

Is food safety and quality influenced by stock structure?

Pampoulie

Christophe

2nd of June
2026



Stock structure and food

- The food industry relies on **quality** and **food safety** management to provide safe and nutritious products to consumers
- **All these depend on stock structure, e.g. the fact that some population of a species might be adapted to specific environment**
- The environment in which the organisms live varies in terms of chemical composition and prey resources => influence food quality

Stock structure and food

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doi: 10.3354/meps11114

MARINE ECOLOGY PROGRESS SERIES
Mar Ecol Prog Ser

Published March 2

Stock structure of Atlantic herring *Clupea harengus* in the Norwegian Sea and adjacent waters

Christophe Pampoulie^{1,*}, Aril Slotte², Guðmundur J. Óskarsson¹, Sarah J. Helyar³, Ásbjörn Jónsson³, Guðbjörg Ólafsdóttir³, Sigurlaug Skirnisdóttir³, Lísa Anne Libungan⁴, Jan Arge Jacobsen⁵, Hóraldur Joensen⁶, Henrik Hauch Nielsen⁷, Sindri Karl Sigurðsson⁸, Anna Kristín Daniélsdóttir³

ICES Journal of Marine Science (2014), 71(9), 2390–2397. doi:10.1093/icesjms/fsu071

Original Article

Genetic structure of the lumpfish *Cyclopterus lumpus* across the North Atlantic

Christophe Pampoulie^{1*}, Sigurlaug Skirnisdóttir², Guðbjörg Ólafsdóttir², Sarah J. Helyar², Vilhjálmur Thorsteinsson¹, Sigurður Þ. Jónsson¹, Alain Fréchet³, Caroline M. F. Durif⁴, Sally Sherman⁵, Magdalena Lampart-Kaluźniacka⁶, Rasmus Hedeholm⁷, Halldór Ólafsson⁸, Anna K. Daniélsdóttir², and Jacob M. Kasper^{1,8}

The genetic structure of Atlantic cod (*Gadus morhua*) around Iceland: insight from microsatellites, the *Pan I* locus, and tagging experiments

Christophe Pampoulie, Daniel E. Ruzzante, Valérie Chosson, Thóra Dögg Jörundsdóttir, Lorna Taylor, Vilhjálmur Thorsteinsson, Anna Kristín Daniélsdóttir, and Guðrún Marteinsdóttir

Short Communication

A “seascape genetic” snapshot of *Sebastes marinus* calls for further investigation across the North Atlantic

Christophe Pampoulie, David Gíslason, and Anna Kristín Daniélsdóttir

ICES Journal of Marine Science (2020), 77(2), 604–612. doi:10.1093/icesjms/fsaa003

Original Article

The genetic composition of feeding aggregations of the Atlantic mackerel (*Scomber scombrus*) in the central north Atlantic: a microsatellite loci approach

David Gíslason^{1,‡}, Sarah J. Helyar^{1,2,‡}, Guðmundur J. Óskarsson³, Guðbjörg Ólafsdóttir¹, Aril Slotte⁴, Teunis Jansen^{5,6}, Jan Arge Jacobsen⁷, Kristinn Ólafsson¹, Sigurlaug Skirnisdóttir¹, Geir Dahle⁴, Helle Siegstad⁵, Hóraldur Joensen⁸, Kiersten L. Curti⁹, François Grégoire¹⁰, Jacques Masse¹¹, Sæmundur Sveinsson¹, Anna Kristín Daniélsdóttir¹, and Christophe Pampoulie^{1,3,*}

Stock structure and food

The composition of adult overwintering and juvenile aggregations of Atlantic cod (*Gadus morhua*) around Iceland using neutral and functional markers: a statistical challenge

Christophe Pampoulie, Anna Kristín Daniélsdóttir, Vilhjálmur Thorsteinsson, Einar Hjörleifsson, Guðrún Marteinsdóttir, and Daniel E. Ruzzante

ICES Journal of Marine Science



ICES Journal of Marine Science (2016), 73(6), 1525–1532. doi:10.1093/icesjms/fsv176

Original Article

Origin of Atlantic salmon (*Salmo salar*) at sea in Icelandic waters

Kristinn Olafsson^{1,2*}, Sigurdur M. Einarsson³, John Gilbey⁴, Christophe Pampoulie⁵, Gudmundur O. Hreggvidsson^{1,2}, Sigridur Hjorleifsdottir⁶, and Sigurdur Gudjonsson³

