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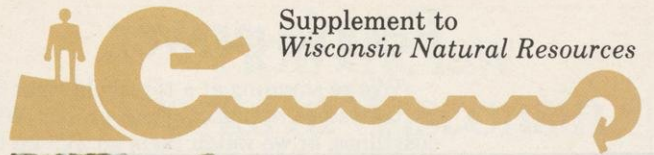
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Lake Superior on Wisconsin's northern border is the greatest of the Great Lakes. It is 380 miles long, 160 miles wide, 1,302 feet deep and contains half the water in the entire Great Lakes system. The system, which also includes Lakes Michigan, Huron, Ontario and Erie covers 95,000 square miles and is the largest group of freshwater lakes in the world. Lake Michigan, at Wisconsin's eastern border measures 321 by 118 miles and is 923 feet deep. Together, Lakes Michigan and Superior give Wisconsin 820 miles of coastline and therein lie some problems.



Supplement to
Wisconsin Natural Resources



WISCONSIN'S COASTS



William S. Becker

People power.

"We're standing at a threshold right now. Either we take steps to preserve and protect Wisconsin coastlines, or we watch them go. It's up to us."

Those are the words of Allen H. Miller, a foremost authority on shoreline problems of Lakes Superior and Michigan. Miller, who works in the State Office of Planning worries about the recent heavy push for development on the lakes.

His warning is reinforced by Harvey Grasse, a lifelong resident of Door County and chairman of the Coastal Management Council. "Unless it's more carefully guided," Grasse says, "People pressure could change the coastlines from resources of priceless beauty and utility into a California-like example of thoughtless, insensitive growth."

Although not often thought of as a coastal state, 820 miles of Lakes Michigan and Superior lap Wisconsin's border. The allure of the two lakes is legend. Some 43% of the entire state population live along them. Their commerce, from the huge international port at Superior to the popular playgrounds of Door County contribute mightily to the Wisconsin economy. We eat their products, drink their water and live, work and play on their shores. Most of this brings great satisfaction.

But the people-power of the lakes causes problems—problems which have not yet reached crisis but are serious and growing worse. We dump in poisons, destroy wetlands and other important wildlife habitat, and build businesses and homes in hazard areas. What to do about it? One of the most unusual government supported programs in state history is turning up answers. Unusual because it's low-cost and run as much by ordinary citizens as by bureaucrats, the Wisconsin Coastal Management program began in 1974. First it planned then it started allocating funds as seed money to help local government and other entities protect the lakeshore. Miller is the program's state-level manager.

Unlike some environmental movements Wisconsin Coastal Management is not anti-development. Those involved in it recognize that urban development, industrial growth, recreation and tourism are important uses of the coastline. The challenge is to balance these with the need to protect rare natural areas, archeological sites, wildlife habitat and other fragile coast resources.

Spawning reefs, habitat, history, plants, marshes.

The Wisconsin coasts are studded with resources, of special scientific interest, of unusual scenic beauty, or of critical importance to plants and animals which depend on the shore for habitat and nourishment. Coastal Management finances efforts to learn more about these resources and protect them.

One of the most unusual projects is happening underwater—a DNR study of reefs and shoals. These collections of rocky rubble, are the natural breeding ground of lake trout, the valuable commercial and game fish now in serious jeopardy, particularly in Lake Michigan.

Once, lake trout sustained a \$20 million industry in Wisconsin. But in the '60s, the sea lamprey, a

predatory eel invaded Lake Michigan. The tragedy is well known. Lake trout were virtually wiped out. Despite lamprey control and stocking a million fish a year ever since 1965, Lake Michigan trout have never resumed natural reproduction. In Lake Superior, the drop has been less severe but still of great concern.

Scientists don't know the reasons: too many predators? poisons like PCB's? or poor conditions on the reefs and shoals? Because they're under water, little has been known about the reefs and shoals where lake trout spawn.

Now, with a grant from Coastal Management, a team of Wisconsin scientists has pinpointed 32 reefs, 16 in Lake Superior and 16 in Lake Michigan for inspection by divers from the UW-Madison Marine Studies Center. Using special equipment and underwater photography, divers note the thickness of rubble, the type of rock, the number and species of trout egg predators (especially crawfish and mudpuppies) and the degree to which reefs are covered with sediment or algae. They also record presence of honeycomb rock which is the best kind for safely harboring trout eggs.

