued)

Sector	Industry	NAICS	NAICS Industry (2012 NAICS)
Marine Transportation	Deep Sea Freight	483111	Deep Sea Freight Transportation
		483113	Coastal and Great Lakes Freight Transportation
	Marine Passenger Transportation	483112	Deep Sea Passenger Transportation
		483114	Coastal and Great Lakes Passenger Transportation
	Marine Transportation Services	488310	Port and Harbor Operations
		488320	Marine Cargo Handling
		488330	Navigational Services to Shipping
		488390	Other Support Activities for Water Transportation
	Search and Navigation Equipment	334511	Search, Detection, Navigation, Guidance, Aeronautical and Nautical System and Instrument Manufacturing
	Warehousing[1]	493110	General Warehousing and Storage
		493120	Refrigerated Warehousing and Storage
		493130	Farm Product Warehousing and Storage

1 The 4-digit NAICS codes are supplemented for counties where the 6-digit data are not available.

Ocean and Great Lakes Economy Sectors and Industries by NAICS Codes

Sector	Industry	NAICS	NAICS Industry (2012 NAICS)
Tourism and Recreation	Boat Dealers	441222	Boat Dealers
	Eating and Drinking Places	722511	Full Service Restaurants
		722513	Limited Service Eating Places
		722514	Cafeterias
		722515	Snack and Nonalcoholic Beverage Bars
	Hotels and Lodging	721110	Hotels (except Casino Hotels) and Motels
		721191	Bed and Breakfast Inns
	Marinas	713930	Marinas
	Recreational Vehicle Parks and Campsites	721211	RV Parks and Recreational Camps
	Scenic Water Tours	487210	Scenic and Sightseeing Transportation, Water
	Sporting Goods	339920	Sporting and Athletic Goods Manufacturing
	Amusement and Recreation Services	487990	Scenic and Sightseeing Transportation, Other
		611620	Sports and Recreation Instruction
		532292	Recreational Goods Rental
		713990	Amusement and Recreation Services Not Elsewhere Classified
	Zoos and Aquaria	712130	Zoo and Botanical Gardens
		712190	Nature Parks and Other Similar Institutions

Ocean and Great Lakes Economy Sectors and Industries by NAICS Codes (Continued)

Sector	Industry	NAICS	NAICS Industry (2012 NAICS)
Offshore Mineral Resources	Limestone, Sand and Gravel	212321	Construction Sand and Gravel Mining
		212322	Industrial Sand Mining
	Oil and Gas Exploration and Production	211111	Crude Petroleum and Natural Gas Extraction
		211112	Natural Gas Liquid Extraction
		213111	Drilling Oil and Gas Wells
		213112	Support Activities for Oil and Gas Operations
		541360	Geophysical Exploration and Mapping
Ship and Boat Building	Boat Building and Repair	336612	Boat Building and Repair
	Ship Building and Repair	336611	Ship Building and Repair

Appendix D - Instructions for Accessing Census Employment Data

To access data for Table E (Employment in Fishing), follow the methods below. These instructions are also available in NOAA's Economic Contribution of Working Waterfronts publication; however, the processes and websites have changed since the guide was published in 2017.[67] Towns or regions can also request an online or in-person training from NOAA on this methodology.[68] In Method 1, census data only encompasses typical employment data (W-2 employees) and excludes self-employment data. Since most fishermen and women are self-employed, the NOAA ENOW data in Method 2 will be more accurate. These data are only available at the county level at this time. Due to confidentiality rules, some values may appear as N, meaning not available or not comparable for a particular Zip Code. Please note that as of December 2022, 2019 is the most recent year that self-employment data are available on NOAA's website. A spreadsheet with this information by Maine county is available on MCFA's website (see Table E).

Method 1 - Employment Data by Zip Code

Step 1: Go to https://data.census.gov and click on "Tables" in the upper right corner.

