

# **Workshop of Range States of the American Eel Santo Domingo, 4-6 April 2018**

Country Presentation by  
U.S Fish and Wildlife Service (USFWS) &  
Atlantic States Marine Fisheries Commission (ASMFC)  
United States of America

# Outline

- Biology and Distribution
- Threats
- Management
- Stock Assessment
- Overview of Status
- Landings
- Aquaculture
- Trade

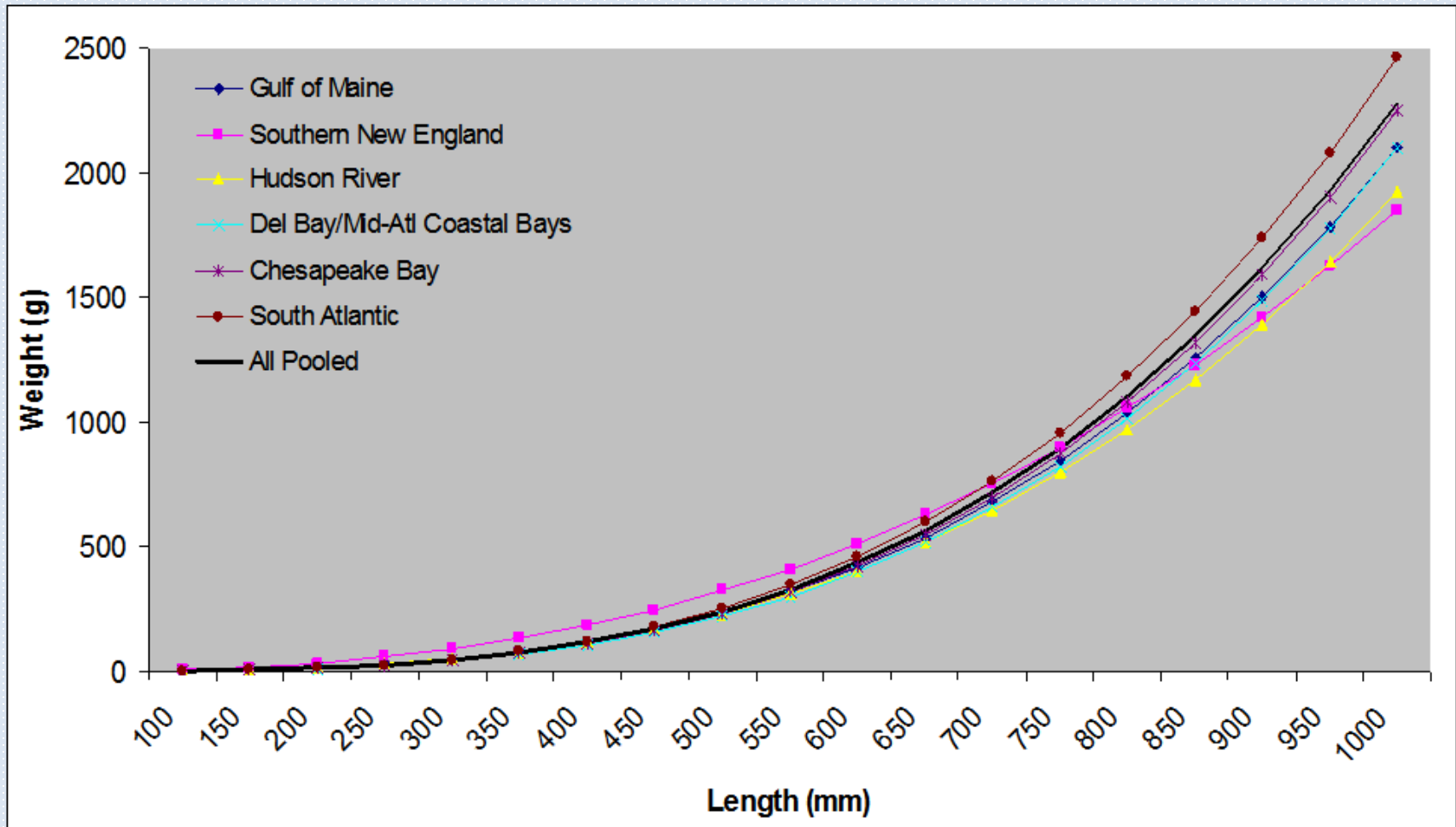


# Biology

- The species is a panmictic, catadromous anguillid that are spawned in the Sargasso Sea
- Leptocephali (larvae) carried by ocean currents and dispersed along coastal areas from South to North America
- The U.S. is home to all life stages of the American eel (glass/elver/yellow/silver)
- There is little compiled regional information available for stage/age relationship except among the Atlantic Coastal States
- Populations along the Atlantic Coast remain primarily in fresh/brackish yellow-eel phase areas longer in the northern regions than in the south
- Silver-eel phase-reach maturity and return to the Sargasso Sea where they spawn and die
- No information available related to the relative contribution of regional populations to the maintenance of the entire panmictic population

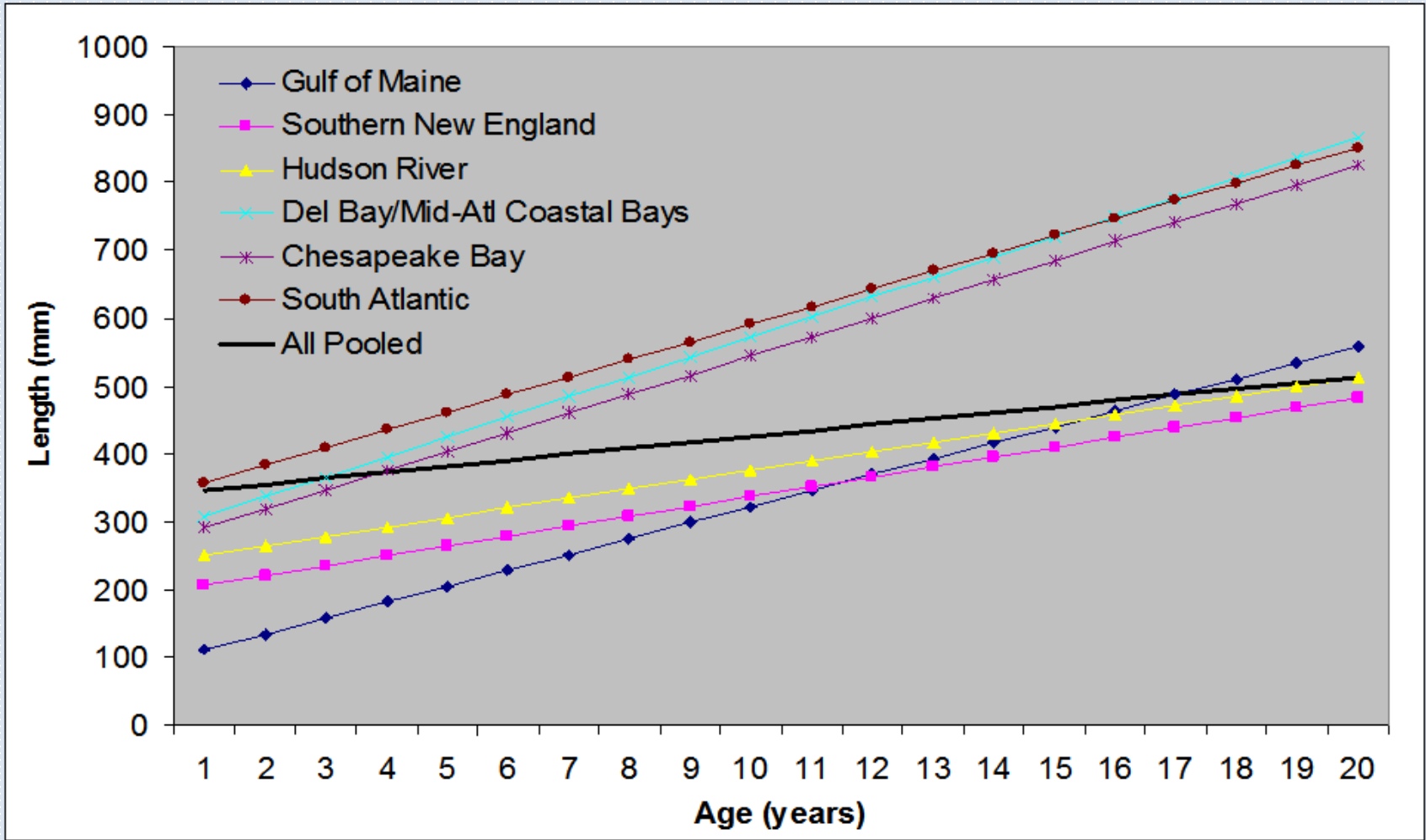


# Regional Analysis: Length-Weight



Predicted total length-weight relation for American eel based on available data, by region and all pooled.

