Biology and fishery characteristics of Jonah crab in Rhode Island

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Growing fishery: information needed for stock assessment

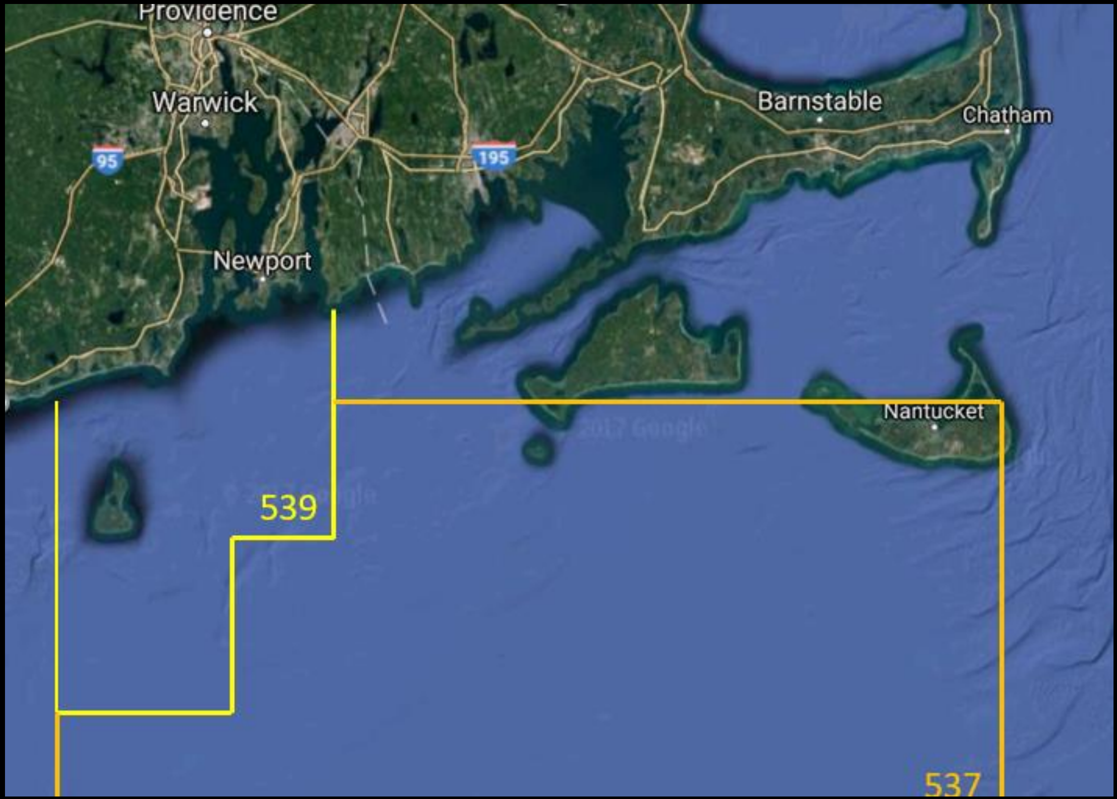
Objectives:

- provide detailed fishery dependent data in Rhode Island commercial fishery
- describe growth, including growth-per-molt and molting seasonality

At-sea data collection completed in August

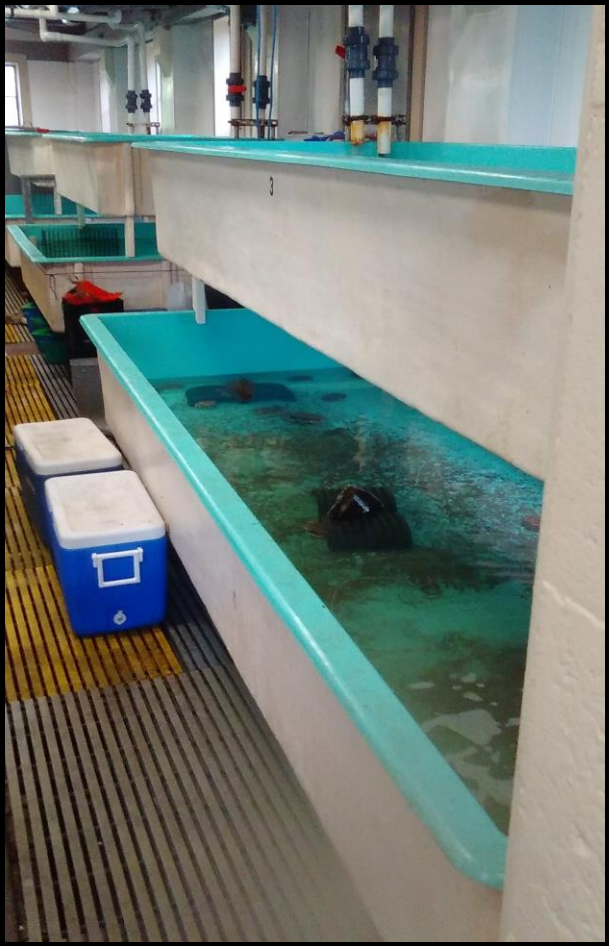
- 13 sea days, June 2016-August 2017
  - NMFS Statistical areas 537 and 539
- 9482 crabs measured
- >700 trap hauls

