**Trout model discussion**

Start at the baseline scenarios

Density dependent effects on condition trait

Timing that the strategies

Parasitism effects are related to the quality of the adults

What maintains the ability to switch tactics – balancing selection mechanism

Why does a threshold system evolve in the first place?

For G – the genetic threshold trait

Create correlations between the males and females at:

1. 0 no correlation allows for movement to optimum

2. +1 positive correlation which results in sexual conflict

3. -1 negative correlation which results in fast tracks to optimum

Sex-specific loci /sex chromosomes / pleiotropy

Frequency of tactics as an endpoint

Two scenarios of evolutionary dynamics one with no costs of sea and one with costs at sea e.g. ramp up the mortality at sea multiplier

Break inheritance to turn off evolution by randomising inheritance or by setting the values of G to be the same at the start of the model run.

Selective agents affect relative fitness e.g. the parasite load

Have pluses, minuses, or zeroes for each

Specify sex-specific condition values for the distribution at the start so that we get ~ 50:50 anadromous: residents at the beginning

Heterozygosity should decline over time in an idealised population at a rate of 1/2Ne per generation and we can check that with our neutral locus

Per locus mutation rates – is this a sum of the individual loci?

Male Female

1, 1 1,1

Offspring

1,1

But the offspring could be a 1,0 a 0, 1 or a 0, 0 if there are mutations

How does variance in G relate to heterozygosity in the population?

Standardise G by the condition per sex for plotting

Census could be conducted pre and post selection

Sneaker tactic – the quality should exceed that of the anadromous males e.g. mean shifted from 100 to 300. Or it could be a function of the frequency of anadromous males in your environment. The amount the males benefit from is at the front end.

Need to code something into RNetLogo that protects against the trout going extinct

**Migration**

December 1st Reproduction

April 1st not the year after to go to sea as 1+ fish

Marine fish return in November 1st

December 1st, they breed again

There is a cost to breeding – parents get an increased mortality cost

Fish can be semelparous

Residents can breed after the first year and may be semelparous

Iteration plots 10,000 after 1,000 in RNetLogo!

200 years for the run time

<https://virtualapp.ucc.ie/vpn/index.html>