



## Water DUCKWEED EXPERIMENT

### Supplies:

- 6 jars or beakers
- 2 containers to mix stock solutions
- Measuring spoons/pipettes
- Road salt
- Fertilizer (i.e. miracle grow)
- Distilled water
- Healthy duckweed

### Explanation of activity:

- What is duckweed? (Hydrophyte, phytoremediation, fronds, asexual)
- Why we are conducting this experiment? (Duckweed takes up excess nitrogen/phosphorus in the system, but there can be “too much of a good thing” – thus the different concentrations of fertilizers, and it can be detrimental impacts of runoff – thus the different concentrations of road salt)
- Think about your hypothesis and write it down. (What will happen when we add salt and fertilizer in different concentrations?)

### How to set-up the experiment:

- Count 10 duckweed plants into each of the 6 jars (look for healthy duckweed)
- Mix a stock solution of the fertilizer and salt (one spoonful of each variable into a container, fill with distilled water, and invert the container until dissolved)
- Leave two jars as is (these are the controls) – jars #1 & 2 in the chart
- Fill jar #3 with a 25% concentration of salt (1 tsp of the stock solution input gently into the jar)
- Fill jar #4 with a 25% concentration of fertilizer (1 tsp of the stock solution input gently into the jar)
- Fill jar #5 with a 100% concentration of salt (4 tsp of the stock solution input gently into the jar)
- Fill jar #6 with a 100% concentration of fertilizer (4 tsp of the stock solution input gently into the jar)
- Put all 6 jars near a window that will provide indirect light (or under growing lights, if available)
- Wait 5-7 days, then record the results in the “AFTER” portion of the chart

### Graph for students to record on a piece of paper:

	BEFORE						AFTER					
Jar #	1	2	3	4	5	6	1	2	3	4	5	6
Treatment	Clean		25%		100%		Clean		25%		100%	
# Duckweed	10	10	10	10	10	10	?	?	?	?	?	?

After 5-7 days, record the number of duckweed in each jar. Discuss what happened and why you think population sizes increased, decreased, or stayed the same.