Analysis complete by March 2018



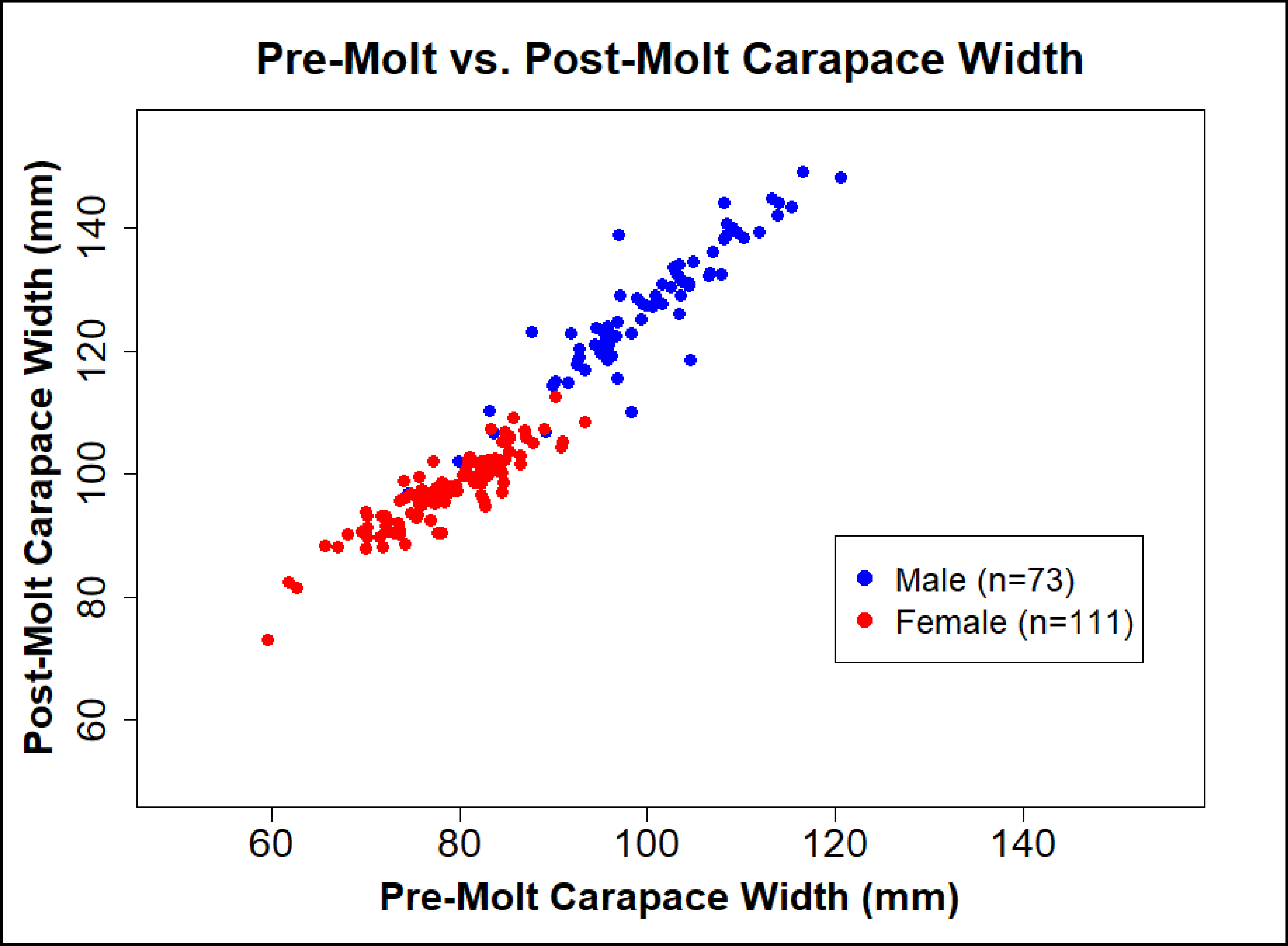
Growth study

Needed for stock assessment:
- Growth rates
- Molting seasonality
- Evidence of terminal molt

