



REDD SURVEY HANDBOOK

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A Handbook
for Trout
Unlimited
Chapters,
Staff and
Partners

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BACKGROUND

This handbook was created by Trout Unlimited with funding from the United States Forest Service CitSci Fund. Our intent is to encourage and support chapter and staff-led redd survey projects. Redd surveys are relatively easy to conduct, provide useful data to track trout reproduction and offer a fun angler science opportunity for local volunteers. This data can be used to monitor the effectiveness of restoration projects, prioritize restoration and protection efforts and track spawning response to environmental and climate factors. In addition, volunteers who take part in redd surveys gain a deeper connection to their local streams and rivers, often walking unknown stretches of their favorite streams and observing trout spawning activities. The purpose of this handbook is to provide guidance on developing a new redd survey initiative including data collection protocols, study design, outreach and logistics.

INTRODUCTION

Purpose and Application of Redd Surveys

Salmonids are gravel nest spawners, with female trout and salmon excavating a nest, called a redd, where they deposit eggs. These eggs are externally fertilized by one or more male trout or salmon, then covered by gravel. By counting and mapping the number and distribution of redds in a study area we can answer questions about trout populations and spawning habitat. There are several ways in which this data can be applied depending on the goals of your study. This list is not meant to be exhaustive.

Document Trout Reproduction

By identifying and counting trout redds, TU chapters and staff can show that trout are attempting to reproduce in a particular area. Additional data collection can be completed to document the success of reproductive efforts, though these protocols are outside the scope of this handbook. This information can have implications for the regulatory protections afforded to these streams and stream reaches.

Prioritize and Identify Stream Restoration Projects

By mapping redd distribution within a study area, we can effectively identify areas that do not support reproduction, potentially as a result of erosion and siltation on the streambed. These areas can be prioritized for stream bank

stabilization or other projects that reduce sediment input into streams. Also, volunteers walking the stream may identify specific habitat issues or disturbances and can document them using TU's [RIVERS app](#).

Monitoring Effectiveness of Restoration Projects

By mapping redd distribution within a study area over time, we can document the effect of stream restoration projects on increasing available spawning habitat. For example, culvert replacements often open up new spawning habitat previously unreachable to downstream populations. By conducting redd surveys before and after culvert replacement, we can document whether trout populations are utilizing this new spawning habitat at a higher rate. Similarly, as we implement projects that reduces sediment input into streams, we can document the effect this has on available spawning habitat.

Track Fishery Response to Environment and Climate

By conducting redd surveys on a yearly basis we begin to build a dataset that can track spawning activity over time, potentially aiding in identification of environmental impacts affecting reproductive success or changes in spawning behavior due to climate change.

ORGANIZING A REDD SURVEY

Survey Design

Scope of study

The scope of the redd surveys will usually be based upon the defined goals. For example, redd surveys may be completed on a single stream if the goal is to monitor the effectiveness of a barrier removal or habitat improvement project or may be watershed-wide to document trout reproduction and/or prioritize restoration projects at a larger scale. The scope of the study will dictate how many volunteers are needed and the number of stream reaches to be surveyed for a particular study.

Site Selection

Regardless of the scope of the study (single stream to watershed level), surveys should be segmented into easily managed stream reaches that can be walked in a 3-4 hour timeframe. In general, reaches should be approximately 1-3 miles (3-5 km) in length. Figure 1 provides example survey reaches for a stream network. Figure 2 is an example of a regional redd survey effort on targeted streams. Reach length can be adjusted for the fitness of volunteers, accessibility of the reach, difficulty of the terrain, etc. If particular reaches are of more interest than others (ex: directly upstream and downstream of a barrier replacement project), these reaches may be prioritized to be certain they are surveyed if too few

volunteers are present to survey each reach identified in the study design.

The start and end points of reaches should be, where possible, at easily identifiable access points such as roads or trails. In some cases, a car shuttle may be worthwhile at the start and end of reaches to eliminate the hike back to the starting point. Reaches should be numbered for easy identification and maps should be provided to all participants prior to the survey.

