

Status of Planning and Zoning in Michigan's Great Lakes Shoreline Communities

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This status report on coastal community planning and zoning is intended for Sea Grant researchers, community planners and educators, regional authorities, NOAA-supported Coastal Management Program decision-makers, legislative and policy-making bodies, and the public. In particular, it is hoped this report will strengthen Sea Grant's foundation for new land use planning and sustainable development work with its many partners in Michigan's coastal zone.

This report would not have been possible without the cooperation of the Michigan Society of Planning (MSP — formerly MSPO), which is Michigan's leading professional planning association. The mission of the Society is to "foster planning in Michigan communities through educational and professional development support...." MSP generously agreed to share its 1994 data with Sea Grant in the interest of better understanding and fostering coastal community planning. Thanks also to Jason Potter, research assistant and Joyce Daniels, editor.

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Introduction

The cumulative and secondary impacts of coastal development along Michigan's Great Lakes shoreline threaten the long-term sustainability of coastal communities. New 2002 U.S. Census data confirm that Michigan's top 10 coastal cities are losing population while coastal rural areas are rapidly suburbanizing. Communities that do not plan ahead may fail to recognize and fully value or protect unique coastal resources. Integrated planning, zoning and creative public sector development incentives can protect unique coastal resources from misuse.

Sea Grant coastal land use objectives include protecting water quality and habitats, fostering sustainable development of waterfront areas, avoiding waterfront misuse, enhancing tourism and water-dependent marine trades, improving coastal business and assuring public access to the Great Lakes. Within this context, the Michigan Sea Grant management team commissioned a survey of Michigan coastal communities in July 2001 as part of the program's Sustainable Coastal Community Development Initiative.

This report, *Status of Planning and Zoning in Michigan's Great Lakes Shoreline Communities*, provides a snapshot of coastal Michigan's local land use policies and laws and planning tools that influence land development along the shores of the Great Lakes. The survey research is the first part of a longitudinal study of land use planning and zoning practices in coastal Michigan.

Executive Summary

The Michigan Sea Grant Coastal Community Land Use Planning and Zoning Survey of 2002 was mailed to administrative leaders of all 338 political divisions whose jurisdictions touch the Great Lakes shoreline. Results were compared to those from a 1994 survey conducted by the Michigan Society of Planning. Six coastal regions



were used for regional analysis of survey results along the state's coast. Statewide results are also presented.

Findings indicate that although improvements have been made regarding land use planning along Michigan's shoreline, serious gaps remain. Survey results show that most coastal jurisdictions now have a planning commission in place, and the use of sophisticated tools — particularly GIS — has dramatically increased. Despite these advances, land use planning is not coordinated across coastal regions or ecosystems, and planning remains fragmented. Although the geographic coverage of local planning and zoning has been steadily rising during the past several years, nearly two out of three coastal communities do not have a professional planner on staff. In addition, local regulations that define coastal-dependent economic uses and protect coastal natural resources are uncommon. If conditions do not improve, unplanned development will continue to cause immediate and long-term cumulative problems for coastal ecosystems and regional economies. Long-term, sustainable coastal development may not be realized unless land use planning is improved in, and between, Michigan's coastal communities.

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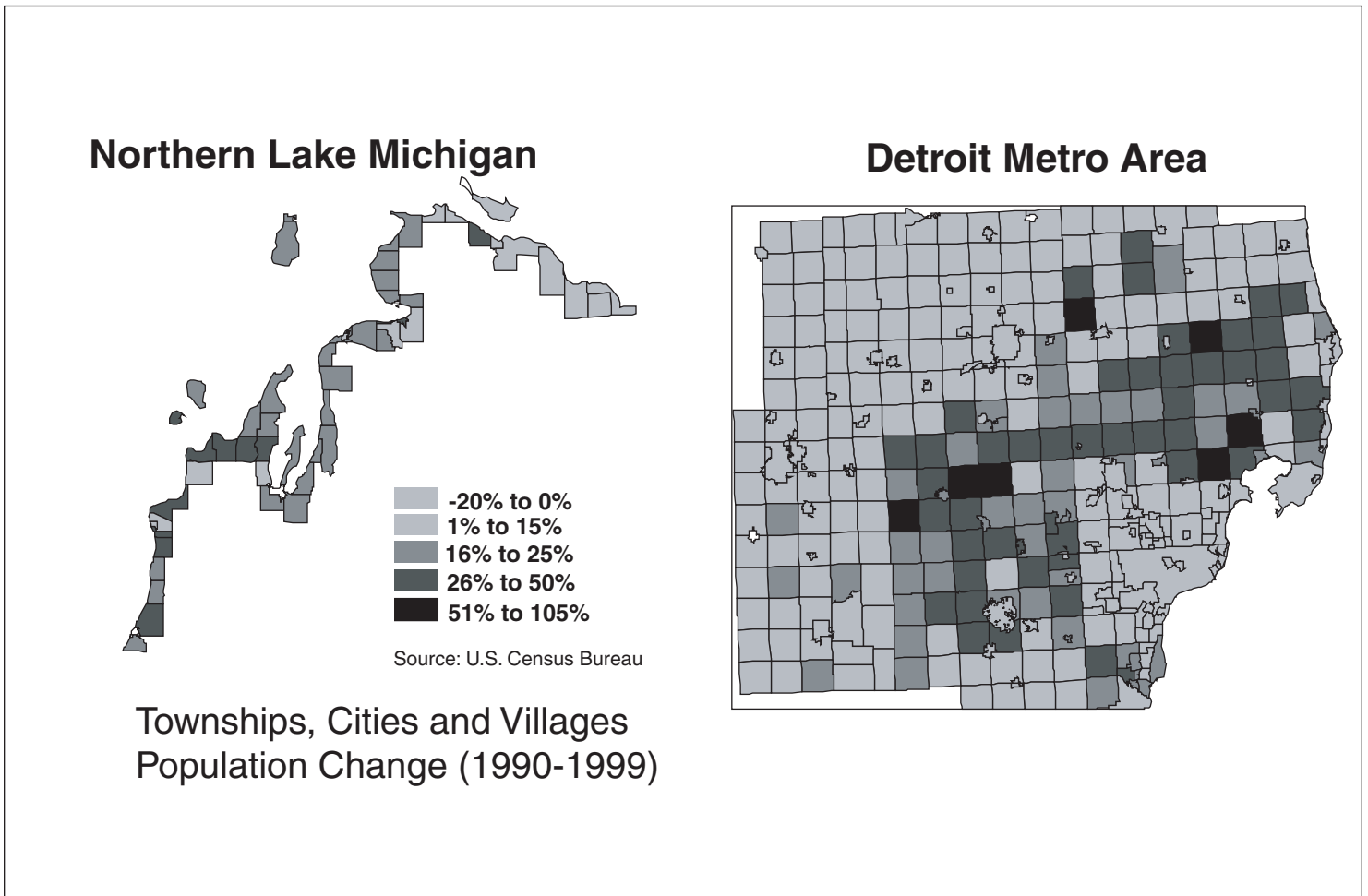
The Setting for Sustainable Land Use and Coastal Community Development in Michigan

Michigan's Coastal Land Development Patterns

Thousands of independent land use decisions over the past several decades have contributed to today's land development mosaic on Michigan's coasts. As is the case with waterfront property all across the United States, Great Lakes shoreside properties in Michigan continue to receive a disproportionate amount of development pressure relative to inland. (National Coastal Condition Report, U.S. EPA, 2001). Demographic data suggest that Michigan is following a low-density land development pattern along its 3,288-mile Great Lakes coastline, just as it is in the interior of the state, Figures 1 and 2.

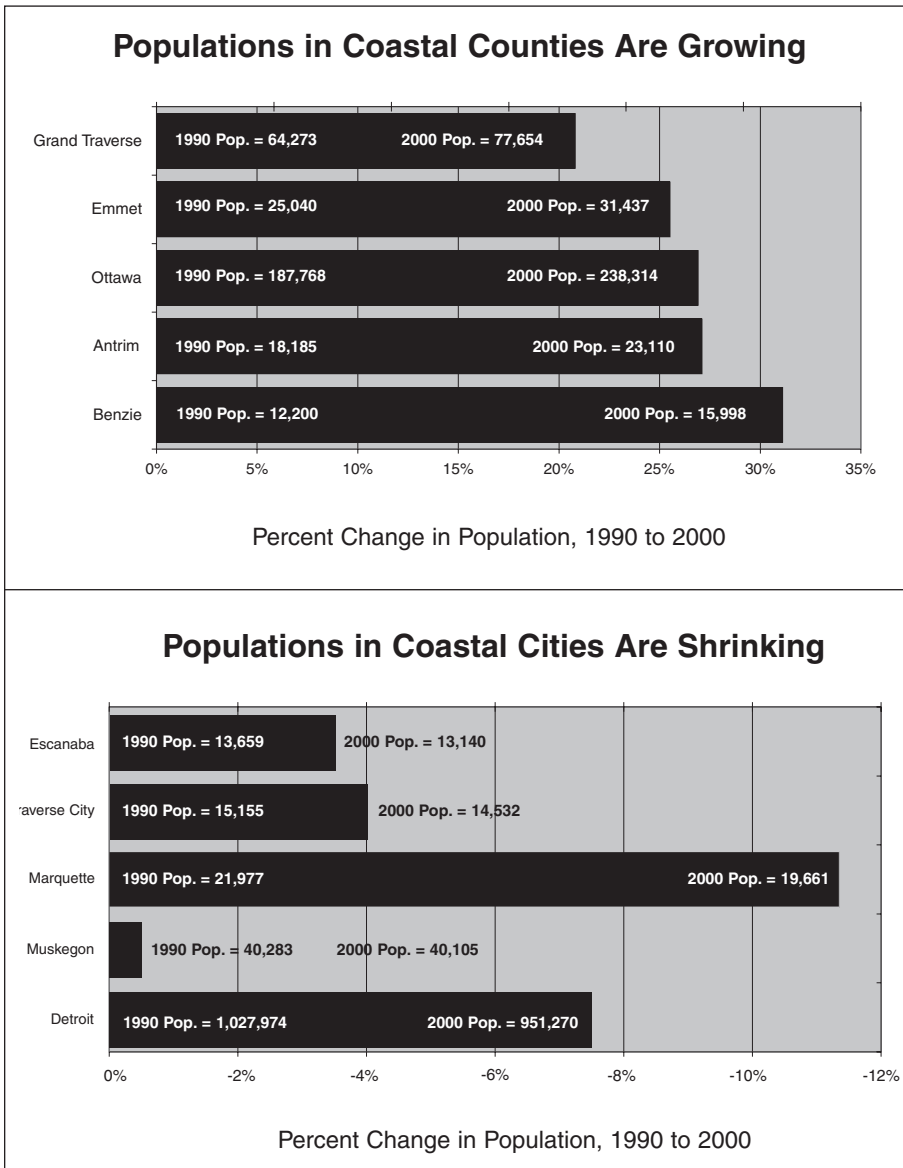
(Michigan Trend Futures, 1995). Studies show that Michigan development patterns are highly land consumptive. The state has one of the nation's highest ratios of urbanized land per person (i.e. low number of persons per urbanized acre). In Michigan, coastal areas are experiencing "linear sprawl" similar to the suburban "growth rings" around Detroit, Grand Rapids, and other metropolitan areas. People are moving out of cities and small towns to develop rural greenfields. Several researchers and expert panels have condemned Michigan's reputation for low-density, land consumptive, high impact development patterns. (Michigan's Environment and Relative Risk, MDNR, July 1992).

