

From Vision to Market: The Target Marine Story of White Sturgeon & Sunshine Coast Caviar

Presentation at the
Aquaculture Innovation Workshop

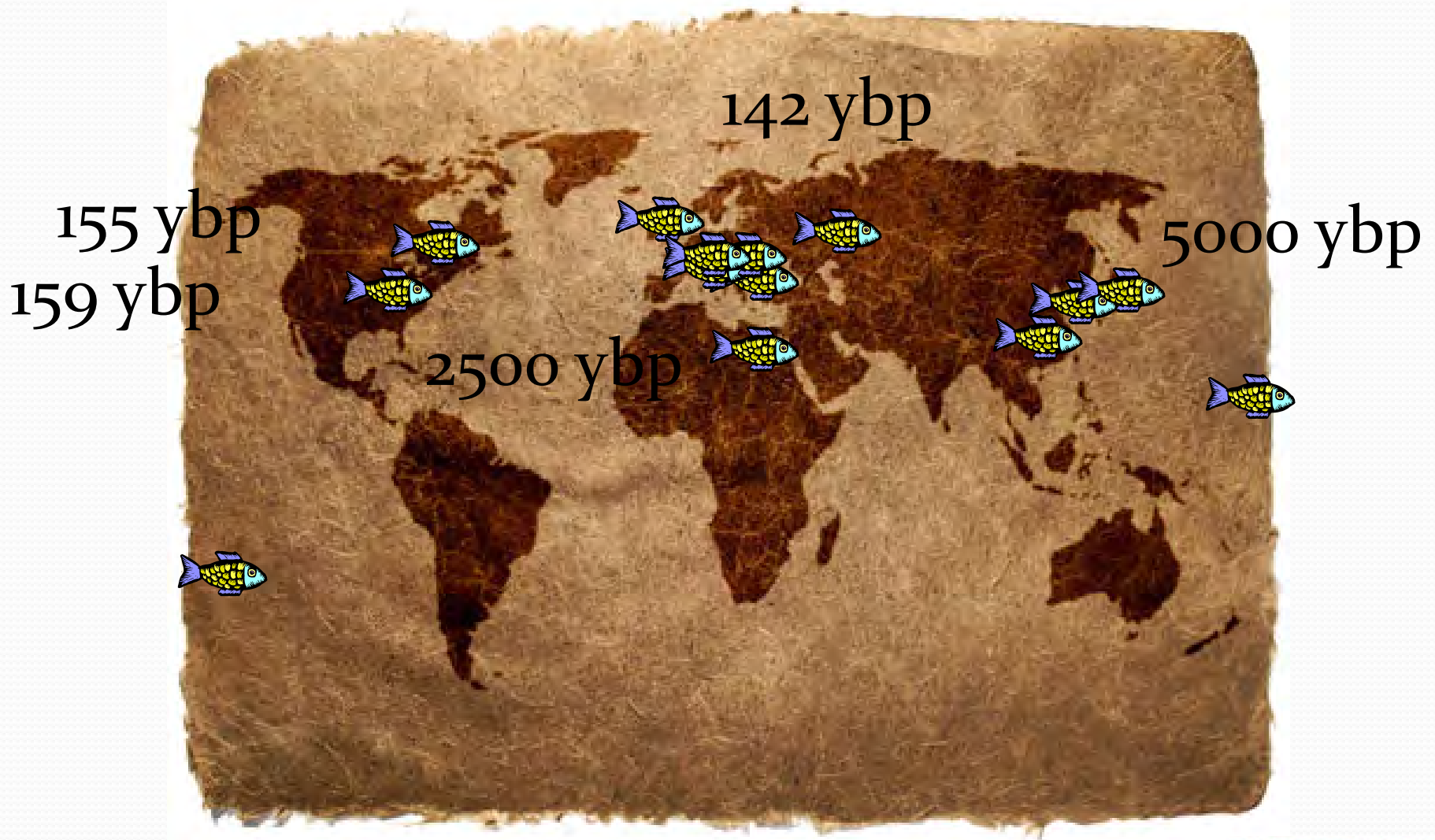
September 26th & 27th 2011

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