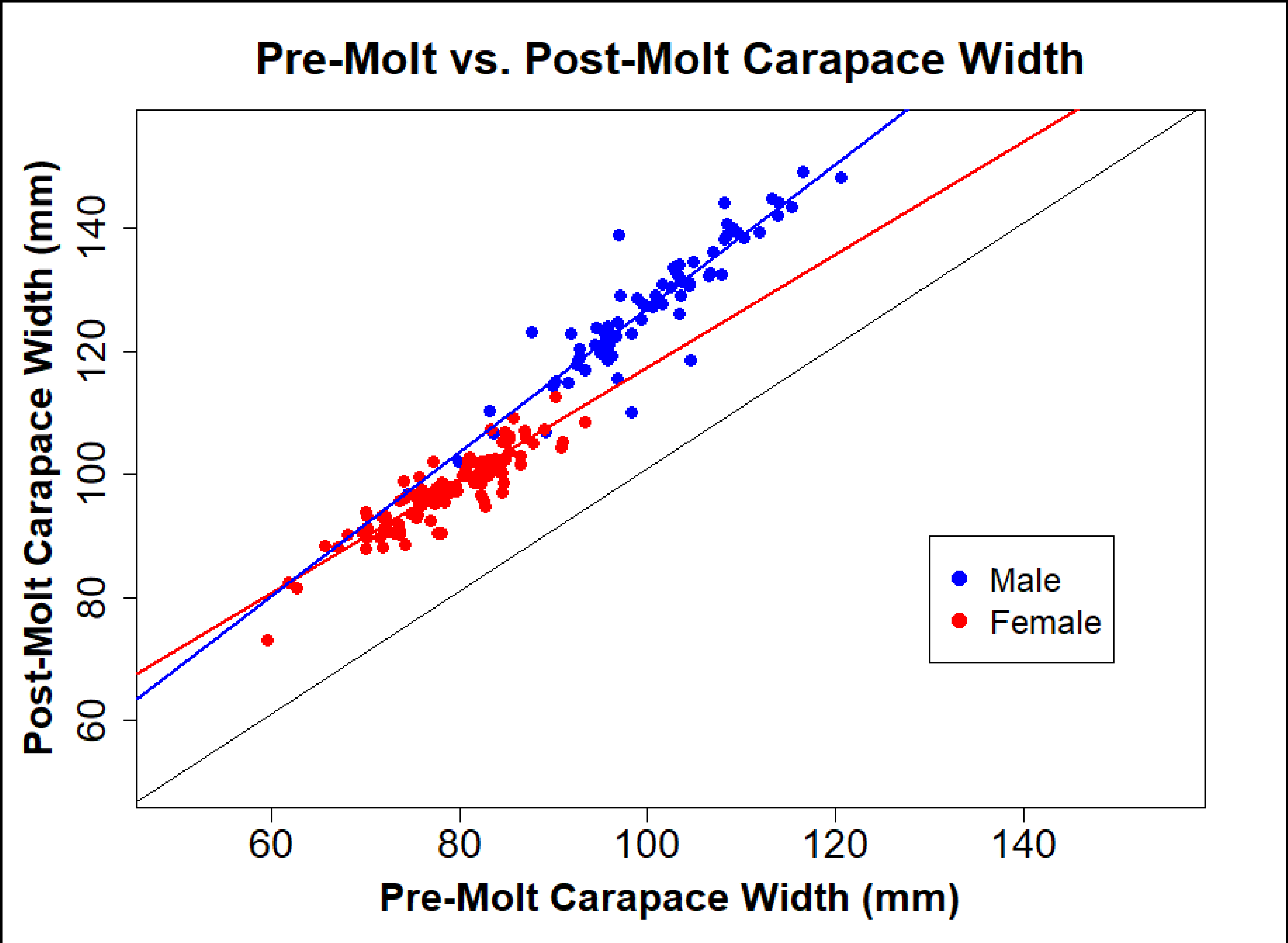


- Laboratory observation
- Initial success in spring 2016 →

~monthly collection, observation for 30 days



Pre-Molt vs. Post-Molt Carapace Width
Post-Molt Carapace Width (mm)
60
