Quick Tips for the Field

Always remember to do a QC check before leaving the field

Sequence=order of day

See Index For this line

2 or 3

Record # from camera

For **multiple culverts** choose the primary, or lowest in elevation, to complete this side of the form

Depth: inside pipe
Span- widest point on pipe

Pool: Twice the size **or** twice the depth compared to natural channel=large

Armoring type: riprap/plastic/concrete

See pp.18 for more info

When in doubt:comparable

High traffic volume= greater than or equal to 50 cars/minute

Date _____ (mm/dd/yy) Time ___:___ Sequence #_____ | Site ID

Observer (s) _____ Organization _____

Stream _____ Tributary to _____ Town _____

Road _____ Type ☐ Paved ☐ Unpaved ☐ Railroad ☐ Trail ☐ Driveway

GPS Coordinates [WGS84 UTM Zone 19N Meters] 0 East North

DeLorme Atlas Map # _____

Photo IDs Inlet _____ Outlet _____ Other _____

Upstream _____ Downstream _____ Flow ☐ Low ☐ High ☐ Moderate ☐ NONE

[redacted] _____ [redacted] _____

Basic Structure Type ☐ Bridge ☐ Culvert ☐ Multiple Culverts # ____ ☐ Ford ☐ Removed Structure

Material ☐ Metal ☐ Concrete ☐ Plastic ☐ Wood ☐ Stone ☐ Other _____

Specific Structure Type (see diagrams): ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

[redacted]

Inlet Condition ☐ At Stream Grade ☐ Inlet Drop ☐ Perched

☐ Deformed ☐ Beaver Fencing ☐ Blocked 25% 50% 75% 100% (Circle One)

Inlet Water Depth _____ ft/m

Upstream Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel

☐ Sand ☐ Clay ☐ Organic ☐ Unknown

A) Inlet Span _____ ft/m B) Inlet Clearance _____ ft/m C) Inlet Wetted Width _____ ft/m

Outlet Condition ☐ At Stream Grade ☐ Perched ☐ Cascade ☐ Perched Above Cascade

Outlet Water Depth _____ ft/m Outlet Drop _____ ft/m

Tailwater Scour Pool ☐ Large ☐ Small ☐ None

Tailwater Pool Depth ☐ < 3 ft / 1 m ☐ > 3 ft / 1 m

Tailwater Armoring ☐ Extensive ☐ Not Extensive ☐ None

Downstream Substrate

☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel

☐ Sand ☐ Clay ☐ Organic ☐ Unknown

A) Outlet Span _____ m B) Outlet Clearance _____ m C) Outlet Wetted Width _____ m

D) Crossing Structure Length _____ ft/m E) Abutment Height _____ ft/m | Sliplined Culvert ☐ Yes ☐ No

Crossing Substrate ☐ None ☐ Comparable ☐ Contrasting ☐ Unknown ▶ Continuous ☐ Yes ☐ No ☐ Unknown

Internal Structures ☐ None ☐ Baffles / Weirs ☐ Bridge Piers ☐ Other _____ | Corrugations ☐ Yes ☐ No

Water Depth Matches Stream ☐ Yes/Comparable ☐ No Water Velocity Matches Stream ☐ Yes/Comparable ☐ No

Slope Compared to Channel Slope ☐ Higher ☐ Lower ☐ Same | Alignment ☐ Flow-Aligned ☐ Skewed

Significant Sediment Source Upstream ☐ Road / Ditches ☐ Embankment ☐ Stream Banks ☐ None

Downstream ☐ Road / Ditches ☐ Embankment ☐ Stream Banks ☐ None

Wildlife Barriers ☐ None ☐ High Traffic Volume ☐ Steep Embankments ☐ Retaining Walls ☐ Jersey Barriers ☐ Fencing

Comments:

Units ☐ [redacted] ☐ Meters

To be determined on day of survey

See abutment type for 6 & 7

Boulder- Basketball: Cobble- fist: Gravel=size of corn to tennis ball
Sand= size of salt to corn:
Organic- mud

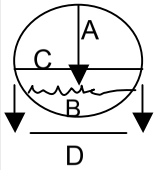
Width of water in pipe

Outlet Condition: see definitions on back

Drop:bottom edge of pipe to surface of pool

Sliplined: liner
Abutment Height: Structure type 6&7 only

When in doubt: none



A- Inlet Clearance
B- Inlet Water Depth
C- Inlet Span
D- Inlet wetted width

If the crossing is tidal, estimate height (high/medium/low) and outgoing/incoming, and place that comment here along with any additional items that may help with the survey

Inlet terms

At stream grade means the inlet of the structure is roughly at the same elevation as the stream bottom upstream of the structure

Inlet drop means there is a drop from the stream channel down to the inlet.

