WF4313/6613-Fisheries Management

Class 26– Commercial Fisheries continued & climate change

In the news

Nations press panel to raise annual Bluefin tuna quo

BRUSSELS (AP) — Nations fishing the Atlantic Ocean and the Mediterranean Sea have started assessing how much more prized Bluefin tuna can be caught in the next few years amid signs that stocks of the iconic fish are recovering. The ***50-nation International Commission for the Conservation of Atlantic Tunas*** *opened its year-end meeting Tuesday in Marrakech, Morocco,* ***facing pressure from nations to allow more Bluefin to be caught after years of cuts****.*

Environmentalists, *however, say the recovery of the Bluefin — a prized gastronomic delight in sushi bars around the globe — is still far too fragile to shift to a major increase in fishing quotas.*

http://www.ourmidland.com/news/world/article/Increase-in-Atlantic-Bluefin-tuna-catches-top-12355459.php#photo-14543963

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Elver lottery gets under way Wednesday

DIRECT CREMATION SERVICE

ELLSWORTH — For the first time in more than four years, participate in the elver fishery.

On Wednesday, the Department of Marine Resources will be issued for the 2018 elver fishery. The season begins on

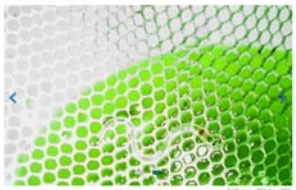
During its session that ended earlier this year, the Legisla open to Maine residents at least 15 years old by the start o right to obtain an elver license suspended. The departmen

The cap on licenses was set at 425, seven more than are cu licenses are not renewed by the end of the year, that many lottery.

On Wednesday, the Department of Marine Resources will open a lottery for at least seven new licenses to be issued for the 2018 elver fishery. The season begins on March 22. Each new license holder will be allotted a minimum of 4 pounds of the state's aggregate elver quota. Based on the average price for the 2017 season that ended in June, that would be worth some $6,000.

https://www.ellsworthamerican.com/maine-news/waterfront/elver-lottery-gets-way-wednesday/

Maine elver fishermen caught $12 million worth of eels this season



Forecast just released

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

2018 BRISTOL BAY SOCKEYE SALMON FORECAST

FORECAST AREA: Bristol Bay
SPECIES: Sockeye Salmon
FORECAST OF THE 2018 RUN:

TOTAL PRODUCTION:	Forecast (millions)	Forecast Range (millions)
Total Run	51.28	40.68–61.88
Escapement	12.20	
Commercial Common Property Harvest	39.08	
Bristol Bay Harvest	37.59	
South Peninsula Harvest	1.49	
Inshore Run	49.79	

Announcements

Final countdown

3 classes left…

Brief presentations Nov. 28th

Final Exam December 5th @ 8am

Limited entry & controlled access fisheries

How can we do that

Preliminaries

- Total allowable catch (TAC) is still the rule
  - Once exceeded fishery is closed
  - How do you share the TAC?

TAC Allocation

1. Commercial Harvest
2. Recreational Harvest
3. Conservation

Equals the TAC

LIMITED ENTRY (CONTROLLED ACCESS)

1. License Limitations
2. Individual quotas

License limitations

Suppose you are moving to a limited access fishery. How do you determine how many licenses to issue? Need 2 parts

1. How many fish could be caught
2. How many fish are required for an average fisherman to live off of

License limitations

What are some of the issues with the previous approach?

Issues with is approach?

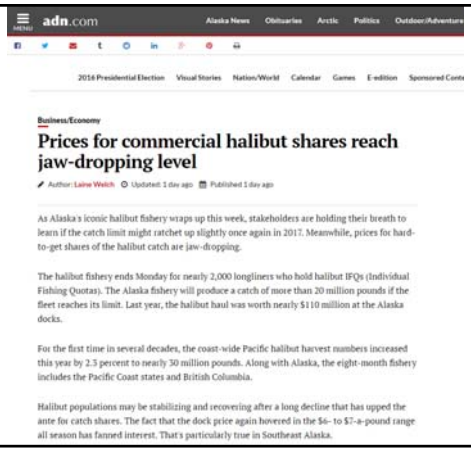
1. What do you do with fisherman that have to leave the fishery?
2. What fishermen get licenses?
3. New fishermen entering the fishery?
4. Can licenses be bought or sold? Or governmental control

Individual transferable quotas

Gives each fisherman a share (%) of the TAC

Transferable quotas can be

1. Bought
2. Sold
3. Leased



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Business/Economy

Prices for commercial halibut shares reach jaw-dropping level

Author: Laine Welch Updated: 1 day ago Published 1 day ago

As Alaska's iconic halibut fishery wraps up this week, stakeholders are holding their breath to learn if the catch limit might ratchet up slightly once again in 2017. Meanwhile, prices for hard-to-get shares of the halibut catch are jaw-dropping.