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67 https://coast.noaa.gov/data/digitalcoast/pdf/working-waterfronts.pdf
68 https://coast.noaa.gov/digitalcoast/training/marine-economy.html
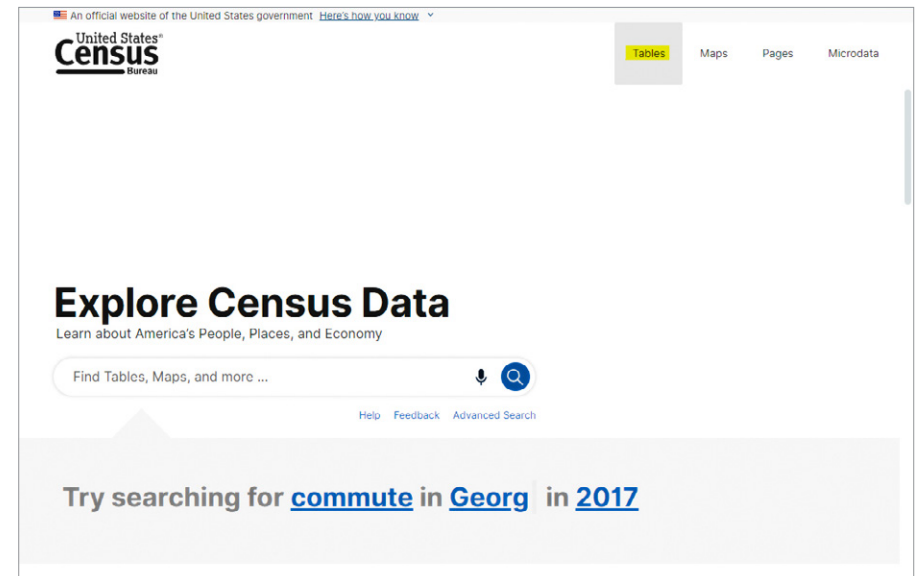
Step 2: In the "Find a Filter" column, select "Codes"
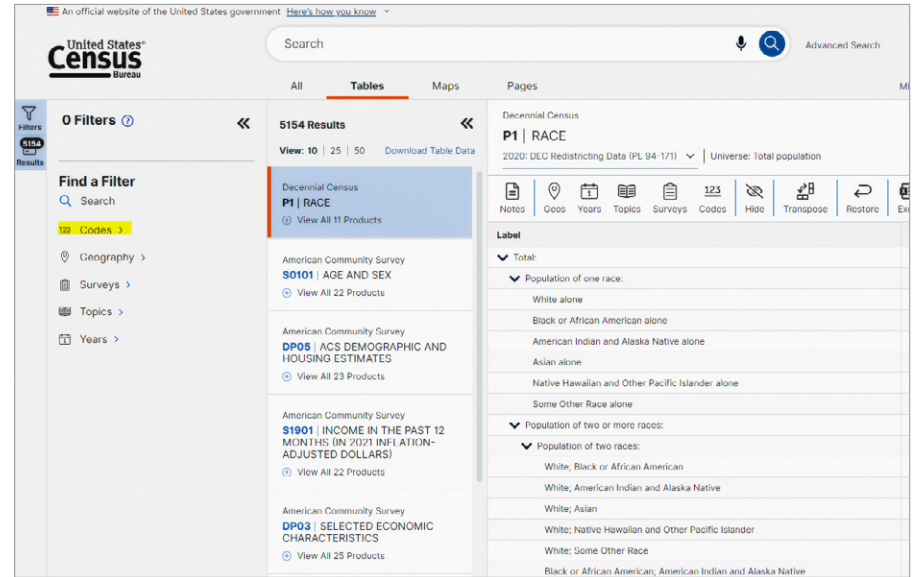
Step 3: Select "Industry Codes (NAICS)." This example will start with the NAICS code for Fishing, 11411.
