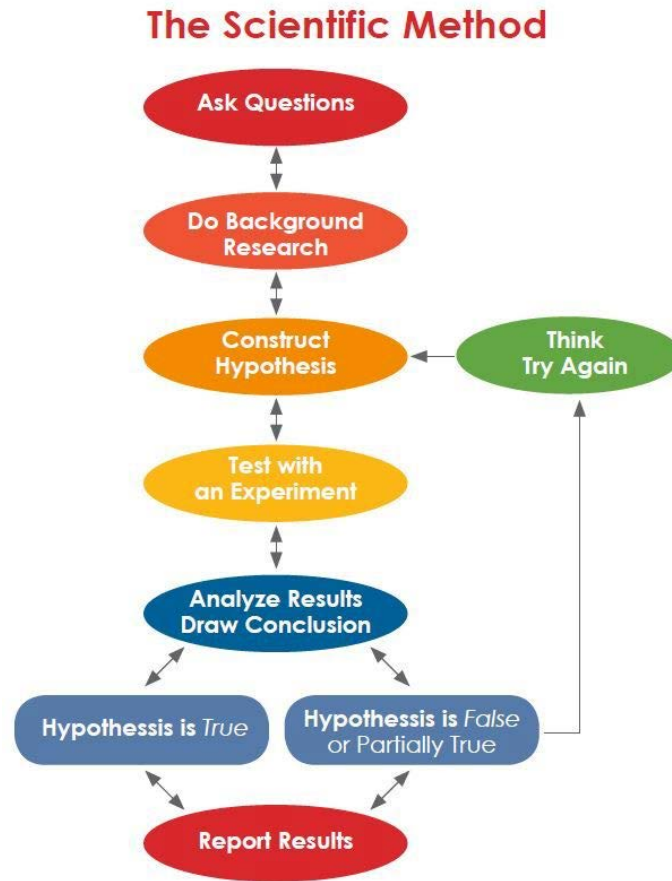


# The scientific method



# GREAT LAKES ECHO

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## Fix little leaks, save big money

By **Kaley Fech** | 9 hours ago

Michigan's energy waste reduction programs have saved customers nearly \$1.1 billion in utility costs. A recent Public Service Commission report credits them saving nearly 1.6 million megawatt hours of electricity and more than 5.5 billion cubic feet of natural gas. Experts say that the state's program is among the better ones in the Midwest, but lags national leaders.

### GREAT LAKES

#### Cuts to Great Lakes Restoration Initiative proposed again in federal budget

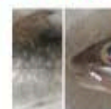
For the third straight year federal officials are threatening to cut the budget for restoring contaminated sites in the Great Lakes. And while Congress has so far resisted such cuts, environmental officials fear the constant attacks on the popular program.



### CLIMATE CHANGE

#### Deadly fish virus returns to northern Michigan hatchery

The Marquette State Fish Hatchery lost around 100,000 fish in 2012 to the disease, according to a new publication in the American Fisheries Society. Similar losses happened again in 2017.



### CLIMATE

#### Poor mixing of nutrients among looming climate change impacts

A temperature change of 3 to 4 degrees is also big enough to push back annual events, such as bird migrations and the



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## CATCH OF THE DAY



**Warm weather means less ice, more erosion at Lake Erie's Presque Isle State Park**

About \$3 million will be spent on annual beach replenishment this year.

[More Catch of the Day](#)

## PODCASTS



**Sustainability in the**



Coast Guard Cutter Mackinaw escorted the freighter Canadian Olympic and the CSL Assiniboine, which is barely visible to the left of the Canadian Olympic under the Mackinac Bridge. Cutter Mackinaw breaks ice for freighters shipping goods around the Great Lakes during the winter. (Courtesy Photo/Petty Officer 3rd Class William B. Mitchell)

## Freighters need improved ice forecasts for lakes

BY ANDREW BLOK  
CAPITAL NEWS SERVICE

LANSING — In 2015, the Arthur M. Anderson, loaded with iron ore on a passage across Lake Erie, got stuck in ice for five days near Conneaut, Ohio.