The halibut fishery ends Monday for nearly 2,000 longliners who hold halibut IFQs (Individual Fishing Quotas). The Alaska fishery will produce a catch of more than 20 million pounds if the fleet reaches its limit. Last year, the halibut haul was worth nearly $110 million at the Alaska docks.

For the first time in several decades, the coast-wide Pacific halibut harvest numbers increased this year by 2.5 percent to nearly 30 million pounds. Along with Alaska, the eight-month fishery includes the Pacific Coast states and British Columbia.

Halibut populations may be stabilizing and recovering after a long decline that has upped the ante for catch shares. The fact that the dock price again hovered in the $6- to $7-a-pound range all season has fanned interest. That's particularly true in Southeast Alaska.

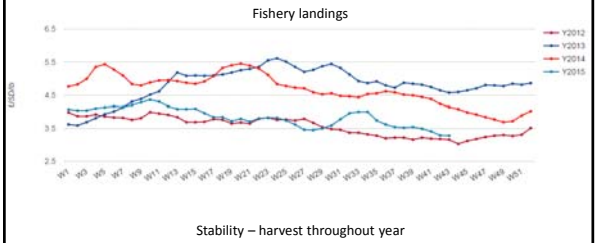
What is a fair quota?

Your guess is as good as mine….

No formal process

Every fishery is different

Major benefit of quotas



Stability – harvest throughout year

Catch quotas

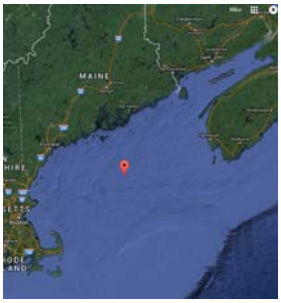
Fishermen obeyed their quotas, so why did Maine cod stocks collapse?

October 30, 2015 | Canada, New England

Dr. Andrew Pershing from the Gulf of Maine Research Institute (GMRI), lead author of the study released Thursday in Science, explained for the first time why cod stocks in the Gulf of Maine have decreased to 3 to 4 percent of sustainable levels, despite numerous harvesting restrictions in 2010 by fisheries managers. Fisheries published strict quota limits for fishermen without accounting for ocean warming in the Gulf of Maine,,, By not accounting for such an influential change, fisheries set quota ceilings that were too high and inadvertently endorsed severe overfishing. Read the rest here 13:09

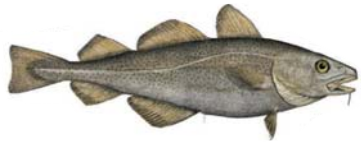
Gulf of Maine Cod

- Recovering stock
- Gulf of Maine has been increasing temperature



We are only as good as our models

"Our hypothesis is that feeding patterns for larvae have changed so fewer may have survived, and the warm water could make the young fish more available to predators," Quota models did not account for this…



Gulf of Maine Cod

- Recovering stock
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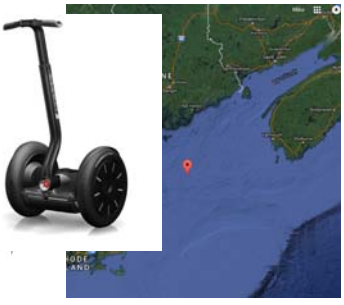
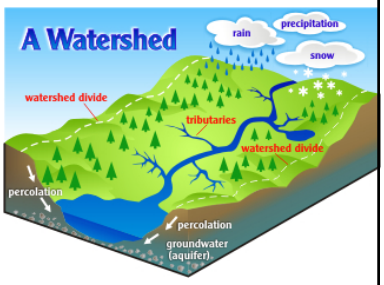


