

# Sun Journal

## What's in the Gulf of Maine?

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What's in the Gulf of Maine? More than anyone thought. Considered one of the most productive ecosystems in the world, experts urge caution when it comes to oil drilling and other threats.

Not so long ago, no-one knew exactly what lived in the Gulf of Maine.

So Lew Incze, a Lewiston native, helped find out.

Chief scientist and local head of the international Census of Marine Life, his group counted 3,317 species living in the Gulf of Maine. He suspects there are hundreds if not thousands left to discover.

It's a major undertaking, the ongoing census of marine life in the Gulf, and far from the only project dedicated to the thousands of miles of ocean between Nova Scotia and Massachusetts. As a natural resource, a recreational resource and an economic driving force, the Gulf of Maine is getting a lot of attention of late.

President Bush recently lifted the ban to drill for oil in the Gulf of Maine. A Maine company is floating a proposal to stick 1,000 windmills up to 20 miles offshore and draw power from its sea breeze. The Gulf of Maine Research Institute has 30 ongoing projects. One that's already wrapped up looked at how cod swim when they're tired. (It's different than tired haddock.)

It's a hub of activity, a spot some people say to keep an eye on. The Gulf of Maine could weigh heavily in Maine's future.

The chief technology officer behind the windmill project estimates the creation of 5,000 to 10,000 jobs if that project takes off. And with the rise of the middle class in India and China, GMRI President Don Perkins can see fish turning into a luxury protein that commands four to five times the price it does now.

"What do we have (that will allow us) to compete with the rest of the world?" Perkins asked. He'd answer, the Gulf.

"It's not something that's going to migrate to South Carolina because the cost of labor is cheaper down there."

*Gulf health: a snapshot*

Sea life in the Gulf ranges in size from the endangered 100-plus-ton right whale to the teeny copepods that the right whale eats by the billions each day.

As deep as 1,500 feet in spots, according to the Gulf of Maine Ocean Observing System, the Gulf is home to 52 species of commercially harvested fish and shellfish. Lobster is by far the biggest crop with a catch valued at \$270 million last year, more than half of the estimated half-billion-dollar fishing economy in Maine.

"The resource is really, really healthy," said Dane Somers, executive director of the Maine Lobster Promotion Council.

And that's despite decade-long predictions of an impending crash, Perkins said.

When scientists looked to see why lobster stocks had fared so well, preliminary data found 30 to 45 percent of a Gulf lobster's meat is a derivative of herring - a free lunch that's snatched from the bait bags set in lobster traps. (Lobsters don't try to catch live herring; it's too much work.) Turns out nearly all lobsters that end up in a trap find a way out, he said. That is, after a nourishing meal.

"We're basically running a lobster ranch at the bottom of the ocean," said Perkins.

He characterized the Gulf's lobster stock as great, herring as robust and mackerel as very abundant.

"Haddock have recovered in a very dramatic way, where cod haven't," Perkins said. And tuna is "struggling." He remains optimistic about chances for recovery, and the Gulf's fisheries in general.

"The ecosystem here is one of the 12 most productive ecosystems in the world," he said.

Incze, who started the marine census here in 2003 as one of the pilot sites for the international count, said there's a lot left to understand. For instance, why aren't some stocks rebounding. It's possible the genetic or species mix has been tipped too far to come back.

Dredging on the bottom during fishing is also a problem, he said. Some compare it to tilling a garden. Incze's not sure of the repercussions.

"All in all, the Gulf of Maine is doing pretty well. ... At this point in our history, we are doing things in virtually every spot in the ocean in the Gulf of Maine. Someone is fishing, someone is traveling, someone is trying to lay a cable or a pipeline or is transporting oil or is discharging ballast from a ship or wants to mine gravel or wants to grow salmon or mussels," Incze said.

"The question is, what's the right amount, and where, and how."

### *To drill or not to drill*

The specter of drilling for oil in the Gulf was raised anew July 14 when President Bush lifted a ban on offshore drilling originally signed by his father in 1990. To happen, Congress has to also agree, so far an unlikely prospect. Members of Maine's congressional delegation all oppose drilling off the Gulf.