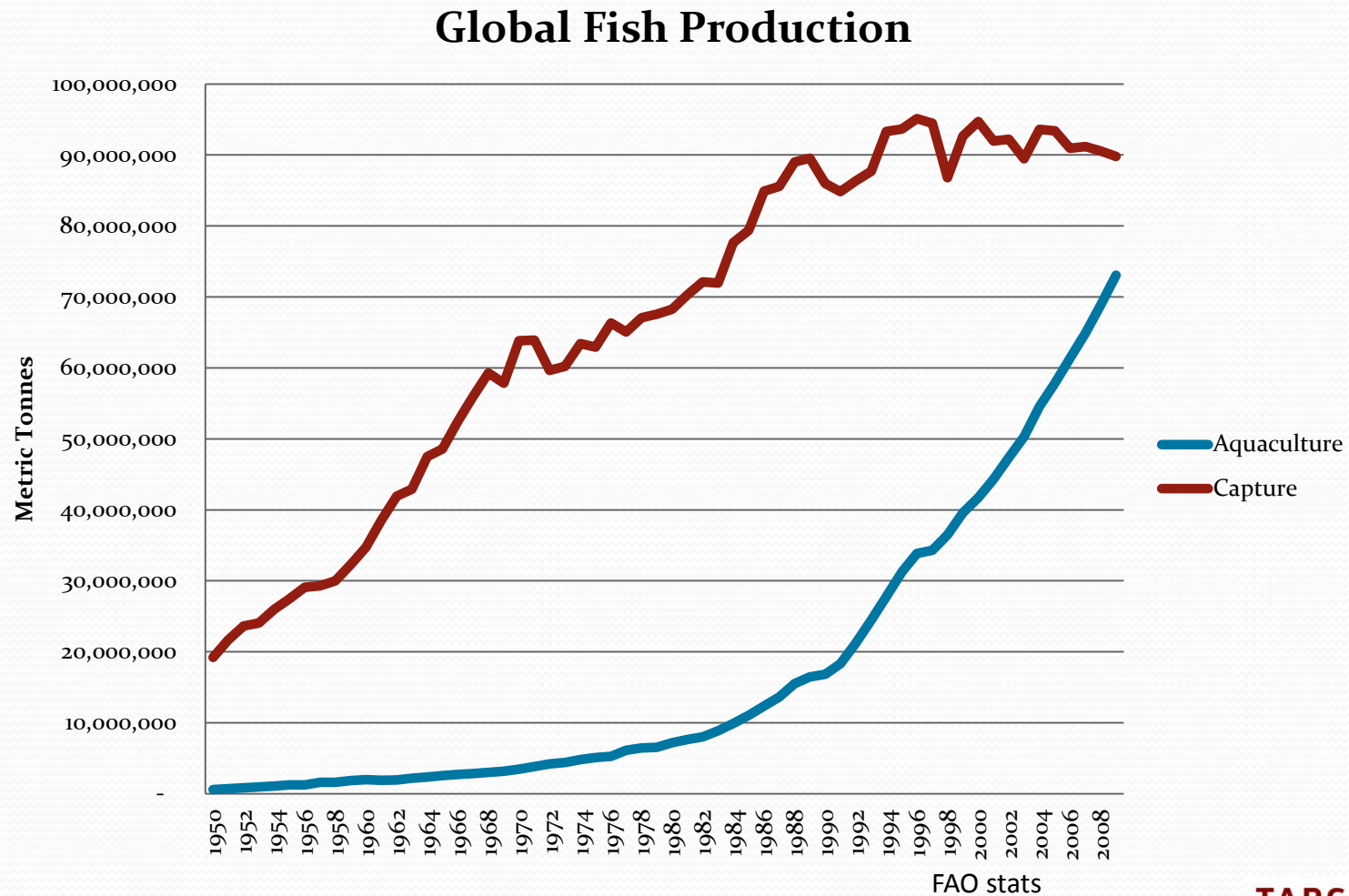
Outline

- Who Opened the Door to Sturgeon Culture?
- What Culture Technology is Required?
- When Did We Figure Out Recirc?
- From • Where Did Challenges Arise?
- Why Are You Doing This? (Are you Crazy?)