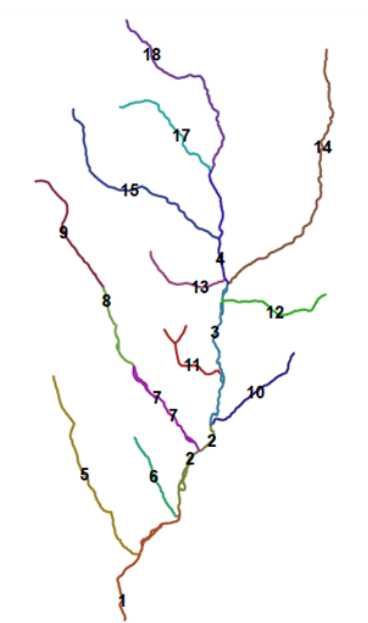


Figure 1: Example survey reaches for stream network

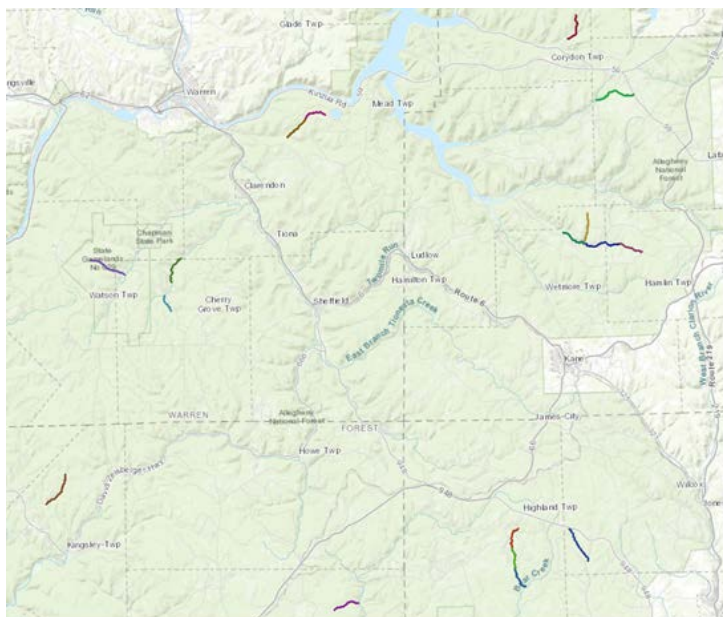


Figure 2: Sections for regional survey of targeted streams.

Frequency

Organizers should plan on annual redd counts over the course of several years to establish a time series of data and to account for yearly variations in spawning.

Ideally, redd counts should be repeated at regular intervals throughout the spawning season each year; however, volunteer participation, availability, and other factors may only allow for one survey day each year. If the capacity exists to complete surveys multiple times over the course of

a spawning season, surveys should begin prior to the onset of spawning if possible, and all stream reaches should be resurveyed at a minimum of every two weeks (less than 14 days) until spawning is complete.

If repeated surveys are not feasible, a single survey may be completed near the end of the spawning season using the peak count method (Parken et al. 2003). The peak of spawning activity and redd development may vary by up to a few weeks from year to year depending on temperature and streamflow. When using the peak count method, a member of your team should track the progress of spawning to identify the point in time where spawning is most active. Volunteers should then be deployed to survey all target stream sections over the course of one to three days during peak spawning. The peak count method does present higher risk of a major rain event or inclement weather hindering redd count efforts and/or biasing the data. Flushing flows can obscure redds, turbid water can make redd identification difficult and poor travel conditions can prevent access to more remote streams. This risk is mitigated by conducting multiple surveys throughout the spawning period.

Field Methods

Materials Needed

- Field Data Sheets and/or Survey 123 mobile app
- Handheld GPS unit or Smartphone
- Maps
- Waders
- Appropriate field gear (rain jacket, warm clothes, etc.)
- Polarized sunglasses

Prior to the start of the survey, a survey leader should be designated. This person is responsible for assigning stream reaches and groups, providing a brief review of the protocols, answering questions from survey participants, providing directions to survey locations and the collection of data sheets and equipment at the conclusion of the surveys. It may be helpful if this person remains at a centralized meeting location during the surveys to serve as a point of contact for participants in case of emergency or other issues in the field.

All persons participating in the redd survey should meet at a centralized location prior to the start of data collection. A brief review of protocols and an opportunity for questions should be provided before participants disperse to complete the surveys. Depending on the number of volunteers and the number of stream reaches to be surveyed, volunteers should work in groups of 2-3 persons

to complete redd surveys. Each group will be assigned one or more stream reaches to complete during the timeframe of the survey and should verify with the survey leader the start and end points (if defined) of their survey. The stream reach name or identification number should be recorded on each group's datasheet at this time.