Perched means the inlet is set above the stream, and is accessible only at higher flows.

Deformed means the structure itself is deformed. Select this box if the structure is deformed to the point that it affects the flow.

Outlet Terms

At stream grade means the outlet of the structure is at roughly the same elevation as the stream bottom just downstream and in the general vicinity of the structure.

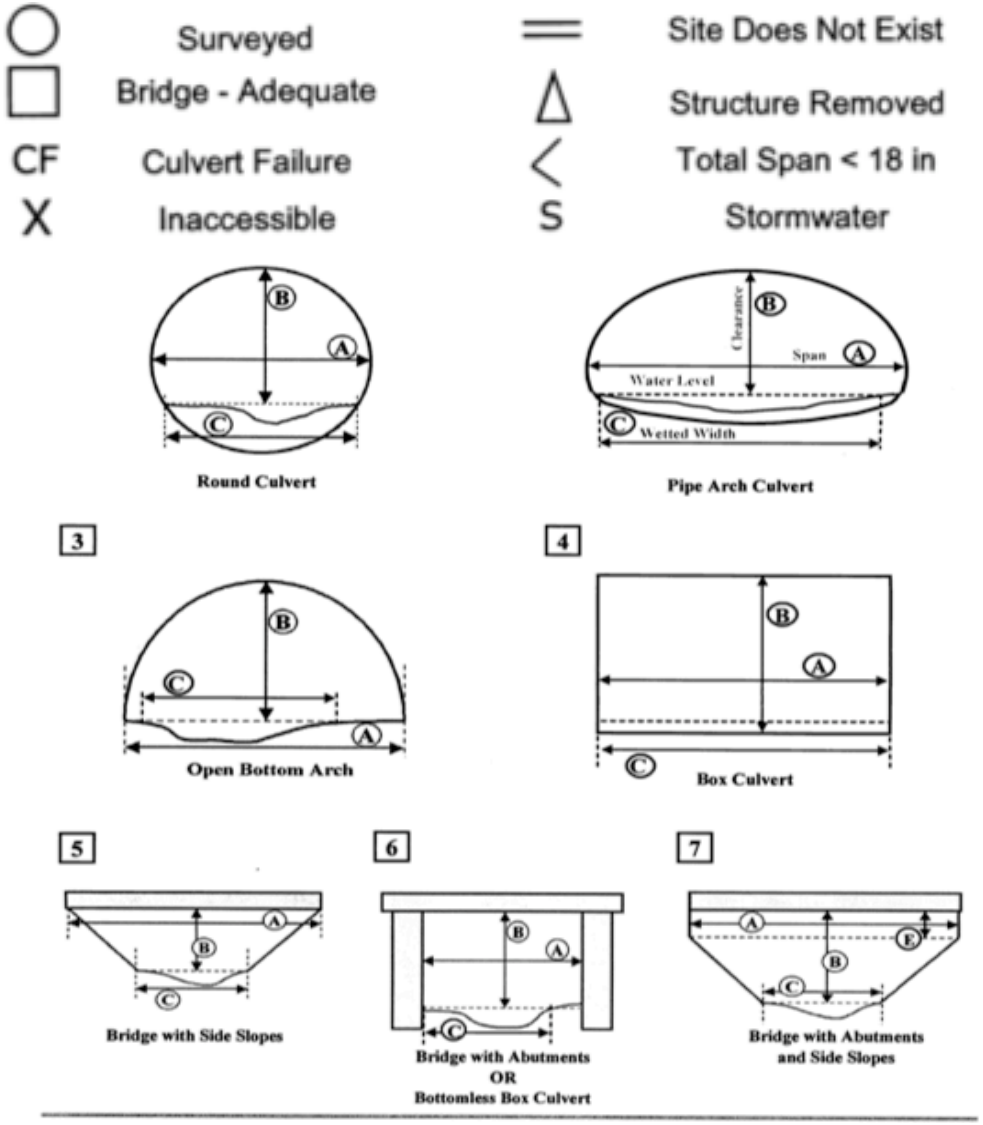
Perched means there is a vertical drop from the structure outlet down to the stream channel, normally into tailwater pool, but possibly onto substrate. A ***Perched*** outlet can occur with a ***Cascade***, if this is the case check both boxes.

Cascade means the stream flows much more steeply from the outlet than the general stream gradient for some distance before it reaches a slope more representative of that section of stream

Crossing structure length for all structures, measure the length of the structure from inlet to outlet

Corrugation roughness to crossing structure on its inside surface

Map Symbols and Structure types



How to take
a GPS point

1.

