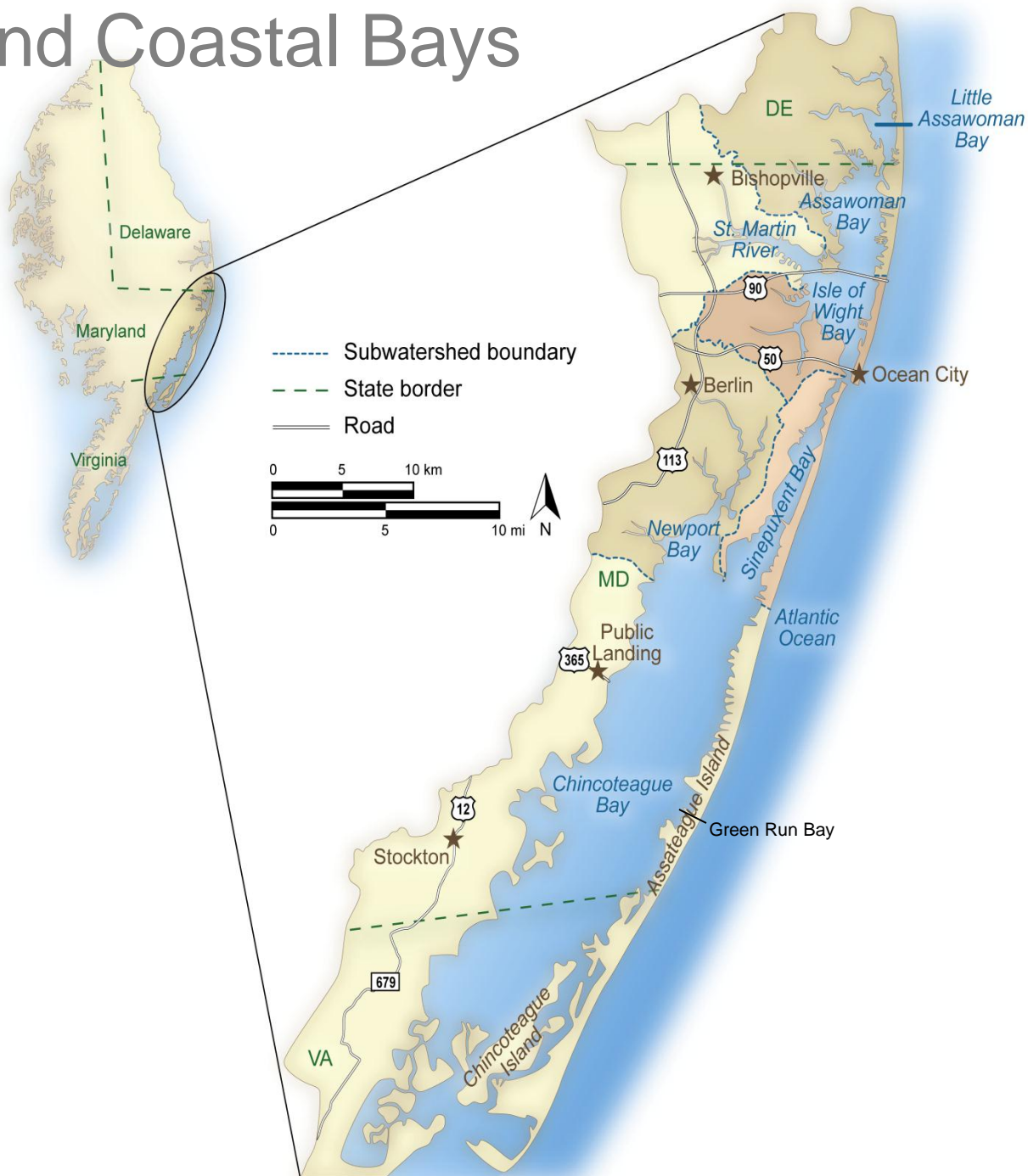


A person wearing a white cap and a red shirt is seen from the side, leaning over a white cooler on the deck of a boat. They are holding a large quantity of dark scallops in their hands, appearing to be sorting or packing them. The cooler has a white bag inside with some handwritten text. The background shows a cloudy sky and a body of water.

