NRIS AI/AB Data Entry Guide
for
Pacific Northwest Stream Inventory Data

DRAFT

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PURPOSE OF THE GUIDE

This guide is intended to assist the user who is entering R6 Level II Stream Inventory Data. It will provide step-by-step instructions specific to R6 stream and biota data. This guide will hopefully answer those questions the user will have specifically regarding what to do with R6 stream data. The data entry process consists of 4 steps:

1- Create your survey segments in Arcview
2- Enter data describing the survey (where, when, how). (Survey Tab)
3- Enter specific data about the survey (reach). (Reach Tab)
4- Enter the specific channel units for the survey. (Channel Unit Tab)

Commonly used Acronyms

NRIS – Natural Resource Information System
AI – Aquatic Inventory Module
AB – Aquatic Biota Module
R6 – Region 6
LLID – Latitude, Longitude Identifier

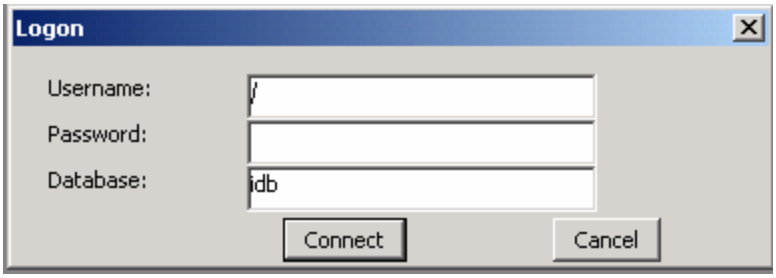
THE RIGHT STUFF

Before entering a survey it is a good idea to have all the forms and maps you will need to create your segments and enter your data. The process will go much smoother by having good maps (1:24,000 USGS quads) with the reach breaks already identified on them. All required fields should be filled out and all the sequence orders corrected if needed.

LOGGING IN

This guide assumes you have NRIS Water loaded on your computer and you have edit access. If not please contact the NRIS Helpdesk (541-750-7100).

Log into NRIS Water by going to Start → Forest Service → NRIS → Water → Water v1.1.1. This will bring up the following Logon screen. Enter the fields as seen below. No password is needed if the appropriate roles have been granted.



WATERSHED TREE

You will be taken to a screen with all the HUC's for your Forest after logging in. Navigate to the appropriate Watershed using the Find option or scrolling through the HUC's. Once you find the watershed where your stream is located click on the Aquatic Inventory button to take you to the next screen.

GIS PHASE

NRIS Water connects several coverages from your forest into the ARCVIEW program integrated into AI. If you need to obtain other coverages or you know there are other coverages available you can add these to assist you in locating your reaches. Contact your GIS person for the pathway to these coverages on your home network system.

You will first need to create segments representing your reaches (surveys) in ArcView. Survey maps and the Final Reach Form are essential to have during this phase to accurately locate your segments. NRIS AI treats each Reach/Ecoreach as a survey. Each survey can have only one LLID.

When locating reaches in GIS the program will prompt you to designate a survey as a Reach, Ecoreach, or Valley Segment (Step #21 in procedure below). For R6 Protocol you will designate it as the following:

ECOREACH if it was physically surveyed and broken out based on geomorphology. It has defined ecological and physical characteristics (e.g., A survey starts at the mouth of the stream where there is a wide open floodplain, Rosgen C channel, then changes to a higher gradient, riffle dominated reach, Rosgen B channel, and the reach is broken, this is designated as an ECOREACH).

REACH if the starting and/or ending points were chosen due to private land or based on Forest service boundaries, etc., NOT on geomorphology. This is a discretionary reach, defined by physical extents, but not necessarily having defined ecological and physical characteristics.

Segment (Reach) ID

⇒ The ecoreaches/reaches will be named simply with a number (1,2,3, etc.) sequentially moving upstream (Step #20 in procedure below) along with the Beginning Index Point (i.e., starting River Mile of the reach). If a stream survey is repeated over the years and the same reaches are broken out with the same river miles use the same reach segment from the previous year. The segment will be identified by the year and protocol chosen on the Survey Tab. If the reaches do not exactly correspond to a previous survey but the reaches overlap create a new segment in Arcview then designate with the letter 'a' to indicate the reach overlaps. See example below of 2 surveys from different years on the same stream:

Reach Example	Segment ID	Comments
Reach 1 1999 0.0 to 2.5	01-0.0	0.0 is the beginning of the reach
Reach 2 1999 2.5 to 5.0	02-2.5	
Reach 1 2004 0.0 to 2.8	01a-0.0	The 'a' indicates overlap with the 1999 survey
Reach 2 2004 2.8 to 5.1	02-2.8	You do not need the 'a' because the From point is different

Do NOT place years or any other descriptors here. It is unnecessary and each survey will be identified with the year on the survey tab.

HOW TO CREATE NEW SEGMENTS

This section contains the step-by-step directions for creating new stream segments. The steps vary slightly depending on how the user wants to begin. The user chooses one of the following case situations:

> **Case 1 – Uses GIS Display**: The stream name is known; user selects the stream on the form.
> **Case 2 – Uses GIS Query**: The stream name is not known or not found; user selects the stream on a map in ArcView.

WARNING: If you are using a Windows 2000 PC, ArcView may open behind the Oracle forms. If this occurs, click on the flashing blue button on the task bar at the bottom of the screen to bring the ArcView session to the top.

Creating Stream Segments and Points

Stream segments and points can be created from within any NRIS Water submodule.

Creating New Stream Segments

Case 1: The stream name is known; user selects the stream on the form.

1a. **From AI Survey or AB Streams form:** • Select a Stream Name	1b. **From the Location form:** • Click on Stream Seg. tab • Select a Stream Name
2. Click the GIS Display icon  , which launches ArcView. The stream is highlighted. **NOTE:** If the highlighted stream is not the one you want, either select the stream you want using the Select Feature icon  or go to Case 2.	
3. **OPTIONAL:** To add another theme(s) to view (e.g. roads or waterbodies) • Click on NRIS Water on the menu bar • Click Add Themes to ArcView View • Select another theme(s) and click *OK*	
4. Click the Zoom To Selected icon to view highlighted stream  (if needed).	
5. Click the Zoom In icon  . Zoom in on the area of interest by clicking and dragging the mouse to create a box around the area of interest. (For best results, repeat this step to zoom to a scale of 1: 10,000 or larger. The scale is located at the top right corner of the ArcView screen in the tool bar.)	
6. Click on NRIS Water from the menu bar.	
7. Click on Creation Tools (window opens).	
8. Select Create Stream Segments. Click *OK* (window opens).	

9. Click *OK* after reading the Event Creation in 2 Steps message. (Cursor will change to a circle with a dot in the middle and the blue <In> icon  appears on the button bar.)
10. Click the beginning point of the stream segment on the selected stream (window opens).
11. If the Confluence Found message box appears indicating a confluence nearby:
    - Click *YES* to place the point on the confluence
    - Click *NO* to keep the point where you clicked
12. At the Characteristics of the Point message box:
    - Click *YES* to keep the point
    - Click *NO* to delete the point and try again
13. Click the ending point of the stream segment on the selected stream (window opens).
14. If the Confluence Found message box appears indicating a confluence nearby:
    - Click *YES* to place the point on the confluence
    - Click *NO* to keep the point where you clicked
15. At the Characteristics of the Point message box:
    - Click *YES* to keep the point
    - Click *NO* to delete the point and try again
16. **OPTIONAL:** If you have segments that are continuous (i.e. the end point for one is the begin point for the next), repeat Steps 13 – 15 to create multiple segments.
17. Click the blue <In> icon  on the button bar (window opens).
18. At the Insert Highlighted Flashing Segment message box:
    - Click *YES* to insert segment into database (window opens)
    - Click *NO* to cancel creation of the segment
19. Click *OK* at the Insert message box (window opens).
20. Type in the name you want for the segment. See pg 4 for more information. Click *OK* (window opens).
21. Select the segment type. See pg 4 for more information. Click *OK* (window opens).
22. **OPTIONAL:** If multiple segments were created, you will be asked to repeat Steps 18 – 21 for each segment.
23. At the New Segment Display message box, click *YES* to view the new segment(s) and segment name(s) on screen. Note that the segment exists in the database even if not displayed on the screen.
24. Click the Return to Form icon  .
25. Click in the Segment ID field.
26. Click the Execute Query icon  .
27. The new segment(s) should be listed, although you may have to scroll down to find it.
    NOTE: If the segment does not appear, make sure you are on the correct tab, stream, and HUC in the Streams block. You may have created the segment on the same stream in another HUC.

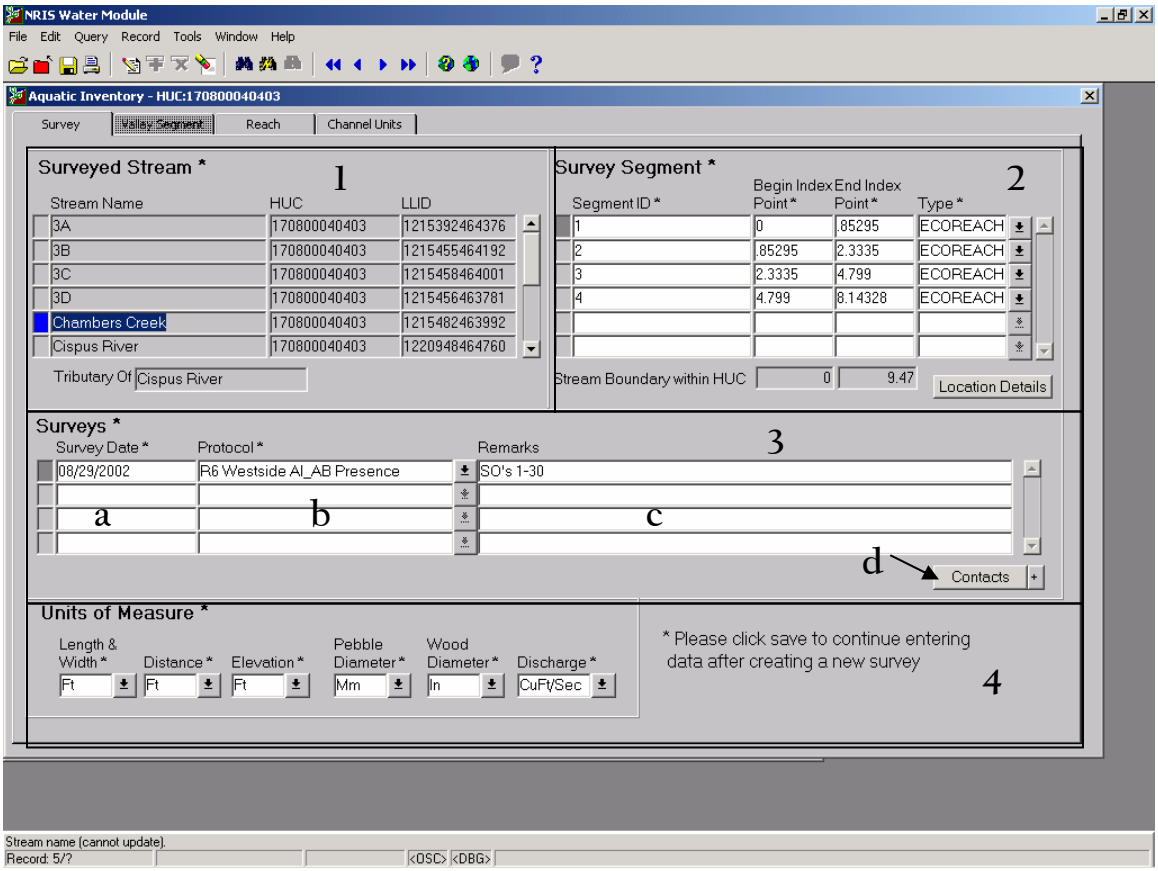
Case 2: The stream name is not known or not found; user selects the stream on a map in ArcView.

