NEEDS AND ISSUES IN THE TAUNTON BAY REGION

A Survey of Residents from Franklin, Hancock, and Sullivan, Maine



Prepared by Tracy Hart

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Researched and written by Tracy Hart for the Maine Sea Grant Program

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Introduction

Purpose and Background

Located just east of Acadia National Park, the towns of Franklin, Hancock, and Sullivan rest on the shores of Taunton Bay, a small embayment linked to the northwest end of Frenchman Bay by the Taunton River. Taunton Bay encompasses a number of smaller bays such as Egypt and Hog (See Map, Fig. 1).

Between August and November of 2002, the Maine Sea Grant Program conducted an opinion survey focused on Taunton Bay, which was distributed to a total of 600 residents from Franklin, Sullivan, and Hancock. The survey was designed to help Maine Sea Grant assess the level of interest and perceived need in the area for the types of extension programs that it provides to coastal communities throughout the state of Maine. Among its list of extension activities, Maine Sea Grant provides public information sessions, conducts targeted training and outreach, facilitates multi-stakeholder discussions, engages local citizens in coastal monitoring, and serves as a liaison between scientists, managers, municipalities and local residents. These efforts aim to make sciencebased marine information more accessible and locally relevant to coastal communities.

The survey represents an approach that Maine Sea Grant is taking to address marine-related topics at the local level. It was designed to gather information about the region's needs and interests in order to guide the development of programs that are of real concern to the people who live and work near Taunton Bay. The survey results provide tangible local input about the information and products that would be most useful to the area. It is hoped that the results also serve as a useful resource to decision-makers, town officals, community groups, state agencies, resource users or others who focus efforts in the Taunton Bay region. The survey addressed the following overarching questions:

- How is Taunton Bay a part of the lives of those living and working near its shores?
- How important is Taunton Bay to the culture and livelihoods of residents living near it?
- What knowledge do local residents possess about the status and issues related to Taunton Bay?
 What level of importance do they place on these issues?
- For which topics are there additional information or training needs?

Why Taunton Bay?

Taunton Bay is an important focus for a number of reasons. Most frequently noted is the Bay's ecological importance. Covering 3,772 acres¹, a substantial portion of the bay floor is blanketed by eelgrass, an underwater plant that provides vital habitat to many commercially and noncommerically important species. Taunton Bay also boasts kelp beds and vibrant mudflats, whose inhabitants provide food to many animals, including several types of endangered shorebirds. The flats also support clamming and worm harvesting activities as part of the region's local economy. One of its claims to fame, Taunton Bay reportedly hosts the most northern breeding population of horseshoe crabs in North America.

Maine Sea Grant's primary interest in this area, however, stems from the the diverse marine-related issues emerging in the Taunton Bay region. Recent proposals and decisions concerning resource use in Taunton Bay suggest a possible role for Maine Sea Grant's skills in information transfer and outreach. For instance:

• During the 1999-2000 legislative session, the Maine Legislature closed the portion of Taunton Bay north of the Route 1 bridge to a fishing method known as dragging for a period of five years.² In 2005, the Maine Legislature will decide whether to lift the ban on dragging or leave it in place.

Franklin

Frankl

Figure 1. Map of Taunton Bay and Surrounding Towns

Map obtained from Maine Office of GIS Internet Mapping (edited) (http://apollo.ogis.state.me.us/mapping/mapframe.htm).

- The United States Department of Agriculture has proposed to build an aquaculture research facility in Franklin. Preliminary public informational meetings hosted by USDA have suggested that residents have some interest in the facility as a potential source of jobs, but also a number of concerns.
- A number of shellfish aquaculture lease applications for Taunton Bay have been proposed since 2002. A public information session facilitated by Maine Sea Grant in September 2002 indicated various levels of support and opposition to the proposals.
- Some Taunton Bay clam flats that were closed to harvesting under the DMR Shellfish Sanitation Program may be reopened if the results of water quality tests continue to show low fecal coliform levels. If they are reopened, management of the flats will be turned over to the presiding towns to determine the local harvesting regulations for these areas.
- Like in many coastal areas, shoreline development is increasing. The growth could benefit the area and/or raise some of the issues that have surfaced as a result of growth in other parts of the state including public access, use conflicts, and pollution runoff.

These examples highlight the diverse interests in the use and future of Taunton Bay and its resources—some compatible, some potentially incompatible. Through this survey, Maine Sea Grant has begun to assess how its resources and extension skills might contribute to discussion, resolution, or local decision-making concerning such issues, specifically by bringing science-based information to the table. Because other areas in the state are likely to face similar issues in the future, work in the Taunton Bay area could provide models relevant to other regions.

About Maine Sea Grant

Maine Sea Grant's mission is to play a leadership role in marine science research and education and to promote their use for the development, management and stewardship of marine and coastal resources. Maine Sea Grant accomplishes its mission in three ways: through extension agents who work directly with coastal towns and groups; by providing grants to scientists for marine research; and by producing publications on topics such as aquaculture, fisheries, and the health of Maine's coastal and marine areas.

Methods

Survey Design

This survey was designed and distributed by the Maine Sea Grant Program at The University of Maine in Orono. The survey instrument was reviewed and edited by faculty at the Margaret Chase Smith Center for Public Policy and the Center for Research and Evaluation, both at The University of Maine. These institutions conduct surveys on a regular basis and have advanced training in survey design and protocol for survey distribution. Their expertise was solicited for guidance in minimizing question bias, improving clarity, and devising appropriate sampling methods. Maine Sea Grant staff members, as well as the principal investigator of a survey conducted in July 2002 for the Penobscot Bay Network³, provided feedback on the direct content of the survey. Survey standards and methods were also researched through Web-based sources and printed literature.

Format

For the majority of the questions, respondents were provided with a pre-selected list of responses from which they were asked to choose (multiple choice or yes/no). Most of these questions asked the respondent for a single reply; however, a few questions allowed the respondent to mark as many choices as he/she found applicable. In a few cases, respondents were provided with unbound, openended questions that they could respond to in their own words.

The survey was divided into four main sections: the local importance of Taunton Bay; perceptions about the health of Taunton Bay; views on specific issues; and questions about the respondent (Appendix A).

Surveying Methods

The survey was disseminated to a random sample of 600 registered voters out of the 4,702 people living in the towns of Hancock, Franklin, and Sullivan (as of 2000 census)⁴. Two hundred surveys were distributed to each town. The surveys were mailed once only. The survey did not include follow-up phone calls or mailed reminders to those who received the survey.

Each survey distributed was labeled with a number (1-600). This numbering system allows all of the data from each individual survey to remain linked within the database. The linked data enables correlation of a given response with such information as:

- the town from which it was received;
- the respondent's residency time in Maine;
- the respondent's reported profession and/ or recreational interests.

From such correlations, differences in the responses can be assessed according to various characteristics of the resondents. The numbering also allows us to ensure that the surveys returned and tallied were the originals, not photocopies. This safeguard is important to maintaining a random sample design, which is more likely representative of the larger population's perspectives than surveys potentially photocopied by the original recipients and distributed through non-random networks to their associates.

To preserve confidentiality, the numbers and corresponding data are not linked with the names and addresses to which the surveys were mailed.

Potential Bias

As with any survey, because only a sample of the total population was polled, the results provided here may or may not be representative of the general opinions and attitudes of people residing in the

Taunton Bay region. Also, inherent in all surveys, is the possibility that the characteristics of those who answered the survey differ from those who chose not to respond. For these reasons we caution attempts to make generalizations from the data presented.

