

2016 Lake Ontario

Salmon Symposium

Fisheries Management
From Stocking To Catching



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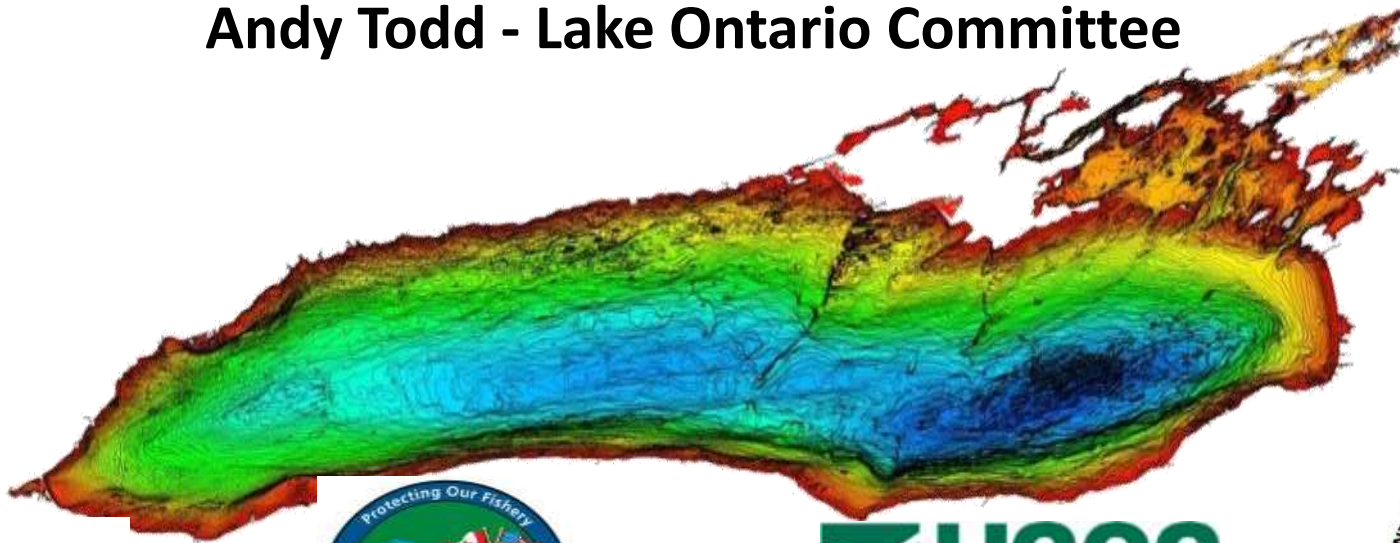
Halton Region Salmon & Trout Association

Lake Ontario – Salmon Symposium

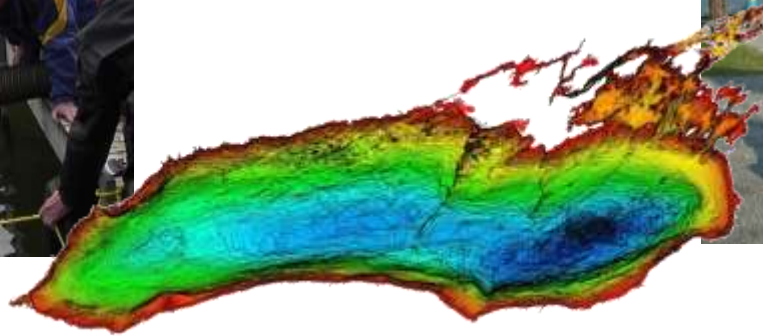
Stocking and Catching

Port Credit - April 2016

Andy Todd - Lake Ontario Committee



From Stocking To Catching



**Finding the Right Balance and
Exploring some Factors Affecting
Catch Success.**



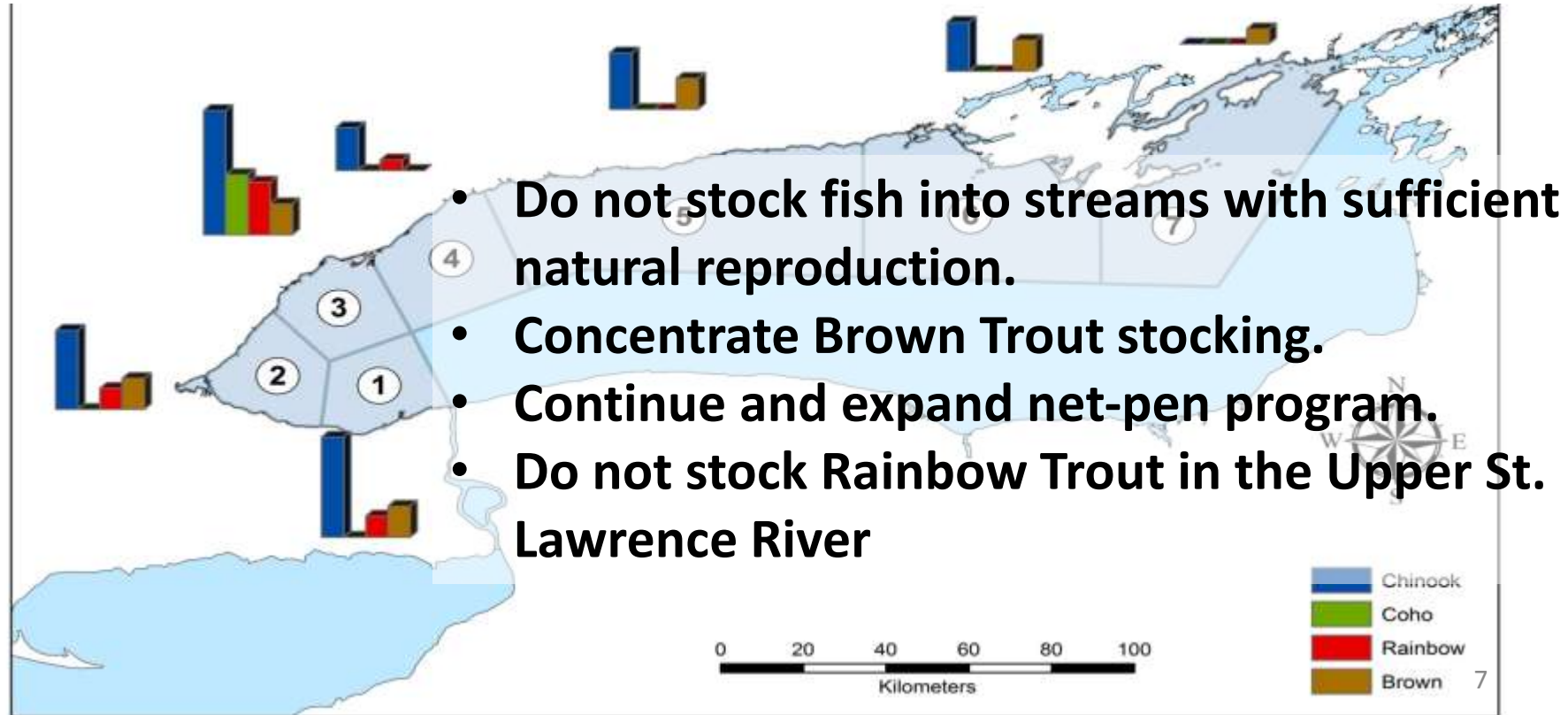
Stocking Strategy

Lake Wide Trout & Salmon Stocking Targets

Species	Ontario	New York	Total
Lake Trout	440,000	800,000	1,240,00
Atlantic Salmon	750,00	50,000	800,000
Chinook Salmon	600,000	1,761,000	2,361,000
Coho Salmon	80,000	245,000	325,000
Rainbow Trout	140,000	623,200	763,200
Brown Trout	165,000	400,000	565,000
Total	2,225,000	3,879,800	6,104,800

Plus walleye, bloater

Lake Ontario Stocking Strategy (Summary Recreational Fisheries)



Challenges - Lake Ontario Is Big

- Lake Ontario is about 7320 sq. miles or 4,684,800 acres



But it's not that big for a Chinook!