1a. **From AI Survey or AB Streams form:** • Click in the Stream Name field (it does not matter which stream you select)	1b. **From the Location form:** • Click on Stream Seg. tab • Click in the Streams block (it does not matter which stream you select)
2. Click the GIS Query icon  which launches ArcView.	
3. **OPTIONAL:** To add another theme(s) to view (e.g. roads or waterbodies) • Click on NRIS Water from menu bar • Click Add Themes to ArcView View • Select another theme(s) and click *OK*	
4. Click the Zoom In icon  . Zoom in on the area of interest by clicking and dragging the mouse to create a box around the area of interest. (For best results, repeat this step to zoom to a scale of 1: 10,000 or larger. The scale is located at the top right corner of the ArcView screen.)	
5. Click the Select Feature icon  .	
6. Click the stream of interest. It will highlight.	
7. Click on NRIS Water from the menu bar.	
8. Click on Creation Tools (window opens).	
9. Select Create Stream Segments. Click *OK* (window opens).	
10. Click *OK* after reading the Event Creation in 2 Steps message. (Cursor will change to a circle with a dot in the middle and the blue <In> icon  appears on the button bar).	
11. Click the beginning point of the stream segment on the selected stream (window opens).	
12. If the Confluence Found message box appears indicating a confluence nearby: • Click *YES* to place the point on the confluence • Click *NO* to keep point at location where you clicked	
13. At the Characteristics of the Point message box: • Click *YES* to keep the point • Click *NO* to delete the point and try again	
14. Click the ending point of the stream segment on the selected stream (window opens).	
15. If the Confluence Found message box appears indicating a confluence nearby: • Click *YES* to place the point on the confluence • Click *NO* to keep point at location where you clicked	
16. At the Characteristics of the Point message box: • Click *YES* to keep the point • Click *NO* to delete the point and try again	

17. **OPTIONAL:** If you have segments that are continuous (i.e. the end point for one is the begin point for the next), repeat steps 14 – 16 to create multiple segments.
18. Click the blue <In> icon  on button bar (window opens).
19. At the Insert Highlighted Flashing Segment message box:
    - Click *YES* to insert segment into database (window opens)
    - Click *NO* to cancel creation of the segment
20. Click *OK* at the Insert message box (window opens).
21. Type in the name you want for the segment. See pg 4 for more information. Click *OK* (window opens).
22. Select the segment type. See pg 4 for more information. Click *OK* (window opens).
23. **OPTIONAL:** If multiple segments were created, you will be asked to repeat steps 19 – 22 for each segment.
24. At the New Segment Display message box, click *YES* to view the new segment(s) and segment name(s) on screen. Note that the segment exists in the database even if not displayed on the screen.
25. Click the Return to Form icon  .
26. Click in the Segment ID field.
27. Click the Execute Query icon  .
28. The new segment(s) should be listed, although you may have to scroll down to find it.
    NOTE: If the segment does not appear, make sure you are on the correct tab, stream, and HUC in the Streams block. You may have created the segment on the same stream in another HUC.

INFORMATION RELATING TO R6 DATA ENTRY BY FORM/TAB

SURVEY TAB



1. **Surveyed Stream** – All the fields in this block are grayed out which means these fields are not available for editing.
2. **Survey Segment** – The fields in this box will be populated when the segments are identified in ArcView. The reaches should be identified as described on pages 4 and 5. The mileages can be changed here if needed. If your beginning and ending points are not continuous for each survey done on a stream in a year (maybe a private section or inaccessible area was not surveyed) please indicate this in the remarks but DO NOT enter it in as a separate survey.
3. **Surveys**
    a. Survey Date – This is the start date of the survey. Each Reach is considered a separate survey in NRIS AI.
    b. Protocol – Choose the protocol that best fits your area and your biota surveys. Four protocols are available. ***Choose carefully** – Once you enter data into the survey you will NOT be able to change the protocol. If you are entering old Stream Inventory data you will find Pre96 protocols available. For current surveys using the new channel unit types (2001 and newer) use the following protocols:

R6 Westside AI_AB Presence – Westside forest, with the biota surveys done using presence only, Streams located west of the Cascade divide.
R6 Eastside AI_AB Presence – Eastside forest, stream survey with the biota surveys done using presence only. Streams located east of the Cascade divide.
R6 Westside AI_AB Count – Westside forest, stream survey with the biota surveys done counting fish. Streams located west of the Cascade divide.
R6 Eastside AI_AB Count – Eastside forest, stream survey with the biota surveys done counting fish. Streams located east of the Cascade divide.

c. Remarks – It is recommended that the SO's that belong in this reach are put in this block. Information specific to the reach can also be entered here.
d. Contacts – This is the location to enter names of the recorder and observers who collected the stream inventory data. It is a good idea to enter all the contacts that may have worked on surveys the first time you enter data.

Directions for Adding Contacts
Click on the Contact, Right click while your cursor is in the field below Contact Name, Choose Maintain Persons, Click on the green plus icon to create an empty line. Enter the last and first name as a minimum (Do not enter anything into the Expertise Type Area). Save. That person is now available in your pulldown list.

Attaching Contact to Survey
Put cursor in blank line, go to pulldown menu and choose appropriate person, click pulldown under Participation and choose appropriate code. Click OK and person is added. There will now be a + sign next to Contacts to indicate there are contacts attached to that survey.

4. **Units of Measure** – Choose the following unit of measure for each of the following:

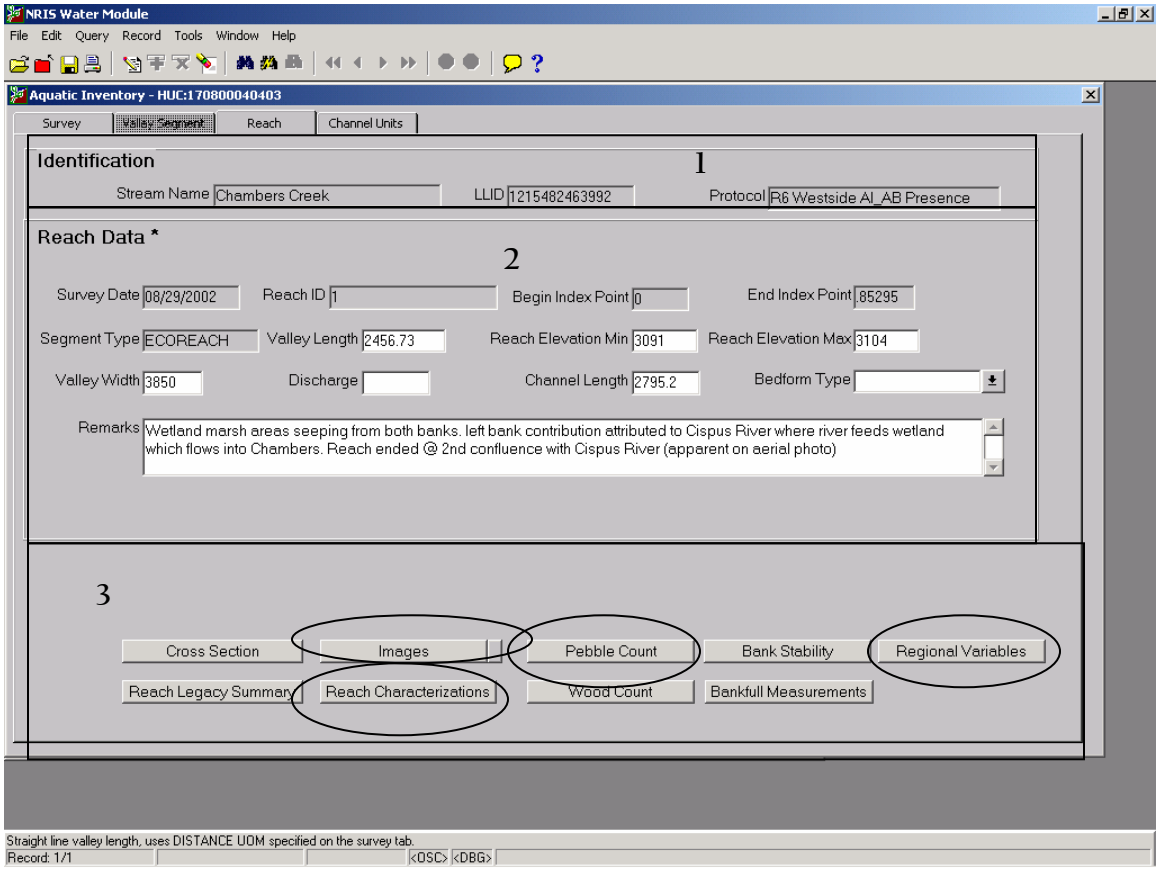
Length & Width – Feet (Ft)
Distance – Feet (Ft)
Elevation – Feet (Ft)
Pebble Diameter – millimeters (Mm)
Wood Diameter – Inches (In)
Discharge – CFS (CuFt/Sec)

You must save before the Reach and Channel Unit tabs become available. Move on to the Reach Tab.

REACH TAB

The following fields under the Reach tab are R6 Required Fields: Valley Length (feet), Reach Elevation Min (feet), Reach Elevation Max (feet), Valley Width (feet), Discharge (CFS, for First Reach only), Channel Length (feet).

Fish Sampling Method – The reach tab will be the location where you will identify the method of fish sampling you used for the survey. With the cursor in the "Remarks" block, click on the yellow additional Comments icon ( ) and in the pull down menu under "Subject" choose AB_SAMPLING_METHOD (part of the last word will not be visible), in the "Comment Text Box" type in the method of sampling used (e.g., – snorkeling, electroshocking, etc.). If a different method was used in a certain channel unit identify this at the channel unit level in the AB screen.



1. **Identification** – These are automatically filled in from the previously entered information.