The Reintroduction and Subsequent Status of Bay Scallops in the Maryland Coastal Bays – A 10-Year Retrospective

Mitchell L. Tarnowski and Mark L. Homer
Maryland Department of Natural Resources

Maryland Coastal Bays

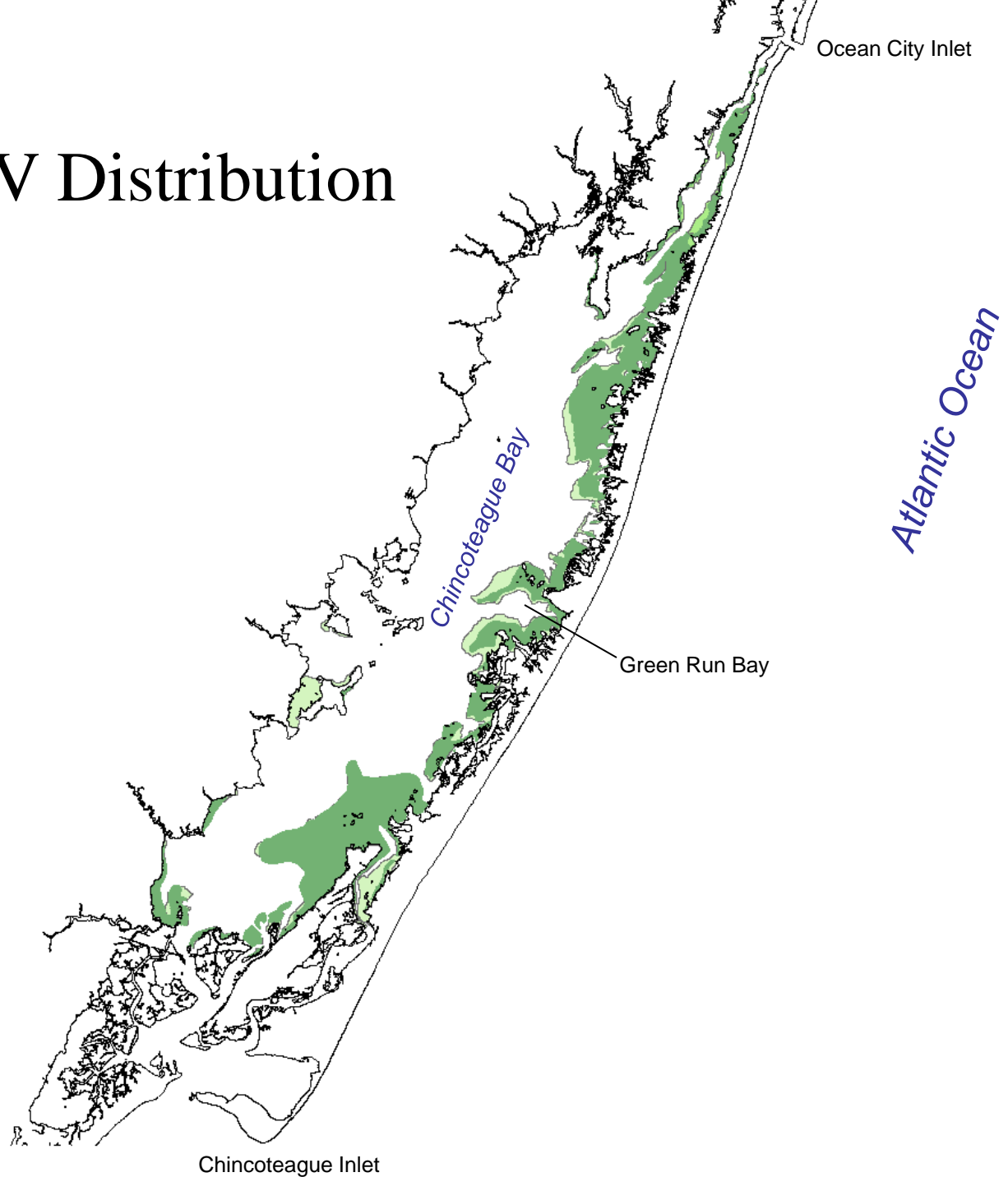


1997 Conditions

- Adequate salinity
- Abundance of seagrasses
 - ~12,000 acres
- Good water quality
- No brown tide



1997 SAV Distribution



Plan

- Plant and overwinter hatchery-reared seed scallops
- Protect the seed scallops in large predator exclosure pens
- Enhance survivorship to sexual maturity in the following spring



1997 Seed Scallops

Site Selection – Green Run Bay

- Well protected from storms
- Abundance of seagrasses
- Fine, hard sand substrate
- Extensive shallows (< 3 m)
- Good water quality
- Larval trap
- Federal park – no development
- Minimal user conflicts
- Remote – avoid unwanted attention



USGS photo

Predator Exlosures

- 1997
 - 2 pens: 80 ft x 80 ft
- 1998
 - 2 pens: 100 ft x 100 ft
 - 1 pen: 80 ft x 80 ft
- Fencing 4 ft high
 - Fine netting overlapping bottom
- Crab pots added



