

# RECENT DATA ON THE COMMERCIAL FISHING AND RESEARCH ACTIVITIES ON SAINT JOHN RIVER, NB CANADA

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## Outline

1. Background
2. Atlantic sturgeon fishery
3. Data collection
4. Length and Age Structure
5. Catch per unit of effort (CPUE)
6. Ongoing and future research
7. Conclusion

## 1. Background

### ❖ Acadian Sturgeon and Caviar Inc, Canada

- ☑ company founded in 2005 in Carters Point, New Brunswick, for producing caviar and meat in aquaculture;
  - ☑ since 2005 producing and selling live sturgeon (Atlantic and shortnose) as stocking material for aquaculture, restocking, research, ornamental (Poland, Germany, USA, Korea, Taiwan);
  - ☑ since 2007 producing sturgeon meat and caviar in our own CFIA federally inspected processing plant, from wild sturgeon harvested in the Saint John River;
  - ☑ initiating the development of a grow-out facility on 2.5 ha of land in Carters Point, NB, Canada, with a designed capacity of 165 tonnes of sturgeon meat and 10 tonnes of caviar;
  - ☑ using the wild products to develop our markets (Canadian and export – CITES regulated) and products for our coming aquaculture production that will phase-out wild collection within 5-7 years.
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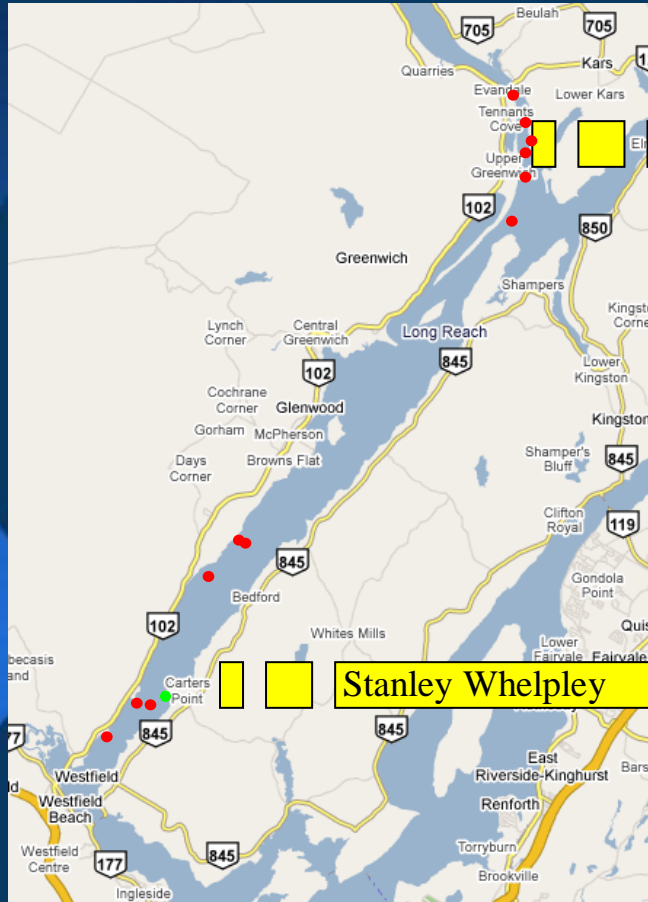
## 2. Atlantic sturgeon fishery - geography



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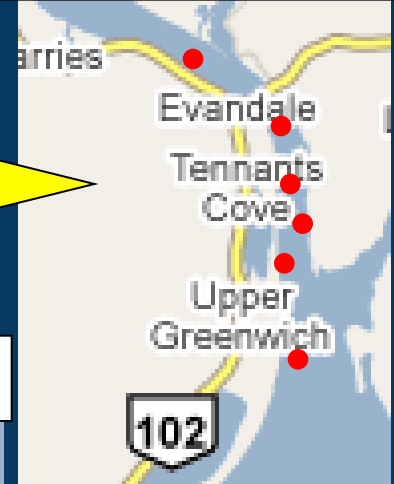
## Alexandria, VA, USA, February 8-10, 2011