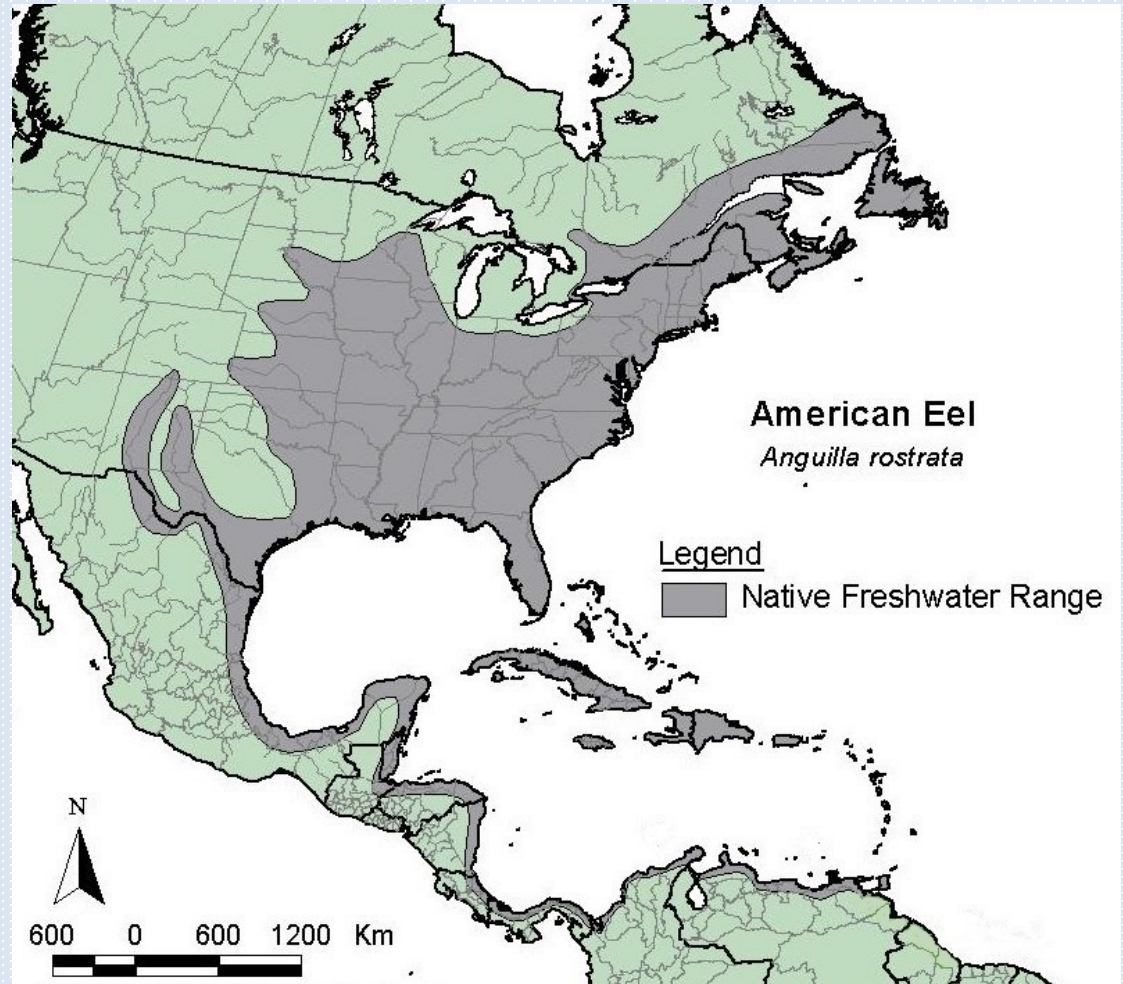
# Regional Analysis: Age-Length



Predicted linear age-length relation for American eel based on available data, by region and all pooled.

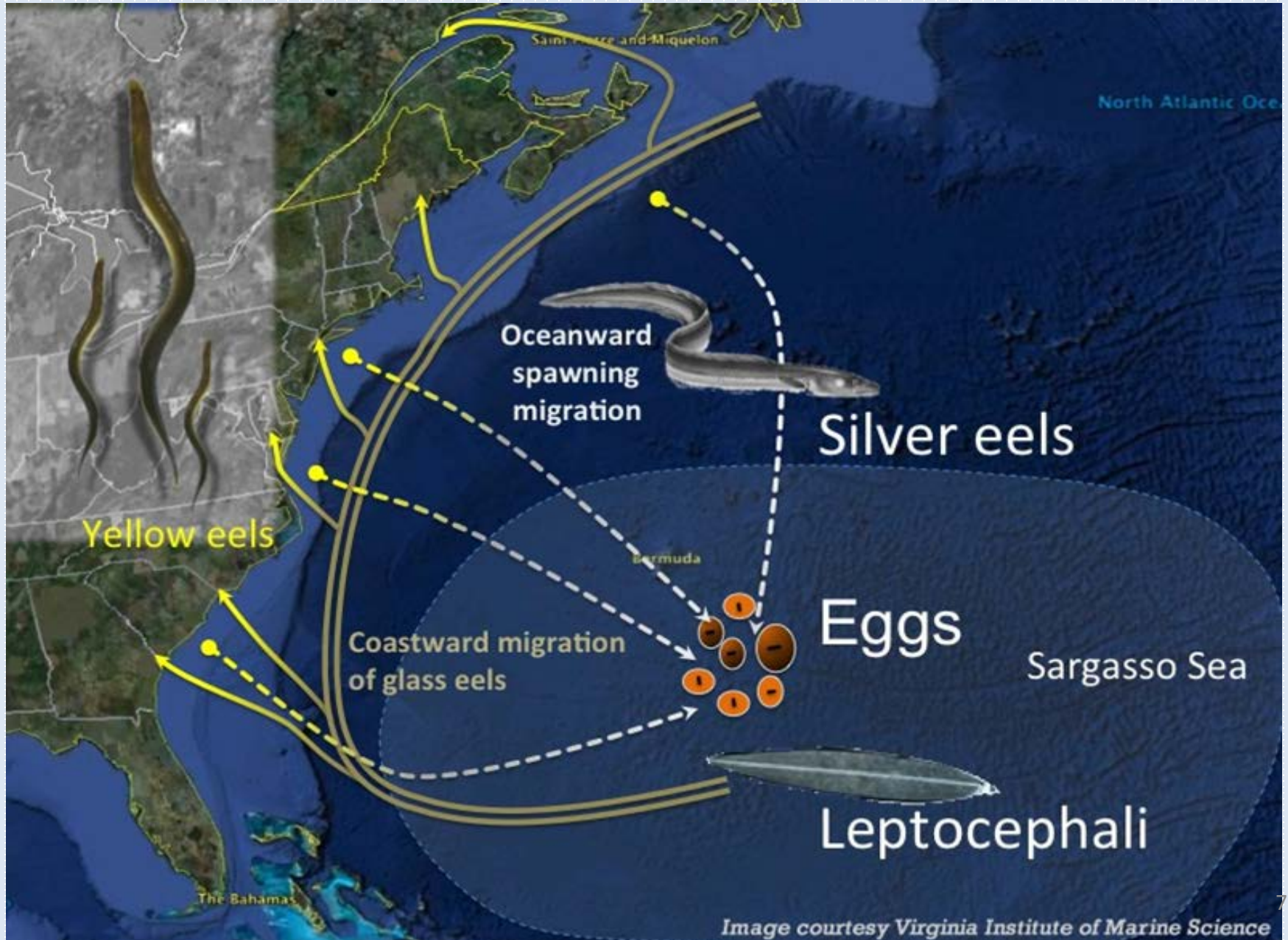
# Distribution

- Freshwater drainages throughout the Gulf Coast and the Atlantic States
- Brackish estuaries, especially along the northern Atlantic Coast (Maine, New Hampshire, Connecticut, New York)