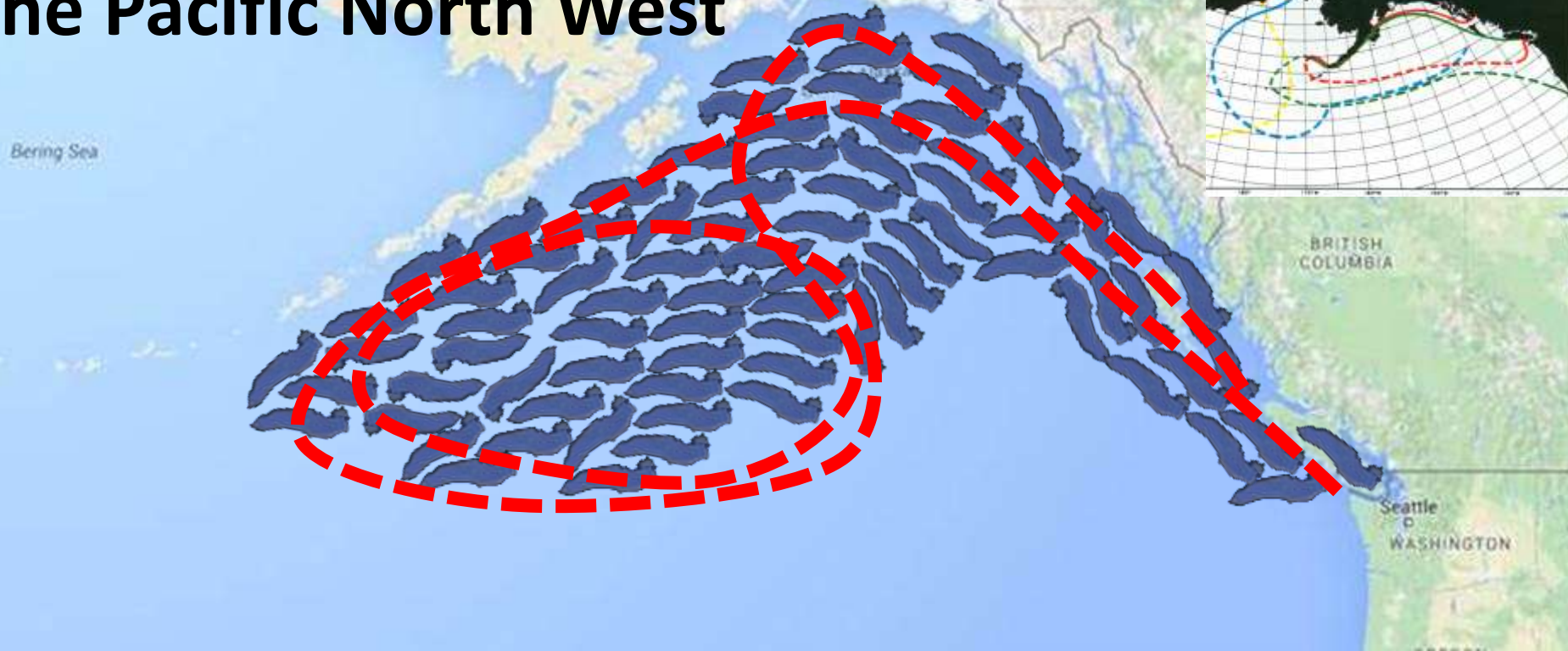
Chinook Salmon Range Pacific Ocean



**Lake Ontario is
about 65% the size
of Vancouver Island.**



There are over 70 Lake Ontario's in the native home range of Chinook Salmon in the Pacific North West



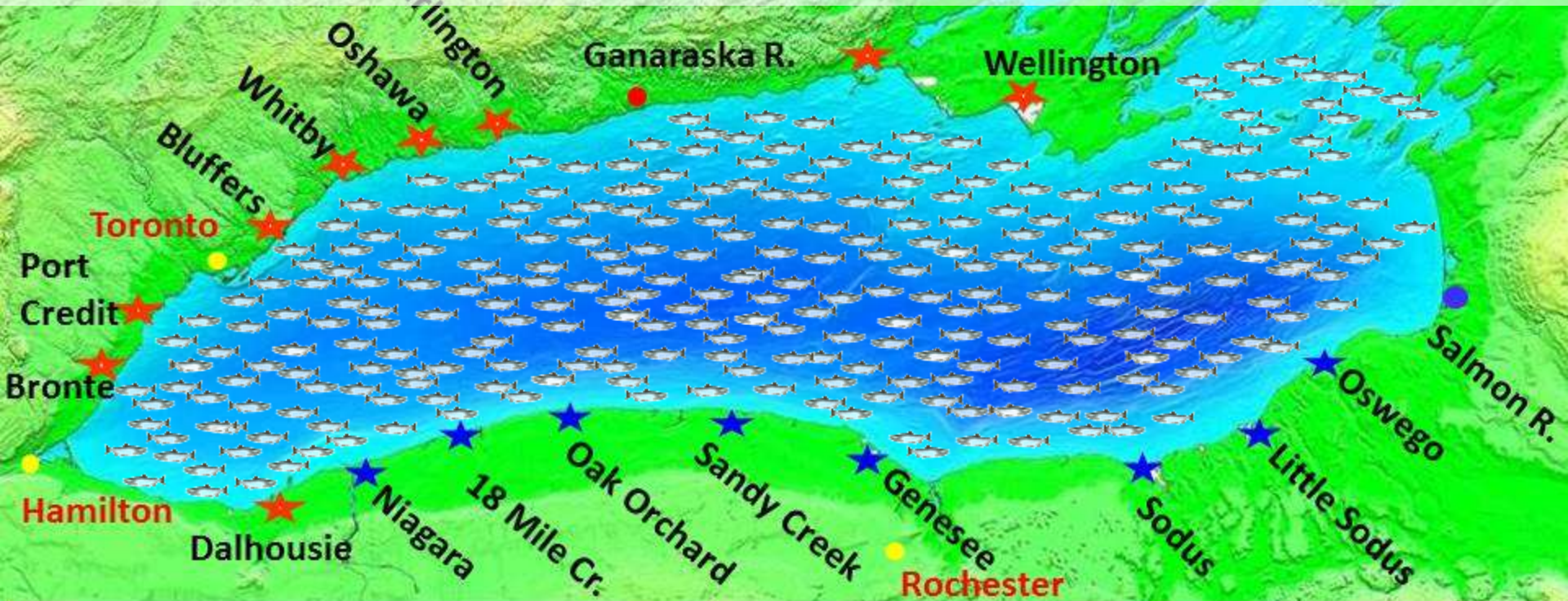
Lake Ontario Is Still Big From a Chinook Management Perspective

- Total Number of Chinook Stocked = 2,300,000
- Net Pens Increase Success - effective stocking = 3,000,000
- Plus an equal number of wild adult Chinook – and yet....

The density of trophy (20+ lb) Chinook Salmon in Lake Ontario is likely about 0.07 fish per acre or 0.16 fish per hectare.