"It couldn't get in to Conneaut and then it couldn't get out, and it had a full load," said Tom Rayburn, director of Environmental & Regulatory Affairs of the Lake Carriers' Association in Cleveland. The trade association promotes the interests of operators of cargo vessels on the Great Lakes.

Ice causes a lot of problems for Great Lakes ships, from delays at locks to damage to ships.

"Every once in a while they'll get a hole in them," Rayburn said.

That's a big problem — 20 percent of Great Lakes cargo moves in the winter. And no

forecast to the needs of the Coast Guard and the shipping industry, the groups that will use it most.

"It's a much more rigorous process of matching user needs and gathering feedback from users," said Devin Gill, the stakeholder engagement specialist at the Cooperative Institute for Great Lakes Research at the University of Michigan.

One feature the shipping industry is interested in is specificity, Rayburn said. A forecast that's too broad won't be useful. One that is too specific could be overwhelming and unwieldy. Whether the data will be mapped, plotted or raw is up for discussion, Anderson said.

Using focus groups and surveys is different from what Gill calls the more typical "loading dock" approach.

That's when scientists ignore users until they deliver the finished product, she said. Instead, this team is answering important questions about the ice forecast before that point.



# THE MINING Journal

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## Forecasting tool for cold-weather shipping a good project

Research being conducted now should provide both the U.S. Coast Guard and the commercial shipping industry with a valuable new tool in navigating the Great Lakes during cold-weather months.

University of Michigan researchers, using a \$10,000 grant from the Graham Sustainability Institute, are in the process of developing an ice forecasting system that will greatly aid winter sailing. And why not? As much as 20 percent of Great Lakes cargo moves in the winter.

Time is money, literally, in Great Lakes shipping. Ships that are stuck in ice aren't generating revenue for either its owner or whomever has leased cargo space aboard, never mind the potential for damage.

# Ice forecasting tool for shipping needed

The Mining Journal  
(Marquette)

## GUEST EDITORIAL

Research being conducted now should provide both the U.S. Coast Guard and the commercial shipping industry with a valuable new tool in navigating the Great Lakes during cold-weather months.

University of Michigan researchers, using a \$10,000 grant from the Graham Sustainability Institute, are in the process of developing an ice forecasting system that will greatly aid winter sailing. And why not? As

much as 20 percent of Great Lakes cargo moves in the winter.

Time is money, literally, in Great Lakes shipping. Ships that are stuck in ice aren't generating revenue for either its owner or whoever has leased cargo space aboard, never mind the potential for damage. Such was the case four years ago when the Arthur M. Anderson, loaded with iron ore on a passage across Lake Erie, got stuck in ice for five

days near Conneaut, Ohio.

"It couldn't get on to Conneaut and then it couldn't get out, and it had a full load," Tom Rayburn, director of Environmental and Regulatory Affairs of the Lake Carriers' Association in Cleveland, said for a story that appeared in The Mining Journal. The trade association promotes the interests of operators of cargo vessels on the Great Lakes.

Using existing data

streaming and forecasting models, look for an experimental version to be available by 2020 and a final product by 2021. A wide variety of stakeholders will be involved in pulling everything together.

Unlike some governmental efforts that produce studies and processes that are all but ignored once complete, we believe this effort will bear usable fruit, and within a reasonable amount of time and at a reasonable cost. We'll look forward to the results.

Cheboygan Daily Tribune 3/13/2019





























# THE FOOD FIX

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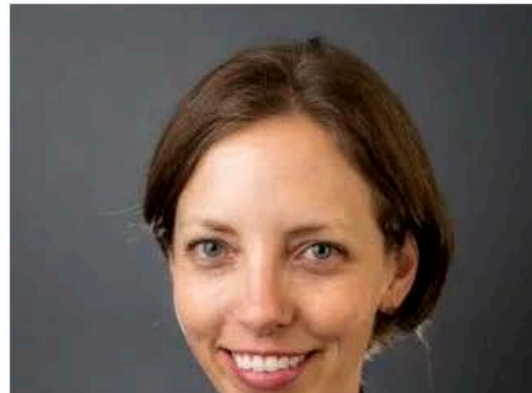
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## AMERICANS' EATING HABITS DURING THE GREAT DEPRESSION

🕒 MARCH 17, 2019    💬 LEAVE A COMMENT    ✎ EDIT



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# NEW TOOLS TO HARVEST BETTER POTATOES

🕒 OCTOBER 25, 2017   👤 THE FOOD FIX   💬 LEAVE A COMMENT   ✎ EDIT



*Mercy Kitavi is a geneticist and capacity-building scientist with the International Potato Center based in Nairobi, Kenya.*

By Mercy Kitavi

In a traditional African setting, we say that time waits for no man and doesn't spare the women either.