### 2. Atlantic sturgeon fishery- geography

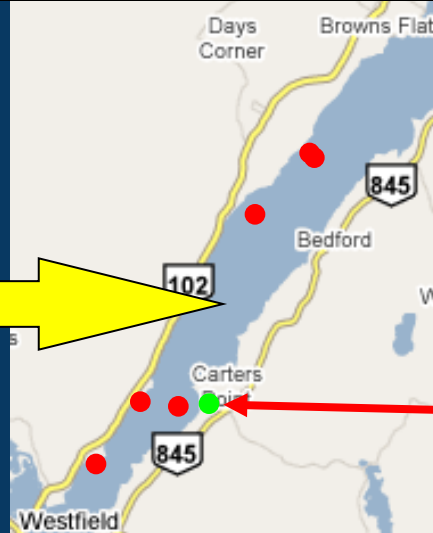


Ted Finley

Evandale Area



Long Reach Area



Stanley Whelpley

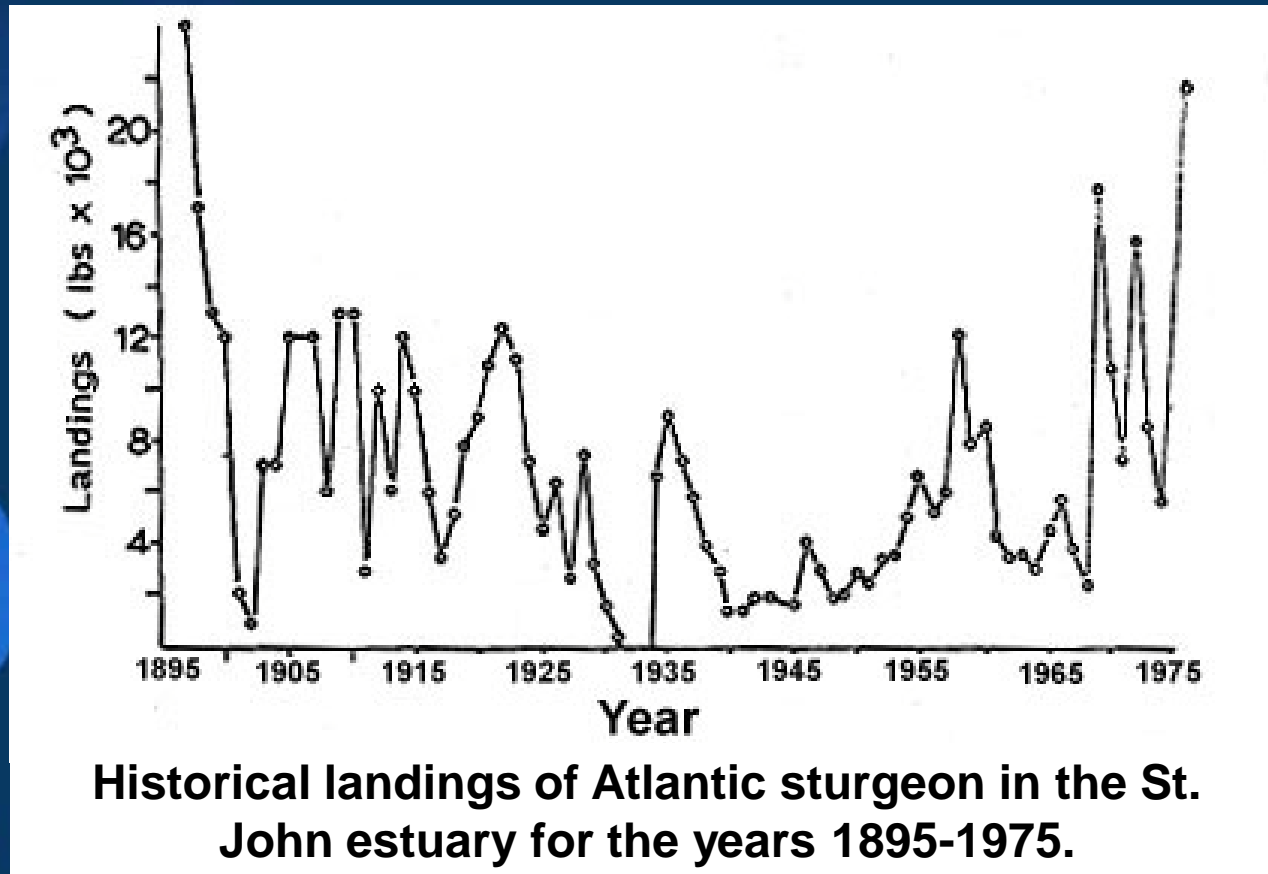
Acadian Sturgeon  
Carters Point Hatchery