Who Opened the Door to Sturgeon Culture?



Who Opened the Door to Sturgeon Culture?

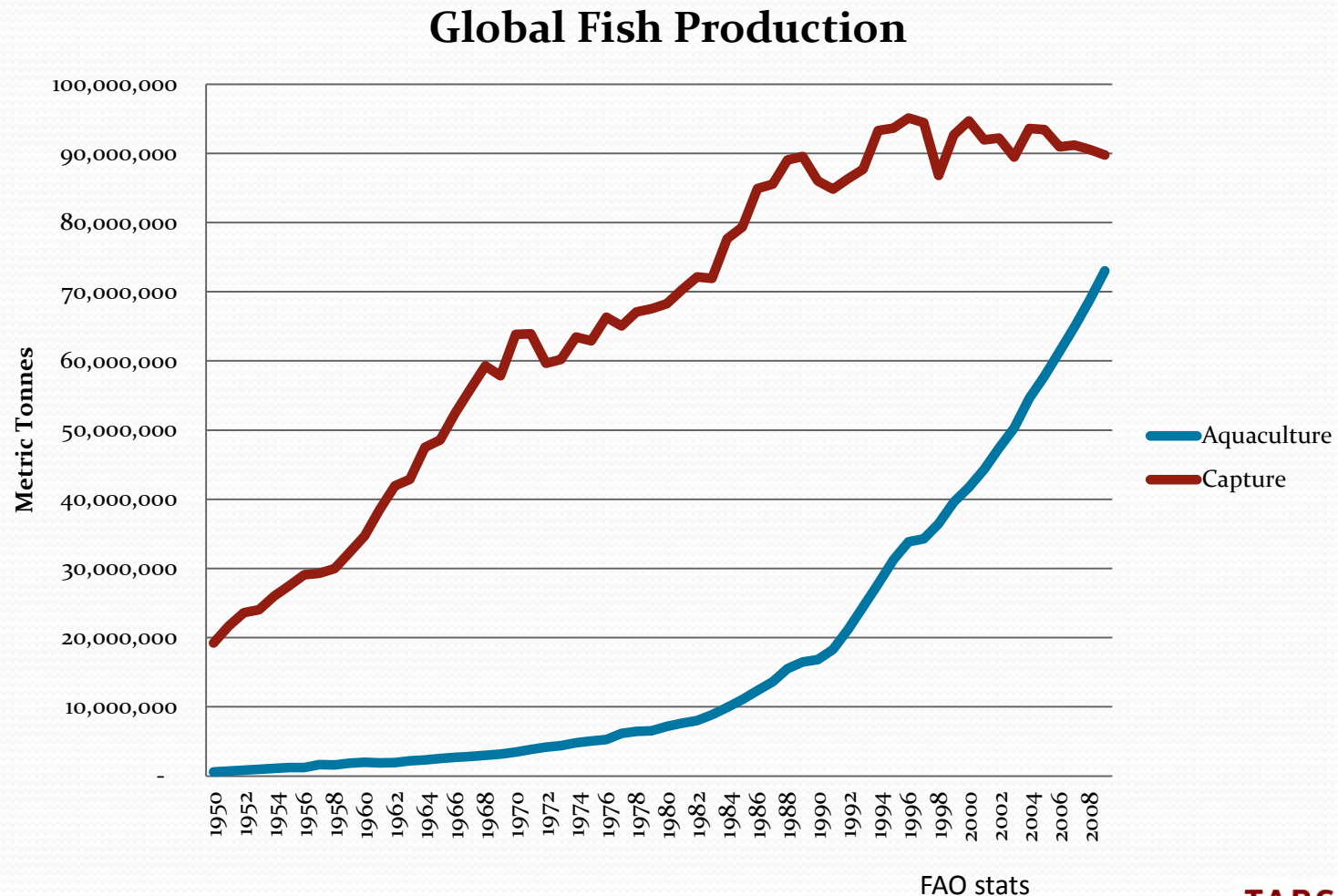


Who Opened the Door to Sturgeon Culture?