Turn on:
Press and hold
red button

3.

Press and hold
MARK Button
then hit OK

Wait for Satellite
to lock on
(Page will change
to map page)

2.

Pocket Rod

Stadium Rod

Meter

All Big Numbers
Tenth of Meter

TOP of Red Line
Tenth of meter

0.20 m

TOP of
Tenth of meter

TOP of **Black** Line
Hundredth of meter

0.15m

Bottom of
5 hundredth meter

0.12m

Top or Bottom
of
Hundredth meter

0.07m

Zero

Road Stream Crossing Database Guide

Ashley Pinkham, Maine Conservation Corps, AmeriCorps Environmental Educator
Wells National Estuarine Research Reserve

This is a comprehensive guide to using the 2010 Microsoft Access Road-Stream Crossing Database. The first step is to make photocopies of each form received. The first forms to be entered into the database will be the **surveyed** site forms. The **unsurveyed** site logs will be the last thing entered into the database. It is suggested and good practice to save often while entering data.

- ► Necessary Items:
  - **Completed** paper data sheet used for barrier survey

To open the database:
- Go to the Research server
Once in the Research Server:
- Open the Stream Barrier Survey Folder
To enter data:
- Choose the database folder, then the Updated form Folder
-Choose the Road-stream Database.mdb file
- This will open up three screens, a form startup interface, a Access 2000 file format screen, and the Maine Road-Stream Crossing Survey Form main window.

When the database opens, the screen you will be working with is Figure 1.
To begin click on the Enter Data button
* If at any time during data entry you are stuck, select the HELP button and it will troubleshoot the system, and/or provide Alex's # for further assistance.

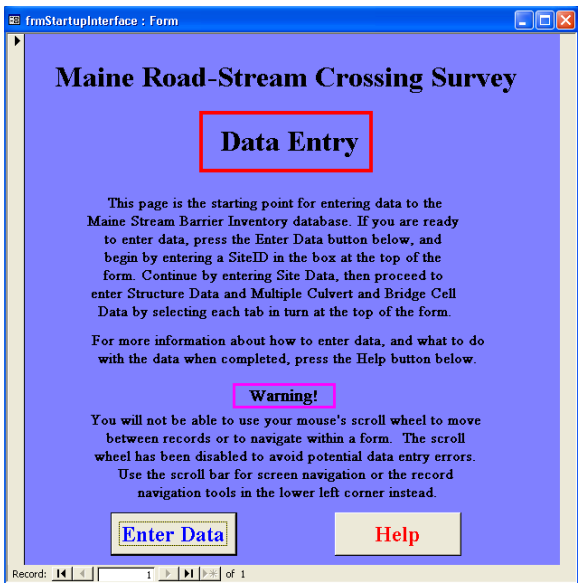


Figure 1

Refer to Figure 2 for the following steps:

- First choose add new record.
- Next enter in SITE ID #
- In site status: Choose **Surveyed** from the drop down menu

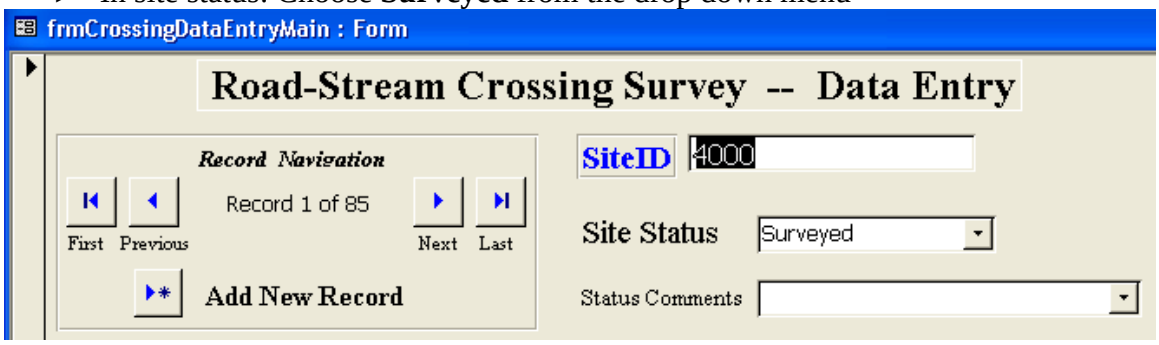


Figure 2.

Refer to Figure 3 for the following steps:

- Enter the date, time, and the sequence number in which the site was surveyed
- Next add the people who surveyed the site and the organization you are affiliated with in the given boxes
- Enter the stream name and the tributary the stream is a part of.