## 2. Atlantic sturgeon fishery - Historical Landings

- Reported landings available since 1895, practically without interruption
- Landings from 1895-1975 are widely variable (0-10.7 mt/year) with average landings of ~ 4-5 mt/year
- Variability likely represents fishing effort and market demand, not stock size
- In 1977, fish harvesters reported an increase in CPUE and exploratory research indicated juveniles were likely abundant



## 2. Atlantic sturgeon fishery - Historical Landings

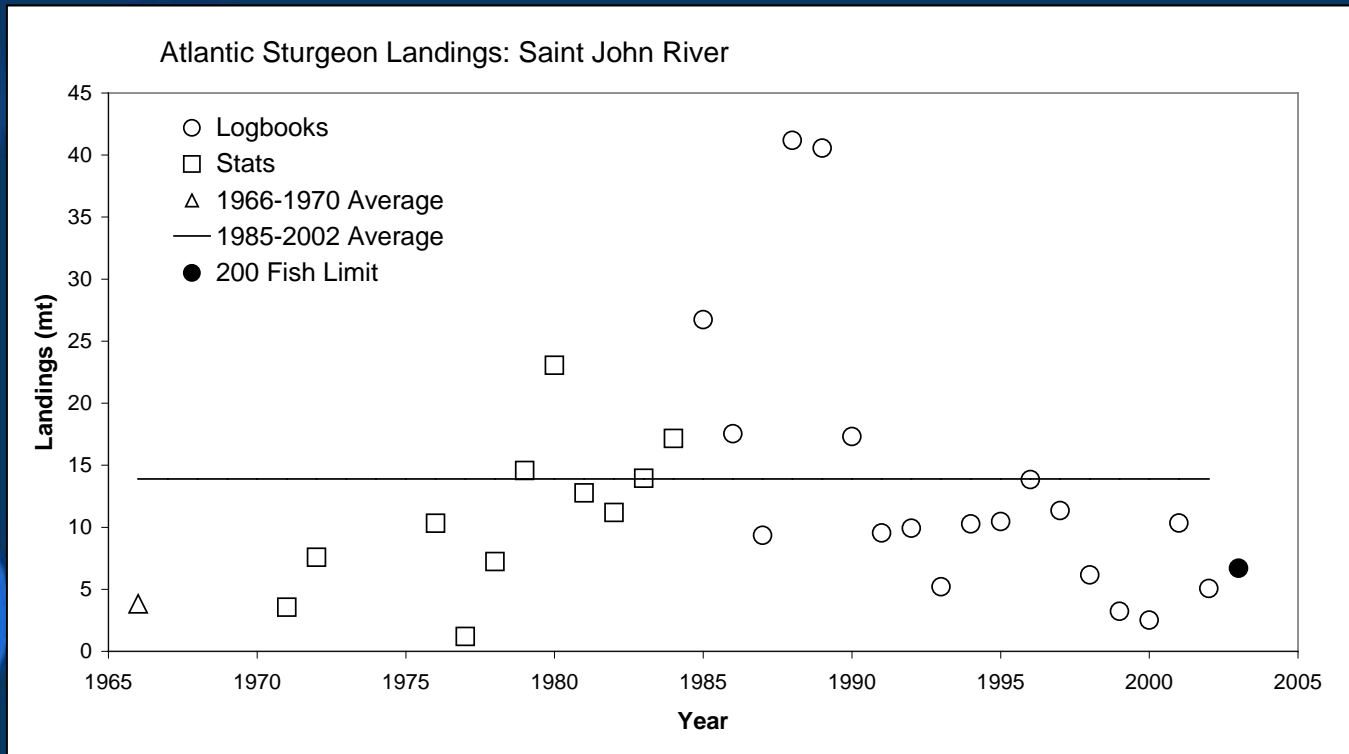


## 2. Atlantic sturgeon fishery - Landings 1965-2010

- **Overview of average annual landings:**
  - **1965-2002: ~ 12.6 mt**
  - **1985-2002: ~ 13.8 mt**
    - **Likely under-reported from 1965-1995 (reporting relied primarily on purchase slips)**
  - **1999 & 2000 3.2 mt and 2.5 mt, respectively**
    - **Landings were uncharacteristically low**
  - **2003-2006: only few fish removed for aquaculture & restocking (Germany);**
  - **2007- 2010: 3.34-10.46 mt**



## 2. Atlantic sturgeon fishery - Landings 1965-2002



Reported landings of Atlantic sturgeon from the Saint John River estuary for the period 1965-2002 (Bradford et al. 2009).