2. Reach Data

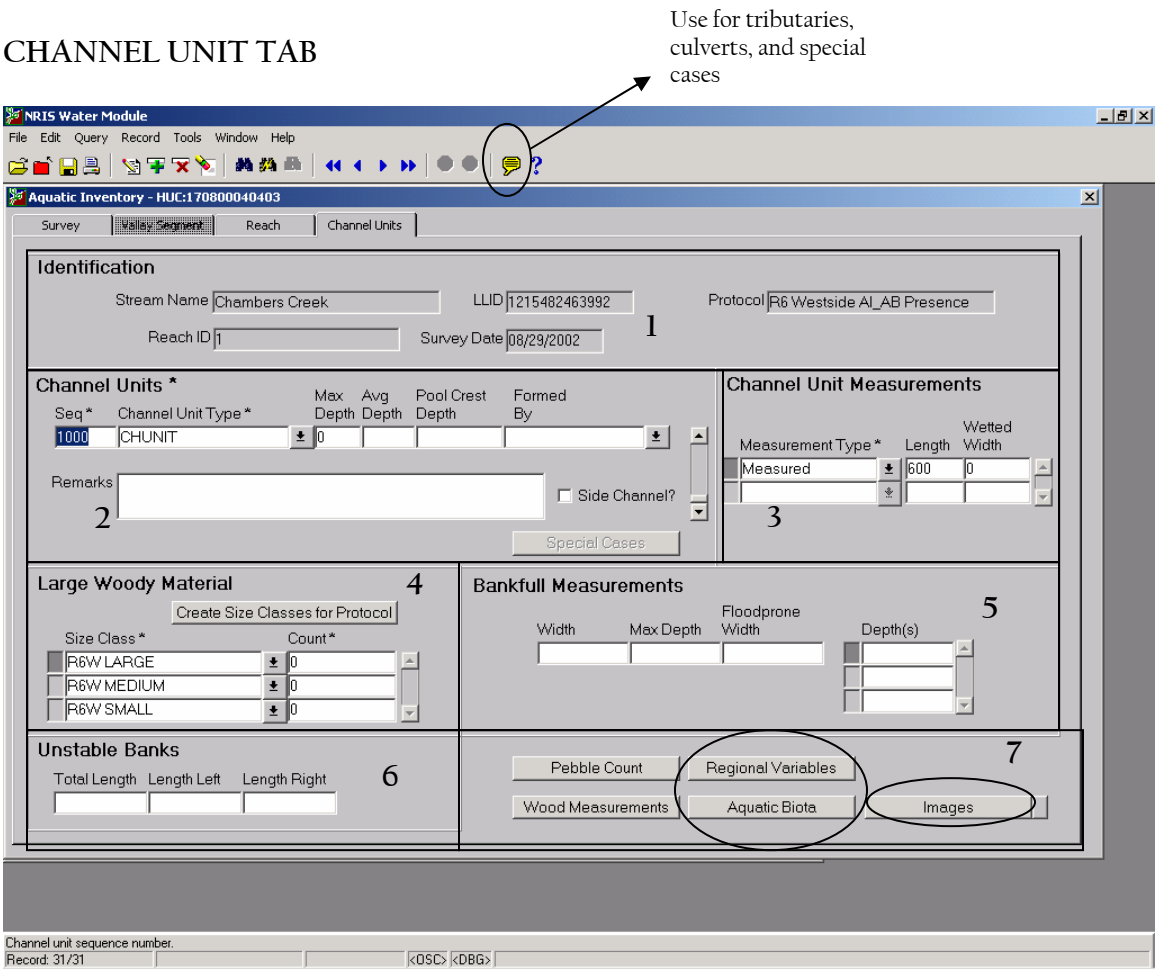
   Valley Length (R6 Required) – Length of the valley in feet measured off of a 1:24000 quad map.
   Reach Elevation Max (R6 Required) – Maximum elevation for the reach in feet.
   Reach Elevation Min (R6 Required) – Minimum elevation for the reach in feet.
   Valley Width (R6 Required) – Average width of the valley in feet (Map Estimated).

Discharge (R6 Required in first reach only) – Flow measured at the beginning of the survey in cubic feet per second (cfs)
Channel Length (R6 Required) – Length of channel in feet for reach measured off the USGS 1:24000 quad map.
Remarks – General information about the reach can be entered here.

3. **The Buttons** – Regarding R6 Level II Stream Inventory data only 4 of these buttons will be utilized. (Migrated gradient data will be migrated to the **Cross Section** button. If older data were entered the gradient would also be entered in this location).

   Pebble Count data will be entered here under the pebble count button.
   Reach Characterizations is the location to enter the Rosgen Channel Type. If the Rosgen Channel type was identified using a map during the office phase it would be a Level I. If the channel type was derived from data collected in the field it is a Level II determination.
   Regional Variables also need to be entered. See Regional Variable section on pg. 21 for more information.
   Images – Photos that represent the reach can be attached here on the local server so all users will be able to view them (See pg. 30 for instructions).

CHANNEL UNIT TAB



**Before beginning data entry it is recommended that you identify your reach breaks on your datasheets with a bright highlighter line to ensure the correct sequence order numbers get into the correct reaches. If you find out you entered data into the wrong reach, contact the NRIS Helpdesk.

1. Identification

The data in this block are grayed out which indicates that the data cannot be edited. This information was brought forward from the previously entered data.

2. Channel Units

Entering and Editing Channel Units in the Channel Units Block

Entering a new Channel Unit:
To enter a new Channel Unit you MUST be on a blank line **in the Channel Unit block in the Seq. field**. There are 3 ways to get to a blank line:

1. Click the Insert icon (green plus sign) on below the menu bar.
2. Click the down arrow on your keyboard.
3. Click the Next Record icon (blue arrow pointing to the right). This works only if you happen to be on the last channel unit entered in your list.

DO NOT TYPE OVER A SEQ NUMBER to enter a new record. Oracle interprets that as editing the record, not entering a new record.

Accidentally typing over a SEQ Number:
If you accidentally type over a SEQ Number thinking you are entering a new record, here's what to do.

1. A message may appear that says "This sequence has been entered, please select another" when you go to enter a channel unit type. Click OK to the message.
2. Immediately, Click the Clear Record icon (icon looks like a pencil with an eraser). This will clear the entry you made. This only works if you have NOT saved yet.

Then proceed with one of the three options above for entering a new record.

If you have saved your data already you have lost your previous data. The database would act as if you were editing that channel unit.

NRIS AI will NOT prompt you to move to the next reach after you have entered your last SO for the reach. Be aware of where your reach ends in order to get your SO's in the proper reaches.

Channel Unit Type

Below you will find the codes that will be most applicable to R6 data. You can use the pulldown menu in NRIS to locate your channel type. **TIP**: You can also type in the beginning letters of a channel unit to get a smaller list. If you go to a higher level of identification for your channel unit codes a crosswalk table for the 3rd level codes can be found on pg. 38.

Crosswalk table for R6 Codes to AI channel unit codes.

R6 Channel Unit Code	NRIS AI Code
SIDES	SLOW (click side channel box)
SIDEF	FAST (click side channel box)
S	SLOW
SD	DAM_PL
SS	SCOURPL
F	FAST
FT	TURB
FN	NONTURB
CHUNIT/CHUNITM (MARSHLAND)	CHUNIT – Marshland in Comment
ARTIF	ARTIFIC (Use comment field to indicate culvert or dam)
WF	WTRFALL
CH	CHUTE
CHUNIT/ND/D (DRY CHANNEL)	CHUNIT – Dry Channel in Comment

Side channels (SIDEF or SIDES)
This channel unit is divided out as either a fast or slow water unit. In AI choose FAST or SLOW, then enter the data. MAKE SURE TO CHECK OFF THE SIDE CHANNEL BOX.

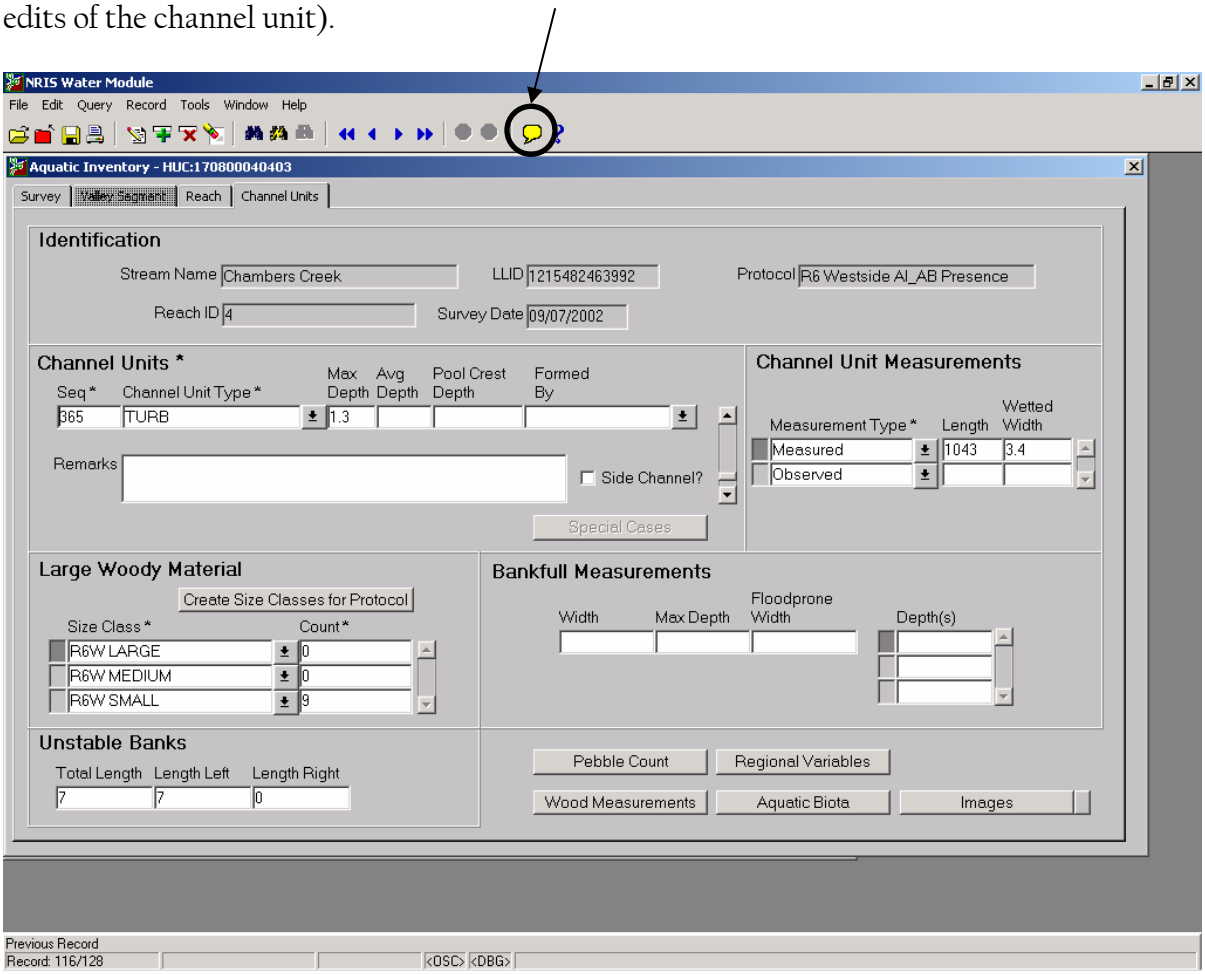
Tributaries
These do not get a specific channel unit. The information for the tributary will be entered into a comment box (the yellow Additional Comments icon on the tool bar at the top, this becomes available after you save the edits of the channel unit). Add this data at the channel unit where the tributary enters. Follow instructions as above to enter into the Comments box. Under subject in the pulldown menu choose HABITAT_TYPE_TRIB (Part of this title will be cut off). In the comment text box enter at a minimum the following information:

- Bank orientation
- Temperature
- Time of temperature
- Gradient, flow contribution to mainstem
- Access to fish
- Tributary name (if it is named on map)

It is recommended that something be typed in the remarks box of the channel unit to indicate there is information for the tributary in the comment box, such as "trib".