Figure 1



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Figure 2



and year-around residential development presents a “Catch-22” situation as new development degrades the solitude so many come to find. There is no end in sight to these pressures. Today’s land use patterns, if they continue, are predicted to cause greater fragmentation of natural systems and loss of development and tourism opportunities in secluded coastal areas. These predictions have been common knowledge for quite some time. Community leaders are now beginning to recognize how land use planning can affect patterns on the land.

Michigan’s 1,892 political jurisdictions have final independent land use decision making authority under state law. Land development has, until recently, traditionally been thought of as merely a local issue. Michigan’s “home rule” system of governance and land use planning has been referred to as “fragmented jurisdiction.” Nearly 340 local units of government have jurisdiction over some part of Michigan’s Great Lakes coastal zone. There has never been an attempt at system-wide management of Great Lakes shorelines.

Sprawling coastal development is causing fragmentation of coastal habitat, which is of special concern to ecologists and other scientists. Coastal wetlands and Michigan’s unique sand dune systems — just to name two valuable coastal features so important to ecosystem health — are increasingly encroached upon by human development. In addition, ubiquitous development threatens to deny coastal access and preclude certain human uses that are dependent on seclusion and the presence of large undeveloped tracts. The allure of unspoiled areas for cottage

Highly fragmented authority for land use policy-making and regulation has been predominant since statehood, although this approach is now being seriously questioned. The original rationale of those who established this constitutional framework — that local policy-makers should have ultimate authority to guide individual decisions in the marketplace — rests upon the notion that land and water ecosystems will take care of themselves. Concepts of ecosystem management and landscape planning have only recently emerged as viable alternatives to purely local governance. We now recognize the

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value of policies and regulations that protect larger systems. Although the marketplace determines where most land development proposals will be made, public policies and laws can have significant influence on final development patterns on the land.

And yet, in the early days of the 21st century, there is no statewide land use authority in Michigan, and there are only a few regional authorities in the state. These governing bodies exercise very limited power. Local planning commissions, which were enabled by statute in 1931, are responsible for taking a comprehensive, pro-active or preventative approach to land use issues — but only at a scale defined by local political and economic needs, not by regional or ecosystem logic. Fragmented jurisdiction creates significant challenges in communication, collaboration, and coordination in coastal ecosystems. For example, four Southeast Michigan counties — St. Clair, Macomb, Wayne, and Monroe — have a combined population of over 3 million people in 39 different coastal municipalities (cities, townships, and villages). Many of them share the same coastal ecosystem, but they each approach the shared ecosystem piecemeal. Each jurisdiction is routinely and significantly influenced by adjacent development and private sector investment, but coordinated planning is extremely rare. They share coastal ecosystems, coastal issues, and coastal development opportunities but, given their legal mandate, their land use decision making focus is almost always local. One key to better regional land use patterns and coastal sustainability is strengthening of communication and collaboration between coastal municipalities.

The Value of Planning

The best coastal community plans begin with an inventory of existing land uses and an accounting of the physical characteristics of the shoreline that affect its suitability for accommodating marine uses — such as nearshore water depth, waterfront land parcel size and ownership,

transportation systems, view points, and critical habitats. Opportunities and limitations for future land use plans can be identified prior to creation of the plan vision and the adoption of plan implementation tools. Some communities may choose to use local zoning ordinances to create “bluebelts” (similar to farmland greenbelts) to protect and preserve the many community benefits associated with waterfronts. Some may use incentive programs, such as density bonuses, to guide growth away from potential harbors, or fragile dunes, or sensitive wetlands.

In many other states Coastal Zone Management plans have been created under the federal Coastal Zone Management Act, which (in addition to other policies and regulations) define and provide for an important land use category called “coastal dependent uses.” Once recognized, coastal dependent use locations can be held in reserve until the time is right for development. There are at least 3 degrees of “dependence” on the shore and each is characterized by its proximity to the Great Lakes:

“Coastal dependent” refers to uses that require direct access to the water to accomplish their primary function (e.g. marinas, harbors, swimming beaches).

“Coastal enhanced” refers to uses that do not require access to the water, but are enhanced by a waterfront location (e.g. restaurants, maritime museums).

“Water related” refers to uses that do not require direct access to the water, but provide goods or services associated with water dependent uses (e.g. bait and tackle, scuba stores).

Communities that do not plan ahead may fail to recognize, and fully value or protect, unique coastal resources. They may leave their waterfronts subject to less-than-desirable (from the community's long-term perspective) market forces if protective policies, regulations, and incentives are not in place. For example, some land uses, such as auto-repair shops or casinos,

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don't depend on a waterfront location. In the past, coastal dependent uses, which offer the potential of capitalizing on a community's unique landscape, have been precluded by poor land use decisions all along the coast. The marketplace does not always efficiently serve the long-term public interest. Market forces may or may not guide development toward sustainability of coastal resources. As coastal resources become more precious and the concept of coastal use dependency becomes widely understood, new tools will need to be adopted by Michigan communities. Planning should precede adoption of new tools.

When communities engage in long range planning they identify their unique local values and establish policies to enhance local resource-based advantages. The best master plans result in inter-generational implementation of shared goals and objectives. Some communities are using a combination of public pressure and progressive policies by government agencies, rather than relying solely on traditional economic "highest and best use" market forces, to maximize coastal value. Planning, zoning, and creative public sector development incentives can protect unique coastal resources from misuse.

Very little has been done to recognize, designate, and protect coastal dependent uses in Michigan — either locally or on a comprehensive statewide basis. This is an area ripe for Sea Grant research and outreach. Sea Grant coastal land use objectives include protection of water quality and habitats, fostering reasonable development of waterfront areas, avoiding waterfront misuse, enhancing tourism and water dependent marine trades, improving coastal business, and assuring access to the Great Lakes.

Improving Planning in Coastal Communities

Improved land use planning and regulation is important to the sustainability of the Michigan shoreline. Communities need to know what planning can do for them and they need the capacity to take steps toward planning. A community without a professional planner has been compared to a family without a medical doctor - Planning Commissions of lay persons cannot be expected to maintain the highest level of local land use health or sustainable development without professional assistance. And a community without a plan faces a long-term future subject to the short-term impulses of the marketplace. The need for increased planning capacity and increased planning is most pressing in rapidly growing areas of the state.

The goal of improving long-term planning in local jurisdictions is shared by many organizations in Michigan. The Michigan Department of Environmental Quality, Office of Coastal Resource Management, Coastal Management Program (OCRM — a NOAA funded partner of Michigan Sea Grant) provides leadership in this area.

OCRM has identified a strategy to assist coastal communities in managing increasing growth rates and the cumulative impacts of coastal development. DEQ-OCRM supports local initiatives through direct financial assistance to develop and/or revise local master plans, zoning ordinances, and land use regulations.

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When the federal Coastal Zone Management Act (CZMA) of 1972 was reauthorized by Congress in November 1990, a new section (Section 309) was added to encourage states with approved coastal management programs to address several issue areas to enhance and improve the nation's coastal resources. States wishing to participate in the Section 309 Enhancement Grants process were asked to develop an assessment of eight issue areas and, based on the findings of the assessment, to prepare strategies for improved management of the identified priority issues. Federal funding is provided to states to pursue their approved Strategies.

Michigan DEQ undertook an Assessment of coastal issues in 1992, 1997, and again in early 2001. Each of the Assessments identified the issue of "cumulative and secondary impacts of coastal development" as Michigan's highest priority issue area. Michigan's 309 Assessments have found that coastal issues such as fragmentation of coastal habitats, loss of agricultural and forest lands, increased impervious surfaces and resulting stormwater runoff, and the increased development in coastal hazard areas, wetlands, and Great Lakes Islands, could be improved through better coastal land use planning. (MDEQ Coastal Management Program Section 309 Enhancement Grants Assessment/Strategy, January 2001).

The DEQ Coastal Management Program has worked extensively toward improved communication and collaboration between jurisdictions

over the past several years. The Program advised and supported the 2001 passage of land use planning legislation designed to improve interjurisdictional communication, among other things. (Coordinated Planning Act; P.A. 265 of 2001).