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## 2. Atlantic sturgeon fishery - Landings 2007 - 2011

Year	Total WT	Nb. Fish	Average WT
	mt	pc	kg
2007	3.34	64	52.25
2008	6.85	190	36.04
2009	9.46	246	38.47
2010	10.46	246	42.53
2011	11.40	300	38.00

## 2. Atlantic sturgeon fishery - management

- Recommended harvest as per CSA 2009 assessment  
400 fish/year (precautionary approach for CITES NDF)
- Fishery is:
  - Low effort, and low yield in nature
  - Limited entry
    - Presently 5 license holders, only 2 active
  - Subject to gear and effort restrictions
- All licenses are terminal

## **2. Atlantic sturgeon fishery - management**

- Atlantic sturgeon may only be fished commercially with gill nets of  $\geq 330$  mm mesh size (13")**
- It is illegal to retain or possess any Atlantic sturgeon  $< 120$  cm in length (4 ft) (applies to by-catch in all coastal and river fisheries)**
- Season is closed in June to protect spawning adults**

## 2. Atlantic sturgeon fishery - Harvest Recommendations

### 2009 CSA for CITES NDF

- The abundance of Atlantic sturgeon in the Saint John River has never been formally assessed, and the current population size is unknown.
- Maximum commercial harvest of 350 Atlantic sturgeon from the Saint John River is considered to be sustainable over the short-term (5 years).
- A formal species assessment including the acquisition of robust life history, abundance, and age-structured genetic data is recommended before future harvests are considered.

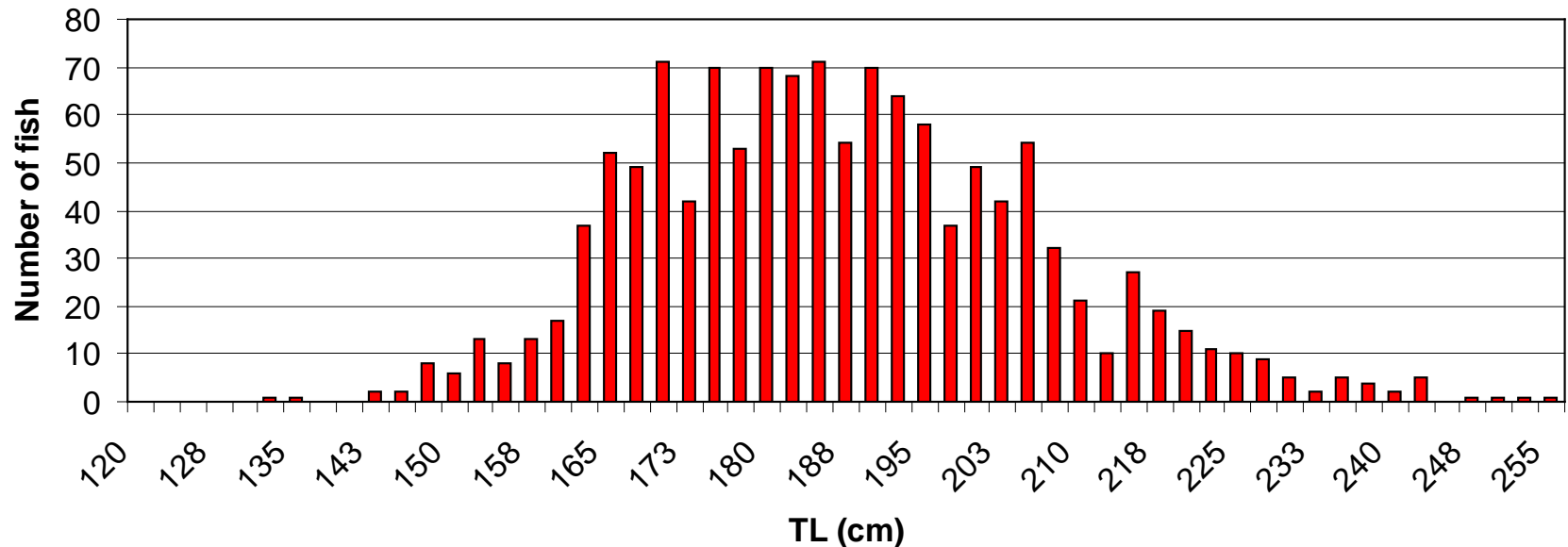
### 3. Data collection

- Set gill nets of 14" stretched mesh, 30 phatoms (180 ft)/net;
- 24 hours fishing, checked once a day (morning or by tide);
- CPUE data as fish/24 hours/net;
- Biometry/biology data (TL, FL, WT, sex);
- Yield as carcass weight and caviar;
- Samples for age and genetics.