Something we are wrestling with

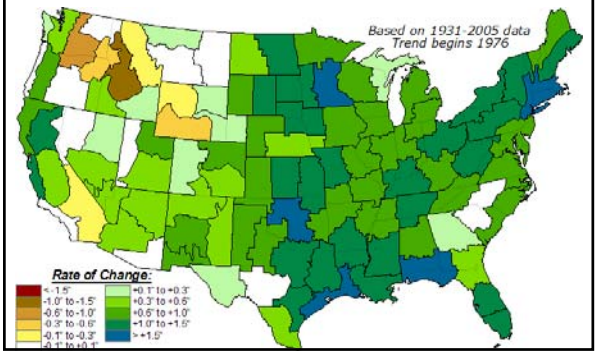
CLIMATE CHANGE & MANAGEMENT

Climate change & water

- Amount
- Temperature



Precipitation trends

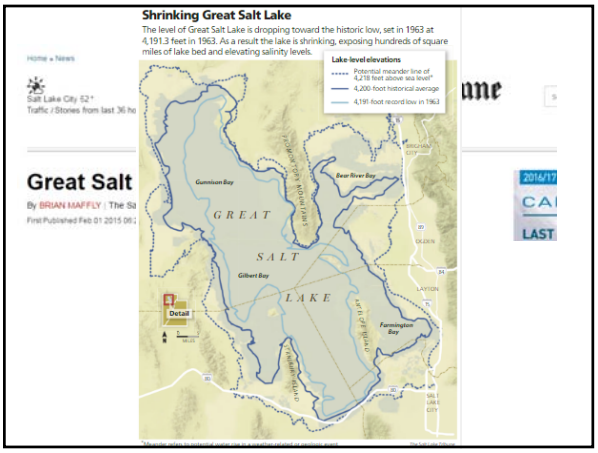


Amount

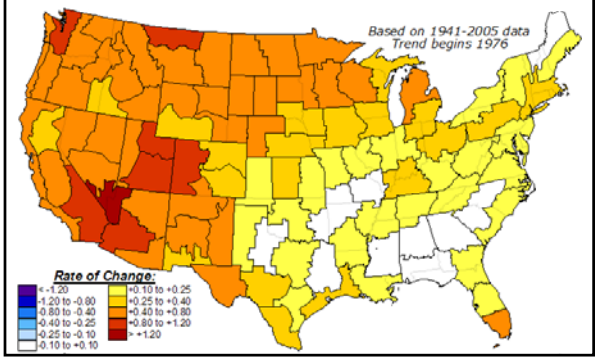
- Frequency of droughts
- Duration of droughts
- Changes/variability in precipitation
- Changes in snowpack

