

Center for Experimental & Applied Economics





Consumer Preferences for Oysters: Field Experiments on Brand, Location, Growing Method and Environmental Benefits

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Sunny Jardine, George Parsons, John Ewart, Joanna York, Ed Lewandowski, Doris Hicks, Jacob Fooks, Maddi Valinski, Walker Jones, Tongzhe Li, Francesca Piccone, Kaitlynn Ritchie, Jeremy Keeler "He was a huge, illiterate brute, an ex-Chesapeake-Bay-oyster-pirate..." (Jack London, The Road)

"...I had attained a dizzy reputation in my chosen circle of adventurers, by whom I was known as the Prince of the Oyster Pirates." (Jack London, The Road)

Port Norris Baseball Team--1931 Oyster League Champs



Back row-"Possum" Gandy, Earl Brown, Harry Newcomb, Bill Riggin, umpire Mac Fowler, Luther Jeffries and Bob Rudolph. Front row-"Jiggs" Robbins, Harry Brown, Lee Robbins, Dave Dunham, Norman Jeffries, Fenton Anderson and Wilbert Robbins.

Consumable Private Good



In 2014 the United States produced 9.5 billion pounds of oysters valued at \$5.5 billion. (NOAA 2016)

"Green" Public Good



- NOAA supports using shellfish aquaculture as part of nutrient management efforts to offset eutrophication of estuaries and the negative impacts on ecosystems.
- Cost-effective BMP (Rose et al. 2014)

Oyster Decline

- Chesapeake and Delaware Bay oyster numbers have declined by 90-99% over the past century, while 85% of oyster reefs have been lost in the U.S. (Beck 2009).
- 65% of assessed estuary systems in the United States reported moderate to high eutrophication (Bricker et al. 2008).
- In the Chesapeake Bay oyster populations once filtered the entire water of the Bay every week (NOAA, Chesapeake office).
- Delaware is currently the only coastal State without a commercial shellfish aquaculture.

U.S. Oyster Sales (dockside) 2010 - 2014



Oyster Dock-sales by State, NOAA (2016) New Jersey and New Hampshire – Not available.

Research Questions

As Economists we are interested in how people make decisions.

 People make decisions based on information and preferences.

 Little information exist about how consumers' preferences for oysters.

Research Questions

What do consumer preferences look like? and how much are consumers willing-to-pay for different oyster attributes?

- (1) Brand name
- (2) Location
- (3) Growing method: aquaculture versus wild
- (4) Environmental benefits
- (5) Demographic differences

Experimental Design

Dichotomous Choice Experiment	
Before Experiment	• Participants were set up with \$10.
	• Purchase quantity: 3, 6, 9 or 12.
	• Raw, fried or take-home.
During Experiment	 6 Yes or No decisions to random posted prices (mean = \$1.50 and standard deviation = \$0.50).
After Experiment	 1 decision was randomly determine

Experiments at the 16 Mile Brewery, Famous Joes Tavern, AG Day and the DMV



Results 1

Brand Name – Location – Growing Method

Willingness to pay: \$0.81 per oyster

Wild-caught Blue Points

Little Bitches from the Chesapeake Bay in VA

Aquaculture from Plymouth Rock MA

> Aquaculture from the Chesapeake Bay in VA

Wild-caught from Long Island NY Significant drop in willingnessto-pay:

Nauti Pilgrims from Plymouth Rock MA: \$0.28

Aquaculture Nauti Pilgrims: \$0.27

Aquaculture Little Bitches: \$0.30

Blue Points from Long Island NY: \$0.04

Results 2

Brand Name – Location – Growing Method

(1) Brand names by themselves do not significantly raise the willingness-to-pay.

(2) Harvest locations by themselves do not significantly raise the willingness-to-pay.

(3) Overall participants were willing to pay more for wild-caught oysters than aquaculture oysters .

Results 3 Demographics

- First time consumers did not have any detectable preferences (other than price) and their overall willingness-to-pay was \$0.48.
- Frequent oyster consumers preferred aquaculture oysters.
- Participants that purchased 6 oysters were willing to pay \$1.35 per oyster.
- Participants that purchased 12 oysters were willing to pay \$2.12 per oyster.

Results 4

Preferences for Environmental Benefits

- Telling participants that oysters came from a water column that contains moderate to high nutrient levels increased the willingness-to-pay by up to \$0.60 per oyster.
- The National Oceanic and Atmospheric Administration (NOAA) classified the Delaware Inland Bays as moderately eutrophic.
- However, too much information about the water quality and the filter feeding cleansing ability of oysters lowered demand for all oysters.
- Food safety concerns and potential disgust might be more important than the environmental preferences.

The Oyster Logo



INLAND BAYS OYSTERS A Southern Delaware delicacy.



- 64% of our participants thought the umbrella logo was appealing.
- Among tourists we find that 13% said they would pay higher prices for oysters accompanied by this logo.
- Among local residents 28% said they were willing to pay higher prices for oysters accompanied by this logo.



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Thank you!



