

Closed-areas as a conservation tool: the effect on size of American lobster (*Homarus americanus*) in Newfoundland

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The Lobster Fishery in Newfoundland

Lobster is an important source of income for many fishermen in rural Newfoundland

•4th most valuable fishery: 2981mt landed in 2008 worth ~\$28 million

•2900 licenses (~1700 active)

•Small, open-boat fishery; 8-10 week spring season; trap limits range from 100-350

*Source: DFO. 2009. Assessment of American lobster in Newfoundland. DFO Can. Sci. Adv. Sec. Sci. Adv. Rep. 2009/026.

Conservation Measures

In addition to management regulations that attempt to control effort (seasons, trap limits, min/max size limits, etc.), **industry-initiated conservations measures include:**

- Closed areas
Lobster fishing is prohibited; 11 throughout Nfld
- V-notching
A v-shaped notch is cut into the tail of ovigerous females; retained through 2-3 molts; voluntary conservation measure

Are these conservation measures working to sustain lobster populations?

Data Collection

Information on sex, size, presence of eggs and/or v-notch collected at 6 closed areas in Nfld: Shoal Point, Trout River, Duck Islands, Round Island, Summerford & Gander Bay

Study Objective

Compare lobster size inside closed areas to that in adjacent fished waters

Results

- Establishment of a closed area does not necessarily result in larger lobsters inside the closed area.
- Longer time since closure does not result in larger lobsters.



Trout River

(closed 2002)

Area = nd

Males: no sig diff

Females: no sig diff

Shoal Point

(closed 2002)

Area = .57 km²

Males: no sig diff

Females: no sig diff

Round Island

(closed 1997)

Area = .47 km²

Males: larger inside

Females: no sig diff

Duck Island

(closed 1997)

Area = 1.96 km²

Males: larger inside

Females: no sig diff

Summerford

(closed 2003)

