

Bay to Table: Expanding the Commercial Fishery for Invasive Blue Catfish (*Ictalurus furcatus*) in the Chesapeake Bay, USA

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Emerging Species = Emerging Opportunities?

- Provide additional fishing opportunities to support diversification
- Economic benefits to fishermen and coastal communities
- Reduce vulnerability and *increase resilience* to ongoing environmental changes
- Unintended consequences

Noun. invasivorism (plural invasivorisms) the act of eating invasive species as a method of population control.

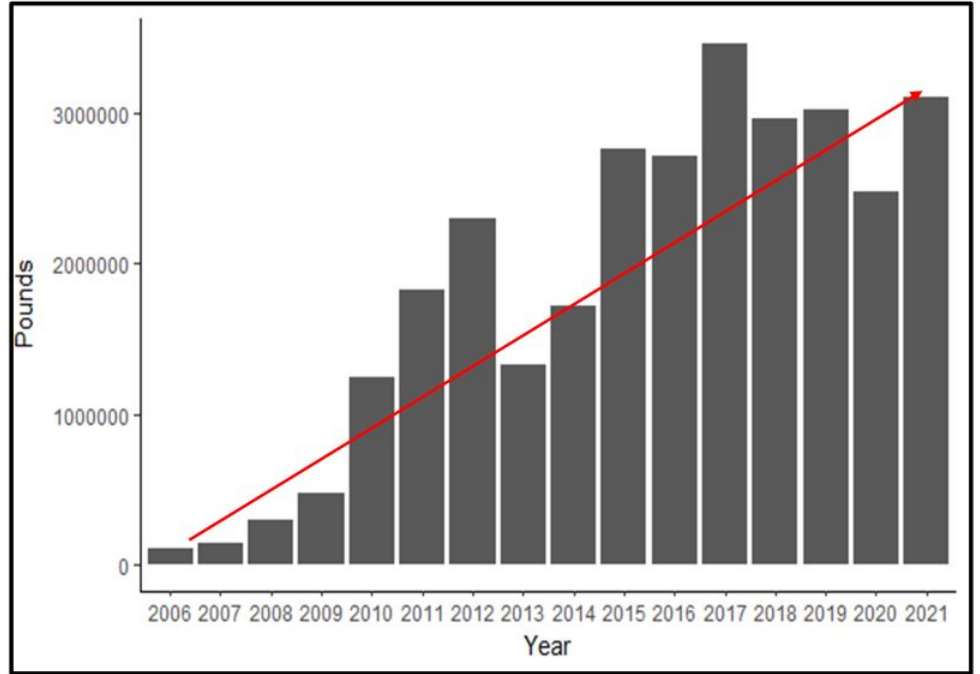
BLUE CATFISH



Ictalurus furcatus

Potential for a Commercial Fishery?

- Small, but growing fishery (100,000 lbs in 2006 to >3.1 million pounds in 2021)
- Barriers to expansion
 - Low market values
 - Processing constraints – USDA inspections
 - Limited consumer demand
 - Regulations
 - Diversification



Objectives

1) Ex-vessel price

Evaluate changes in fishing behavior in response to market price through a paper-based survey to Virginia's small-scale fishermen

2) Processing constraints

Evaluate barriers and bottlenecks to expansion through semi-structured interviews with seafood processors

3) Consumer demand

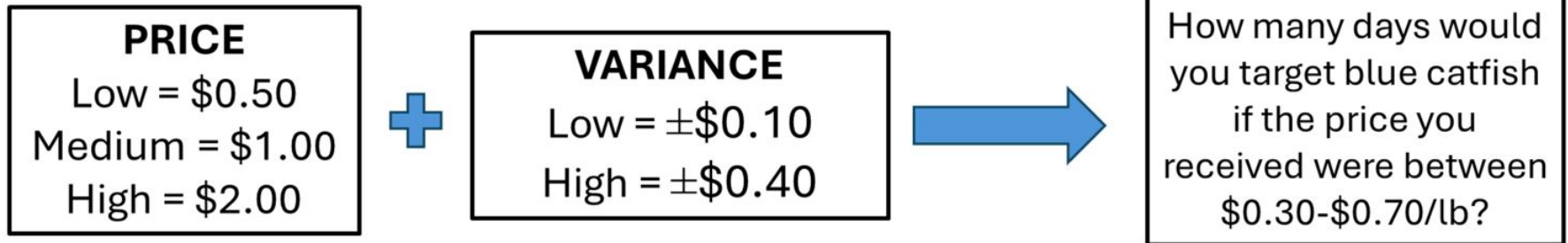
Evaluate consumer seafood preferences through an online survey in the Mid-Atlantic and Southeast US

