

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.

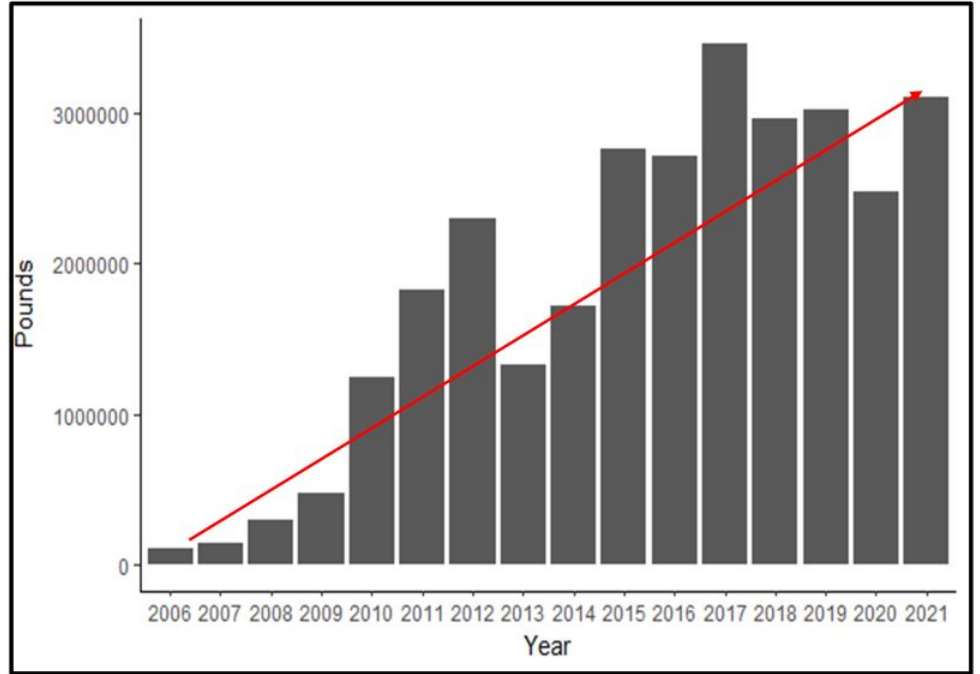
BLUE CATFISH



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

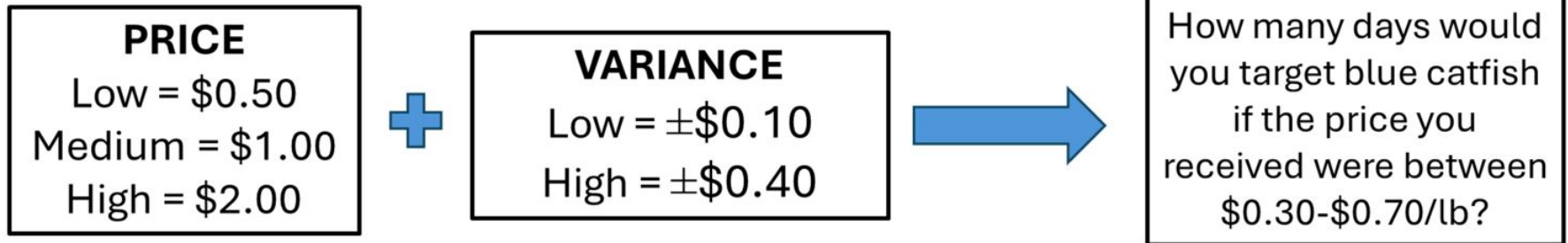
Evaluate consumer seafood preferences through an online survey in the Mid-Atlantic and Southeast US

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*

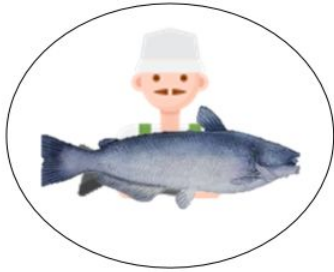
Survey Development for Waterman Survey

- 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

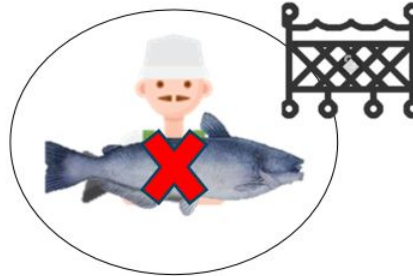


Survey Implementation

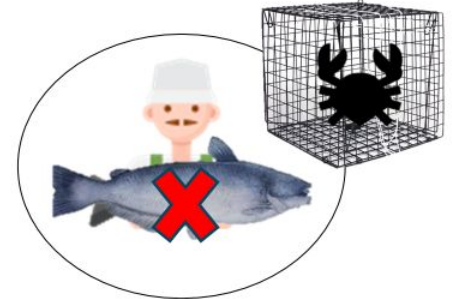
- 800 surveys distributed using Dillman et al. (2009) approach