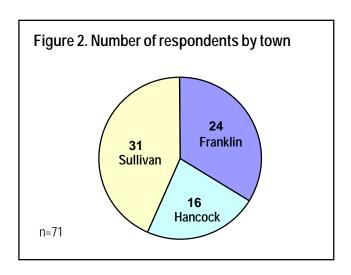
A number of factors specific to this survey deserve mention. The survey was mailed only to registered voters. This method places emphasis on Maine residents and most likely underrepresents: non-residents who visit or own property in the area; residents under 18 years of age who are not yet able to register to vote; those who work but do not live within the three towns sampled; and adult residents who have not registered as Maine voters.

Because Maine Sea Grant conducted this survey to evaluate whether, and on which issues, Taunton Bay communities might desire assistance in dealing with marine-related topics, this survey focuses specifically on Taunton Bay and does not consider other topics that may be of interest to residents or town governance. Additionally, it does not attempt to rank the importance of Taunton Bay issues relative to other community-level considerations. Maine Sea Grant's extension and outreach approach is based on the belief that local input has relevance to management and decisions concerning the marine environment.

Survey Findings

Profile of the respondents

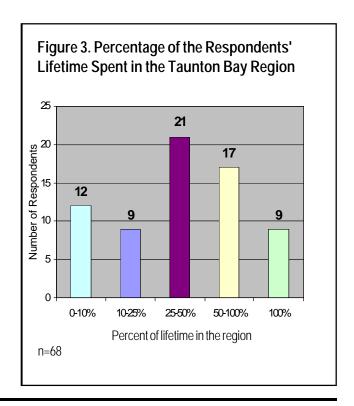
In total, 71 out of 600 individuals returned completed surveys. The majority of respondents (43%) were from the town of Sullivan, followed by 34% from Franklin, and 23% from Hancock (Figure 2). Most were long-term residents of Maine, with 53% having spent at least half of their lives in Maine and only 21% reporting that they lived any part of their lives outside of the state. Most of the respondents were also longtime residents of the Taunton Bay Region, with 38% residing in the region for more



than half of their lives and over two-thirds (69%) residing in the region for at least a quarter of their lifetimes (Figure 3).

The average age of those who responded was 56, with ages ranging from 22 to 92 years of age. On average, respondents were within 15 years plus or minus the mean age (e.g. standard deviation = +/-15 years).

Fifty percent of respondents reported that they have held an ocean-related job at some time in their lives, or have had a family member with an ocean-related job. Out of 70 respondents, 19 stated



that they have an ocean-related job or ocean-related source of income at this current time. Of these, four reported commerical fishing as a source of income for their household. Seven work in shorefront development, real estate, and/or construction. Two reported work in industries related to boats, marinas, or boat products. Two are involved in the processing and transport of marine products. Two more work in fields of marine research, education, advocacy, or resource protection.

Of the 51 people who reported that they do not currently receive income from a marine-related source, nine are retired, six work in tourist-related industries, five work in retail, four work in health care services, four are in education, and three receive income from municipal services. Other individuals listed jobs in farming, construction, research (Jackson Laboratory), federal government, arts, crafts, automotive repair, military, and landscaping.

Twenty-four of 70 respondents (34%) own waterfront property on Taunton Bay. Of these, 11 were from Franklin, 6 from Hancock, and 7 from Sullivan. Ten of the seventy respondents have served on a local government board or commission in the Taunton Bay region. Forty-six percent of the total respondents report being active members of community or civic groups. Fifty-nine percent report that they usually attend town meetings.

Profile Summary

Overall, the majority of respondents have spent a large portion of their lives in Maine and the Taunton Bay region. Because only one fifth of those who returned surveys reported that they have spent portions of their lives outside of Maine, the responses reported in the following pages are likely to be more representative of the views of individuals with a long-term history in the area than those who have moved to Maine or into the region recently.

The pool of respondents contains representatives from all three of the towns surveyed, with Sullivan submitting the greatest number of completed surveys. Hancock residents submitted substantially fewer surveys than either of the other two towns. Sullivan has the least shoreline footage on Taunton Bay of the three towns, and the bay provides the town's only marine access. In contrast, Hancock has water access via Taunton and Frenchman bays and more shoreline on Frenchman Bay.

The list of income sources for the group of respondents is impressively diverse, suggesting that the responses to this survey draw from a broad base of interests and are not constrained to narrowly defined income sectors. The large age range of the respondents suggests that the data provided in this report represent a number of generations.

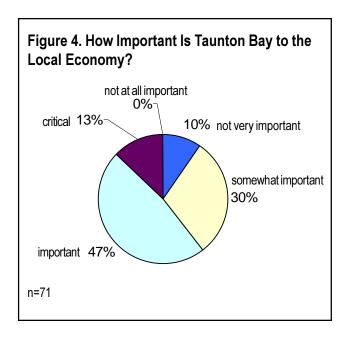
The fact that 50% of respondents report having had an ocean-related job or source of income at some point in their lives opens the opportunity for comparisons between the two resulting groups in their answers to the survey questions. Similarly, over one third of those who answered the survey own waterfront property on Taunton Bay, providing an opportunity to assess differences in perception between shorefront owners and those living at large in the region. The data is divided according to these groups in the section titled "Views on Specific Issues" in order to assess if Taunton Bay issues may be perceived as having greater importance among those who hold ocean-related jobs or own shoreline property than those who do not.

The majority of respondents to this survey report that they usually attend town meetings. A substantial number are also active in community or civic groups. These findings may suggest that the responses originate from an involved and civically active sector of the population, and perhaps a sector with a raised level of interest in Tauton Bay, local decision-making, and/or marine resource management.

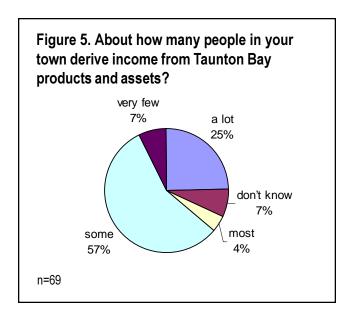
Perceived Economic Importance of Taunton Bay

The survey's initial questions aimed to decipher the perceived economic importance of Taunton Bay to the region. For these questions, respondents were provided with qualitative rankings (i.e., "a lot", "some") in order to determine how prominently respondents view this source of income in comparison with other sources, rather than actually how many people derive income from Taunton Bay assets.

In response to these questions, over one half of the respondents (60%) rated Taunton Bay as *important* or *critical* to their town's local economy. Almost another one third ranked the Bay as *somewhat important* economically. None of the respondents selected the answer choice *not at all important*. (Figure 4).

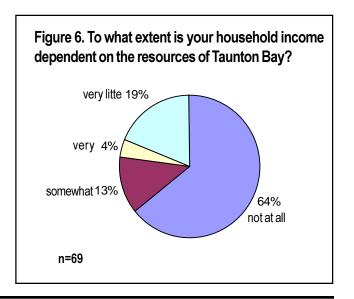


Similarly, over one half of the respondents (57%) answered that *some* people derive a part of their income from Taunton Bay assets, including examples such as waterfront real estate, seafood, tourism, and marine commerce (Figure 5). This answer choice received a markedly higher response rate than any of the others, with the next highest rating at only 25% who expressed the belief that *a lot* of people in the region derive income from Taunton Bay assets.



