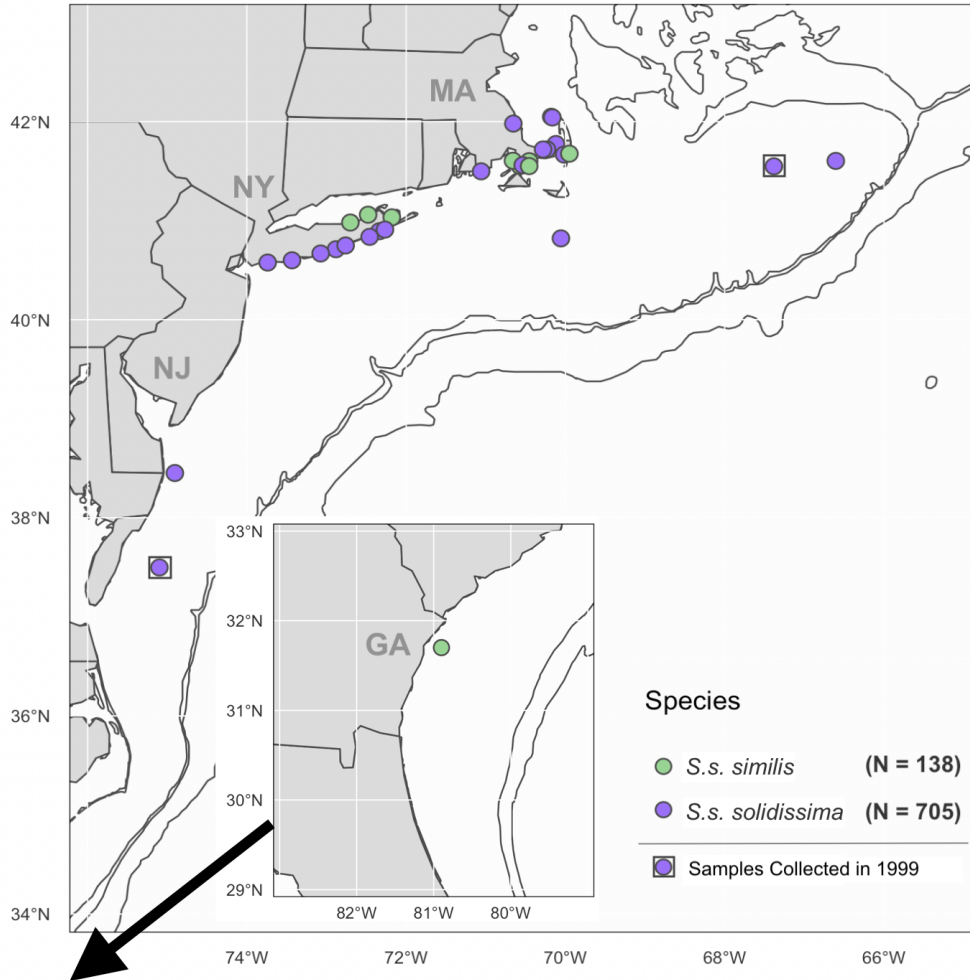
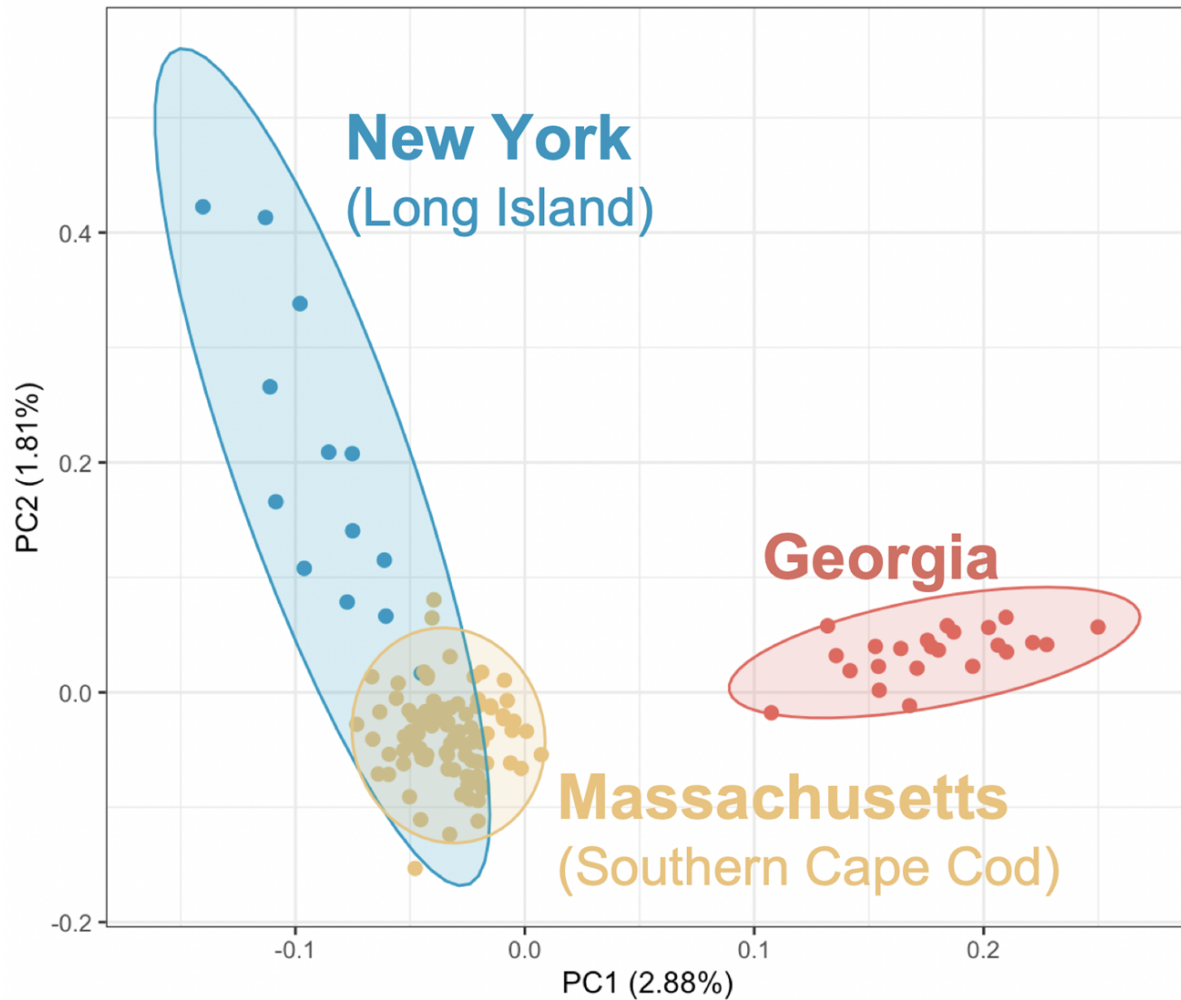


