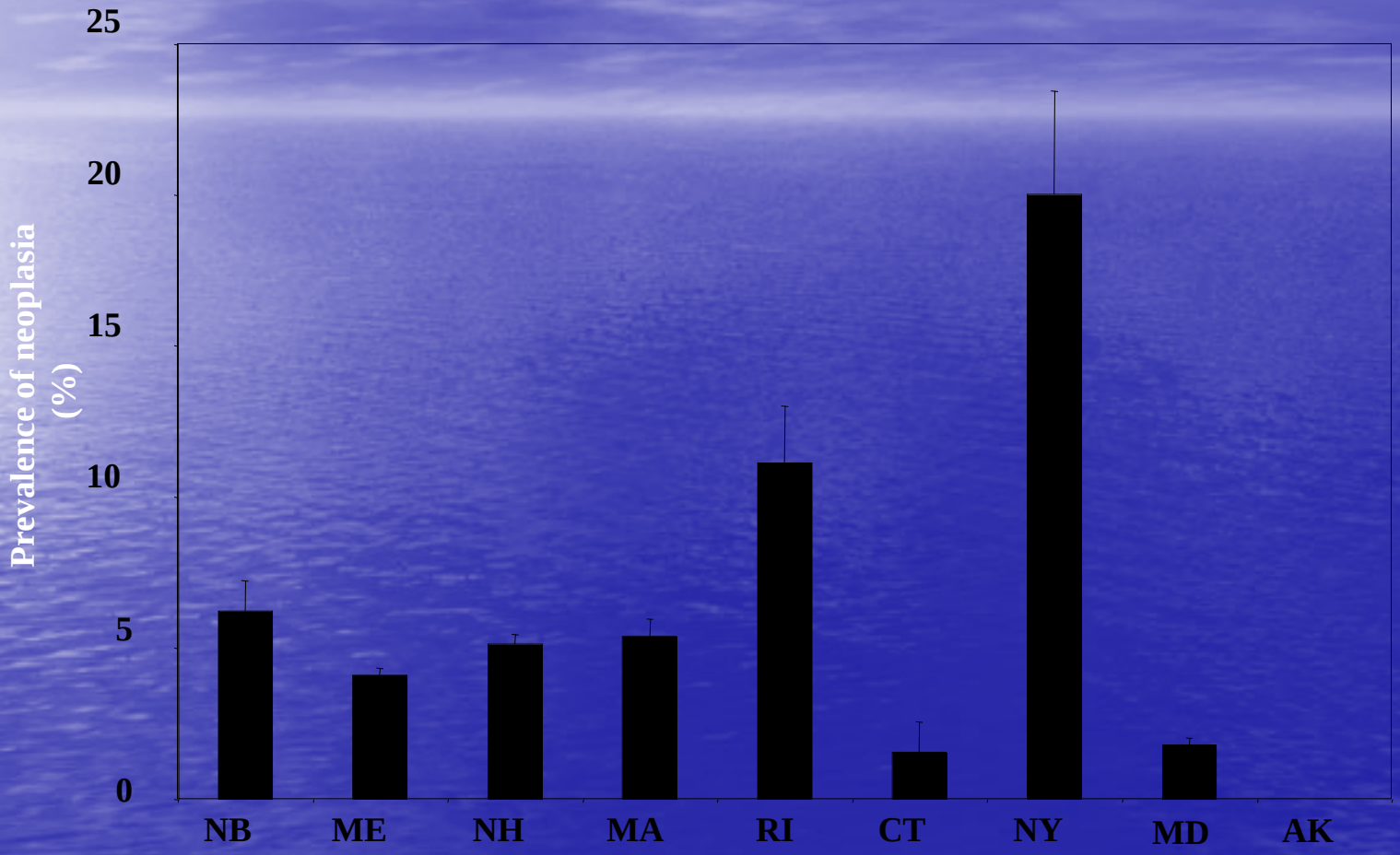
Neoplasia in Maine Clams

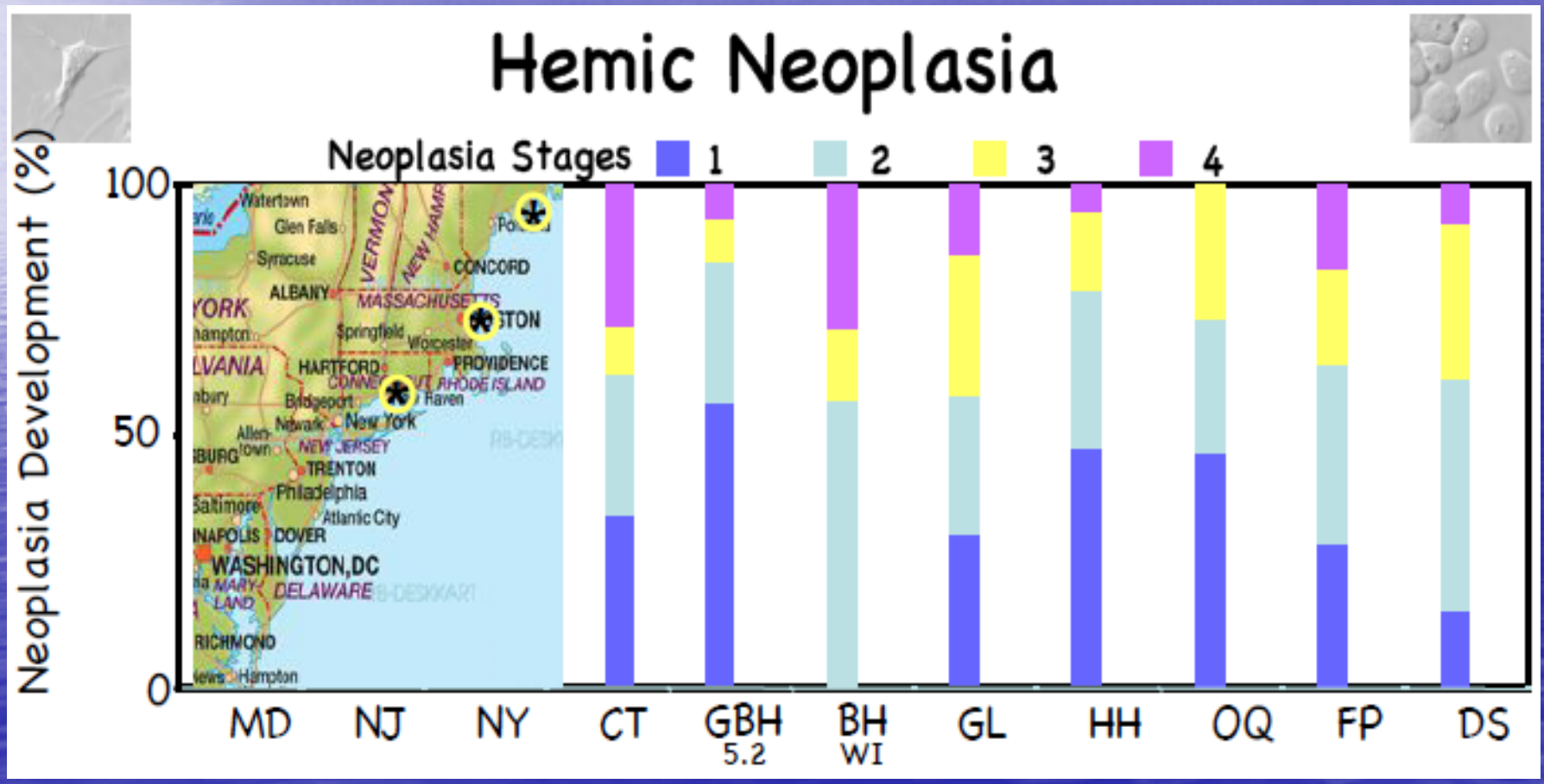
A recent event or old news

Median Neoplasia in the US

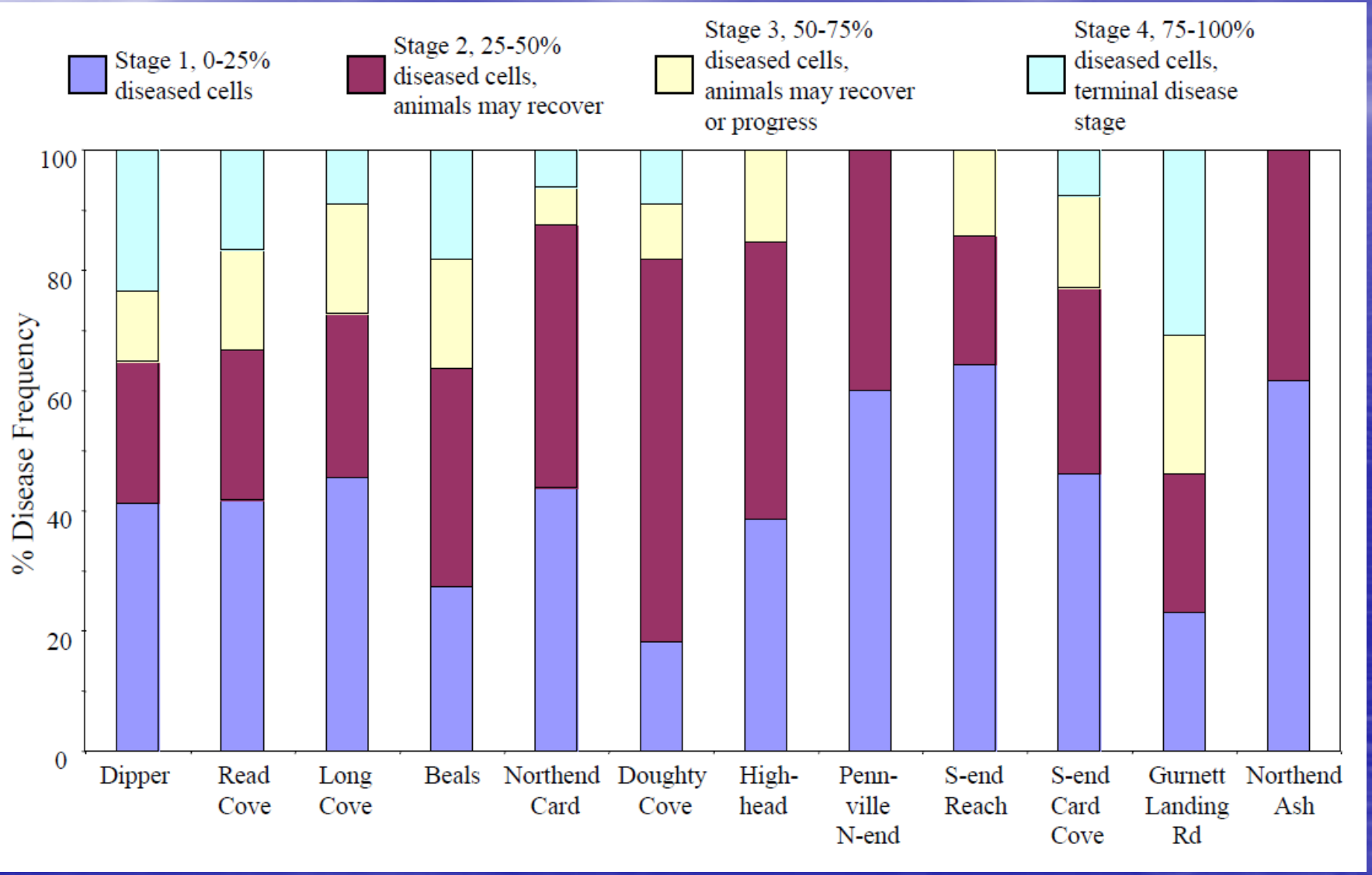


Frequencies of clams with neoplasia (stage 4 recorded only) were compiled for locations including Alaska (**AK**), Maryland (**MD**), New York (**NY**), Connecticut (**CT**), Rhode Island (**RI**), Massachusetts (**MA**), New Hampshire (**NH**), Maine (**ME**) and New Brunswick (**NB**). Data was collected between 2002 and 2009. Clam populations in Alaska were added as a West Coast comparison, since *Mya arenaria* naturally did not occur on the West Coast but were imported from East Coast flats.