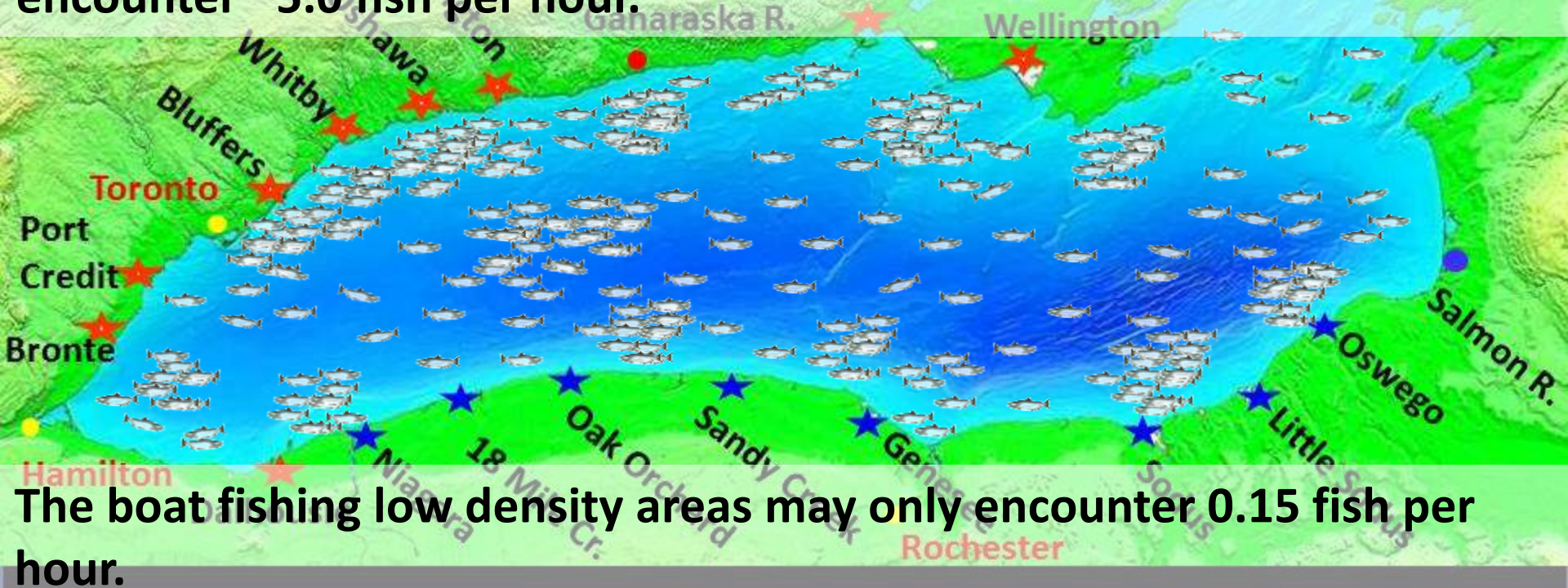
Trophy Chinook Salmon – Even Distribution

If Trophy Chinook Salmon are evenly distributed – a boat fishing four rods could expect to encounter ~1.1 fish per hour.

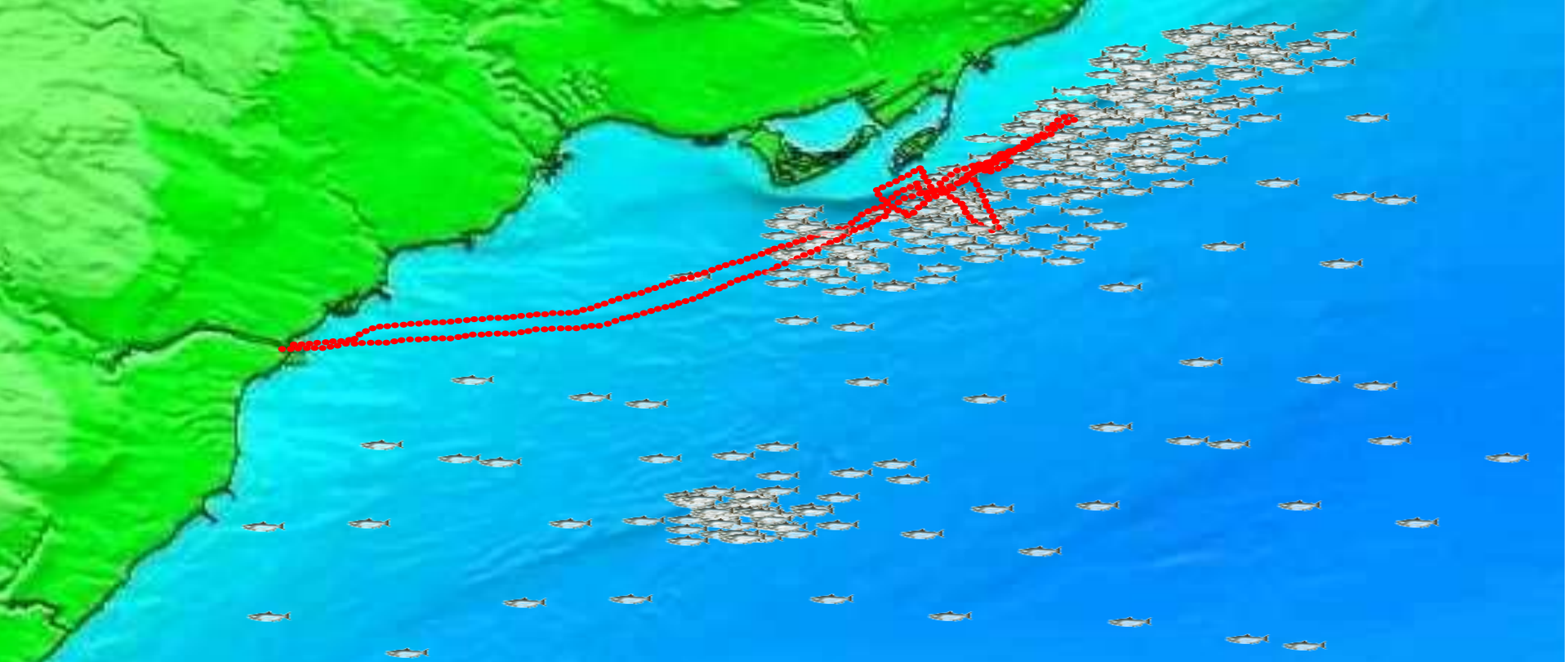


Trophy Chinook Salmon – Patchy Distribution

If Trophy Chinook Salmon are patchy with 90% of the fish in 20% of the lake – a boat fishing four rods in high density areas may expect to encounter ~5.0 fish per hour.



The boat fishing low density areas may only encounter 0.15 fish per hour.



It is not possible to create a high density of trophy Chinook everywhere.