Surfclam Population Structure in the Western North Atlantic

Matthew Hare & Hannah Hartung
Cornell University

Sample Map both taxa



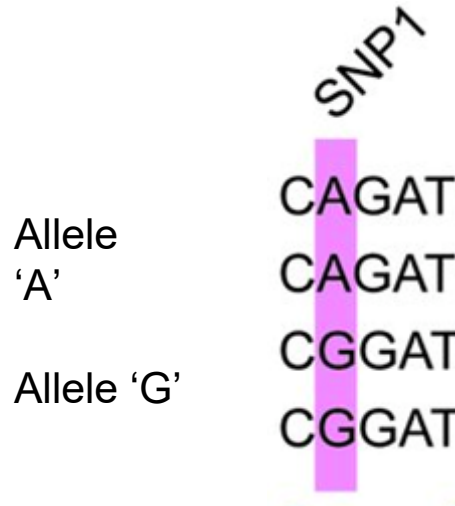


PCA *similis*
12.7k SNPs

Population



Single Nucleotide Polymorphisms = SNPs



Cluster Analysis using Admixture Model

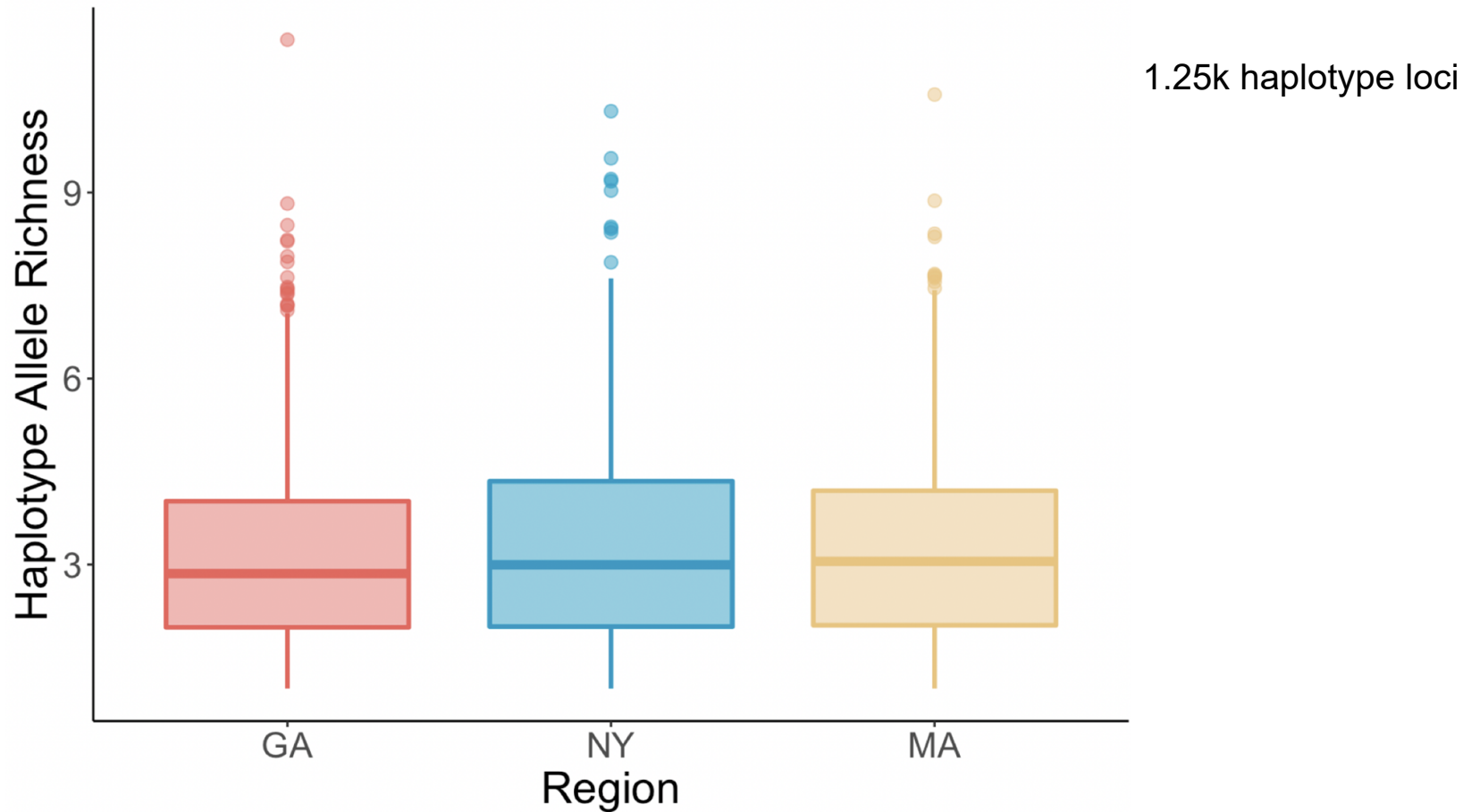
similis haplotypes

1.25k haplotype loci

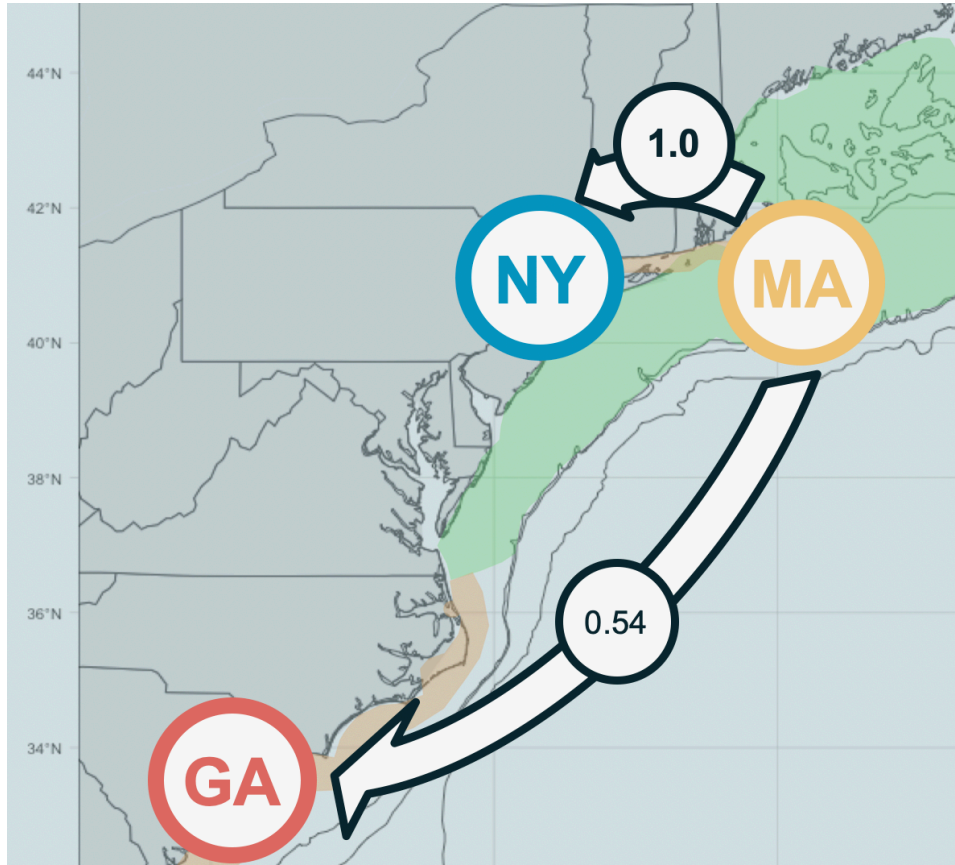
STRUCTURE $K=2$ model best fit



similis genetic diversity



