



# The Price of Bycatch

Examining the Economic Value of Discards in U.S. Fisheries

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# Where We're Going



**Brief Background**



**Results**



**Project Goals**



**Management Uses**



**Methods**



**Next Steps**



# Background, in Brief



## Fisheries Economics

- Valuable industry in the U.S. and around the world
- Supplying food, seafood products, retail sales, and jobs
- A world of modeling



## Bycatch Valuation

- Many types – direct losses, ecosystem losses, opportunity costs
- Growing field, but few studies to date



## Challenges

- All fisheries are unique – overview studies are difficult
- Data availability



# Project Goals + Methods



## Valuing Discards

What would discarded fish be worth if they were landed and sold?



## Bycatch Data

### 2014 National Bycatch Report

- ✓ Compiled stock discards by region
- ✓ # of individuals → pounds



## Ex-vessel Price

### NOAA Commercial Landings Database

- ✓ 2012 ex-vessel price for each stock

$$\text{Discards}_{(\text{lbs} + \text{individuals})} \times \text{Price}_{(\$/\text{lb})} \rightarrow \text{Value}_{(\text{species 1})} + \text{Value}_{(\text{species 2})} \dots \rightarrow \text{\$Value}_{(\text{REGION})}$$

$$\text{Regional Value (\$)} \div \text{Total regional lbs} = \text{Average regional price per discarded lb}$$

# Results



## Regional Values



	<b>Regional Discards (million lbs)</b>	<b>Value (\$ millions)</b>
<b>Northeast</b>	142	83
<b>Southeast</b>	250	242
<b>Alaska</b>	203	121
<b>Northwest</b>	22.5	23
<b>Southwest</b>	3	0.8
<b>Pacific Islands</b>	8.9	3
<b>National</b>	628	475

# Results



## Regional Values



	<b>Regional Discards (million lbs)</b>	<b>Value (\$ millions)</b>	<b>Price (\$/lb)</b>
<b>Northeast</b>	142	83	0.58
<b>Southeast</b>	250	242	0.90
<b>Alaska</b>	203	121	0.60
<b>Northwest</b>	22.5	23	1.03
<b>Southwest</b>	3	0.8	0.24
<b>Pacific Islands</b>	8.9	3	0.37
<b>National</b>	628	475	0.75