Special Cases (Culverts, Dams, Marshlands), and Dry Channels
(See crosswalk table on pg. 15 for corresponding channel unit type)

Additional information for these channel units is entered into a comment box (the yellow Additional Comments icon on the tool bar at the top, this becomes available after you save the edits of the channel unit).

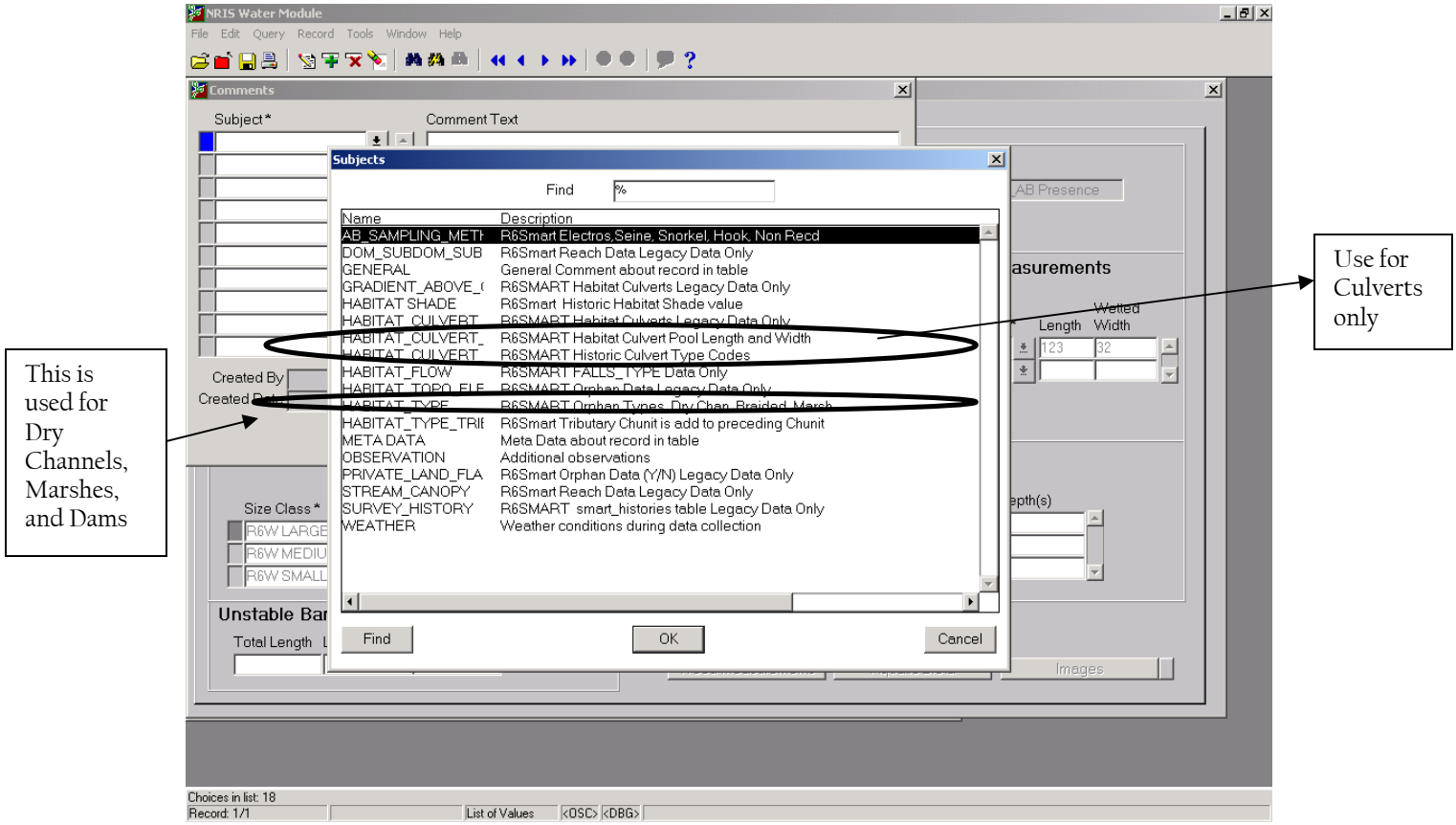


**IMPORTANT – Before clicking the yellow additional Comments icon, make sure your cursor is either in the Seq or Channel Unit Type field. This will ensure that the comment gets attached to the channel unit.

Special Cases and Dry Channels

When the yellow additional comment icon is clicked a separate box appears. In the subject area choose HABITAT_TYPE (R6SMART Orphan Types) for manmade dams, marshes, braids, and dry channels.

- Indicate the type of channel unit or special case it is in the comment text box along with any other pertinent information pertaining to the channel unit such as width of dams.



Once comments have been entered into this area the yellow bubble will appear to have writing in it ( ).

Culverts

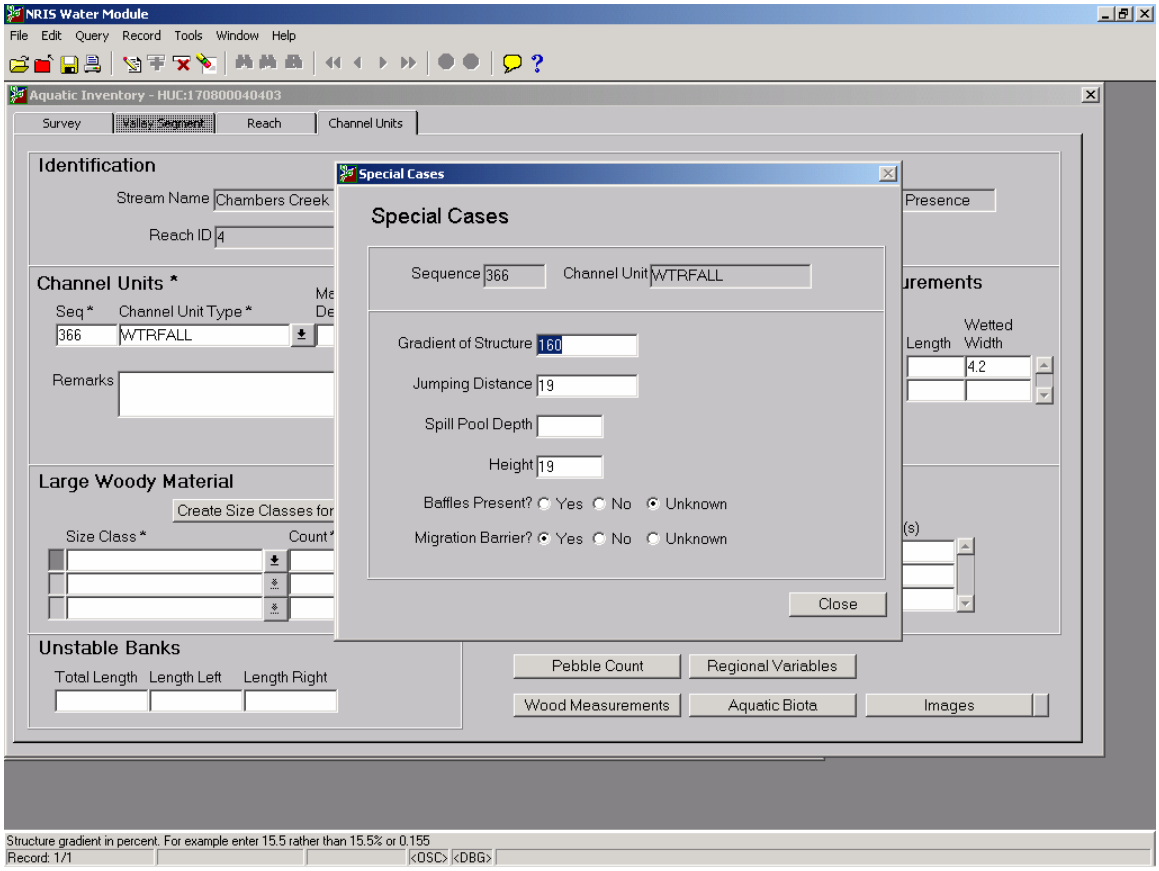
Choose the yellow additional comment icon. Choose the following names and enter the appropriate information in the comment text box (Parts of the name are not visible, Use the NAME and the Description to choose the correct Subjects – see screen shot above)

a. HABITAT_CULVERT_TYPE (R6SMART Historic Culvert Type Codes) – **Comment Text:** Indicate the culvert type (open arch, round pipe, etc.)
b. HABITAT_CULVERT_POOLS (R6SMART Habitat Culvert Pool Length and Width) – **Comment Text:** Enter the length and width of the pool below the culvert if one is present. If one is not present enter "No pool below culvert".

Channel Units (cont.)

Max Depth – Required on all main channel wetted units
Avg. Depth – Forest option
Pool Crest Depth – Required on Slow water units
Formed By – Forest Option
Remarks – Enter any pertinent information regarding that specific channel unit.
Side Channel? – If the channel unit is a side channel click on this box. The channel unit type should be identified as either a fast or slow water unit in accordance with the R6 Stream Inventory Protocol. **NOTE:** Remember to change the Measurement Type to Observed if the side channel was not measured.
Special Cases – This box will become highlighted if a listed channel unit is chosen and you have saved (see screen shot below).

