

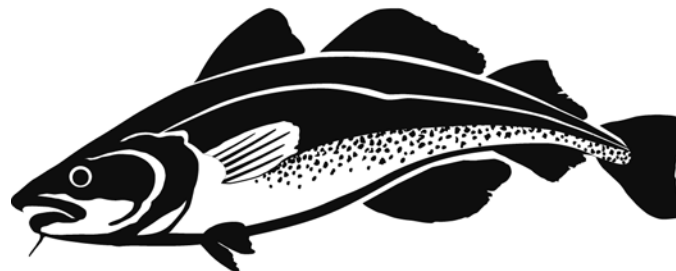
# DMF Public Hearing Commercial Whelk Management

April 18, 2013

Massachusetts Maritime Academy  
Buzzards Bay, MA

**Marine Fisheries**

Commonwealth of Massachusetts



# DMF Proposals for Public Hearing

- 1) Increase the minimum size from 2.75” to 3.5” (schedule to be decided);
  - 2) Prohibit the baiting of any fish pot or lobster pot, other than a conch pot or eel pot, with horseshoe crabs;
  - 3) Retire the 31 conch pot permit endorsements that did not fish at any time between 2007 and 2011;
  - 4) Eliminate the sub-legal possession tolerance; and
  - 5) Develop a new standard gauge and method of measurement.
- 
- In the future: Require owner on board for all conch pot permit holders similar to the Coastal Lobster Permit requirements



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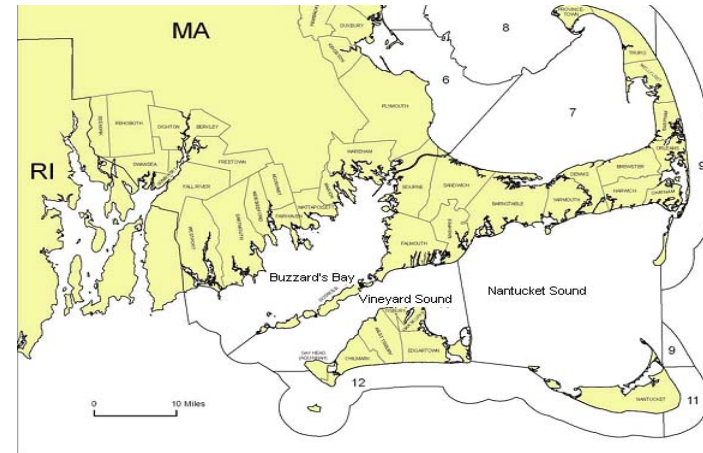
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# Channeled Whelk Fishery

- 2012 Landings – Over 3.6 million pounds (highest in time series)
- MA landings value >\$6.1 million
- Caught using traps



- Most harvested from Nantucket Sound (>2 million pounds)
- Most of landings occur between September and December
- 155 license issued and approximately 80 active fishermen per year



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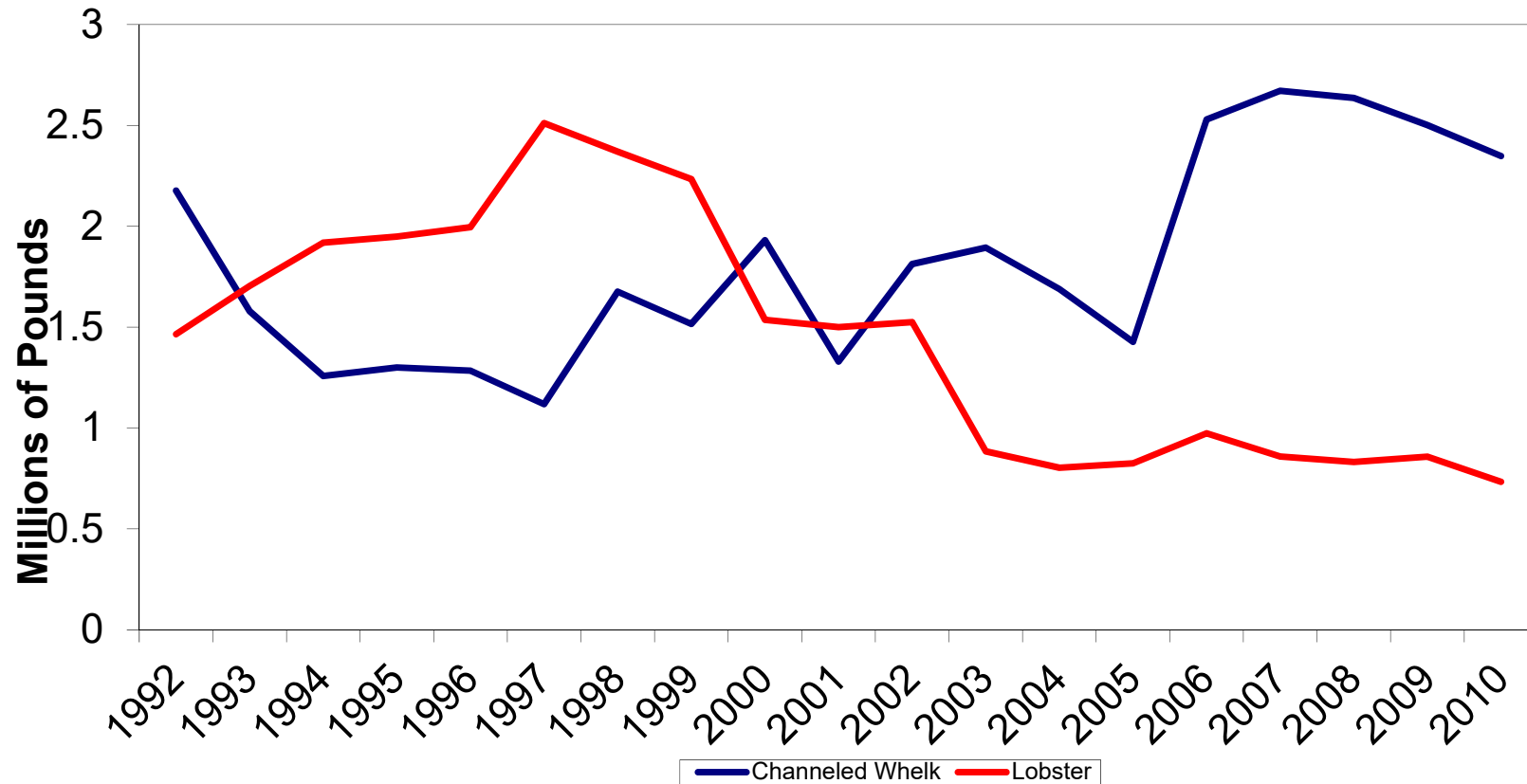
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# Landings Data