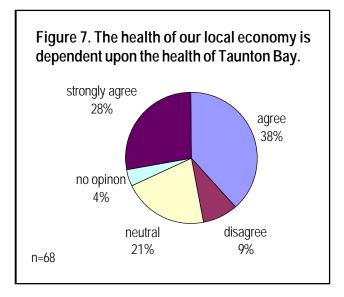
These results suggest that respondents view Taunton Bay as an important, but not a primary source of income to the region, and as a valued, but not driving component, of the local economy.

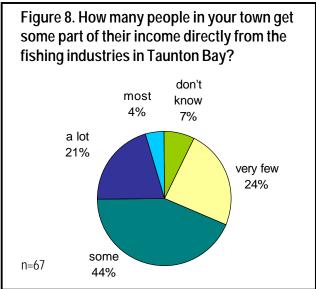
When asked to what extent their own household income is dependent upon Taunton Bay resources, 64% answered *not at all*. Just over one third (36%) of the respondents said that some part of their personal household income is reliant on Taunton Bay resources and assets, with the majority of these stating that this source makes up *very little* of their total income (Figure 6). Overall, respondents appear to view Taunton Bay as proportionally providing a greater overall economic contribution to the region than to their own personal household income.



In light of all of these answers, it is compelling that a large majority of the respondents expressed agreement with the statement that, "The health of our local economy is dependent upon the health of Taunton Bay." Thirty-eight percent stated that they agree and 28% stated that they strongly agree with this statement. Only six respondents (9%) chose to disagree and none chose the answer strongly disagree in response to this statement (Figure 7). The question defines a large majority of respondents (66%) who believe there is an important tie between the health of Taunton Bay and the health of the local economy.

The final economic question queried respondents on the economic importance of fishing industries in the region (i.e., direct extractive activities) versus more



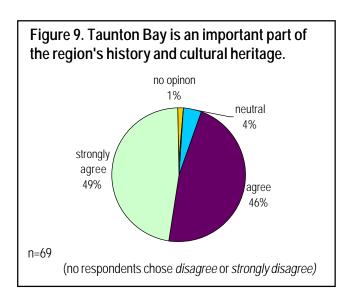


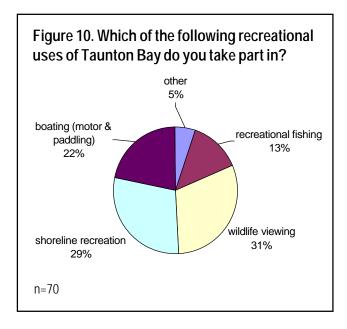
indirect economic activities linked to Bay resources. Nearly one half of the respondents (44%) expressed that *some* of the people in their town receive a portion of their income directly from fishing industries in Taunton Bay. Almost one quarter of the respondents (24%) expressed the belief that *very few* people receive their income from Taunton Bay fishing industries (Figure 8). This finding is consistent with anectdotal information, collected during preliminary interviews, that a small number of lobster, worm, clam, and mussel harvesting operations exist in Taunton Bay. The ranking of Taunton Bay as important to the local economy was evidently not linked primarily to contributions from fishing practices.

Perceived Non-Economic Value of Taunton Bay

In addition to the questions about the economic benefits provided by Taunton Bay, a number of questions were included regarding non-economic benefits associated with the Bay and its resources, such as cultural, recreational, and aesthetic. In response to these questions, 95% of respondents either agreed or strongly agreed that Taunton Bay is an important part of the region's history and cultural heritage (Figure 9). None of the respondents disagreed with this statement.

Taunton Bay also appears to provide significant recreational value to residents, based on the large





number of respondents who reported some type of recreational activity on the Bay or its shoreline (Figure 10). Of 70 respondents, only eight responded that they are not involved in any of the recreational activities listed in the survey, including bird-watching, wildlife viewing, motor boating, canoeing, kayaking, recreational fishing, or use of the shoreline for exercise, recreation, or scenic viewing. Nearly 90% are involved in two or more of the recreational activities listed. Eight respondents listed additional recreation they partake in on Taunton Bay, including hunting, horseshoe crab counts, woods maintenance, aesthetic enjoyment, cross-country skiing, island exploration, listening to the sounds, and dog walking.

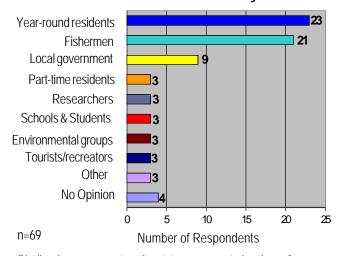
The responses to these questions suggest that Taunton Bay is perceived as an important component of the historical, cultural, and recreational fabric of the region. And, in fact, 42% of respondents agreed or strongly agreed that the primary reason they live in the region is because of Taunton Bay and its resources. These results suggest that there is a substantial population who view this resource as an important influence on their quality of life.

Perhaps part of the respondents' assessment of the bay's importance lies in the perception that the benefits of coastal resources in the region accrue

largely to local residents. From a list of 13 possible choices, a full 29% of the responses indicated *year-round residents* as the primary beneficiaries of Taunton Bay assets (Figure 11). Another 26% of responses categorized *fishermen* as the primary beneficiaries of Taunton Bay resources, presumably because they derive their income directly from extraction of marine resources. The third most frequently chosen answer was *local government*, receiving nine out of the 80 total responses provided to this question.

The number of responses to all of the other answer categories provided (including state government, part-time residents, scientists and research interests, environmental interests, tourists and recreators, school and university students, chambers of commerce, local businesses, and large corporations) fell sharply behind the top three ranking categories.

Figure 11. Which of the following groups do you think benefits most from Taunton Bay?

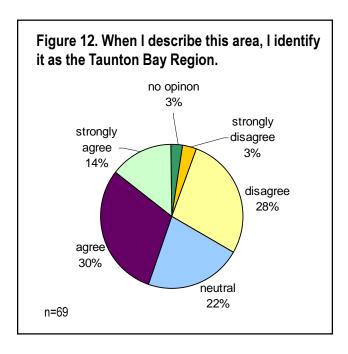


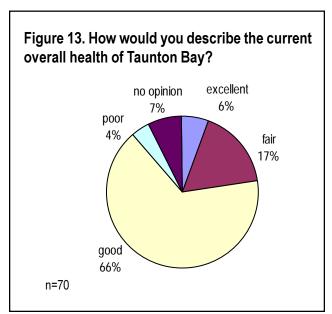
(Not listed are answer categories state government, chambers of commerce, local businesses, and large corporations each of which received between zero and one response)

These results are interesting in light of reports from some parts of Maine's coast indicating a shift of coastal benefits away from longtime local residents. Taunton Bay is apparently still very much a local resource, perceived to be largely unaffected by some of the pressures and changes occurring in several other regions. Overall, the responses to this question suggest that pressures affecting some of

Maine's coastal towns are not perceived strongly in this region.

Interestingly, despite the bay's reported local significance, Taunton Bay does not appear to provide a strong identity for the region. Respondents were quite divided as to whether or not they identify the area as the *Taunton Bay region* (Figure 12). At present, Taunton Bay does not appear to be viewed as a primary identifying characteristic of the area, nor does it appear to unify the residents of the three towns around a common identity.





Perceptions about the Health of Taunton Bay and the Region

The vast majority of respondents (66%) indicated that they believe the current health of Taunton Bay is *good* (Figure 13). This ranking is corroborated by the 70% who believe the bay is safe for swimming and the 76% who believe that it is safe to eat seafood harvested from Taunton Bay.