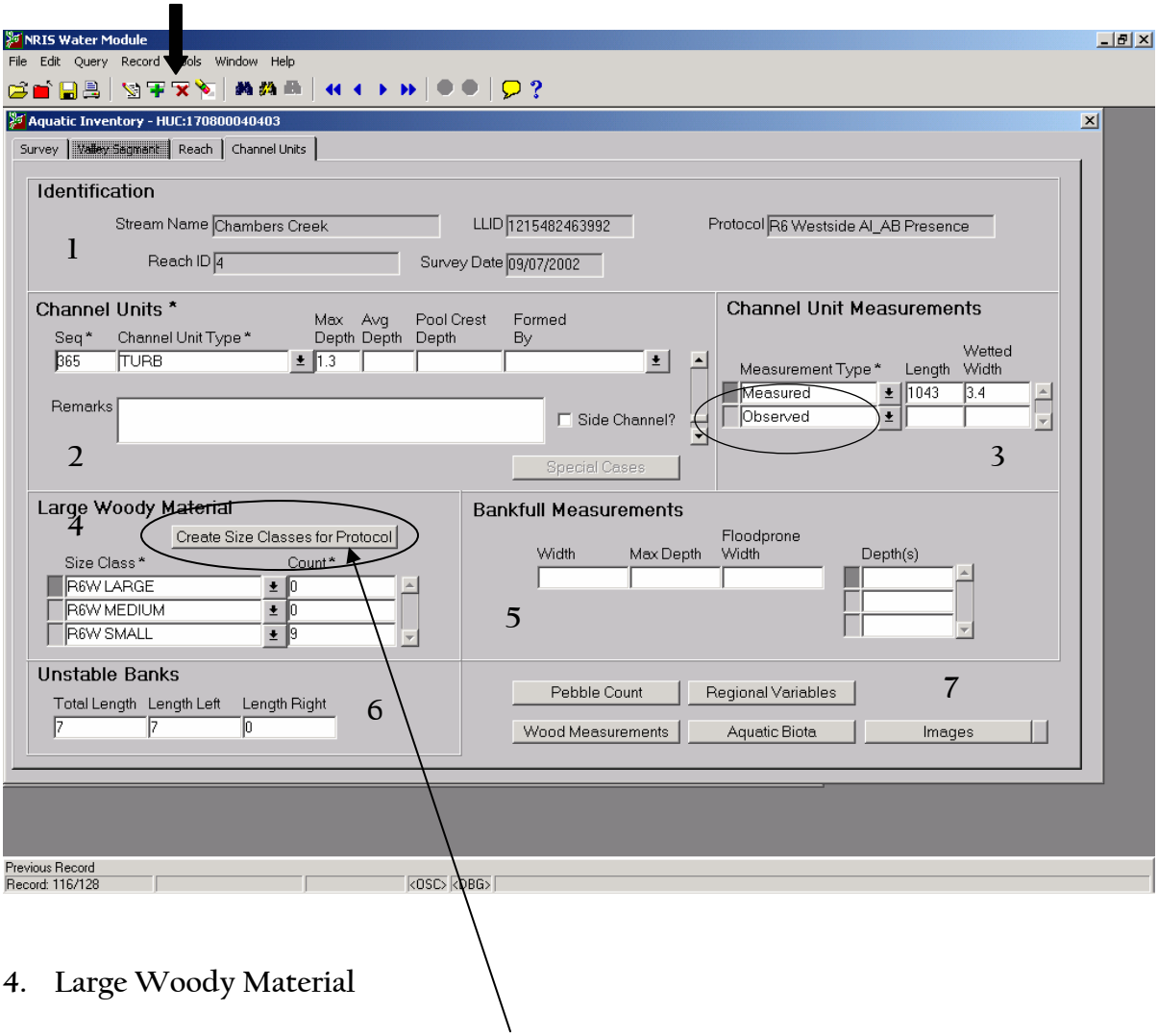
ARTIFIC – Manmade dam or culvert (see pg. 16 and 17)
WTRFALL – Enter data into Special Cases area and also enter wetted width under Channel Unit Measurements
CHUTE – Same as waterfall but also enter length and wetted width of channel unit
CASCADE – Same as CHUTE
BVRDAM – Enter same info as manmade dam.



3. Channel Unit Measurement

Measured vs. Observed Lengths and Widths

If a unit has only measured length and width data, do NOT leave a blank line with 'observed' in the Measurement Type (see example below). (This also holds true if there is only observed data, do NOT leave a blank line with 'measured' in the Measurement Type). This will have a negative effect on some of the queries run in the NRIS Access Tool. If this happens, delete the line by placing the cursor on the Observed line and click the red X on the toolbar. Save and put cursor in the Seq. field and create a new sequence.



4. Large Woody Material

ALWAYS click the Create Size Classes for Protocol button even if no wood was found. It will fill in automatically with 0's. You can then change the numbers to reflect your count. This field must be filled in. Do not leave woody material blank as it will affect the woody debris query in the NRIS Access Tool.

5. Bankfull Measurements

This information is filled in on measured fast water units only. If bankfull indicators are not present on the measured channel unit, type in a remark stating that fact and enter the bankfull data in the actual channel unit where the measurements were taken.

6. Unstable Banks

Enter the Total (left and right bank numbers must add up to the total) unstable banks observed within that channel unit. If you collect this data only on measured units do not enter anything on unmeasured units. If you are collecting unstable banks for the entire survey make sure to enter 0's into the fields if no unstable banks were observed along with your other measurements.

7. The Buttons

Three of these buttons will be utilized for the R6 Stream Inventory: Regional Variables (see pg. 21), Aquatic Biota (see pg 22), and Images (see pg 30).

REGIONAL VARIABLES

Regional Variables can be found on the Reach and Channel Unit Tabs. The button is in the lower right hand corner. The table below describes the Regional Variables for each Tab/Form and describes the required format for entering the data.

The formatting of the regional variables can also be found in the database by clicking on TOOLS → SYS ADMIN → SITE PREFERENCES. You can then scroll down to look at the various formats for the Regional Variables.

Form	Regional Variable	Example of Required Format	Description of Regional Variable
Reach	Stream Order	1,2,3, etc	The designations of the relative position of stream segments in a drainage basin network. See R6 Handbook, Appendix B for more information.
Reach	Valley Form	2	As described in the R6 Handbook (Value of 1 to 10) (Forest Option)
Reach	Flow Regime	Intermittent	Intermittent, Perennial, Ephemeral (Forest Option)
Channel Unit	Meas Grad @ Riffle	3	Gradient taken with an Abney Level at measured fast water units (Forest Option)
Channel Unit	H_2O Temp (C)	13	Water Temperature taken in degrees Celsius using a handheld thermometer
Channel Unit	% Shade	54	Percent **shade** using a Solar Pathfinder (Forest Option)
Channel Unit	Riparian Veg*	#GF#GF#GF#ST#CD#SS#	As Described in R6 Handbook (Can also have a total of 3 values. e.g., #ST#CD#HA#). See pg 36 of this guide for valid codes.
Channel Unit	Date/Time H2O Temp	09/02/2001 1420	Date and time that water temperature was actually taken - not survey start date. Time H_20 temperature was taken (seconds are not required)
Channel Unit	SubstEst S,G,C,B,R	#10#30#20#40#0#	As Described in R6 Handbook (Forest Option), (Make sure to fill in all fields)

*Riparian vegetation relates to inner zone and outer zone (outer zone is forest option) as described in the R6 Handbook. #size class#overstory#understory#

****It is recommended that all AI data be entered before entering Aquatic Biota (AB) data. All sequence order numbers need to be correct before entering AB Data. This will ensure no AB data will be orphaned if a unit is deleted without first deleting the AB data. ****

AB DATA

AB data will be entered through AI. Fish data will be entered into the SO number at which the data was collected.

Depending on the protocol chosen, the procedures for data entry will be different. **Figure 1 below gives more detailed instructions on entering data for each specific block.**

Please refer to the Stream Inventory Handbook, Region 6 for specific information pertaining to AB protocols.

Quick Tips

You only need to enter the sampling method into the Reach Tab unless another method was used. The method then will be entered into the individual unit in AB. Enter the method for identification in the yellow additional Comments Icon while your cursor is in the "Sample Number" box. Valid methods are Seine, Snorkel, Electroshock, or Hook and Line. **(Required R6 Field)**

You can choose types of species by genus or genus species.

R6 Westside/Eastside AI/AB Presence Protocol: You cannot enter any other number but a 1 or 0 for "Count" in the Sample Detail block. If you have an incidental count that you would like to enter please see # 7 below for instructions.

R6 Westside/Eastside AI/AB Count Protocol: Use this protocol if counting fish. User can enter actual fish count numbers into the "Count" field in the Sample Detail Block.

The protocols above have already been selected at the Survey Tab screen prior to data entry into AI

AB Data Entry Instructions

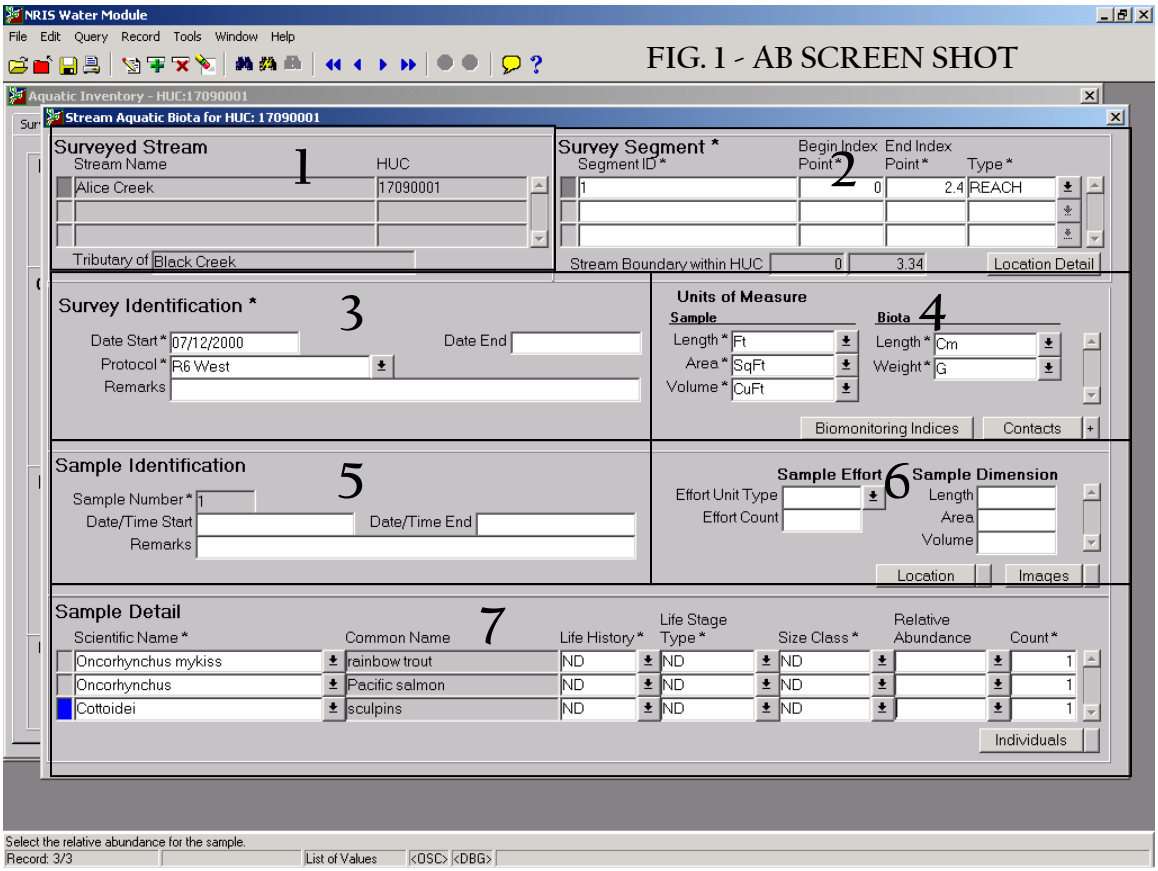


FIG. 1 - AB SCREEN SHOT

1. This block is automatically filled in.
2. This block reflects the information for the Ecoreach from the survey tab and cannot be edited.
3. "Date Start" and "Protocol" fields are automatically filled in and cannot be edited. "Date End" – End day of the physical survey of the reach (Optional).
   "Remarks" – If no fish were observed enter "No fish observed". Can also enter any other pertinent information.
4. Units of measure for the sample shall be in English.
   Biota measurements can be in English or Metric. These fields are required. Contacts are the people who collected the data and can be selected here.
5. "Sample Number" is the sequence order number where the data was collected and cannot be edited.
   "Date/Time Start" and "Date/Time End" are start and ending time of the sample in this unit (**Required R6 Field**).
   "Remarks" – Enter any pertinent information here.
6. "Effort Unit Type" – Choose from Pull down menu.
   "Effort Count" – This refers to the amount of time spent in relation to your choice of Effort Unit Type.
   "Sample Dimension" – Enter information on area surveyed if available.
7. "Scientific Name" – Use query to find appropriate species name, ND will automatically fill into next 3 required fields. *If you have a crew that incidentally counted fish while

using the Presence Protocol you can enter the count at this block using the yellow comment bubble. The comment will be attached to the specific species you have entered here. Use the General Tab to enter your numbers and any other pertinent information. (See pg 28 for more information on using the yellow comment bubble).
"Common Name" – Automatically filled in after choosing fish from query.
"Life History", "Life Stage Type", "Size Class" and "Relative Abundance" can be entered if data is available.
"Count" – Enter 1 if using presence protocol, Enter actual count if using count protocol **(R6 Required)**.

