
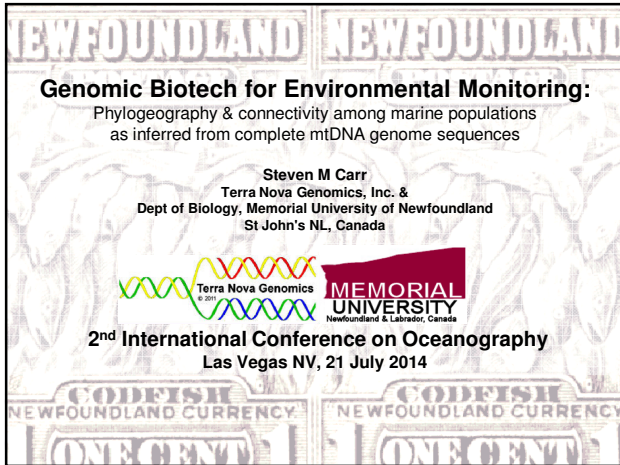


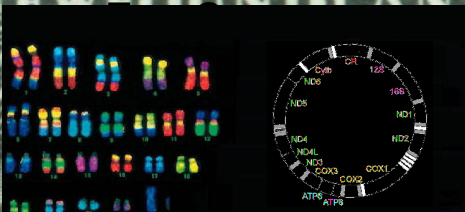
Genomic Biotech for Environmental Monitoring:
Phylogeography & connectivity among marine populations
as inferred from complete mtDNA genome sequences

Steven M Carr
Terra Nova Genomics, Inc. &
Dept of Biology, Memorial University of Newfoundland
St John's NL, Canada