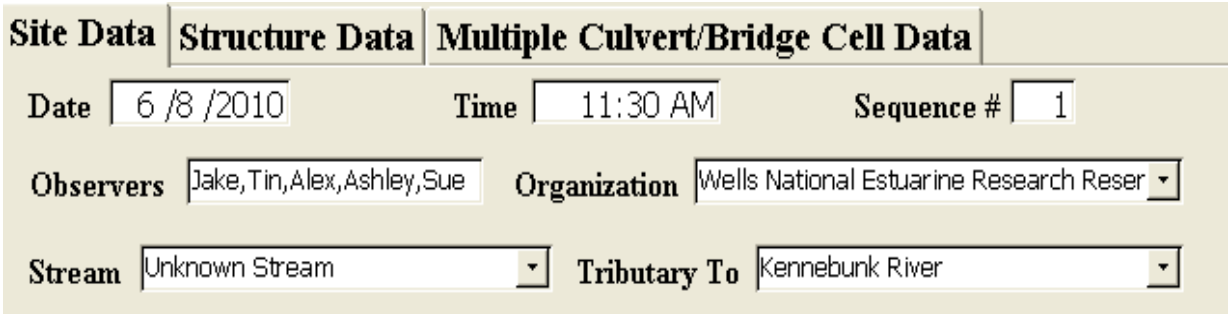


Figure 3

Refer to Figure 4 for the following steps:

- ► Enter the where the site was located, the road type, and the road name.
- ► GPS Coordinates: When typing in the UTM-East you do not need the prefacing '0'.
- ► UTM-North requires all digits.

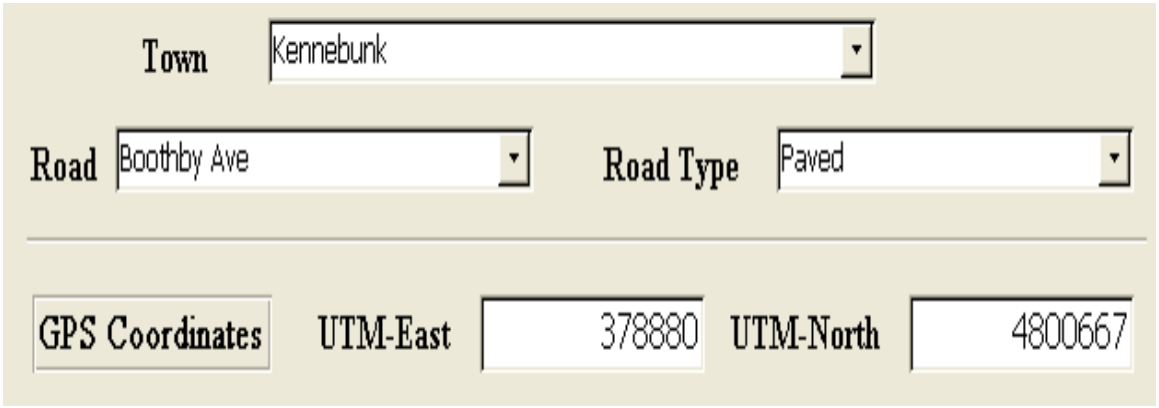


Figure 4

Refer to Figure 5 for the following steps:

- ► Enter the DeLorme Atlas Map # and the DeLorme Grid Reference of the site.
- ► If there is additional descriptive information that will help locate the site add these details in the Location Description box.

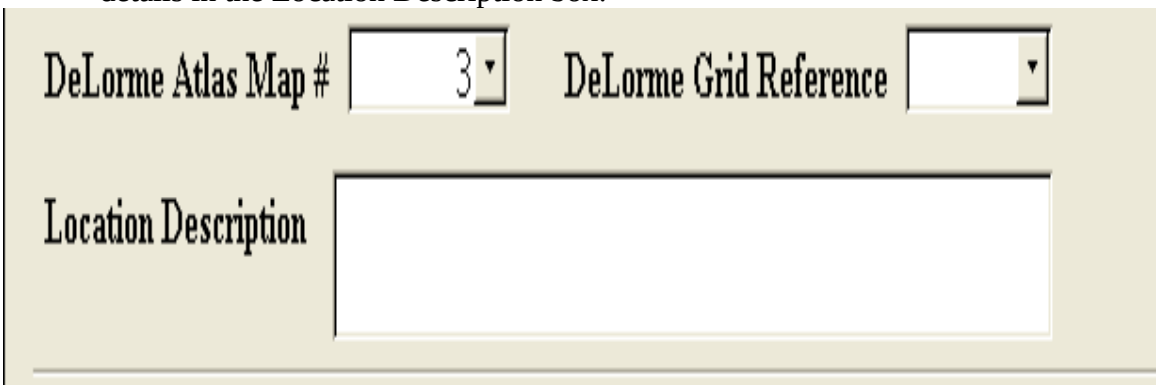


Figure 5

Refer to Figure 6 for the following steps:

- Photo ID's are the numbers associated with the raw photos you took of the site. The camera assigns these numbers to each image.
- Enter in the RR and RL Approach.
- Enter the numbers of any other photos taken at the site.
- Enter the flow conditions of the stream. Flow should be determined before the survey based on recent weather.