80
100
120
140
Pre-Molt Carapace Width (mm)
60
80
100
120
140
Male (n=73)
Female (n=111)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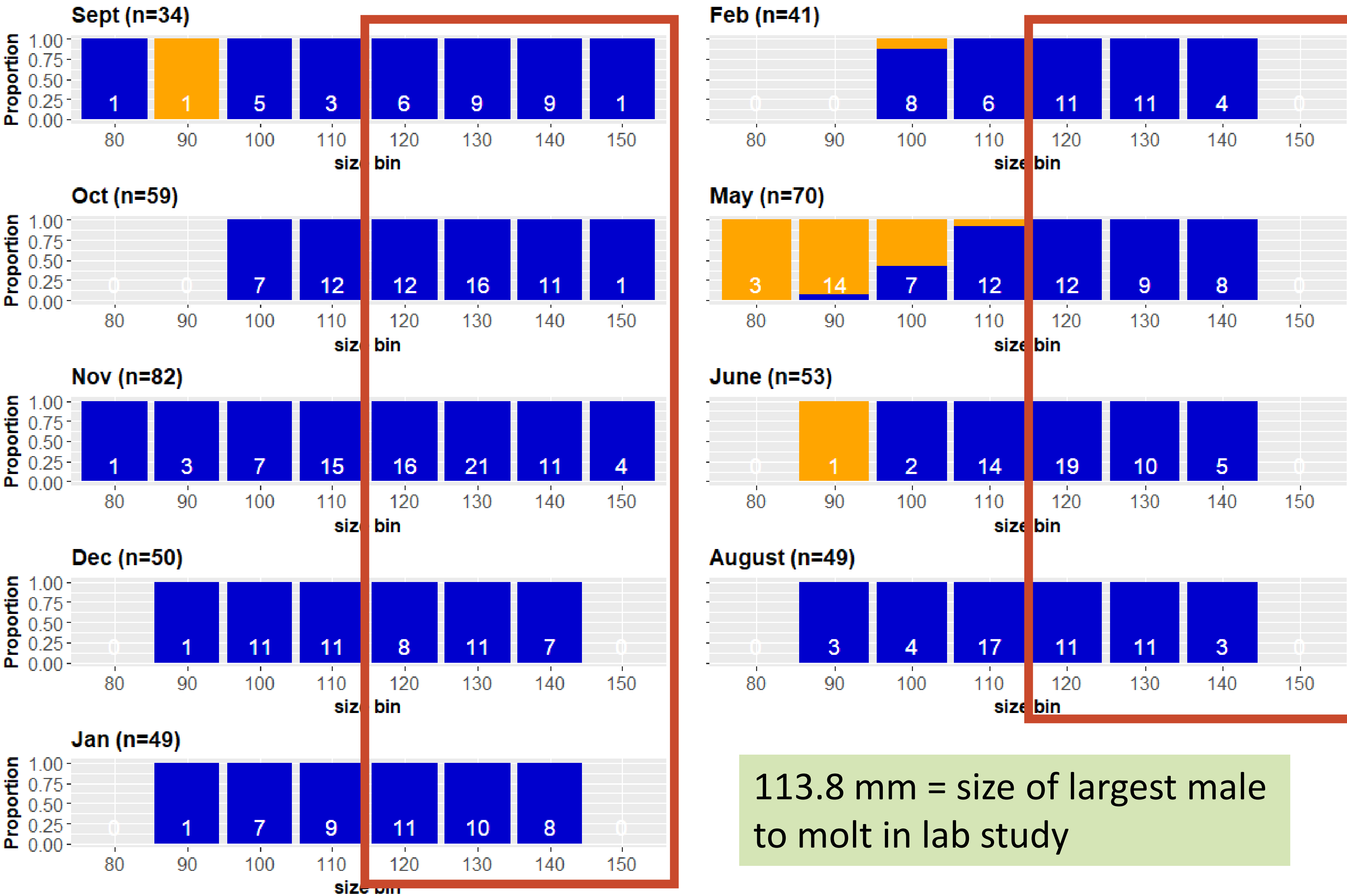
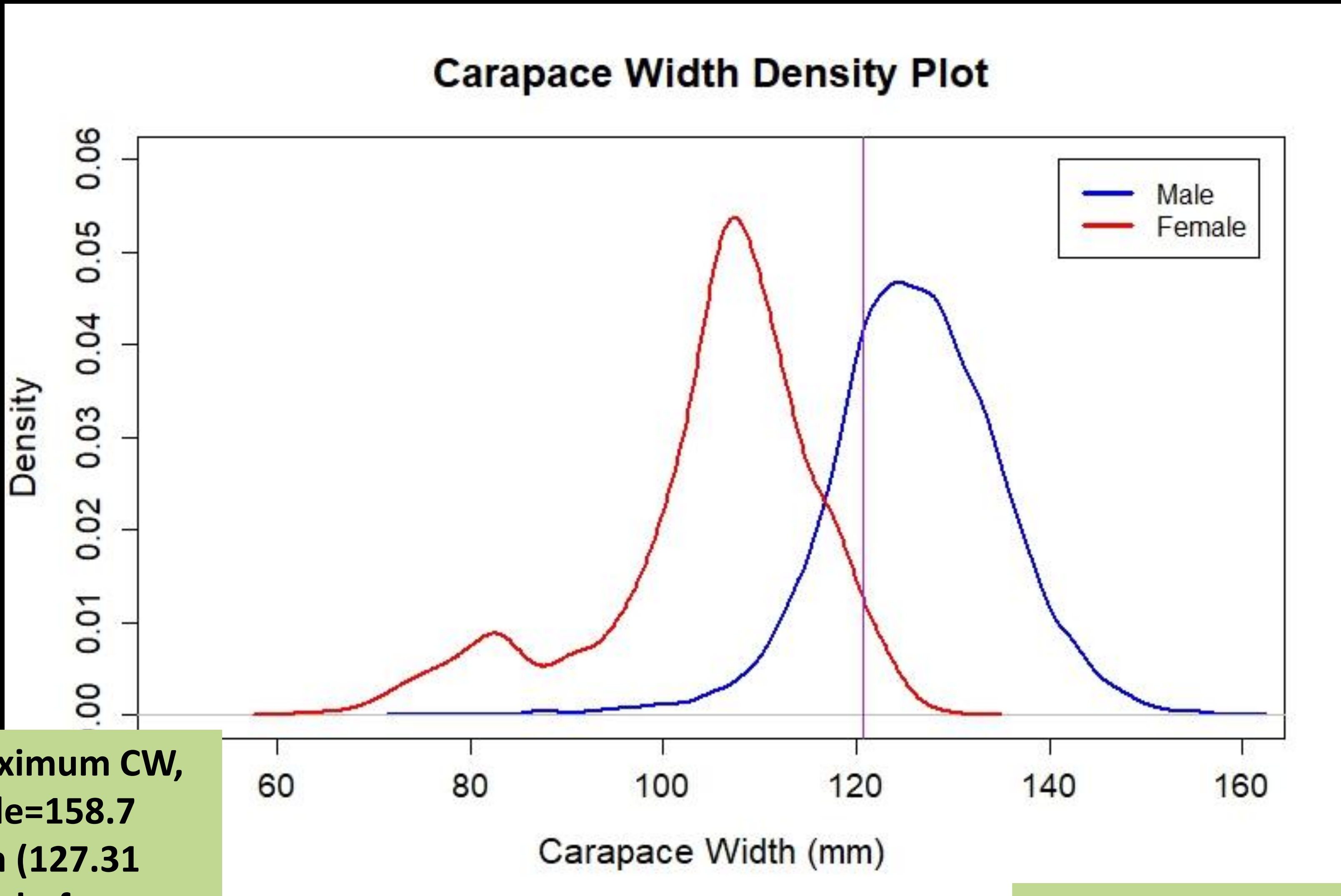