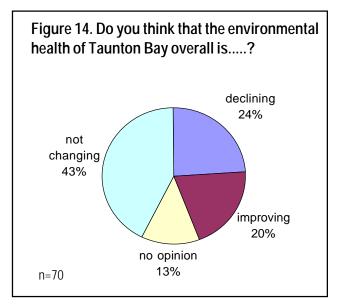
Respondents provided a vast array of reasons why they rated the bay's health as they did. Some based their rating on personal experience and observations made over time, providing examples such as "production of fish, clams, and mussels is going well," "I see lots of marine life when I'm out kayaking," and "the bay looks clean" (see Appendix B for a full list of responses). Others cited the relative remoteness of the area, few pollution sources, and low levels of industry as factors preserving the bay from degradation. A third set of responses focused on the protection afforded by regulation and state-funded improvements, such as shoreland zoning, septic tank replacements, pollution and fishing laws. A few credited the bay's favorable status to the efforts of community-based organizations.

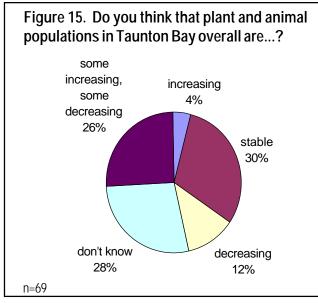
Lastly, a number of respondents provided detailed assessments of the information available to them, including lists of wildlife populations that have increased or decreased, evaluations of habitat quality, and accounts of pollution problems and improvements. Compiled, the responses represent a high level of familiarity with the resource and a good understanding of the variety of factors influencing marine health.

While respondents generally agreed that the bay is in good health, there was somewhat less consensus about *trends* in the bay's health. While almost half expressed the opinion that the bay's health is *not changing*, the remaining respondents who offered an opinion were nearly equally divided about whether the bay's health is improving or declining (Figure 14). Another 13% remained undecided.

Just under 50% of respondents, a high percentage, answered that they *don't know* if Taunton Bay is overfished. Of those who expressed an opinion, a majority believed that the bay is not overfished.

Almost one third (19 out of 69) also stated that they don't know if plant and animal populations are stable, increasing, decreasing, or fluctuating (Figure 15). Respondents were essentially equally divided between three answer choices: animal and plant populations are *stable*; *some are increasing*, *some are decreasing*; and *don't know*. While many believed populations to be stable, many responses also suggested a perception of a bay in flux or a lack of confidence in the stability of Taunton Bay's marine life.





The large percentage choosing "don't know" suggests a lower level of knowledge about the existing trends in the bay's health, perhaps highlighting an area for additional study or a need to disseminate available information to the residents of the region.

Views on Specific Issues

Perhaps most interesting are respondents' views on issues related to Taunton Bay and its management. In this section, the survey assessed which issues are viewed as most important locally. It also questioned whether the various uses of Taunton Bay resources are considered to be occurring at favorable levels. In addition, this section included questions about some of the issues likely to pose decision-making and management challenges in the near future, such as the dragging ban, aquaculture in the bay, and shellfish management. It is hoped that an assessment of local perceptions may help inform managers and decision-makers about the viewpoints of the local constituency. It should be noted that the opinions presented here represent a snapshot in time, reporting views that may or may not remain static over time and as the issues evolve.

For this section of the survey, comparisons were made between responses provided by shorefront and non-shorefront property owners, and between those reporting ocean-related sources of income versus those without. These comparisons were made to investigate whether the views of those who have a direct personal stake in the issues vary from those who do not. Also analyzed were differences in responses according to town of residence. In the following pages, the results of these analyses are discussed only if they showed differences in opinion according to group. If a comparison is not discussed, it can be assumed that the analysis showed no apparent differences in response rates between groups.

Priority Ratings

Respondents were asked to rate on a scale of one to five (1=highest priority) which issues related to Taunton Bay are the most important for their town to address in the next five years. Seven categories were provided: pollution washing off the land such as oil, fertilizers, and dirt; fisheries management issues; aquaculture; growth and land development; shoreline and waterfront access; habitat loss; and coastal heritage, defined as maintaining traditional jobs and town character. Respondents were also given the opportunity to list and rate additional issues of their choice.

According to respondents, pollution runoff and habitat loss are the highest priorities for the towns to address in the near future. These two issues received an average rating of 2.0 on a scale of 1 to 5 (Figure 16; Average Rating column). Several respondents defined their concerns about habitat loss specifically as an observed decline in eelgrass and the potential impacts of dragging on habitat.

Figure 16. Which issues related specifically to Taunton Bay do you think are the most important for your town to address in the next five years?

Issue	Avg. Rating	Ratings of those with ocean- related jobs	Ratings of those without
1. Pollution Runoff	2.0	2.3	1.6
2. Habitat Loss	2.0	2.1	1.9
3. Growth and land Development	2.1	2.1	2.0
4. Fisheries Issues	2.3	2.8	1.7
5. Aquaculture	2.4	2.7	2.2
6. Waterfront Access	2.5	2.3	2.6
7. Coastal Heritage	2.6	2.6	2.4

(1=highest priority; 5=not a priority)

After development and habitat loss, *growth and land development* came in a close third both with an average rating of 2.1. In the space where respondents were given the opportunity to list additional issues, two residents listed "clamming" or "opening the bay to clamming" as top priority.

The average ranking for every issue listed fell between 2.0 and 2.6, suggesting that: 1) respondents on average perceive very little difference in priority level for these issues; and 2) all of the issues are viewed to be of fairly high priority. This finding is supported by responses to a separate question to which slightly over one half of the respondents stated that Taunton Bay issues overall should receive *high* to *very high* priority within their town. However, the large majority of respondents felt that, in reality, Taunton Bay issues currently receive *neither high nor low* priority in their town.

For all of the listed categories, there was a great level of agreement between the average rating and the ratings provided by each town, with one exception. Respondents from Hancock gave *fisheries issues* a full point higher average rating than did Franklin residents (1.6 versus 2.6). For both waterfront and non-waterfront property owners, the top two issues remained pollution and habitat, with growth and development ranking closely behind. Non-waterfront property owners ranked waterfront access issues as a slightly higher priority than did waterfront property owners (2.3 versus 2.8).

The largest differences surfaced in responses delineated according to those who have and who have not held an ocean-related job (or had a family member with an ocean-related job). Note that respondents were allowed to self-define whether they considered their job to be ocean-related. Those who stated that they have held or currently hold a job related to the ocean included fishermen; those involved in shorefront development, marine research, resource protection, and seafood transport or processing; and those with jobs in marinas and boat products.

Those who stated that they have not held an oceanrelated job rated the issues somewhat higher priority overall (with their ranking ranging from 1.6 to 2.6) than those with a history in ocean-related jobs (from 2.1 to 2.8) (Figure 16). Those with ocean jobs ranked development and habitat as the highest priority issues (both 2.1), with waterfront access and pollution issues tying for second priority (2.3). Those who have not worked in ocean jobs also ranked pollution, habitat, and development within the highest priorities; however, this group highlighted fisheries rather than waterfront access within their top four list. Those without ocean-related jobs gave fisheries an average rating of 1.7, while those who have held ocean-related jobs ranked fisheries issues at 2.8. Conversely, waterfront access issues ranked second overall for those who have held ocean-related jobs, and seventh for those who have not.

These results suggest that respondents in oceanrelated jobs are less concerned about current fisheries management and more concerned with waterfront access than those who do not consider their employment to be related to the ocean.