## 4. Length and age structure

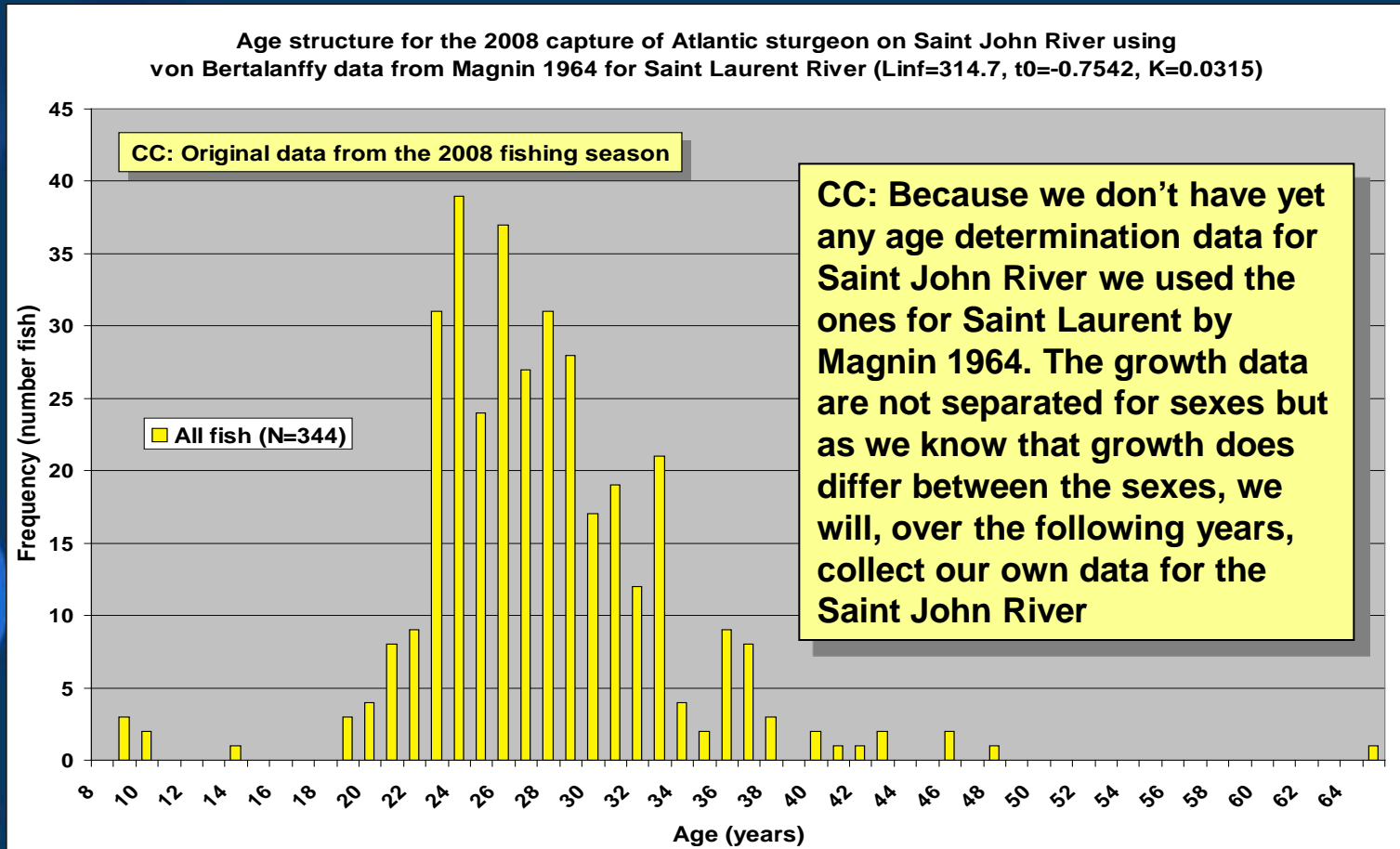
Frequency distribution of the total length (@ 2.5 cm bar) n=1263 fish  
(multiannual cohort 2008-2010)