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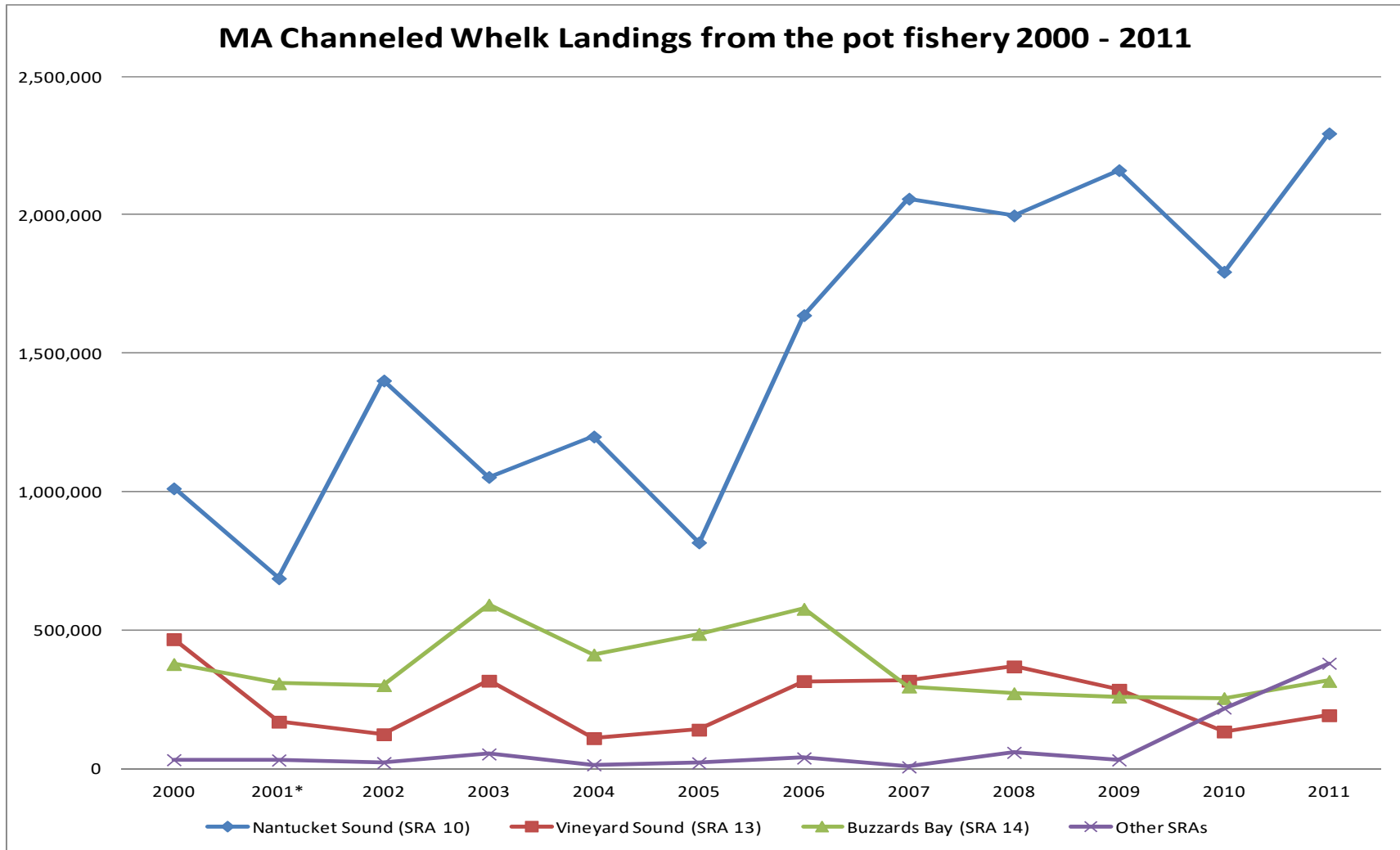
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# Commercial Conch Pot Landings By Region



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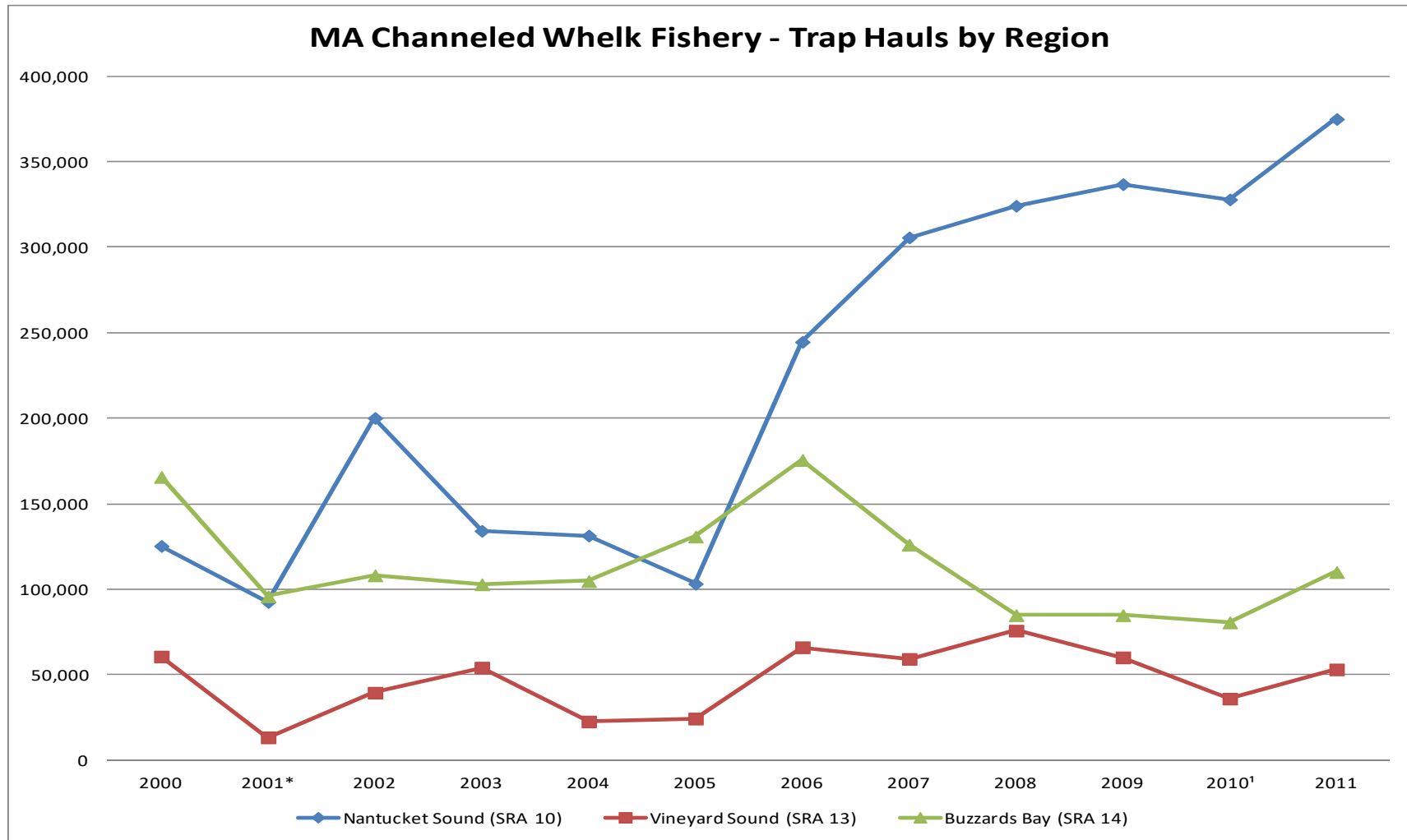
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# Effort In Conch Pot Fishery By Region