ICES Journal of Marine Science (2011), 68(1), 20–25. doi:10.1093/icesjms/fsq165

Short communication

A pilot genetic study reveals the absence of spatial genetic structure in Norway lobster (*Nephrops norvegicus*) on fishing grounds in Icelandic waters

Christophe Pampoulie^{1*}, Sigurlaug Skirnisdottir², Sigurbjorg Hauksdottir², Kristinn Olafsson³, Hrafnkell Eiríksson¹, Valérie Chosson¹, Gudmundur O. Hreggvidsson³, Gudmundur H. Gunnarsson⁴, and Sigridur Hiorleifsdottir²

Vol. 739: 227–240, 2024
<https://doi.org/10.3354/meps14619>

MARINE ECOLOGY PROGRESS SERIES
Mar Ecol Prog Ser

Published July 4



Discriminating populations of Atlantic herring mixing in the Norwegian Sea feeding ground using single nucleotide polymorphisms (SNPs)

Christophe Pampoulie^{1,*,#}, Aril Slotte², Guðmundur J. Óskarsson¹, Guðbjörg Ólafsdóttir³, Jan Arge Jacobsen⁴, Hóraldur Joensen⁵, Sindri Karl Sigurðsson⁶, Sæmundur Sveinsson³, Leif Andersson⁷, Anna Kristin Daniélsdóttir³, Davíð Gíslason^{3,#}

ORIGINAL ARTICLE

Evolutionary Applications
WILEY

Evidence of unidirectional hybridization and second-generation adult hybrid between the two largest animals on Earth, the fin and blue whales

Christophe Pampoulie¹ | Davíð Gíslason² | Guðbjörg Ólafsdóttir² | Valérie Chosson¹ | Sverrir Daníel Halldórsson¹ | Stefano Mariani³ | Bjarki Þ. Elvarsson¹ | Marianne H. Rasmussen⁴ | Maria R. Iversen⁴ | Anna Kristín Daniélsdóttir² | Gísli A. Víkingsson¹

Population structure of beaked redfish, *Sebastes mentella*: evidence of divergence associated with different habitats

Steven X. Cadrin, Matthias Bernreuther, Anna Kristín Daniélsdóttir, Einar Hjörleifsson, Torild Johansen, Lisa Kerr, Kristjan Kristinsson, Stefano Mariani, Kjell Nedreaas, Christophe Pampoulie, Benjamin Planque, Jákup Reinert, Fran Saborido-Rey, Thorsteinn Sigurðsson, and Christoph Stransky