Upon arrival at the starting point of the survey, the following data should be recorded on the datasheet (or Survey123 mobile app):

- Names of participants
- Date of survey
- GPS coordinates of start location
- Stream Flow condition (ex: low, normal, or high)
- Visibility condition (ex: clear, moderate, or poor)
- Time of day at beginning of survey

After these data fields are completed, the survey may begin. Participants should proceed walking at a deliberate pace upstream from the starting point, scanning the substrate for evidence of redds. When the stream substrate is visible from the bank, participants should walk along the banks as to not disturb fish and/or spawning sites. When possible, a person should walk on each bank, as redds may be more visible from a different angle. In locations where the substrate is not visible from the bank, participants should cautiously walk in the stream channel while looking for redds. In some larger streams, it may be appropriate to survey via driftboat. In this case, a team of two volunteers should drift at a slow pace, with one volunteer standing at

the casting brace spotting redds. When a redd is encountered (see section “Identifying Redds”), the team should reach a consensus to verify a redd and the following data should be recorded on the datasheet:

- Redd ID number (Each redd encountered should be given a unique ID number. ID scheme should be decided by the project manager prior to onset of the project.)
- GPS coordinates of the redd location
- Macrohabitat type of redd (ex: riffle, run, glide, or pool)
- Species of trout observed on the redd (if any)
- Any notes that may be useful

This process should be repeated for each redd that is encountered for the length of the survey. Participants should continue walking upstream and recording all redd locations until the end of the designated stream reach or, in some cases, until the stream becomes dry. If the stream becomes dry prior to end of the designated segment, that point should be recorded as the end-point of the survey. In cases where a portion of the stream is dry the GPS coordinates for the beginning and end of the dry segment should be noted. During the survey, participants are also encouraged to record any relevant field notes about the stream segment such as habitat condition, areas of poor habitat (heavy sedimentation, bank erosion, etc.), potential barriers (dams, road culverts, natural barriers such as waterfalls, etc.). Photos and/or GPS coordinates may also be helpful along with these field notes.

Consider using [TU's RIVERS app](#) to document habitat issues while conducting redd counts.

Once the participants reach the end of their designated reach, or the stream becomes dry or impassable, the time of day should be recorded on the data sheet along with the GPS coordinates of the ending point. Following the end of the survey, participants should return to the centralized meeting location and turn in their field sheets and equipment to the survey leader or if using the Survey 123 app, upload their data to the online database.

Identifying Redds

Redd construction includes the excavation of an initial pit, laying and fertilizing the eggs within the pit, and covering the eggs by the female with loose gravels. This process creates a “classic pit and tailspill”, which constitutes a fully formed redd or a **Complete Redd** (aka “true” redds) (Dunham and Rieman, 2001). These redds will generally be one foot long or more and oblong, running parallel to the river flow (Figure 3).

Another scenario often encountered is the presence of two or more redds in a single location with no space between them. In order to count two or more redds at a single location in this scenario, you must see two definite pits and two definite tailspills. If any one of these components is missing, count the redd as a single site.



Figure 3: Example trout redd

Data Management

Paper Data Sheets: A sample paper datasheet is included in Appendix A of this manual. If paper datasheets are used, for a one-day redd survey event, they should be turned into the project manager at the specified meeting location at the conclusion of the event. If conducting multiple surveys over the course of a spawning period, you may have volunteers send scans or photos of datasheets to the project manager via email, or have them upload to an online file sharing application such as [Dropbox](#). The data can then be entered into a Microsoft Excel spreadsheet. The entered data should be checked against the datasheets by a second individual for quality control. Data files should be stored in a shared

folder on Dropbox or other cloud-based storage option with access e-granted to multiple individuals.

Redd Survey App: Refer to the Survey 123 Redd App guide in Appendix C for instructions on downloading and using the Redd Survey mobile application to manage data.

Data visualization and analysis for both data management options will be discussed in a later section.

Volunteer Training

The volunteer orientation provides several purposes: 1) to train volunteers to identify redds; 2) to train volunteers in survey, data collection and data management protocols; 3) to provide background on the purpose of the project and how data is used; and 4) to go over study reach assignments and maps. Ideally, the initial volunteer orientation is located near a stream with actively spawning trout. The best way to learn to identify redds is to see several first-hand.

Volunteers should be shown several redds along a stream reach. If a streamside training is not possible, volunteers can be shown photos of redds and a narrative description of what to look for. For example, an oblong areas of cleared gravel, often with a slight mound on the upstream end with a “tail spill” or freshly excavated gravel on the downstream end. They may or may not have paired fish holding above the redd. In most cases, the redd is lighter in color from the

surrounding substrate for a period of days to weeks (Bjornn and Reiser 1991).

Volunteer Field Packets

Volunteers should be provided with the following resources.

- Redd Survey Datasheet: Should be provided as backup even if volunteers are using redd survey data collection app. Sample datasheets are provided in the Appendices of this resource.
- Maps of the study area: Study reach mapping is discussed in more detail in the appendices.
- Printed copies of the data collection protocol
- GPS device or smartphone GPS application: Suggested applications are provided in the appendices.
- Optional: It may be a good idea to provide orange vests as brook and brown trout spawning often overlap with hunting seasons. You can also suggest that volunteer wear hunter orange when conducting surveys.