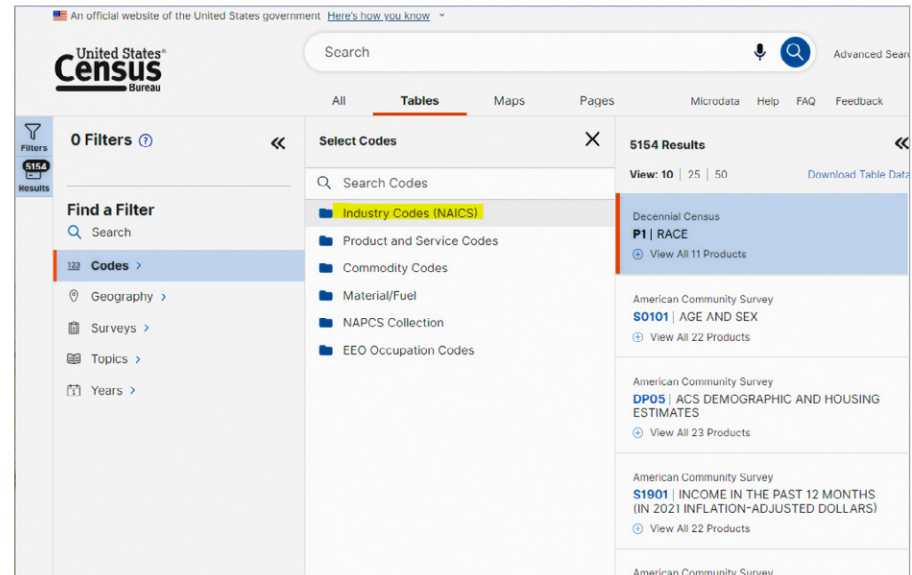
Step 4: Select "11 - Agriculture, forestry, fishing, and hunting"
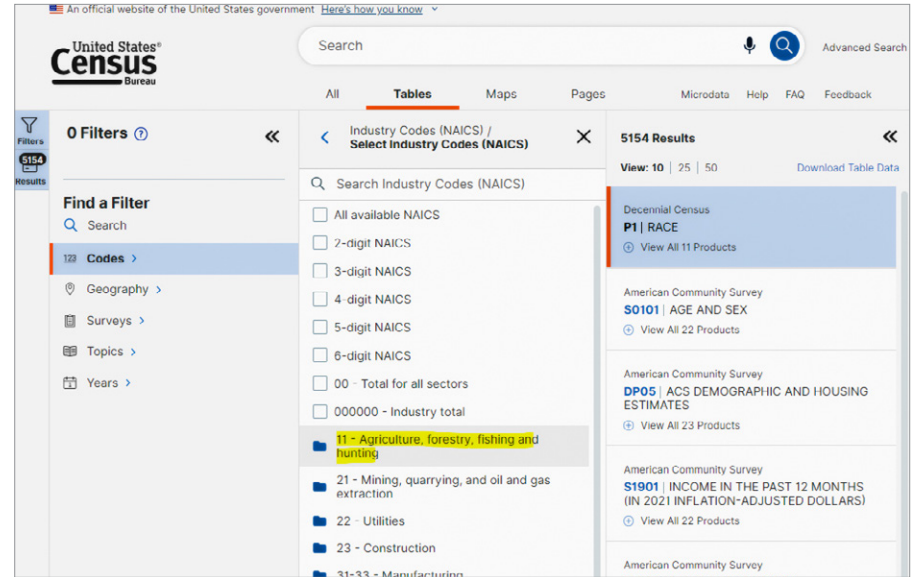
Step 5: Select "114 - Fishing, hunting and trapping"
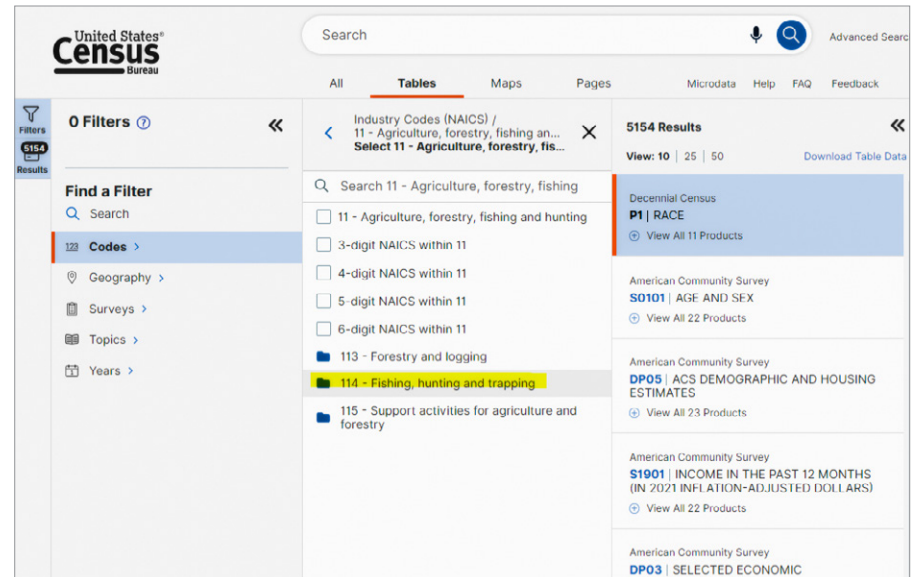
Step 6: Select "1141 - Fishing"
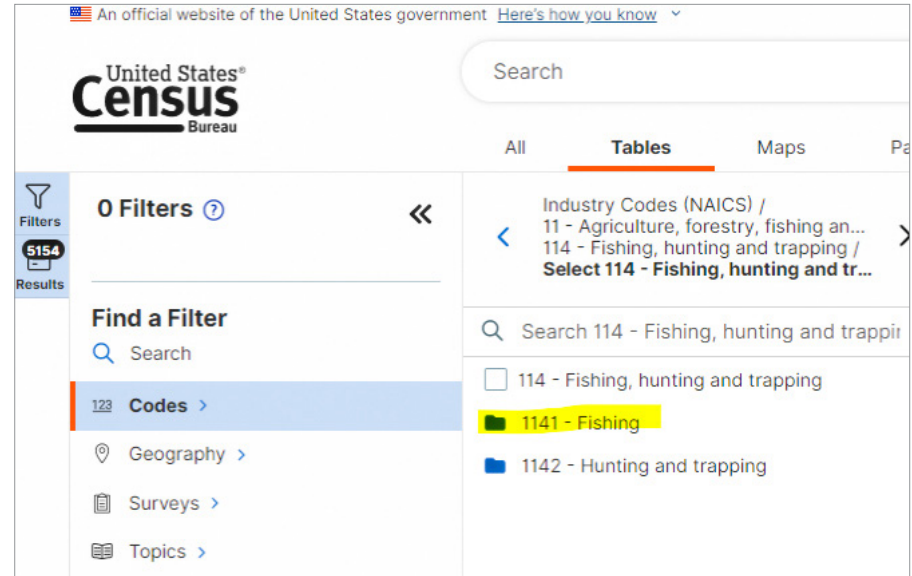