Level of Resource Use and Activity in the Taunton Bay Region: Are Current Levels Too Low or Too High?

In addition to prioritizing issues, respondents were asked if they view current levels of various activities in the Taunton Bay region to be at favorable levels. For example, they were asked if restrictions on public access to the bay are too restrictive, too lax, or just about right.

The graph on the next page (Figure 17) represents the responses to this question. Each individual bar on the graph can essentially be viewed as its own pie chart, with each bar totaling 100% and including the total number of responses about that given issue.

The predominant finding from this graph is that most respondents view the current overall uses and activities in the Taunton Bay region to be at acceptable levels. For almost every issue, the greatest

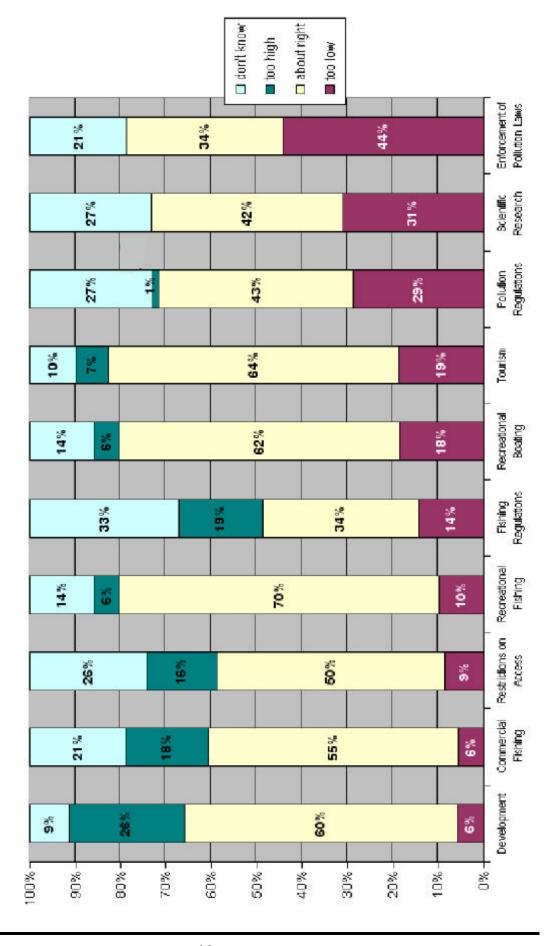
number of responses fell within the *about right* category. This is consistent with responses to a separate question in which 49% of respondents stated that Taunton Bay can support the current uses of its resources and the coastline. Only 12% believed that the bay cannot support current levels of activity and resource use.

Also shown in Figure 17 is the significant portion of *don't know* responses to the questions about current use levels. This was particularly evident in the *fishing regulations* category, where a full one third of respondents marked that they do not know if regulations are too high, too low, or about right. This response corresponds with an earlier question in which a large percentage of respondents answered *don't know* when asked if they believed the bay was overfished. The graph suggests that fishing issues, pollution, and scientific research may represent the greatest informational needs for these respondents.

There were some cases where respondents expressed stronger opinions about current use levels. Similar to prior responses, respondents felt most strongly about pollution and development issues. Forty-four percent expressed that the level of pollution law enforcement is too low and 29% felt that there were too few pollution regulations. Almost no one believed pollution laws and enforcement to be too high. Thirty-one percent of respondents felt that the amount of scientific research being done in the region is *too low*. Development received the highest number of responses in the *too high* category. Twenty-six percent of respondents answered that the amount or rate of development in the region is *too high*.

Fisheries issues also received some of the strongest responses. While most (55%) believe that the amount of commercial fishing in the bay is about right, 18% responded that there is too much commercial fishing in the bay. Nineteen percent of respondents expressed that fishing regulations are too high. Reviewing the data, we found that those individuals who rated regulation levels as too high were often the same individuals who rated fishing

Figure 17. For each category, are current levels too high, too low, or about right in the Taunton Bay region?



levels as too high. One half of those who thought that fishing levels were too high also felt that regulations on fishing were too high. These choices were not viewed to be mutually exclusive.

Views on the Dragging Moratorium

Regarding fishing issues, respondents were asked about their views on the dragging moratorium in Taunton Bay. In 1999, the Maine Department of Transportation replaced the old Route 1 bridge linking Hancock and Sullivan. The new bridge was high enough to allow larger fishing vessels to pass under it into Taunton Bay. The new bridge therefore provided new potential for dragging vessels to access a relatively intact benthic community.

Concerned about the potential for habitat alteration and overharvesting of shellfish beds, some area residents sought a ban on dragging in the bay and sequestered sponsorship for a legislative bill. Effective March 22, 2000, the Maine State Legislature placed a five-year moratorium on fishing using a drag in Taunton Bay north of the Route 1 bridge. The law required the Department of Marine Resources to conduct a study on the impacts of dragging and provide recommendations by February 1, 2004 on whether the prohibition should remain after the five-year timeline. In 2005, the Legislature will decide whether or not to lift the ban on dragging in Taunton Bay.

When asked about the moratorium, 66% expressed the opinion that the bay should remain closed to dragging (Figure 18). An additional one third believe the bay should remain closed to dragging only if studies provide convincing evidence that dragging has significant negative impacts on eelgrass, marine habitats, or other types of fisheries in the bay, such as worming or clamming.

Survey responses indicate a clear preference among respondents for the Bay to remain closed to dragging. Because of the high level of agreement on this question, there were no notable differences in

Figure 18. Should Taunton Bay be opened or closed to dragging?

Opened
3%
Other
2%
other fisheries
11%
closed if impacts
marine life
18%

closed
66%

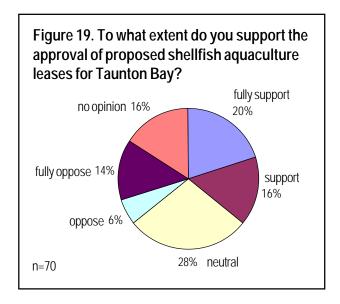
n= 70, some selected more than one answer choice

responses according to respondents' town of residence, type of job, or proximity to the bay's coastline.

Aquaculture

Respondents were asked a number of questions regarding aquaculture initiatives in Taunton Bay. Given the information that several shellfish aquaculture lease applications are under consideration for Taunton Bay, respondents were asked to what extent they support such aquaculture developments. Almost one third (28%) remained neutral on the issue. Among those that expressed an opinion, more supported or fully supported the granting of the leases than those who opposed them by a margin of 16% (Figure 19). These results are interesting given recent controversy around aquaculture lease sitings both regionally and throughout the state.

Waterfront property owners had stronger opinions about this issue than respondents who do not own property on Taunton Bay's shoreline. Whereas one third of non-waterfront property owners were neutral on this issue and another fifth stated they had no opinion, only 9% of waterfront property owners stated that they held no opinion and only 20% were neutral about the issue. In both groups, nearly twice as many *supported* or *strongly*

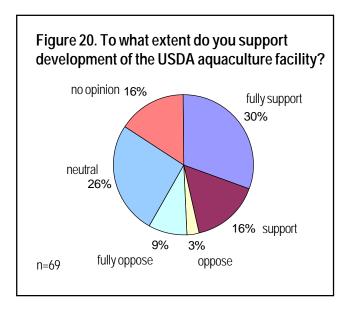


supported the leases than *opposed* or *strongly opposed* them.

More respondents from Franklin were neutral on the issue (38% versus the other towns, each at approximately 25%). More respondents from Sullivan (42%) supported the leases than from either Hancock (38%) or Franklin (29%). For each town, still roughly twice as many supported or fully supported the leases than opposed them.