Stock

The co-juvenile morhua function

Christophe Einar Hjörleifsson



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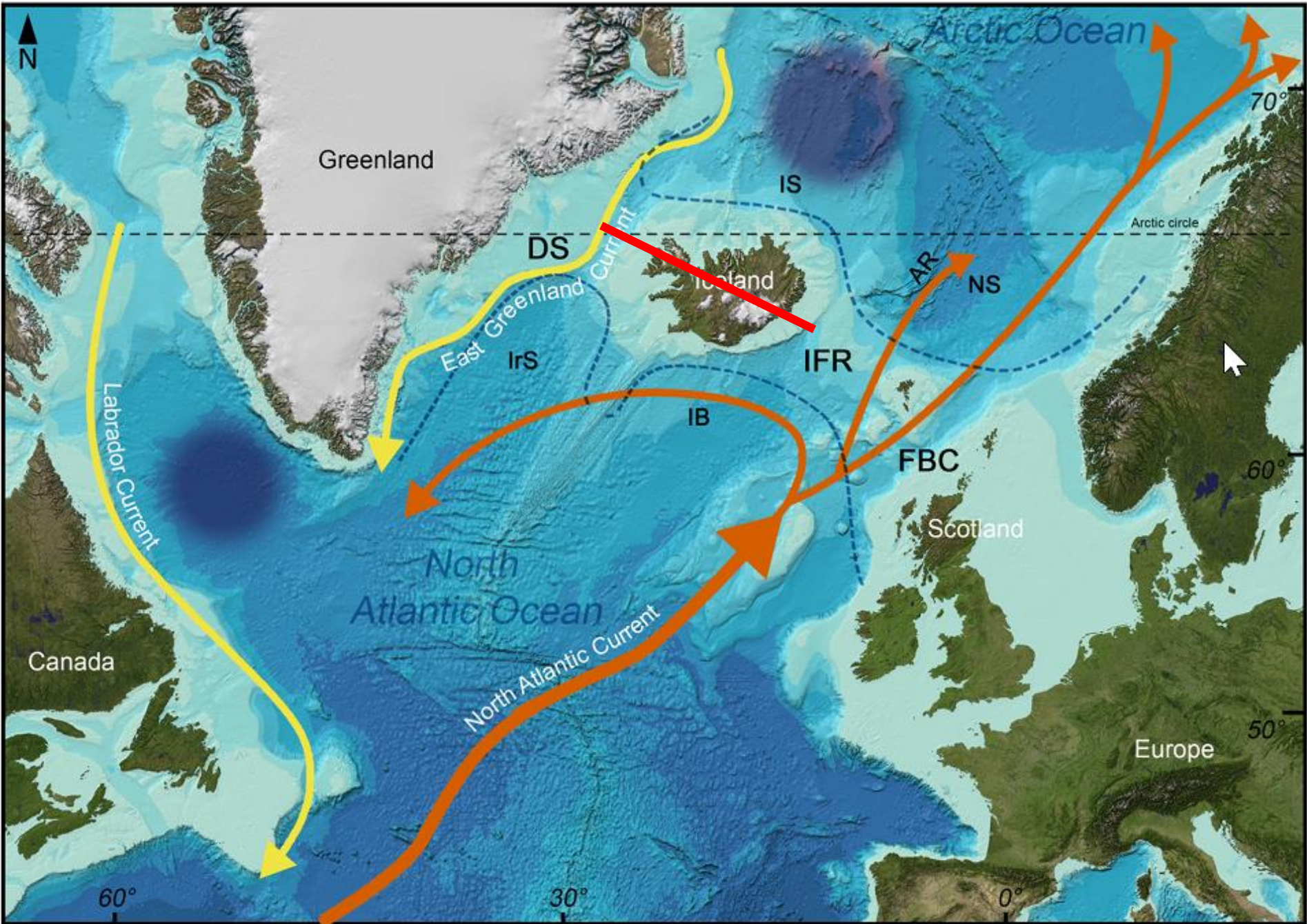
ORIGINAL ARTICLE

Evidence of unidirectional adult hybridization between Atlantic and blue whale

Christophe Pampouille, Sverrir Daníel Halldórsson, Marianne H. Rasmussen, Gísli A. Víkingsson¹

Population structure and genetic evidence of unidirectional adult hybridization between Atlantic and blue whale

Steven X. Cadrin, Torild Johansen, Liisa Lehtonen, Christophe Pampouille, Thorsteinn Sigurðsson, and Christoph Strassky



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Stock structure and food: Most successful story

Behav Genet (2015) 45:236–244
DOI 10.1007/s10519-014-9701-7

ORIGINAL RESEARCH



Rhodopsin Gene Polymorphism Associated with Divergent Light Environments in Atlantic Cod

Christophe Pampoulie · Sigurlaug Skirnisdottir · Bastiaan Star · Sissel Jentoft ·
Ingibjörg G. Jónsdóttir · Einar Hjörleifsson · Vilhjálmur Thorsteinsson ·
Ólafur K. Pálsson · Paul R. Berg · Øivind Andersen · Steinunn Magnúsdóttir ·
Sarah J. Helyar · Anna K. Daniélsdóttir

Behav Genet (2008) 38:76–81
DOI 10.1007/s10519-007-9175-y

ORIGINAL PAPER

Are Vertical Behaviour Patterns Related to the Pantophysin Locus in the Atlantic Cod (*Gadus morhua* L.)?

Christophe Pampoulie · Klara B. Jakobsdóttir ·
Guðrún Marteinsdóttir · Vilhjálmur Thorsteinsson