The DEQ Coastal Management Program has worked with targeted coastal communities by:

- 1) assisting with the collection of data through resource inventories and biological studies,
- 2) funding the development of regional and county geographic information systems and mechanisms for cooperation with smaller units of government,
- 3) providing funding for comprehensive land use plans, master plans and zoning ordinances and
- 4) assisting with land use planning workshops.

This program is helping to reduce the negative impacts of jurisdictional fragmentation while building local planning and zoning capacity. At the time of this writing, new land use planning research and education initiatives are beginning at the highest levels of state government and on the campus of Michigan State University. New partnerships are emerging that hold promise for significant improvements in coastal community planning for sustainability.

Sea Grant Land Use Research and Outreach for Sustainable Coastal Community Development

Michigan Sea Grant's Sustainable Coastal Community Development Initiative

This survey research and report were commissioned by the Michigan Sea Grant Management Team in July 2001 as part of the Sustainable Coastal

Community Development Initiative (CCD).

Improving coastal land use and thereby improving coastal community sustainability are goals in Michigan

Sea Grant's Strategic Plan

(MSG Strategic

Plan, 2000-2005). The underlying purpose of the Michigan Sea Grant Sustainable Coastal Community Development Initiative is to nurture coastal ecosystem health, which provides the foundation for economic and societal health.

"Sustainable development" has been defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." (*Our Common Future*. Brundtland Commission. Oxford University Press, 1987).

Sea Grant has been particularly successful in building partnerships at the local and regional levels, working one-on-one with community leaders. Sea Grant works to improve the potential and water-related competitive advantage of coastal communities by strengthening community leadership, promoting development and wise land use decision making, and increasing communication and collaboration links between

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jurisdictions. With its primary focus on sustainable coastal land use, the CCD initiative integrates research and outreach for improved sustainability in individual Great Lakes communities as well as sustainability statewide.

Purpose of the Survey

Although land use planning is widely recognized as an important tool for achieving sustainability, questions remain related to which sections of Michigan's coastline are subject to local land development policies or law (planning or regulation). Sea Grant researchers and extension educators, as well as regional and State of Michigan coastal resource managers and others, need information about the current status of, and about emerging trends in, coastal land use planning and zoning, such as:

- 1) How many coastal communities have adopted a comprehensive plan? Which areas of the coast are not covered by a county or local master land use plan?
- 2) What percent of the Michigan coast is covered by a community zoning ordinance? Which areas lack zoning or other land use regulation?
- 3) Are coastal community planning and zoning records updated and maintained manually, or with computer assistance or geographic information systems (GIS)?
- 4) How many coastal communities have adopted local wetlands regulations? High-risk erosion regulations? Shoreline protection standards? Sand dune regulations? Where are these?

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Research Methods

A mail-survey of coastal communities was conceived in 2001 as an efficient way to gather information from the state's 338 coastal planning and zoning jurisdictions as part of a longitudinal study of land use practices in coastal Michigan. A similar survey, called the Michigan Local Planning and Zoning Survey, was conducted in the mid-1990s on a statewide basis. The 1994 survey, which was conducted by the Michigan Society of Planning Officials (then MSPO, now called MSP), gathered data from approximately 70 percent of the state's planning and zoning jurisdictions. At that time, the subset of coastal communities, whose responses were culled from the larger statewide database for this report, responded at a rate of nearly 95 percent. The 1994 coastal community data collected by MSP provides a baseline for comparison with many of Sea Grant's 2002 survey results.

The 1994 survey data was entered into a FoxPro(c) software database, analyzed by MSP, and characterized in the MSP 1995 Trend Futures Report. Each database record carried the potential of 126 entry points and the entire database contained a potential total of over 235,000 items. Responses were not anonymous. In the Fall of 2001, Michigan Sea Grant personnel used Access(c) software (a relational database management program) to query and aggregate all of the 1994 MSP FoxPro(c) survey records, isolating needed data from the state's 338 coastal jurisdictions. Distribution frequencies and simple statistics were applied to this subset of the MSP data to draw meaning relevant to the status of planning and zoning in Michigan's coastal communities.

In January of 2002 Sea Grant created a mail survey instrument (see Appendix) to send to coastal community leaders that replicated many, but not all, of the queries of the earlier MSP survey. Several new questions were also presented, most notably to collect information about the use of new computerized geographic information systems. The draft questionnaire was reviewed by MSP staff, MDEQ-OCRM staff, Sea Grant Extension Agents, land use planners, and social survey scientists prior to its finalization, trial, and administration. A total of 338 surveys were mailed to the attention of coastal community leaders (city and village mayors, township supervisors). "Coastal" communities, for the purposes of this study, are those with authority over land abutting one of the Great Lakes or connecting waterways. Based on survey techniques of Salant and Dillman (1996), follow-up letters were sent to non-respondents before a final total of 201 useable survey instruments were returned.

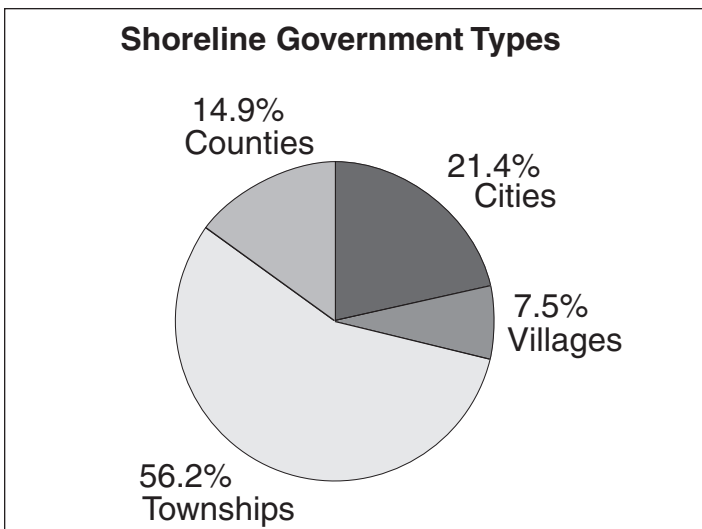
The Sea Grant CCD survey received an overall response rate of approximately 60% in April 2002, and the representative data were extended to all coastal communities for some parts of the analysis. Records were aggregated statewide and regionally in an Access(c) database and analyzed with the help of descriptive statistical tools for this report.

Survey Results and Discussion

Overview of Results

Land use planning is not coordinated across coastal regions or ecosystems in Michigan. Although the geographic extent of local planning and zoning has been steadily rising over the past several years, and although communities are devoting additional human resources to planning, nearly 2 out of 3 coastal communities do not have a professional planner on staff. Most jurisdictions now have a planning commission in place and the use of computerized geographic information systems is trending upward. Local regulations that are specifically beneficial to the protection of coastal dependent uses and to the protection of coastal natural resource values are uncommon. This section describes the data behind these observations in some detail.

Figure 3



Land Use Planning Authority

Authority for regulation of land use along Michigan's shoreline is highly fragmented: cities, villages, townships and counties each have responsibility but they do not, generally speaking, discuss or share their responsibilities across political boundaries.

This fragmented system of governance places regional ecosystems and economies at risk of failing to capture the benefits of coordinated long-term planning for sustainability. There is no "Coastal Commission" in Michigan (as there is

in California, for example) to protect regional or statewide coastal resource values. Since Michigan does not have statewide planning or zoning, and since regional planning and zoning are very rare, improving local land use planning is at present the most effective way to manage the long-term cumulative impacts of rapid coastal development.

Master Plan Coverage

The geographic extent of Master Plan coverage as of February 2002 in all types of respondent coastal communities is arranged for convenience by region and presented on maps in the Appendix. Figure 4, next page, shows the statewide coastal coverage pattern from responding counties and local communities. When data from responding communities are extended to all jurisdictions in coastal Michigan, it can be calculated that Master Plan coverage is quite complete statewide; 95.3% of cities, 86.7% of villages, 76.1% of townships, and 73.3% of counties have adopted a Master Plan. When data are aggregated by jurisdiction statewide, the percentage of coastal community comprehensive plan adoption is up from just 55.7% in 1994 to 80.6% in 2002 — an increase of more than 44%. When considered in light of data collected in 1978 and reported by MSP in its Trend Futures Report, the long-term trend in coastal planning coverage is clearly upward, as can be seen in Table 1, below.

Table 1

Coastal Jurisdictions That Have Adopted Master Plans

	1978	1994	2002
Cities	31.1%	69.8%	95.3%
Villages	8.8%	66.7%	86.7%
Townships	52.9%	49.6%	76.1%
Counties	7.2%	53.3%	73.3%
State	N/A	55.7%	80.6%