The survey also polled respondents about the cold-water aquaculture research facility that the U.S. Department of Agriculture has proposed to build in Franklin. This facility will have water intake and discharge pipes connecting to Taunton Bay, but will otherwise be a land-based facility. None of the site's research is proposed to be conducted directly in the bay.

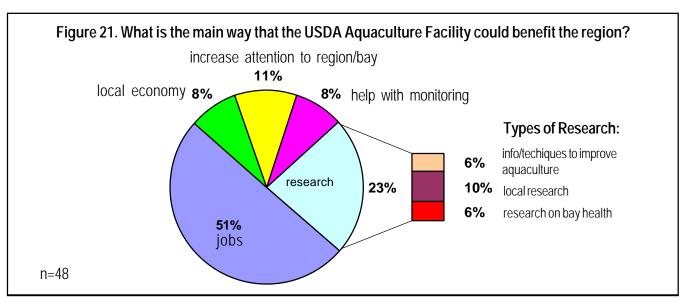
Regarding this facility, respondents were asked to what extent they support its construction, what benefits it could bring to the region, and what their main concern is about the project. Almost half (46%) *support* or *fully support* the building of the facility (Figure 20). Only 12% expressed opposition or full opposition to the facility. A fairly high percentage (16%) had no opinion on the issue. Again, similar to other questions in this survey, the respondents demonstrate a general level of support for aquaculture-related developments in Taunton Bay.



Notably, respondents from Hancock were the most supportive of the facility with 67% stating that they *support* or *fully support* the building of the facility and none stating that they oppose it. Hancock was closely followed by respondents from Franklin of whom 56% expressed support for the facility in their town; only one Franklin respondent opposed it. However, only 30% of Sullivan respondents expressed support for this development in the region.

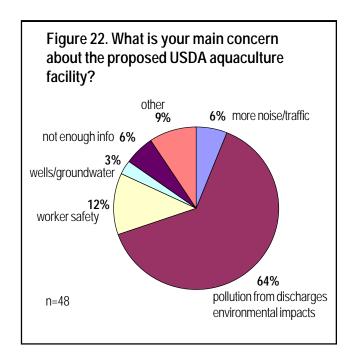
Interestingly, none of the waterfront property owners responding to this survey opposed this project, whereas 18% of those who don't own property on Taunton Bay *oppose* or *fully oppose* the project.

Fewer respondents wrote answers to the openended questions about the potential benefits of the facility and their concerns. Of the 48 who listed potential benefits, 51% stated jobs as the primary way they believed the facility could benefit the region (Figure 21). Another 23% looked forward to the research information that the facility could provide. The types of research that the respondents believed the facility could generate fell into three general categories: the development of techniques to improve aquaculture and fisheries overall; information about the local region; and information about the bay's health and habitat. Some respondents also hoped that the facility's researchers would contribute to monitoring and identification of pollution problems. Others



looked to the facility for a general boon to the local economy and increased attention to the region.

A large majority (64%) listed pollution from discharges and general environmental effects as their primary concern about the facility (Figure 22). Given that this survey was conducted soon after a fatal accident at a University of Maine aquaculture facility in the region, it is not surprising that 12% listed worker safety and accidents as their major concern. Other concerns listed included potential noise from the facility, increased traffic, and concerns about the amount of fresh water that the



facility would draw from available groundwater supplies and the effect on neighboring wells. Nine percent listed responses we have categorized as "other." These included concerns about the level of local control and local decision-making power that the region will maintain, whether the jobs will really benefit local people, whether the facility will affect the value of shorefront property, siltation, the level of honesty and reporting by the facility, and aquaculture in general.

While in general respondents supported the facility, they held a balance of interests and concerns regarding this project. Comments suggested that respondents desire more information about the true benefits and impacts they can expect from a USDA aquaculture research facility in the region.

Conclusions

This survey was designed to assess the interests, concerns, and priorities related to Taunton Bay as perceived by residents of Hancock, Sullivan, and Franklin. The degree to which these can be generally assessed is limited by the number of responses, as compared to the towns' total populations. However, the likelihood that the results reported here are more generally representative of the region is improved by the fact that the respondent pool represents all three towns, a diverse age range, many different types of jobs and sources of income, both waterfront and non-waterfront property owners, and those with a significant history in the local region.

Several areas of strong consensus emerged from the responses that were provided. Taunton Bay is clearly considered an important local resource among respondents for both its economic and non-economic benefits. The bay is viewed by a large majority of respondents as a vital part of the region's history and cultural heritage. It is valued for its recreational and aesthetic values, and also viewed as an important, although not predominant, contributor to the local economy. Interestingly, despite its importance, residents of the three towns do not overwhelmingly describe the area where they live as the Taunton Bay region. The bay does not appear to be generally accepted as a defining characteristic of the area.

Notably, the benefits provided by Taunton Bay are viewed to accrue primarily to local residents. Moreover, many of the stresses reported in other regions, such as nonpoint source pollution, use conflicts, sprawl, and overburdened service sectors are not perceived to be predominant in this area, although some residents expressed concern about the future.

In the absence of such impacts, it is not surprising that most respondents view Taunton Bay to be in good health, citing its remoteness, few pollution sources, successful stewardship efforts, good regulation and regulatory improvements, and abun-

dant signs of life in the bay. A large majority believe the bay to be safe for swimming and clean enough to produce seafood safe for consumption. In line with the perception that the bay is healthy, most of the current uses of Taunton Bay and activities along its shores are viewed to be occurring at about optimal levels, including tourism, recreation, harvesting, amount of public access, and various regulations.

There were, however, some issues of concern that emerged from the responses. Pollution from runoff, growth/land development, and habitat loss were consistently rated as top priorities and concerns for the region as it considers Taunton Bay issues. Development was the issue most often rated to be at levels that are too high. Pollution regulations and their enforcement and scientific research were the activities respondents most frequently rated to be too low.

Concerns were also noted about levels of commerical harvesting and regulations on fishing industries. Respondents overwhelmingly believed that Taunton Bay should remain closed to dragging. Some believed it should remain closed under all conditions, while others expressed that the ban on dragging should only be maintained if the results of research demonstrate that dragging activities have signficant negative impacts on habitat, marine life, or other fishing practices in the bay, such as clamming or worming.

Notably, most respondents repeatedly expressed support for aquaculture-related activities in Taunton Bay, including shellfish aquaculture leases and the proposed USDA aquaculture facility. This finding is particularly interesting in light of the high level of controversy around aquaculture issues in the state currently, and considering a recent Hancock County Superior Court Action regarding oyster leases in Taunton Bay.

While many clear trends emerged from the responses provided to this survey, there were a number of questions for which respondents demonstrated either less agreement or a lower level of

confidence in their knowledge about the topic. For instance, many were uncertain (i.e. answered "don't know") whether plant and animal populations are increasing or decreasing, whether clam flats are being well managed by their town, or if the bay is overfished. In addition, there was no clear agreement about whether the bay's health overall is improving, declining, or remains stable.

Given that one objective of this survey was to determine informational needs in the region, the areas of uncertainty or non-consensus may highlight opportunities for education and outreach, with the goal to make Taunton Bay information more accessible to residents, decision-makers, and managers. If information simply does not exist about the topics that were unclear to respondents, the areas of uncertainty may also underscore areas in which more scientific research is necessary. This survey suggests that information about trends in marine populations represents the greatest knowledge gap, followed by information about the specific impacts of fishing activities and aquaculture in Taunton Bay.