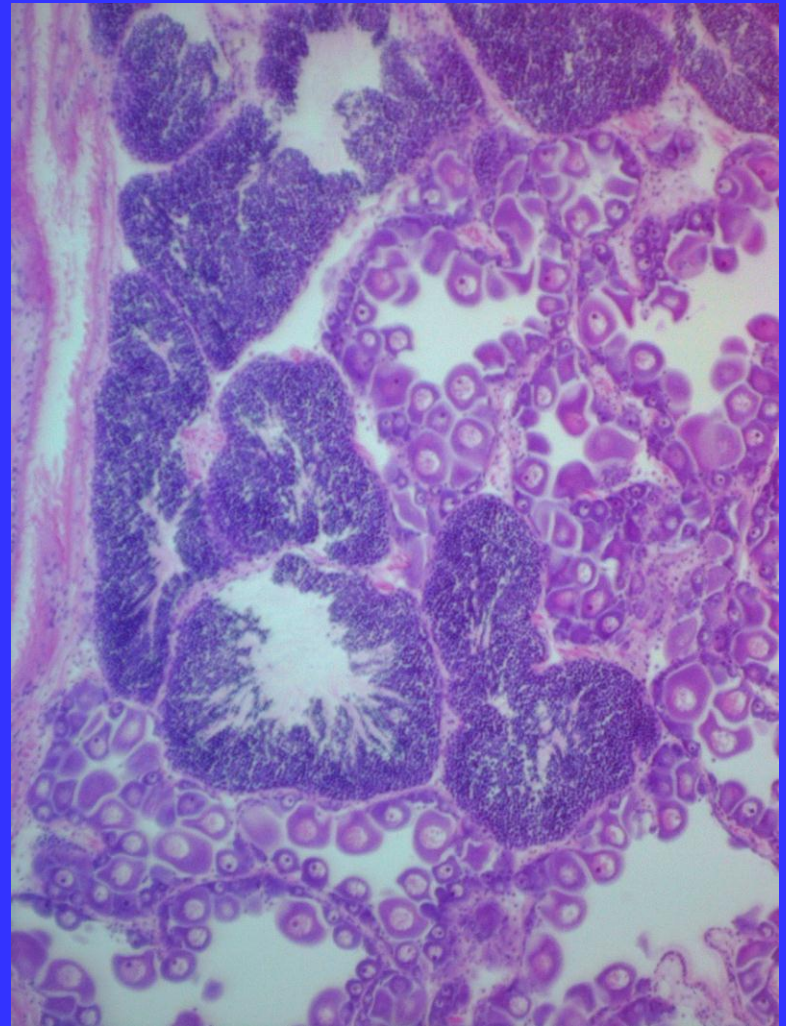


Results

- Planting – Total of 1.2 million seed scallops
 - 1997: 550,000 seed (avg. 8 mm SL)
 - 1998: 650,000 seed (avg. 20 mm SL)
- Density
 - 1997: 42/ft²
 - 1998: 24/ft²
- Survivorship to Initial Spawning
 - 1997: 80%
 - 1998: 89%

Results (cont'd)

- Total Number of Spawnings
 - Three: Spring, Fall, Spring
- Survivorship to Second Spawning
 - 14%-30%
- Survivorship to Third Spawning
 - 5%