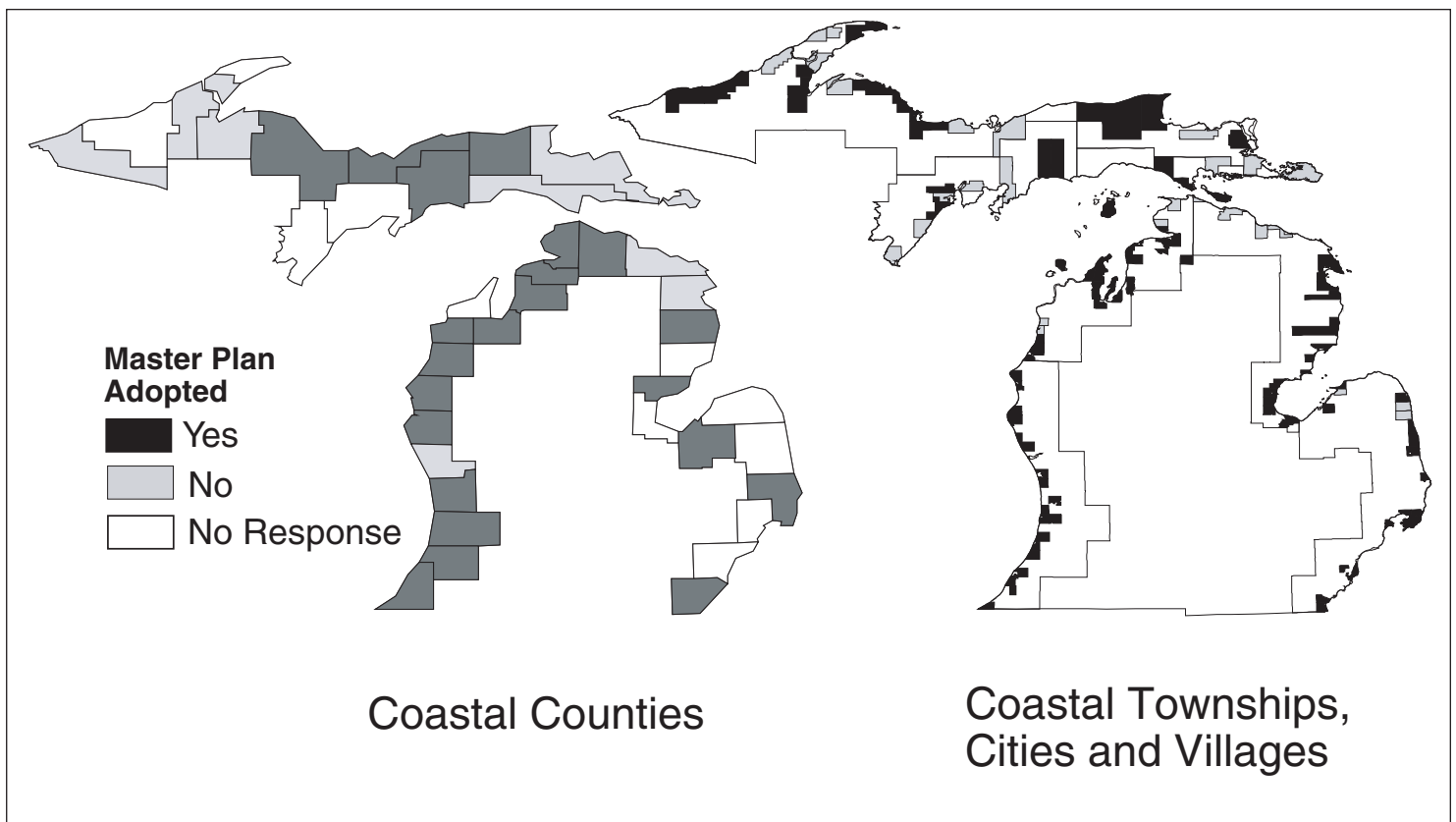
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Although more than 80% of coastal jurisdictions have adopted a Master Plan, important gaps in coverage are evident — there are vast stretches of the shore where no county-level planning has been done and where sub-county jurisdiction plan adoption appears to be minimal. Lake Superior coastal counties have the lowest percent coverage of the five regions, just 40%. In contrast, nearly all Lake Michigan coastal counties (91.7%) have some sort of Master Plan in place. Of the southern Lake Michigan counties, only one responded that they did not have a plan in place in 2002. Under Michigan law, comprehensive planning can take place at the county, city, village or township level. Plan adoption

by sub-county jurisdictions (municipalities) varies widely across the state with the northern regions notably lacking.

Only 8 of 30 respondent counties had no Master Plan in place in 2002, and within these it was found that 9 local jurisdictions also lacked a plan. When extended statewide to include non-respondents this indicates that approximately 3 percent (roughly 90 shoreline miles if equally distributed among all types of minor jurisdictions) of Michigan's coastline lacks any level of (county or local) comprehensive plan. More detailed maps of Master Plan coverage are presented in the Appendix.

Figure 4



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Zoning Coverage

The geographic extent of zoning ordinance coverage as of February 2002 in respondent coastal communities is presented on maps in the Appendix. Figure 5, below, shows the statewide coverage pattern from responding counties and local communities. If data from responding communities are extended to all jurisdictions in coastal Michigan it can be seen that zoning coverage is quite complete statewide; 93% of cities, 80% of townships, 93% of villages and 33% of counties have adopted some form of zoning code. When data are aggregated statewide, coastal community zoning ordinance adoption is up 22% since 1994, to 77.1% of all jurisdictions.

Zoning powers in Michigan are available to counties, cities, villages and townships who adopt a zoning ordinance. Twenty of 30 respondent counties had no zoning in place in 2002, and within these it was found that 6 local jurisdictions also lacked zoning. When extended

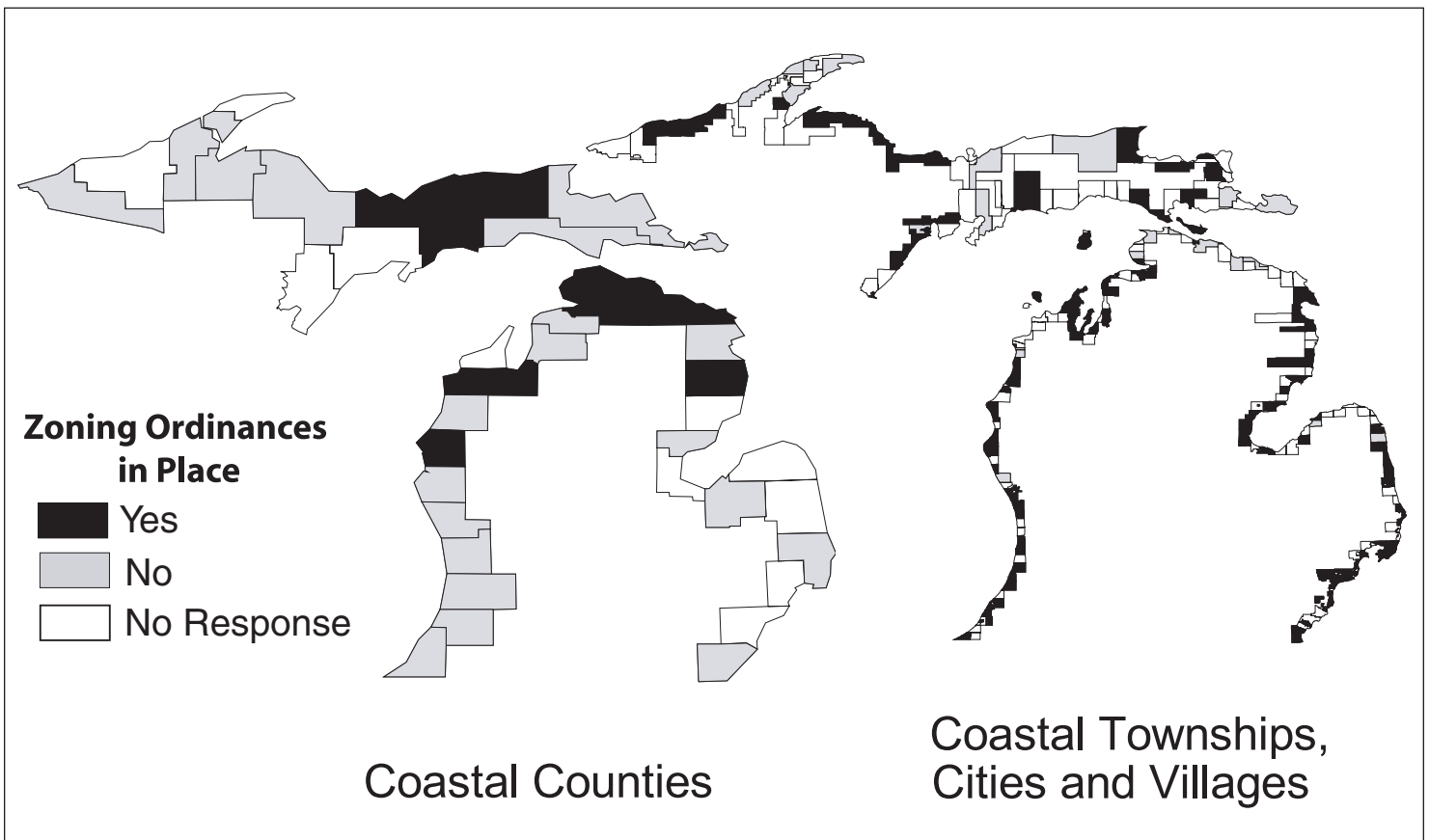
statewide to include non-respondents this indicates that approximately 2% (roughly 60 shoreline miles if equally distributed among all 300 minor jurisdictions) of Michigan's coastline lacks any level of (county or local) zoning. When considered in light of data collected in 1970 and 1978 and reported by MSP in its Trend Futures Report, long-term trends are up in coastal community zoning code coverage, as can be seen in Table 2, below.

Table 2

Coastal Jurisdictions That Have Adopted Zoning Ordinances

	1978	1994	2002
Cities	25.7%	93.0%	93.0%
Villages	12.8%	73.3%	93.3%
Townships	59.4%	60.2%	80.5%
Counties	2.1%	26.7%	33.3%
State	N/A	63.2%	77.1%

Figure 5



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Professional Staff Levels

Professional staff hiring and retention is trending upward, but there are significant shortages in planning and zoning staff resources along Michigan's shoreline. One measure of local planning and land use management activity is a jurisdiction's application of fiscal and staff resources to planning and zoning.

Over the past 8 years, the statewide trend in coastal community professional planning and zoning staff hiring and retention is upward; the number of professional planners on staff is up 20.0% and the number of zoning administrators is up 14.2%.