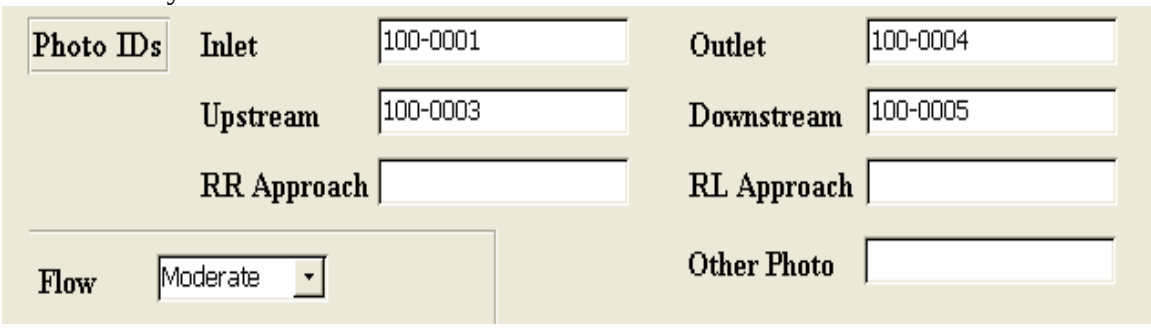


Figure 6

Refer to Figure 7 for the following steps:

- From the drop down menu's select structure type, material, and the number of culverts present at the site.
- If there is a secondary material that the culvert is made out of choose the correct one from the menu.
- Usually the survey is conducted with metric units, if not than select the appropriate units used at the site.

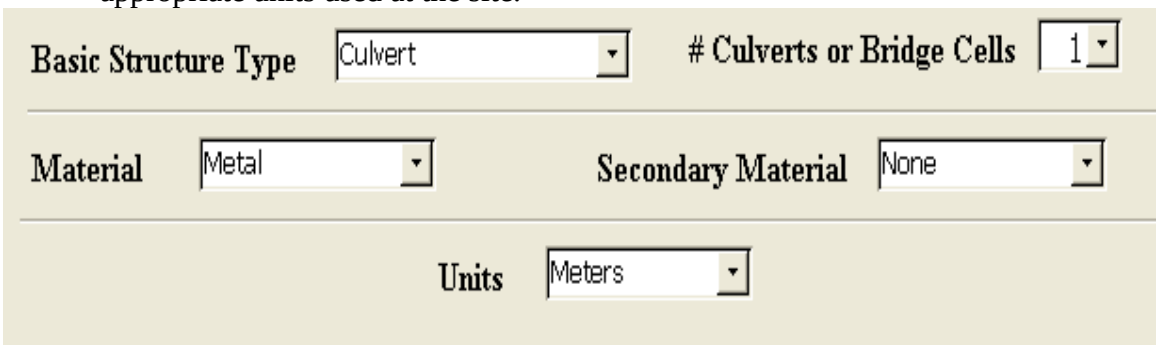


Figure 7

Refer to Figure 8 for the following steps:

- When you are completed with entering data on this page (units are the last thing entered) click the save icon in the upper left corner of the screen (Outlined in red).