113.8 mm = size of largest male to molt in lab study



Maximum CW, male=158.7 mm (127.31 mm before most recent molt)

N=9482
Males: n=8549
Females: n=983

Thanks to:

Al Eagles
Brian Thibeault
Ed Baker
Dr. Jeremy Collie
Dr. Candace Oviatt
Dr. Gavino Puggioni
Rhode Island DEM
Collie Lab

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Rhode Island Department of Environmental Management
University of Rhode Island

Forthcoming Project: Collecting Fishers' Knowledge to inform fishery management of Jonah crab in Southern New England

URI DEM and URI Department of Marine Affairs
Principal Investigator: Dr. Tracey Dalton

List of Jonah crab data needs is extensive

- Directed scientific research has limited ability to address all data needs
- Fishers are often untapped resource of information:
  - Economic, social and ecological aspects of fisheries
  - Long-term observation
  - Detailed spatial and temporal scales

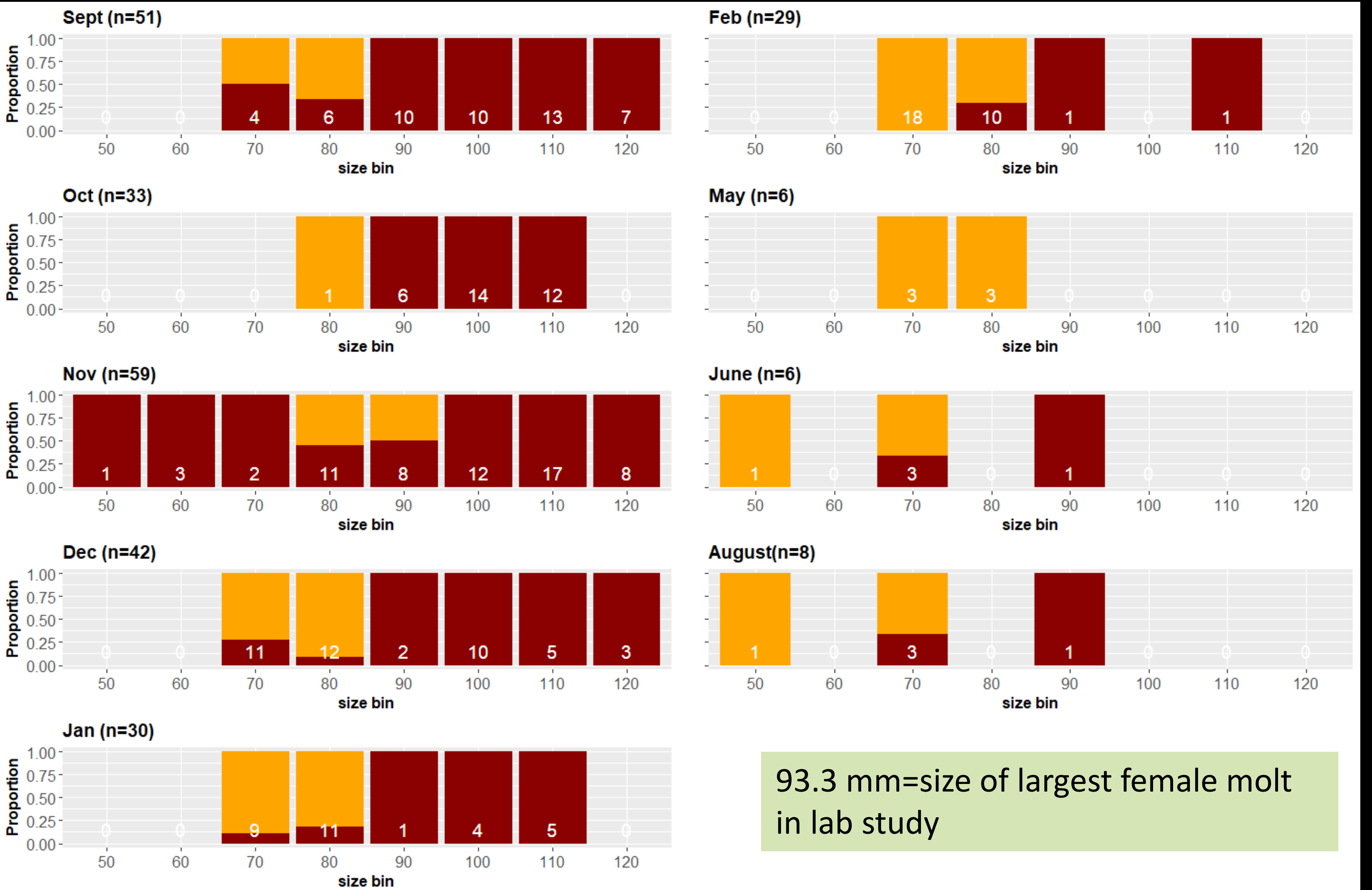
Objective: Collect fishers' knowledge in Jonah crab fishery across Southern New England

- Focus on major ports in RI and MA
- Approx. 1 hour structured interview: open-ended and closed-ended questions
- Confidential
- Responses codified and summarized, results shared with Jonah Crab Technical Committee