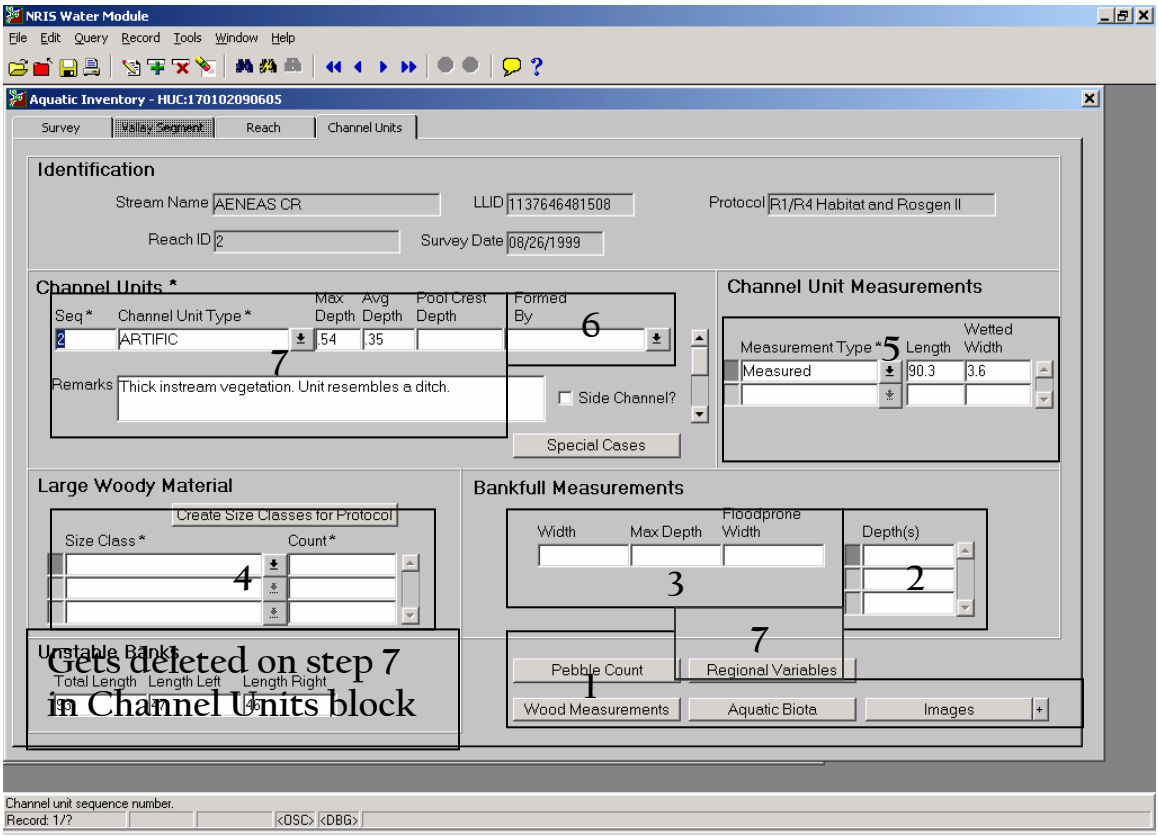
HOW TO DELETE IN AI

You enter data in AI starting on the Survey Tab and proceed to successive tabs and forms. When you want to delete a survey, you generally do it in the opposite order that you enter data. Below are some tips to follow to delete an AI survey. The steps are grouped by tab.

When deleting it is important to remember you must delete using the delete icon (red X) and then save before moving to another block or form.

Channel Units Tab

The following graphic indicates the order that data needs to be deleted to successfully delete one channel unit. These steps must be repeated on each channel unit within a survey. When the scroll bar in the Channel Units block is no longer active and all the fields are blank, then you have deleted the channel unit data.



1. Be sure to click each button to make sure there is no data on the pop-up forms. Delete any data and save. You do not delete the Regional Variables. The Regional Variables get deleted on step 7 when you delete the Channel Units block.
2. Delete the bankfull depth measurements and save before deleting the other bankfull measurements.
3. Delete and save.
4. Delete all rows and save.
5. Delete all rows and save.
6. When you want to delete a channel unit and there is data in the *Formed By* field, you must place the cursor in the *Formed By* field and click the Delete icon, followed by the Save icon. This will delete the data in the *Formed By* field, as well as any data entered into the Special Cases popup form.

   Deleting Special Cases data: The only way to delete Special Cases data is by placing the cursor in the *Formed By* field and clicking the Delete icon, followed by the Save icon. The *Formed By* data and Special Cases data are stored in the same table.
7. Delete records in the Unstable Banks block by deleting records in the Channel Units block. Unstable Bank data and Channel Units data are stored in the same table, so by deleting the Channel Unit you will also delete the Unstable Banks data.

If you cannot delete a Channel Units record because of a "matching detail records exist" error and it appears that there are no detail records, you may have a ghost record. Refer to the Deleting Tips section in Chapter 3 for instructions in the User Guide for NRIS Water.

Reach Tab

Make sure all data is deleted from the Reach Characterizations popup form before exiting the Reach tab. It is possible to delete the Reach record but still have data left on the Reach Characterizations popup form, if that form is not checked. If this happens, you will not be able to delete the Survey on the Survey tab even though it appears as if all data has been deleted. To correct this, you will need to go back to the Reach tab and enter some data in the Reach Data block. You will then be able to open the Reach Characterizations form and delete any remaining data.

Survey Tab

Contacts must be deleted prior to deleting the Units of Measure and Surveys data, so if there is a "+" sign beside the Contacts button, first delete all contact data. The Units of Measure and Surveys data can then be deleted.

QUICK REFERENCES

Using the Keyboard

The following is a list of keyboard strokes that can be very useful while working in AI. The table is designed so it can be copied, cut out, and taped near a workstation. These can also be found by going to Help Menu (found in all tabs) → Keys.

ACTION	KEY
Cancel Query	Ctrl Q
Clear Record	Shift F4
Copy	Ctrl C
Count Records	Shift F2
Create Record	F6
Cut	Ctrl X
Delete Record	Shift F6
Duplicate Item	F3
Duplicate Record	F4
Enter-Query	F7
Execute Query	F8
Exit	Ctrl Q
Help	F1
List of Values	F9
Next Item	Tab
Next Record	Down Arrow
Paste	Ctrl V
Previous Item	Shift Tab
Previous Record	Up Arrow
Print	Shift F8
Save	F10

General Information – Helpful Hints and Troubleshooting

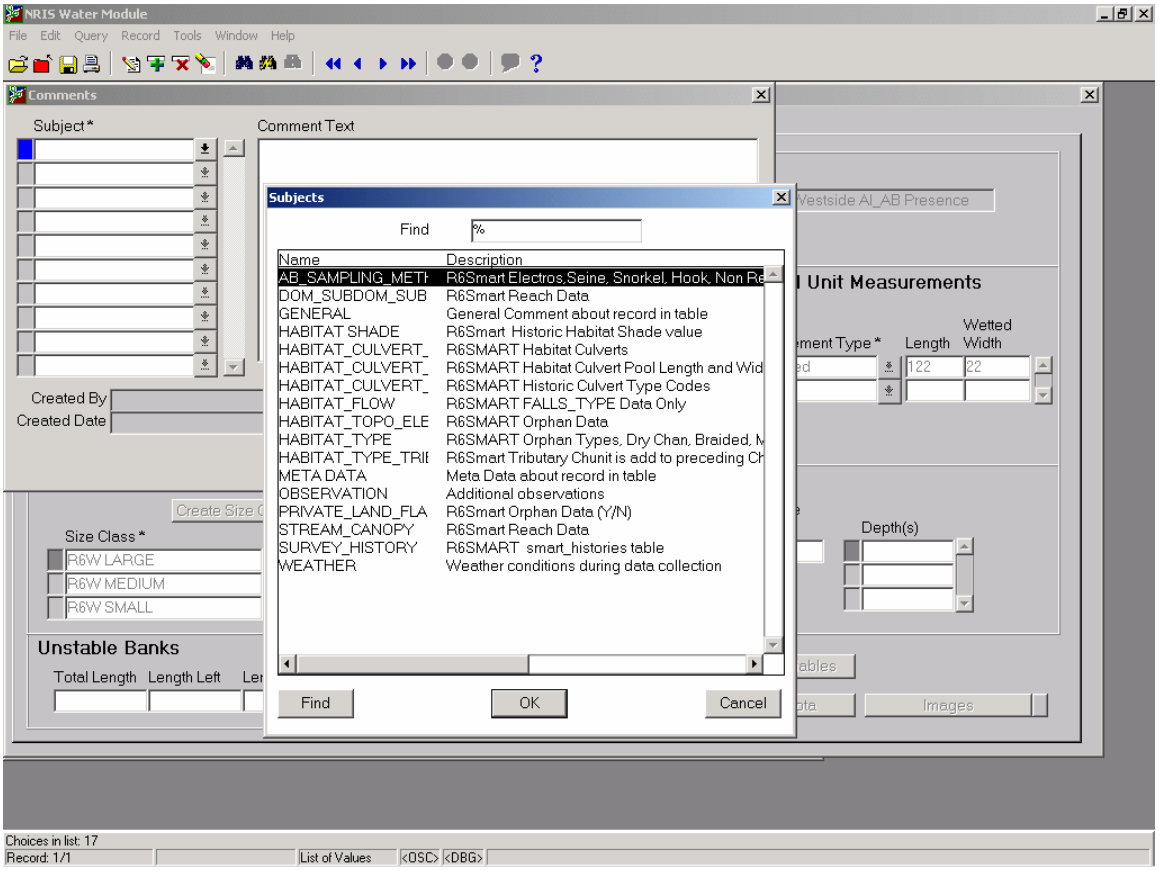
The following table highlights some helpful tips for the user as they are doing data entry. It's a little like a troubleshooting guide. If the user needs some guidance on a certain item they may find it here. Some of the information is repeated from the previous sections in this document.