Source: [USFWS. American eel \(\*Anguilla rostrata\*\) Fact Sheet](#)

# Life History



# Threats

- Vary by life stage
- Commercial and recreational harvest
- Illegal harvest and poaching
- Ocean warming which changes current patterns
- Parasites (*Anguillicoloides crassus*, *Pseudodactylogyrus anguillae* and *P. bini*)
- Habitat loss in estuaries, rivers and lakes
- Dams (Upstream and downstream passage)





# Legislation and Management Relevant to American Eel

- No National Legislation specific to domestic management
- There are no fisheries for American eels in US federal waters
- From Maine south to Florida, ASMFC coordinates management of American eels in state waters under the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA, 1993)
- The 1999 Fishery Management Plan, and subsequent addenda required:
  - All states are required to have a young-of-the-year (YOY) survey.
  - A 9” minimum size limit for commercial and recreational harvesters, with the exception of Maine and South Carolina.
  - Mandatory catch and effort monitoring program for the commercial harvesters.
  - Recreational possession limit to 25 eel/person/day, with the option to allow an exception of 50 eel/person/day for party/charter employees for bait purposes.
  - Eel pots are required to be constructed with a minimum of ½” by ½” mesh size.
  - The glass eel fishery is required to implement a maximum tolerance of 25 pigmented eels per pound of glass eel catch.

# Who is ASMFC?

- Compact of all the Atlantic States (ME-FL)
- Jurisdiction in state waters 0-3 miles; rivers for diadromous species
- Management Board
  - 15 member states and two federal partners
- 3 Commissioners represent each state



# ASMFC Management of American Eel

## Among the Atlantic Coastal States

- The 1999 Fishery Management Plan, and subsequent addendums required (continued):
  - The silver eel fishery is prohibited in all states from September 1st to December 31st from any gear type other than baited traps/pots or spears..
  - A coast-wide cap of 907,671 pounds of yellow eel.
    - Triggers would implement a state-specific allocation if:
      - (1) if the cap is exceeded by more than 10% in a given year, or
      - (2) the coast-wide quota is exceeded for two consecutive years regardless of the percent overage
  - Maine's glass eel quota set to 9,688 pounds (2014 landings).

# Assessment Summary

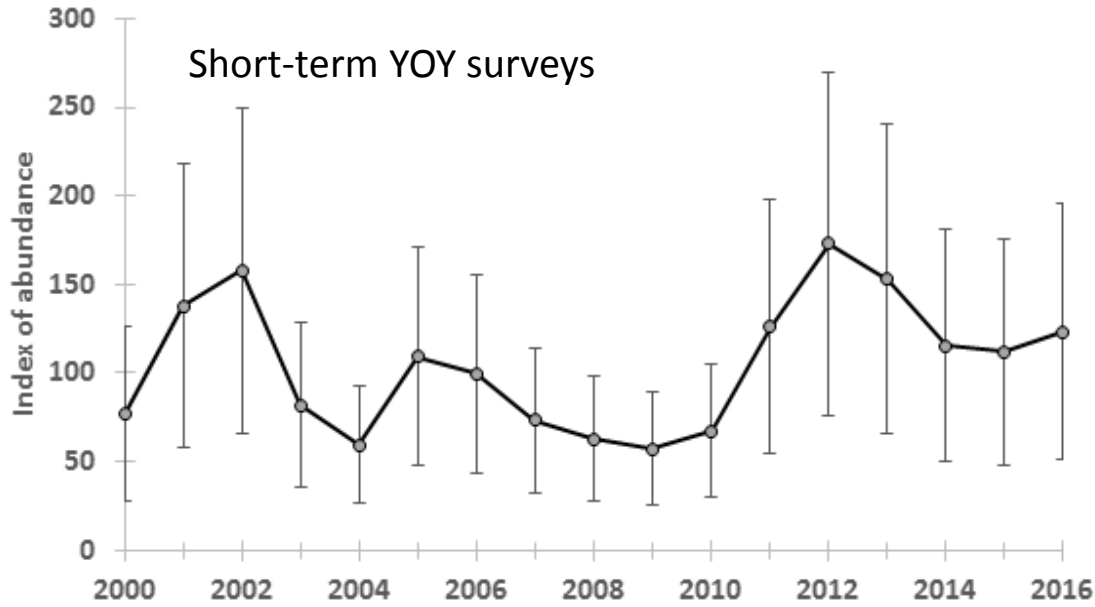
- ASMFC performed a benchmark stock assessment in 2012; performed an updated stock assessment in 2017
  - Trend analyses of abundance indices provided evidence of neutral or declining abundance of American eels in the U.S. in recent decades.
  - Three separate trend analysis methods detected significant downward trends in some indices
    - Significant downward in 6 of 22 YOY indices, 5 of 15 yellow eel indices, 3 of the 9 regional trends and both the 30-year and 40-year yellow phase abundance indices.
    - Two indices showed positive trends and the rest showed no trend
- American eel is considered data poor
- All life stages are subject to fishing pressure
- Commercial Glass eels fishery only allowed in Maine and South Carolina

# 2017 Assessment Update

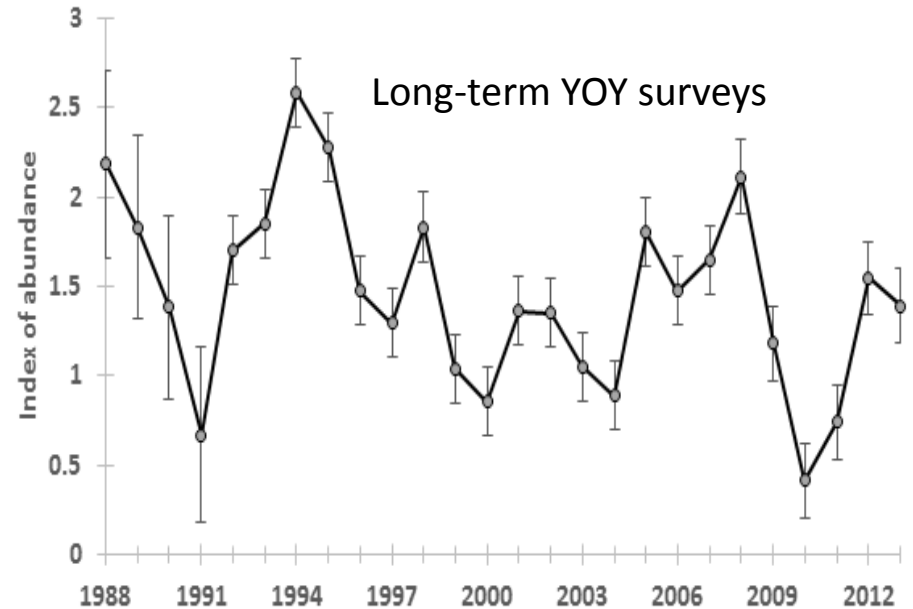
- Updated indices and trend analyses with data through 2016 where available
- Updated biological data (length, weight, age) and growth analysis
- Methods consistent with benchmark where possible but a few tweaks necessary