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# Whelk Price and Value Trends

## Dealer Reported Massachusetts Landings and Value All Whelk Species & All Gear Types

Year	Live Pounds	Estimated Value	Price Per Pound
2006	2,877,622	\$3,523,419	\$1.22
2007	2,760,765	\$2,692,080	\$0.98
2008	2,839,618	\$3,306,214	\$1.16
2009	3,021,869	\$3,847,648	\$1.27
2010	2,904,902	\$4,360,585	\$1.50
2011	3,153,630	\$6,180,435	\$1.96



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# Conch Pot Permitting Trends

## Conch Pot Endorsements and Reporting Status

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Permits Issued	164	161	165	166	166	159	155	155	155	153	151	148	146
Permits Fished	84	83	97	87	88	79	96	96	88	90	81	86	91



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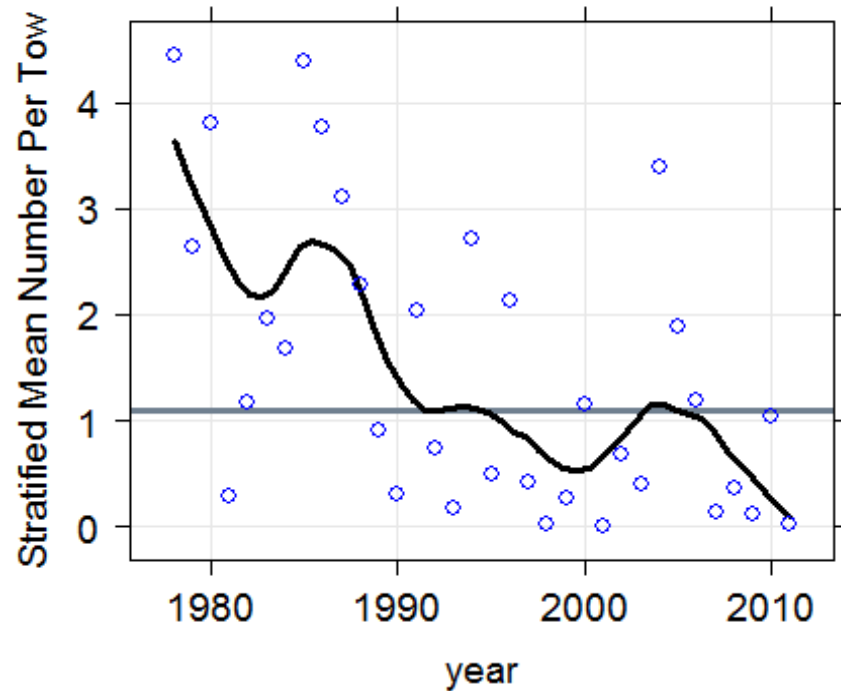
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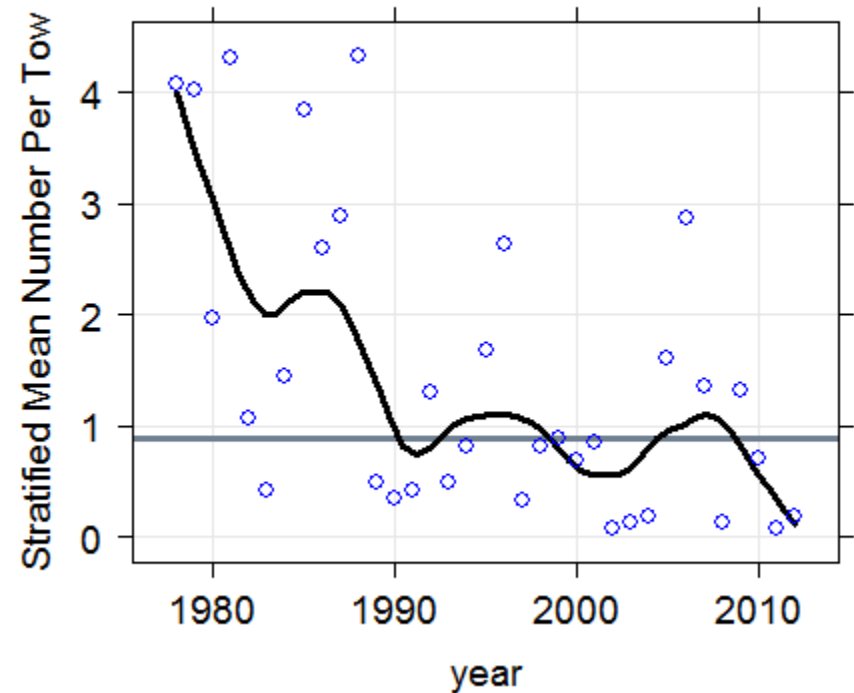


# MADMF Trawl Survey Abundance Trends

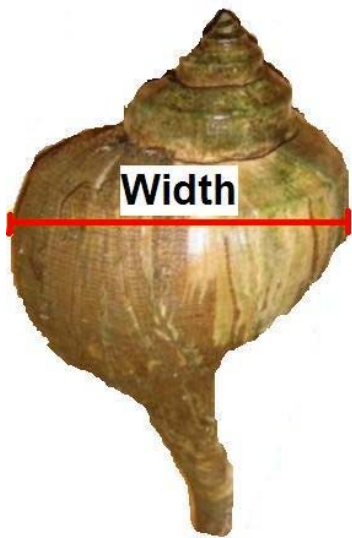
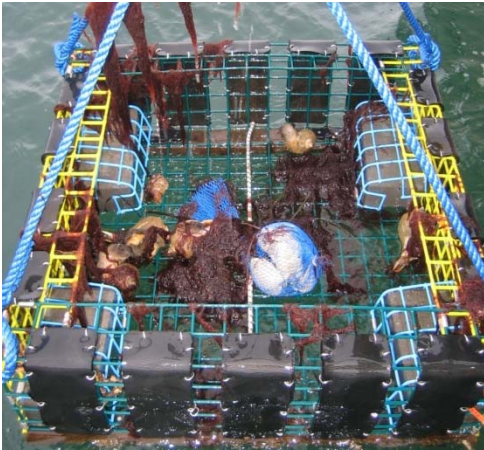
## Channeled Whelk MADMF Fall Survey