According to Ron Poff, DNR's Great Lakes fish management specialist, the underwater studies will help guide a number of future efforts. Data will be used to determine where stocking should be focused. Sediment might be cleaned from shoals or predator control projects initiated. Some of the most promising reefs could become the nucleus for lake trout refuges where fishing might be restricted to provide sanctuary. At the moment, Wisconsin has only one such sanctuary—at Gull Island Shoals in Lake Superior.

"These areas are critical to establishing a self-sustaining trout population," says Poff. "If we can get them to produce again we can reestablish an important commercial industry and a popular source of recreation."

Some kinds of land as well as fishes have been threatened. At one time, for example, the western shore of Green Bay along the Wisconsin coast was dotted with 9,600 acres of marsh. But under the pressures of economic growth and urban sprawl, 60% have been destroyed. This hurts for many reasons. Some 350 species of birds, 50 kinds of mammals and 33 varieties of fish use the coastal marshes for food, breeding, habitat and migration resting-places.

The marshes also absorb nutrients, help control runoff and influence water levels. Thanks to a \$21,200 Coastal Management grant, an ambitious master plan has been developed to protect remaining wetlands in Brown, Oconto and Marinette Counties. These counties contain 85% of the existing wetlands on the entire Lake Michigan shore. Approved last summer by the Wisconsin Natural Resources Board, the 10-year master plan calls for acquisition of nearly 7,600 acres under a variety of public programs. Although eventual cost might exceed \$3 million, protection of these wetlands is critical to survival of coastal wildlife and to the health of the bay.

Other Coastal Management funds have gone to the State Historical Society to conduct inventories of threatened archeological sites. Last summer nine researchers from the Great Lakes Archeological Research Center in Waukesha marched across 150 square miles of fields and forests along Green Bay looking for prehistoric Indian ruins.

Guided by letters and journals of early



Year of the Coast

A coalition of environmental groups have declared 1980 the "Year of the Coast."

Organizations like the Sierra Club, Friends of the Earth, the Natural Resources Defense Council and the Conservation Foundation, will join a group called the Coast Alliance in a series of educational events. Throughout 1980 the enormous economic and aesthetic values of the nation's coasts will be publicized.

"We cannot survive without a functioning coast," explains William Painter, executive director of the Alliance. "Americans are caretakers of 100,000 miles of beaches, bays, estuaries and wetlands, including fish and wildlife habitat that constitute a resource of infinite economic value. People use the coast for recreation and sport, and whole communities depend upon it for their livelihood."

Wisconsin's coastal problems are the same as those facing the entire nation. Among examples: PCB contamination in the Hudson River; the threat of massive loss of life and property because of hurricanes along the Florida and Gulf coasts; loss of 42% of the wetlands in San Francisco Bay to commercial and residential development; and proposed beach restoration and maintenance projects that could cost an estimated \$2-billion, plus a yearly maintenance charge of \$73-million.

For more about Year of the Coast activities, write "Year of the Coast," P.O. Box 2708 Department A, Washington, D.C. 20013.

missionaries and explorers, the team rediscovered 100 sites whose locations had been forgotten and found 70 new ones never before recorded. So far the discoveries have yielded artifacts up to 9,000 years old and the Society plans to ask that the entire area be designated a National Historic District. The sites are now being catalogued to make sure they are not destroyed. Two farmers along Green Bay have agreed to plow around two prehistoric cemeteries found in their fields. "These resources can be destroyed forever if not identified and protected and our goal is to keep that destruction from happening," says project director Dr. David Overstreet of the University of Wisconsin- Waukesha.

Another Coastal Management project will identify threatened scientific areas along the lake—rare geologic forms and endangered plant and animal habitat.

Top:
At Algoma, a symbol of hard times in the fishing industry. The lamprey, PCB's and unproductive spawning reefs share the blame. The lamprey is under control. Scientists are at work on the other problems. Photo by Roy Tull, UW-Madison Sea Grant Institute

Center:
The Indian Cemetery at Red Cliff on Lake Superior. Coastal management has financed a study to find archeological sites. Photo by Roy Tull, UW-Madison Sea Grant Institute

Bottom:
Using an underwater pad and pencil, a diver takes notes at a spawning reef in Lake Superior. Coastal management wants to help find out why lake trout fail to reproduce. Photo by Doug Stamm, UW-Madison Sea Grant Institute



A freighter loads grain at the Superior Harbor.