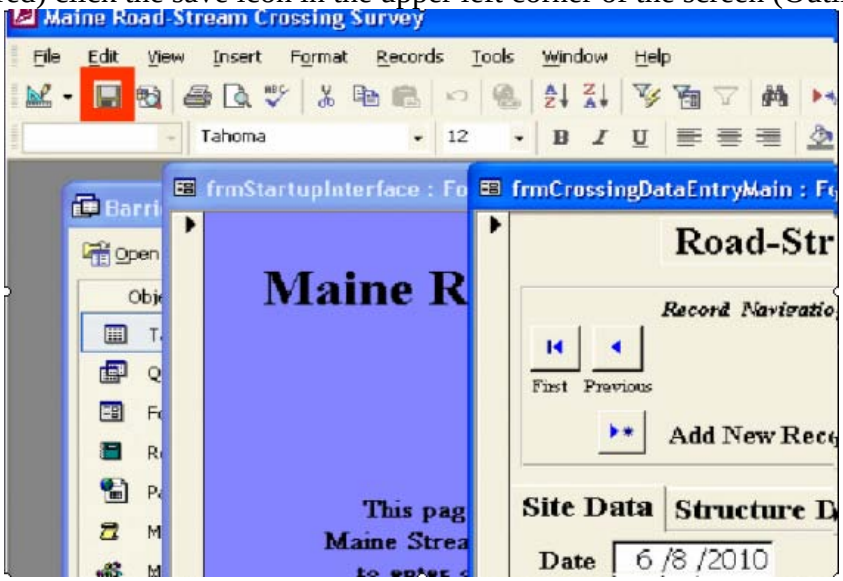


Figure 8

Refer to Figure 9 for the following steps:

- Next, click on the **Structure Data Tab**, this will keep the same heading (Site ID, Site Status), but bring up another section of the survey form.
- Choose from the drop down menu the structure type of the culvert.
- Enter in Channel Width, and Width Type
- Indicate whether the measurements were estimated or measured from the drop down menu.

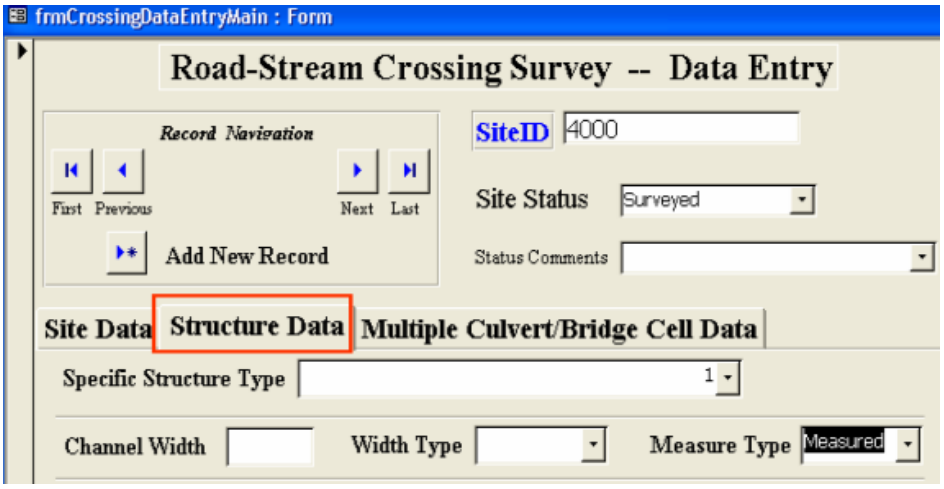


Figure 9

Refer to Figures 10 and 11 for the following steps:

- From the drop down menus select inlet conditions as well as upstream substrate

Figure 10

- Next enter the Inlet Span, Clearance, Wetted Width, and Water depth.

Figure 11

Refer to Figure 12 for the following steps:

- Choose outlet condition. If the outlet is perched than the database will prompt you enter the outlet drop.
- If it is not perched the outlet drop will not need to be entered
- Next, enter the outlet water depth.

Figure 12

Refer to Figure 13 for the next step:

- Following along with your data sheet select from the dropdown menu the proper choice that corresponds with your data for tailwater scour pool, pool depth, tailwater armoring, and downstream substrate.

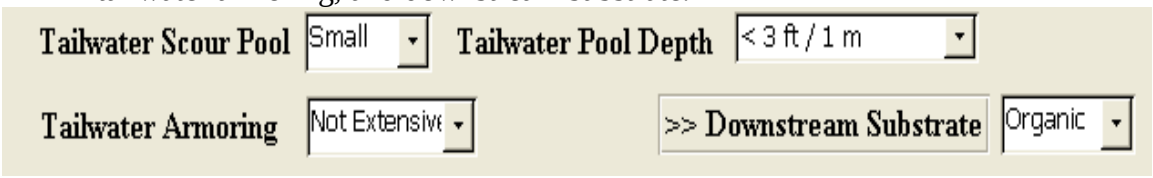


Figure 13

Refer to Figures 14 and 15 for the following steps:

- ► Enter the Outlet span, Clearance, and Wetted Width.
- ► If the measurements are too large the system will not let you continue to fill out the survey because it assumes the site is highly unlikely to be a barrier to fish passage.
- ► If this happens refer to the people who surveyed this site.

