

Amoebic Gill Disease: current situation in Ireland and diagnostic tool development

Neil Ruane & Jamie Downes

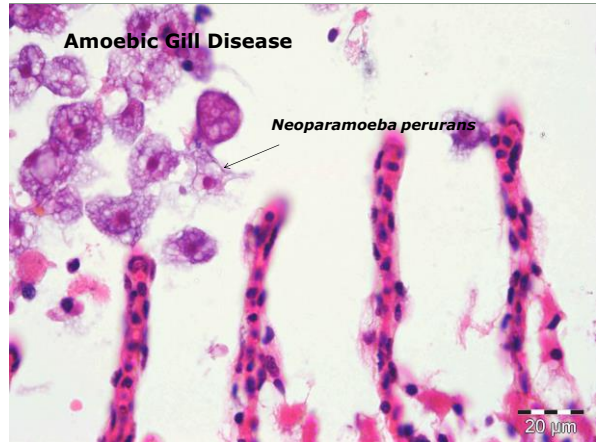
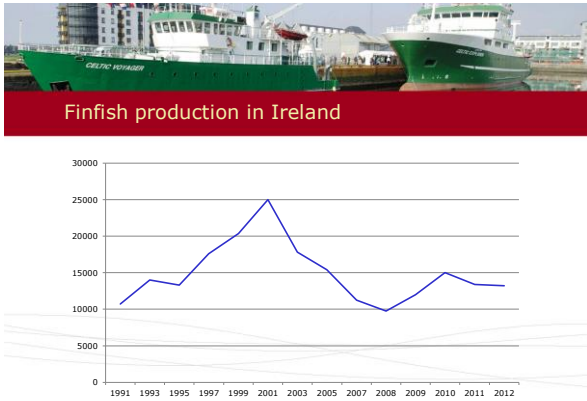
Fish Health Unit

www.marine.ie



2014 active marine sites



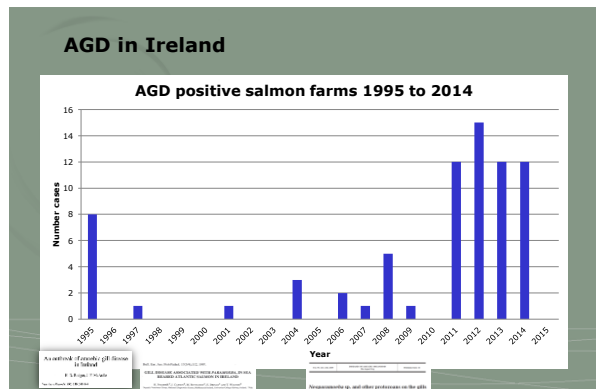


Amoebic Gill Disease



1980's: Washington State, US (coho salmon) & Tasmania (Atlantic salmon)
 Not a major issue outside Tasmania.....until...

- 2011 – France (July), Ireland (August), Scotland (September)
- 2012 – Shetland & Orkneys Isles, Norway (Nov/Dec – 5 farms)
- 2013 – Norway (56 cases inc. rainbow trout and wrasse)
- 2014 – Faroe Islands (Aug/Sept)



Source: H. Rodger, M. Marcos Lopez Vet Aqua International



Screening for AGD

- Gross gill scores *
- Wet preps
- Histopathology
- Molecular diagnostics

* Taylor et al. (2009). Gill observations in Atlantic salmon during repeated AGD field exposure and survival challenge. *Aquaculture* 290, 1-8.