So far, no one has ever died from Great Lakes pollution.

Right minded people do not contaminate their own drinking water or dump poison into their food. Yet Wisconsin communities and industries—sometimes intentionally, sometimes accidentally—have used the Great Lakes as a natural dispose-all for wastes. Despite the fact that some of these wastes are toxic, hundreds of thousands of people drink the water and eat the fish.

So far, experts say no one in Wisconsin has ever died from Great Lakes pollution. Nevertheless, the pollutants and poisons are dangerous. Official warnings tell people not to eat more than one meal a week of lake trout and salmon from Lake Michigan because of high levels of PCB's. Pregnant and lactating women are warned not to eat any at all. Used in manufacturing between 1929 and 1977, PCB's cause cancer in animals, retard growth and development and cause miscarriages. Runoff, sewage and industrial wastes put the chemical into the lake. Fish picked it up through the food chain. Most trout and salmon in Lake Michigan now contain more than the 2 parts per million the Food and Drug Administration allows as the maximum tolerance for humans. Although manufacture and distribution of the poison has now been outlawed, experts predict it will remain in the lake and its fish for at least a decade.

The possibility that drinking water taken from Lake Michigan will be contaminated is also a source of concern. Sewage effluent and other wastes from a number of Wisconsin communities and industrial plants go into the lake or one of its tributaries. The City of Milwaukee has dumped in raw sewage during heavy rainfalls when the capacity of treatment facilities has been surpassed. Sued by the City of Chicago, which claimed contamination of the Illinois coast, Milwaukee is now upgrading treatment facilities. The cost will be high.

At the same time, people keep drinking the water. Cudahy, Green Bay, Kenosha, Manitowoc, Milwaukee, North Shore, Oak Creek, Port Washington, Racine, Sheboygan, South Milwaukee and Two Rivers—all draw their drinking water from Lake Michigan.

In some cities, even beaches have had to close because of pollution. Germ-laden water forced Green Bay to shut one down permanently several years ago.

These incidents have made poisoning of the lakes a major issue. A statewide questionnaire circulated by Coastal Management in 1976 revealed that pollution was the No. 1 concern of Wisconsin citizens. Despite this, we don't really know much about the toxic substances in Lake Michigan. To find out more, Coastal Management is financing two projects.

Some \$118,000 went to Dr. Tom Sheffy of DNR for a study of 17 different poisons in Lakes Michigan and Superior. Sheffy's crews will gather 300 samples of fish from 60 different locations along the coast. The State Hygiene Laboratory will determine what toxins they contain and in what quantities. The survey may be the most comprehensive of its kind ever undertaken in the Great Lakes by a coastal state.

With the results, DNR will be able to advise commercial fishermen of where high-quality, uncontaminated catches might be found. The data will also reveal where pollution is most serious and where poisons might come from. The public will be able to learn about potentially dangerous fishing spots and experts will be able to measure whether future toxic levels are better or worse.

Included on Sheffy's most-wanted list of chemical criminals are PCB's, dieldrin, DDT, arsenic, mercury and lead. Some, like DDT, have been banned for quite a while and levels should be down. Others, like dieldrin, a poison used until 1972 for corn rootworm, will probably still be high in the sample fish.

"I don't think we have mother-lodes of toxic substances that are going to kill people or devastate communities," says Sheffy. "But too many times we've reacted only after high levels of poisons have been found. This survey might allow us to nip some problems in the bud."

Another \$10,000 is being used by Coastal Management to learn more about drinking water. Are pollutants a threat to communities supplied by the Great Lakes? If so, what can be done? How do we make sure lakewater drinkers are protected by adequate warning systems in case toxic substances appear?

According to Phil Utic, general manager of the Green Bay Water Department and past chairman of the American Waterworks Association, several potential pollution sources could cause trouble. They include nuclear power plants, industrial and municipal wastes and spills from Great Lakes ships. The study, to be performed by a private firm, will analyze lake currents, winds, temperatures, lake level fluctuations and tributaries to find how these factors influence the movement of pollutants. "We enjoy a good water supply from Lake Michigan," says Utic. "We'd like to make sure it stays that way."