- Expertise in recirculation technology
- Experience in the egg market (Coho salmon)
- Access to eggs for production (VIU)
- Shortfall in market supply

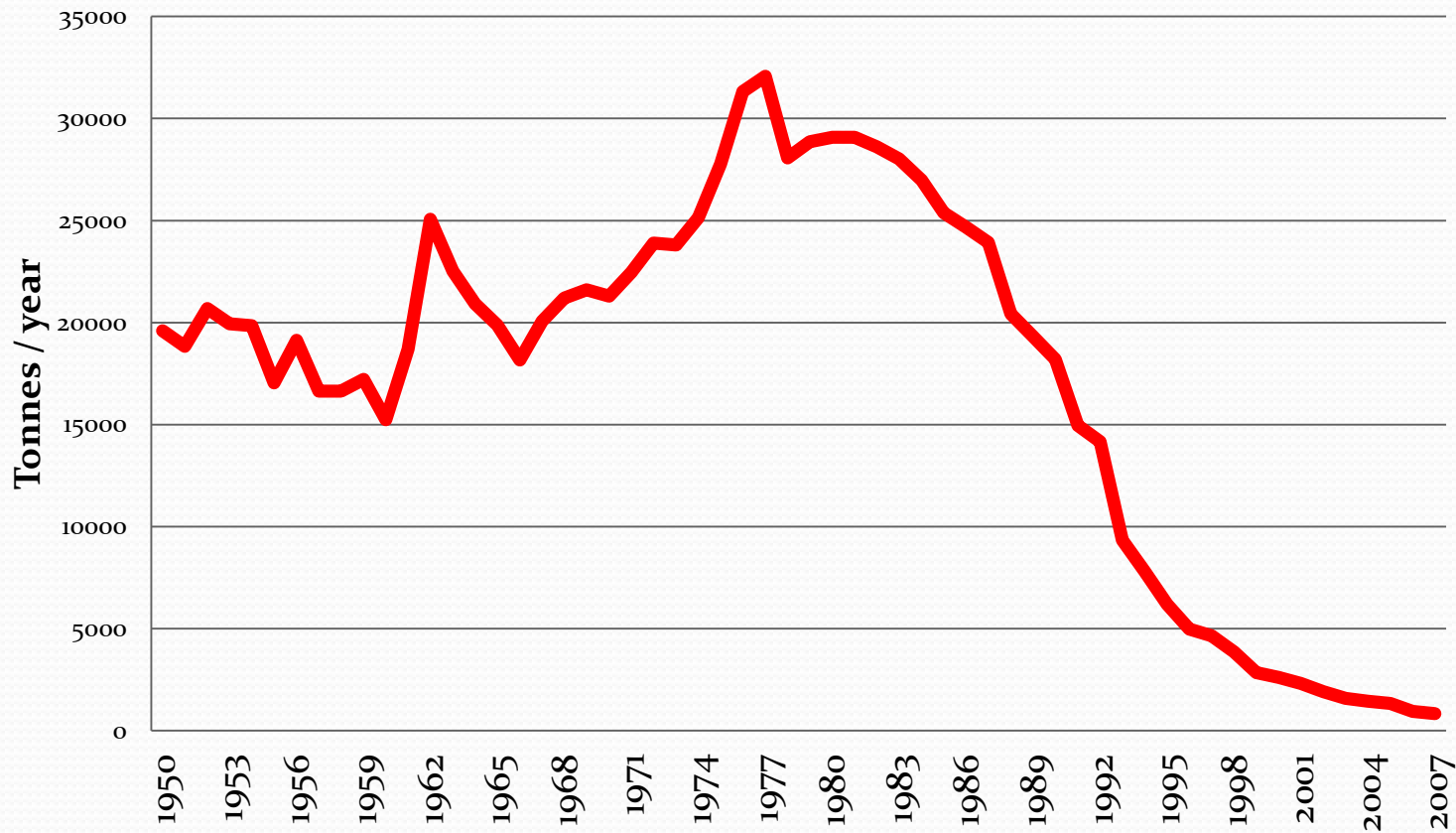


Who Opened the Door to Sturgeon Culture?