From Stocking To Catching

**Chinook
Stocking**

=

Time lag of 2 – 3 years

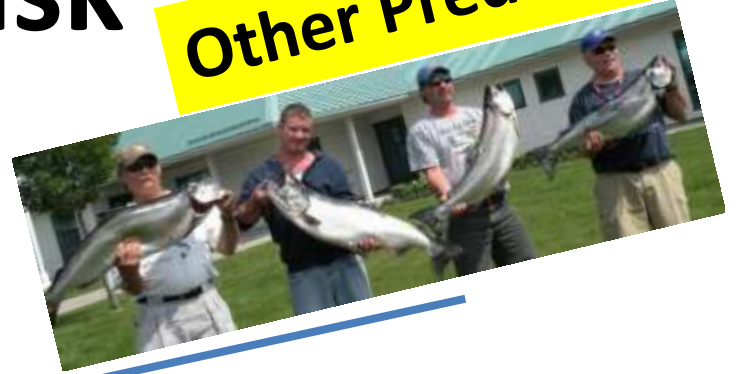
**Chinook
Catching**



Predator/Prey Balance

Low Risk

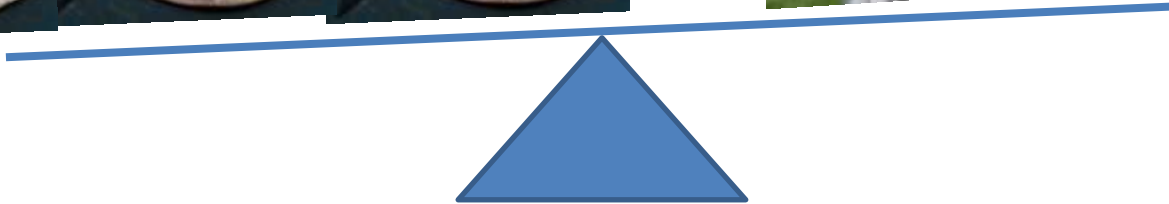
Other Predators



Predator/Prey Balance

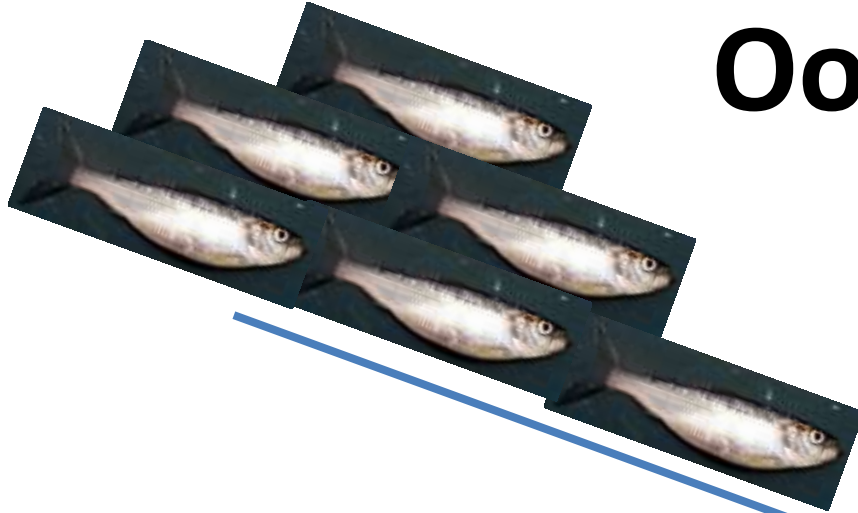
Increasing Risk

Other Predators

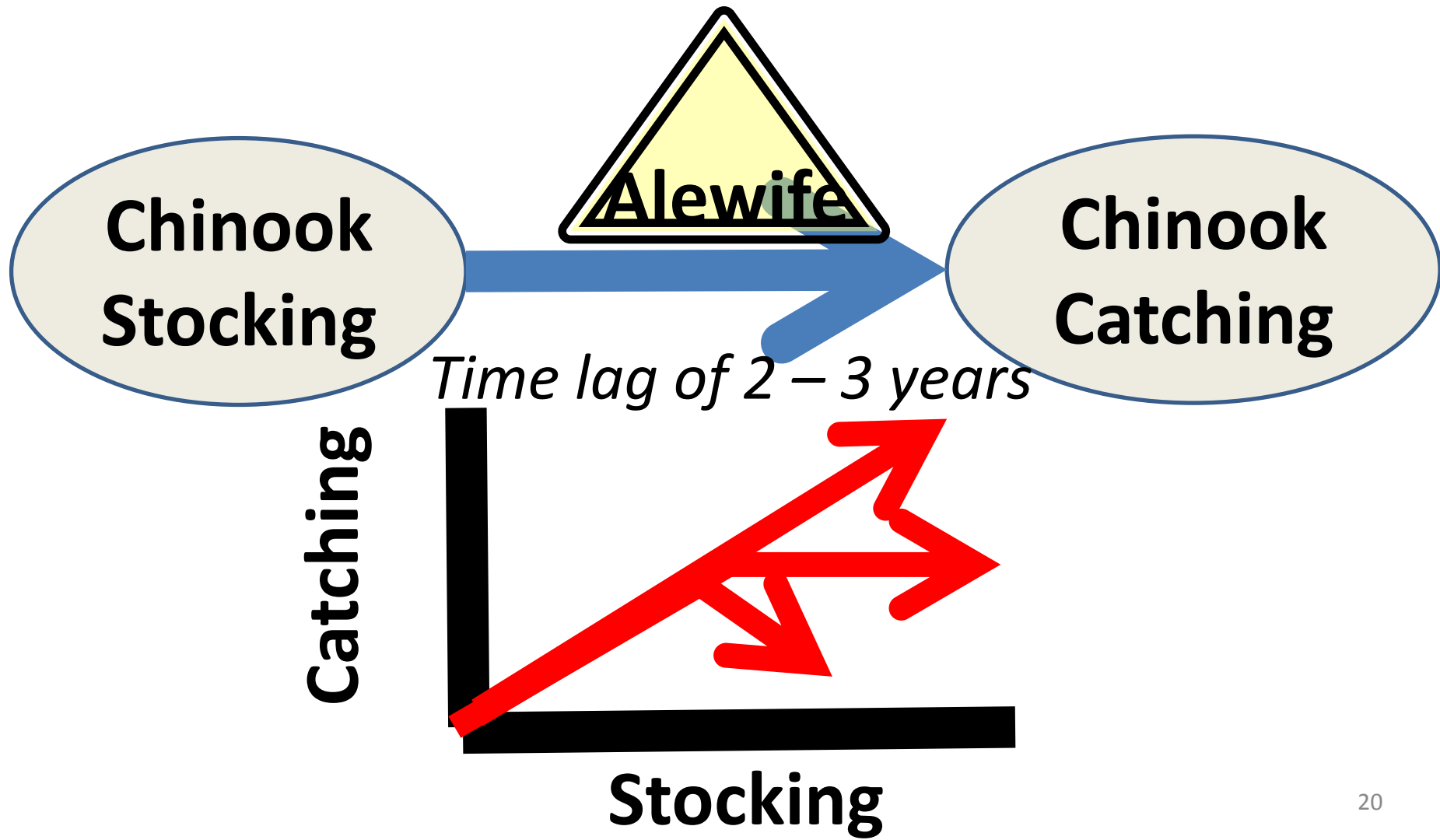


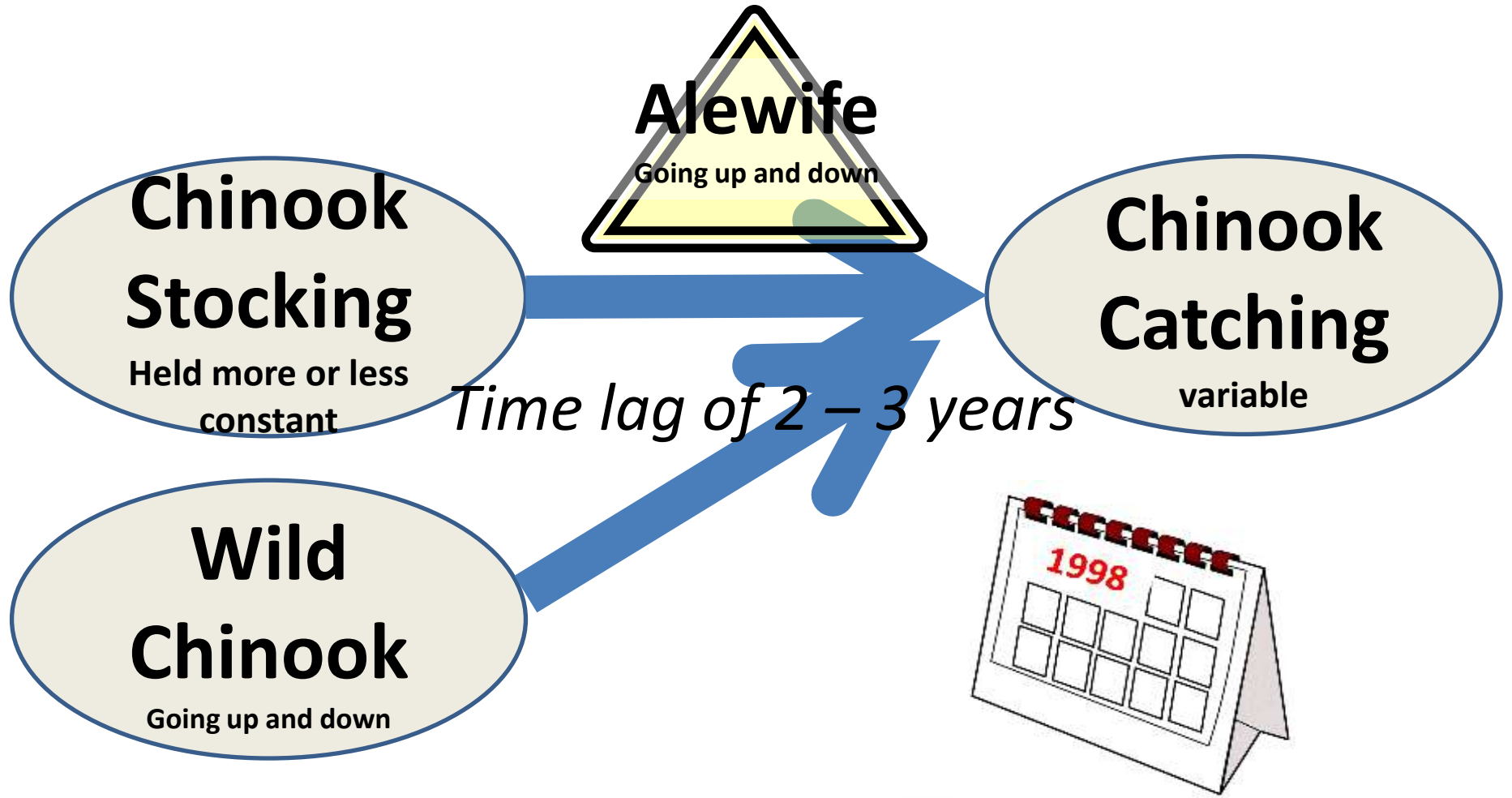
Predator/Prey Balance

Oops



Other Predators





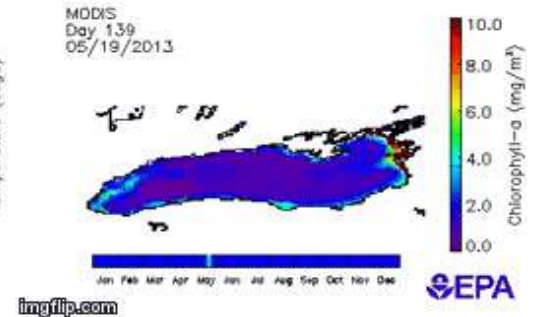
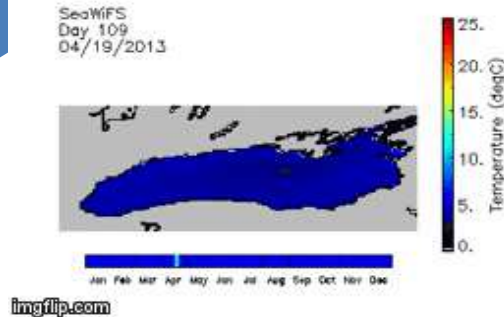