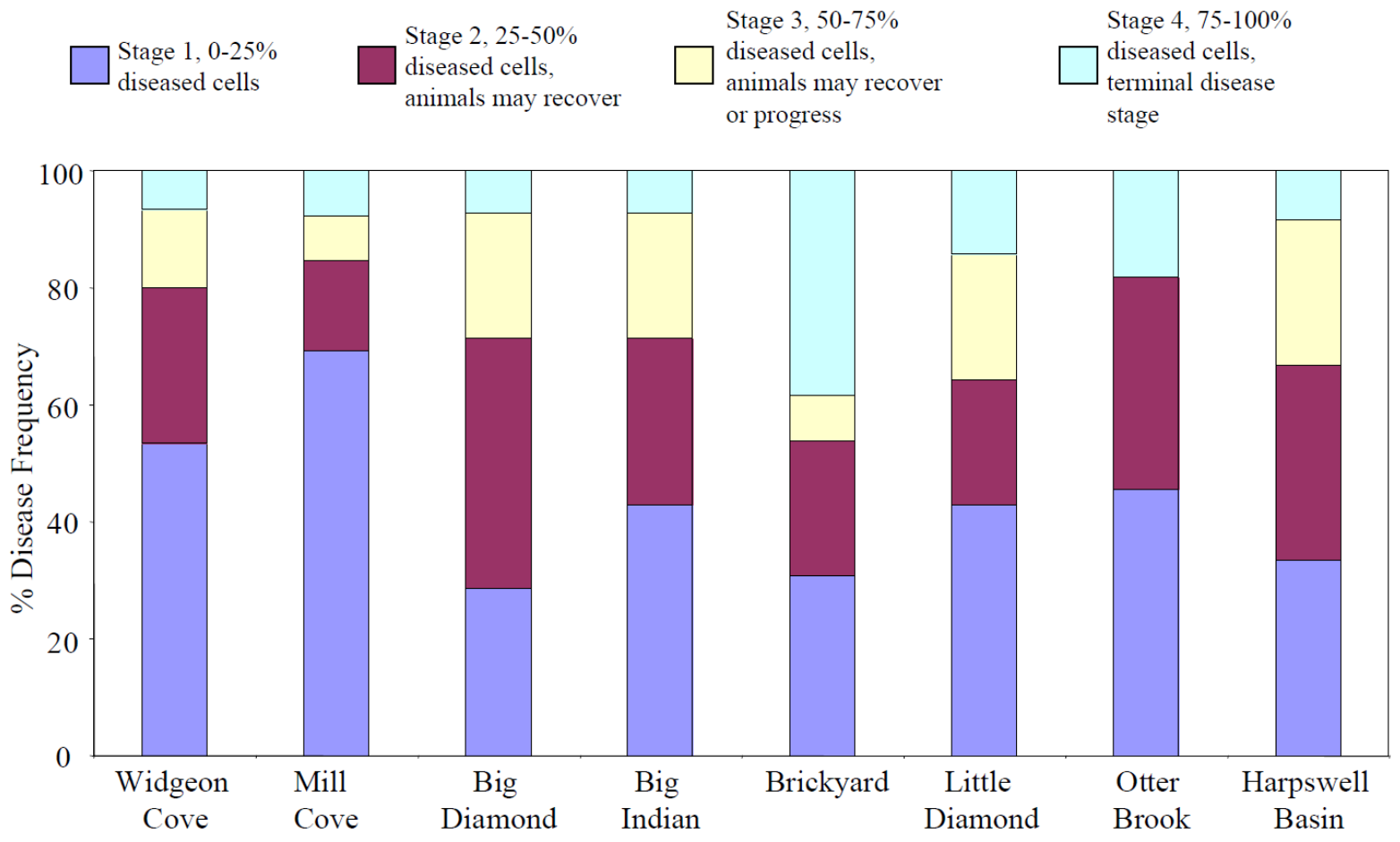
Northeast Study



Harpswell 2012



Harpswell 2013



Harpswell Cove 3-9-2013

	Widgeon Cove	Mill Cove	Big Diamond	Big Indian
Stage 1	53.33	69.23	28.57	42.86
Stage 2	26.67	15.38	42.86	28.57
Stage 3	13.33	7.69	21.43	21.43
Stage 4	6.67	7.69	7.14	7.14