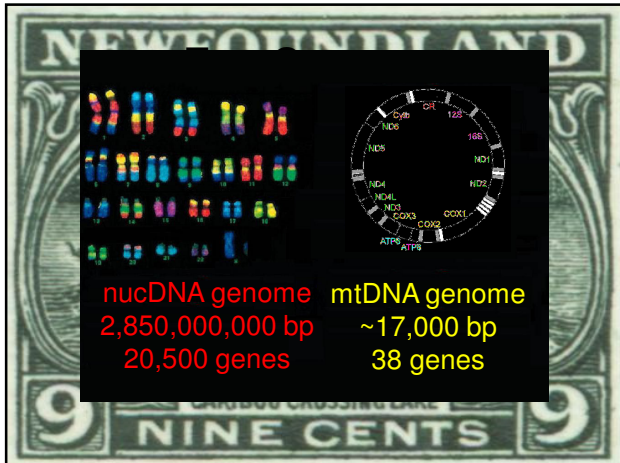


2nd International Conference on Oceanography
Las Vegas NV, 21 July 2014

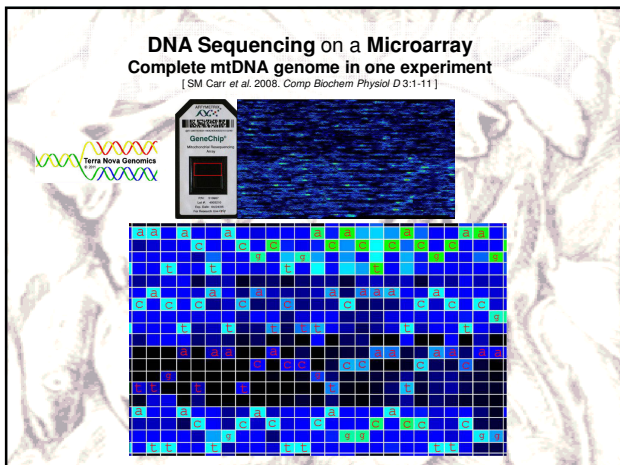

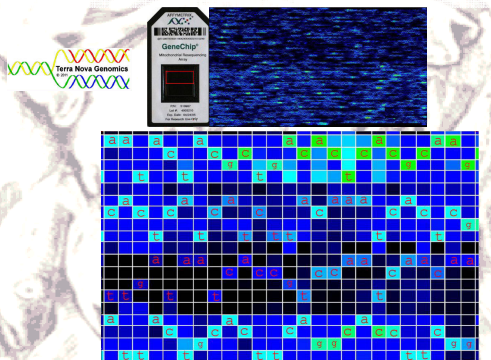


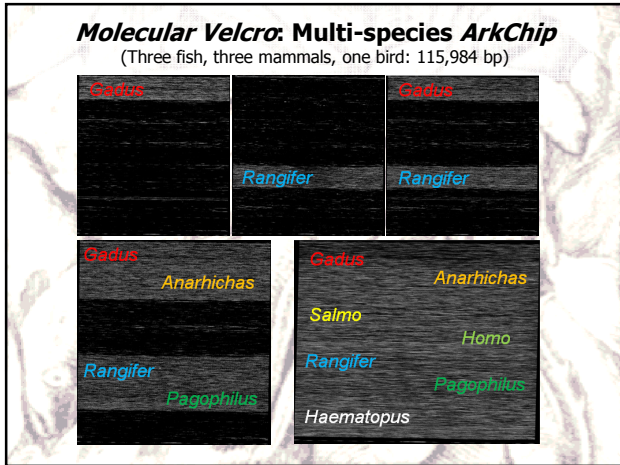


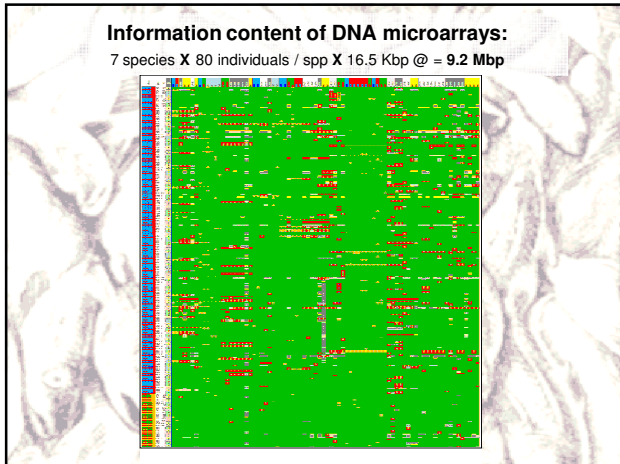
nucDNA genome	mtDNA genome
2,850,000,000 bp	~17,000 bp
20,500 genes	38 genes



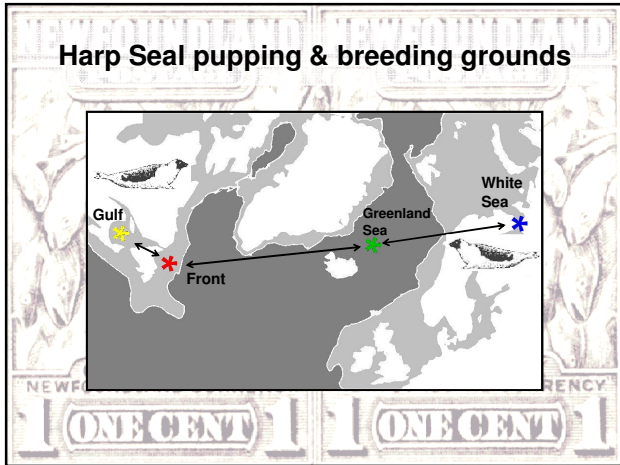
DNA Sequencing on a Microarray
Complete mtDNA genome in one experiment
[SM Carr et al. 2008. *Comp Biochem Physiol D* 3:1-11]

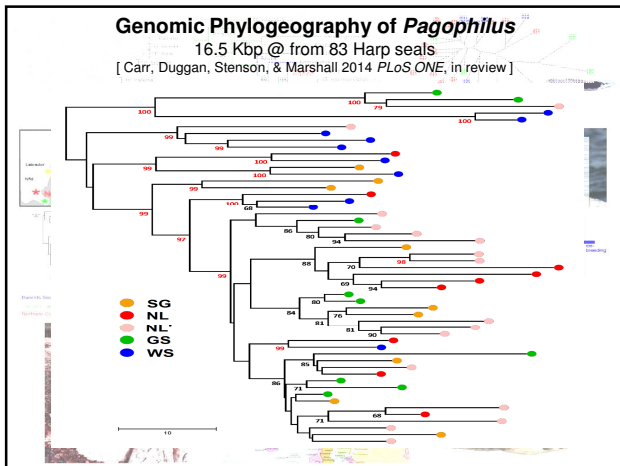


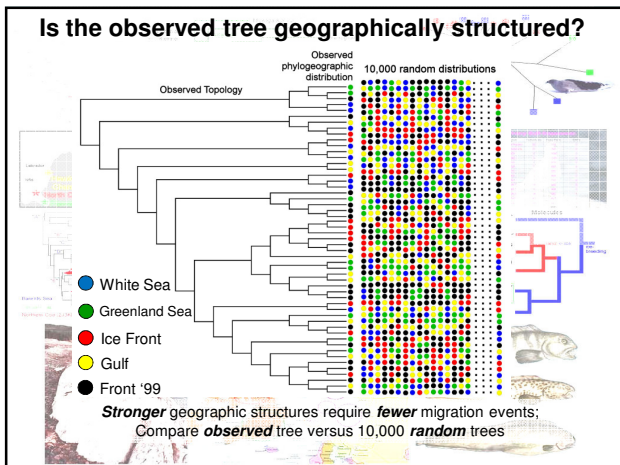










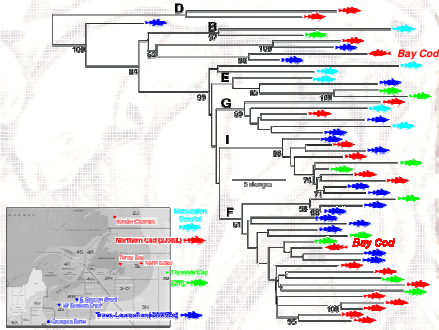


Spawning Stocks of Atlantic Cod Are they genetically distinguishable populations ?



Family Tree of Atlantic Cod:

Northern Cod (2J3KL) vs Trans-Laurentian stocks (4WX5Ze)
vs Flemish Cap (3M) vs Norwegian Coastal stocks
[Carr & Marshall 2008 Genetics 180,381 & in progress]



Worst-Case Scenario: Oil Spill impacts Genome Ecosystem