**Step 7:** Select "11411 - Fishing." This includes finfish fishing, shellfish fishing, and other marine fishing.
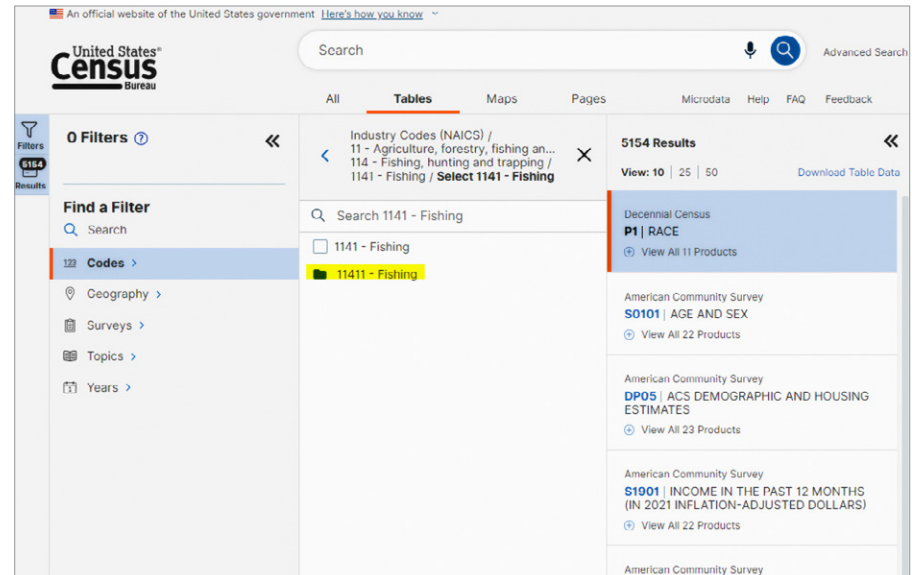
Step 8: Check the box next to "11411 - Fishing." This will apply a filter, seen circled in red. If more NAICS codes are being included, refer to the NAICS table in Appendix C and follow the steps to apply another filter.
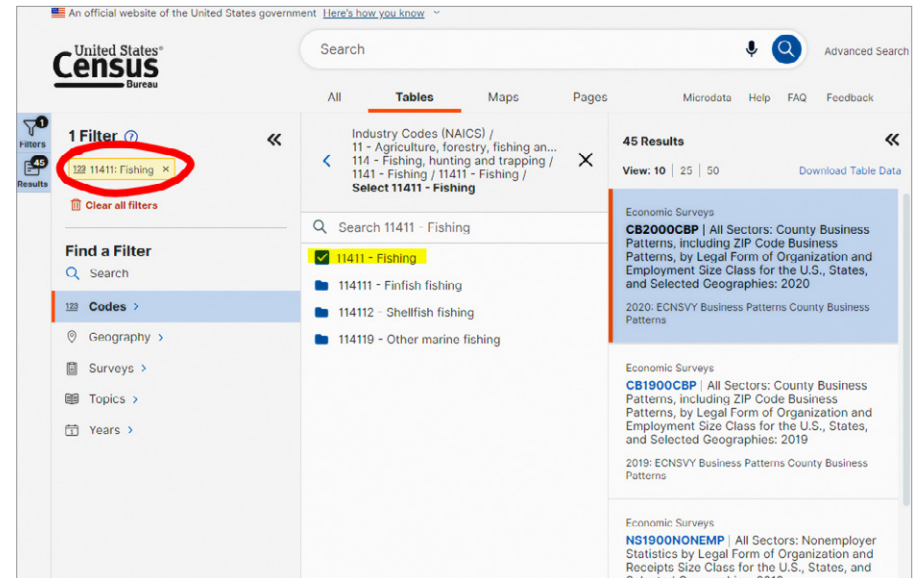
