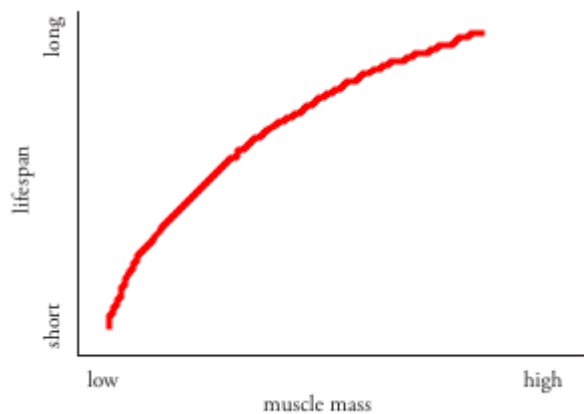


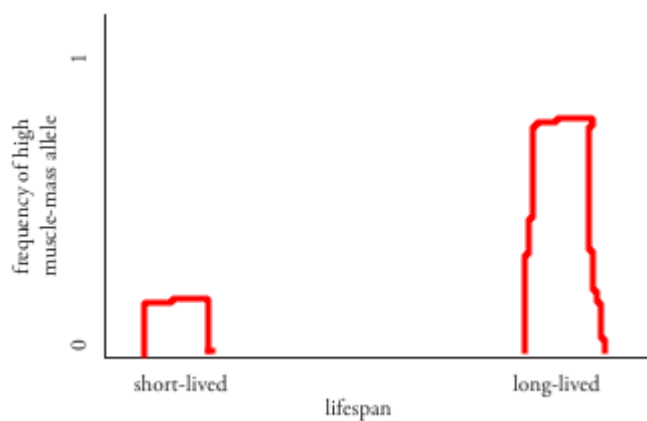
## 2 - Fish out of salt water

### Part 1

1. It must be variable across the population, have selective pressure towards a certain size of muscle mass, and be heritable



2.



3.

4. Yes, like energy efficiency, proportions, coat color

### Part 2

1. maybe like 7, because most things should remain similar across the same species but some things would be different due to different environmental pressures

2. Table 1

Trial	Number of different alleles
1	7
2	6
3	5
4	7
5	6
6	7
7	7

Trial	Number of different alleles
8	6
9	8
10	7
<b>Avg</b>	<b>6.6</b>

3. 6.6, no not really
4. about 20
5. I would say it is quite close as it would all tend towards similar phenotypes in a similar environment anyway
6. Less natural selection would happen because there are less things to select from

## Part 3

1. Organelles within the cells of the respective fish, since they may be required to work at different pH levels
2. The genome that would code for the cell walls, or proteins that would aid moving molecules across it, as they may differ in the way they deal with high or low pH molecules
3. There are some abnormally high differences in chromosomes 1, 4, 8, 14, 15, and 28
4. It most likely correlates to differences in genomes to respond to their respective environments (freshwater and saltwater)

## Part 4

1. High  $F_{ST}$  likely means that there is a difference in those genes
2. Maybe the way that solutes around the cell would be different from saltwater to freshwater fish, as there will likely be more solutes in the saltwater fish, meaning they need to be transported out of the cell more often more likely

## Part 5

1. The  $F_{ST}$  would likely decrease as it readapts to the new environment, choosing alleles that would be better for for this environment through natural selection
2. Its unlikely, but maybe they got flushed out of a river into the ocean. They would likely die because it takes generations to acclimate to such a different environment without easing into it.