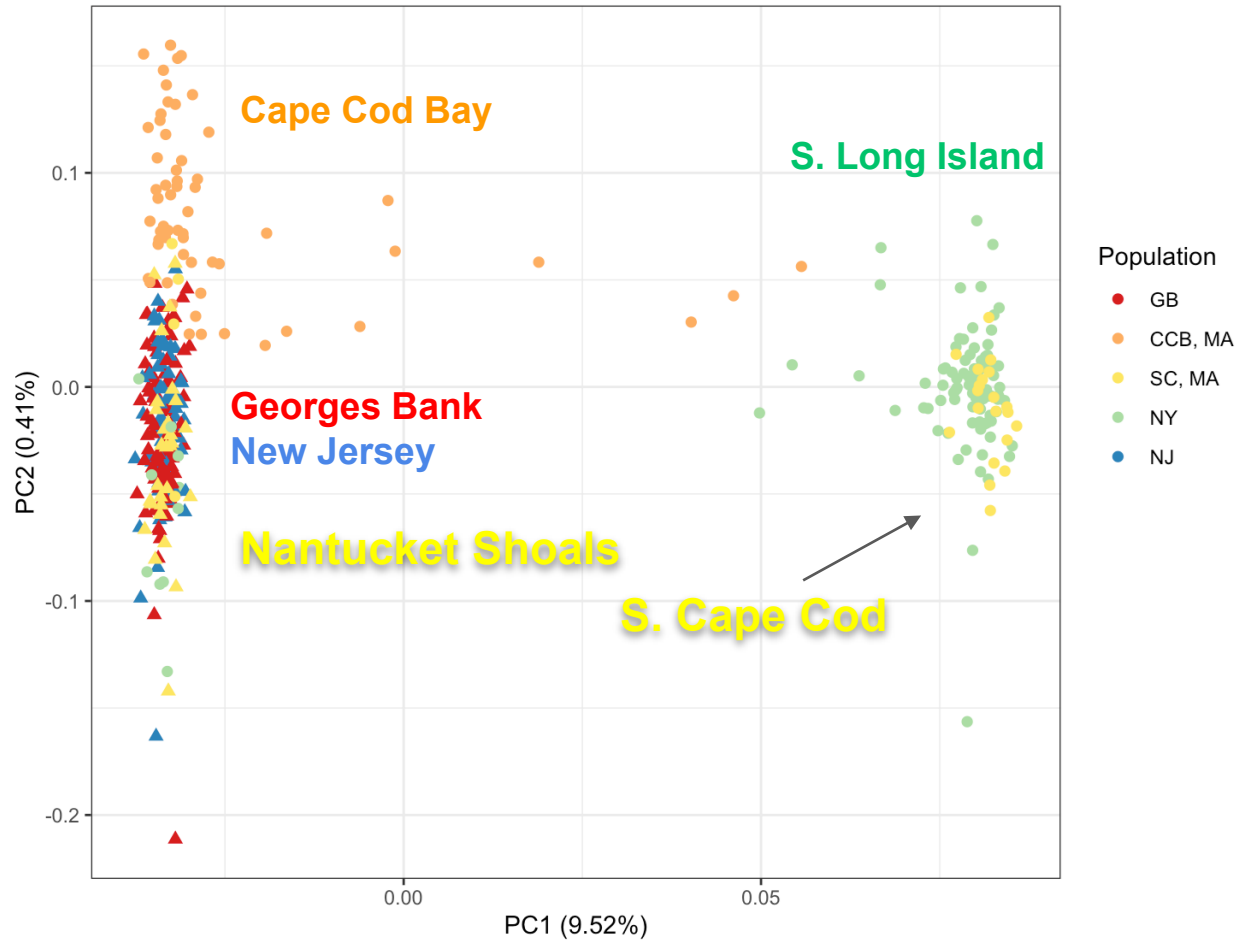
similis gene flow based on divMigrate



Note error in your summary document, gene flow magnitudes reversed

solidissima PCA

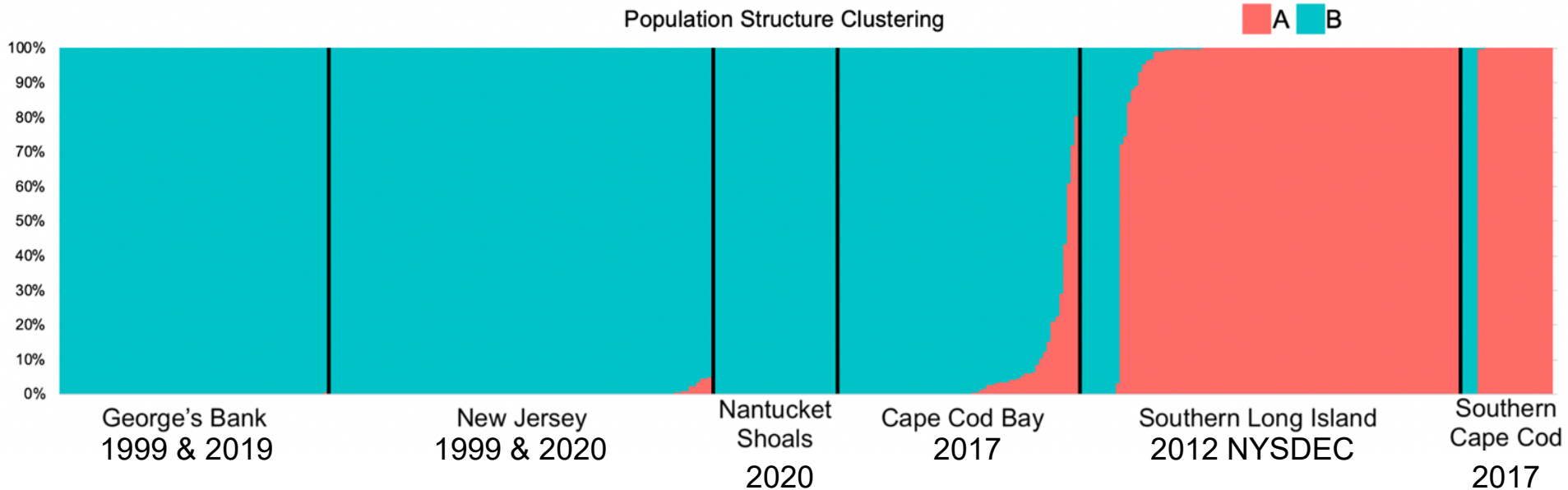
7.6K SNPs



Cluster Analysis using Admixture Model - *solidissima* SNPs