Step 9: Once all desired NAICS codes are included, select "Geography" under the "Find a Filter Column" to apply a filter for the desired Zip Code(s).
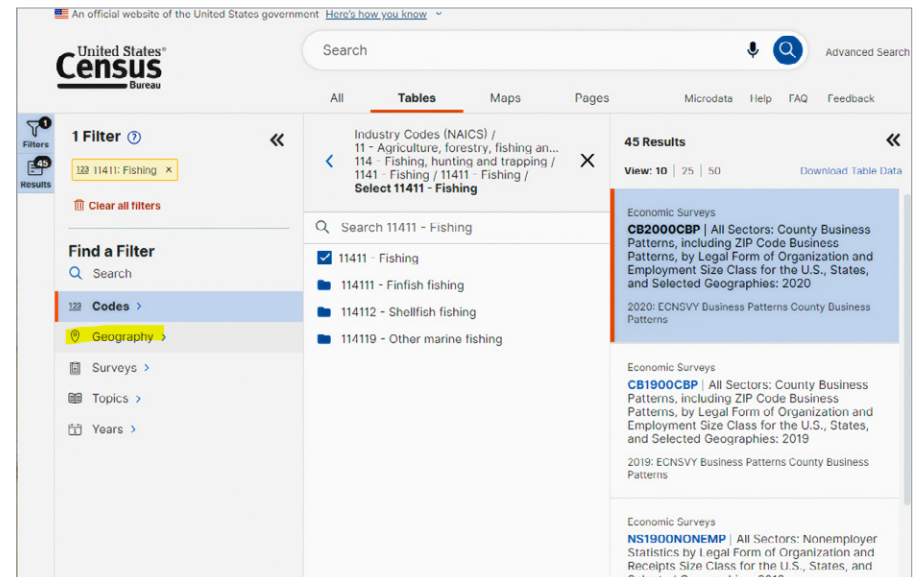
Step 10: Under "All Geographies", select "5-Digit Zip Code." Depending on the size of your screen, you may need to scroll down.
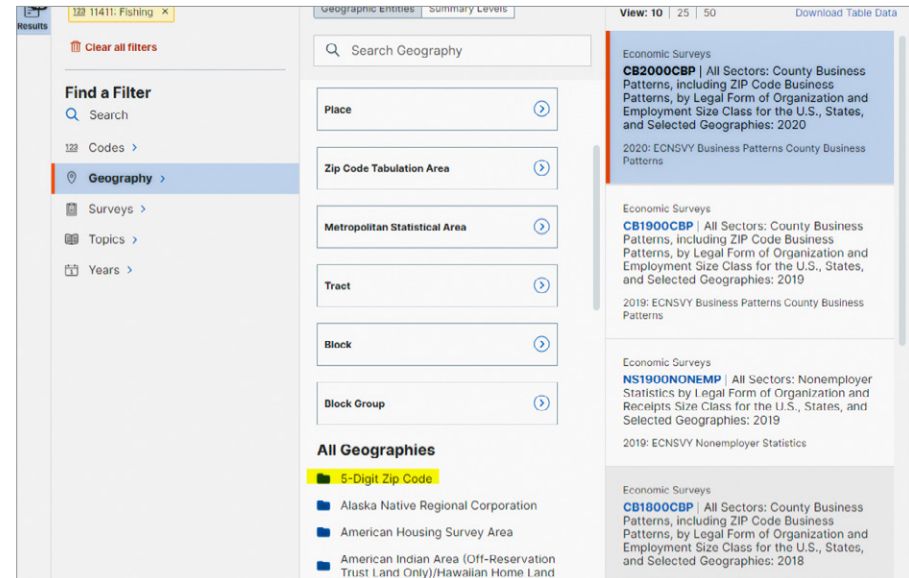