Obstacles

- Serpulid worms
- Macroalgae
- Eelgrass detritus



Breaks

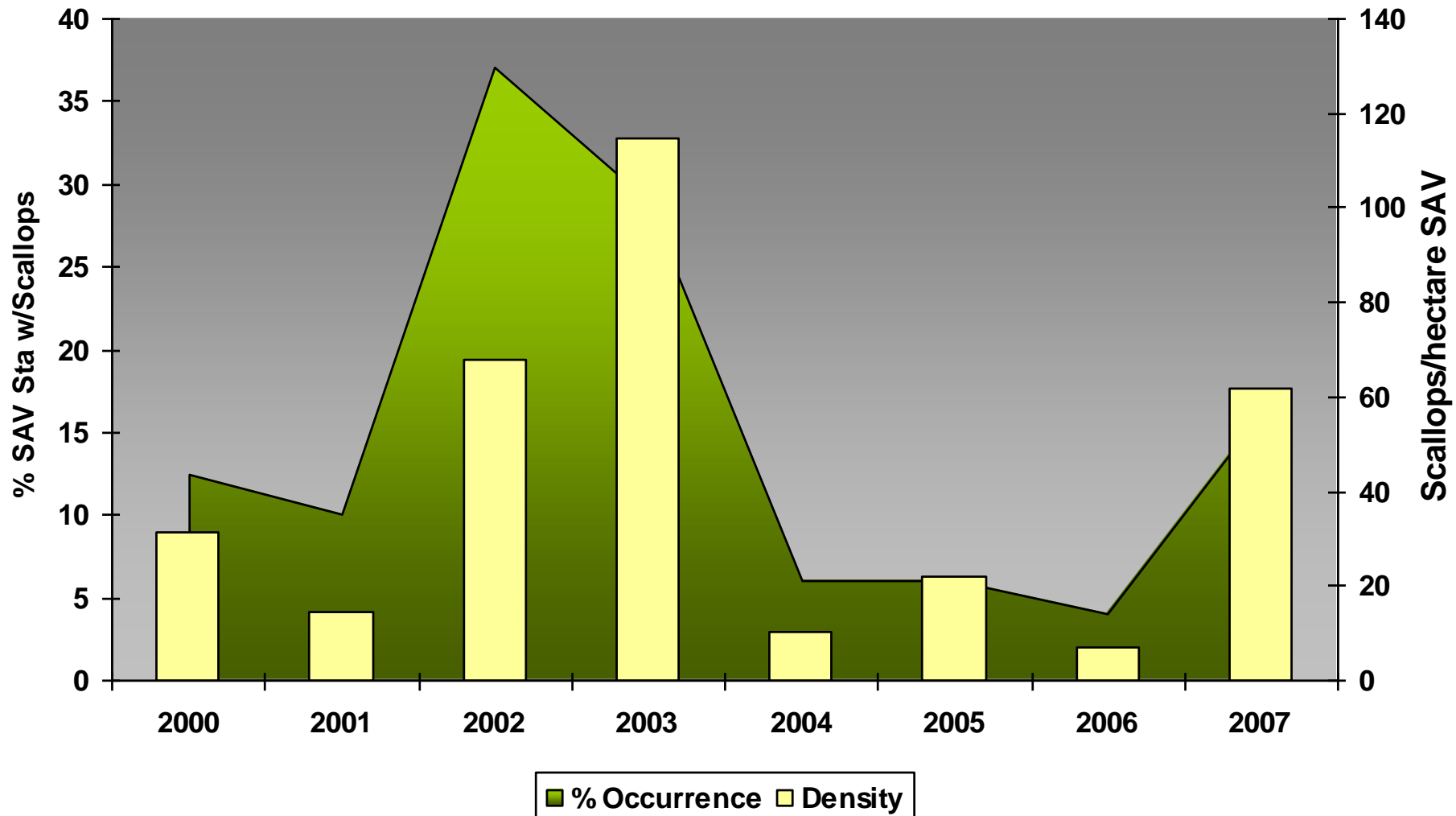
- Mild winters
 - No ice for 3 successive years
- Fewer predators
 - Blue crabs decimated by *Hematidinium* (44% prevalence)