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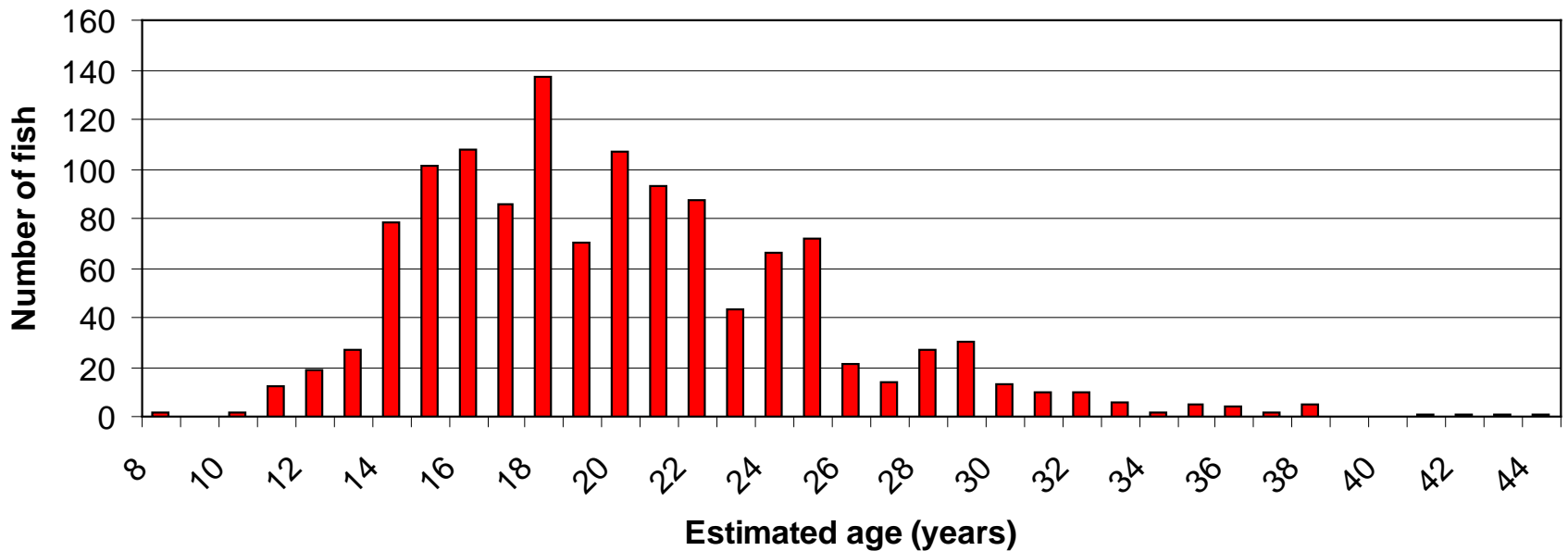
### 4. Length and age structure





## 4. Length and age structure

Frequency distribution of the estimated age n=1263 fish  
(multiannual cohort 2008-2010)