Safety

Project leaders should conduct a brief safety talk at the volunteer orientation. Key factors to discuss include, but are not limited to, the following.

- **Safe Access/Wading:** In many cases you may be sending volunteers to a stream or stream reach that the project leaders are not familiar with. Especially during the first year of a redd survey initiative, you should emphasize that the assigned study reaches may or may not have safe access or wading, and it is up to volunteers to use good judgement when considering whether to complete their survey reach as directed. The volunteer's safety is much more important than the data!
- **Legal Access and Private Property:** Understand local stream access laws and regulation. If necessary, obtain landowner permission for completing the redd survey in advance. Tell volunteers that they should immediately discontinue surveys in areas if confronted, move on to the next area where they have access and document this in their field notes.
- **Navigation and Driving:** The condition of backcountry roads can change so volunteers should be aware that they may meet obstructions or unexpected road conditions. Volunteers should use their best judgement in rerouting around

obstructions, or abandoning the study reach if necessary.

Study Reach Maps and Navigation

Getting to the assigned starting point: Volunteers should be encouraged to bring a map of the area (i.e. Delorme Atlas) and maps/atlas should be brought to the orientation to hand out as needed. You can also provide GPS coordinates for the starting location or car staging location so volunteers can navigate using Google Maps or another smartphone GPS application. Ensure that each team feels comfortable with navigating to their starting point, and car staging areas if applicable.

Navigating the study reach: Volunteers should be provided with hard copy maps of their study reach. In areas with many road/stream crossings study reaches are often bound by bridges. Ensure the maps show the stream and any roads in the area. These maps can be created using screenshots of Google Maps or other mapping applications. Alternatively, the start/end points of the study reach can be marked on a paper map. In more remote areas other landmarks will need to be used to mark the bounds of a study reach, such as a tributary, trail crossing, fishing access or campsite.

If a member of your project team has the necessary skills, you can map study reaches using ArcGIS (Figure 4) and export them as a georeferenced PDF. Volunteers can download these maps to a smartphone application

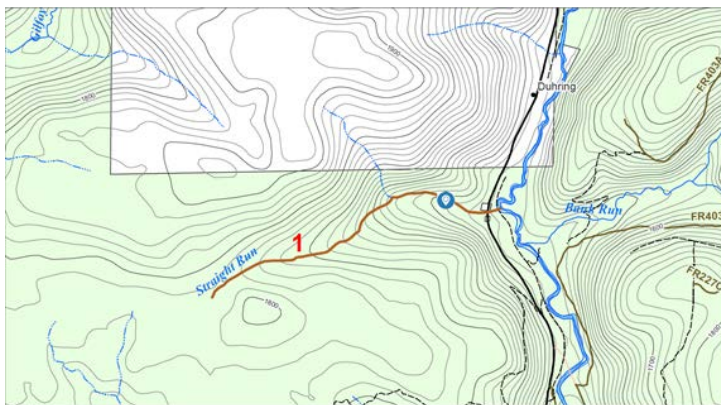


Figure 5: Location of volunteer shown as blue icon in Avenza app.

Collecting GPS Data

If the TU Redd Survey Mobile Application is used, GPS data will automatically be associated with redd observations. If you opt to use the paper data sheets, you should ensure that each team has a device capable of measuring GPS coordinates. Many volunteers may have a handheld GPS device and should be encouraged to bring them. Project coordinators should send links to GPS mobile applications to volunteers in advance of the training/orientation. Several suggested mobile applications are provided below. You should ask that your volunteers collect GPS coordinates in decimal degrees (DDD.DDDDD). This format is most often used in mapping and GIS software.

Iphone: [Pure GPS](#)

Android: [GPS Waypoints](#)

Quality Assurance Quality Control

A critical assumption for redd surveys is that redds are counted by observers with minimal error. Sources of error for redd counts (as outlined in Dunham et al. 2001) include; variability in habitat characteristics, timing of redd surveys, variation among observers, variation in redds, and incomplete sampling of spawning area (either in space or time). Each of these factors may reduce the accuracy and precision redd surveys, therefore it is important to be cognizant of the error sources and employ methods to minimize error during data collection. Project managers should be straightforward concerning potential errors and bias when drawing conclusions from redd surveys.