Step 11: Type the desired Zip Code into the search bar. For this example, the Zip Code for Winter Harbor was used. Select the box to apply another filter. If a town has more than one Zip Code, repeat the process for the next code(s).
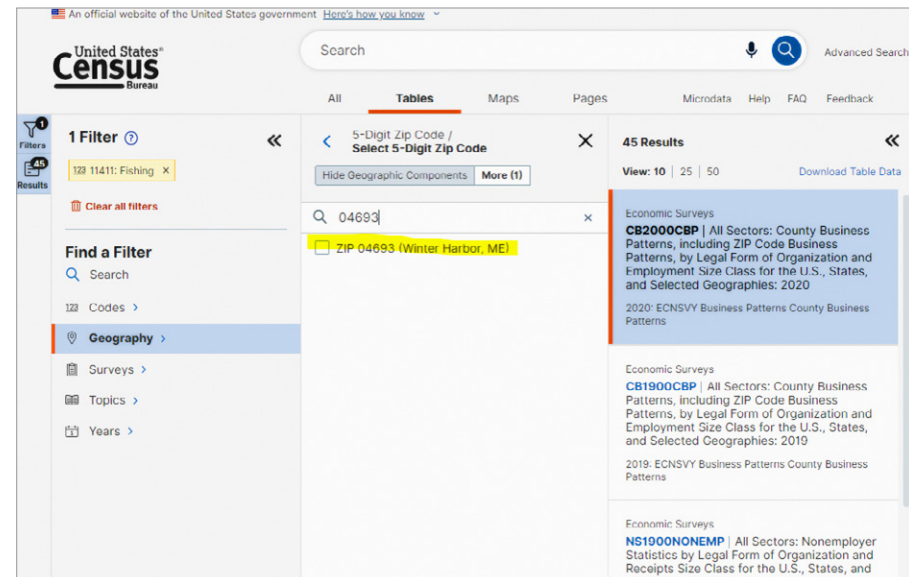
Step 12: In the column on the right, select "CB2000ZBP" to access Zip Code Business Patterns by Employment Size Class for 2020. This is the most recent data as of December 