Form	Field/ Subject	Comment
General	Not seeing entire screen	Change the resolution on your computer to 1024x768
All	* Fields	Fields with an asterisk are required
Survey	Segment ID	Number sequentially from downstream to upstream – 1,2,3,4
Reach	Pebble Counts	Enter Pebble count data here not within the Channel Unit Tab
Reach and Channel Units	Regional Variables	Don't forget Regional Variables – Check Regional Variables table for help, Must use the mouse to access the button
Channel Units	Sequence	Not automatically filled in so be aware of numbers. WARNING: sequence on Field data form often incorrect
Channel Units	Length and Width	Can have measured length and observed width (can also have measured width)
Channel Units	Wood Size Classes	**Be aware** – ordered alphabetically so Large, Medium, Small
Channel Units	Side Channels	First choose the unit (Fast or slow water dominated) then check off side channel box. Side channel dimensions are usually observed dimensions not measured.
Channel Units	Sequence numbers in reaches	When entering sequence numbers be aware where your reach ends. NRIS AI will not prompt you to go to next reach when you enter the last sequence number of the reach.
Channel Units	Moving from distances to wood	Do not push Enter after entering distances, move cursor to wood block and click the Create Size Classes for Protocol, **do not** click the down arrows within the block. If you accidentally push enter after the distances an error will appear, ignore it. It means nothing.
Channel Units	Moving into Unstable Banks block	You must use mouse to move into block. You can arrow through to get out.
Channel Units	Special Cases	The Special Case button is only available on certain channel units and becomes available **after you save.**

General Instructions on Yellow Additional Comment Icon

The yellow additional comments icon is available at each tab within the NRIS Water database on the top toolbar.

It becomes available only after the information entered on that screen is saved. This is used in a variety of situations (see below) and should be used to store information that you may want to query for later. It is best to have the cursor in the first block of any screen when using the comment box. When you click on the icon a separate screen will appear as seen in the screen shot below. See the table below for specific details on the use of the subjects in this pulldown. Notice not all of them are used and some will hold only legacy data from SMART.



Once comments have been entered into this area the yellow bubble will appear to have writing in it ().

Where to Use the Yellow Comment Icon

	Subject Pulldown			
Situation	**Name***	**Description**	**Comment Text**	**Pg #**
Fish Sampling Method (Reach Tab)	AB_SAMPLING_METH	R6Smart Electros,Seine,Snorkel, Hook, Non Recd	Enter type of sampling method used in reach	12
Tributaries	HABITAT_TYPE_TRIB	R6Smart Tributary Chunit is add to preceding Chunit	Enter minimum of bank orientation, temperature, time of temperature, gradient, flow contribution to mainstem, tributary name (if on map)	15
Special Cases (Dams, marshes, braids)	HABITAT_TYPE	R6Smart Orphan Types, Dry Chan, Braided, Marsh	Enter the type of special case, and any other pertinent information	16
Dry Channel	HABITAT_TYPE	R6Smart Orphan Types, Dry Chan, Braided, Marsh	Enter Dry channel and any other information pertinent to the unit	16
Culvert	HABITAT_CULVERT_	R6SMART Historic Culvert Type Codes	Indicate the culvert type (open arch, round pipe, etc.)	17
Culvert	HABITAT_CULVERT_	R6SMART Habitat Culvert Pool Length and Width	Enter the length and width of the pool below the culvert if one is present. If one is not present enter "No pool below culvert".	17
General Information	GENERAL	General Comment about record in table	User discretion	
General Information	OBSERVATION	Additional observations	User discretion	
Aquatic Biota / Sample Detail/ Scientific Name	GENERAL	General Comment about record in table	Enter incidental count of fish taken during a presence survey	23

*Some of the names in this area are cut off so using both the Name and the Description is needed

Inserting Images

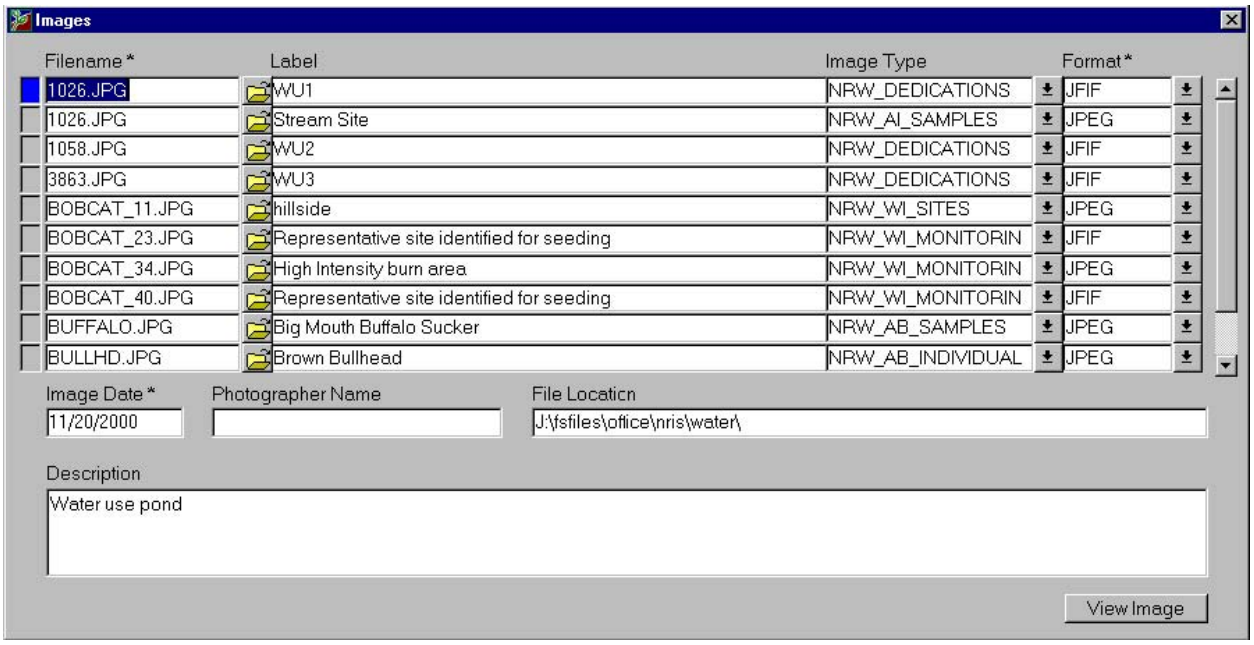
The Image Maintenance Form

This form provides you with the ability to attach images (maps, photos, drawings) to your data. The system will work best if image files are stored and maintained in a central location for the entire application. It is possible to store files to any drive that a networked computer has mapped. Other users will not have access to files if the files are located on PCs or in directories on the server that all users do not have access to.

The Attached Images and Available Images popup forms are used to link the images to a specific submodule record.

There are two ways to access the maintenance form. You can select *File/Open/Maintenance/Images/* on the menu bar, or you can right click with the mouse while the Attached Images popup form is open and the cursor is in the popup window. The new window that appears will have the Images maintenance form listed as an option.

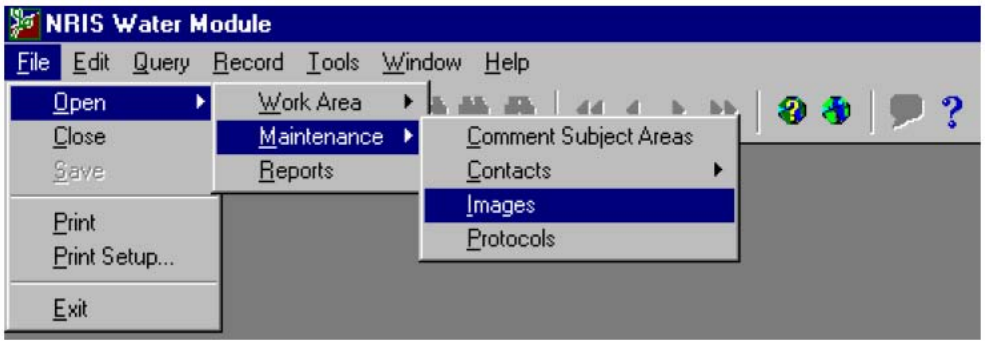
The Images maintenance form lists all of the images that are available to be associated with surveys, projects, etc. You can view available images or add new images using this form.

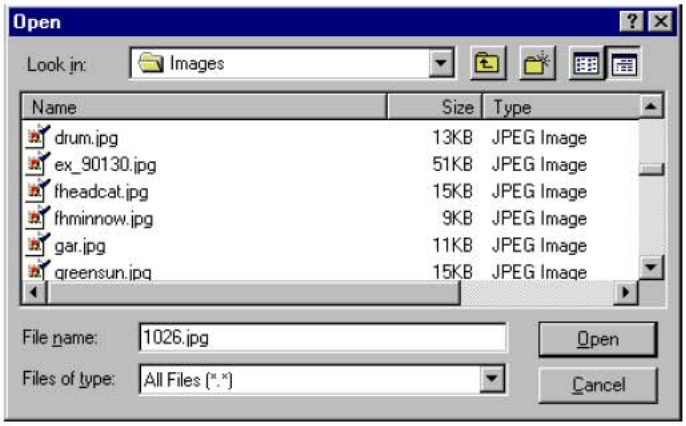


To add a new image to the list of images, the first step is to add the new image file to the default file folder that is being used to store images associated with survey data. This file folder directory was created by the System Administrator during the application set-up process. The open yellow folder icon, located between the first and second columns on the Images maintenance form, provides the link to the image file folder. When saving photos avoid using spaces (use underscores as a replacement) and remain consistent with upper case or lower case characters.

Once stored, images should not be moved since the image location is saved in the database once an image is associated to a survey or activity.

Images Form

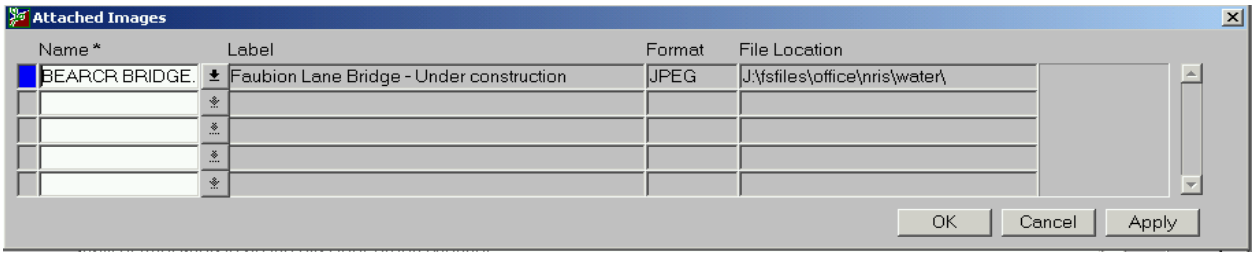
Step No.	Field	Instructions
1.		Click *File* in the Menu Bar at the top left of your screen, and then click *Open*/*Maintenance*/*Images* to display the *File* cascading menu.  This opens the Images maintenance form.