Area = .41 km²

Males: larger inside

Females: larger inside

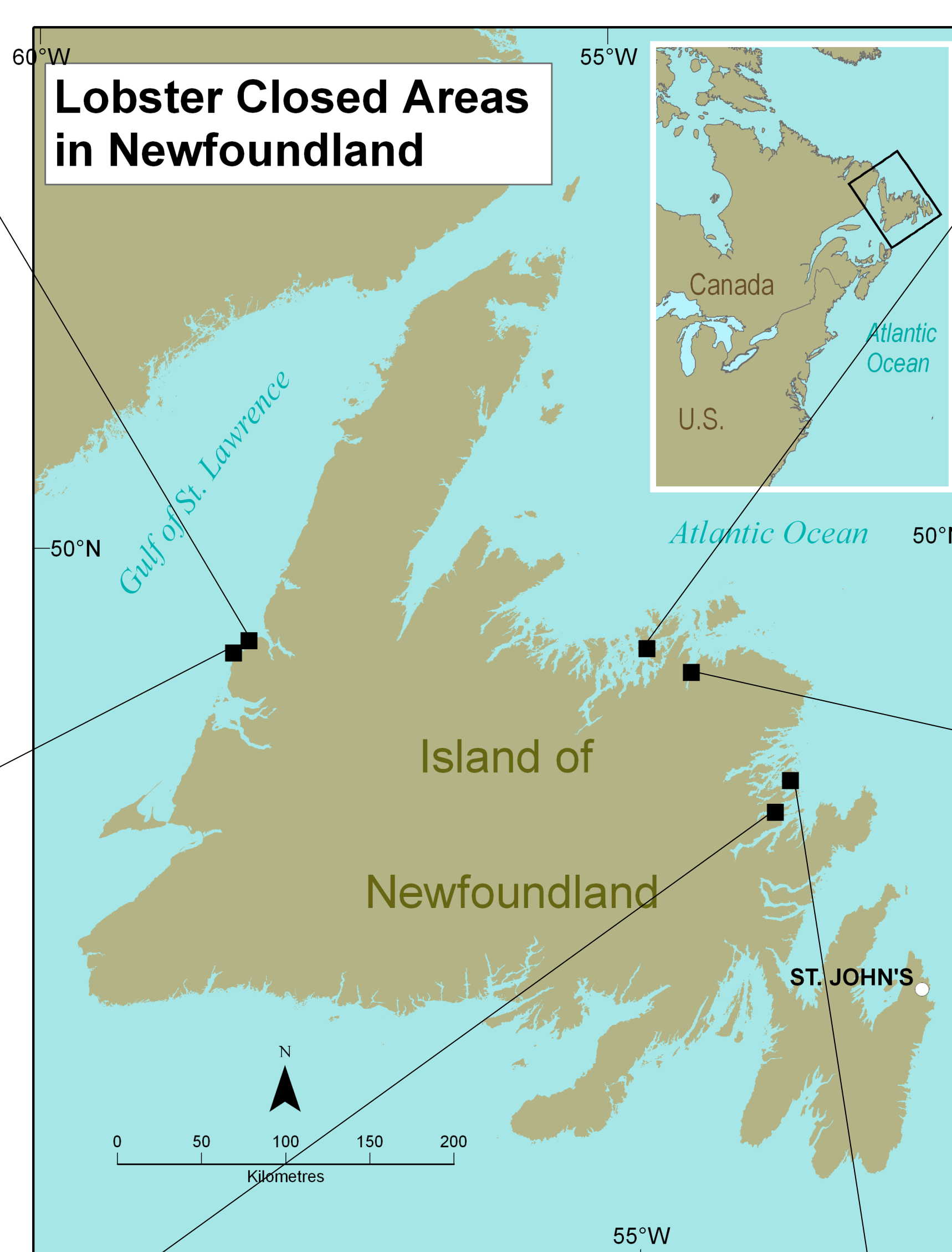
Gander Bay

(closed 2003)