## Channeled Whelk MADMF Spring Survey



# Current Commercial Whelk Regulations



- Minimum legal size of 2 ¾" width
  - No standard gauge
  - Tolerance for undersized: EPO must measure 10% of catch. Up to 5% by count may be undersized. If more than 7% is undersized the entire catch is seized.
- Maximum of 200 conch pots.
- Closed Season: December 15 – April 14.
- Limited Entry on conch pots since 1990
  - 2010-2012 temporary moratorium permit transfers has been lifted
  - Transfer rules no require that permit is actively fished for 4 out of past 5 years
  - Active fishing means at least 5,000 pounds per year.
- By-catch tolerance for Lobster Permit holders
  - Weight of conch and fish cannot exceed weight of lobsters.
- Catch and retention by mobile gear is authorized and not subject to trip limit



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# Channeled Whelk Life History

- Females anchor egg casings into sediment
- No larval dispersal
- Limited movement
- Food sources:
  - Live shellfish
  - Scavengers (dead fish, shellfish and crabs)



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# New Life History Information

- Age & Growth Rate
  - How old are the animals you are harvesting?
  - How long does it take them to reach the minimum size?
- Sexual Maturity
  - At what size do they become sexually mature?
  - How long does it take them to reach sexual maturity?



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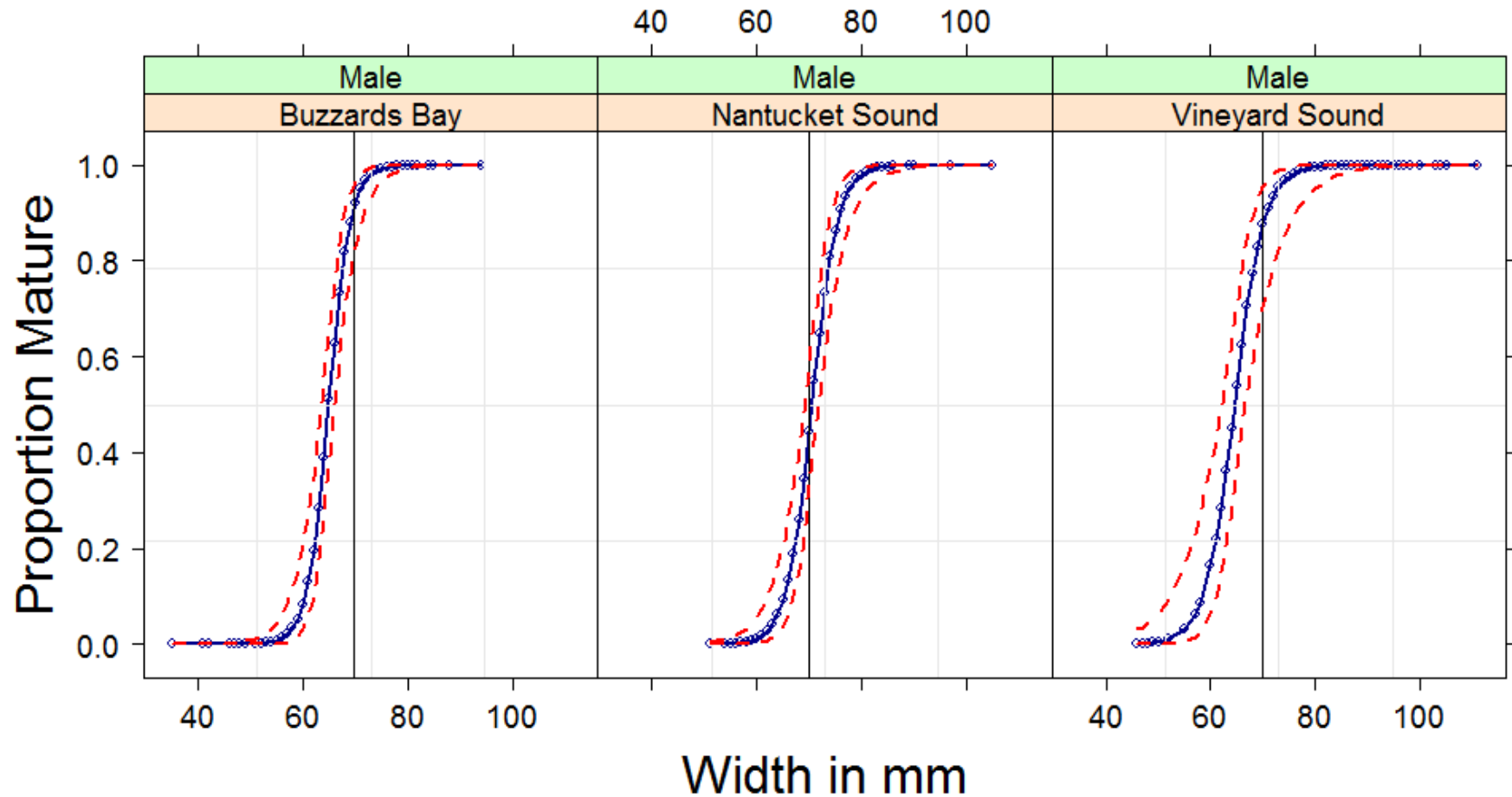
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# Male Proportion Mature