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

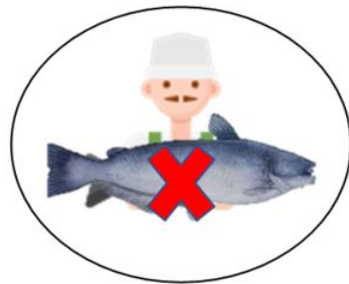
- Diversification across species, gears, and income sources → blue catfish fishermen are more diversified
 - Targeted blue catfish an average of 55.4 ± 66.5 days
 - Bycatch also an important aspect of fishery
 - Ecological concerns regarding blue catfish expansion
- Average ex-vessel price received in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

TOP THREE REASONS FOR NOT TARGETING BLUE CATFISH?

1) Lack of interest

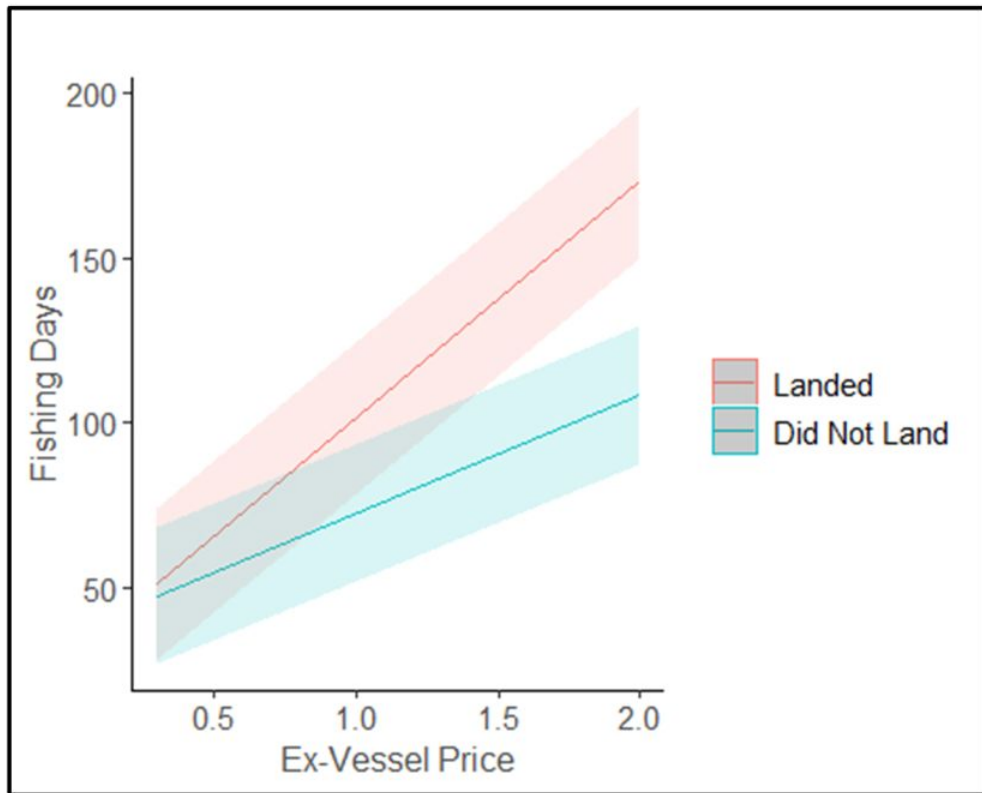
2) Lack of gear

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, two workers wearing yellow gloves are using knives to process fish on white cutting boards. 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 close-up photograph of a glass plate with a decorative pattern, containing a meal of grilled salmon, asparagus, cherry tomatoes, and lemon slices. The text is overlaid on the center of the image.



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