Field Surveys

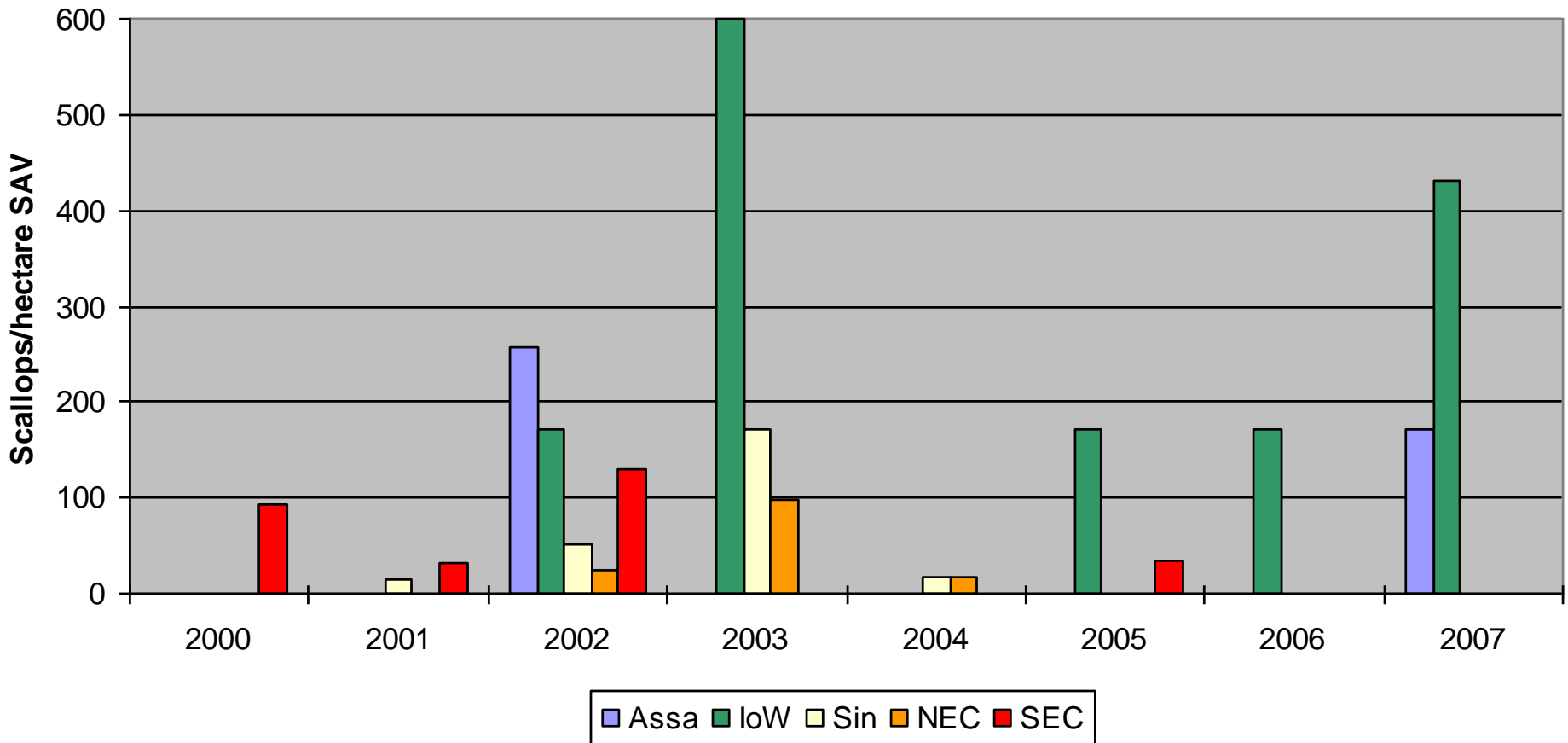
- Commercial hard clam boat w/ hydraulic escalator dredge
- 250 ft. dredging distance
- Small sample n – only 21 to 38 samples/yr in SAV beds