The diversity of people who answered this survey suggests that a variety of people are interested in Taunton Bay and, therefore, any work conducted in the area should not be limited to specific sectors. To relay the results of this survey broadly, Maine Sea Grant will disseminate this report to all who responded to the survey, to any interested parties and, if invited, at local meetings and forums.

Overall, the results of this survey will guide the development of Maine Sea Grant's work in the Taunton Bay region. It is hoped that this report will aid in future discussions and decision-making regarding Taunton Bay and the management of its resources and surrounding lands.

End Notes

- 1. Fefer, S. and P. Schettig, 1980, An Ecological Characterization of Coastal Maine (North and East of Cape Elizabeth), Volume 2, p. 5-2, Newton Corner, MA: U.S. Fish and Wildlife Service, Northeast Region.
- 2. Committee Bill Summaries: Joint Standing Committee on Marine Resources 119th Legislature (1999-2000), Office of Policy and Legal Analysis. Available online: www.maine.gov/legis/ opla/mar00.PDF
- 3. Atkinson, J., 2002, *Penobscot Bay Grassroots Environmental Advocacy Study* (prepared for the Penobscot Bay Network), Friendship, ME: Terra Nova Consulting: .
- 4. Fogler Library, 2001, *Maine Census Data Population Totals*, Orono, ME: Raymond H. Fogler Library, The University of Maine. Available online: www.library.umaine.edu/census/townsearch.asp.

Appendix A



WHAT IS THE PURPOSE OF THIS SURVEY?

We at Maine Sea Grant are surveying residents of Hancock, Sullivan, and Franklin to find out how **Taunton Bay** is a part of the lives of those who live and work near its shores. We'd like to know if the local economy is linked to the Bay; what views people hold on current issues; and what concerns there are related to marine industries or coastal resources. We'll look at your answers and consider if there are programs, resources, or information that Maine Sea Grant can provide to help meet the coastal needs of the **Taunton Bay Region**. This survey is part of our effort to make non-biased marine information relevant and available to people living in Maine's coastal communities.

IMPORTANT TERMS:

Taunton Bay: For the purposes of this survey, Taunton Bay includes Egypt Bay and Hog Bay.

Taunton Bay Region: Includes the towns of Franklin, Hancock, and Sullivan.

WHO IS MAINE SEA GRANT?

Maine Sea Grant is part of the University of Maine and one of 30 Sea Grant programs nationwide. Our mission is to promote the development, management, and stewardship of marine and coastal resources. We aim to take a leadership role in marine science research and education. Maine Sea Grant accomplishes its mission in three ways:

- Through extension agents who work directly with coastal towns;
- By providing grants to scientists for marine research; and
- By producing publications on topics such as aquaculture, fisheries, and the health of Maine's coastal and marine areas.

HOW LONG WILL THIS SURVEY TAKE?

We estimate about **15-20** minutes.

Your answers will remain confidential!!

THANK YOU!

Please return the completed survey to:

Tracy Hart at Maine Sea Grant

University of Maine 5715 Coburn Hall Orono, ME 04469

If you would like to learn more about this survey, please call (207) 581-1434 or email thart@maine.edu

SECTION I: HOW IMPORTANT IS TAUNTON BAY TO YOUR TOWN AND REGION?

1. Overall, how important do you think Taunton Bay is	to your town	n's local	econ	omy?	(Ci	rcle	one	choice)	
a. critical b. important c. somewhat import	tant d. no	ot very i	impoi	tant	e. 1	not a	ıt all	importa	ınt
Please check one answer for each of the following of	questions.	Most	A lo	t S	Some		ery	None	Don't know
2. Overall, about how many people in your town do yo some of their income from Taunton Bay products and as as waterfront real estate, seafood, tourism, marine comm	ssets (such								
3. About how many people in your town do you think a part of their income directly from the fishing industries Bay (such as fishing, clamming, worming, lobstering)?									
4. Which of the following groups do you think benefits	most from T	Taunton	Bay?	(Plea	ase c	ircle	? 1 le	tter bel	ow)
 a. local government b. state government c. year-round residents d. part-time residents e. school and university students f. fishermen g. chambers of commerce 	h. local busi i. large corp j. scientists a k. environm l. tourists an m. other (<i>sp</i> n. no opinio	orations and rese ental int ad recrea ecify)	arch i terest		sts				
Please indicate the degree to which you agree or disagree following statements:	with each of	f the		Strongly agree	Agree	Neutral	Disagre	Strongly disagree	No opinion
5. The health of our local economy is dependent upon the	health of Ta	unton B	ay.						
6. Taunton Bay is an important part of the region's histor	y and cultura	ıl heritag	ge.						
7. When I describe this area, I identify it as the Taunton I	Bay Region.								
8. I live in or visit this area primarily because of Taunton	Bay.								
SECTION II: PERCEPTIONS ABOUT THE HEALTH	OF TAUNT	TON BA	AY A	ND T	Гне	REG	GION	V	
9. How would you describe the current health of Taunto a. Excellent b. Good	c. Fair		ease c d. P		one i			oinion	
10. Why do you give the Bay this health rating? (Please	explain brie	fly)							

11. Do you think that the environmental health of Taunton Bay overall is...(*Circle one letter*)

a. improving

b. not changing

c. declining

e. No opinion

12. Considering the current uses of Taunton Bay and its coastline, overall do you think that Taunton Bay....

a. can support more of these uses

c can support current uses, but not any more

b. cannot support current levels of use

d. No opinion

13. Do you think that plant and animal populations in Taunton Bay overall are...

a. increasing

b. stable

c. decreasing

d. some are increasing; some are decreasing e. Don't know

14. Do you believe that Taunton Bay is	Yes	No	Don't Know
Safe for swimming?			
Clean enough to eat seafood from?			
Over-fished?			

SECTION III: VIEWS ON SPECIFIC ISSUES

15. Which issues related specifically to Taunton Bay do you think are the most important for your town to address in the next five years?		ase F not a			high	est priority;
Pollution washing off the land (such as oil, fertilizers, trash, dirt, pesticides)	1	2	3	4	5	No opinion
Over- or under- fishing and issues related to fishing practices	1	2	3	4	5	No opinion
Aquaculture	1	2	3	4	5	No opinion
Growth and land development	1	2	3	4	5	No opinion
Shoreline and waterfront access	1	2	3	4	5	No opinion
Coastal heritage (maintaining traditional jobs, town character)	1	2	3	4	5	No opinion
Habitat loss (wetlands, eelgrass beds, etc.)	1	2	3	4	5	No opinion
Other (Please specify)	1	2	3	4	5	No opinion

16. For each category below, do you think current levels in the Taunton Bay region are too high, too low, or about right? (Circle one answer for each category below)

Development	too low	about right	too high	don't know
Tourism	too low	about right	too high	don't know
Recreational Boating	too low	about right	too high	don't know
Recreational fishing, clamming, etc.	too low	about right	too high	don't know
Commercial fishing/harvesting	too low	about right	too high	don't know
Regulations on fishing industries	too low	about right	too high	don't know
Restrictions on public access to the Bay	too low	about right	too high	don't know
Pollution regulations	too low	about right	too high	don't know
Enforcement of pollution laws	too low	about right	too high	don't know
Scientific research on Taunton Bay	too low	about right	too high	don't know