**Chinook
Stocking**
Held more or less
constant

**Chinook
Catching**
variable

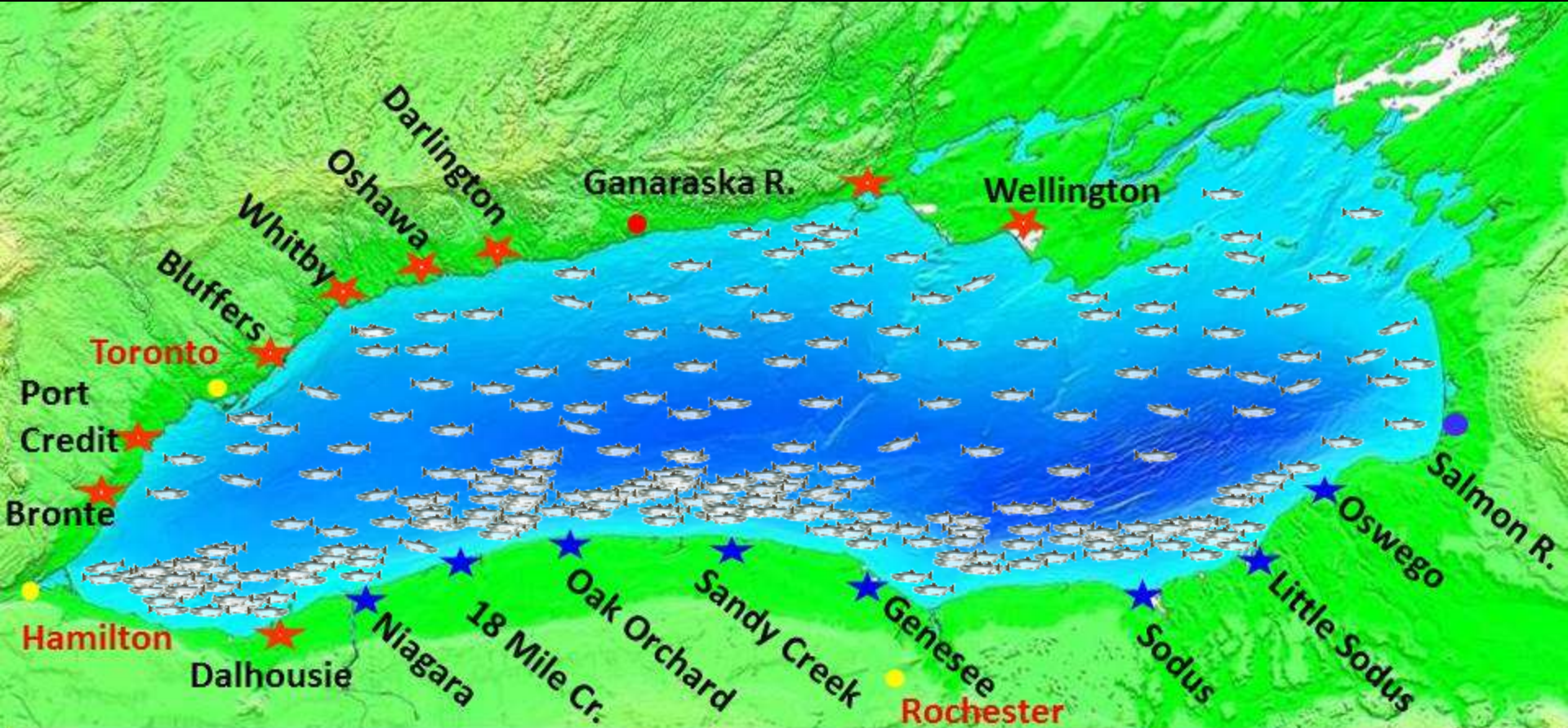
**Wild
Chinook**
Going up and down

Time lag of 2 – 3 years

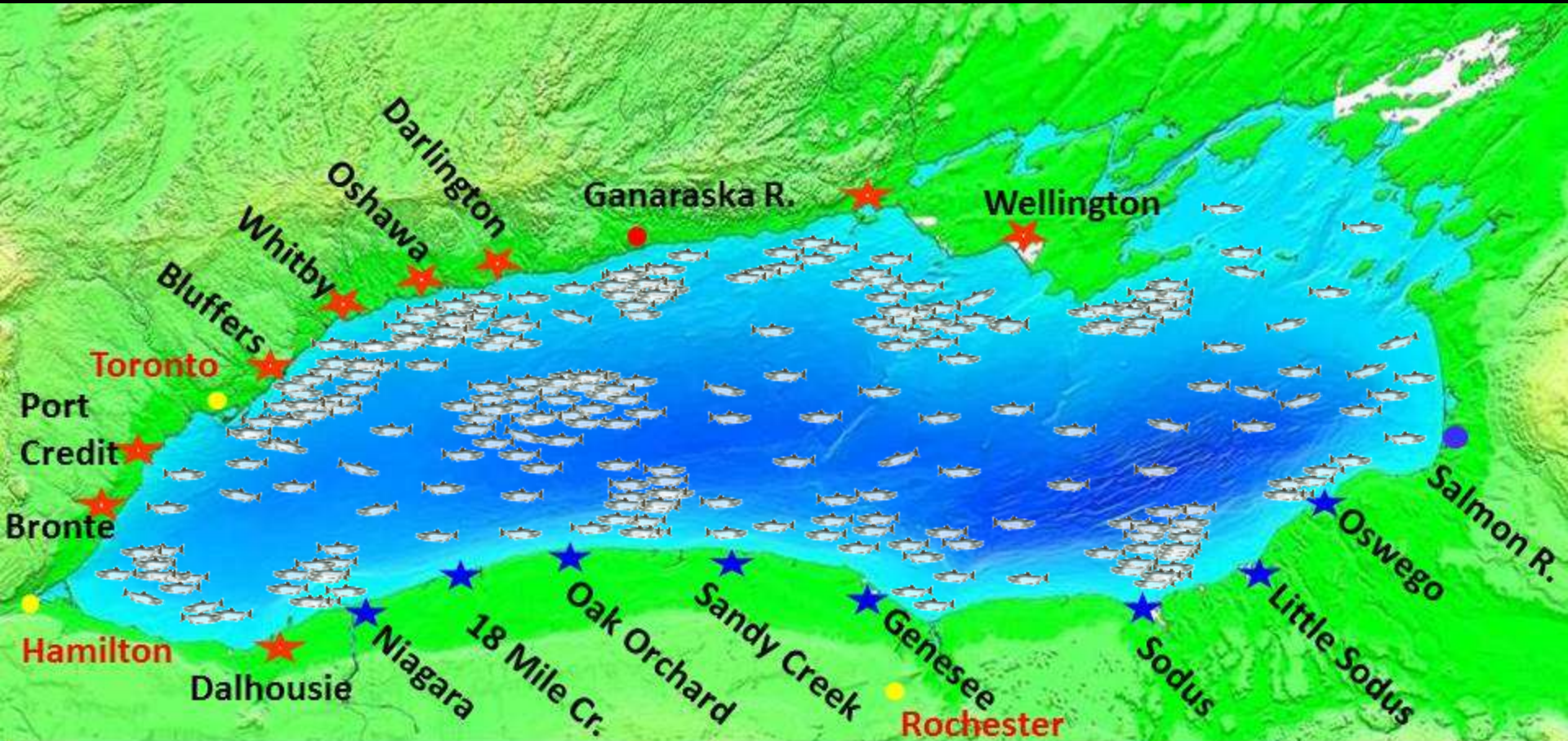