At exactly 5:30 a.m. in East Africa, the cock crows and Kanini slowly stretches from her rickety-legged wooden bed that is covered by a thin mattress. She knows she is lucky, yet every morning when she opens her

eyes to a new day, she feels like closing them again.

Her three children sprawl across a nearby mat, covered with a piece of blanket. She glances at the four goats standing in a corner of their one-room grass-thatched house. They must make room for the children to prepare for school. She takes them outside and ties them to a tree standing tall at the entrance of the house.

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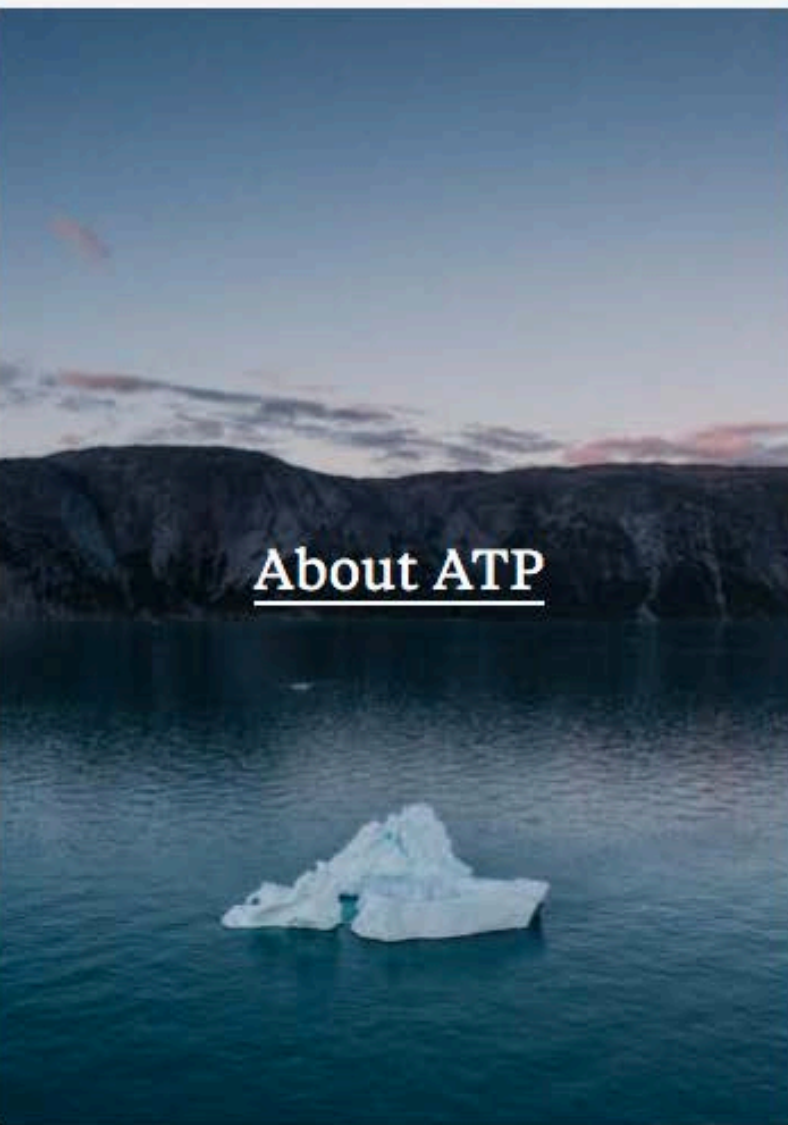












The Washington Post