A fisherman in a red and yellow jacket is pulling a large fish from a net on a boat. The fish is dark and long, and the net is white. The background shows a body of water and a distant shoreline with some buildings.

Ex-Vessel Price *Survey to Virginia's Watermen*

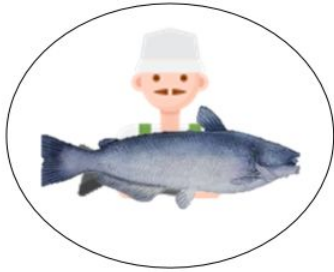
Survey Development for Waterman Survey

- 36-40 questions, depending on responses
- Past and current participation and diversification in commercial fisheries, sociodemographic information, perceptions, barriers for participation, and hypothetical contingent behavior scenarios

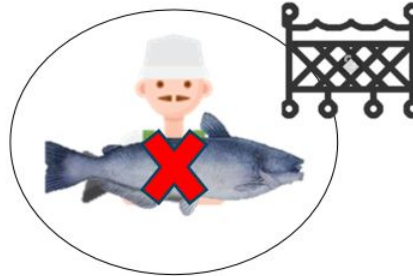


Survey Implementation

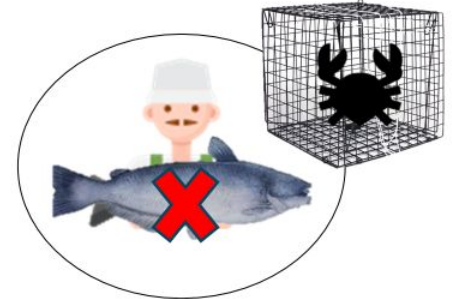
- 800 surveys distributed using Dillman et al. (2009) approach



Landings ≥ 100 lbs
between 2017-2021
(n=224)



Licenses/permits for
gears that could be used
for harvest (n=288)



No licenses/permits
for gears that could be
used for harvest
(n=288)

Survey Responses

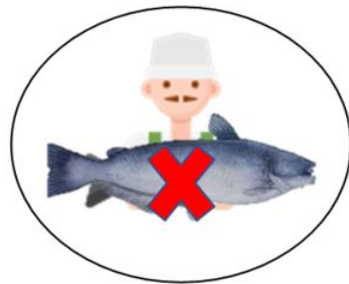
- Diversification across species, gears, and income sources → blue catfish fishermen are more diversified
 - Targeted blue catfish an average of 55.4 \pm 66.5 days
 - Bycatch also an important aspect of fishery
 - Ecological concerns regarding blue catfish expansion
- Average ex-vessel price received in 2021 → \$0.53

TOP THREE REASONS FOR NOT TARGETING BLUE CATFISH?