Molecular Diagnostics

Marine Research Sub-Programme (MRSP 2007-13 Series)

SeaChange
Growth to Scale

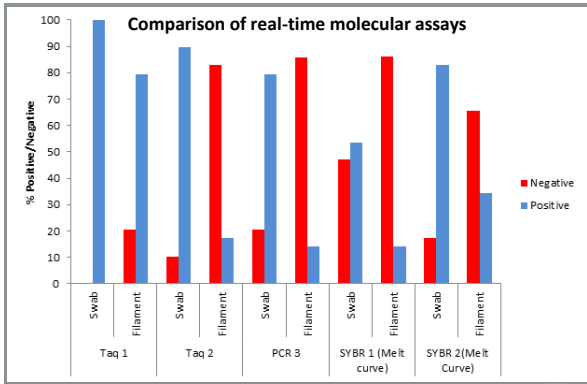
GILPAT - An Investigation into Gill Pathologies in Marine Reared Finfish
Project funded by:

Project funded by:

Marine Research Sub-Programme (MRSP 2007-13 Series)

SeaChange
Growth to Scale

Marine Institute



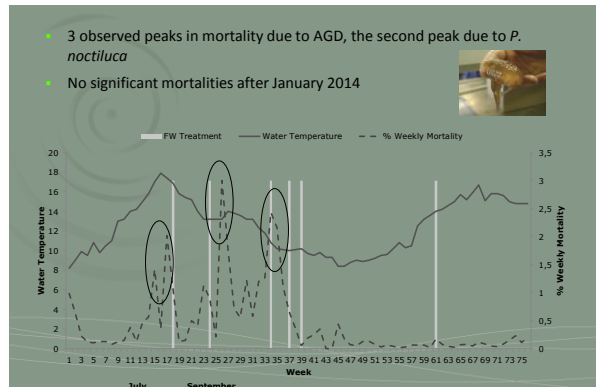
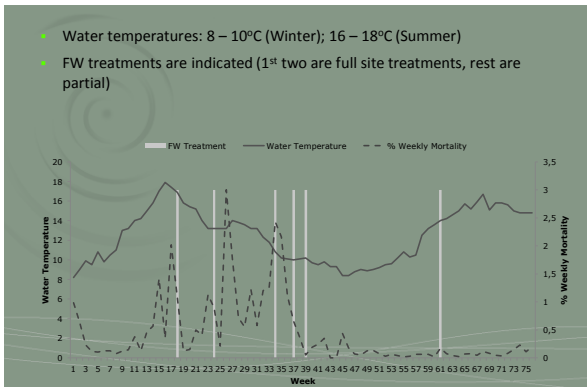
Longitudinal Study:

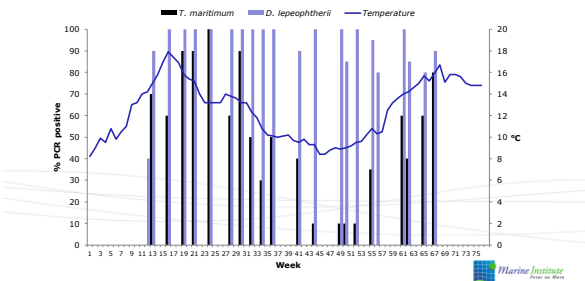
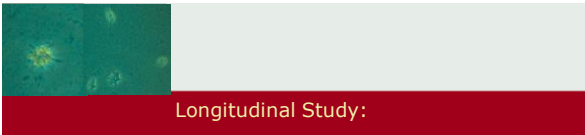
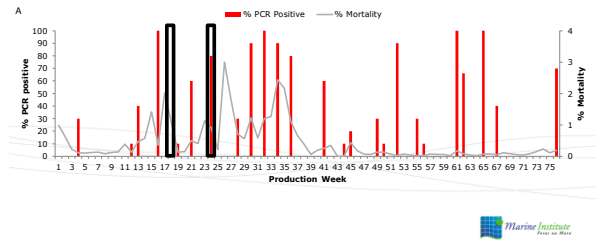
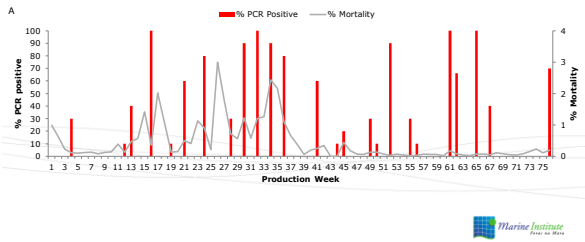
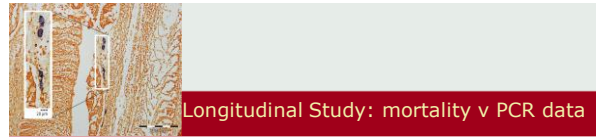
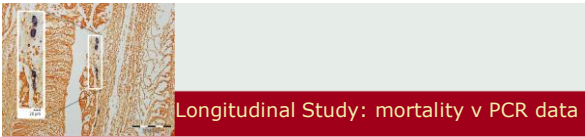
May 2013 – Sep 2014