Habitat variables including depth of water, the composition of the substrate (i.e. suitable gravels), and water visibility (turbidity), and the amount of overhead cover have each been shown to influence the accuracy of redd surveys (Dunham et al., 2001). Surveys completed during high stream flows and/or increased turbidity may also preclude accurate identification of redds by reducing visibility. Variation in the habitat is inherent to redd surveys, however surveys should be timed to avoid periods of high flows and/or reduced visibility (i.e. 1-2 days after significant rainfall) to reduce observation error associated with these variables.

The timing of redd surveys also presents a potential source of error to surveys. Redds may be formed after the counts

have been made and/or redds that are constructed before the counts may become obscured prior to the counts. Multiple surveys throughout the spawning season can reduce this error. However, if only a single survey is planned, it is recommended that the project manager make several visits to the survey sites prior to the actual survey to monitor redd development and attempt to time the survey near the end of spawning season.

Observer variability has been quantified in studies of bull trout redd surveys and have shown observer estimates of the number of redds in a survey reach ranged from 23-245% of the “best estimate” of redds within the survey reach (Bonneau and LaBar, 1997; Dunham et al., 2001). However, Muhfeld et al. (2006) measured reduced error rates of only 78-107% of the “best estimates” by using experienced observers that had received training. Training volunteers prior to surveys as outlined in this handbook may reduce observer errors due to inexperience and variations in redd development (size, age, superimposition, etc.). Depending on the objectives of the survey, it may be beneficial to estimate observer error by having a well-trained, experienced observer re-survey a selection of surveyed reaches and compare his/her estimates to the original observer. A re-survey should be done as close to the original survey date as possible. We recommend that a minimum of 10% of the survey reaches be re-surveyed if this method is used.

Finally, spawning sites are rarely spread evenly throughout a stream or watershed. Therefore, as much of the stream or watershed of interest should be surveyed as resources allow (number of volunteers, funding, etc.).

Outreach and Engagement

Redd surveys are an excellent opportunity to engage new volunteers and partner organizations in your area. You should create an online flyer detailing the crucial dates, expected commitment and goals of the effort. This flyer can be shared with partner groups, in addition to your local TU members and chapter leaders, such as the following.

- Other TU chapters and members in the region
- Local watershed associations
- Local fishing guides
- Local universities
- Local Master Naturalist chapters
- Local agencies (i.e. Forest Service, DNR, county conservation etc.)
- Other local conservation groups

You should ask volunteers to register by providing their name, email address and phone number to your redd survey coordinator. It can also be useful to gather information on the volunteer's experience in identifying redds, physical abilities (i.e. hiking and wading) and whether

they have an AWD or 4WD vehicle. This can help you to create survey teams that have varying levels of previous experience, ensure particularly rugged study reaches are surveyed by the most able-bodied volunteers and study reaches accessed by backcountry roads are assigned to volunteers who have an appropriate vehicle.

Example Communications Schedule

2 months in advance of volunteer orientation: Initial outreach to target groups

1 month in advance of volunteer orientation: Second outreach push

2 weeks in advance of volunteer orientation: Third outreach push if additional volunteers needed

1 week in advance of volunteer orientation: Provide day-of details such as an agenda, what to bring, travel directions, etc. This is also a good time to send links to the redd survey data collection smartphone application and suggested GPS applications as well as maps of assigned study reaches. Volunteers should download these in advance of the volunteer orientation and familiarize themselves with their use. Many volunteers will already have a favorite GPS application, and most have proven to have sufficient accuracy for redd surveys.

1-3 days after volunteer orientation: Send follow up email thanking volunteers for attending the orientation and providing any necessary follow up information.

Ongoing throughout study period (if conducting multiple surveys): Be available to promptly answer volunteer questions via email and phone.

After data tabulation and analysis is complete: It is important to send any maps, reports or other materials developed utilizing redd survey data to the volunteers, so they can see how their data is being used.

Data Visualization

Paper datasheets can be tabulated on an excel spreadsheet and saved as a .csv file. Data can be visualized as points on a map using free online mapping applications such as www.arcgis.com. See [this link](#) for instructions on using .csv files to map points using ArcOnline. Desktop applications such as ArcMap can be used for data visualization as well and will provide more options, such as displaying redd densities by survey section (see Figure 4 and 5 for example data visualizations). When using the Survey123 Redd Survey App, you will need to contact Matt Mayfield (mmayfield@tu.org) to obtain .csv files for your data. It is suggested that you obtain assistance from an individual (TU

staff, agency partner, etc) with the necessary skills to manage and visualize data before completing your redd survey. If you do not have local capacity for data visualization, please contact Matt Mayfield to discuss options for data visualization support.

