SFB Tributary Assessment – Volunteer Instructions

Explanation:

The Boise National Forest has identified the culverts on several SFB tributaries as barriers to Aquatic Organism Passage (AOP) which is mainly fish but can be other biologically important species. Culverts improperly installed typically prior to the 1990's like those on the SFB tributaries, typically move water faster than the stream itself. Since has a limited distance they can swim at higher speed in shallow water, their passage can be restricted due to the water velocity, length of the culvert and depth that results.

Later during the summer, the BNF Summer Work Crew will electro-shock portions of these tributaries to look for evidence of fish presence and to collect tissue samples to compliment the genetic study to be undertaken, a separate project.

By monitoring the tributary flows and presence of fish at various locations, an assessment and prioritization can be made as to any future remediation projects such as culvert replacement or other activities and thus improve spawning capability.

When

As many times as you want between May 1 and June 15. We will hold a final redd count survey on May 31 at 10AM (current planned date – subject to change based on run-off conditions). Mike Kellett for the USFS will be present to instruct everyone on identification of spawning redds. Please notify us if you can help on this day. There should be plenty of time left to fish that day after the work is complete.

What to Take with you:

A partner or helper is advisable but not necessary

- □ **Camera**
- □ **GPS (if available)**
- □ **Stopwatch**
- □ **Yardstick or Ruler (to measure water depth at culvert) – see below**
- □ **Lemons or Apples (as floats for speed measurement) or a Tennis Ball or ½ filled water bottle (if you have a partner to catch it) – see below**
- □ **Waders (old since you will need to break through brush) – or Wet Wade (wear heavy brushproof pants and sturdy boots)**
- □ **Machete (to help clear path along trib if needed)**

Dress appropriately as you will need to move through overgrown and sometimes briar infested areas (sound like fun??).

What to Measure and Record

- **flow data (see procedure below)**
- **fish presence**
  - **staged at mouth**
  - **staged below obstacles / culverts**
  - **movement - typically at obstacles requiring a jump**
  - **spawning activity noted**

General Procedure

Use care when walking along tributaries to avoid spawning redds and hazardous obstacles since these areas are fairly overgrown.

1) **Park near the tributary and start by measuring and recording the flow data according the procedure below using the form attached to record your measurements.**
2) **Walk down to the mouth at the river and look / photograph any fish that look like they might be staging to move up into the tributary. You should try to be stealthy to avoid spooking the fish.**

3) **Photograph the flow coming out of the tributary mouth into the main river (it is a braided delta on most of these)**
4) **Wait a few minutes, relax, and observe the most likely pathways to see if you notice any fish moving up from the river**
5) **Proceed up the tributary looking for presence of any fish migrating or trying to spawn. Should you notice any redds, note their position by GPS if possible and photograph.**
6) **Look for any fish staged below the culvert opening that might be trying to migrate up. Photograph if possible. (you might do this step when taking the water depth measurement for the flow data)**
7) **Proceed upstream looking for fish and/or redds noting the location by GPS if possible.**
8) **Continue as far as physically possible or until you notice no further fish presence or activity.**
9) **Continue on to the other tributaries if your time allows.**

<u>Tributary Locations:</u>
Each tributary should be marked near the road crossing with an orange tape in case you aren't able to use the road crossing GPS coordinates provided below.

Dixie Creek – N43.34138° W115.47892°
This tributary is located just upstream of the Anderson homestead bridge. No flow data measurable since no culvert exists – photograph the mouth flow from road to document change in flow once combined with our other chronological photo's. We have permission from the Anderson's to cross the bridge and enter their property to observe spawning activity on this stream. The water was turbid as of May 1 so locating fish may be difficult. Once the water clears, look for redds (cleaned areas of gravel in comparison to the surrounding gravel).

Rough Creek – N43.35802° W115.53942°
This tributary comes into the SFB just above the 'Slide Rapid' (below Indian Rock and above Cow Creek). This tributary is the smallest perennial stream and least likely to have much fish activity. If no fish are observed within the first 50-100 yards above the culvert, there is no need to go further.

Granite Creek – N43.38762° W115.54353°
This tributary enters the SFB just above the Pine Tree Hole/Rapid. There is a road usage sign right near it. Water depth on the outlet may need to be noted as clear height since it is very deep on the outlet side. If the outlet side is completed flooded, the flow rate method will not work since the float will not pass through. There is an ATV trail along this stream than can be used to walk back to the road.

Pierce Creek – N43.40302° W115.56031°
This tributary enters the SFB just upstream of the new Danskin boat ramp. To assess the upper stream, it may be easier to drive up the hill and climb down to the stream and walk downhill.

Rock Creek – N43.42721° W115.56799°
This culvert is accessed by the Prairie road up on top of the plateau, above Danskin. Fish presence has already been verified by BNF and bordering land is private so no further assessment other than flow data is necessary. This tributary will require two people to take flow data. The culvert outlet can be accessed from right hand side on the roadside approach. Take care to observe any fish staged below the culvert here.

Flow Data Measuring Procedure:

1) **First, measure the water depth at the outlet – for the inside bottom surface of the culvert to the water surface. A yard stick or ruler works best. If the water is too deep, or you only have a tape measure, you can measure the open height from the top and subtract it from the culvert diameter which is 48" except Rock Creek which is 60".**
2) **Next, throw a buoyant object (lemon, apple, tennis ball or ½ filled water bottle) into the stream about 10-15 feet above the culvert inlet to allow it time to settle and reach the water speed.**
   >> Please use something that will not litter the river if it cannot be retrieved
3) **Start timer or stopwatch once the object enters the culvert.**
4) **Stop the time when the object exits the culvert at the outlet.**
5) **Repeat 3 times or until you have 3 reasonably close times and record the average time in the form.**

SFB Tributary Assessment Form

Fax completed form to 208-493-7348 or edit this doc and email to mtoalson@cableone.net

Name:			**Date:**	
Tributary:				
Water Clarity:				
Culvert Float Time				
1)				
2)				
3)				
Average:				
Water Depth in Culvert				
Upstream:				
Downstream:				
Fish Observation Notes				