Figure 6

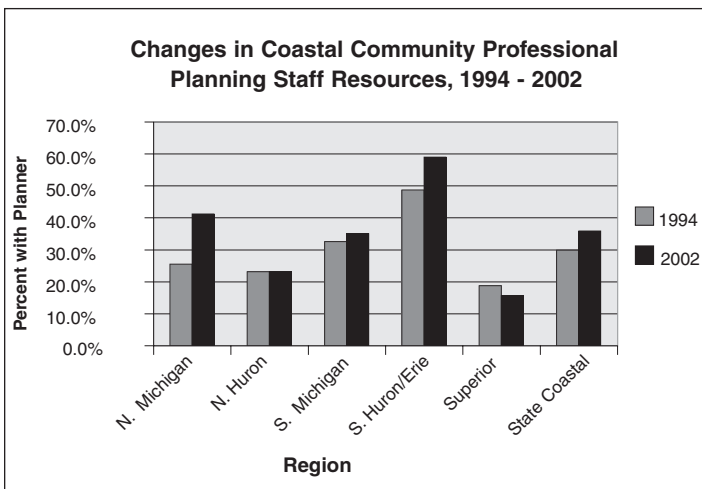


Figure 7

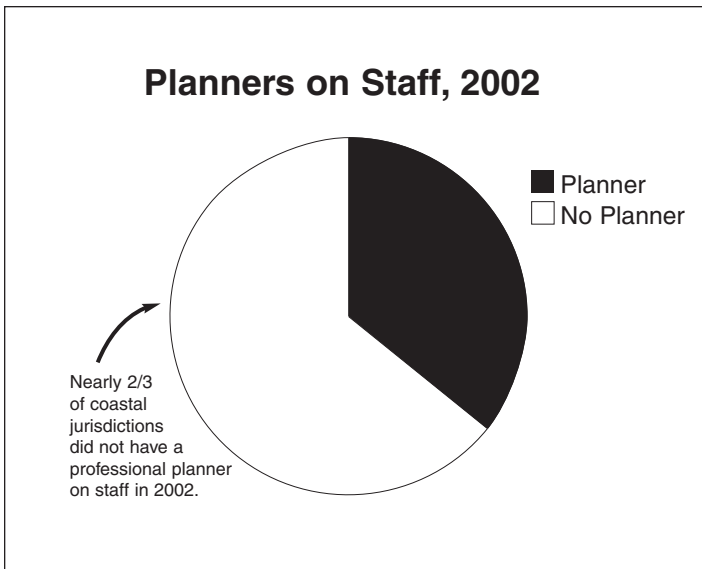


Figure 8

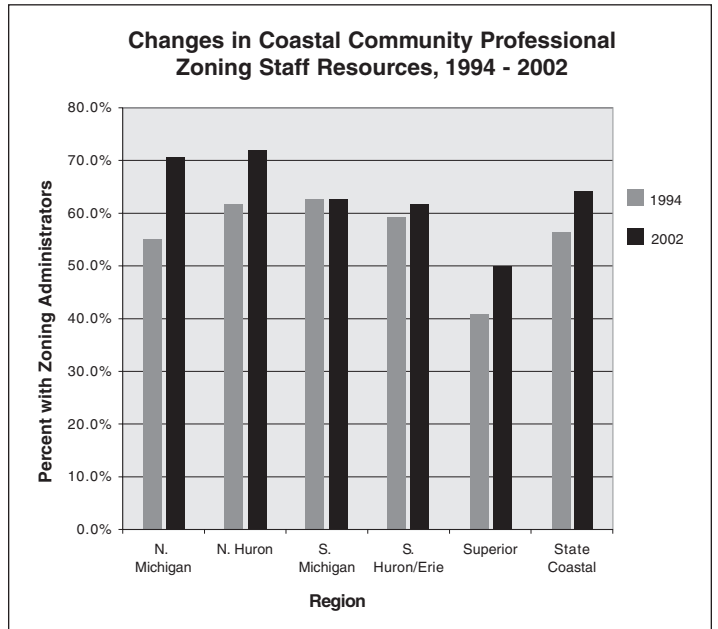
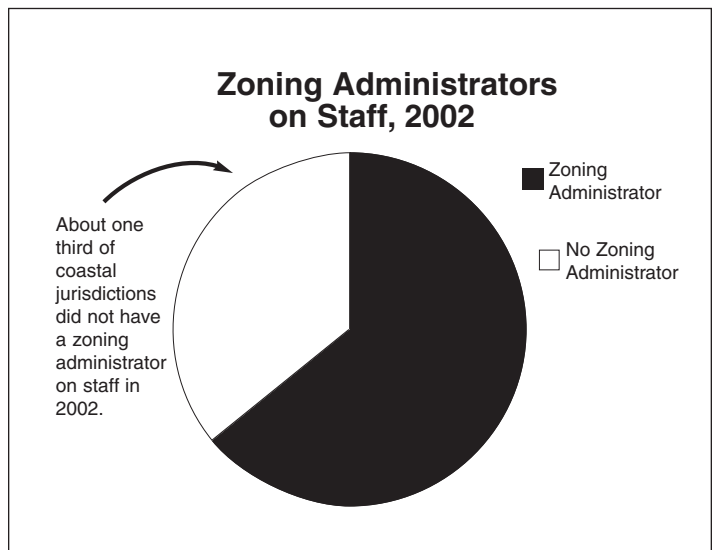


Figure 9



Regional differences in staffing are evident, as can be seen in Figures 6 and 8; the Northern Lake Huron and Lake Superior regions fell below the statewide average. When these results are considered on a more local basis the differences do not correspond well with either the increase in adoption of local master plans and zoning ordinances, or with a given jurisdiction's population growth. A significant number of the fastest growing counties and communities have not increased their master planning or hired professional staff.

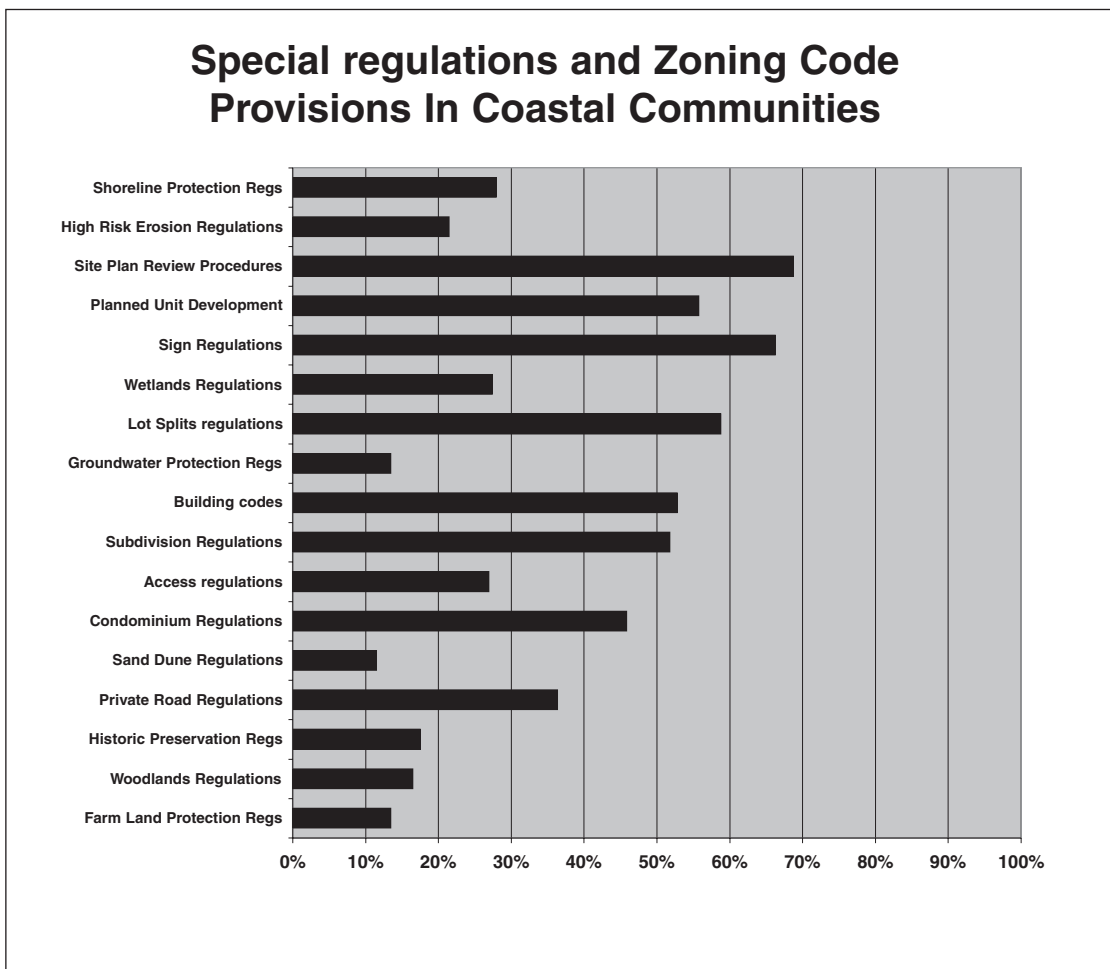
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Fewer than 20% of the Lake Superior region respondents reported having a professional planner on staff, and less than 60% in the South Lake Huron/Lake Erie region (which was the region with the highest percentage). Roughly 72% of responding communities without a professional planner on staff have a Master Plan in place. In contrast, roughly 97% of those communities with a professional planner on staff have

adopted a Master Plan. Similar relationships are found vis-a-vis professional staff and locally adopted protective regulations for coastal resources (i.e. shoreline protection, high risk erosion, and sand dune regulations).

Local adoption of special regulations, although spotty, is trending upward as can be seen in Figure 10, below.

Figure 10



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Special Regulations for Coastal Communities

A subset of special regulations that are of particular value in coastal communities along the shores of Lake Michigan and Superior was selected for analysis: high risk erosion, sand dune protection and shoreline protection regulations were grouped as “coastal protective regulations.”

Table 3

Jurisdictions with a plan in place were 4.2 times more likely to have adopted one of the three protective regulations.