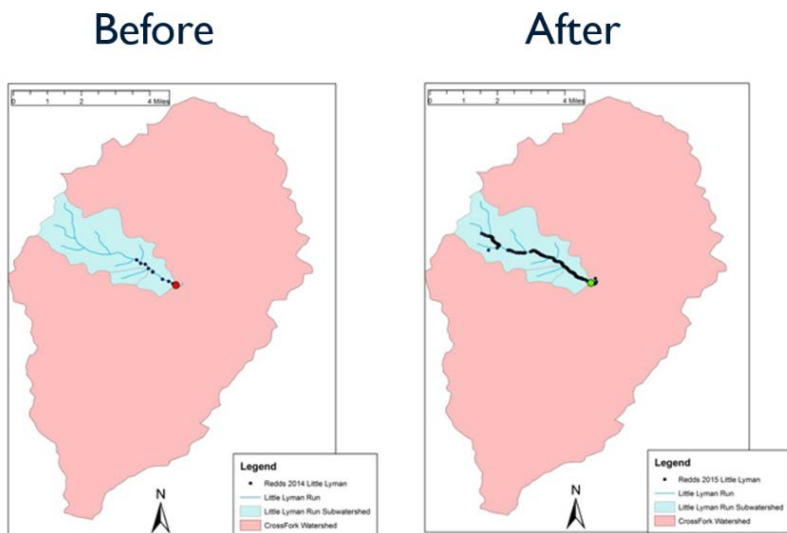


Figure 4: Redds displayed as points before and after a barrier removal.

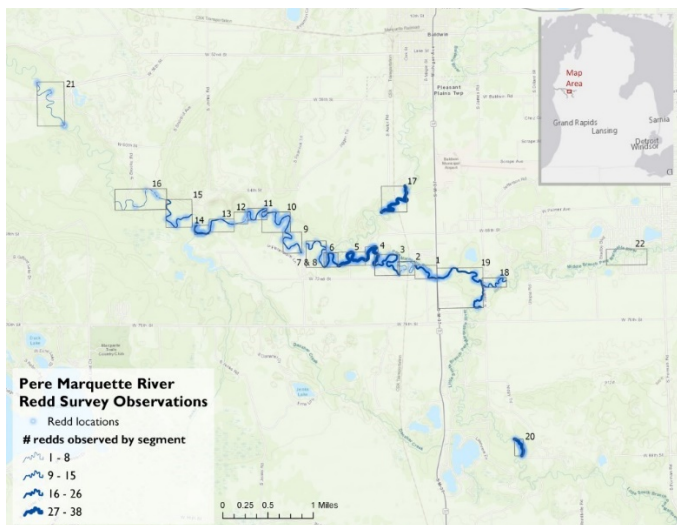


Figure 5: Redds displayed in density by section.

ACKNOWLEDGMENTS

We'd like to thank the US Forest Service, who provided support for the development of this handbook through their Citizen Science Competitive Funding Program.

REDD SURVEY FIELD DATA SHEET

| Waterbody | | | | | | PAGE | OF |
|---|--------------|--------------------------|-------------------------------|---|---------------------------------------|----------------------------------|------------|
| Date | | Participant Names | | | | GPS Coordinates (Lat/Lon) | |
| Segment ID | | | | | | | |
| Segment Description | | | | | | Time Start | End |
| | | Time End | | | | | |
| Flow Condition (circle one): Low Normal High | | | | | | | |
| Visibility Condition (circle one): Clear Moderate Poor | | | | | | | |
| Redd ID | GPS Location | | Type (Complete or Test) | Macrohabitat Type (Riffle/Run/Pool) | Fish Observed on Redd? (Y or N) | Notes | |
| | Lat. | Long. | | | | | |
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| Other Notes: | | | | | | | |

ALLEGHENY NATIONAL FOREST SPAWNING SURVEY



**Orientation: October 20, 2018
10:30am-11:30am**

Volunteers are needed to help survey several streams within the Allegheny National Forest to document the location of trout spawning sites, also known as redds. This effort will require hiking and/or wading a section of a small stream in the forest, identifying redds, taking GPS coordinates for their location and recording your data. Hiking/wading distance will range from one to three miles and may include some rugged sections. We are asking volunteers to survey their stream reaches every other week during the spawning period, for a total of three surveys in October and November. This data will serve as baseline information to document the success of culvert replacements and stream restoration projects in increasing spawning habitat.

To register, please [click here](#) to complete the registration form. Contact Jake Lemon at jlemon@tu.org or 814-779-3965 with questions. Registration will remain open until October 10th or until all spots are filled.



Redd Survey App Guide



Trout Unlimited (TU) has developed a data collection form to support our chapters and staff in conducting redd surveys. The form is accessed through the Survey123 smartphone application. This guide will detail how to download the app, access the form and complete a redd survey.