Some of the identified pollutants will be hard to deal with. In the interwoven ecosystem, even air pollution ends up as water pollution. Estimates are that 25% of all particles in the coastal air end up in the water. When PCB's are vaporized or incinerated they fall out as "PCB rain." Other air pollutants

produce "acid rain," which is already causing change in some inland lakes. The poison problem promises to last a while. Coastal Management programs will help move us toward solutions.

The lake could eat up your life savings.

The Biblical admonition warns there are problems with building on sand. Even so municipalities, industry, small business and homeowners all converge on the lakeside.

Figures from the Army Corps of Engineers show eroding action of the Great Lakes caused \$20 million in property damage in Wisconsin between 1972 and 1976. In some places, homes, businesses and public facilities literally fell into the lake as land on which they sat was eaten away. Trying to help, government spent \$10 million for erosion control structures during the same four years. Property owners themselves spent thousands more.

In some places near Kenosha, Lake Michigan eats 50 feet of shoreline annually. In Racine County, nearly five million cubic feet of bluff was lost each year between 1968 and 1976, nearly 2.5 acres annually. Those statistics mean serious personal problems for homeowners. In recent months one Racine County family watched six feet of land slip into Lake Michigan behind their house. The future looks scary. Life savings could be lost.

Government and landowners both try to deal with the problem by building erosion control structures. But these are expensive (up to \$500 per foot) and, what's worse, temporary. Many now feel the best way to handle erosion is not to change the lake, but construction practices along it.

Wisconsin has a shoreline zoning law, passed in 1968 to require that all new building be set back a safe distance from the lakes. Local versions of it are

now in effect in 14 coastal counties. But the regulations can be complicated and sometimes difficult to understand. To help improve compliance with the zoning rules, Wisconsin Coastal Management has funded a number of initiatives by DNR. They include an inventory to see how well zoning works plus technical aid for local zoning administrators and citizens trying to work with the law.

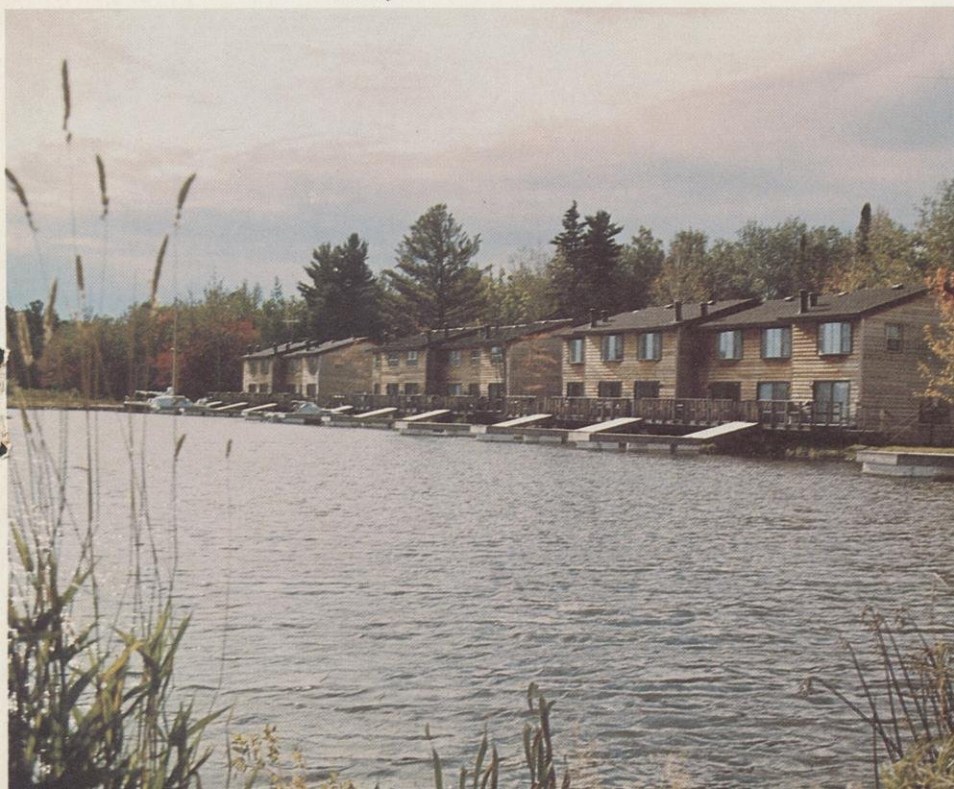
So out in the country good construction practices are just a matter of time. But in urban areas things are confused. Reason is that the 1968 law didn't apply to Wisconsin's 33 coastal cities and villages. Even though 10 communities have passed shoreline zoning on their own and most of the rest have something, the lack of common standards means regulations vary and enforcement can be spotty.