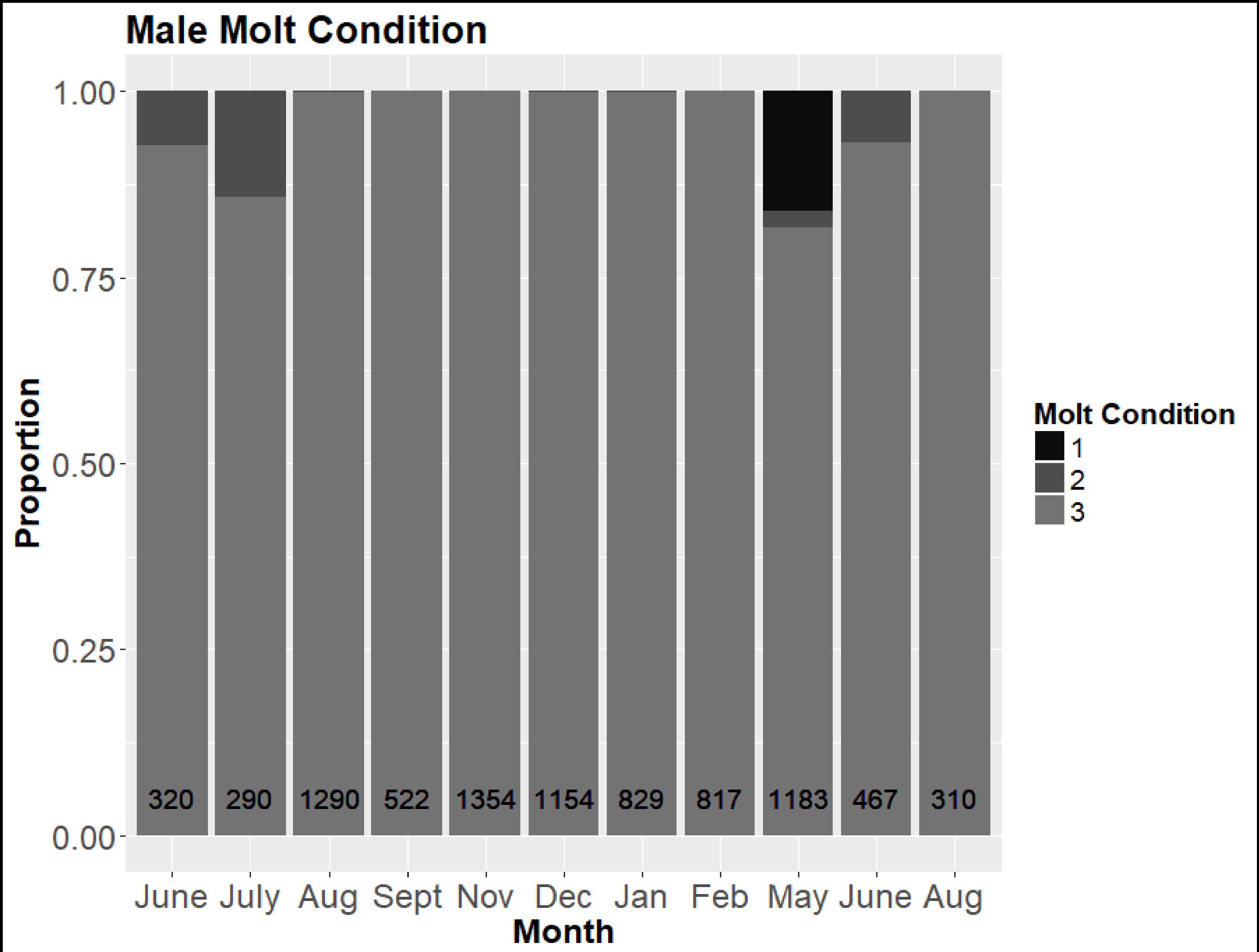
Collect information on:

- Biology/life history of Jonah crab
  - Spatial distribution and seasonal migrations
- Fishing practices, fishing effort and economics
  - Particular focus on relation between Jonah crab and lobster fishing effort
  - Historical trends in catch and effort
  - Destination of harvest (proportion of catch sold to different types of buyers)
- Management perceptions