Downloading Survey 123 and Accessing the Form

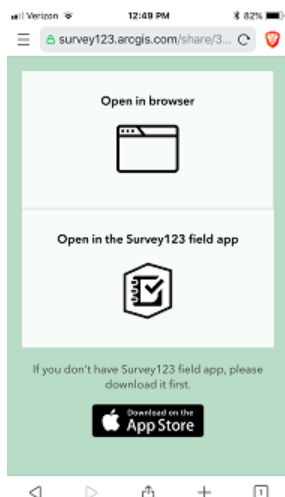
1. Click on the “App Store” icon on your smartphone or tablet device.
2. Search for Survey123.



3. Download the app. You may be prompted to enter your Apple ID or Google password.
4. Once the app is downloaded, type <https://arcg.is/1DGHKa> into the web browser on your device, such as Safari or Google Chrome. Do not use the Google Search app. You can also use the QR code on the next page to open the link. With most phones, you can hover over the QR code with your camera app and the webpage link should pop up.




5. On the following screen, click “Open in the Survey123 field app”. This should open the form in your Survey 123 app. You may have a window pop up asking “Allow Survey123 to access your location while you are using the app?”. Please select yes.



6. After your first time accessing the form, you can find it by opening the Survey123 app and navigating the “My Surveys” page.


Completing a Redd Survey

Note: For a description of the data fields and survey protocols please see the TU Redd Survey Handbook or the materials provided by the redd survey coordinator.


1. If you are accessing the form through the “My Surveys” page, click “Collect” to start your survey.
2. Enter the name of the waterbody, the date of the survey and the start time of the survey. The start time should be automatically filled by clicking the data entry box. Also record the names of the survey participants, your assigned segment ID and segment description.
3. Set your survey start location by tapping the  icon on the top right corner of the map. This will locate the map pin to your current location. If you are not currently at the location where the survey began, you can relocate the map pin by tapping and dragging the map around until the pin is in the correct location.
4. Tap your choice for flow conditions and visibility conditions.

- When you identify a redd, scroll down to the “Individual Redds” section and enter the Redd ID.




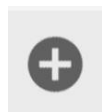
Mark the redd location by tapping the  icon, tap your choice for Redd type, Macrohabitat type, Fish on redd and type any notes.

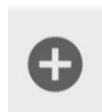



- When you identify another redd, tap the  icon and enter all the information for the redd.
Note: GPS coordinates are only displayed to three decimal places in App. It is possible that you may record multiple redds located close together and the same GPS coordinates will be displayed for each.



- You can also take a picture of the redd by clicking the  icon.


A screenshot of a mobile application interface titled "Redd Survey App". The status bar at the top shows "Verizon", signal strength, time "3:59 PM", and battery level "98%". The app has a close button (X) and a menu button (three lines). The main content area has two columns of radio button options for fish species: "No fish", "Brown trout", "Steelhead", "Coho salmon", "Other", "Brook trout", "Rainbow trout", "Chinook salmon" (which is selected), and "Unknown species". Below this is a "Photo" section with a camera icon and a folder icon. Underneath is a "Notes for redd" section with the instruction "Enter any notes on the individual redd." and a large text input area. At the bottom, there is a red trash can icon, the text "1 of 1", a plus icon, and a checkmark icon in a circle.

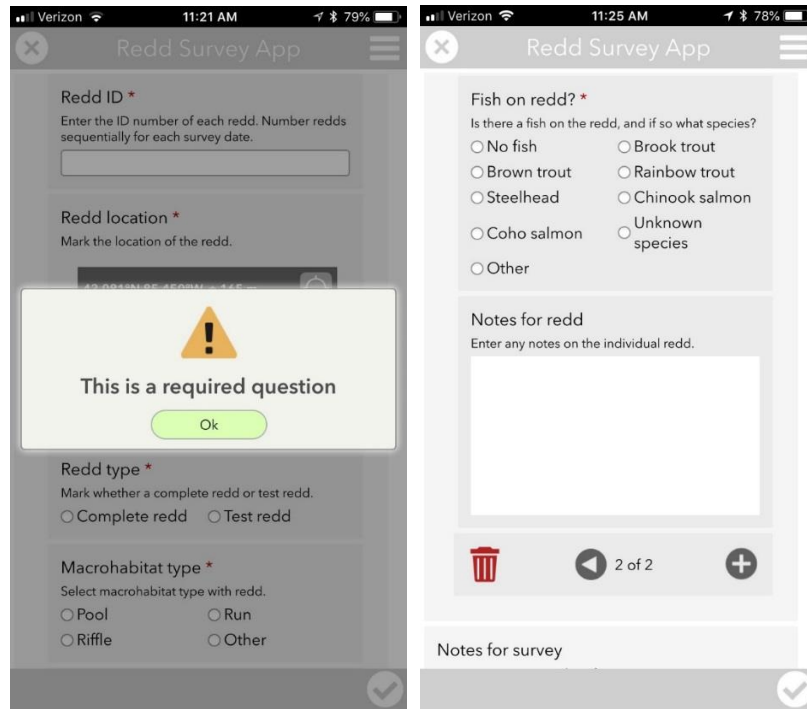
- Continue using the  icon to add more redds until you've completed your survey.