# Coastwide Recruitment Indices

Short-term YOY surveys



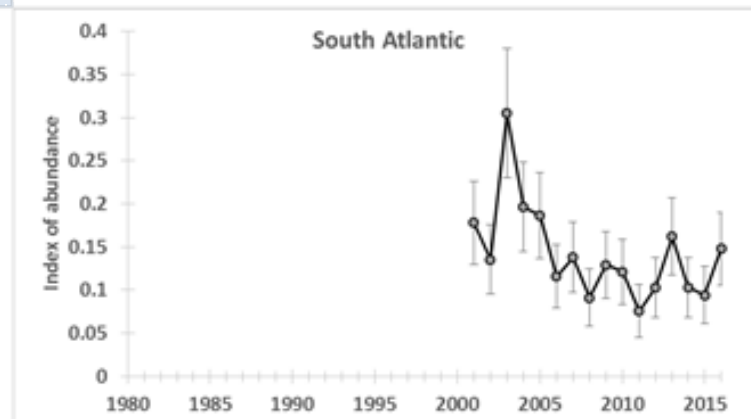
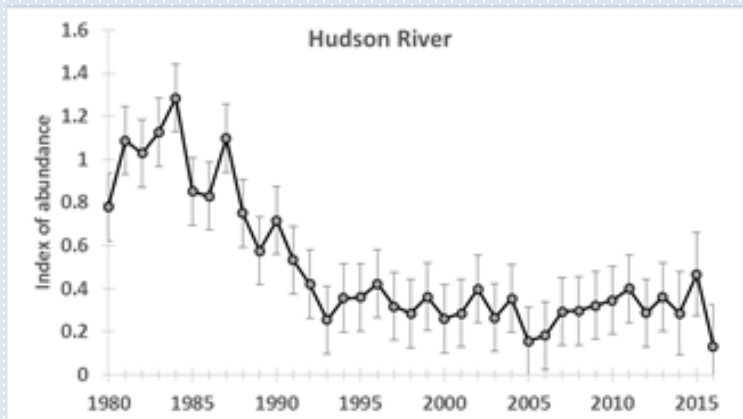
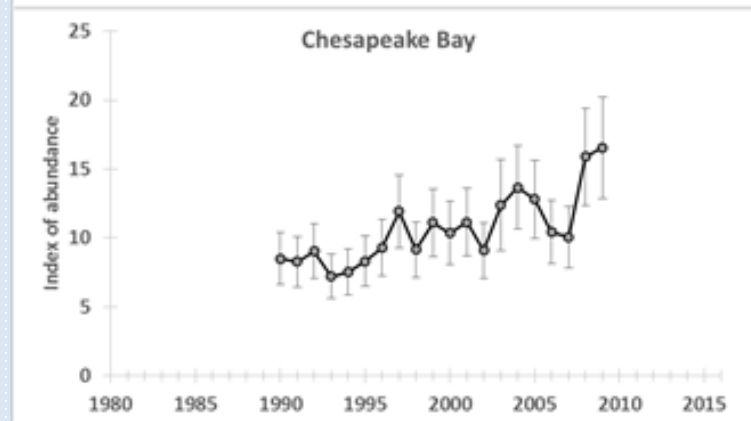
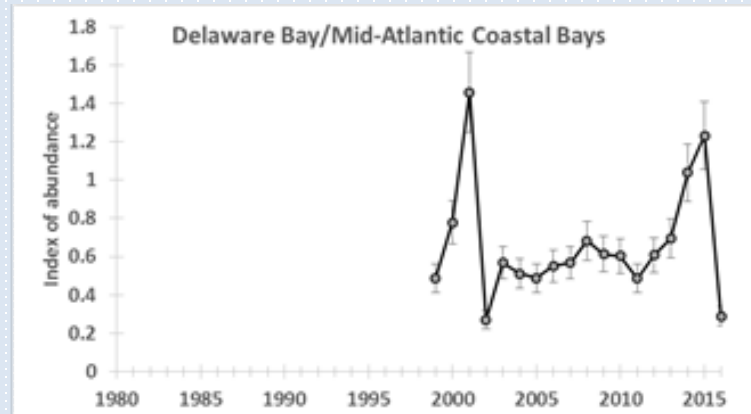
Long-term YOY surveys



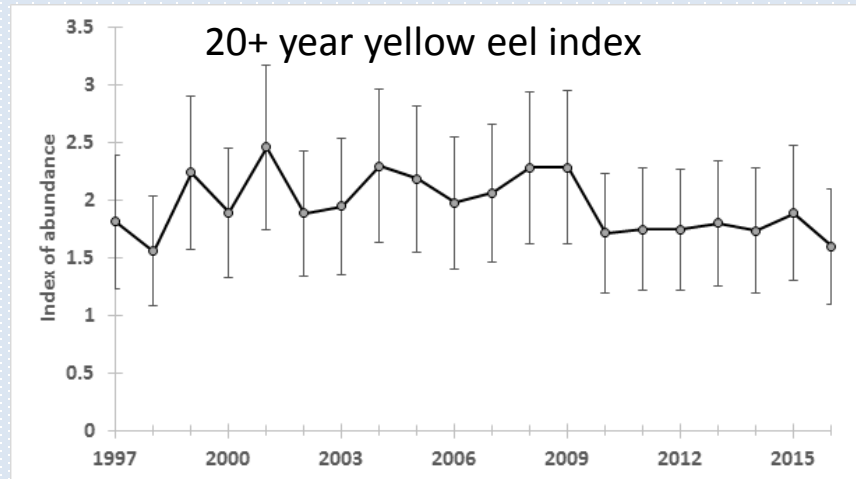
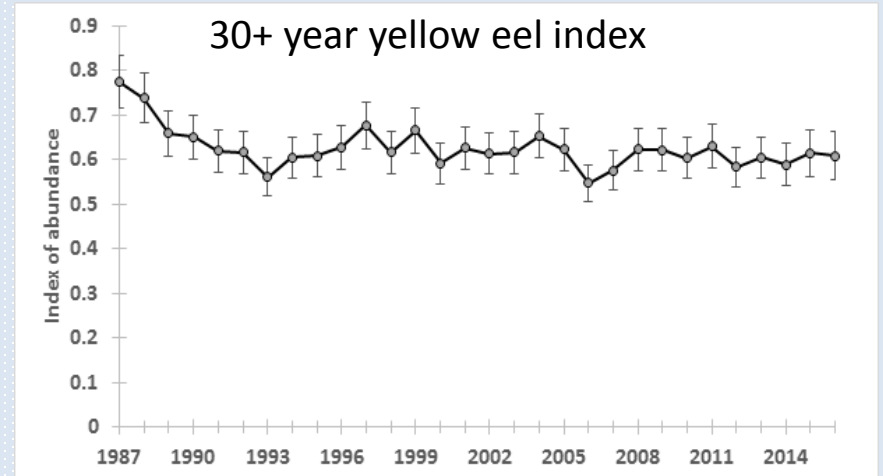
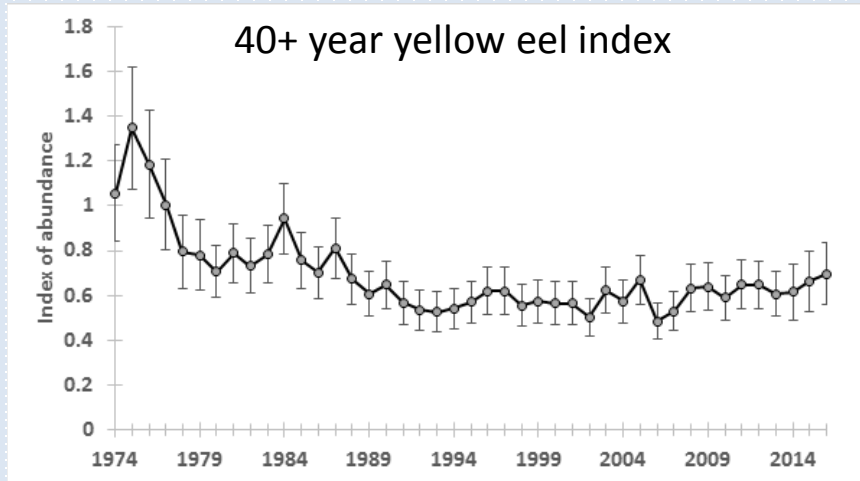
# Regional Yellow Indices