## Male Maturity at Size



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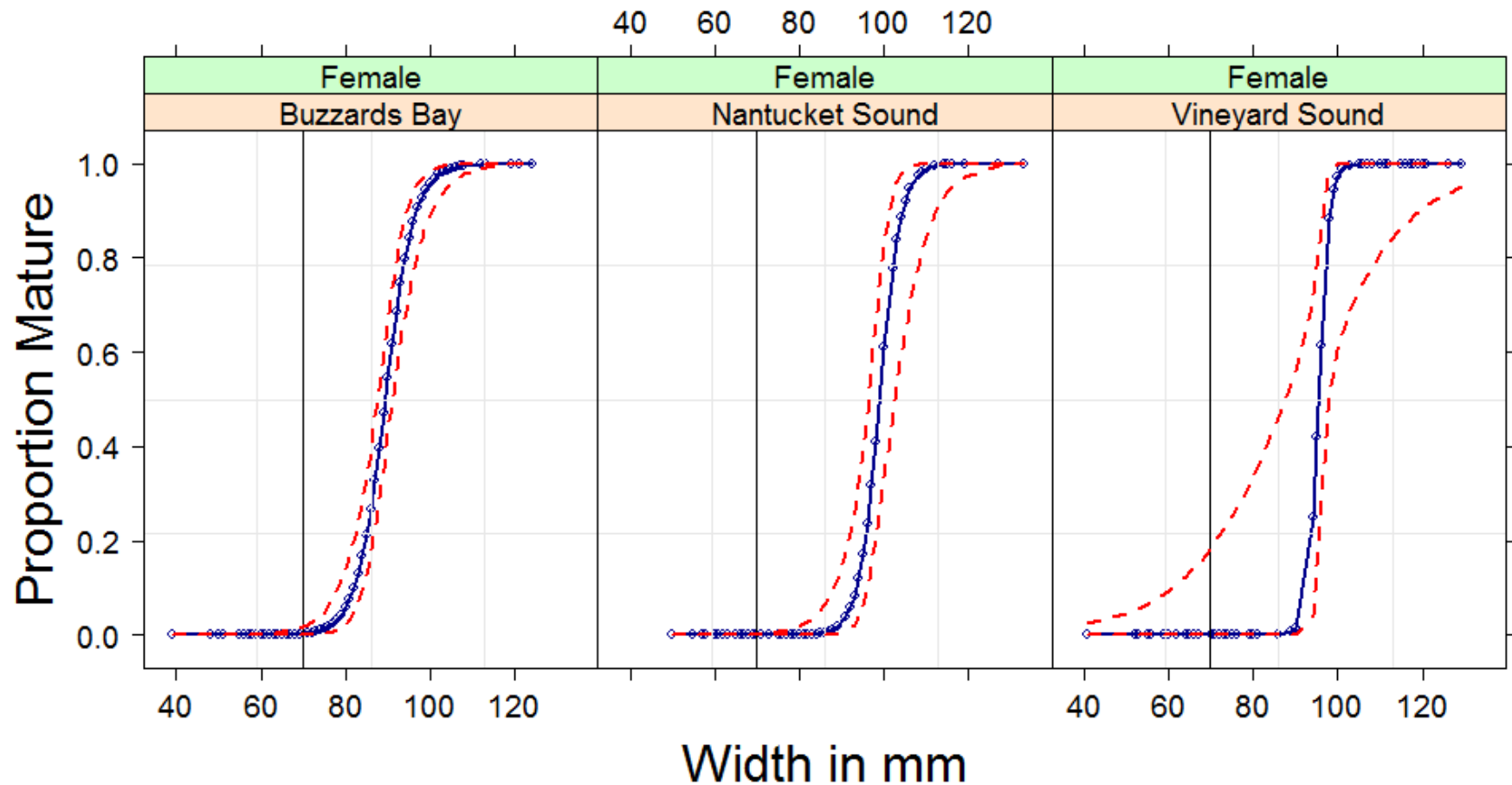
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# Female Proportion Mature

## Female Maturity at Size



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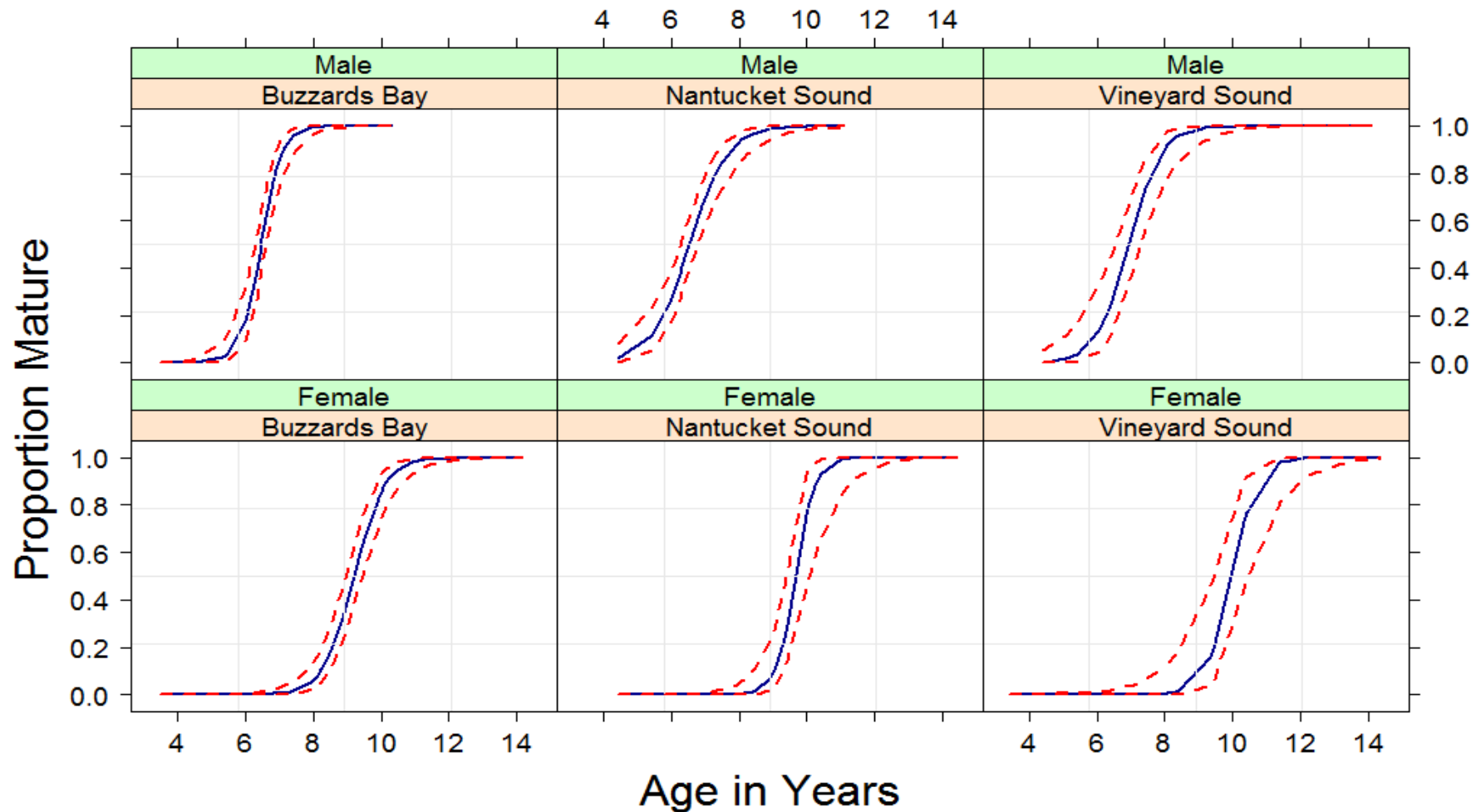
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# Population Mature by Age