REGION	Plan Adopted?	# With Regs	N	%Yes
N. Michigan	NO	1	9	11.1%
S. Michigan	NO	0	2	0.0%
Superior	NO	1	14	7.1%
Mich/Superior	NO	2	25	8.0%
N. Michigan	YES	18	42	42.9%
S. Michigan	YES	10	38	26.3%
Superior	YES	5	18	27.8%
Mich/Superior	YES	33	98	33.7%

Table 4

Jurisdictions with a professional planner were 1.9 times more likely to have one of the three protective regulations in place.

REGION	Pro Planner?	# With Regs	N	%Yes
N. Michigan	NO	9	30	30.0%
S. Michigan	NO	5	26	19.2%
Superior	NO	4	27	14.8%
Mich/Superior	NO	18	83	21.7%
N. Michigan	YES	10	21	47.6%
S. Michigan	YES	5	14	35.7%
Superior	YES	2	5	40.0%
Mich/Superior	YES	17	40	42.5%

This subset was correlated to the incidence of Master Plan adoption and to presence of professional planning staff in each jurisdiction to determine regional coverage of protective regulations. Jurisdictions with a Master Plan in place were 4.2 times more likely to have one of the three protective regulations in place than those with no adopted plan (Table 3). Jurisdictions with a professional planner on staff were 1.9 times more likely to have one of the three protective regulations in place than those without a planner (Table 4).

Coastal sand dune formations are of particular importance to coastal communities, resource managers, and Sea Grant researchers. Michigan laws (e.g. Part 353, Sand Dune Protection and Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451 as amended; and Part 323, Shore Lands Protection and Management) protect many of the larger dune systems (approximately 70,000 acres are included). These are designated by law as “critical dune areas.” Locally important smaller pockets of open dune systems and “fringe” systems found adjacent to state regulated systems appear to be under very little protection. Estimates of dune acreage range from 200,000 to 275,000 acres in Michigan, mostly along lakes Michigan and Superior. Counties and local communities are empowered by state law to regulate these fringe and isolated dunes, but county and local regulatory coverage has not been put in place for most of the shoreline. The state data files indicate larger dune systems only, but they are useful because smaller fringe and isolated systems are often associated with larger formations due to local geology, local climate, etc. The state data files point us to the highest concentrations of unregulated systems. To approximate the level of local regulation in otherwise unmanaged or isolated dune areas, an initial attempt was made

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to correlate data from the 1994 and 2002 coastal community surveys to State of Michigan Geographic Library land cover files. Although our rather cursory examination of the records revealed a disturbing lack of coverage, a meticulous inventory of coverage is a complex undertaking beyond the scope of the present study.

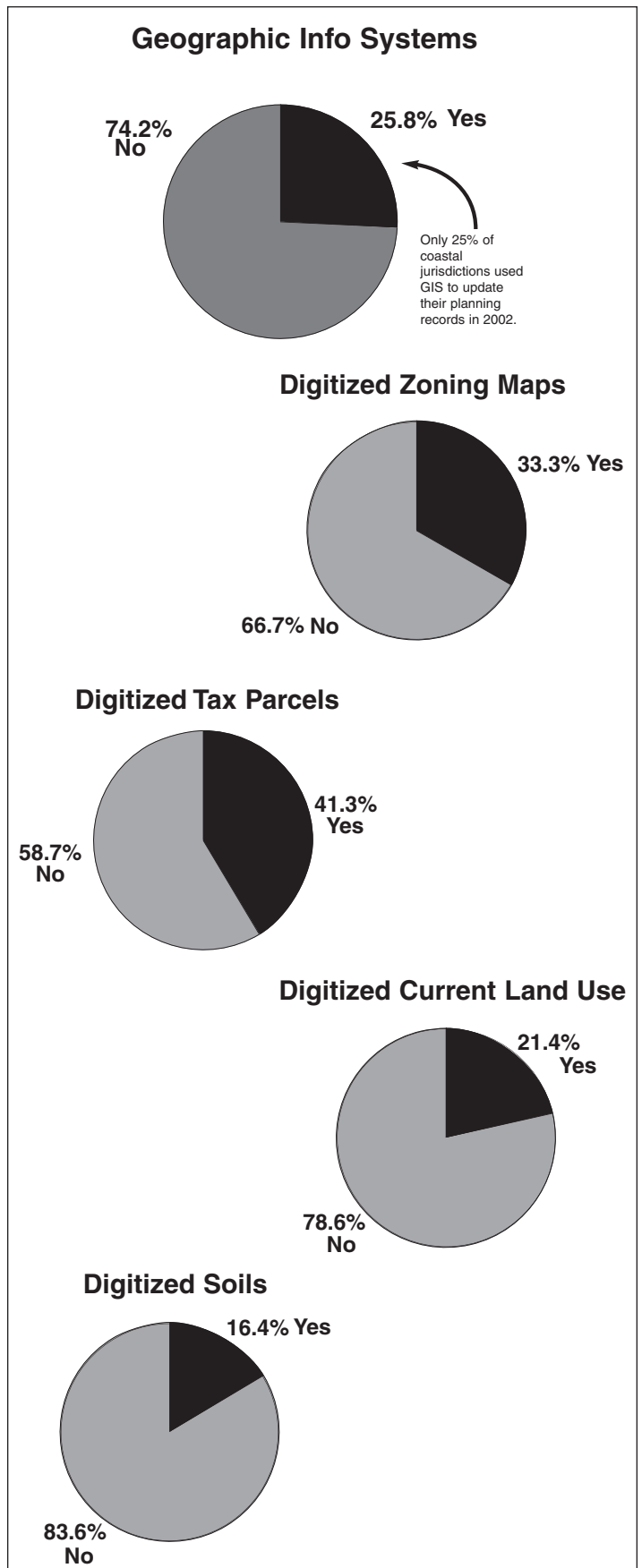
The level of local protective regulation being applied to isolated open dune systems is not known. Although the actual extent of fringe and isolated systems is not yet known on a statewide basis, this correlation begins to provide a picture of where small systems are or are not being protected by local regulations.

Use of Computers for Planning

Communities using geographic information systems are able to quickly correlate local conditions. For example, correlation of zoning designation to soil type — a correlation of a legal “data layer” to a natural capacity “data layer.” And decision-makers can visually correlate much more data than is possible when data is archived and accessed manually. Better-informed decisions result when access to information is improved at the community level. To gauge, at least in part, the sophistication of planning and zoning efforts in coastal communities, survey respondents were asked to provide information about their use of computer-assisted tools for planning and zoning.

The use of digital zoning maps, a GIS data layer specifically examined, is trending positively statewide — up from 19.4% in 1994 to 33.3% in 2002. Regarding the use of GIS tools more generally (Figure 13), there was wide variance between regions (e.g. Superior averaged 19.5% use of GIS and South Michigan averaged 45.7%), but survey results did not vary widely across jurisdiction type (e.g. cities averaged just over 50% use of GIS while townships averaged just under 40%). When considered on a statewide basis, the increase in GIS tool use was quite remarkable; up from just over 11% in 1994 to over 35% in 2002.

Figure 11

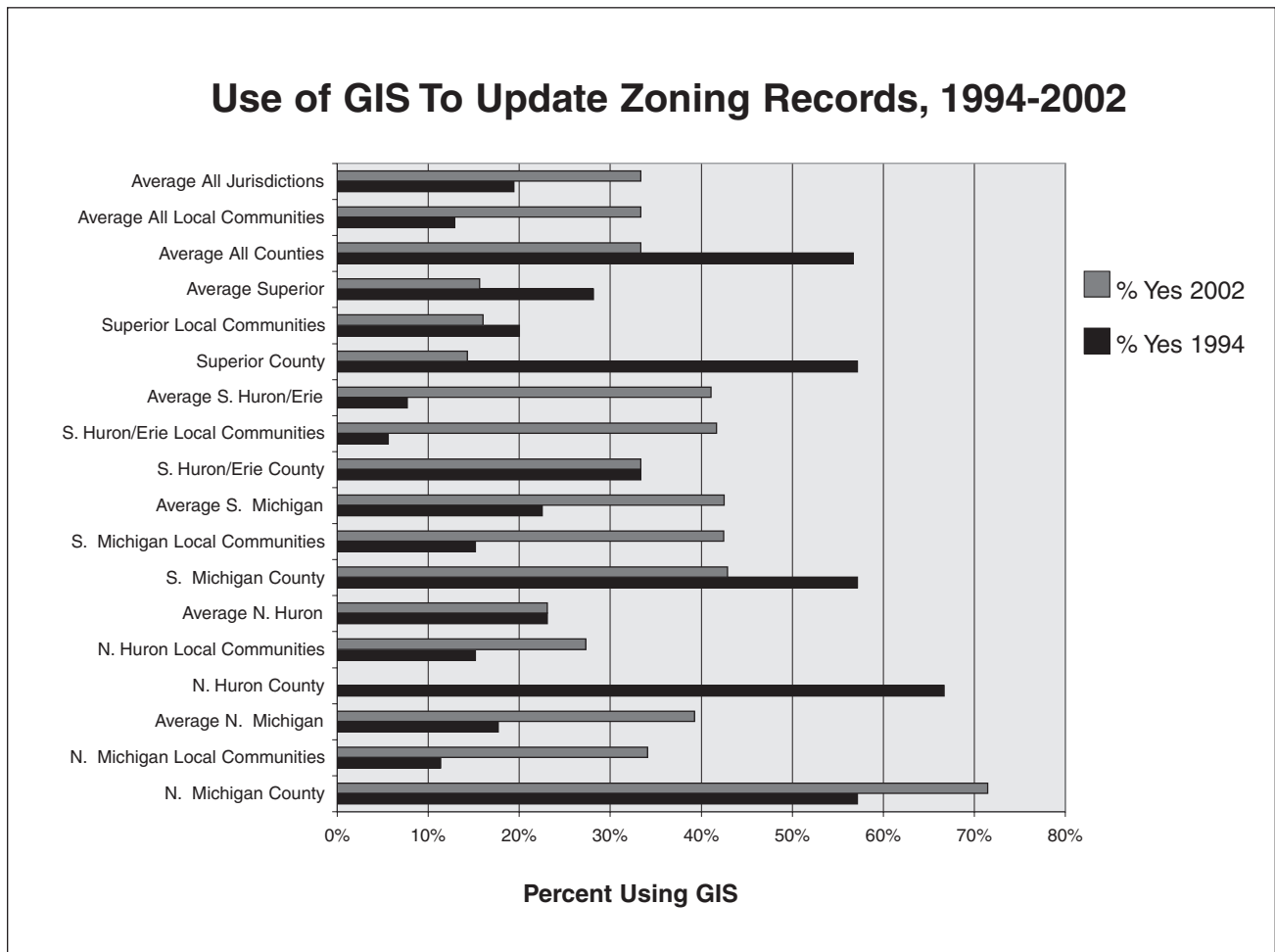


Status of Planning and Zoning in Michigan's Great Lakes Shoreline Communities

Planning Commission member length-of-tenure may be an indicator of the quality of local planning. New commissioners often feel as if they are “walking around in the dark” during the first few years of their tenure. It can be a complicated job and most appointees have little prior experience in either planning or public process. If this is true, what can be done to increase volunteer longevity on local land use boards? What motivates citizens to volunteer for and to remain a member of a planning board?