2022. Click on the left facing arrows (<<) in the upper right corner to hide results and see the table.
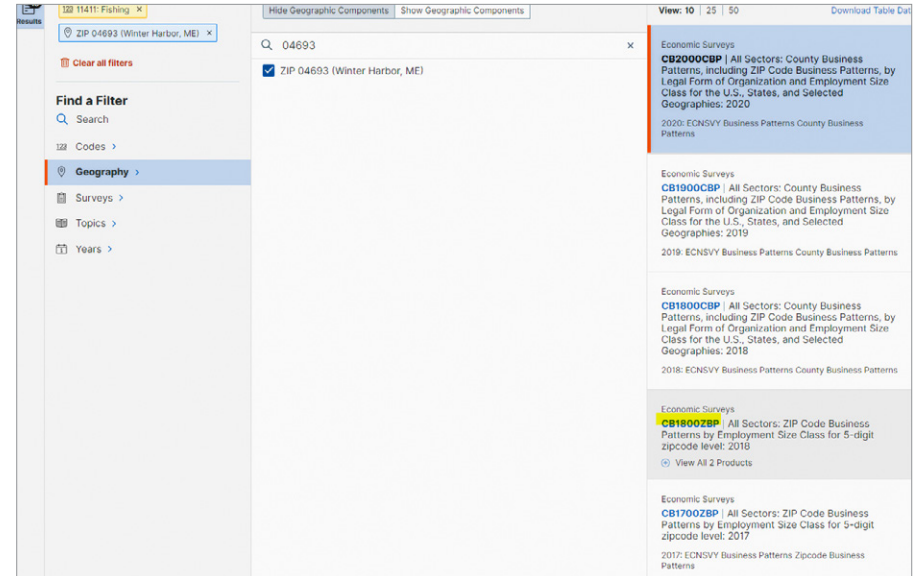
Step 13: When looking at results, some values may appear as N, meaning not available or not comparable. When there are three or less employees in an establishment, the number is hidden for confidentiality. In this case, use the number of establishments.