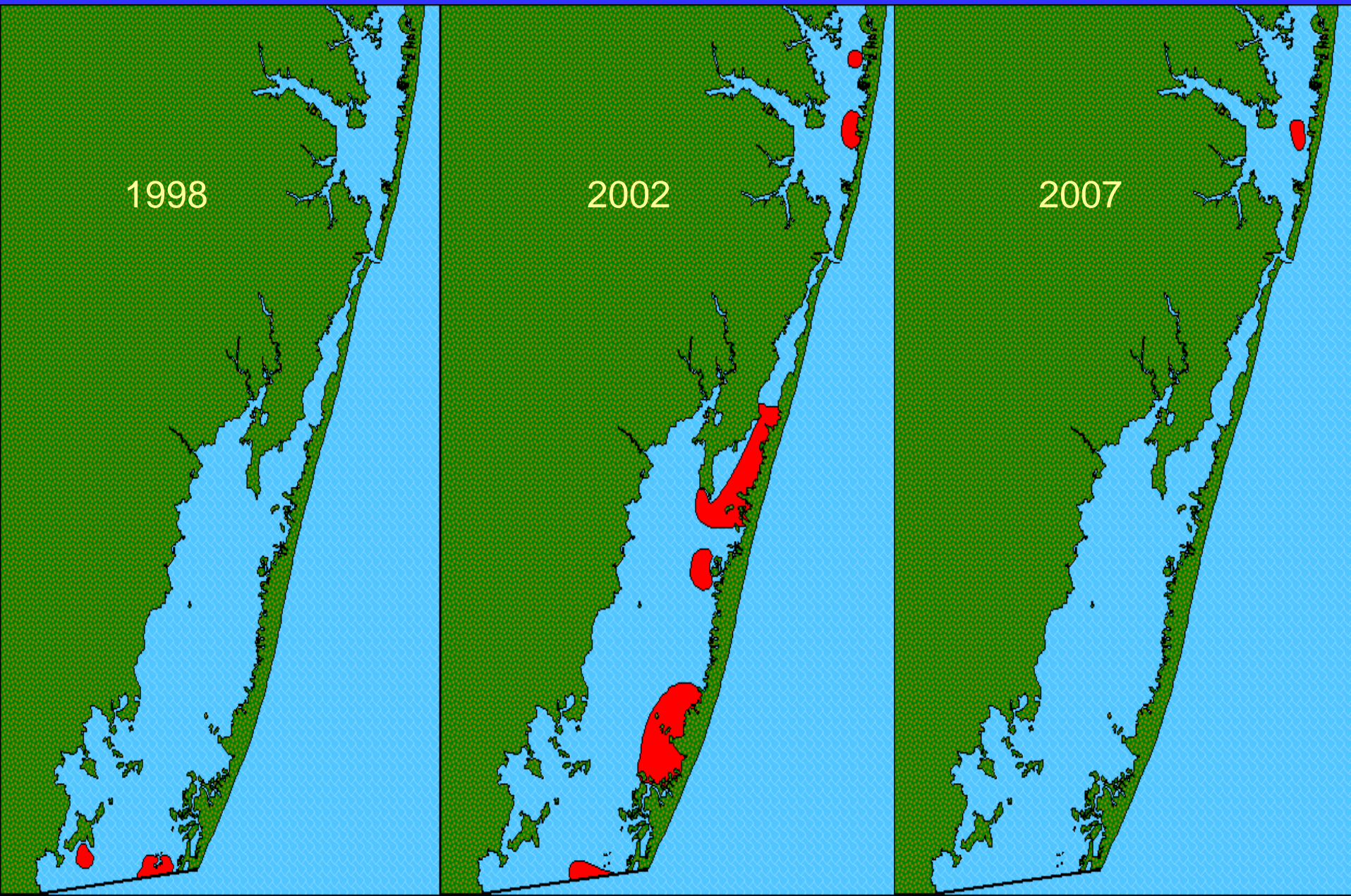
Hard Clam Surveys – SAV Stations



Density by Area



Scallop Distribution (Hard Clam Surveys)