9. Scroll down below the “Individual Redds” section and record any notes you may have for the whole survey. Document whether you completed the survey to the end of the survey segment. Record your survey end time and end location. If you were not able to survey to the end of your assigned segment, please explain why (i.e. unsafe conditions, stream went dry, etc.)
10. When you have completed your survey, click the checkmark icon  in the bottom right corner.

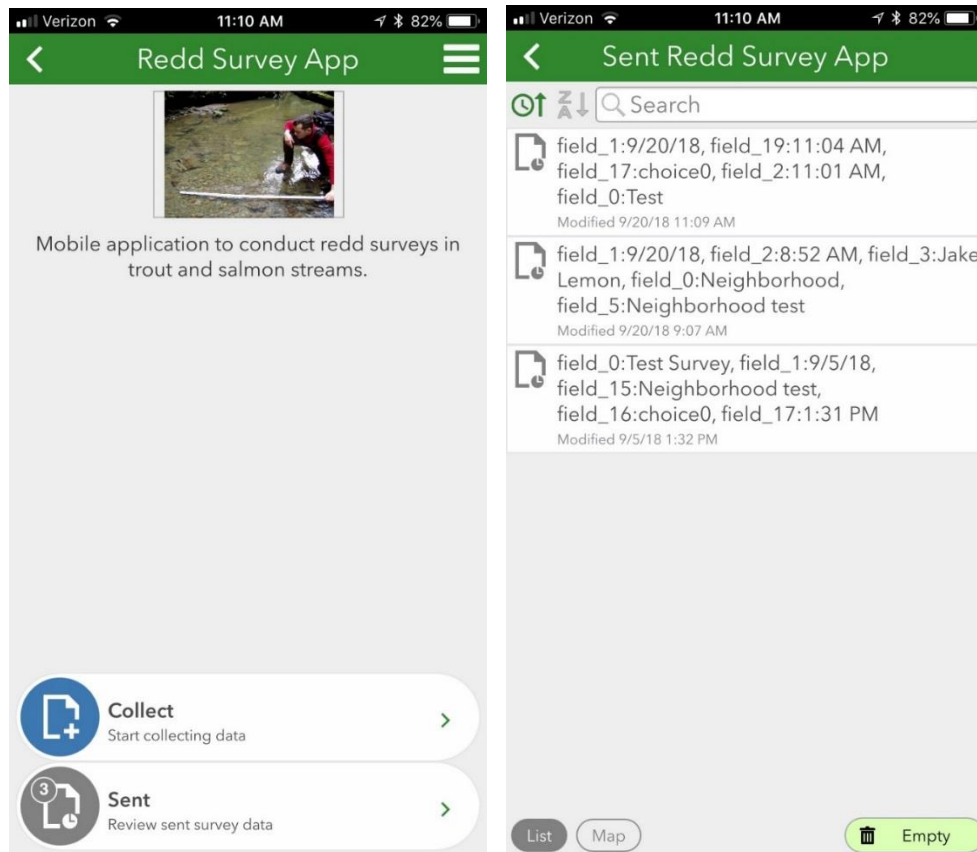


Tip: You may get a message saying “This is a required question” after clicking the checkmark. If so, please complete the required information. If the form automatically scrolls so that “Redd ID”

is at the top of your screen when displaying the message, you may have tapped the  icon after entering data for the last redd you observed. If this is the case, simply click “OK”, then scroll down and click the trash/delete icon at the bottom of the “Individual Redd” section to delete the empty redd observation. After doing so, click the checkmark.



11. A window will open saying “Survey Completed” and provide options for submitting the survey. You can click “Send Now” to upload your data to the database. After the survey is successfully uploaded you should see it in your “Sent” page.



12. If you do not have data service at the location where you complete your survey, a window will open saying "Survey Completed, Your device is offline, The survey has been saved in the outbox." Click OK.
13. When you have cell data service or a Wifi signal, open the Survey123 App, navigate to the "Outbox" and click the survey. This will open the completed survey. Tap the checkmark then tap "Send Now" to submit your data.

