Name: Teachers Guide Date: _____ Period: _____

Following Fishes Work Sheet

Pit Tag Number: _____

Directions: Part 1-Pit tags

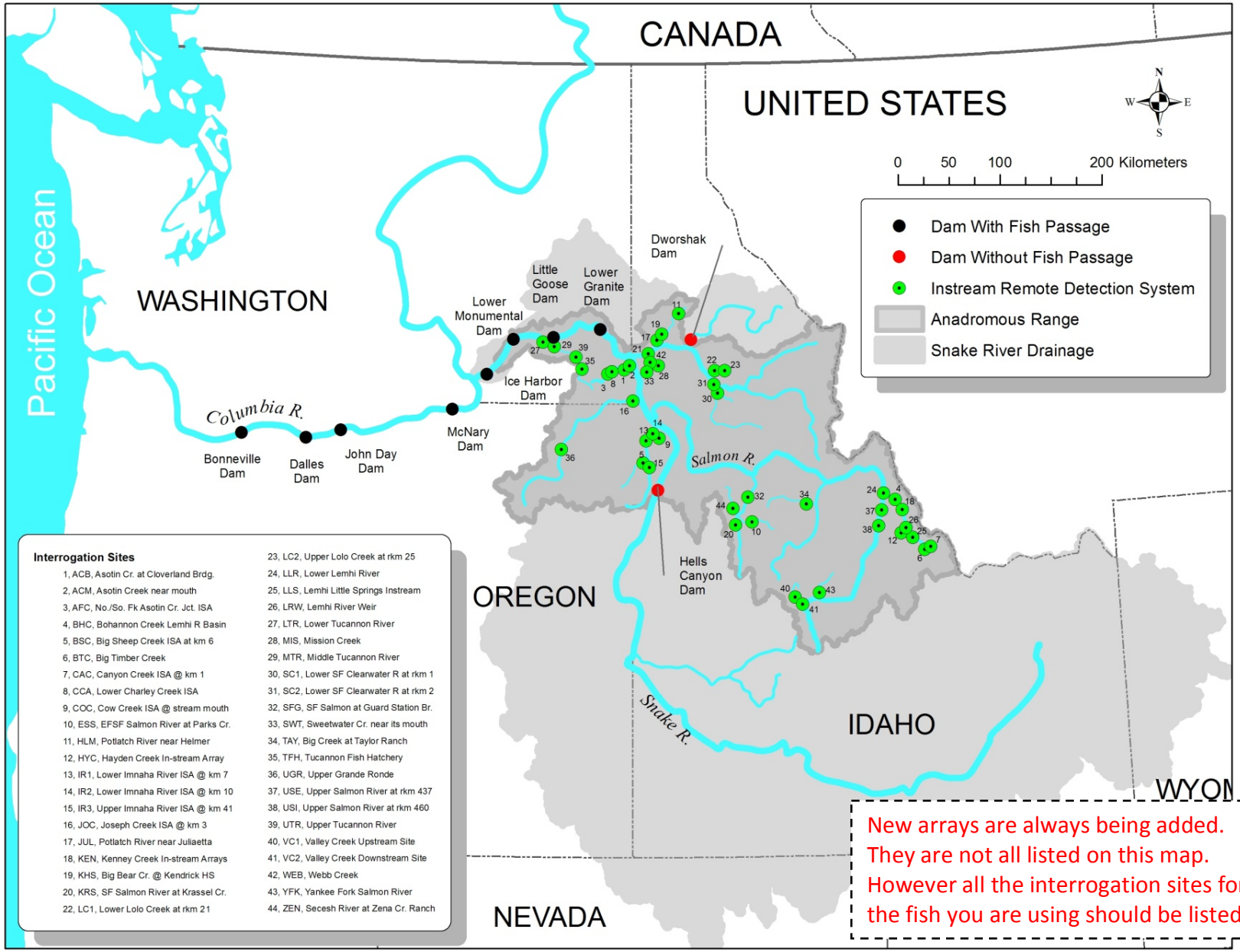
1) Go to the PTAGIS website (**www.ptagis.org**)
2) Click on the ***Data*** tab, then ***Quick Reports,*** then ***Complete Tag History.***
3) Enter your fish tag number in the box under the heading "Value"
4) Click ***Run Document*** at the *bottom of the page* and record your records in the table below.
5) Click on the ***History Summary*** button and record all the detection locations of your fish.
6) Click on the ***Recap/Mort Detail*** button and record additional information in the Observation Details column.