Coastal Management has also helped in this situation by providing funds for a DNR inventory of coastal zoning in urban areas. "There have been good zoning ordinances developed in some of these communities," notes DNR's Melvin Albers. "Chances are these can be used as models in other cities and villages having trouble."

Wise construction means protecting lakes from people as well as people from lakes. Wisconsin has regulations that cover such activities as dredging, sand blankets for beaches, dock building and other shoreline alterations. But sometimes permit applications get bogged down in red tape and frustrated citizens begin projects without approval.

To try and remedy this, Coastal Management has funded three additional water management investigators, one for each of the state's three coastal regulatory districts. Here's an example of what happened as a result: in the Marinette district permit processing has been cut from 60 days to 16. The extra help allowed staff to keep better watch on new project compliance with state law, and gave them more time to investigate unauthorized projects. Coastal Management hopes the experiment will inspire the state legislature to hire permanent additional help.

A condominium development at Port Superior in Bayfield County.



Lakeshore erosion at Whitefish Bay near Milwaukee eats away at a foundation. Photo by Jim Escalante



Environment, tourism, recreation, shipping, guaranteed?

If there's one problem common to all 820 miles of Wisconsin coastline, it's probably this: how to make sure that all competing activities—economic, historic, recreational, natural, residential, municipal—have their place in the sun. The resource is very limited (only nine inches of Great Lakes coast for each Wisconsin resident means that we must make sure that the economy and the environment are partners not competitors). How can we guarantee that all state people will benefit?

Northern coastal counties along Lake Superior starve for economic development. Ashland, Bayfield, Douglas and Iron Counties are among the neediest. The 1970 census reported 11% of the families in that region live below the poverty level of \$3,000 compared to 7% statewide. With their potential for jobs in shipping and recreation the Lake Superior counties need only the right catalyst for economic conditions to blossom.

All along shore, pressures for new and better recreational facilities intensify. In 1977, the UW-Extension Recreation Resource Center surveyed 13 coastal communities. Ten reported boating facilities overcrowded, seven complained of overtaxed fishing facilities. Many need new ones because the old had deteriorated beyond repair. The Center predicts that boating will grow by 210% between 1970 and 1990, fishing and hiking by 150 and 147% respectively, camping by 133% and sightseeing 115%.

To take advantage of potential tourist income Wisconsin's coastal communities will have to make

hard decisions about whether to modernize to accommodate the anticipated crowd: boaters, anglers, swimmers, hikers, campers and sightseers. The City of Bayfield on Lake Superior illustrates the problems. In 1973, after the Apostle Islands were designated a national lakeshore, 60,000 visitors showed up. Projections say the number will zoom to a quarter million in 1985. By 1976, Bayfield was already on the spot: inadequate parking, an influx of small businesses open only in summer and increased worry about crime. "We don't want to wind up a seasonal town like many other tourist spots, with too much razmatazz and plastic and everyone dedicated to one thing—fleecing the public," said Mayor Lawrence Wachsmuth. "But we get more pressure every year."

Superior is Wisconsin's largest port. Its shipping terminals serve 15 states and three Canadian provinces and are important in shipment of coal throughout the U.S. Investors there have spent more than \$100 million during the past few years to upgrade facilities and keep the port competitive with other Great Lakes terminals.

But to make sure community recreation and environmental areas are not sacrificed to industrial growth, the city has joined neighboring Duluth, Minnesota, in the Duluth-Superior Harbor Plan. New recreational facilities and protection of natural areas are provided for right along with further growth in the port.

Using Coastal Management funds, the city has also developed a master plan for Superior Municipal Forest. Camping, scenic drives, hiking paths, snowmobile trails and an 18-hole golf course are part of it. At Wisconsin Point, a favorite recreational vehicle spot, the city became concerned about damage to natural vegetation and wildlife. To save



things, it came up with a day-use plan and hired a park manager to control vehicle access.

The Superior plan has become a model for other Wisconsin coastal communities to follow if they want balanced use of the lakeshore.