Area = 77.57 km²

Males: larger inside

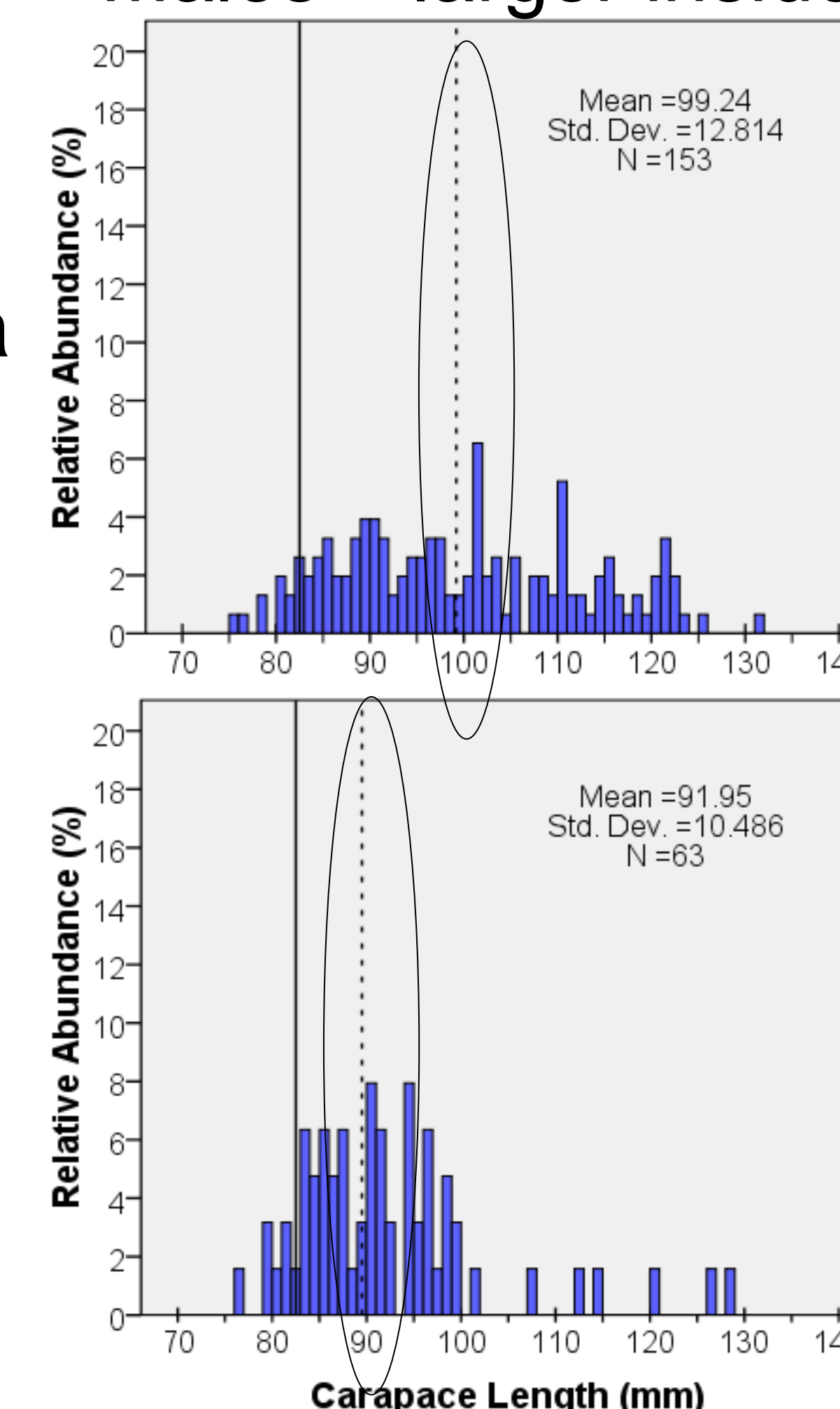
Females: larger inside



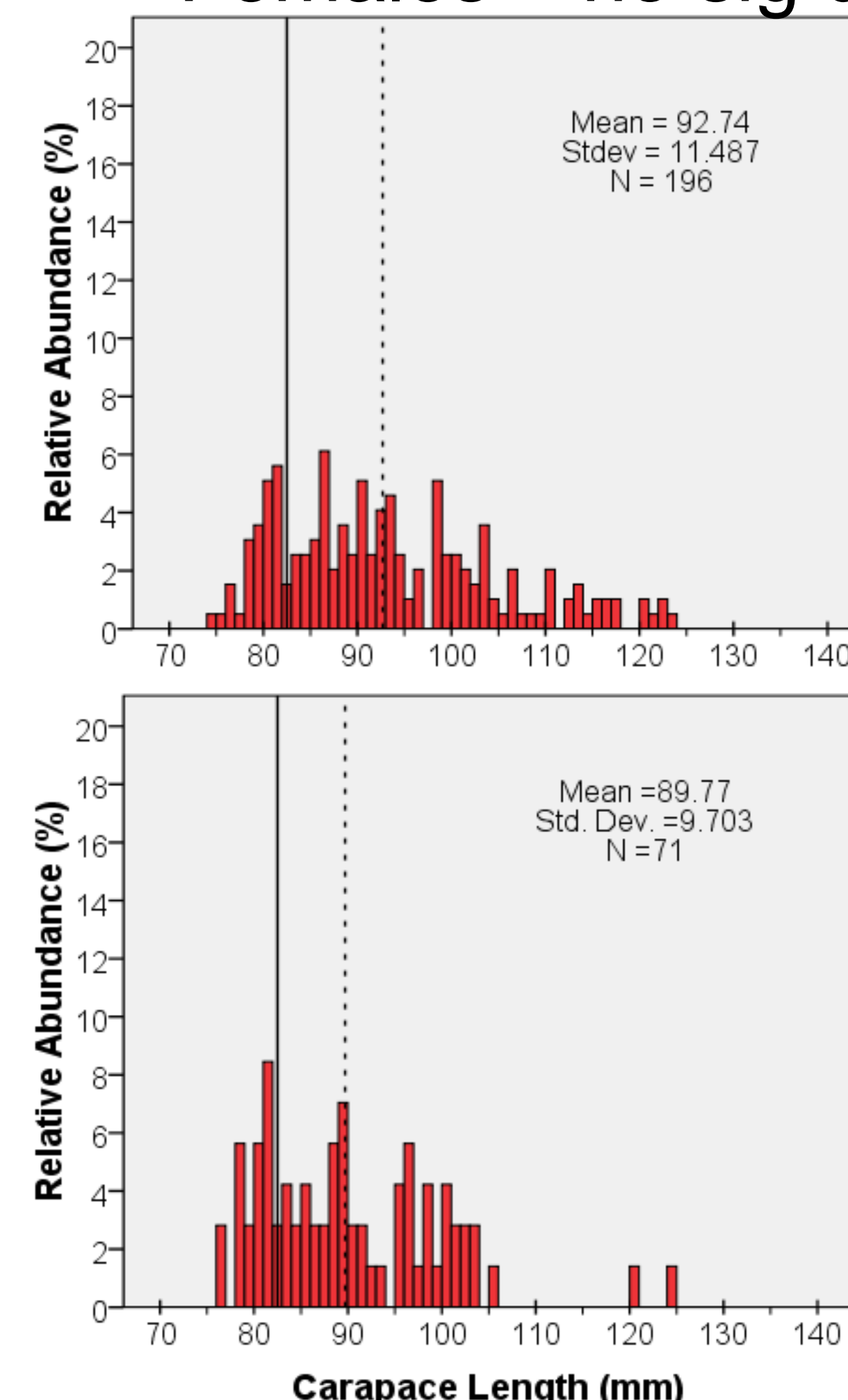
Here's an example:

Inside closed area

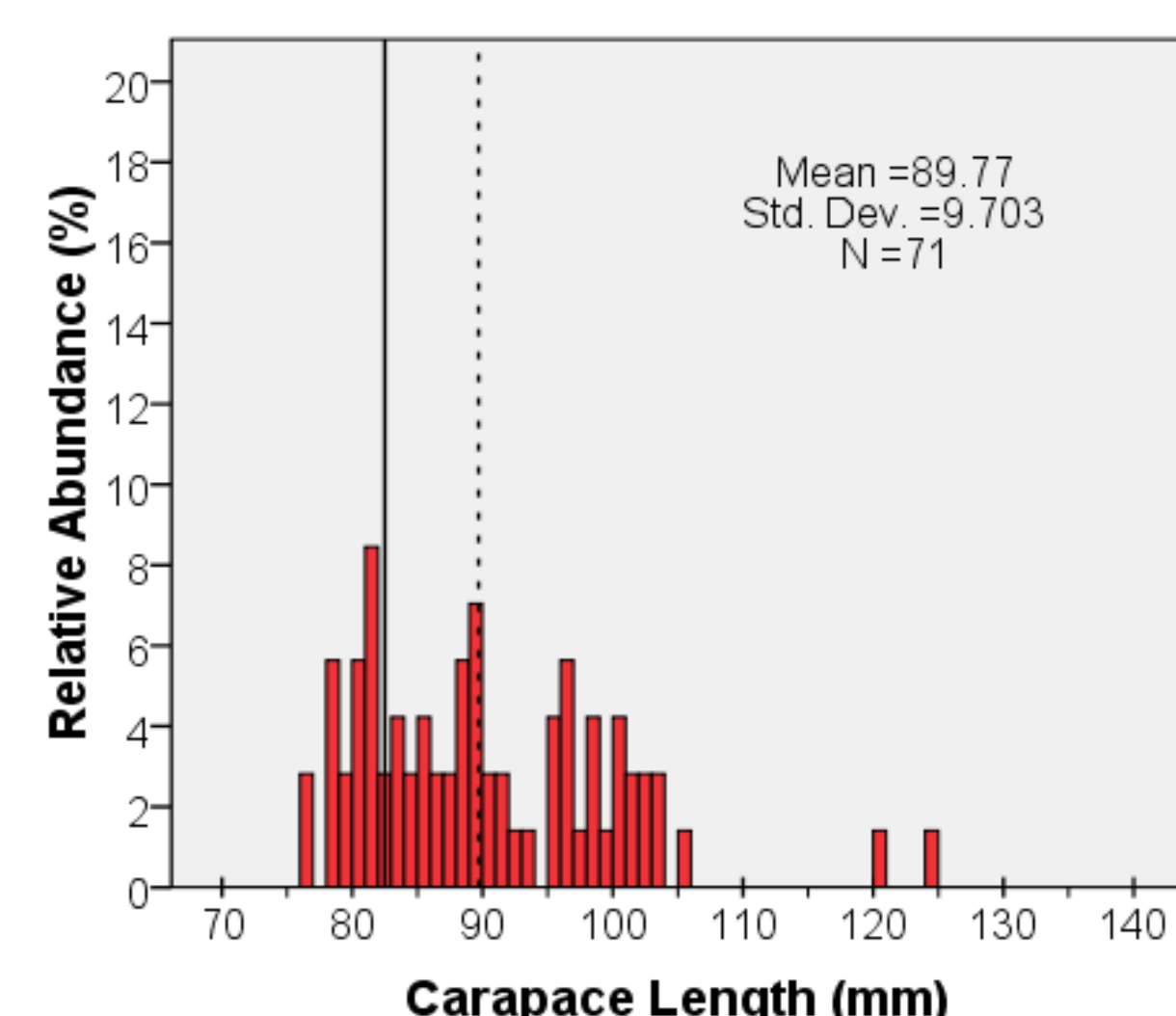
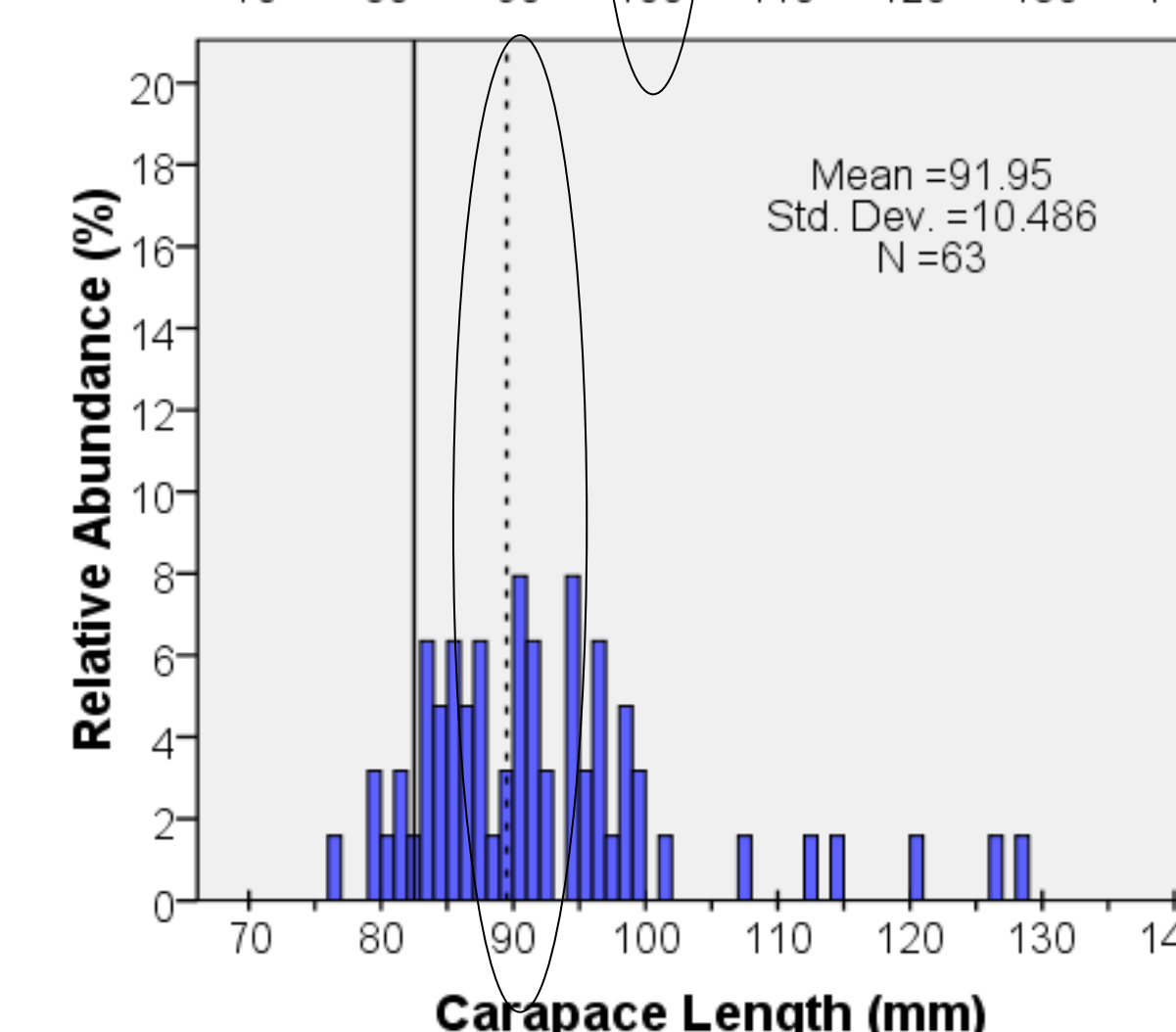
Males – larger inside



Females – no sig diff



Adjacent waters



Conclusions

•Establishment of a closed area is not sufficient to ensure an increase lobster size.

•Other factors such as size of closed area, lobster density, and lobster movement should be investigated more closely.