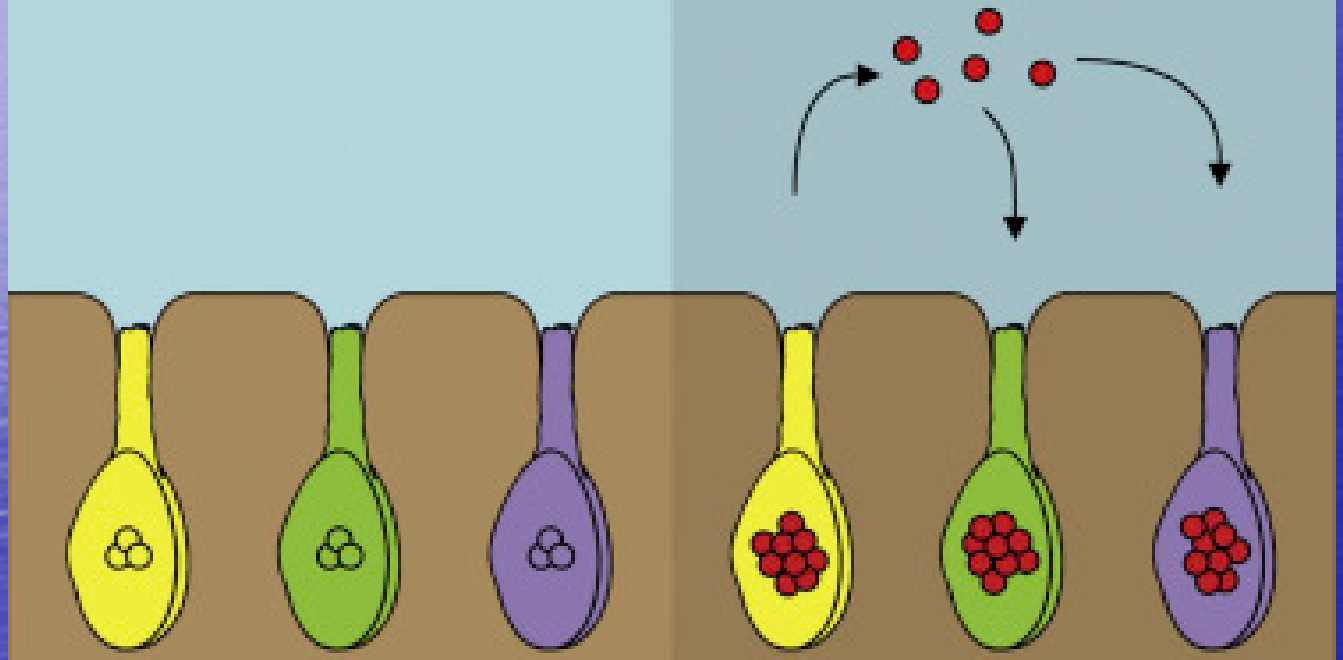
	Brickyard	Little Diamond	Otter Brook	Harpswell Basin
Stage 1	30.77	42.86	45.45	33.33
Stage 2	23.08	21.43	36.36	33.33
Stage 3	7.69	21.43	0.00	25.00
Stage 4	38.46	14.29	18.18	8.33

Normal clams

Hemocyte genotypes match individual genotypes

Leukemic clams

Neoplastic hemocyte genotypes are nearly identical and do not match host genotypes



Leukemia spreads as clonal contagious cancer cells

Disease Testing

- Quahog – QPX
- Blue Mussels – Neoplasia – 2013
  Boothbay and Harpswell
- Soft-Shell Clams - Neoplasia
  Harpswell