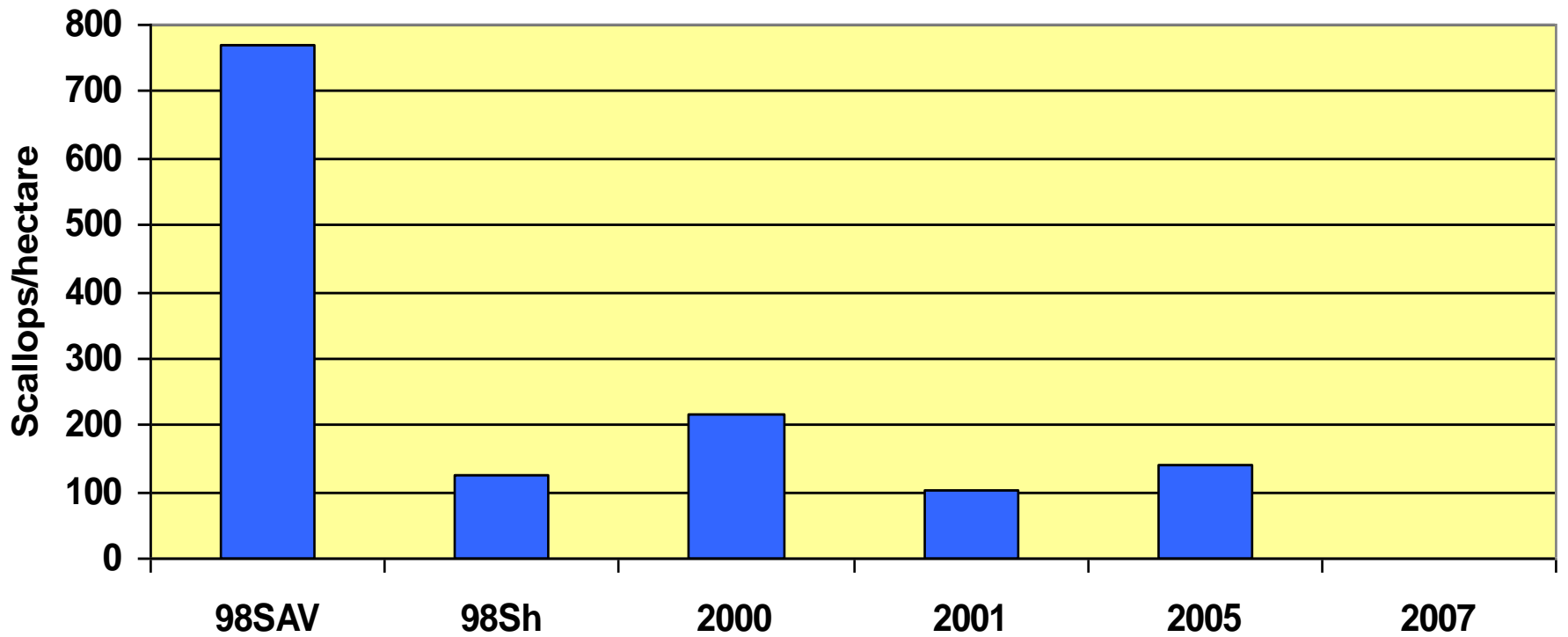
Dedicated Scallop Surveys

- Hydraulic escalator dredge
- Focused in known scallop areas



Dedicated Scallop Surveys

Southern Chincoteague Bay



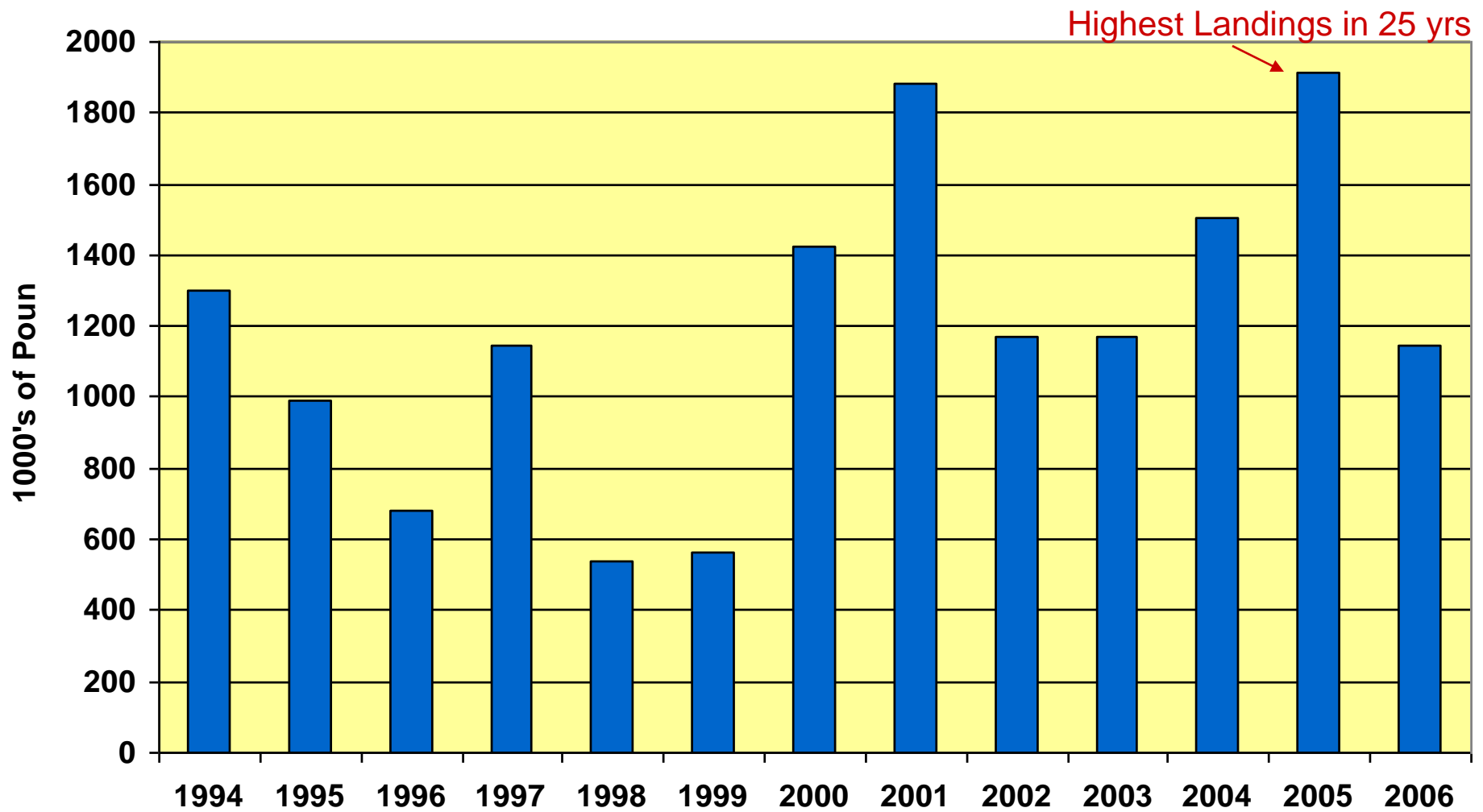
Reasons for Decline

- Loss of Habitat
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 - 52% decline