Figure 14

- ► Only fill in the abutment height for specific structure types 6 & 7

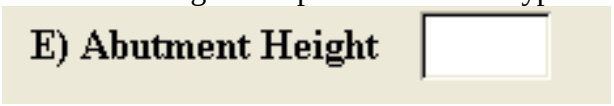


Figure 15

Refer to Figure 16 for the following step:

- ► Continue to follow along with your paper data sheet and select the correct options from the drop-down menus that correspond with the site surveyed.

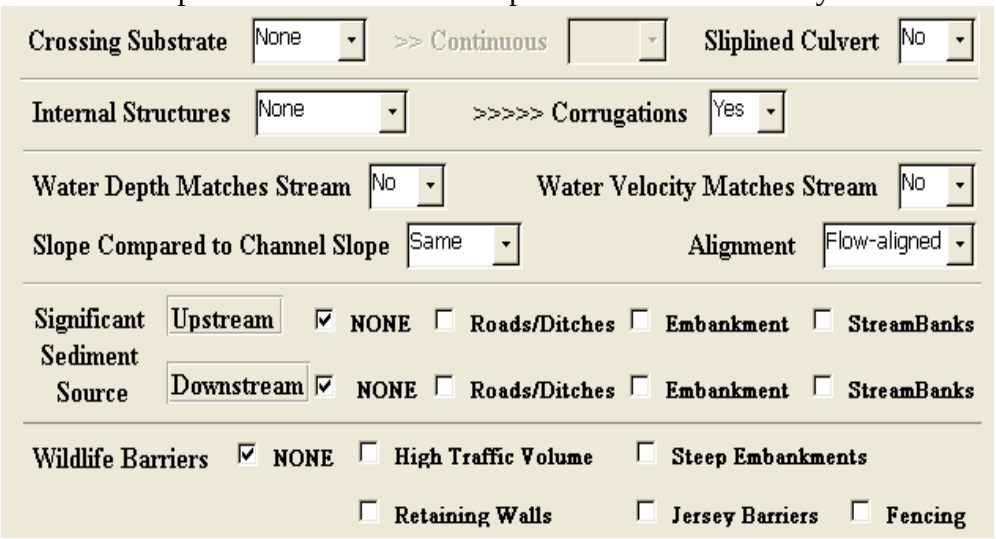


Figure 16

Refer to Figure 17 for the following steps:

- ► Enter any comments or additional observations not captured elsewhere. Comments could include tidally dependent sites, beaver dams, etc.
- ► The example here shows two important factors:
  - The site was tidally dependent
  - The site had a tide gate completely blocking passage of fish upstream.

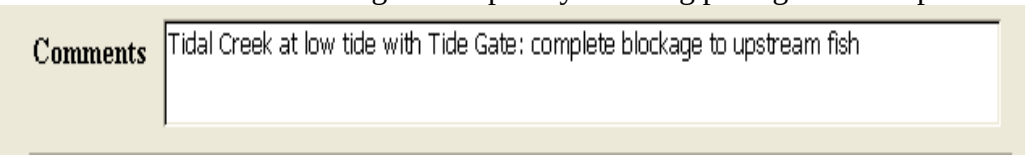


Figure 17

Review the form to make sure all information is entered correctly. Choose save once more and move onto enter multiple culvert data if applicable.

Refer to Figure 18 for the following steps:

- ► If the site has multiple culverts:
  - Select the Multiple Culvert/Bridge Cell Data tab
  - Enter the inlet and outlet measurements from the data sheet.