Who Opened the Door to Sturgeon Culture?

Global Sturgeon Harvest



What Culture Technology is Required?

- Technology for Reproduction
- Technology for Feeding
- Technology for Sex Identification
- Technology for Handling Large Animals
- Technology for Staging Maturing Animals
- Technology for Making Caviar
- Technology for Environmental Control



What Culture Technology is Required?



What Culture Technology is Required?

- Control These Parameters

- Temperature
- pH
- Alkalinity
- Hardness
- Salinity
- etc

- Maintain These Parameters

- CO₂
- NH₃
- NO₂
- NO₃
- SS
- etc

What Culture Technology is Required?



What Culture Technology is Required?

System	1998	2000	2007	2010	2011
Rearing Volume (m ³)	780	600	180	180	180
Flow (lpm)	16,000	12,000	4,000	4,000	4,000
Recirc (%/d)	98	76		84	90
Recirc (% of flow)	99.9	99.2	95.0	99.5	99.7
Turnover (days)	46	4	0.6	6	10
Species	adult sturgeon	salmon smolts	adult salmon	adult sturgeon	juvenile sturgeon
Limiting Factor	NO ₃	°C	SS	O ₂	nothing



When Did We Figure Out Recirc?

We will never completely figure it out

From

Where Did the Challenges Arise?

Biological

Political

Marketing

From

Where Did the Challenges Arise?

Biological

- Juvenile survival was low
- Optimal rearing environment were unknown
- Sexing and staging techniques were invasive
- Captive breeding cycle was not closed in Canada
- Maturation timeline was long



From

Where Did the Challenges Arise?

Political

- Federal
- Provincial
- Municipal



From

Where Did the Challenges Arise?

- **Build**
- **Absolutely**
- **Nothing**
- **Anywhere**
- **Near**
- **Anybody**



From

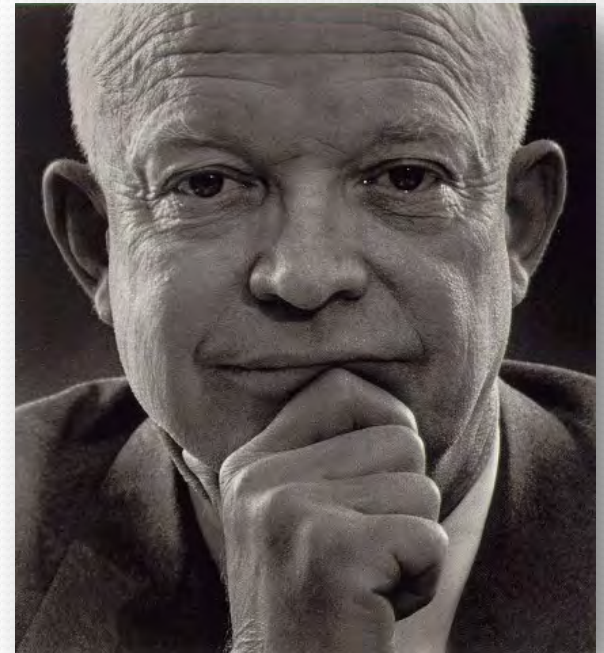
Where Did the Challenges Arise?

Political

- Federal
- Provincial
- Municipal

“Farming looks mighty easy when your plow is a pencil and you’re a thousand miles from the cornfield.”

- Dwight Eisenhower



From

Where Did the Challenges Arise?

Marketing

- Caviar
- Meat
- Heads
- Livers
- Swim bladders
- Fins



Why Are You Doing This?

- We have an opportunity
- We have pride in our practices
- We could have organic caviar
- We produce Canada's most valuable agriculture product
- We can help relieve pressure on wild stocks



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