

Sturgeon (Acipenseridae) in the United States:
Conservation Status and Restoration



Daniel Walker
12 February 2014
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Outline

- Acipenseridae**
- Distribution**
- Threats to Sturgeon**
- Current Status**
- Research and Restoration**

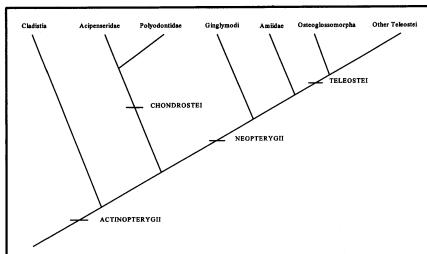
Characteristics

- Heterocercal tail
- 5 rows bony scutes
- Subterminal mouth
- 4 barbels



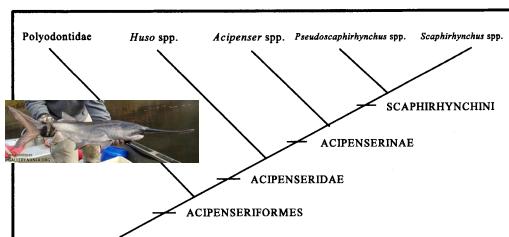
USFWS 2002

Classification



Choudhury & Dick 1998

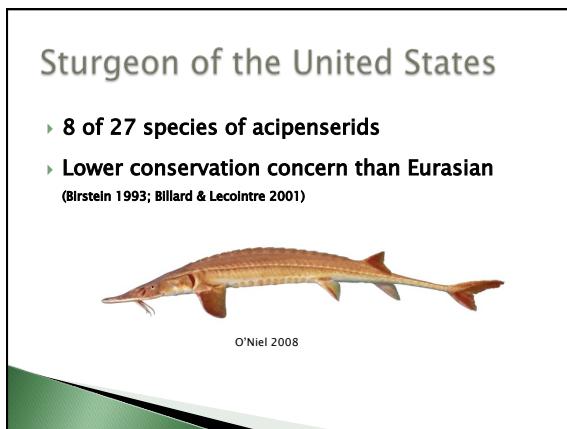
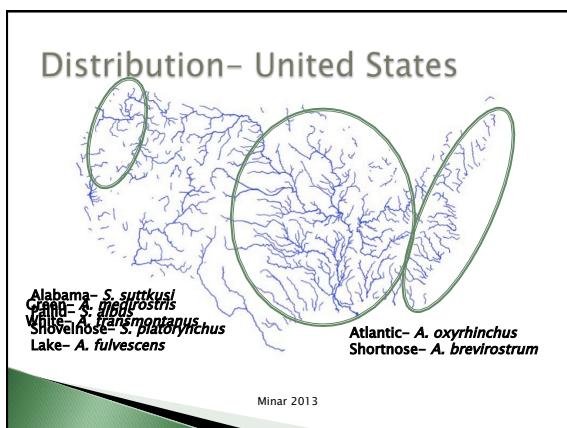
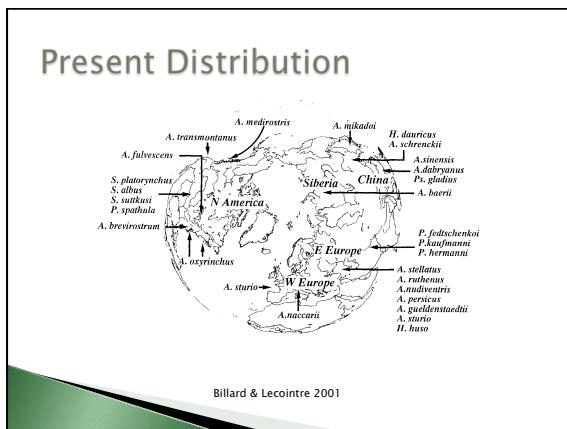
Classification



Choudhury & Dick 1998

Family History

- › Wide dispersal by Cretaceous (Choudhury & Dick 1998)
- › North of 22° N
 - Laurasian dispersal



Threats to Sturgeon

› **Over-fishing** (Smith 1985; Birstein 1993)

- Late 19th C. Industrial Fishing (Secor et al. 2002, Saffron 2004)

- Atlantic
- Shortnose
- White
- Lake



Rich & Tursi 2012

Threats to Sturgeon

› **Habitat Degradation**

- Loss of essential habitat

- Migration, spawning
- Feeding

- Alabama (Rider & Hartfield 2007)

- Green (Adams et al. 2007)

- Pallid (Billard & Lecointre 2001)



Mayden & Kuhajda 1996



Klamath-Siskiyou Wildlands Center

Current Status

- › Alabama- Endangered, 2000
- › Atlantic- 4 DPS Endangered, 1 Threatened, 2012
- › Green- 1 DPS Endangered, 2006
- › Pallid- Endangered, 1990
- › Shovelnose- Considered threatened
- › Shortnose- Endangered, ESA 1967
- › White- 1 DPS Endangered, 1994
- › Lake- Endangered, threatened, protected in 18 states

USFWS 2014

Steps for Conservation

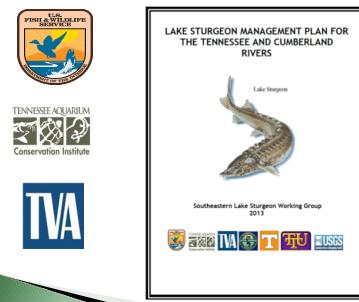
- ▶ Reduce commercial fishing mortality
 - Atlantic & Shortnose (Collins et al. 2000)
 - Cooperation with commercial fishermen (e.g. Rider & Hartfield 2007)
 - ▶ Essential habitat protection
 - ▶ Captive propagation
 - ▶ Public education



Ongoing Efforts

- ▶ **Alabama sturgeon**
 - **Alabama Division of Wildlife and Freshwater Fisheries** (Rider & Hartfield 2007, Rider 2012)
 - **Ongoing sampling efforts for Alabama sturgeon**
 - **Broodstock collection**
 - ▶ **Pallid and shovelnose sturgeons**
 - **Introgressive gene flow from hybridization** (Schrey et al 2011)

Lake Sturgeon in the Southeast



Lake Sturgeon in the Southeast



Saidak 2013

Picture Credits

- Gessner, J., Jaric, I., Rochard, E., & Pourkazemi, M. 2013. Sturgeon and paddlefish research focuses on low risk species and largely disregards endangered species. *Endangered Species Research* 22: 95–97.
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