**Gulf of Maine:**  
No yellow  
indices to  
combine

**Southern New  
England:**  
Indices not  
compatible for  
combining



# Coastwide Yellow Eel





# Population Status of American Eel

## Status

- ASMFC- **Depleted along U.S. Atlantic Coast**
  - Stock Status and overfishing status can not be determined due to lack of data and modelling approaches
- US Fish and Wildlife October 8, 2015 ESA Listing Petition – **Not Warranted**
  - The agency did recommend continuing efforts to maintain healthy habitats, monitor harvest levels, and improve river passage
- Gulf Coast and associated drainages including the Mississippi –**Unknown**

# U.S. Atlantic Glass Eel Fishery Landings (Pounds)

	Maine		South Carolina
Year	Landings	Value	Landings*
2007	3,714	\$1,287,479	
2008	6,951	\$1,486,353	
2009	5,199	\$514,629	
2010	3,158	\$592,405	Confidential
2011	8,585	\$7,656,345	Confidential
2012	21,610	\$38,791,627	Confidential
2013	18,081	\$32,926,991	2271
2014	9,688	\$8,440,333	203
2015	5,260	\$11,389,891	124
2016**	9,399	\$13,388,040	Confidential
2017**	9,282	>\$12,000,000	Confidential

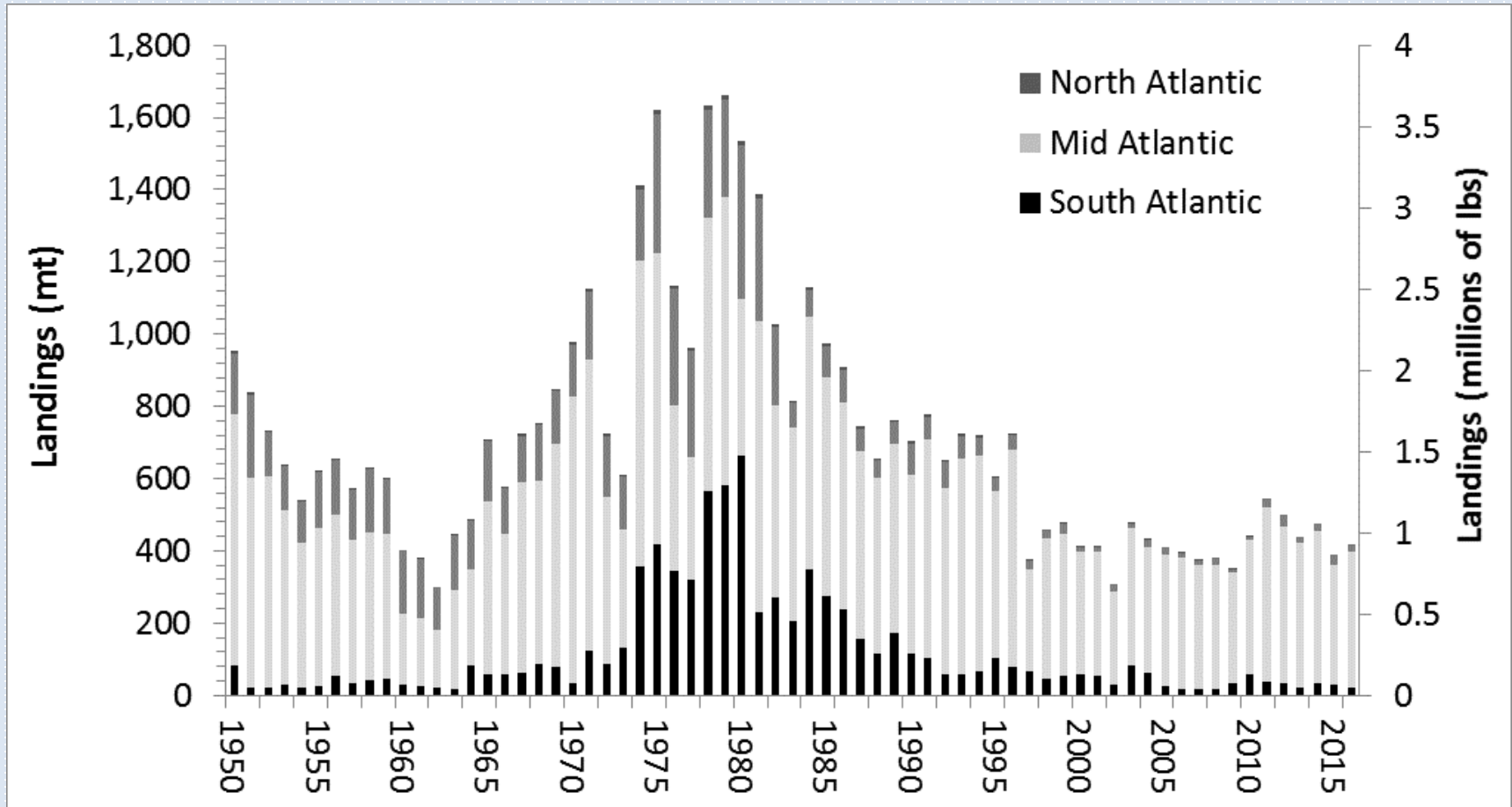
\*\*Preliminary landings (Source: Atlantic Coastal Cooperative Statistics Program)

Source: Bill Post  
[mailto:[PostB@dnr.sc.gov](mailto:PostB@dnr.sc.gov)]

# U.S. Atlantic Coast Yellow Eel Fishery Landing (Pounds)

	Year				
State	2012	2013	2014	2015	2016
ME	12,775	4,596	4,320	3,559	4,509
MA	462	2,499	3,903	2,255	1,705
RI	1,484	2,244	2,353	1,538	2,651
CT	2,228	546	1,390	2,271	2,445
NY	35,603	42,845	38,143	50,194	36,371
NJ	113,806	90,244	91,225	88,828	67,422
DE	54,304	82,991	62,388	44,708	44,558
MD	590,412	587,872	619,935	493,043	583,578
PRFC	90,037	32,290	49,293	31,588	58,223
VA	121,605	100,379	109,537	86,715	96,336
NC	64,110	33,980	60,755	57,791	39,911
FL	11,845	15,059	14,092	5,632	6,034
<b>Total</b>	<b>1,100,881</b>	<b>997,052</b>	<b>1,057,467</b>	<b>868,122</b>	<b>943,808</b>

# U.S. Atlantic Coast Combined American Eel Landings



Total commercial landings of American eel by old geographic region along the U.S. Atlantic Coast, 1950–2016. Landings in 2016 are preliminary.