Stock structure and food: Ecotypes

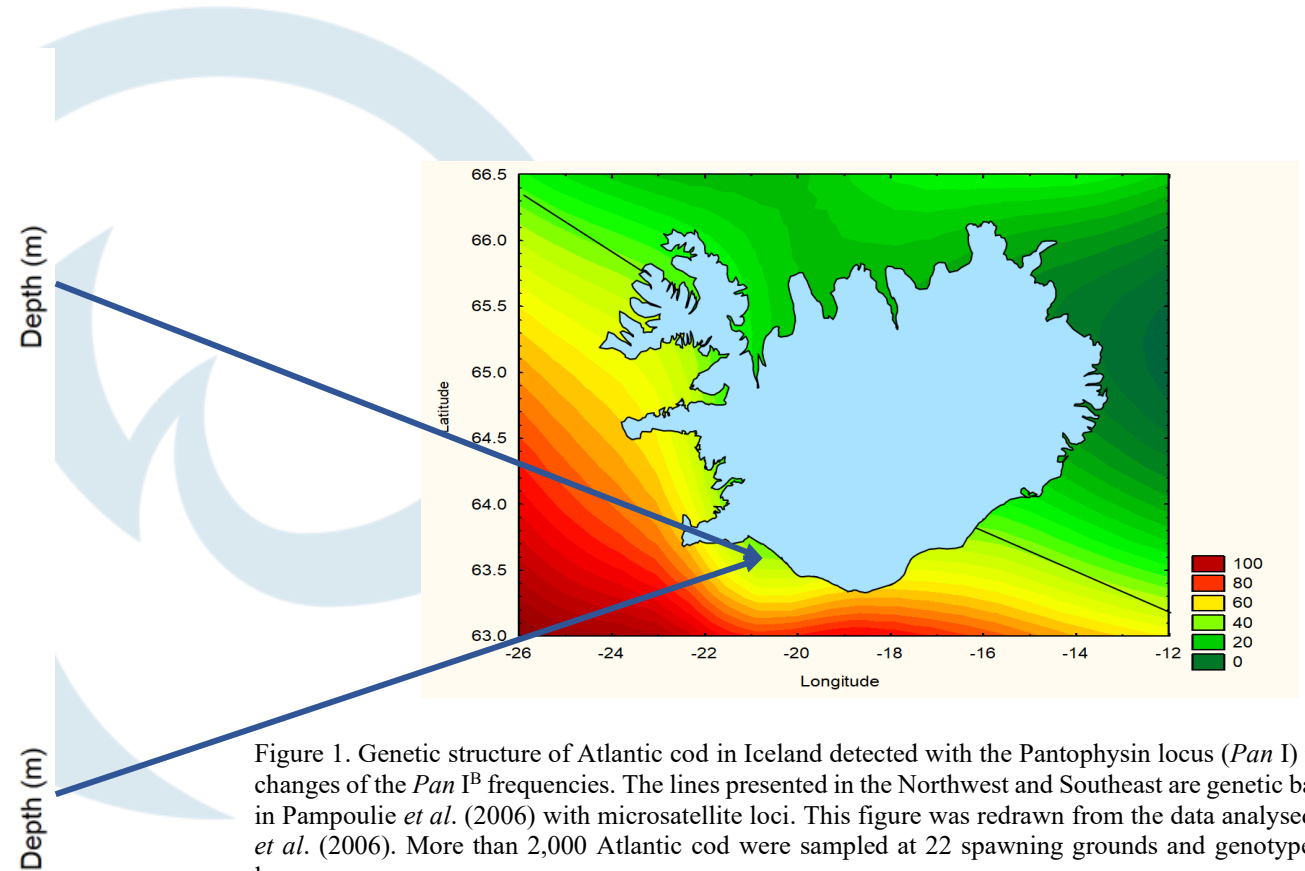