Amount

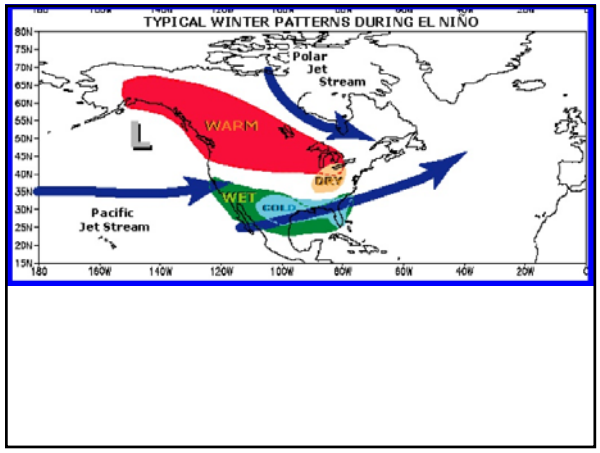
Amount

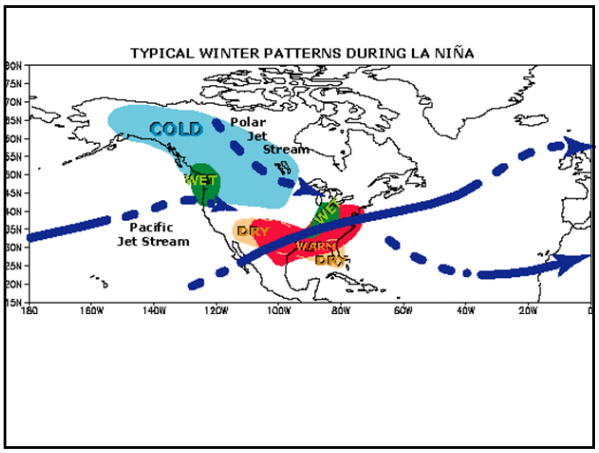


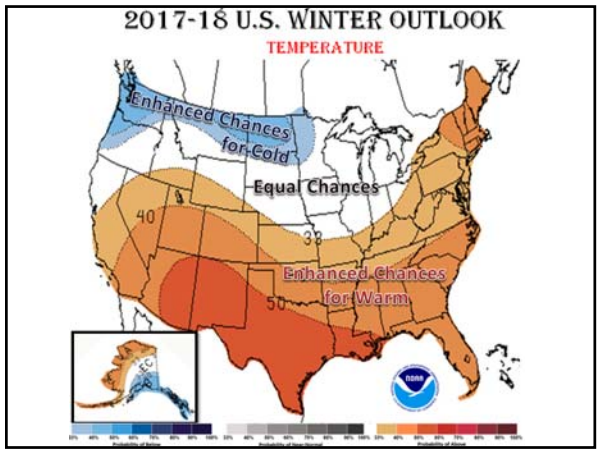
Temperature trends



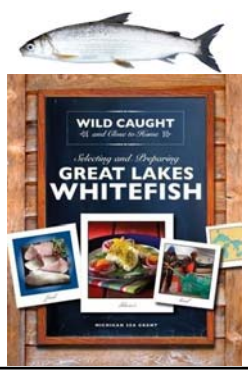
Climate & us

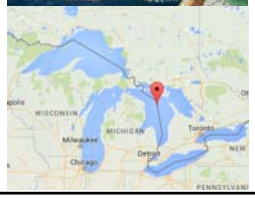






Lake Whitefish





Lake Whitefish

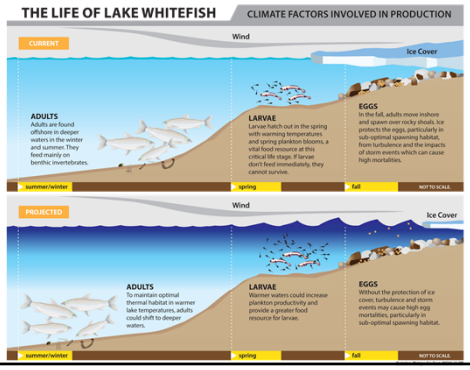
- Spawn in fall
- Hatch in spring

"Research has observed positive relationship between recruitment and spring temperatures and ice cover and a negative relationship between recruitment and fall temperatures and fall wind speed."

The other foot

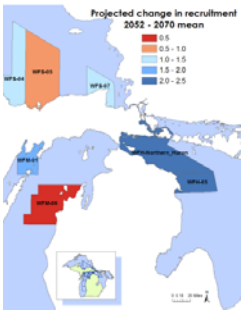
"However, warmer fall temperatures, more wind, and less ice cover may inhibit egg survival and, consequently, Lake Whitefish production."

Climate drives recruitment?

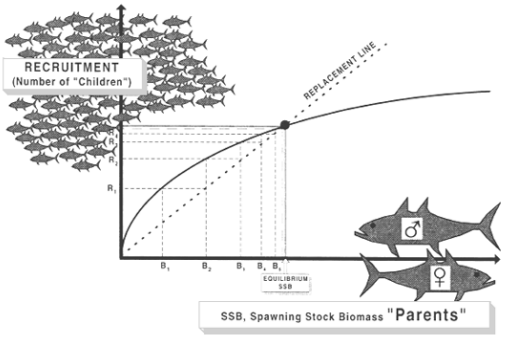


Results

"Potential for increased Lake Whitefish recruitment in the Great Lakes with climate change and some shift in the distribution of the fishery."



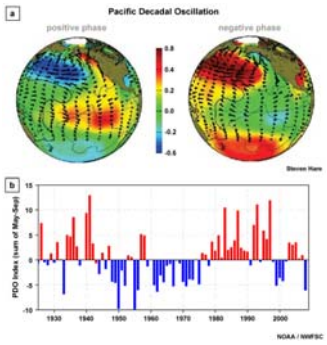
Spawners drive recruitment?



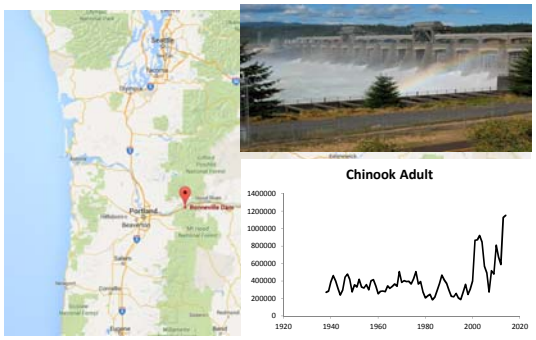
Disentangle climate and fishing?

- Tough to determine
- *"Temperature increased by 2 degrees and survival will decrease 5%"*
- Long time scales…

Pacific decadal oscillation



Pacific decadal oscillation



Salmon

- Columbia stocks
- Passing Bonneville Dam