"Right now, oil companies are sitting on 68 million acres, an area approximately three times the size of Maine," Congressman Tom Allen said through a spokesman. "They need to drill on land they already control. Oil and gas development in the Gulf of Maine would threaten Maine's thriving coastal economy and rich fishing heritage."

Through a spokeswoman, U.S. Sen. Susan Collins said she supports expanded exploration on federal lands in the Rocky Mountains, Gulf of Mexico and parts of Alaska already open to drilling - but not an expansion to the Gulf, citing fishing and tourism.

"We need to produce more, use less, and pursue alternatives," she added.

A push two years ago to let states decide for themselves whether or not to explore for oil and natural gas supplies 50 miles offshore died in Congress.

"What was a poor choice in 2006 is still a poor choice in 2008. We still can't drill our way out of this (energy) situation, which, we admit, is serious," said Dylan Voorhees, clean energy director at the Natural Resources Council of Maine. "I feel relatively optimistic that good sense will prevail again. The economics are really not there. This will not make oil cheaper."

GMRI's Perkins said he has questions about the impact of oil drilling on critical fisheries habitat and the potential for seepage.

Incze's census doesn't take a stand on drilling: "It's really quite dangerous to mix science and advocacy," he said. From a geological point of view, Georges Bank off Maine's coast is similar to the Scotian Shelf off Nova Scotia, where quite a bit of natural gas has been discovered.

"It's still always a bit of a hit or miss as far as what types of reserves you hit. You can have the right geology (but) history just didn't deposit the right materials that would store a lot. So it's still quite an unknown," Incze said.

"Short of accidents, I suspect that you would find that it (drilling) doesn't have a major impact on marine life. It does have an impact. The whole idea behind ecosystem approaches to management is to try to figure out what impacts can you live with, and what can't you."

### *Going where the wind blows*

George Hart is pairing with the Gulf of Maine Research Institute to study the impact of 1,000 windmills on marine life and fishing.

The Ocean Energy Institute's plan: Five 200-turbine fields, each turbine one kilometer apart from the other, 16 to 20 miles out to sea. Each would produce, on average, 54,000 kilowatt-hours a day, sit on the top of a tethered 300-foot pedestal and have a generator and gear box two-thirds the size of a railroad box car, according to Hart, chief technology officer for the company.

The wind in the Gulf blows twice as fast in the winter, which he sees as having the potential to alleviate some of Maine's heating woes. Testing three turbine prototypes would take about \$100 million, Hart said. Jobs would be created by keeping production and assembly in-state. He's talking to the University of Maine's Advanced Engineered Wood Composite Center about the use of composites in the turbines.

To be determined: how well boats can navigate around them.

Perkins' future plans for GMRI include building a marine technology wing at its Portland headquarters in the next three to five years, heavy with private industry researchers and with an aim of bringing products to market. He sees opportunity in the ocean for future pharmaceuticals.

The Gulf of Maine "is on a trajectory that I think is encouraging, except for the (big question) of climate change," Perkins said. Over the long run, the next hundred years or more, the ocean appears to be moving from slightly basic to slightly acidic. "It's a horrible specter."

#### *A gulf of unknowns*

The Gulf, which stretches south to the tip of Cape Cod and east to Nova Scotia, takes up about as much space in the water as the state of Maine does on land. Incze said he was at a meeting with other scientists six or seven years ago when someone raised the question about the number of species living in it. The best guess around the room was 1,700.

The census found almost double that. "Most of those species were already known, it's just no one had pulled the information together," said Incze, who is also director of the Aquatic Systems Group at the University of Southern Maine.

So far, it's also found fewer than a dozen new species in the Gulf, both brand new and new to the area. As well-explored as the Gulf is, there's a whole lot more to learn, Incze said. The Census of Maine Life wraps in 2010.

"It's certainly the most diverse area on the U.S. East Coast. It has a lot of attraction from that standpoint, whether it's people living here or people traveling here," he said. "If that's a big key to our economic future, you better protect it."