# Domestic Farming of American Eel

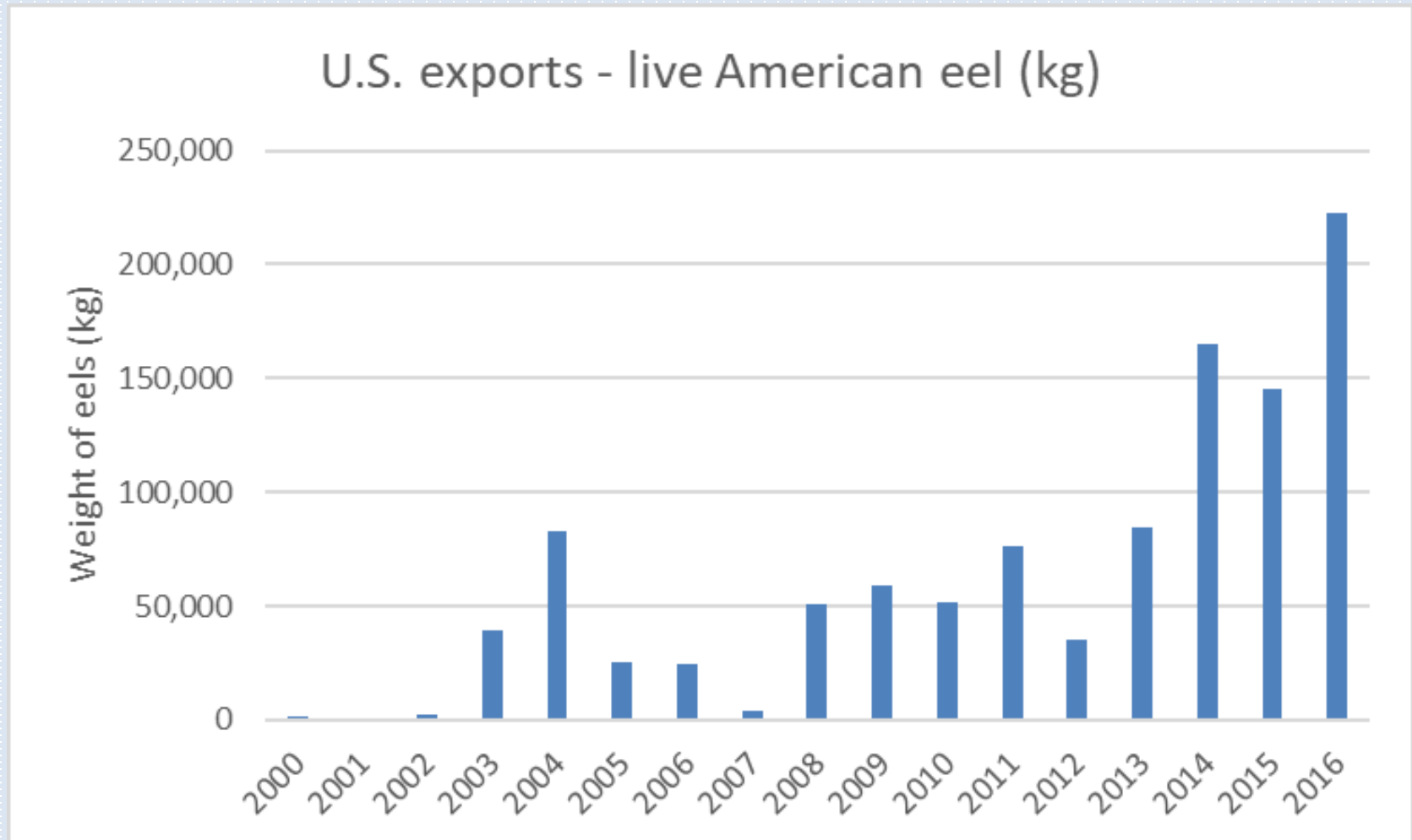
- American eels are beginning to be farmed in the United States in two States, Maine and North Carolina.
- Current Management Allows for up to 200 pounds of glass eels to begin establishment of an eel aquaculture program.
  - Under review is whether to expand this current provision to include pooling across states, up to harvest up to 600 pounds Maine and North Carolina's aquaculture production:
    - Both just beginning operation ( 2014 and 2016, respectively).
    - Both using in-state collected glass eels for brood stock.
      - **Maine: purchased from dealers**
      - **North Carolina: Approved harvest through ASMFC**
  - Both anticipate domestic and export markets.