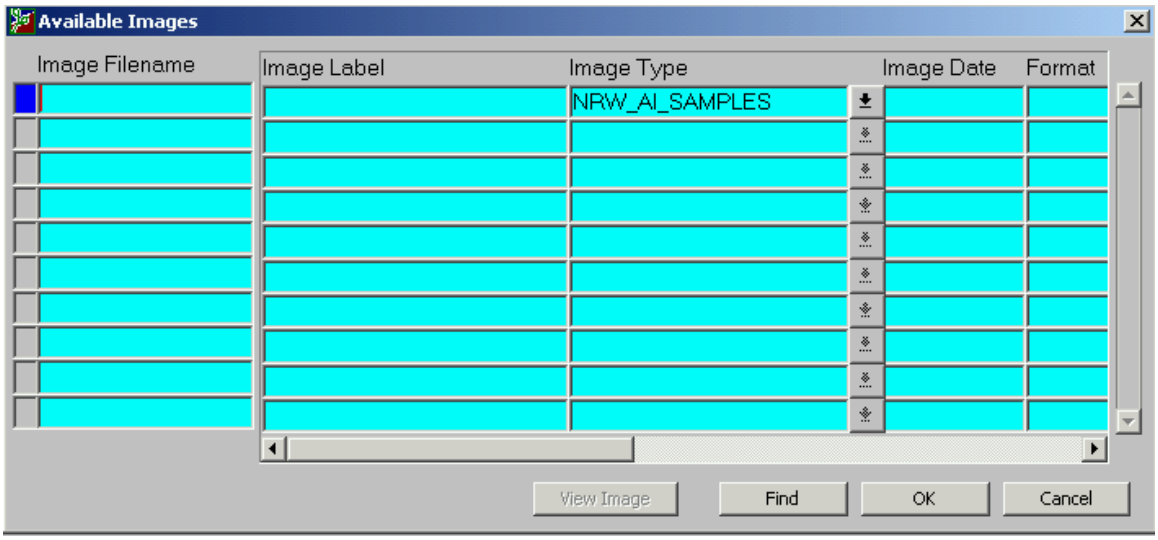
Step No.	Field	Instructions
2.	*Filename*	**Mandatory field entry.** To create a blank record, place the cursor in any field and click on the Insert Record icon in the toolbar at the top of the screen. With the cursor in the blank *Filename* field, click on the open yellow file folder icon to the right of the *Filename* field. This opens the default Images file folder that contains a list of available images.  Highlight the image you want to add to the list of images available from within NRIS Water, and click the *Open* button. This enters the highlighted image filename into the *Filename* field on the Images form.
3.	*Label*	Enter a short description of the image.
4.	*Image Type*	Select *Image Type* from the pull-down menu to associate the image with a particular data block. **Note:** It is important to select an *Image Type* for the image. If you do not, the image will not show up as an available image if *Image Type* is specified in a query if available images.
5.	*Format*	**Mandatory field entry.** Select the image *Format* from the pull-down menu.
6.	*Image Date*	**Mandatory field entry**. Enter the date (MM/DD/YYYY) that the image was created.
7.	*Photographer Name*	Enter the name of the photographer.
8.	*File Location*	The prefilled *File Location* points to the file where the image is located. **Note:** The database stores information about the path to an image file, but it does not store the image itself. For this reason, it is important to store the file in a location that is accessible to all of the application users. This corporate location is represented by the default file path.

Step No.	Field	Instructions
9.	*Description*	Describe the image. Maximum length is 70 characters. **Tip:** After attaching an image to WIT monitoring activities, additional description space is available. This space is accessible by selecting *Image Description* from the Type field pull-down menu in the Monitoring Information block on the WIT Monitoring tab. Up to 2,000 characters can be entered.
10.	*View Image* button. To view the image, click the *View Image* button.	

Attached Images Popup Form

The Attached Images popup form is used to associate images to a data block. Access this form by clicking on the *Images* button on any submodule form. Before an image can be linked to data, the image must first be made available in the Images maintenance form. Only then can it be selected using the Attached Images popup form.



Step No.	Field	Instructions
1.	*Name*	Click on the pull-down menu arrow. This opens the *Available Images* popup query form. The fields appear blue, which means that the form is ready to be used to perform a query. You can query on any field.  **Note:** When the query form pops up, *Image Type* will be filled with the name of the image type associated to the data block where the *Images* button was located. If the image you want to attach has a different image type, you may: 1) change or delete the prefilled image type and select a different type; or 2) delete the value in *Image Type* and run the query with no parameters to get a complete list of all images.
2.	Click the *Find* button. This will list images that meet the query criteria. The color of the fields becomes white. To view an image, highlight a record and click the *View Image* button. **Note:** If the list of available images doesn't have the image you expect or desire, another query can be performed by clicking the *Query* button and entering a new set of query criteria.	

3.	Highlight an image record in *Image Filename* and click the OK button. This returns you to the *Attached Images* form and lists the image you selected. A thumbnail version of the image will appear on the far right of the form. **Tip:** You can click on the image to open the Image File popup form showing an enlarged version of the image.
4.	Click the *OK* button on the Attached Images form to associate the selected image with the data record.

Vegetation Codes used for the Riparian Veg Regional Variable

Riparian vegetation relates to inner zone and outer zone (outer zone is forest option) as described in the R6 Handbook.
(Regional Variable format for Riparian Veg – #size class#overstory#understory#)
Size class codes can appear in the size class, overstory, and understory categories of the Riparian Veg code.

Size Class Code

NV = No Vegetation.
The no vegetation condition is characterized by the predominance of bare soil or naked rock.

GF = Grass/Forb condition
The grass/forb stand condition lasts 2-5 years and occasionally as long as 10 years. Shrubs and some trees that sprout are not yet dominant.

SS = Shrub/Seedling condition
The shrub stand condition often lasts 3-10 years but may remain for 20-30 years if tree generation is delayed. Tree regeneration may be common, but trees are generally less than 10-ft. tall and provide less than 30 percent of crown cover.

SP = Sapling/Pole condition
The open sapling/pole condition occurs when trees exceed 10 ft. in height and are between 5 in. and 8.9 in. dbh.

ST = Small Tree condition
The small tree condition has very little ground vegetation because of closed crown canopy. Average stand dbh is 9 in. to 20.9 in.

LT = Large Tree condition
The large tree condition is characterized by trees with an average dbh of 21 in. to 32 in. dbh. An understory of shrubs and young shade-tolerant trees is present.

MT = Mature Tree condition
The mature tree stand conditions are characterized by old live trees, snags, down woody material, and the replacement of some of the long-lived pioneer species such as Douglas-fir by shade-tolerant species such as western hemlock. Size is generally greater than 32 in. dbh

Overstory and Understory Codes

Hardwood:
HA = Alder
HB = Bigleaf maple
HC = Cottonwood, ash, poplar
HD = Dogwood
HE = Elderberry
HL = Liveoak, canyon
HM = Madrone
HO = Oak, Oregon white, California black
HQ = Quaking aspen
HT = Tanoak
HV = Vine Maple
HW = Willow
HX = Other/unknown

Conifer:
CA = Subalpine fir, mountain hemlock, whitebark pine
CC = Cedar, western red
CD = Douglas-fir
CE = Subalpine fir _ Engelmann spruce
CF = Fir, silver and noble
CH = Hemlock, western
CJ = Juniper
CL = Lodgepole pine, shore pine
CM = Mountain Hemlock
CP = Ponderosa pine, Jeffrey Pine
CQ = Western white pine
CR = Red fir
CS = Spruce, Sitka
CT = Port-Orford-cedar
CW = White fir, grand fir
CY = Yew
CX = Other/Unknown

Formed By Crosswalk Table

FORMED BY (the force)	FORMED BY CODE
Beaver	BV
Wood	WD
Bedrock	BR
Boulder	BO
Stream Bend	SB
Tributary	TR
Culvert	CU
Dam	DA
Restoration	RS
Other	OT

Crosswalk Table for R6 Channel Unit codes and AI Channel Unit Codes (3rd Level)

THIRD LEVEL	R6 CHANNEL UNIT CODE	NRIS AI Code
Cascade	FTCC	CASCADE
Rapid	FTRP	RAPID
Riffle, Low Gradient	FTRF	RIFFLE
Run	FNRN	RUN
Sheet	FNSH	SHEET
Beaver Dam Pool	SDBV	BVRDAM
Debris Dam Pool	SDDD	DEBRIS
Landslide Pool	SDLS	SLIDE
Convergence Pool	SSCV	CONVERGE
Lateral Scour Pool	SSLS	LATERAL
Mid-channel Pool	SSMC	MIDCHNL
Plunge Pool	SSPL	PLUNGE

Partial List of Fish and Amphibian Species

CODE	GENUS AND SPECIES	COMMON NAME
CAXX	*Catostomus* sp.	Unknown sucker
COXX	*Cottus* sp.	Unknown sculpin
GAAC	*Gasterosteus aculeatus*	Threespine stickleback
GIBI	*Gila bicolor*	Tui chub
JUVL	.....	Unknown juvenile salmonid
ONCL	*Oncorhynchus clarkii*	Cutthroat trout
ONGO	*Oncorhynchus gorbushcha*	Pink salmon
ONKE	*Oncorhynchus keta*	Chum salmon
ONKI	*Oncorhynchus kisutch*	Coho salmon
ONMY	*Oncorhynchus mykiss*	Steelhead, Rainbow, Redband trout
ONNE	*Oncorhynchus nerka*	Sockeye salmon
ONTS	*Oncorhynchus tshawytscha*	Chinook salmon
ONXX	*Oncorhynchus* sp.	Unknown salmon/trout
PRWI	*Prosopium williamsoni*	Mountain whitefish
PTOR	*Ptychocheilus oregonensis*	Northern squawfish
RHCA	*Rhinichtyhs cataractae*	Longnose dace
RHXX	*Rhinichthys* sp.	Unknown dace
SACO	*Salvelinus confluentus*	Bull trout
SAFO	*Salvelinus fontinalis*	Brook Trout
SATR	*Salmo trutta*	Brown Trout
AMGR	*Ambystoma gracile*	Northwestern salamander
AMTI	*Ambystoma tigrinum*	Tiger salamander
ASTR	*Ascaphus truei*	Tailed frog
BAWR	*Batrachoseps wrighti*	Oregon slender salamander
BUBO	*Bufo boreas*	Western toad
BUWO	*Bufo woodhousii*	Woodhouse's toad
DICO	*Dicamptodon copei*	Cope's giant salamander
DITE	*Dicamptodon tenebrosus*	Pacific giant salamander
ENES	*Ensatina eschoscholtzii*	Ensatina
PLEL	*Plethodon elongatus*	Del Norte salamander
PLDU	*Plethodon dunni*	Dunn's salamander
PSRE	*Pseudacris regilla*	Pacific chorus frog
RAAU	*Rana aurora*	Red-legged frog
RABO	*Rana boylii*	Foothill yellow-legged frog
RACA	*Rana cascadae*	Cascades frog
RAPI	*Rana pipiens*	Northern leopard frog
RAPR	*Rana pretiosa*	Spotted frog
RHCAS	*Rhyacotriton cascadae*	Cascade torrent salamander
SPIN	*Spea intermontana*	Great Basin spadefoot
TAGR	*Taricha granulosa*	Roughskin newt

Macroinvertebrate Taxa

Ephemeroptera	Mayflies
Odonata	Dragonflies and Damselflies
Plecoptera	Stoneflies
Trichoptera	Caddis flies
Gastropoda	Gastropods, slugs, snails
Diptera	Midges
Heteroptera	Water striders
Coleoptera	Beetles
Megaloptera	Dobsonflies, fishflies, hellgrammites alderflies
Astacidae	Crayfish