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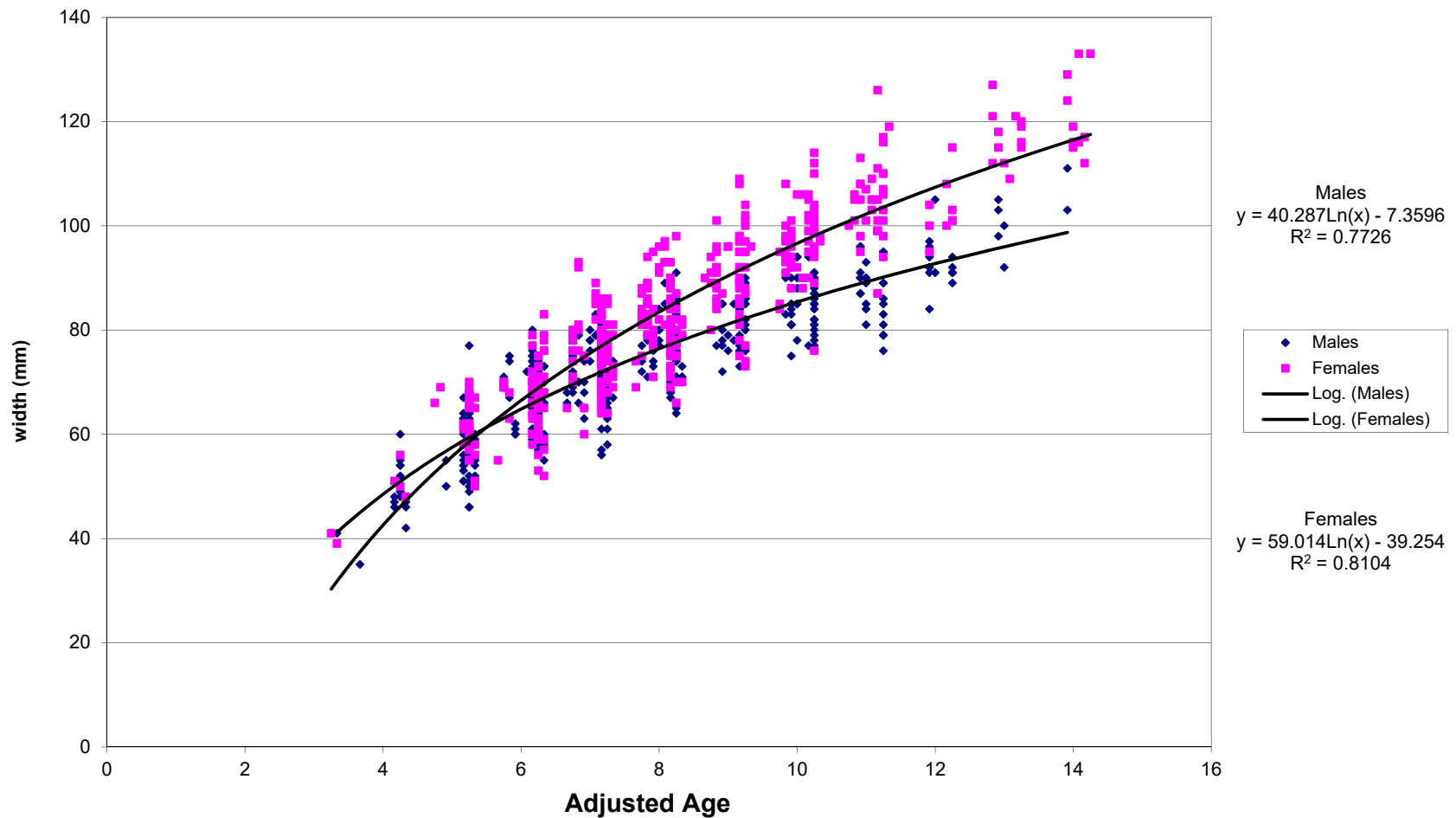
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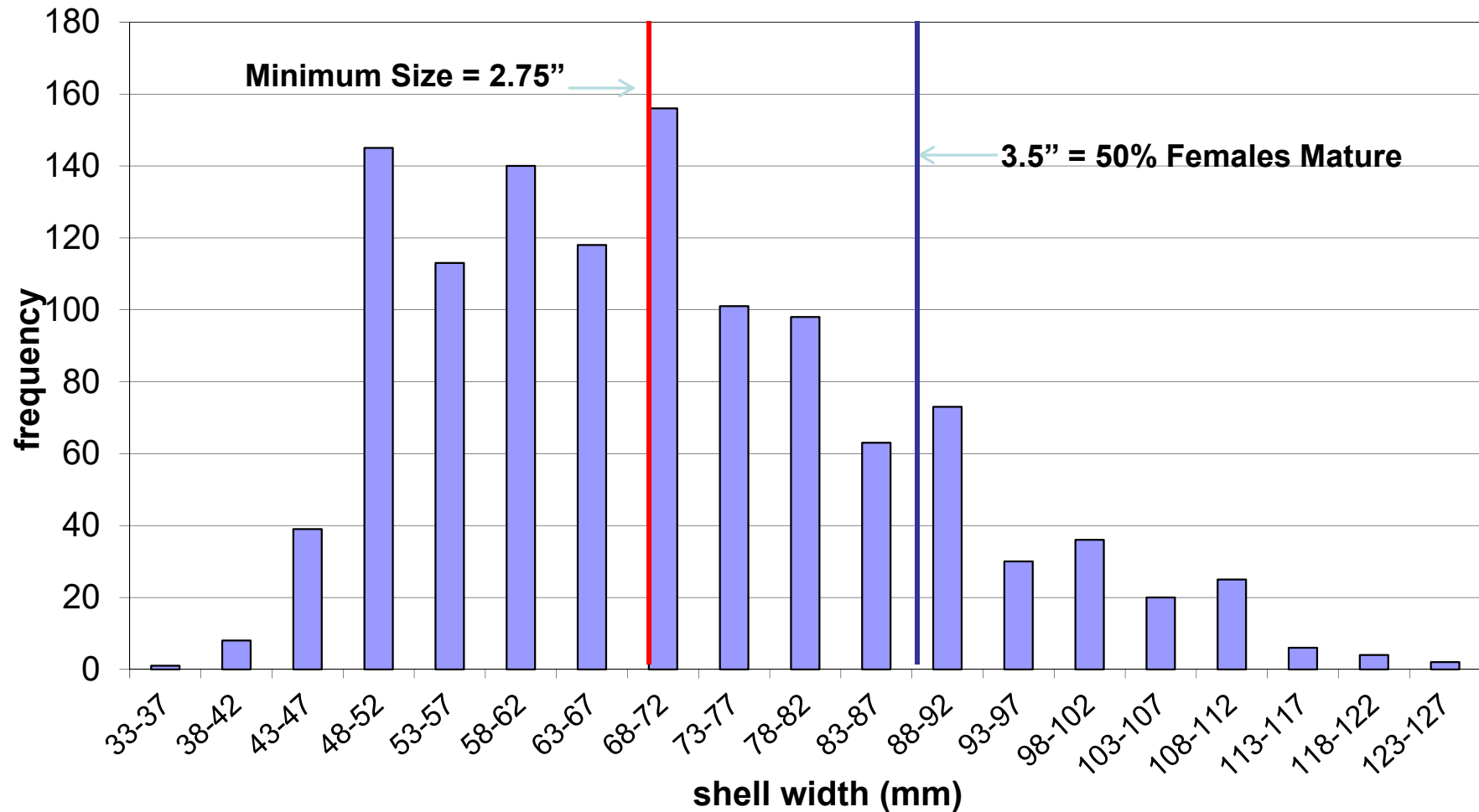