A lakefront settlement, not just a town that could be anywhere.

Some of the most satisfying examples of coastal problem-solving involve citizens rather than government agencies. Grassroots people have creative power and Kenosha, Racine and Washburn demonstrate it.

In Kenosha, several citizen groups are recycling a girls' prep school on Lake Michigan to help conserve cultural, historic and recreational assets. The school, Kemper Hall, closed in 1975. Its campus consists of 10 buildings—including elegant Durkee mansion, built in 1850, plus 11 landscaped acres including tennis courts, playing fields, walkways and gardens.

Citizens formed Kemper Center Inc., a nonprofit organization which rallied support of local governments and helped buy and develop the land. Success took two years. In 1977 the campus was purchased as Kenosha County's seventh park. Kemper Center Inc. administers the park for the county. A 15-foot public fishing pier, especially designed for the handicapped and elderly—is now under construction. Nine local groups are working on projects that range from an elaborate flower garden to refinishing furniture and hanging curtains for the mansion. Plans are to turn the mansion into a cultural center complete with meeting rooms, classrooms, art studios and museum space, all funded by private contributions. A source of community pride, the campus hosted a three-day jazz festival in July. Carthage College uses the facilities for astronomy and lake studies, while members of the local symphony hold chamber music concerts in Kemper Chapel. The project has been recognized by the State Federation of Women's Clubs, the State Historical Society and the National Association of County Boards.

Up the coastline, in Racine, citizens have joined in a different type of project—the Racine County Coast Watch. Concerned about serious erosion problems, volunteers take daily readings at 11 stations to record information about rainfall, wave height and erosion. The work began in September, 1978. Volunteers brave icy winter weather, cold and wind to take photographs and record data. Among the findings: severe erosion of bluffs in the county may be caused more by rainfall than wave action.

"You can develop a program with volunteers and get good, reliable information," says Barbara Burke-Griffin who directs the work. The volunteer data will supplement other erosion research to help Racine County deal with its disappearing coastline.

In northern Wisconsin at Washburn, people had a problem with access to Lake Superior. There simply were not enough places along shore where they could easily visit and enjoy the water. But assisted by Coastal Management money, Washburn citizens developed a rustic, one-mile hiking trail

The Milwaukee waterfront. Marketing promotion to increase use of the port by industry was financed by Coastal Management. Similar marketing work was done at Green Bay and Superior.

How the law works in Wisconsin

Concerned about enormous development pressures along seashores and the Great Lakes, Congress passed the National Coastal Zone Management Act in 1972. A year later \$7.2 million was appropriated to be divided among all of the 34 coastal states and territories willing to develop management programs.

In Wisconsin, Coastal Management began in 1974. With assistance from the State Planning Office, two groups were formed: a Coastal Coordinating and Advisory Council involving legislators, local officials and representatives of state agencies; and an independent Citizens Advisory Committee. From 1974 until 1977, some 150 citizens and officials worked to design the Wisconsin Coastal Management proposal.

In the fall of 1976 a public participation campaign was launched. Questionnaires were circulated statewide and 14 public meetings held to gather citizen input before any details of the program were formulated. Using ideas from these meetings, the Coordinating Council and Advisory Committee put a Wisconsin Coastal Management proposal together in 1977 and submitted it to federal officials for approval. A unique plan, it called for no new legislation and no new bureaucracy. Rather, it took advantage of Wisconsin's long tradition of strong home rule. Federal funds would be used to improve enforcement of existing laws and to streamline existing bureaucracy. They would also provide seed money to help get citizen and local government management initiatives off the ground.

Today, the Wisconsin Coastal Management program is in its second year. In 1978, \$1.3 million in federal funds, matched by more than \$500,000 in state and local money was used for 72 projects ranging from port promotion in Superior and Milwaukee to fisheries studies, park planning and new staff to help enforce zoning laws. This year the program will spend \$2 million in federal, state and local money on 40 projects.

Important to the program is identification of coastal areas worthy of statewide attention. Among them have been natural and scientific areas, historic sites, economic resources, hazard zones, blighted areas and locations for future power plants.