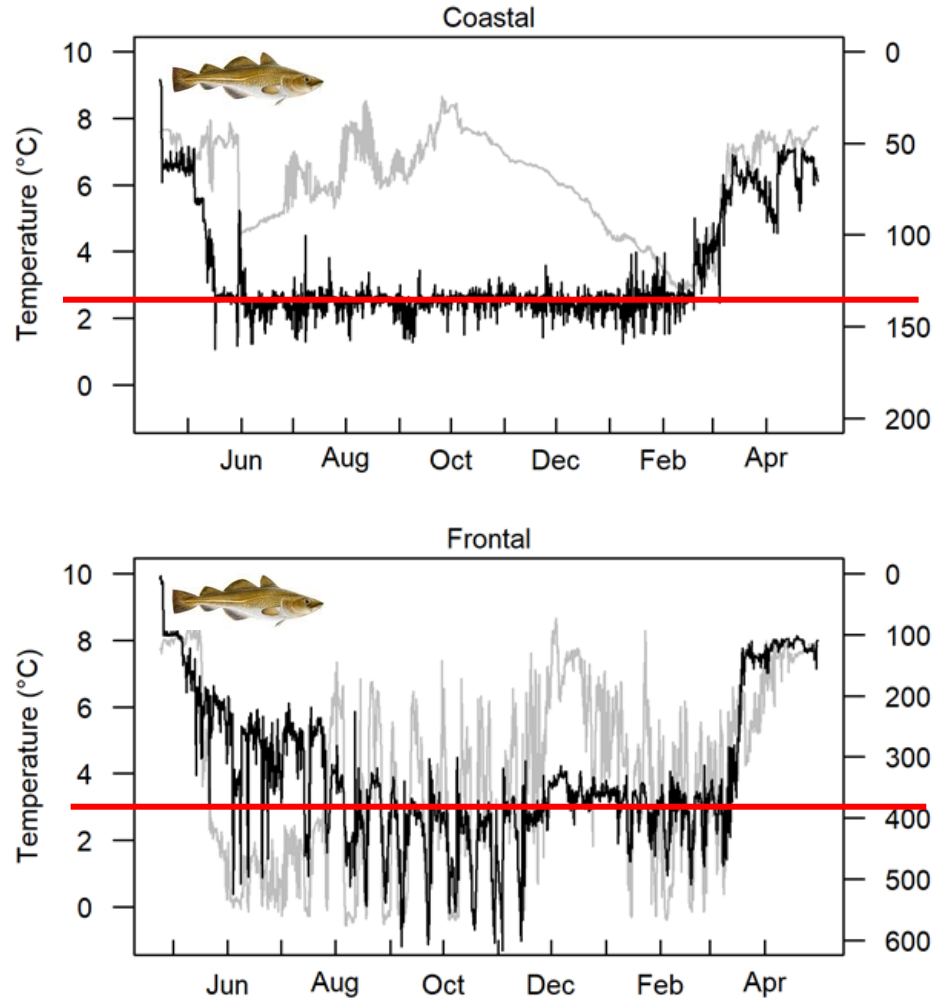
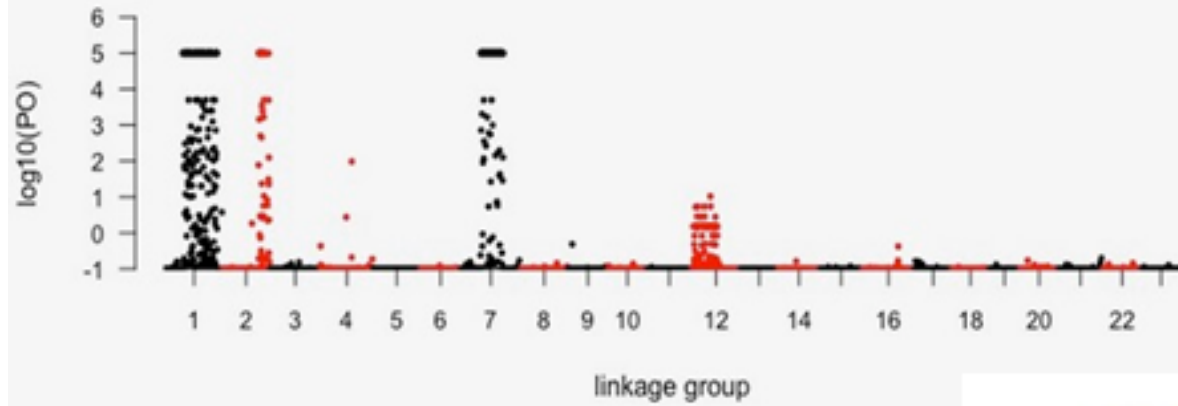