Notes

Method 2 - Employment and Self-Employment Data by Zip Code

Step 1: Go to https://coast.noaa.gov/quickreport/#!/index.html and select "Ocean Economy" (Employment Data) in the "Select Your Data Type" box. The "Select Your Geography Type" box will auto populate with "Ocean Economy Geographies"
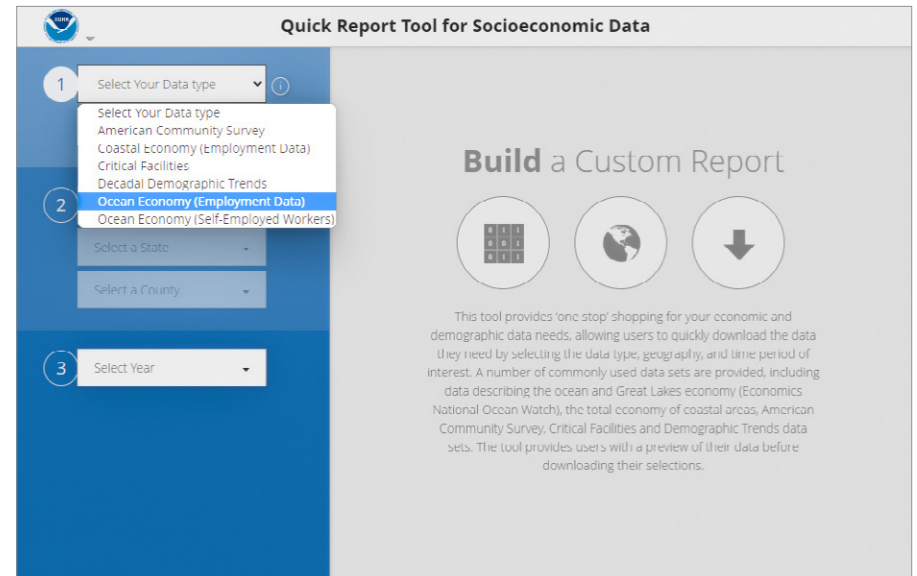
Step 2: In the "Select a State" box, scroll down to select "Maine." You may leave the "Select a Region" box as is.
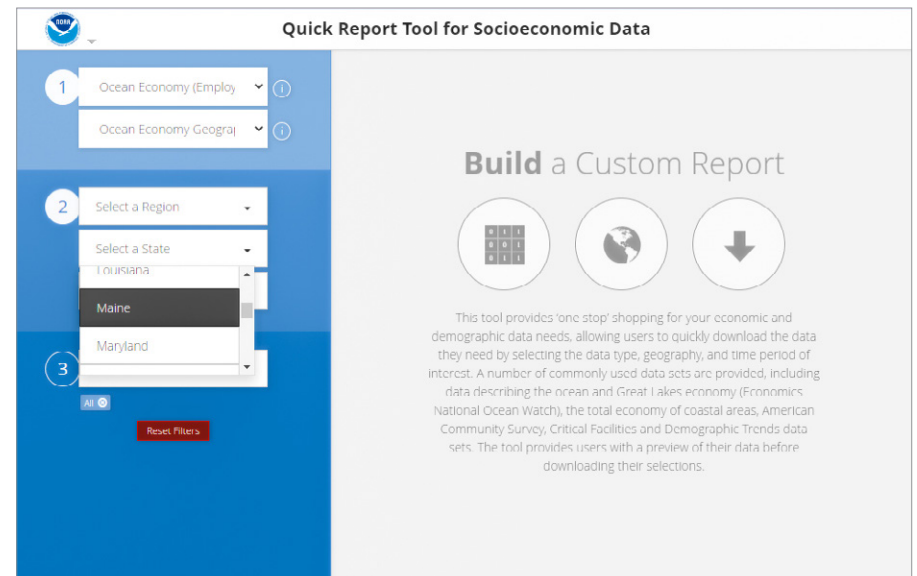
Step 3: In the "Select a County" box, scroll to select the desired county.
Step 4: In the "Select Year" box, select 2019. As of December 2022, 2019 self-employment data are the most recent data available, and these data are also available on MCFA's website.

Step 5: A table of all Ocean Economy industries for the selected county and year will be available. A CSV file may be downloaded using the green button below. To include self-employment data, repeat the process with Ocean Economy (Self-Employed Workers) selected in the first box.

Quick Report Tool for Socioeconomic Data

GeoName	Year	Sector	Establishments	Employment	Wages	GDP
Hancock, ME	2018	Marine Construction	Suppressed	Suppressed	Suppressed	Suppressed
Hancock, ME	2018	Living Resources	171	627	$24,635,000.00	$68,068,000.00
Hancock, ME	2018	Offshore Mineral Extraction	0	0	$0.00	$0.00
Hancock, ME	2018	Ship and Boat Building	18	439	$20,225,000.00	$22,140,000.00
Hancock, ME	2018	Tourism and Recreation	345	3,454	$92,717,000.00	$233,750,000.00
Hancock, ME	2018	Marine Transportation	7	37	$2,073,000.00	$2,857,000.00
Hancock, ME	2018	All Ocean Sectors	561	4,582	$140,692,000.00	$326,063,000.00

1. Ocean Economy (Employme... / Ocean Economy Geographic

2. Select a Region / Select a State / Maine / Select a County / Hancock County, ME

3. Select Year / 2018

Reset Filters

Download CSV

Notes

Working Waterfront Inventory Template

A Tool for Municipal Planning and Preservation of Working Waterfront

Version 1.0
February 2023

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