Further information about Wisconsin coastal management can be obtained from Allen H. Miller, Coastal Management Program Manager, Room B-130, One West Wilson Street, Madison, Wisconsin 53702.

along the lake. Citizens donated materials and labor to construct footbridges, stairs and a sawdust path. Local artisans designed and built benches. Sections of the trail were given names and signs by Boy Scouts, the National Guard and other volunteers. Washburn Mayor Edith Merila says the trail finally makes the community feel like a lakefront settlement, "not just a town that could be anywhere." Coastal Management funds have also been used for design and renovation of Washburn's West End Park.



The beach at Fish Creek in Door County. Photo by Jim Purington, Coastal Management

To the degree we believe we are caretakers, to that degree the coasts will be protected.

The challenges of Wisconsin's coasts are ample, complex and varied. Should we keep the lakes open during winter for year-round navigation? How do we make sure all people, no matter what their income, have adequate access? How do we derive economic benefit from the coasts yet preserve them for the future?

Al Miller says citizens, not bureaucrats have to answer these questions and implement solutions. "Only people can determine the future of the shorelines," Miller says. "Legislatures can legislate and governments administer but ultimately citizens decide. Whether development of our coasts is chaotic and destructive, or careful and constructive is up to them."

With a philosophy that tries to avoid new laws and bureaucracies, Wisconsin Coastal Management clearly places its faith in citizens as creative agents in protection of the lakeshores. That's why a lot of money goes to research to provide information people can use in making intelligent decisions.

Chairman Grasse thinks it's all interdependent. "To the degree we have the information we need, to the degree we believe we are caretakers and custodians of this irreplaceable resource, to that degree the coasts will be protected," Grasse says.

Dorothy Lageroos, chairwoman of the Citizens Advisory Council thinks active citizen participation is vital. She says this: "People like the coastal areas and want them protected, but the program is not a cureall. It's a tool for working together."

So what can you do as an individual citizen? Several things, none complicated, but all important:

- Recognize what a treasure Wisconsin's coastlines are. Visit them. Recreate on them. Gain a personal experience of them.

- Raise your "coastal consciousness." The UW-Sea Grant College Program has several short, well-written booklets on the rich history of the Great Lakes. Write Sea Grant, 1800 University Ave., Madison, WI 53706 for a bibliography. The booklets are especially fun to read before and during lakeshore visits.

- Get involved. If you see examples of poor management let local officials know. If you see a need for action, pitch in.

- Take responsibility for the coasts. Insist on better enforcement of the laws that guide development. Insist that local government officials support planning for coastal uses.

Wisconsin has a tradition of citizen action on state issues. On the Great Lakes shoreline, citizen action is vital if problems we face are to avoid crises. The coasts are 820 miles of fragile magic where land meets water. They belong to you. Take care of them.

Front cover:

Top: Fishing, boating, hunting, trapping, bird watching, swimming and just looking at the scenery are some of the coastal amenities. This is Chequamegon Bay.

Center: Sunset on the coast.

Bottom: Under the high bridge at Superior.

Typical Coastal Management Projects and Studies*

Project	Agency	Budget	Project	Agency	Budget
Milwaukee Port Promotion	Milwaukee	\$399,000	Environmental Corridor on Duck-Trout Creek	Oneida Tribal Reservation	\$ 39,711
Lake Trout Spawning Reefs	DNR	\$289,157	Studies of Erosion Control, Recreation, Lake Access and Ecology	City of Racine and the town of Caledonia	\$ 39,375
Port Promotion and Development at Superior	Superior	\$ 91,250	Park Development	City of Washburn	\$ 37,126
Kemper Center Purchase and Development	Kenosha County	\$ 79,625	Racine County Coast Watch	Racine County	\$ 36,037
Duck Creek Flood Plain	Oneida Tribal Reservation	\$ 61,912	Park and Trail Planning	Ashland	\$ 29,263
Archeological Survey of the Green Bay Coast	State Historical Society	\$ 50,000	Pigeon River Flood Plain	Sheboygan	\$ 26,250
Green Bay Port Improvement	Green Bay	\$ 45,963	Brule River Steelhead	DNR	\$ 25,700
Algoma Coastal Management	Algoma	\$ 43,660	Saxon Harbor, Flambeau Trail and Cedar Road	Iron County	\$ 16,600
Public Education about the Green Bay Coast	Green Bay	\$ 41,020			

* From 1978 through '80 approximately 100 projects were funded along the entire 820 miles of coast. Total cost was \$3-million.

Art by Georgine Price