# Combined Growth Rates





# Commercial Size Frequency



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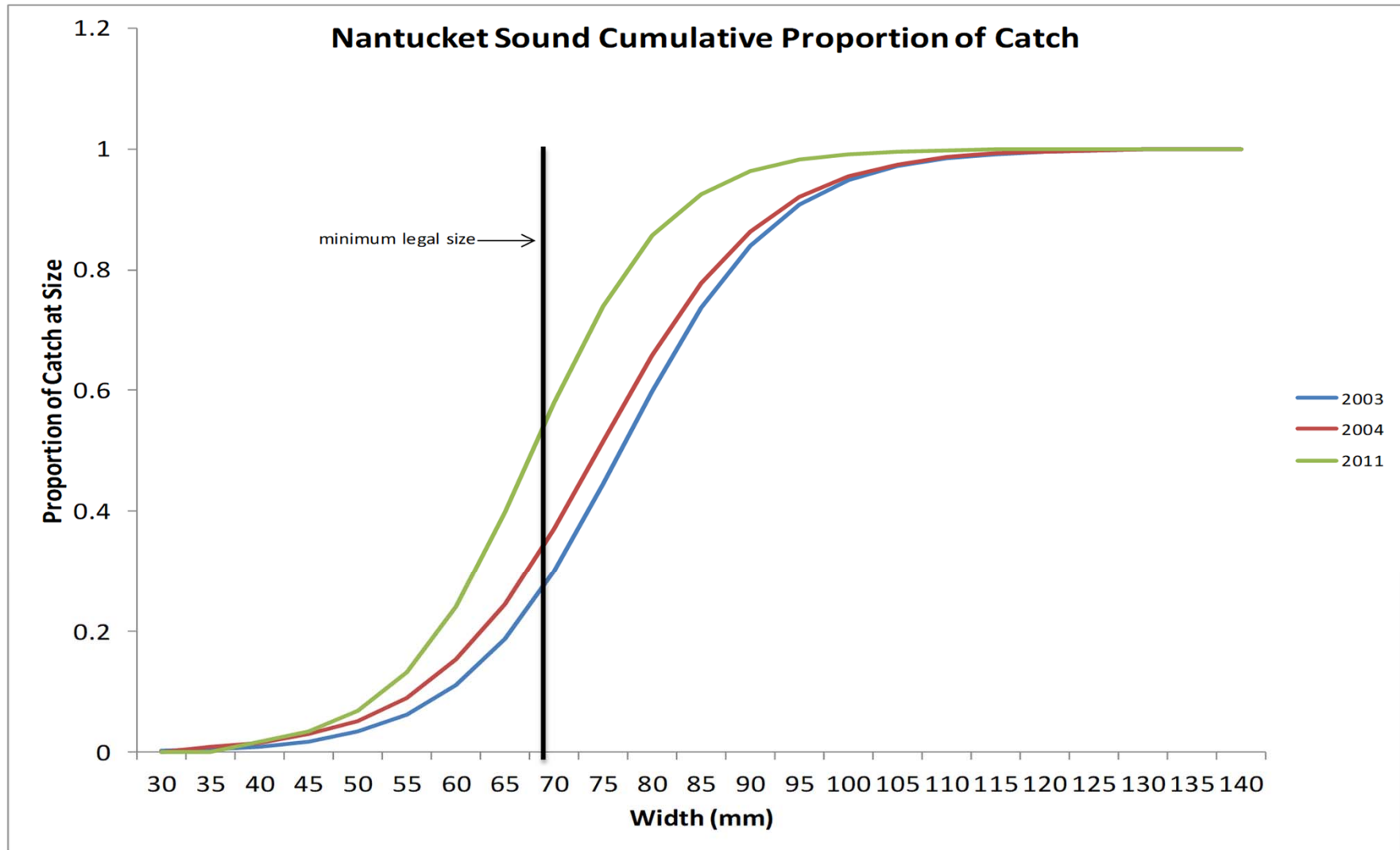
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# Comparison of Size Over Time