Studies of adult volunteerism indicate that continued willingness to participate (longevity) is tied to the individual's sense of accomplishment and job satisfaction. These are related to a sense of proficiency, which in turn is dependent upon a volunteer's knowledge base. Direct experience and classroom learning can both develop an individual's knowledge base.

Figure 12

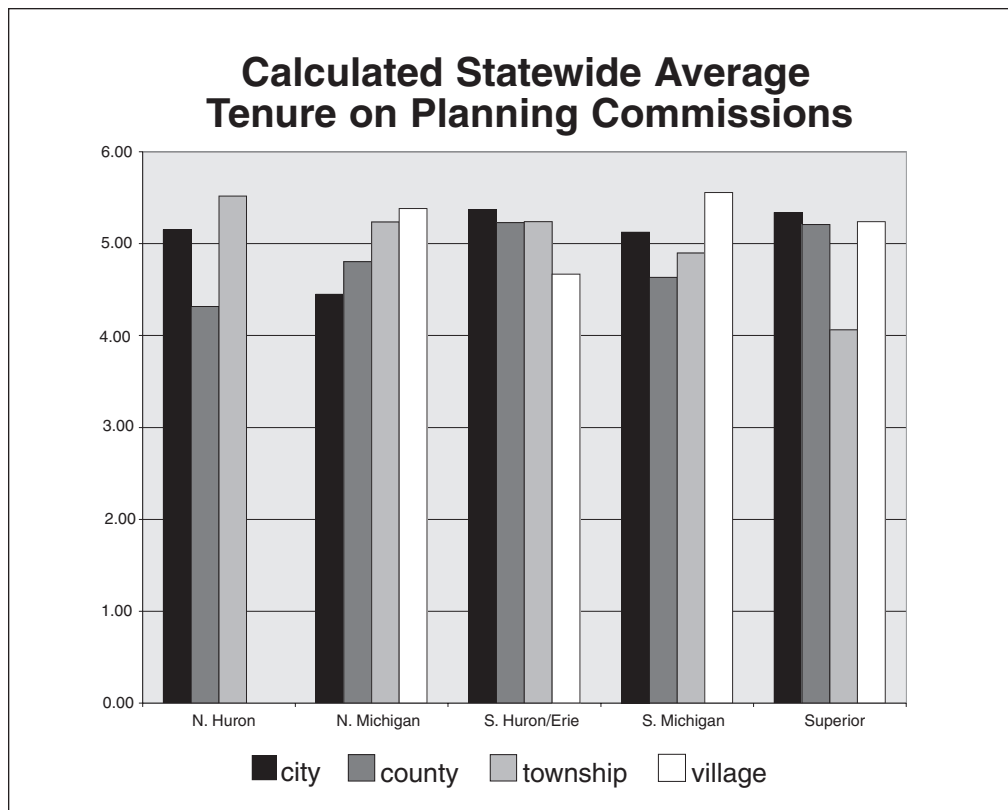


Status of Planning and Zoning in Michigan's Great Lakes Shoreline Communities

To better understand the long-term implications of personal experience and educational programs (e.g. MSP continuing education series and MSUE Citizen Planner Program) on the satisfaction, proficiency and longevity of citizens who serve on Planning Commissions, respondents were asked to provide information about the current tenure of their Planning Commission. These 2002 data offer the potential of providing a baseline for further research. Are there relationships between volunteer longevity and local sustainability? Further research might apply a

suite of sustainability indicators (see e.g. Berke and Conroy, 1999; Evaluation Guidelines for Ecological Indicators, U.S. EPA, 2000) to contrasting areas of the coast (where length-of-tenure is variable) to discover if relationships exist. We now know that Planning Commissions are in place in approximately 80% of the jurisdictions surveyed in 2002, up from just over 60% in 1994.

Figure 13



Status of Planning and Zoning in Michigan's Great Lakes Shoreline Communities

Summary of Findings

Survey results indicate that more than 80 percent of coastal jurisdictions have adopted a Master Plan. Still, important gaps in planning coverage are evident; there are vast stretches of shoreline, particularly in Michigan's Upper Peninsula, where no county-level planning has been done, and where sub-county jurisdiction plan adoption appears to be minimal.

In contrast, if data from responding communities is extended to all jurisdictions in coastal Michigan, zoning coverage is quite complete statewide — 93% of cities, 80% of townships, 93% of villages and 33% of counties have adopted some form of zoning code. When data are aggregated statewide, coastal community zoning ordinance adoption is up 22% since 1994 to 77.1% of all jurisdictions.

Survey data show that jurisdictions with a Master Plan in place were four times more likely to have one of three shoreline protective regulations in place than those with no adopted plan. Further, jurisdictions with a professional planner on staff were almost two times more likely to have adopted shoreline protection regulations.

Finally, survey results show that the overall use of geographic information systems in land use planning has dramatically increased, up from just over 11% in 1994 to over 35% in 2002. Regarding the use of GIS tools more generally, there was a wide variance among regions, with Lake Superior counties averaging 19.5% use and southern Michigan averaging 45.7% use.

For Further Investigation

1) *Qualitative understanding of the efficacy of land use planning.* This survey research indicates that the geographic extent of local planning and zoning has been steadily increasing over the past several years, with a growing number of communities conducting these activities. However, the survey does not provide details about the quality of local land management efforts. While there is more activity underway, what effect will these efforts have on coastal community sustainability? What can be done to remove impediments to ecosystem planning? Future research could go beyond an inventory of planning and zoning activity to target the efficacy of local land management. A research methodology that combines quantitative and qualitative inquiry could begin to shed light on these larger questions.

2) *Overcoming educational and technological constraints.* Although this research tells us that communities are devoting additional human resources to planning, it does not provide details about the work they do or the training and education they might need to plan for sustainability. We know that the use of computerized geographic information systems is trending rapidly upward, but do local planners have adequate access to spatial data and land management tools? Are there impediments to adoption of new technologies? If so, what can be done to overcome those constraints?

3) *Improving local regulations/ordinances that are beneficial to protection of coastal resources.* Local regulations that are specifically beneficial to the protection of coastal-dependent uses and to the protection of coastal resource values are uncommon. Targeted tools and policies would allow organizations such as Michigan Sea Grant and its partners who share the vision of sustainable coastal communities to assist local resource managers in their efforts to better understand how local planning and plan implementation affect the mosaic of land use along the Great Lakes shoreline.

Appendix

Michigan Sea Grant Coastal Community Land Use Planning and Zoning Survey

1. What type of government does your community have?

- a. City b. Village c. Township d. Charter Twp e. County

2. Please tell us about staffing. Please circle all that apply and/or indicate part time or full time status.

- | | | |
|------------------------------------|--|---|
| * Certified Planner/Planning Staff | a. Part Time (#) | b. Full Time (#) |
| * Zoning Administrator | c. Part Time (#) | d. Full Time (#) |
| * Building Inspector | e. Part Time (#) | f. Full Time (#) |
| | g. we have a consultant on retainer for some of these duties | h. we use a consultant as needed for some of these duties |
| | i. none of the above | |

3. Which does your community have? Please circle all that apply.

- a. Zoning Board b. Separate Zoning Board of Appeals c. Planning Commission

4. How many Planning Commission members does your law allow for? _____ (number)

5. How many years is a Commissioner's legal term? _____ (years)

6. How many of the current Planning Commission members are:

- a. first-term members _____ (number)
 b. second term or more _____ (number)

7. Has your community adopted a Comprehensive Plan, Future Land Use Plan, General Plan, Basic Plan, General Development Plan, Master Plan, or other plan with a similar focus?

- a. Yes b. No
 If so, list the year it was adopted and last updated
 c. Year Adopted _____ d. Year Last Updated _____ e. Year Amended _____

8. Has your community adopted a Zoning Ordinance?

- a. Yes b. No
 If so, list the year it was adopted and last updated.
 c. Year Adopted _____ d. Year Last Fully Updated _____ e. Year Amended _____

9. Which of these are used to update and maintain planning information? (Circle all that apply)

- a. Manually (word processed, typewritten)
 b. Computer (database or other retrieval system)
 c. GIS (Geographic Information System)

10. Please think about your community's use of digitized data. Do you have or use:

- | | | | |
|-------------------------------|-------------------|-------|---------------|
| geographic information system | a. Yes | b. No | c. Don't know |
| digitized zoning maps | d. Yes | e. No | f. Don't know |
| digitized tax parcels | g. Yes | h. No | i. Don't know |
| digitized current land use | j. Yes | k. No | l. Don't know |
| digitized soils | m. Yes | n. No | o. Don't know |
| digitized sand dunes | p. Yes | q. No | r. Don't know |
| | z. No dunes, n.a. | | |

Appendix

11. What is the current extent of digitized data coverage in your community?

- | | | | | |
|----------------------------|-------------------|-------------|------------|---------------|
| digitized zoning maps | a. 100% | b. 51 - 99% | c. 0 - 50% | d. Don't know |
| digitized tax parcels | e. 100% | f. 51 - 99% | g. 0 - 50% | h. Don't know |
| digitized current land use | i. 100% | j. 51 - 99% | k. 0 - 50% | l. Don't know |
| digitized soils | m. 100% | n. 51 - 99% | o. 0 - 50% | p. Don't know |
| digitized sand dunes | q. 100% | r. 51 - 99% | s. 0 - 50% | t. Don't know |
| | z. No dunes, n.a. | | | |

12. Does your community have ordinances that include any of the following provisions? Please place a "Z" before all that apply to your zoning ordinance, or use "O" if provided in another ordinance, and note the year first adopted and last year it was significantly updated.