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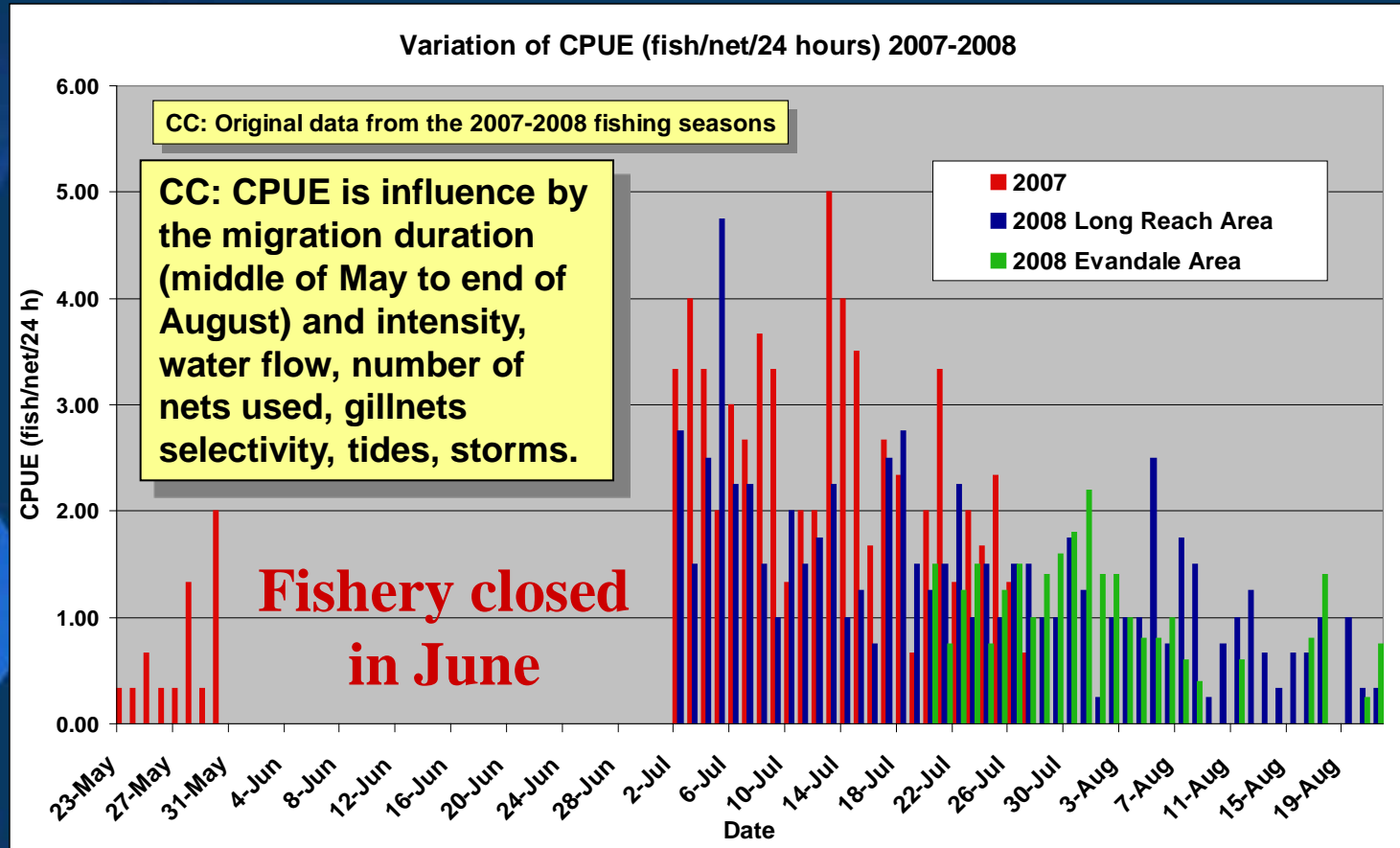
## 5. CPUE results

year	# fishermen	# nets	# days fishing	# fish caught	CPUE # fish per day	CPUE # fish per net day
2007	1	2.5	34	198	5.82	2.33
2008	2	8.5	50	405	8.10	0.95
2009	2	11	58	670	11.55	1.05
2010	2	12	54	700	12.96	1.08

year	# fish caught	# fish harvested	# fish spawned	%# fish released
2007	198	64	30	67.68
2008	405	190	31	53.09
2009	670	246	24	63.28
2010	700	246	32	64.86



## 5. CPUE variation (adult Atlantic sturgeon / net / 24 hours)



## 6. Ongoing and future research

- Tag and recapture study for stock assessment (over 500 fish tagged and released) ;
- Age and growth data; age structure of the population;
- Genetic fitness of the population;
- 2011 – 10 acoustic tags for life history study including identifying the spawning areas;
- Collecting and acclimating to captivity of 100 Atlantic sturgeon broodstock for aquaculture and gene banking.



## 7. Conclusion

- ❑ Based on our data, we have strong reasons to believe that Saint John River Atlantic sturgeon population is in a good shape, with a multiage structure and yearly recruitment;
- ❑ A precautionary, controlled harvest of maximum 350 adults/year, while collecting biological and effort data, would provide more information regarding the status of this population;
- ❑ We are cooperating with UNB and DFO for data collection from the commercial fishery, tag & recapture studies, age structure, genetic fitness of the population etc.



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To finish, some pictures of Atlantic sturgeon, from fishery or by-catch



Thank you!