Figure 1. Genetic structure of Atlantic cod in Iceland detected with the Pantophysin locus (*Pan I*) reflected in the changes of the *Pan I^B* frequencies. The lines presented in the Northwest and Southeast are genetic barriers detected in Pampoulie *et al.* (2006) with microsatellite loci. This figure was redrawn from the data analysed in Pampoulie *et al.* (2006). More than 2,000 Atlantic cod were sampled at 22 spawning grounds and genotyped at the *Pan I* locus.

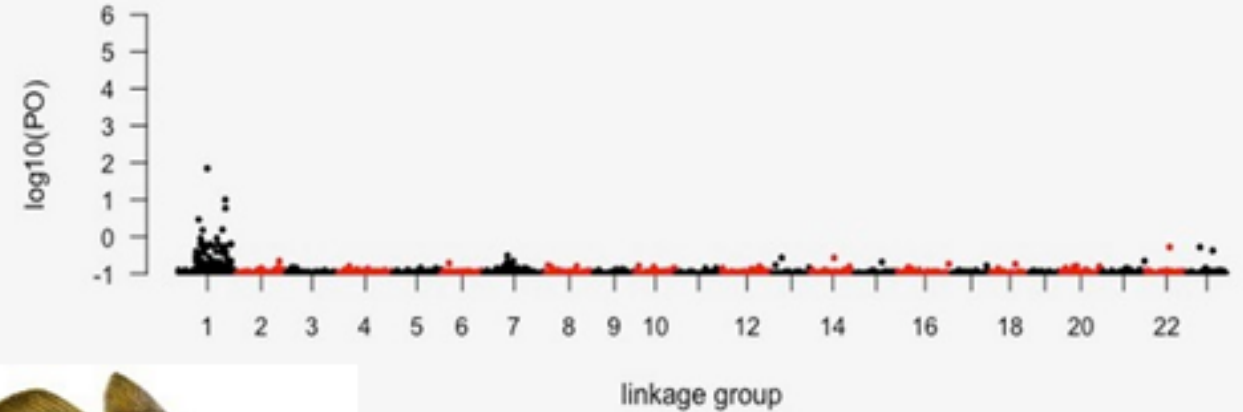
Stock structure and food: Ecotypes



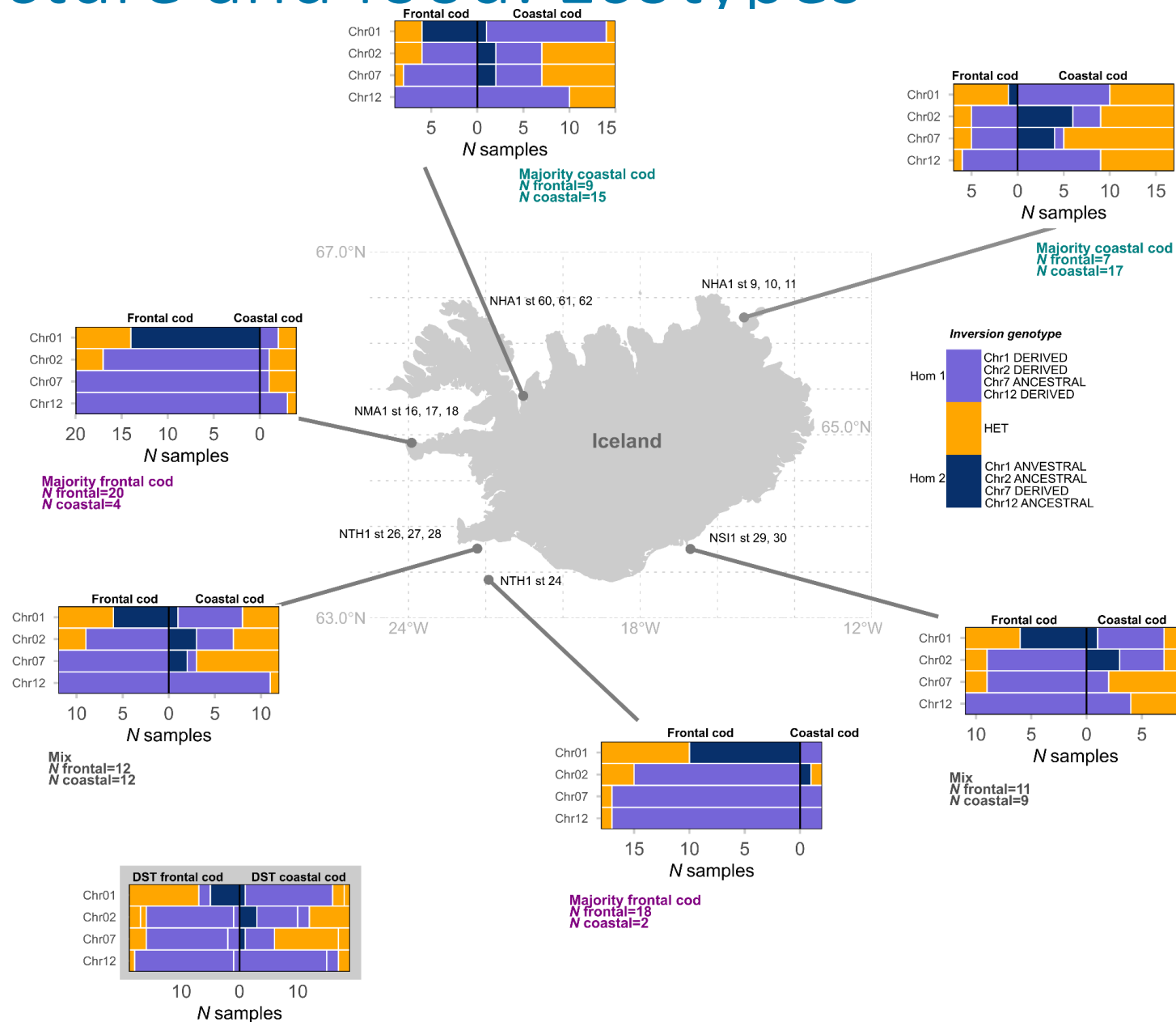
Manhattan plot, NEAC vs. NCC in Norway

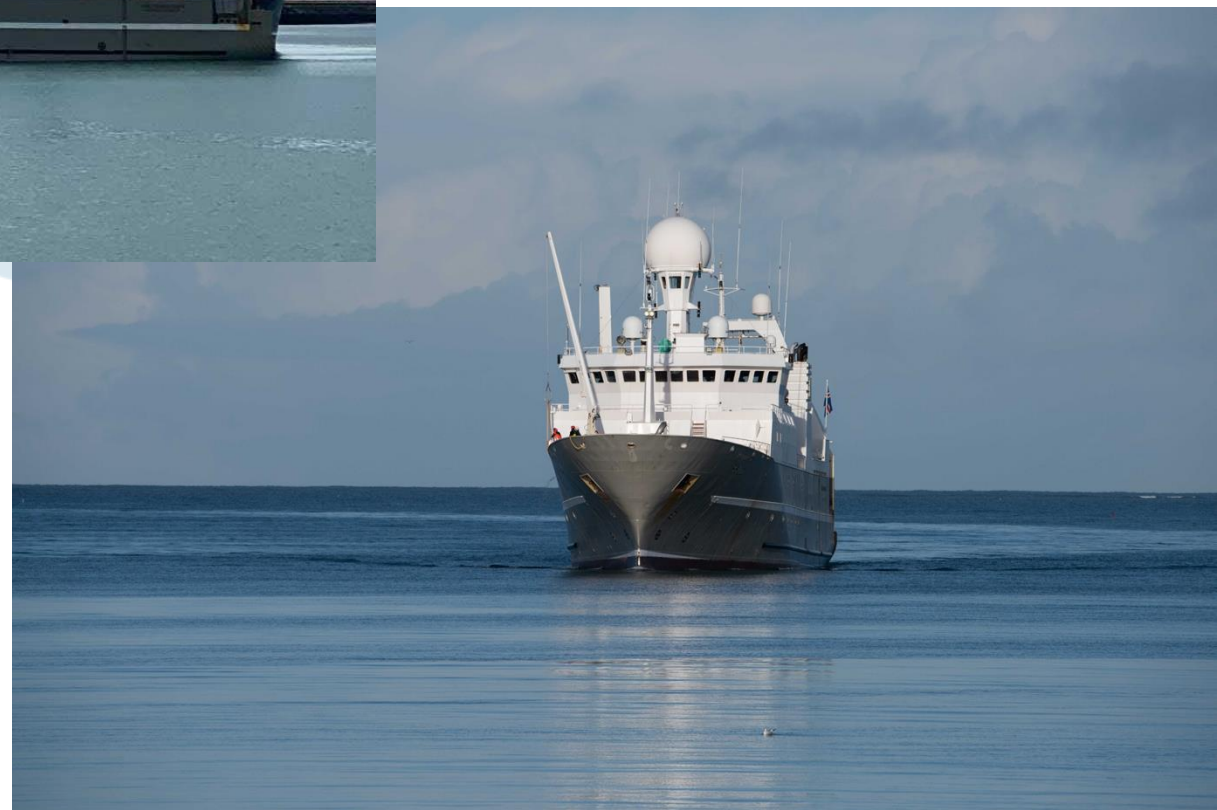


Manhattan plot, Frontal vs. Coastal cod in Iceland



Stock structure and food: Ecotypes





Thank you very much for your attention