Add in environmental variation

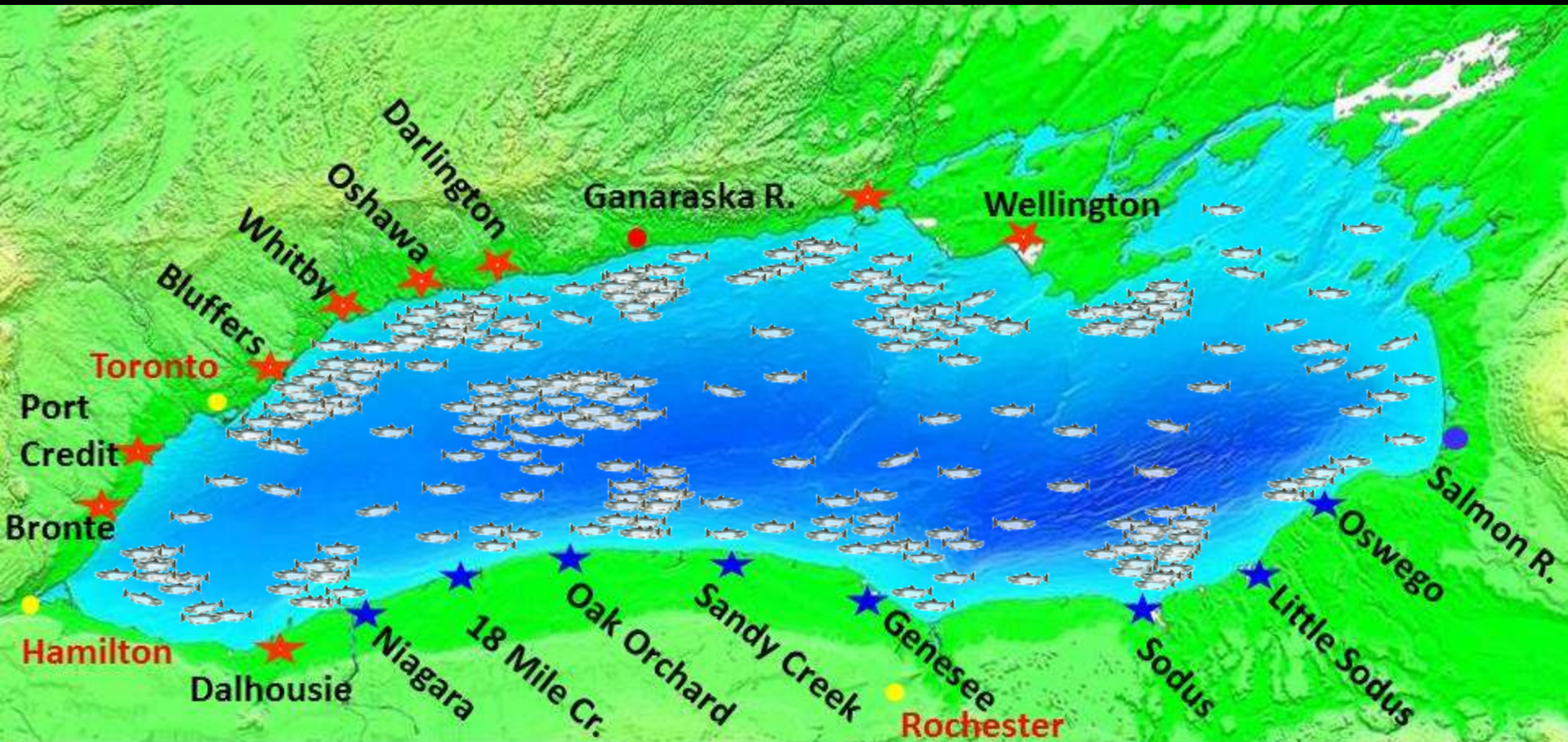
Fish Distribution Is Patchy



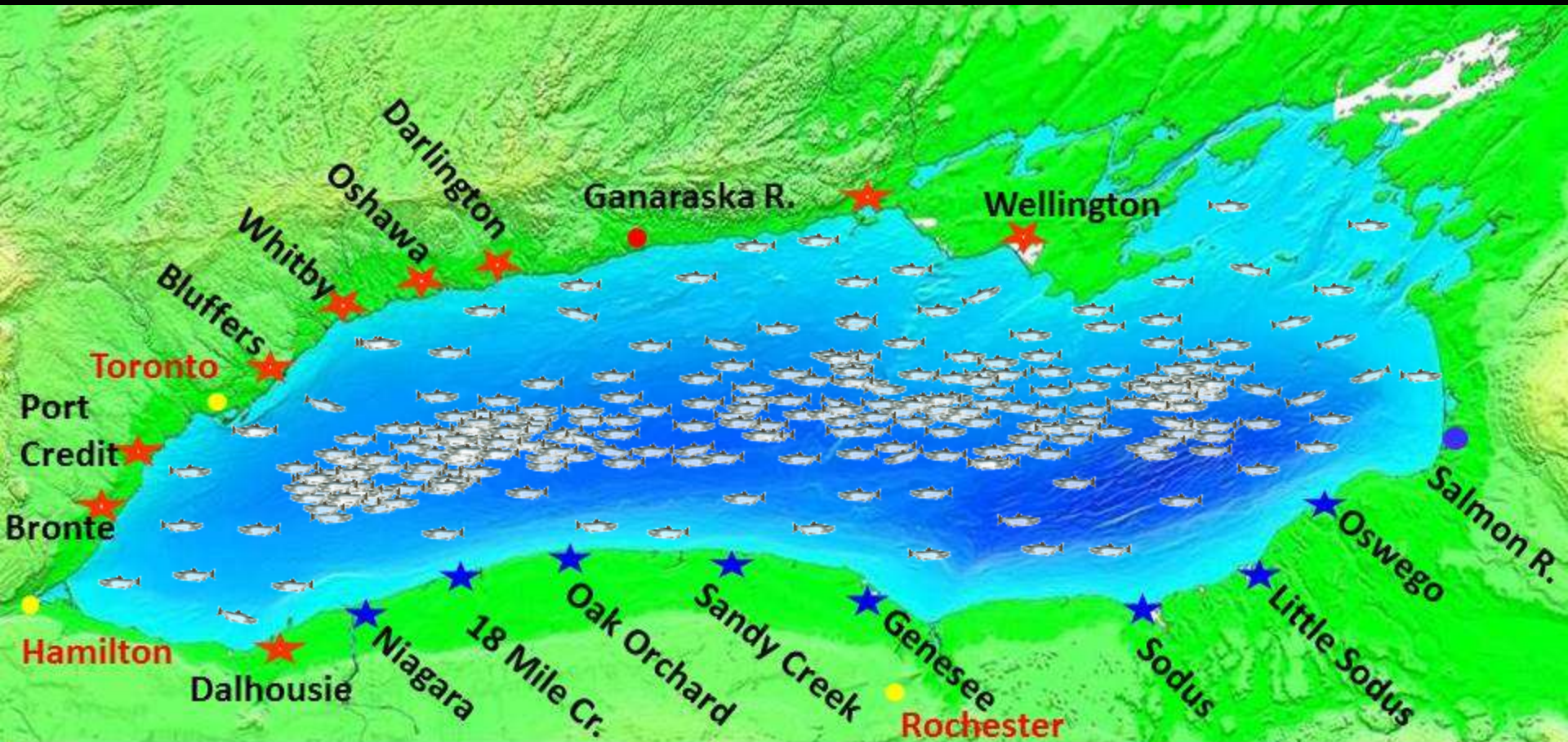
Sometime the lake sets up like this.....