Fish from 2 cages sampled every 2 – 3 weeks (PCR, Histo)

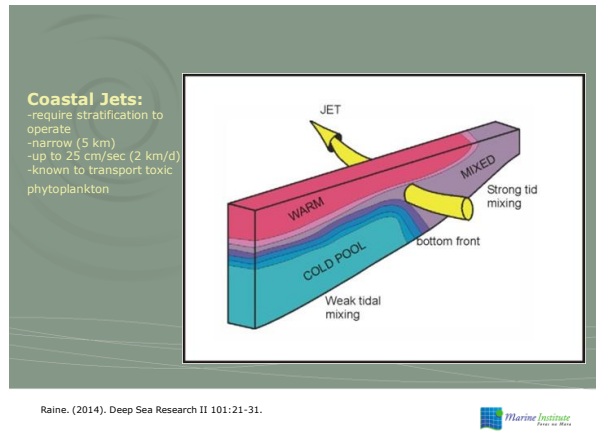
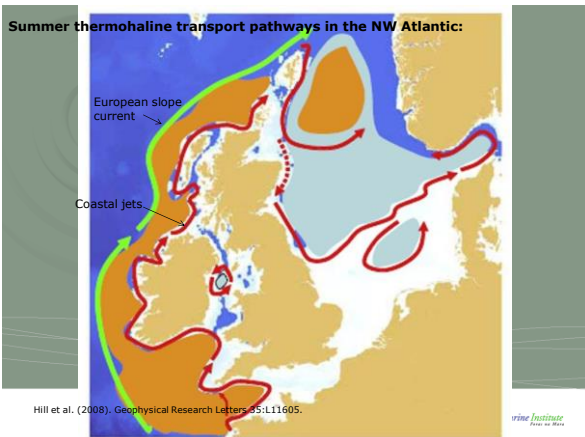
Temperature (MI Temperature Monitoring Programme)

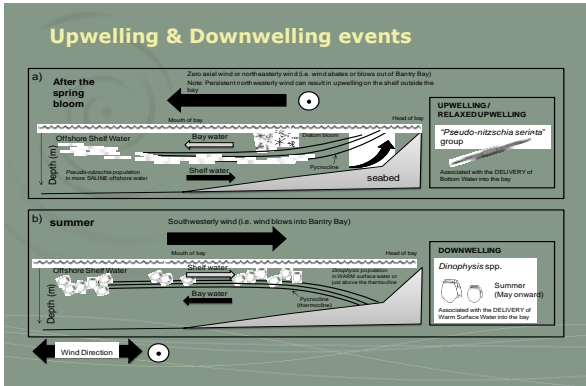
Farm data – gill scores, treatments, weight, mortality





Where have the amoebae come from?





Origins?

- Are the amoebae transported along the coastal jets?
- Can they enter the bays through downwelling?
- Do they encyst in the sediment and if so, would an upwelling event cause them to be released into the bay?



Future work

- Currently screening a number of marine sites with gill swabs
- Deploy a water sampler on a site (compare data with a site in Tasmania)
- Screening wild fish
- Future role of hydrographic modelling to predict outbreaks – more fundamental information required?



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Thank you.....