# Results



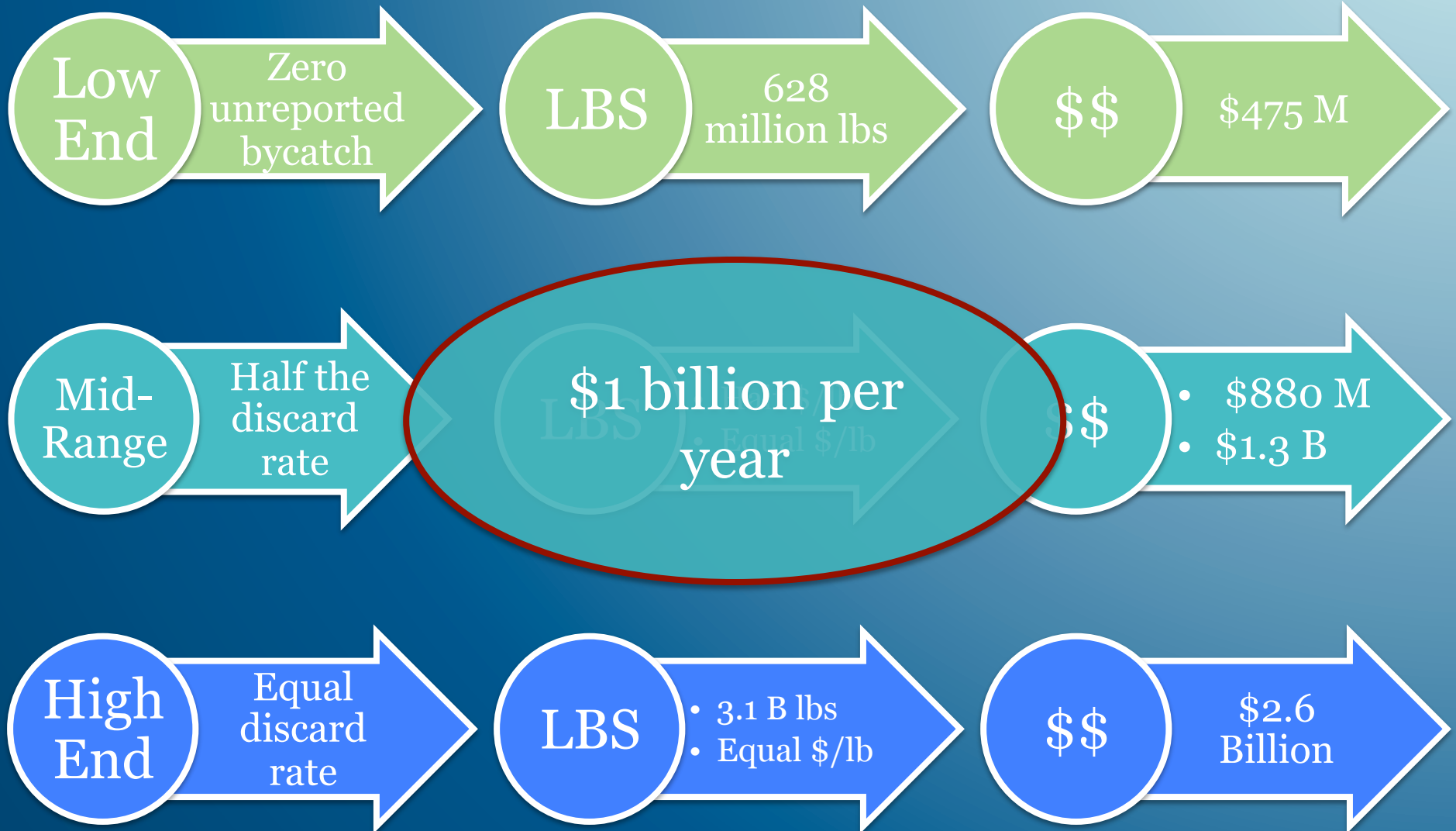
## Species Values

Pacific Halibut	\$58.7
Seatrout	\$45.5
Atlantic sea scallop	\$32.7
Red snapper	\$27.2
Atlantic croaker	\$25.4
Sablefish	\$11.5
Longsping porgy	\$11.3
Monkfish	\$7.5
Summer flounder	\$7.2
Red grouper	\$6.7
King mackerel	\$4.3
Sole	\$3.9
Pacific cod	\$3.9
Atlantic bluefin tuna	\$3.4
Dungeness crab	\$3.1
Atlantic cod	\$2.8
Snow crab	\$2.4
Winter flounder	\$1.9



# Scaling Up for a Range

Reported fisheries only account for approximately 60% of U.S. landings





# The Caveats



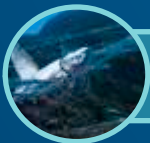
## Reason for discarding

- Regulatory – varying proportions across fisheries
- Economic - quality and size



## Oversimplification

- Not accounting for market dynamics of supply and demand
- Not assessing how lost income further impacts sales revenue or jobs



## So.... What's the use?

- Value in simplicity
- Comparing different approaches
  - Results don't change *that* much: billions in discards

# Policy Implications



## Value of discards

- Some stocks: significant portion of landed value discarded
- Some fisheries: significant portion of ex-vessel value in discards



## Using economic tools

- Tradeable bycatch quotas
- Bycatch taxes and deemed value systems
- Insurance and assurance bonds



## Market-based incentives

- Certifications
- Consumer-driven labeling





Questions?



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