STRUCTURE $K=2$ model best fit

2.7k haplotype loci

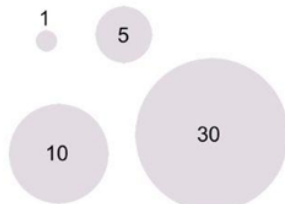


S. s. solidissima Genotypes by Site

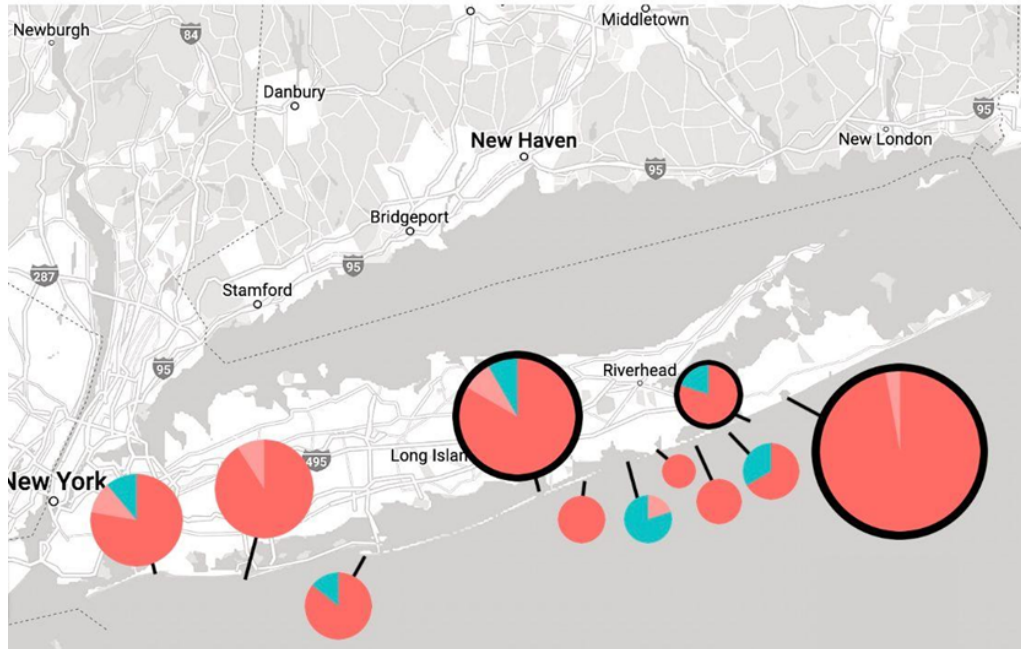
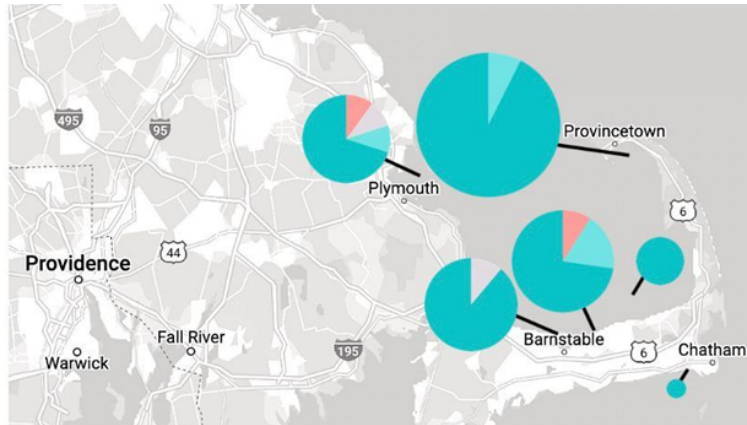