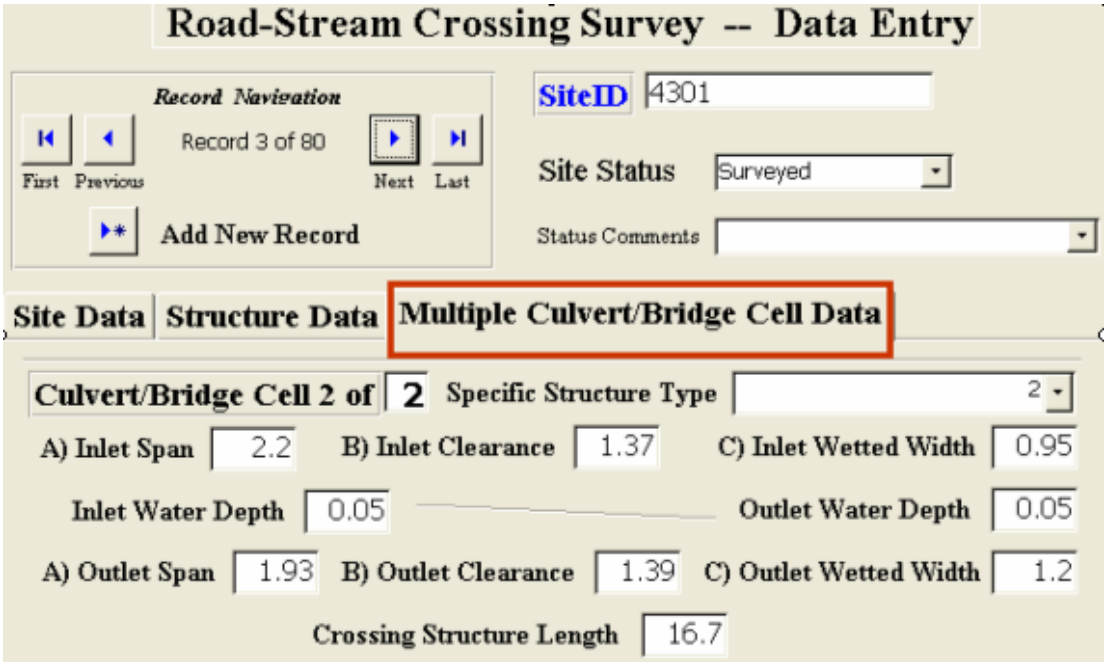


Figure 18

Refer to Figure 19 for the following steps:

- Enter any comments into the Multiple Culvert Comment section at the bottom of the page
- Click the save when finished.

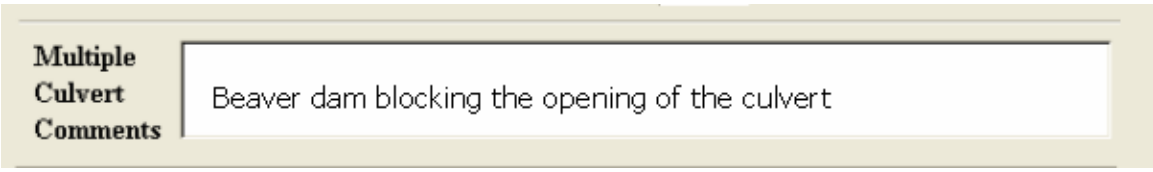


Figure 19

Now you will enter the **unsurveyed** site logs into the database.

Refer to Figures 20 & 21for the following steps:

- Select Add New Record
- Enter in the Site ID #
- Choose the Site Status from the dropdown menu.
- Choices for the remaining site log do not correspond with the Access database. So to complete data entry:
  - Enter in any Status Comments about the site. Comments should also include whether the site should be resurveyed and if the site was inaccessible.

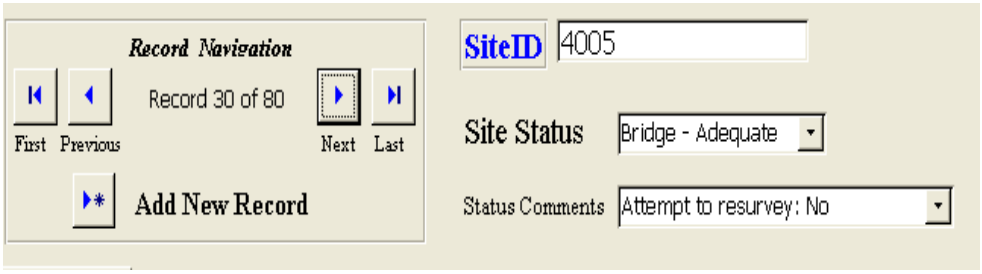


Figure 20

- Choose the Site Data tab.
- Enter the date, time, sequence #, observers, and the organization conducting the survey.
- Once completed click save.

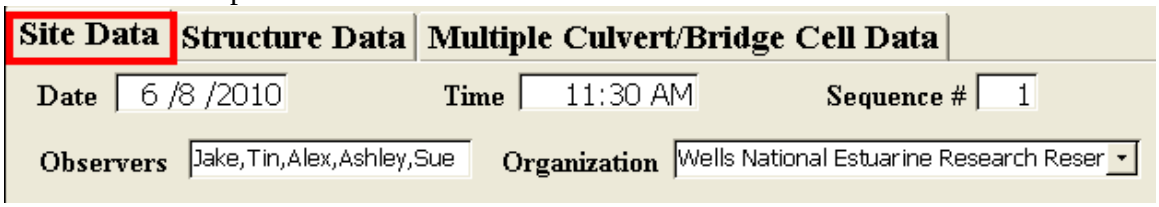


Figure 21

- Once you are finished entering data from all sites save once more, and then close the database.
- For questions or assistance using the database contact Alex Abbott at: 207-781-8364 ex. 21, or alexabbott@hotmail.com.