# U.S. Trade of American Eel



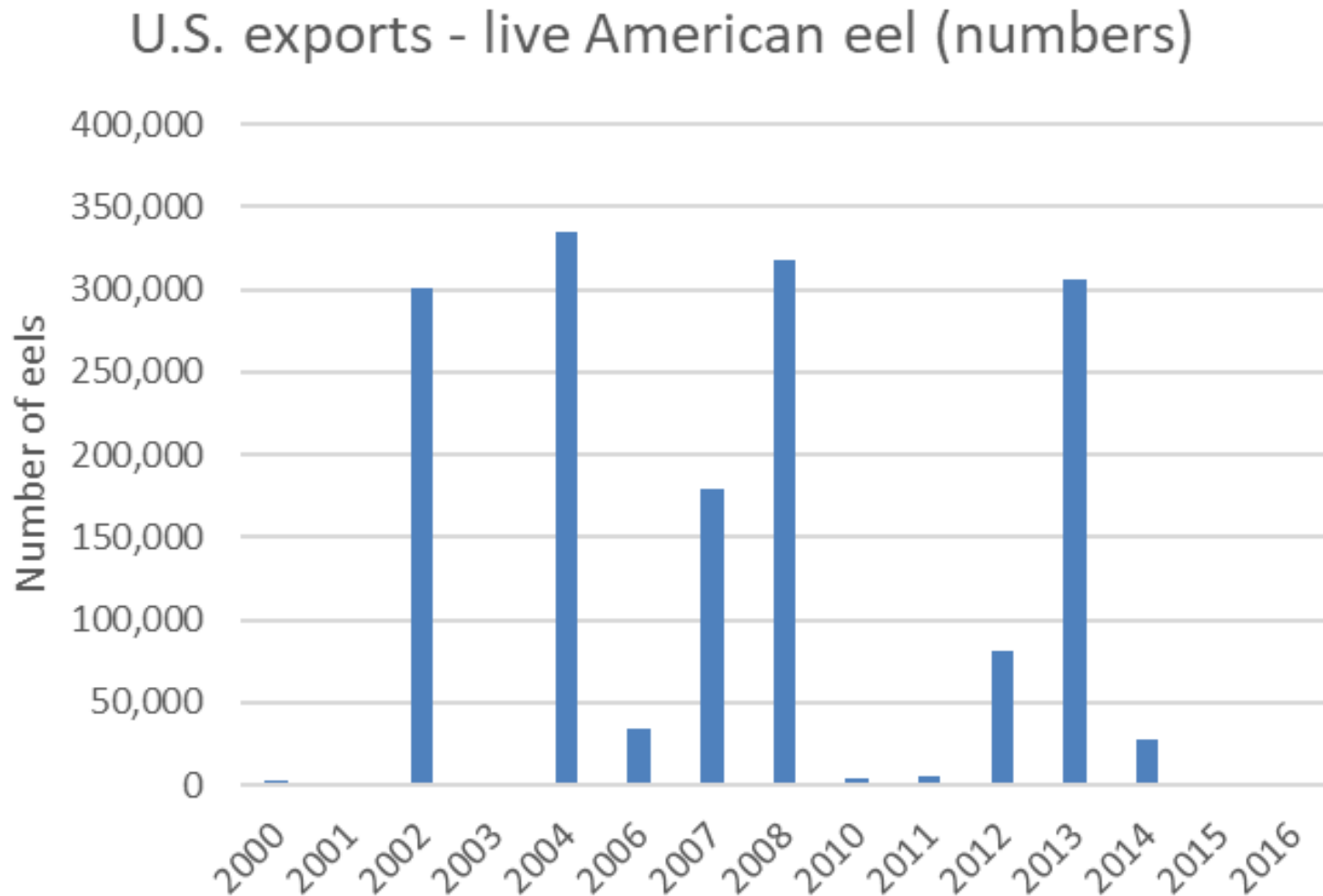


# U.S. Trade of American Eel

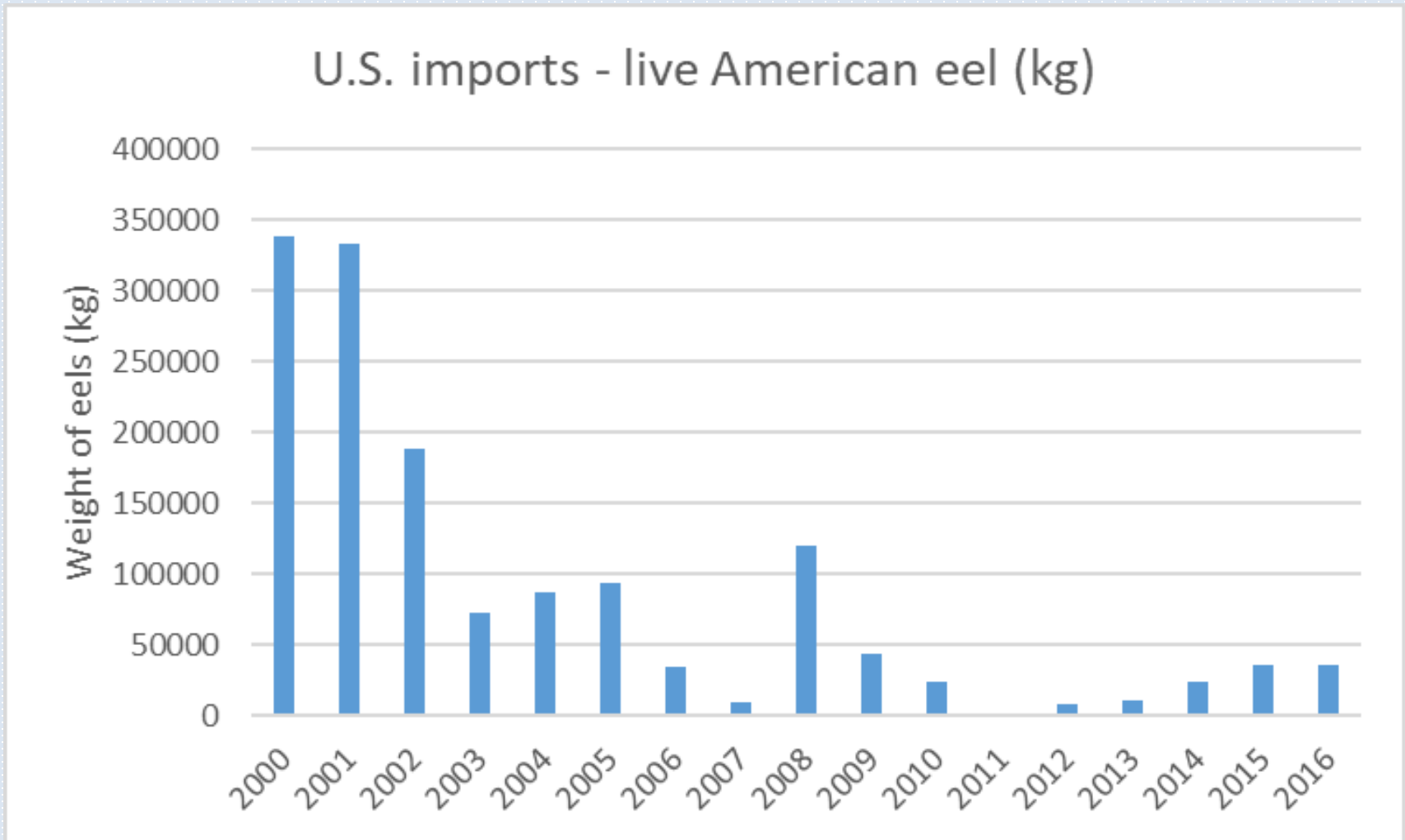




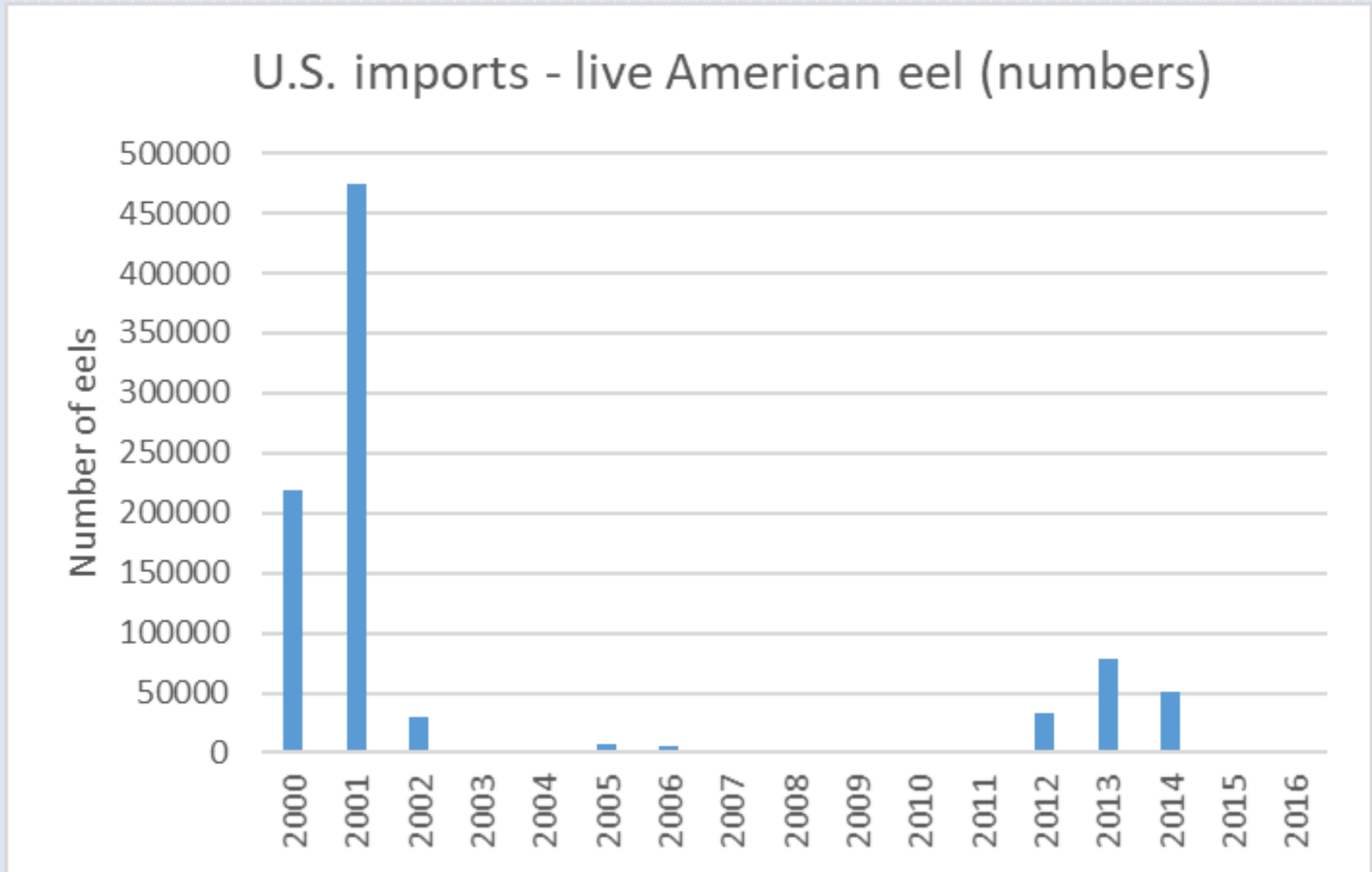
# U.S. Trade of American Eel



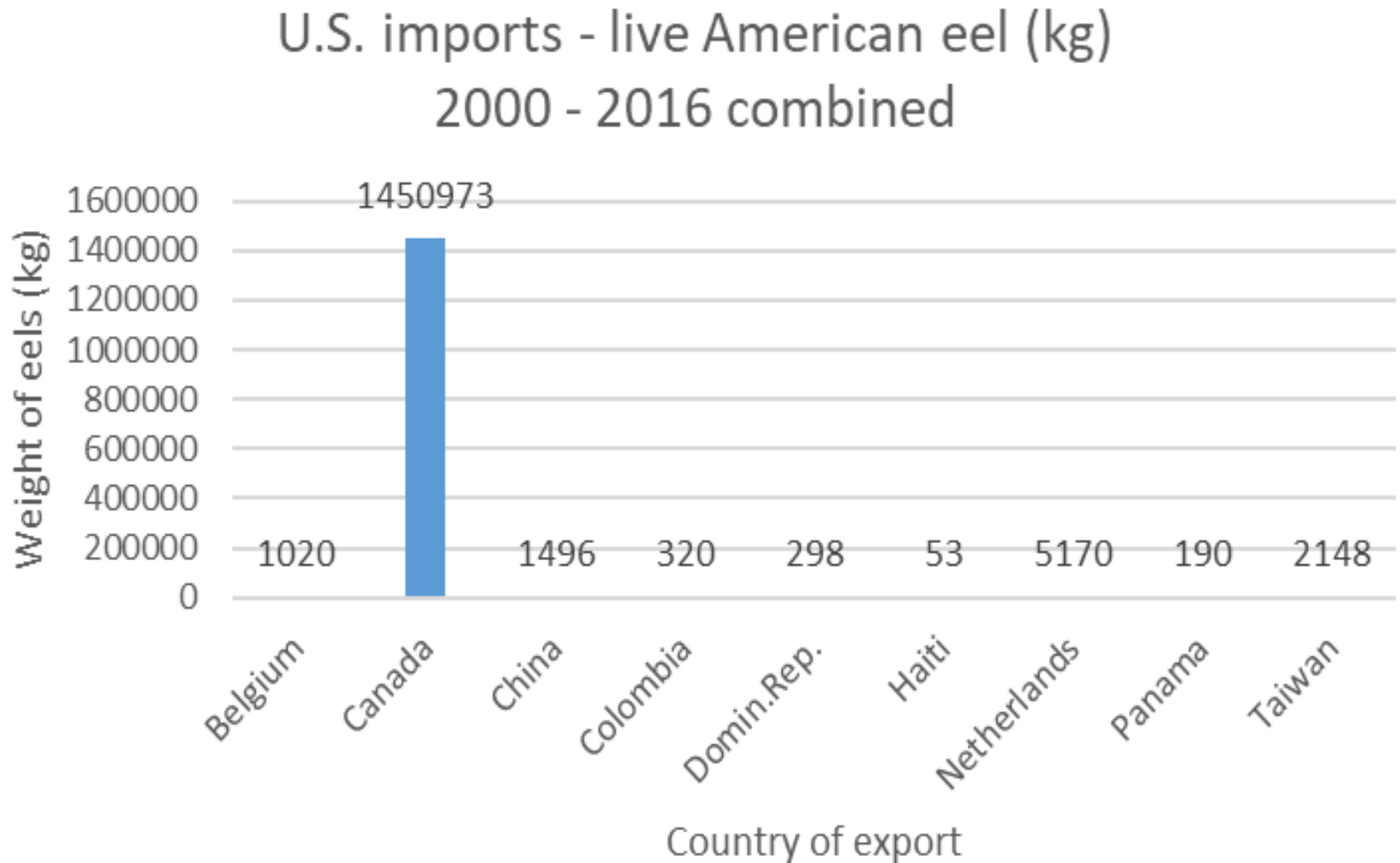
# U.S. Trade of American Eel



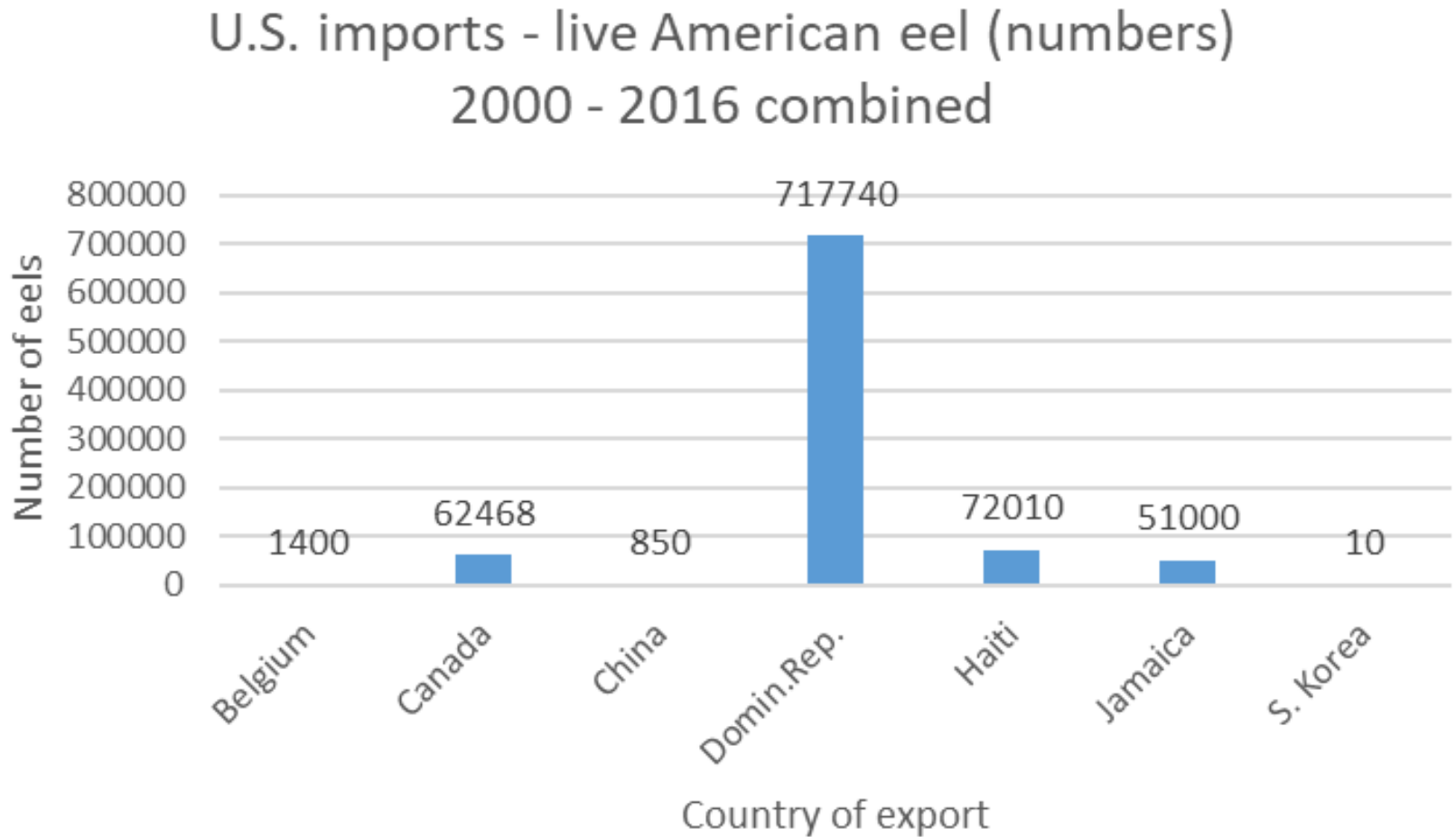
# U.S. Trade of American Eel



# U.S. Trade of American Eel



# U.S. Trade of American Eel



# U.S. Trade of American Eel

- Data presented have been for legal imports and exports of LIVE American eels, into and out of the United States.
- This is only a partial picture of U.S. trade.



# Questions?