1) Lack of interest

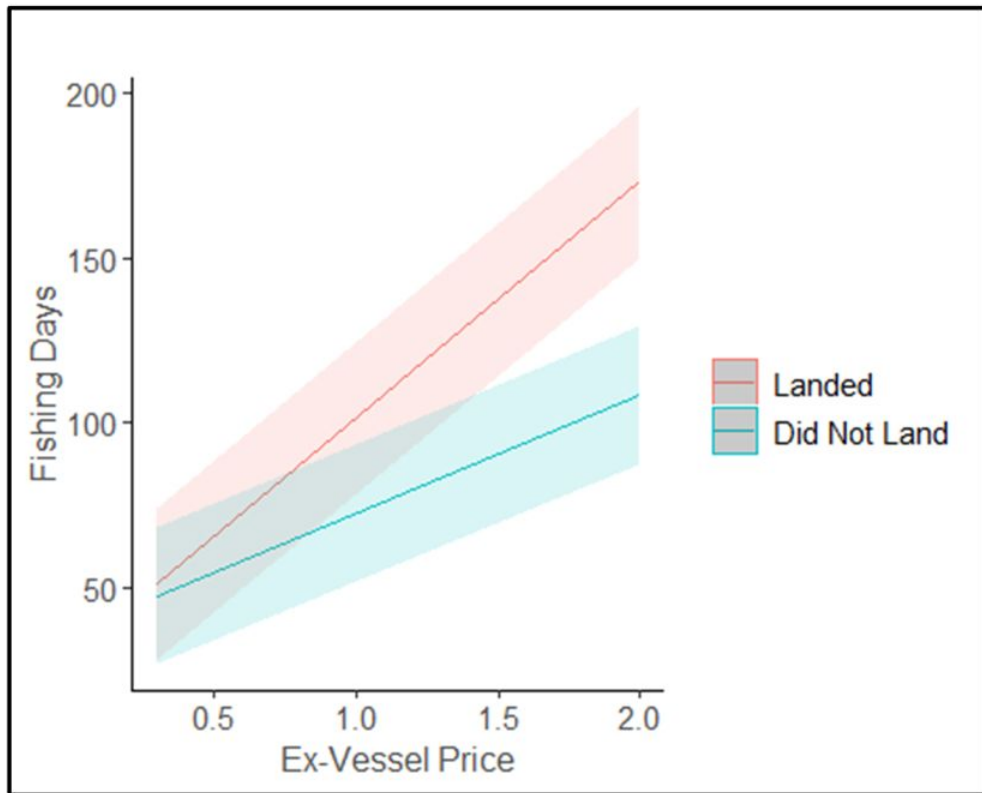
2) Lack of gear

3) Lack of availability in fishing area



Models

- Ex-vessel price highly significant in models – 49.4 more fishing days with a \$1 increase
- Variability of ex-vessel prices is not significant
- More factors may drive participation than ex-vessel price



A background image showing a seafood processing facility. In the foreground, several large, pale, skinless fish fillets are laid out on a stainless steel table. In the background, a person wearing yellow gloves is using a knife to process a fish on a white cutting board. The scene is brightly lit, and the overall atmosphere is industrial and clean.

Processing Constraints

Interviews with Seafood Processors

Semi-Structured Interviews with Seafood Processors

- Phone interviews with processors who had purchased blue catfish between 2017-2021 (n=6)
- Sentiment analysis
- Labor shortages, rising input costs, graying of the fleet, price discrepancies
- Product marketing and consumer education – blue catfish fishery outlook is generally positive



Scheld, A., W.R. Calhoun, C.B. Gilsinan, and S.B. White. 2024. Market development for an invasive species. *Fisheries Research* 278, 107099.

A photograph of a plate of food, featuring a large piece of grilled fish (likely salmon or trout) with a golden-brown crust. The fish is surrounded by grilled asparagus spears, cherry tomatoes, and lemon slices. The plate is ornate with a gold-colored pattern. The background is a light-colored wooden surface.



Limited Consumer Demand

Online Seafood Consumer Survey

Online Seafood Consumer Survey

- Discrete choice experiment with six treatment groups receiving various information
- 1,010 respondents from Mid-Atlantic and Southeast US
- 1/3 of respondents had tried blue catfish and another 1/3 would be willing to try it
- More information tends to increase likelihood of choosing blue catfish

CHOICE SCENARIO

	Option A	Option B	Option C
			Do not purchase
Species Name	Blue Catfish	Channel Catfish	
Production Method	Wild-Caught	Farm-Raised	
Origin	United States	Mississippi	
Price per Pound (\$)	\$14.11	\$14.11	

Scheld, A., W.R. Calhoun, C.B. Gilsinan, and S.B. White. 2024. Market development for an invasive species. *Fisheries Research* 278, 107099.

Summary

- Higher ex-vessel price has the potential to increase fishing days for blue catfish
- Processors generally have a positive outlook on the future of the blue catfish fishery
- Increasing familiarity with seafood products, including blue catfish, increases consumer demand