Vithin your town(Plea	ise circle one	e answer fo	r each questio	on): (1	=ver	y hig	h; 5=	=no j	priority)	
17. How much priority	do Taunton	Bay issues	receive?	1	2	3	4	5	Don't kn	iow
8. How much priority eceive?	do you think	Taunton E	Bay issues sho	ould 1	2	3	4	5	No opin	ion
9. In 1999, the area of marine habitats. In a. Be <i>opened</i> to dragg b. Remain <i>closed</i> to d c. Remain <i>closed</i> to d eelgrass and other n d. Remain <i>closed</i> to d	your opinion, ing ragging ragging only if narine habitats ragging only if	studies prov	unton Bay((Circle all evidence the	that	appl	y) g has	signi	ficant neg	ative impacts on
d. Other (<i>Please exple</i> e. No opinion										
e. No opinion O. The U.S. Department Franklin near the propines connecting to Bay.	ent of Agricul esent univers Taunton Bay	ity aquacul . As a land	Iture center. The last of the	The facility, none of	y wil	l hav	e wat	ter ir	n-take and	d discharge
e. No opinion O. The U.S. Department Franklin near the properties connecting to Bay. What is the main way y	ent of Agricul esent univers Taunton Bay you think the	ity aquacul	Iture center. The last of the	The facility, none of efit the	y wil	l hav	e wat	ter ir	n-take and	d discharge
e. No opinion O. The U.S. Department Franklin near the proping connecting to Bay. What is the main way you begion? (A blank will into the work of th	ent of Agriculesent univers Taunton Bay You think the Indicate that y	ity aquacul c. As a land USDA faci you perceiv	lture center. The last of the	The facility, none of efit the	y will the s	l hav	e wat	ter ir	n-take and	d discharge
e. No opinion O. The U.S. Departme Franklin near the pr pipes connecting to	ent of Agriculesent univers Taunton Bay ou think the indicate that y eern about the	ity aquacul As a land USDA faci You perceiv e project.? (Iture center. The last of the	The facility y, none of efit the indicate th	y will the s	l hav	e wat	ter ir	n-take and	d discharge nducted in the
e. No opinion O. The U.S. Department Franklin near the propies connecting to Bay. What is the main way yegion? (A blank will in the work with the work win	ent of Agriculesent univers Taunton Bay Tou think the indicate that y cern about the support developort; 5=fully	ity aquacular. As a land USDA facity ou perceive project.? (lopment of oppose)	lture center. The last of the USDA actions approved of the use of	The facility, none of efit the indicate the quaculture	y will the s	l have ite's 1	e wateresear	rch v	n-take and will be co	d discharge nducted in the
e. No opinion O. The U.S. Department Franklin near the propipes connecting to Bay. What is the main way yegion? (A blank will in the word with the word have no concerns.) To what extent do you wacility? (1=Fully support of the word with the word of the word with the word of the	ent of Agriculesent univers Taunton Bay ou think the ndicate that y cern about the support devel port; 5=fully nellfish aquace llops). To will	ity aquacular. As a land USDA facity ou perceive project.? (lopment of oppose)	lture center. The last of the USDA actions approved of the use of	The facility, none of efit the indicate the quaculture	y will the s nat	l have ite's 1	e wateresear	rch v	n-take and will be co	d discharge nducted in the

Very Poorly

No opinion

Very Well

	CTION IV: A FEW QUESTIONS ABOUT YOU		
23.	Do you own waterfront property on Taunton Bay?	Yes	No
24.	Have you ever served on a local government board or commission in the Taunton Bay region?	Yes	No
25.	Are you an active member of any community or civic groups?	Yes	No
26.	Do you usually attend town meetings?	Yes	No
	To what extent would you say that your household ome is dependent on the resources of Taunton Bay?	Very little	Not at all
28.	Of the job categories listed below, which are sources of income for your house	ehold?	Ö all that apply
	Commercial fishing		
	Boats, marinas, boat products		
	Shipping goods by water		
	Restaurant, hotel, motel		
	Processing and transport of marine products		
	Shorefront development, real estate, and/or construction		
	Aquaculture		
	Marine research, education, advocacy, or resource protection		
	Municipal services		
	Other (please specify)		
	Other (please specify)		
29.	Other (please specify) Have you or a family member ever held an ocean-related job?	Yes	No
		Yes	No
30.	Have you or a family member ever held an ocean-related job?	Yes	No (State)
30. 31. 32.	Have you or a family member ever held an ocean-related job? What town and state are you currently a resident of? (Town) What year were you born? About how many years have you lived in		(State)
30. 31. 32.	Have you or a family member ever held an ocean-related job? What town and state are you currently a resident of?(Town) What year were you born?		(State)
30. 31. 32. F	Have you or a family member ever held an ocean-related job? What town and state are you currently a resident of?	outside of Ma	(State)
30. 31. 32. F	Have you or a family member ever held an ocean-related job? What town and state are you currently a resident of? (Town) What year were you born? About how many years have you lived in ranklin? Sullivan? Hancock? Maine? O Which of the following recreational uses of Taunton Bay do you take part in	outside of Ma	(State)
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Please return this survey in the enclosed postage-paid envelope to: **Tracy Hart at Maine Sea Grant,** University of Maine, 5715 Coburn Hall, Orono, ME 04469



THANK YOU!



Appendix B: List of responses provided to the question: "Why do you give Taunton Bay this health rating?"

Personal Experience/Observation over time:

- Production of fish, clams, and mussels is going well
- Looks very clean; not much trash on shores
- No odor
- It has been this way for years; only change is more houses on the shores and less access to the shore
- I see lots of birds, marine life when I am out kayaking
- I lobster (professionally). Majority of my gear is in Taunton Bay

Few pollution sources/low use:

- No major pollutants or major sources of pollutants/ No obvious signs of pollution
- No major heavy industry...however, I know that there are undoubtedly smaller pollution sources (home fertilizer, oil, and gas from vehicles and boats, and old and/or faulty septic systems)
- Remoteness; tourists do not really come here to pollute
- Has not been discovered. But the pressures are coming

Good regulation and regulatory improvements

- Shoreland zoning codes concerned environmentalists
- Septic replacements funded in part by the state
- Current pollution control laws and fishing regulations
- No dragging

Results of Stewardship Efforts:

- Community organizations (Friends of Taunton Bay) are vigilant in fighting for the health of the bay
- Because its being watched and monitored
- Because of the interest shown by certain people, I believe there has been a tremendous increase in the health of Taunton Bay
- This region is ecology-minded and is careful about the use of the bay in general
- Based on information from the Friends of Taunton Bay

Balance of Available Information:

- The water is still swimmable; most areas are open to shellfish harvesting. However the supply of shellfish and groundfish has greatly diminished in my lifetime (over the last 40 years). Osprey have made a partial comeback, but heron have essentially left the bay. I'd say the health of the bay is precarious
- Wildlife continue to flourish here
- The Bay is somewhat sullied by septic leakage, runoff, etc., but most of the wildlife seems healthy.
- Pollution & litter not too bad. Eel grass is in decline. Hawk, eagle, osprey populations steady or rising. Alewives, smelt, eels still run, but are declining (fished out?)
- So far not been overfished or overdeveloped. Draggers are kept out. It is a good breeding ground for sea creatures of all kinds and water fowl of all kinds. It is unspoiled...
- I hope its at least in good health. I don't think excellent health, because all our waterways are suffering to some extent from pollution and depletion of natural habitats
- Horseshoe crabs present, possible decline. Silting bad from gravelpit/race track on Hog Bay







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