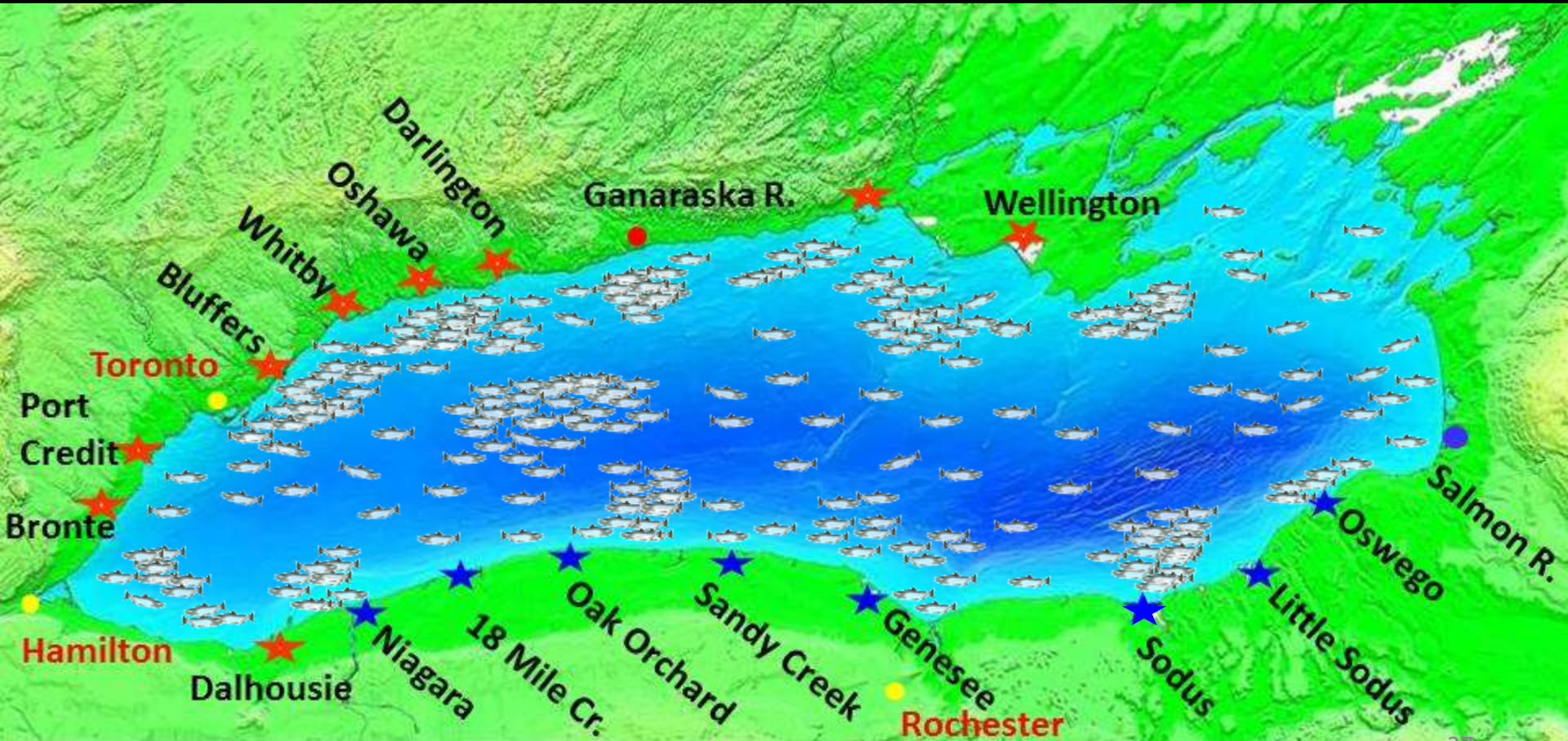
Or like this



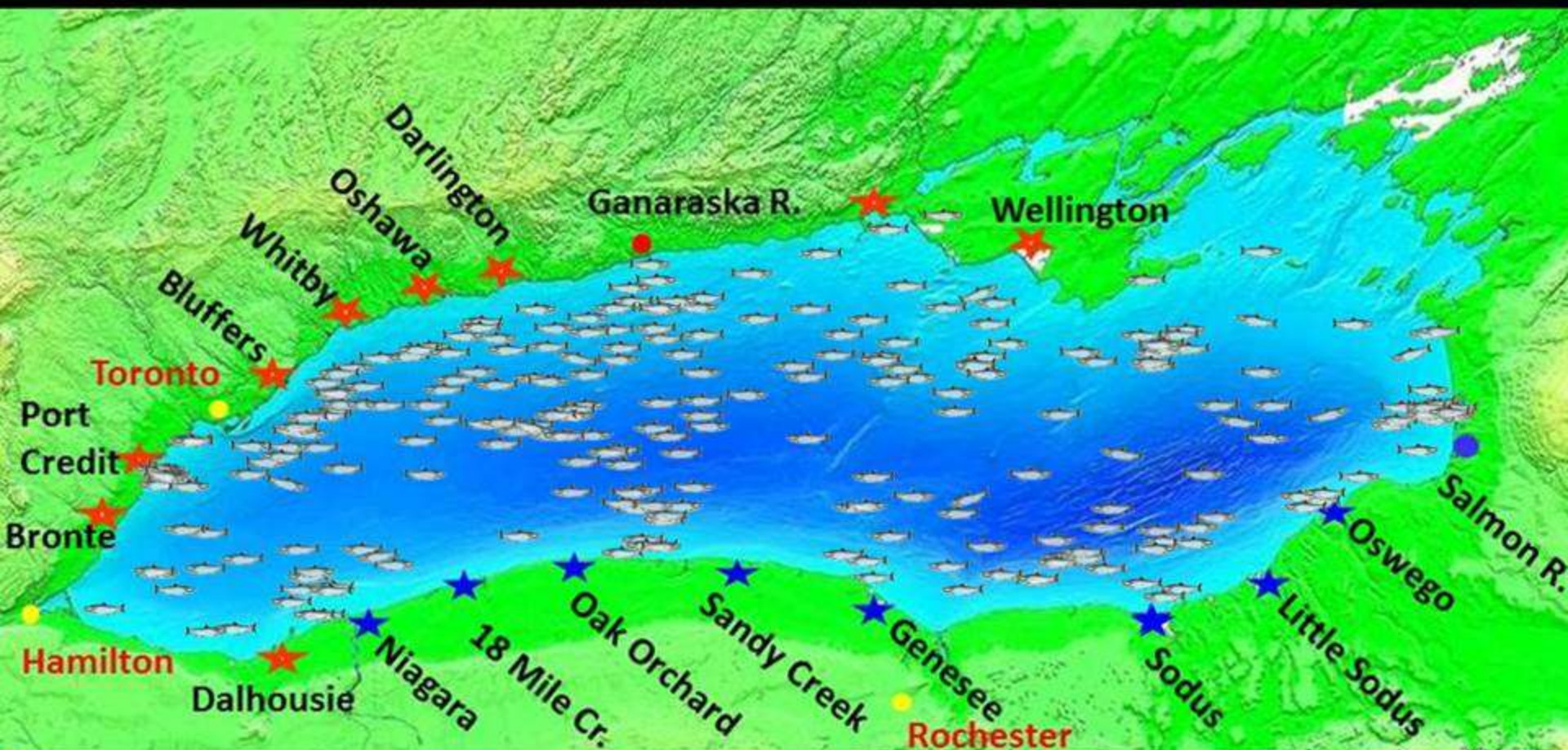
Or like this



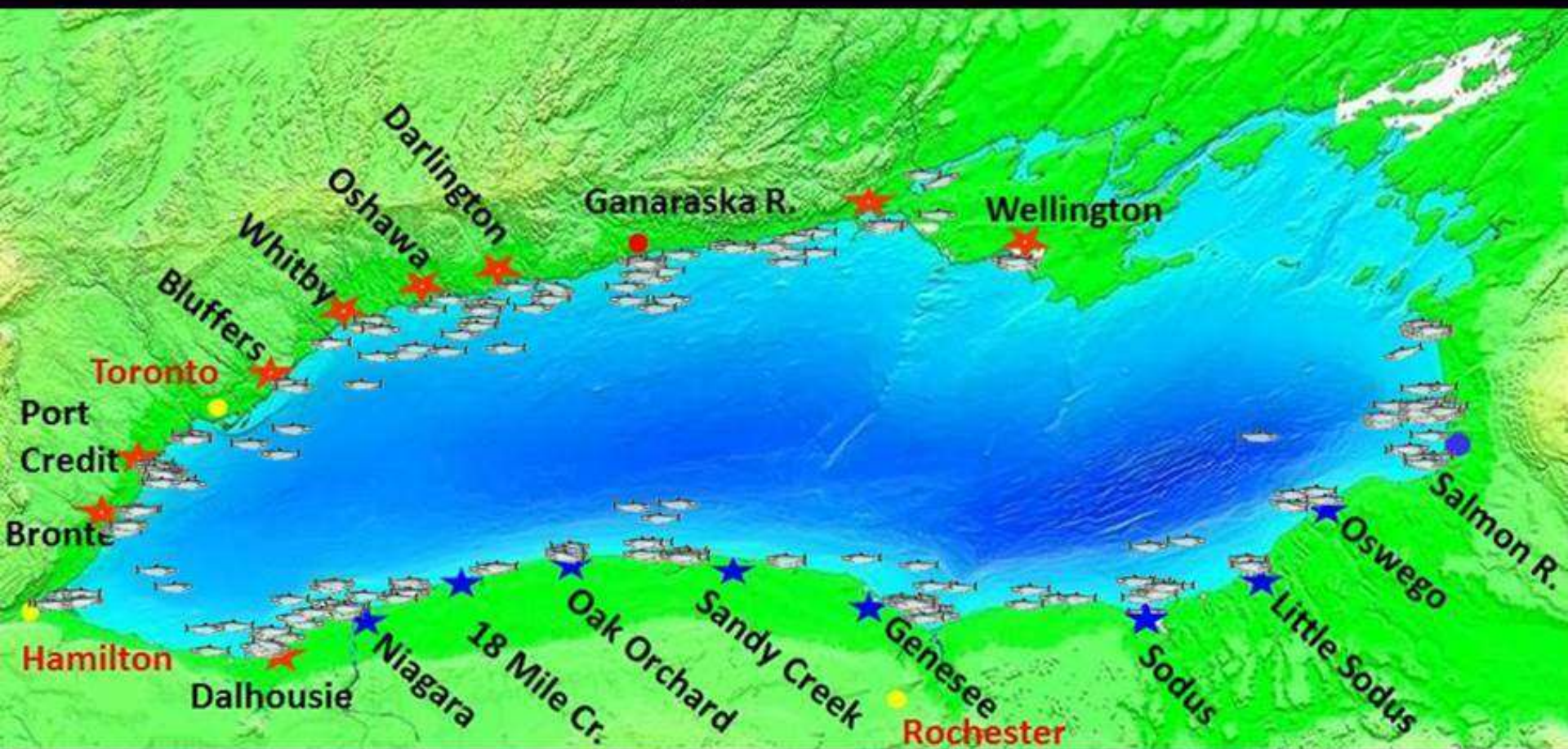
But in the end the fish go home....



But in the end the fish go home.....



But in the end the fish go home.....



What happened in 2015?

Were there fewer fish?

Was there less food?

Was the timing off?

Were fish less concentrated?

Were fish less active and feeding less?

Were fish somewhere other than normal?

Every once in a while nature throws a curve ball.

Can we improve the actual fish?

We are collecting wild Chinook from the Ganaraska River and stocking them into the Credit River to see if the addition of wild fish improves the fishery in the west end. Ganaraska strain Chinook will have an adipose clip



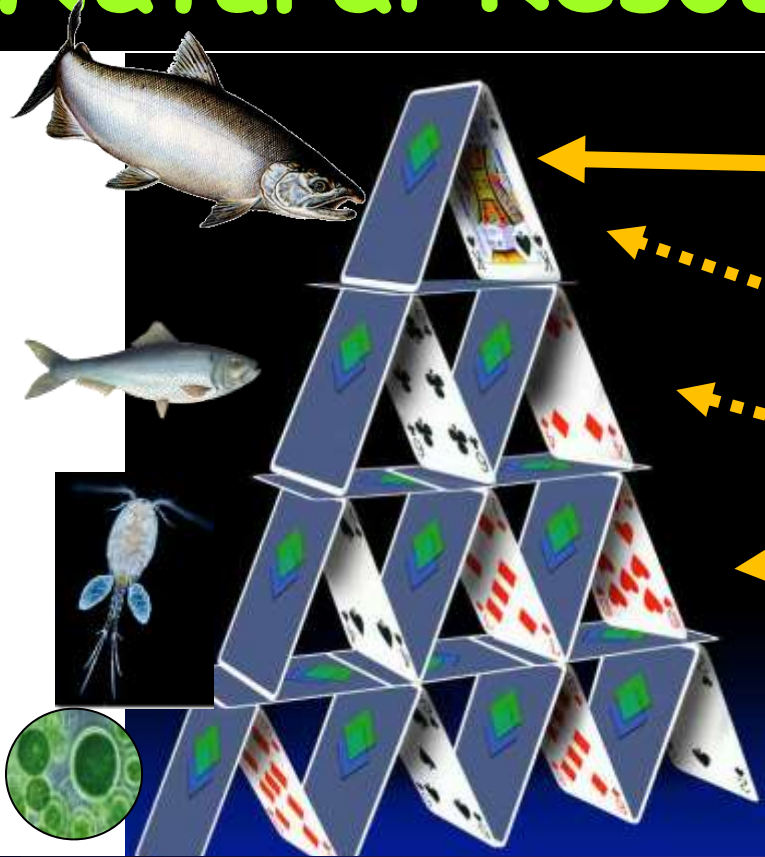
Ganaraska River Port Hope Chinook Salmon Egg Collection September 2015

Video

***OMNRF - Lake Ontario Management
Unit and Volunteers***

Special Thanks to Jason Whyte

Natural Resource Management



Stocking & fishing regulations

- Land use
- Water quality
- Invasive species
- Climate change

Outlook For The Stocking Program

- We can't fill the lake up with top predators**
- We can put fish in but we can't make them stay put.**
- We may be able to improve the fish itself**
- We are in uncharted waters - two bad alewife year classes
– waiting to see about the 2015 year class (in June 2016)**
- Fish in net pens = a stocking increase**
- It is very difficult to balance predators due to wild fish**

Outlook For The Stocking Program

“Don’t Panic” Douglas Adams

- Lake Ontario has shown to be resilient.**
- The best strategies are managing for a diverse fishery with conservative stocking, monitoring and public engagement**

Questions