Timeline: October 2017-June 2018

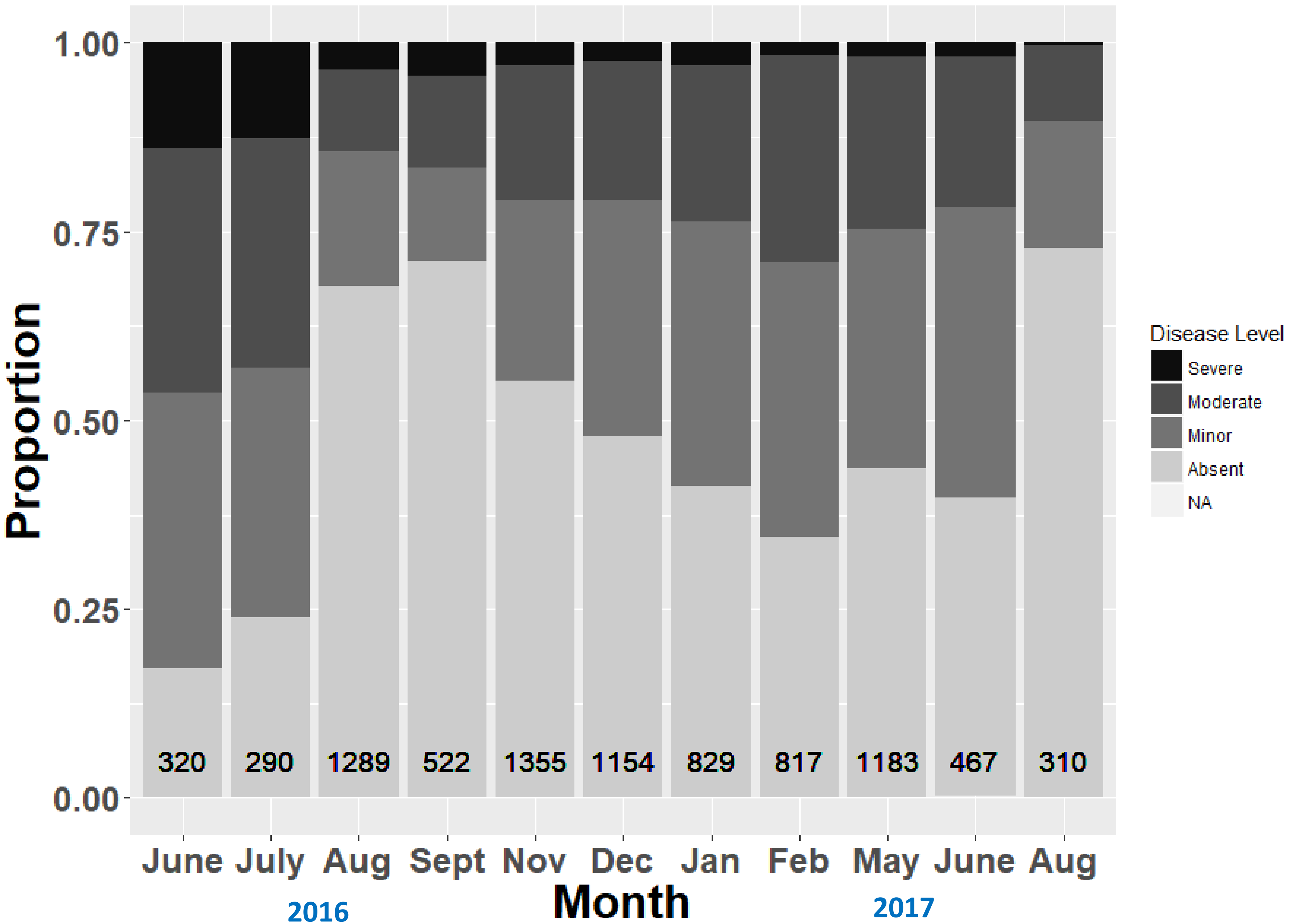


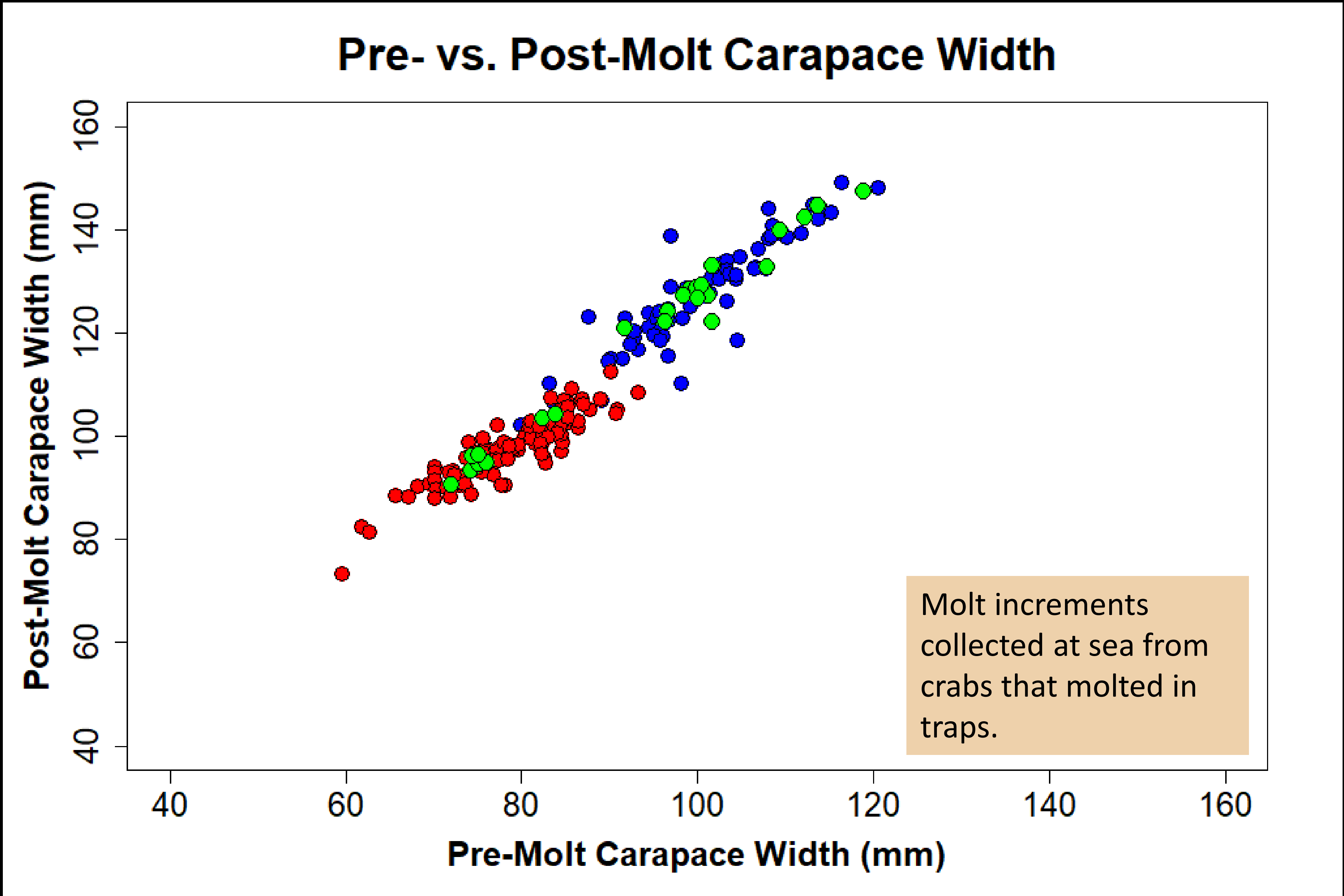
93.3 mm=size of largest female molt in lab study



