Determining size and age at maturation as well as monitoring seasonal gonadal changes for the channeled whelk in Massachusetts

Kenneth Oliveira – Professor UmassD
Robert Glenn – Senior Fishery Biologist DMF
Jarrett Drake – Area 2 Lobster and Conch
Steven Wilcox – DMF, and UmassD
Channeled whelk, *Busycotypus canaliculatus* (conch)

- Females anchor egg casings into sediment
- No larval dispersal
- Limited movement

- Food sources
  - Live shellfish
  - Scavengers (dead fish, shellfish and crabs)
Mass. Channeled Whelk Fishery

- 80 active fishermen in a given year and around 155 issued licenses
- > 2.5 million pounds
- $3 million for Mass fishers
- Majority are trap caught
Fisheries Regulations

- Minimum legal size of 2 ¾" (69.85 mm) width
- 200 trap maximum
- Closed season
- Currently license moratorium

![Shell Image](image_url)

**Width**
Landings Data

![Line graph showing landings data for Channeled Whelk and Lobster from 1992 to 2009. The graph plots millions of pounds against years. The Channeled Whelk line is represented in blue, while the Lobster line is in red.]
Objectives

- Determine size and age at maturity
  - Males
  - Females
  - Are all three areas the same

- Seasonal changes
Sampling area
Seasonal monitoring
For each specimen

- External measurements
- Weights
- Age
Determining age
Mature male

Testes

Penis
Mature female

Ovary

Nidamental gland
Questions???
Closed vs. Open
Mature male

Sperm

Testes
Immature male

Penis
Immature gonad

Testes
Immature Female

Nidamental gland
Size at maturity

Buzzard's Bay Males

Gonad Wt. (g) vs. Length (mm)

N = 165