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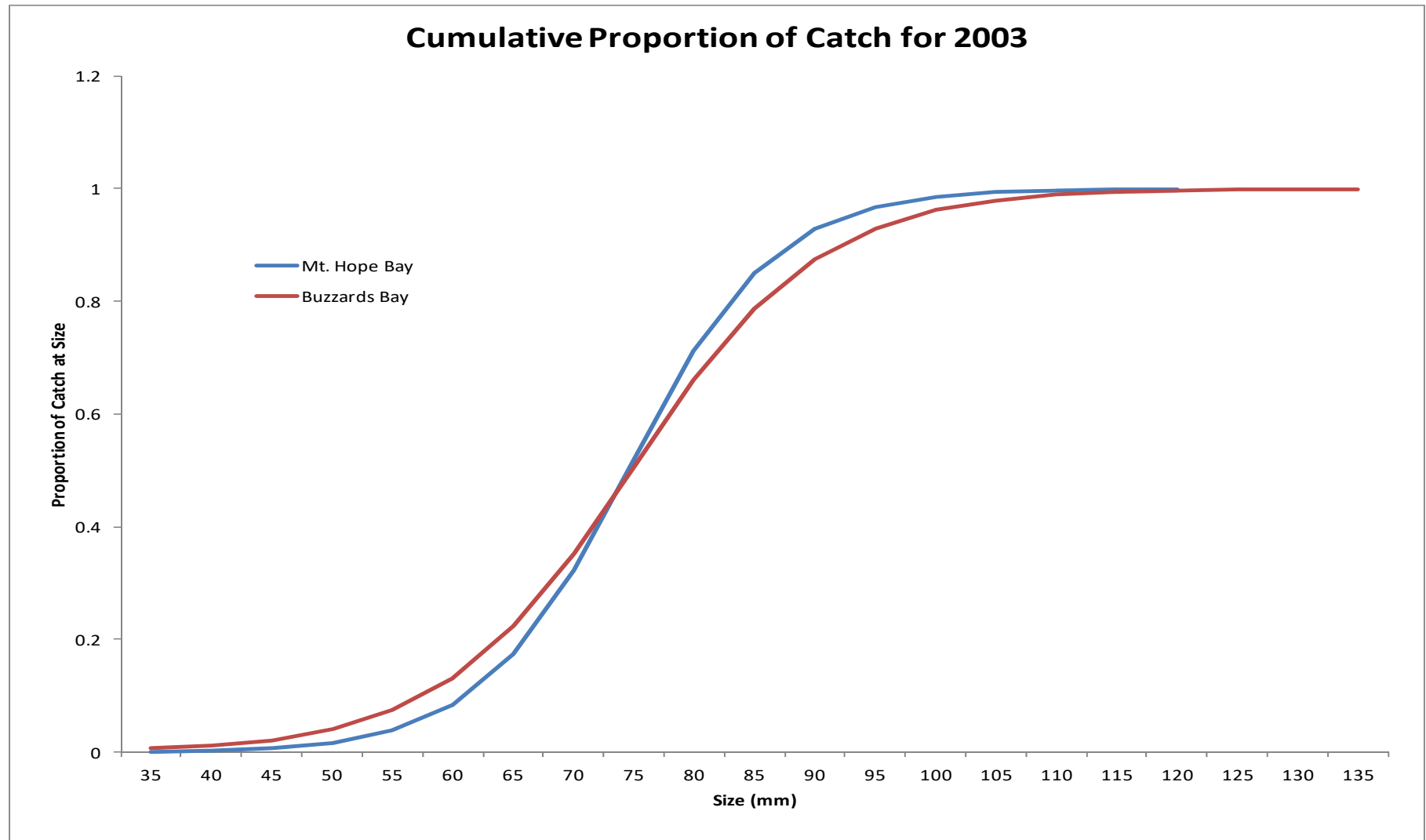
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# Mount Hope Bay/Taunton River



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# Lessons from Around the Globe

- Fishery Boom ↑
- Stock Collapse ↓
- Is a pattern observed consistently among conch and whelk fisheries throughout the world
  - **Common whelk (*Buccinum undatum*)** in Canada (Gendron 1992) the Netherlands (de Voys and van der Meer 2009) and Ireland (Fahey et al. 2005, 2008),
  - **Neptune whelk (*Neptunea arthritica*)** in Japan (Miranda et al. 2008),
  - **Knobbed whelk** in Georgia (Power et al 2009) and South Carolina (Eversole et al 2008)
  - **Black murex snail (*Hexaplex nigritus*)** in Mexico (Bueno 2001)
  - **Fine snails (*Zidona dufresnei*)** and **Loco (*Concholepus concholepus*)** in South America (Gimenez et al. 2005, Cleodon et al. 2005),
  - **Topshell whelk (*Cittarium pica*)** in Costa Rica and the US Virgin Islands (Schmidt et al. 2002, Toller and Gordon 2005)
  - **Abalone (*Haliotis rufescens*)** in California (Karpov et al. 2000)
  - **Queen conch (*Strombus gigas*)** in Panama (Cipriani et al 2008)



# Concerns

- Effort has increased dramatically
  - Especially in Nantucket Sound
  - Increased price in 2010 and 2011 has lead to a “gold rush” mentality
  - Reports of fishermen circumventing trap limit by baiting lobster traps with horseshoe crabs
  - Concerns raised by several fishermen about conflicts with other fishermen
  - A lot of latent effort in the system
- Landings have increased dramatically overall
  - Big increase in Nantucket Sound
  - Recent declines in Buzzards Bay and Vineyard Sound
- Evidence of population decline over time in MADMF Trawl Survey
- Majority of the harvest is on conch that are not sexually mature
  - Minimum size is too low



# Concerns

- Evidence of size truncation and growth overfishing within the last decade
- Life history characteristics make conch very prone to overfishing
  - Slow growth – takes 6 to 8 years to reach minimum size
  - Slow rate of sexual maturation – majority of the females are harvested before they mature
  - Non-migratory
  - Non-pelagic larval stage.
- Current rate of harvest is not sustainable long term
  - Recovery of collapsed whelk fisheries in other places has been slow to non-existent
- Not a lot of alternative fisheries for SNE fishermen
  - Lobster stock is critically low
  - Fish potting (Sea bass , scup, and tautog) is fairly limited
  - Jonah crabs showing same alarming trends in federal waters



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# Impacts of Size Increase

- Short-term loss of catch

Nantucket Sound			
Shell Width	2003	2004	2011
2.75"	0.0%	0.0%	0.0%
3"	19.0%	21.8%	37.8%
3.25"	38.1%	38.2%	59.4%
3.5"	52.1%	54.4%	71.7%
3.75"	69.2%	69.3%	86.2%
4"	82.2%	83.0%	92.5%
n	15699	6388	9000

Buzzards Bay			
Shell Width	2003	2004	2011
2.75"	0.0%	0.0%	0.0%
3"	20.8%	31.2%	17.6%
3.25"	39.1%	49.0%	38.1%
3.5"	55.1%	62.1%	49.8%
3.75"	71.1%	77.5%	71.0%
4"	83.3%	88.2%	85.5%
n	12760	7892	593

- Long term increase in yield
  - A 3.5" conch weighs roughly 80% more than a 2.75" conch
  - It takes a conch slightly less than a year to grow ¼"
- Dealer / Processor Challenges
  - If the rule is statewide possession standard, nonconforming whelks would be allowed.
  - To accommodate nonconforming whelk a variance would be required. Can out-of state product be segregated?



# Other Effects

- Elimination of “Tolerance”
  - Fishermen must be more vigilant measuring whelks
  - Officers could write citations for a single undersized whelk, discretion required
  - Dealers, processors would need variance for non-conforming whelk from out of state.
- Impacts of Retiring Idle Permits
  - Of the 142 issued in 2012, 31 permits had no activity in the period 2007-2011





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