Percent of Loci Clustering with each Genotype

Sample Size



2019 samples collected very close to shore are denoted with black circle



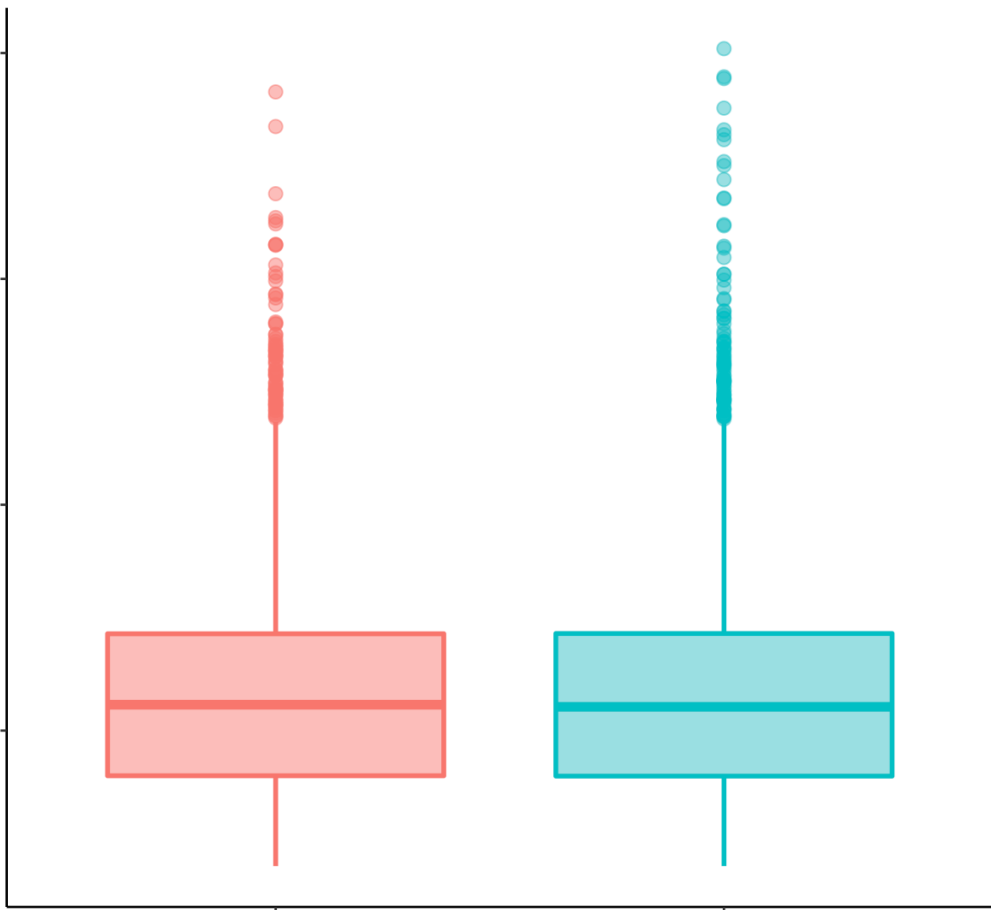
Haplotype Allele Richness

10.0
7.5
5.0
2.5

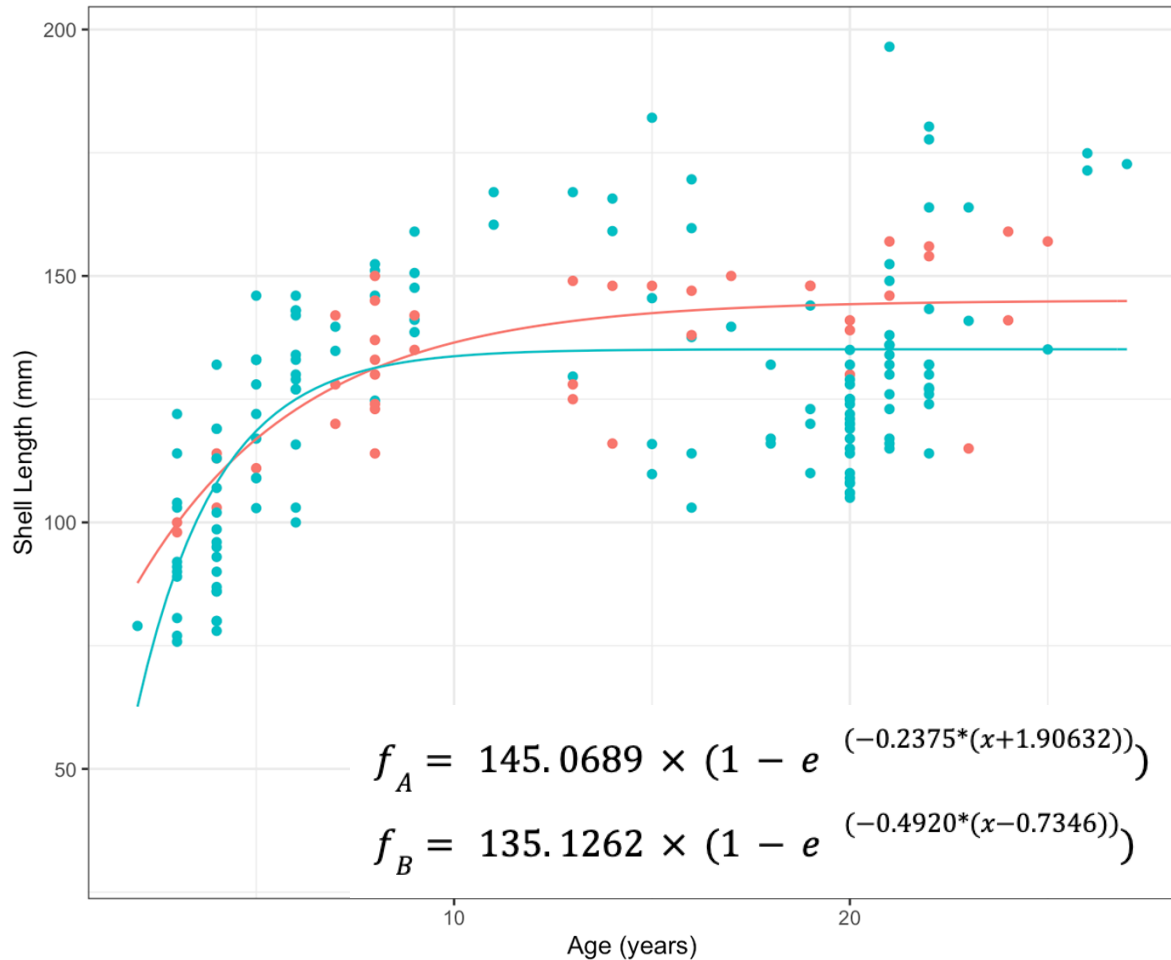
A

B

Genotype



Solidissima Growth by Genotype



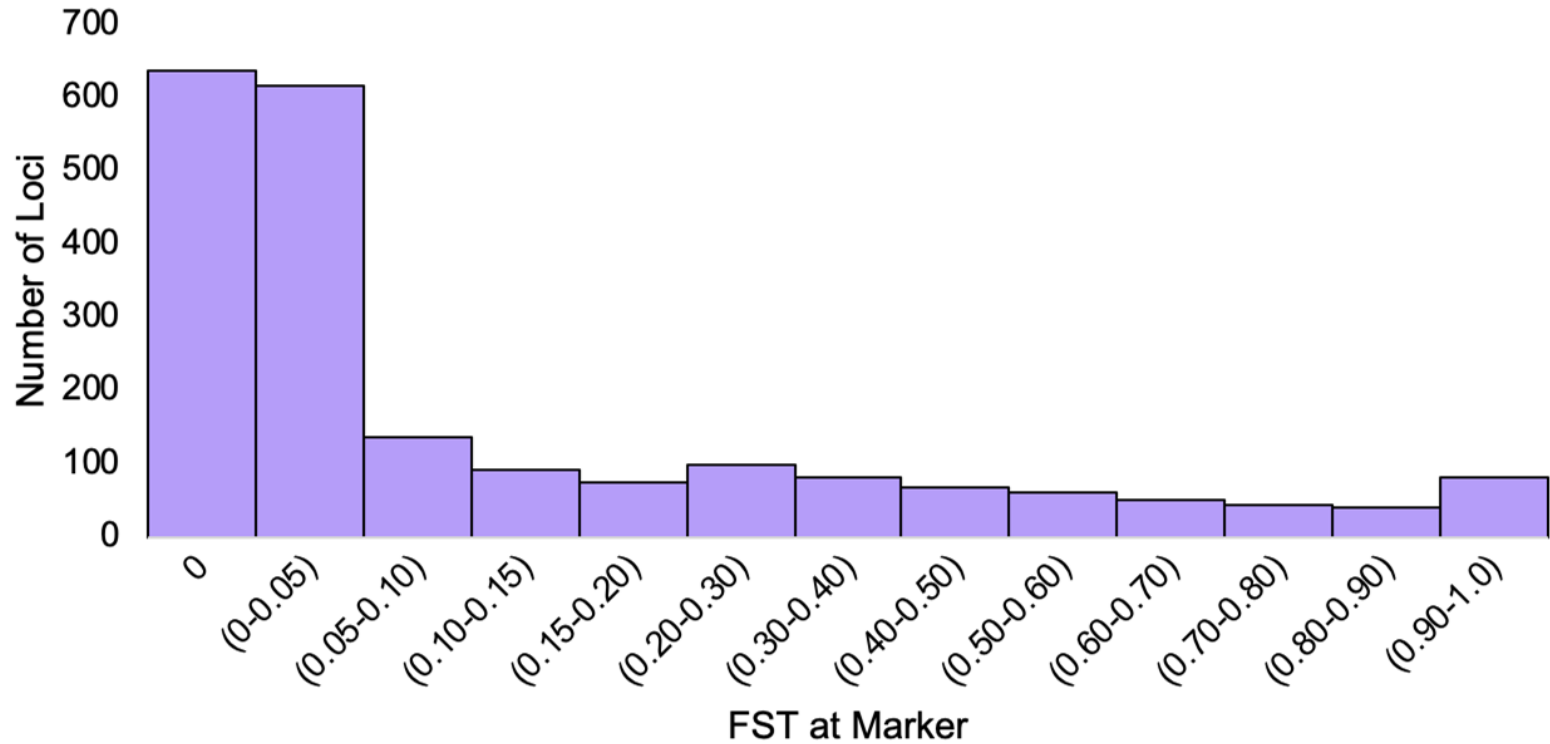
$$f_A = 145.0689 \times (1 - e^{(-0.2375 \cdot (x+1.90632))})$$
$$f_B = 135.1262 \times (1 - e^{(-0.4920 \cdot (x-0.7346))})$$

solidissima genotypes A & B
Von Bertalanffy growth curves

Genotype

- A
- B

F_{ST} between *solidissima* genotype A & B





Open Questions

This project:

- What are the most diagnostic loci for A and B? How efficiently can they be genotyped?
- Are there morphometric differences between A and B?
- What are the patterns of gene flow within similis, *solidissima* A and *solidissima* B?
- What is the demographic history of differentiation for A and B?

For future:

- Are there morphometric differences between A and B?
- If A and B can interbreed, what are the important extrinsic repro isolating mechanisms?
- How do A and B differ in phenology, life history, temperature sensitivity, larval behavior?
- What is the proper taxonomy for S.s. similis, S.s. *solidissima* A & B?