Indicate "DK" if you don't know.

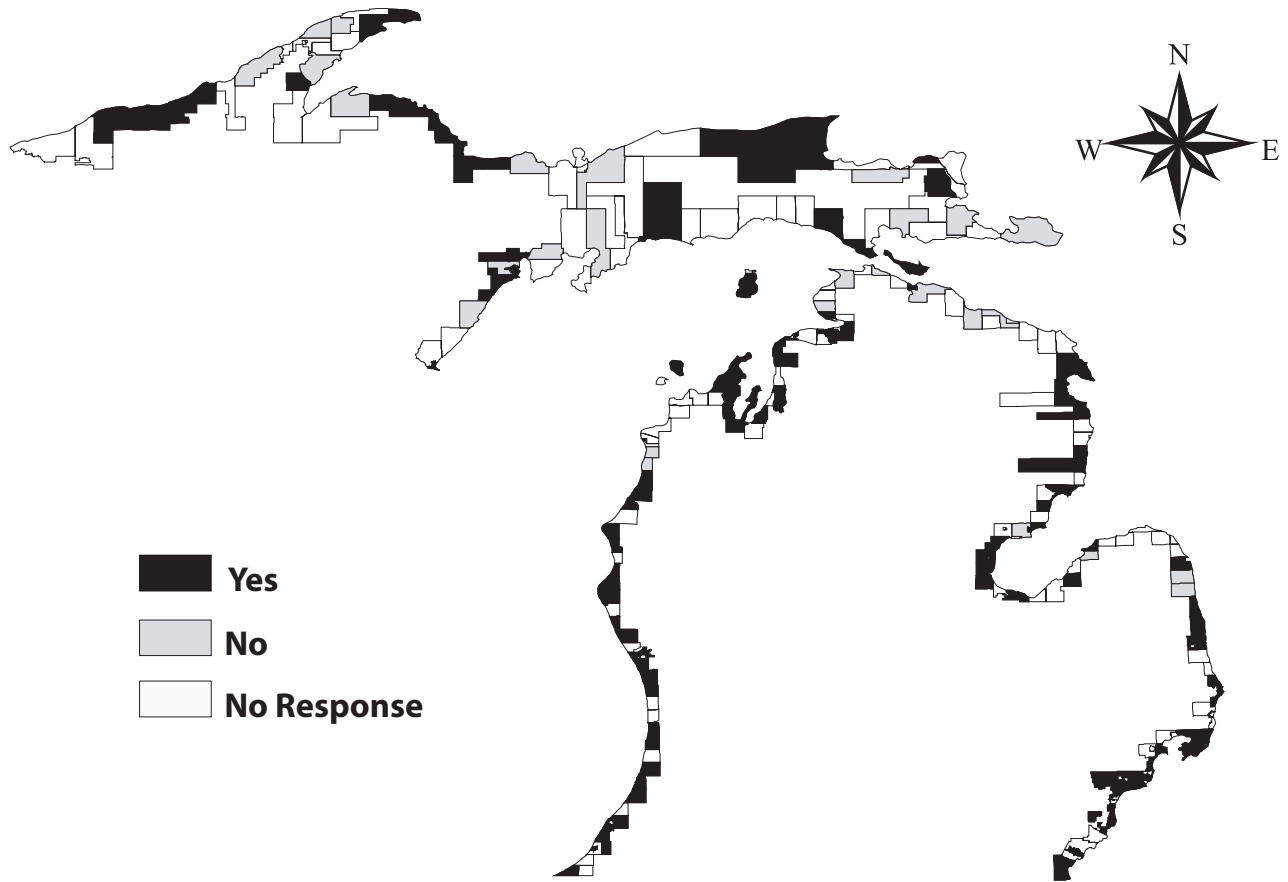
	<i>Year Adopted</i>	<i>Year Last Updated</i>
<u> Z </u> (sample) Building Code (sample)	<u> 1956 </u>	<u> 1986 </u> (sample)
<u> </u> Site Plan Review Procedures	_____	_____
<u> </u> Building Code	_____	_____
<u> </u> Condominium Regulations	_____	_____
<u> </u> Wetlands Regulations	_____	_____
<u> </u> Sign Regulations	_____	_____
<u> </u> Woodlands Regulations	_____	_____
<u> </u> Historic Preservation Regulations	_____	_____
<u> </u> Shoreline Protection	_____	_____
<u> </u> High Risk Erosion Regulations	_____	_____
<u> </u> Sand Dune Regulations	_____	_____
<u> </u> Farm Land Protection Reg.'s	_____	_____
<u> </u> Lot Splits Regulations	_____	_____
<u> </u> Planned Unit Development	_____	_____
<u> </u> Subdivision Regulations	_____	_____
<u> </u> Private Road Regulations	_____	_____
<u> </u> Access Regulations	_____	_____
<u> </u> Groundwater Protection Reg's	_____	_____
<u> </u> Other you wish to mention	_____	_____

13. Have you received technical or educational support from Michigan Sea Grant in the last ten years?

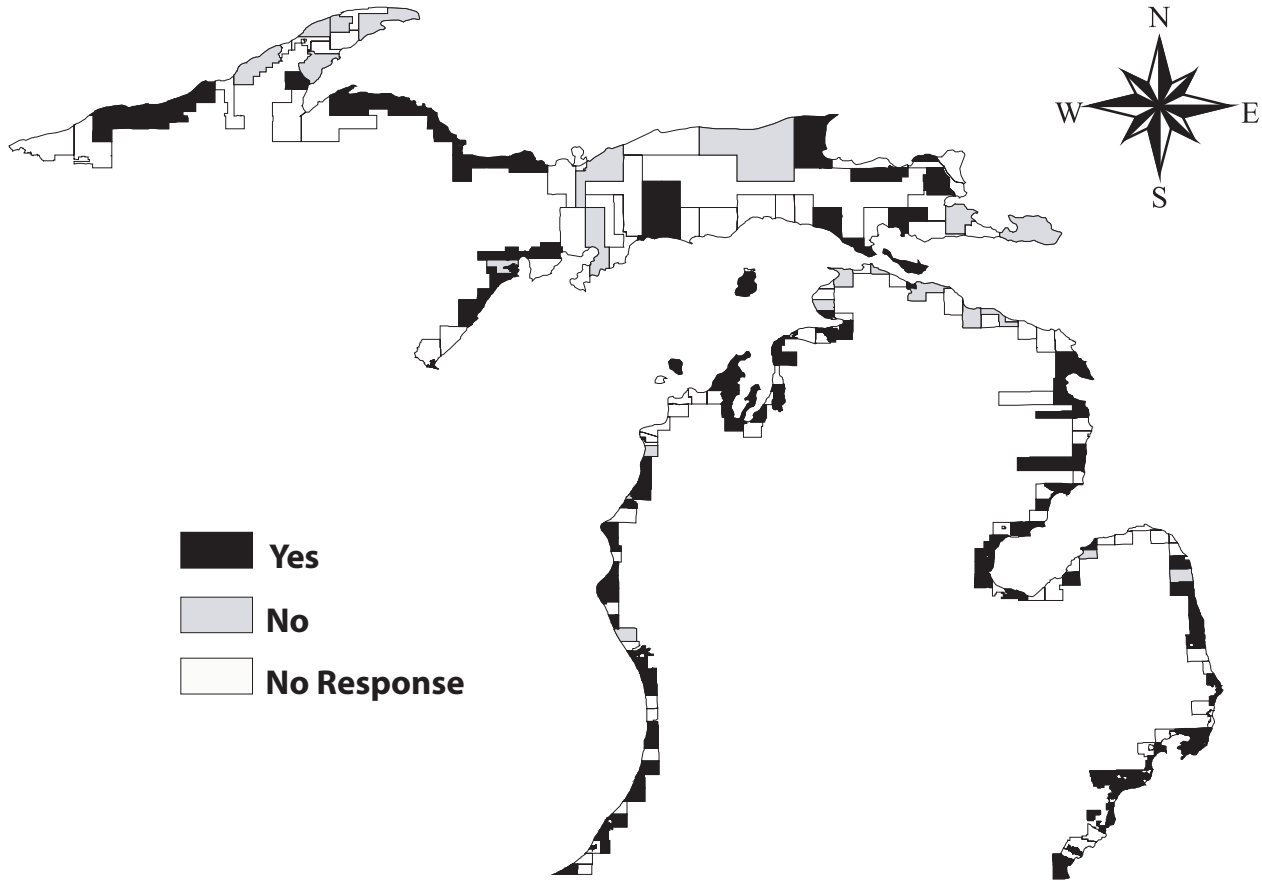
- a. Yes b. No c. Don't know

14. Have you applied for or received financial support from Michigan DEQ Office of Coastal Management in the last ten years?

- a. Applied b. Received c. Don't Know



Coastal Townships, Cities, and Villages with Master Plan



Coastal Townships, Cities and Villages with Zoning Ordinances