Male Molt Condition
Proportion
1.00
0.75
0.50
0.25
0.00
320
290
1290
522
1354
1154
829
817
1183
467
310
June
July
Aug
Sept
Nov
Dec
Jan
Feb
May
June
Aug
Month
Molt Condition
1
2
3

Male Shell Disease Condition

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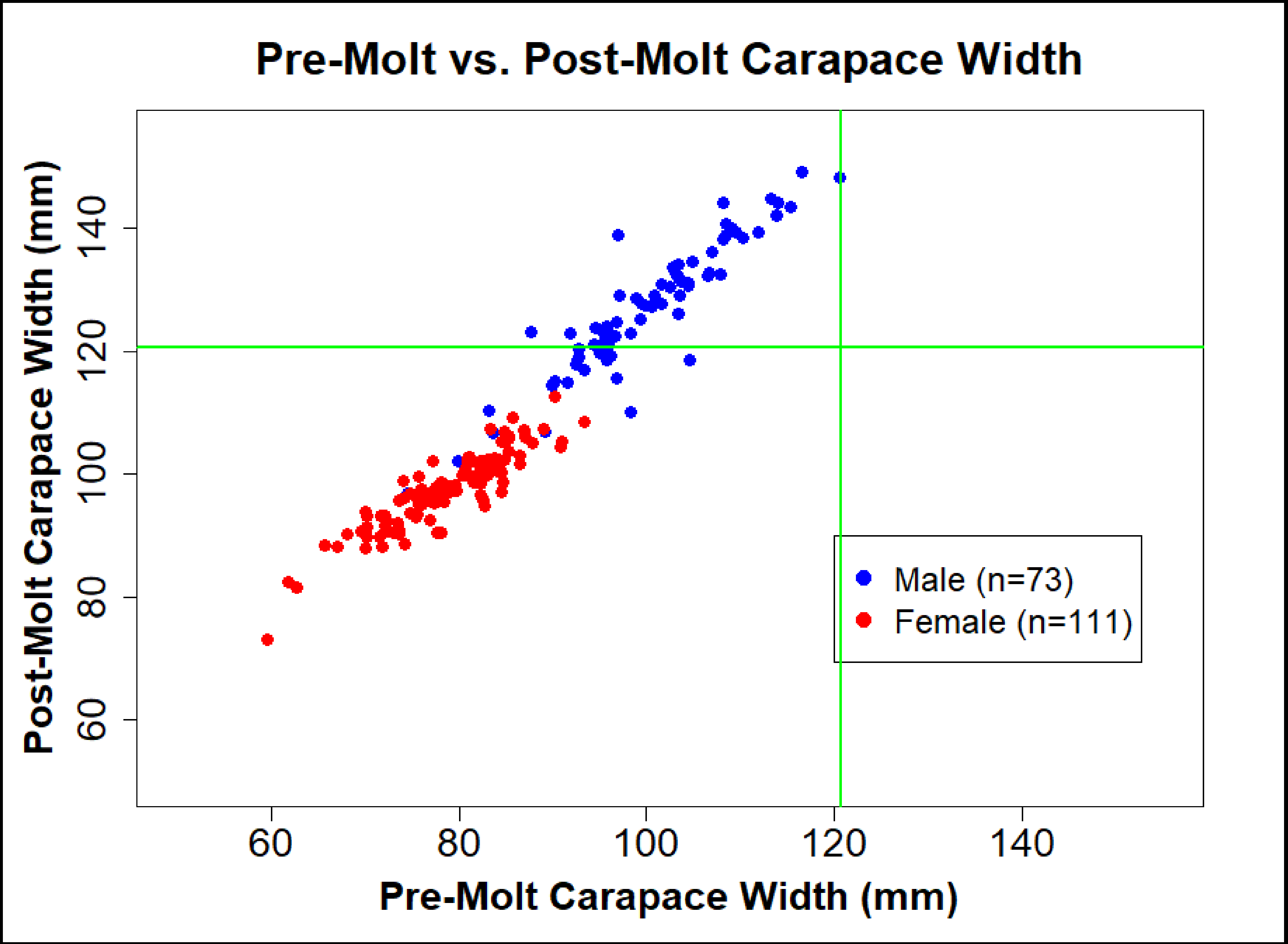
Molt increments collected at sea from crabs that molted in traps.



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