Not all table cells will be filled in.

Fish Species:		**Release Date:**	**Release Site:**	**Fish Length:**	**Fish Weight:**
Obs. Date	**Event Type**	**Site Name (detection location)**			**Observation Details**

Not all fish have anything to add for this section

7) Plot your fish's migration on the map below. Based on the date of observation, use "1" at the first location, "2" at the second and so on.



8) Use the table to answer the following questions:

a. Did your fish make it to the ocean? _____ There will be detection data for Bonneville _____

b. How long did this trip take? _____ Time from Lower Granit to Bonneville _____

c. Did your fish return from the ocean? _____

d. How long was your fish away from its natal stream? _____ Dates between Lower Granite detections

e. Did your fish return to a stream to spawn? _____ Detections in streams after Lower Granite _____

f. Did your fish head back out to the ocean after spawning? (hint: compare the dates of juvenile and adult fish passage) _____ Date at a juvenile detection after return to spawn _____

g. How do you know? _____

Directions: Part 2- The Salmon Run

9) Now go to age DART database (**http://www.cbr.washington.edu/dart).**

10) Under the Adult Salmon Passage heading click on ***PIT Tag Adult Returns.***

11) Select the **year** that your fish migrated back from the ocean (You got this from Ptagis). Also select ***Bonneville Dam Adult Fishways Columbia Mainstem***, ***All Runs,*** and ***All Rear Types***

12) Under Include River Environment select ***Bon-Bonneville, Inflow, and Outflow*** (you need to hold down the shift button to select multiple criteria).

13) Click on ***Submit Query*** and *print the graph.*

14) Answer the following questions from the Bonneville graph.

a. When is the peak water flow at Bonneville Dam? _____

b. When is the peak fish run at Bonneville Dam? _____

c. Are fish moving with the flow of water or against it? _ This is not on the graph. Fish are returning, so moving up stream against the flow of water.

d. What conclusions can you draw from this observation? _____

Fish wait until the peak flow has passed before beginning the upstream swim so that they have enough energy for the trip. If fish wait too long there is not enough water to navigate high mountain streams and the water gets too warm for them.

15) Repeat steps 15 -21 except Select ***Lower Granite Dam Adult Fishway, Snake*** for the observation location and ***LWG-Lower Granite*** for River Site

16) Answer the following questions from the Lower Granite graph.

a. When is the peak water flow at Lower Granite Dam? _____

b. When is the peak fish run at Lower Granite Dam? _____

17) Comparing the two graphs answer the following questions.

a. How long does it take for the peak of the fish run to travel from Bonneville Dam to Lower Granit Dam?

_____ Most graphs will show about 3 months _____

b. How does the pattern of fish migration change from Dam to Dam?

As fish move upstream, water flow decreases.

_____

c. What is the difference in kcfs (Thousands of Cubic Feet per Second) flow between the two dams *at peak migration*?

_____

d. Create a hypothesis that explains why this flow is different. Fish are moving against the flow of water, and peak flow has already passed.

_____

e. Create a hypothesis that explains why this flow is important. _____

Fish stop eating when they enter freshwater. If they had to swim against peak flows they would not have enough energy to make it back to natal streams or they would not make it back in time to spawn.

_____

f. Create a hypothesis to predict what would happen if the flows chang

_____

18) Go to ***http://www.nwp.usace.army.mil/Missions/Environment/Fish.aspx***. This is the US Army Corp of Engineers web site for the Portland District.

19) Click green ***Fish Cameras*** button on the right of the page.

20) If you watch for a few moments you may see fish passing as they climb the fish ladders to cross Bonneville Dam

21) Record the time you watched and the number of fish you saw.

Time: _____ Number of Fish: _____