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 - Blue crab populations have rebounded
 - Other predators more abundant e.g. cow-nose rays
 - Loss of protective seagrasses

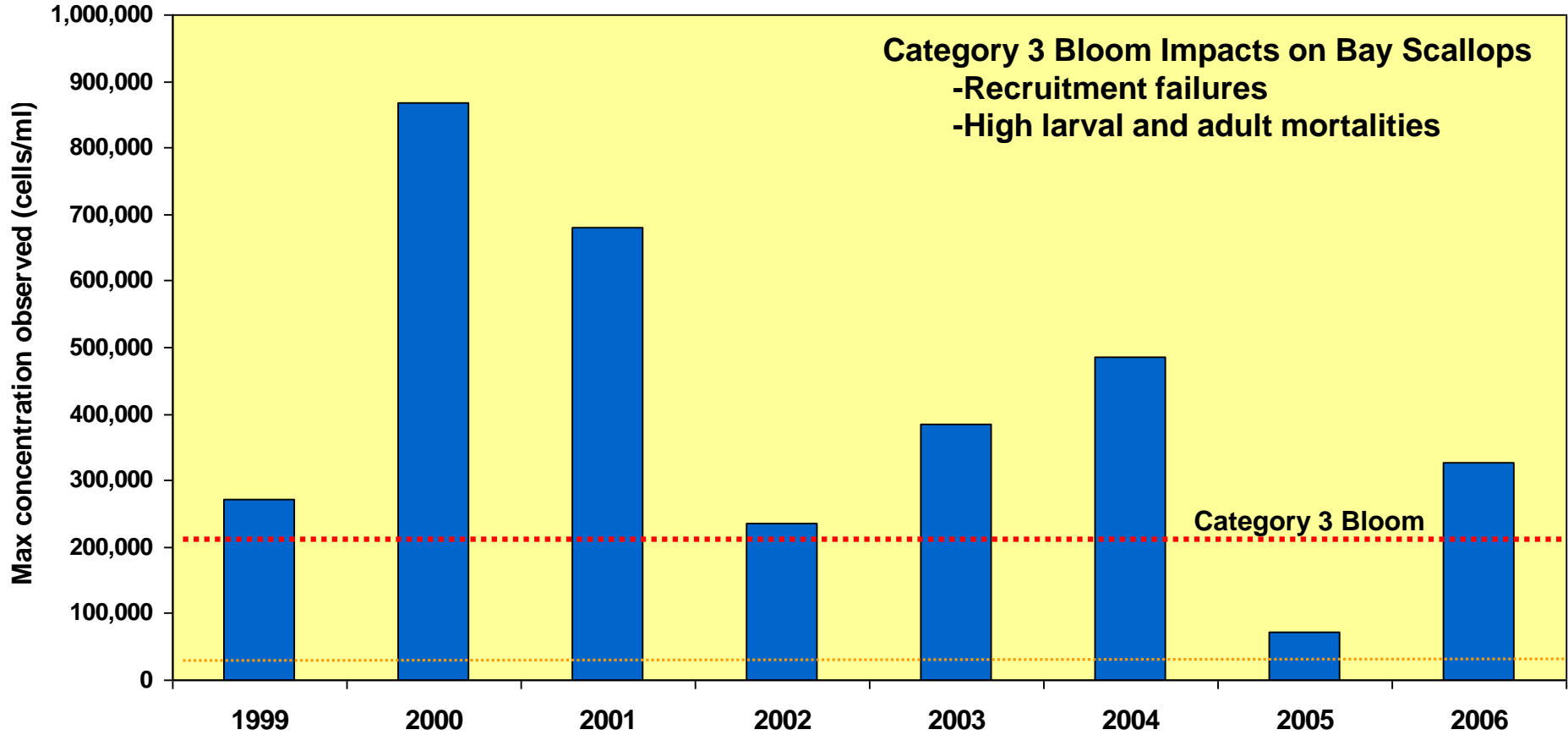
Maryland Coastal Bays Blue Crab Landings



Reasons for Decline

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 - 52% decline
- Increased Predation
 - Blue crab populations have rebounded
 - Other predators more abundant e.g. cow-nose rays
 - Loss of protective seagrasses
- Brown Tide
 - Category 3 blooms 7 of 8 years in Chincoteague Bay

Maximum Brown Tide Counts at Public Landing



Other Possible Reasons for Decline

- Deteriorating water quality
- Elevated temperature anomaly off Delmarva coast in 2005



Acknowledgments

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Capt. William Ryan, F/V Sea Whore

Capt. Gary Pruitt, F/V Suzy Q

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