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**ENVIRONMENTAL MONITORING AND ASSESSMENT PROGRAM-  
SURFACE WATERS:**

**WESTERN PILOT STUDY**

**DATA ACQUISITION PROCEDURES FOR  
SITE RECONNAISSANCE  
August, 1999**

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## **1 INTRODUCTION**

Site reconnaissance comprises the second phase of EPA's Environmental Monitoring and Assessment Program--Western Pilot (EMAP-WP) Study. Site reconnaissance activities are implemented after the completion of the Site Evaluation Study, and may or may not directly precede field sampling. Sites that are to be reconnoitered include the list of target study sites identified by the EMAP-GIS team after the RF3 stream extent estimates are refined and the frame-related errors are assessed. Reconnaissance activities will be conducted from an office and in the field.

The office portion of site reconnaissance will involve identifying site access, safety, and logistics issues, as well as obtaining ownership information for sample points and access locations. Office reconnaissance first researches access to site sample points (e.g., wadeable stream X-sites) and specific access locations (e.g., non-wadeable stream boat launches). Second, safety and logistical considerations are identified for each sample point and access route or location. Methods used to obtain access, safety, and logistical information will include reviewing available maps and aerial photographs, and consulting local resource contacts. Third, after access routes and locations have been identified, land ownership will be obtained from publicly available sources. A complete record of site access, potential safety hazards, and general logistics for each site greatly expedites the planning and implementation of the field sampling effort.

The field portion of site reconnaissance involves visiting selected sites in the field by trained teams of two individuals, primarily during the low flow season preceding the EMAP defined index period. Candidate sites will primarily be accessed by vehicles and on foot, though some remote sites may warrant aerial over-flights. Field sites will be selected for reconnaissance based on data gaps identified during the office activities. Field reconnaissance will also be tailored to answer any remaining questions about site classification and target status. Field information may be collected from field sites, from local resource personnel and landowners, and from county assessor offices. Field reconnaissance is the final activity preceding formal landowner contact for access permission, and will greatly aid in establishing which EMAP--WP sites can be sampled in the following years.

This document is organized into two sections: Office Activities and Field Activities.

The Site Reconnaissance procedures contained in this document were developed from approaches used and information gained during the 1997 and 1998 Oregon EMAP-SW pilot projects. The standardized data forms also reflect the culmination of data collection methods used and lessons learned during the 1997 and 1998 Oregon EMAP-SW pilot projects. Information will be managed

through electronic database storage, and hard copy storage in binders organized by state, county, and site identification number.

## **1.1 DATA FORMS**

Information obtained during office and field activities will be recorded on standardized data forms. The Access Data Form, and the Ownership Data Form are used for site reconnaissance. Both forms will be completed during the office portion of reconnaissance and later are taken to the field for additional information and verification during the field portion. The forms are reviewed for accuracy when crews are in the field (e.g., does the field verified access route or boat launch name correspond with what was recorded in the office?). If different, the field verified access, ownership, logistics, and/or safety information must be included on the data forms.

The access and ownership data forms were not prepared using the optical scanner software. Therefore, the forms can be modified to accommodate individual state/regional study requirements. Both forms are a combination of check boxes and fill-in spaces.

## **1.2 SITE RECONNAISSANCE MATERIALS**

The materials needed for office and field activities include the following:

- 7.5 minute topographic maps with X-sites clearly marked. Non-wadeable streams use the bracketed reach length
- State gazetteer or atlas, general use map
- Federal and state lands maps
- Map wheel, ruler
- State-wide lists of natural resource agency personnel and telephone numbers
- County tax assessor office telephone and FAX numbers (for each county in a state where sites occur)
- Aerial photographs
- Copies of the Site Evaluation data forms (e.g., core and secondary data)
- Access and ownership data forms
- Geographic distribution of the revised set of randomly selected sampling points, depicted on EMAP-GIS maps. These provide a visual overview of site locations per state.
- Three-ring binders

## **2 OFFICE ACTIVITIES**

Begin collecting information for the office portion of reconnaissance by identifying wadeable and non-wadeable site access requirements, as well as safety and logistical considerations, from maps, literature, and telephone conversations with local resource contacts. When all access routes and boat launch areas have been identified, obtain landowner information for all potential locations (e.g., overland access routes, alternate access routes, alternate boat launches).

### **2.1 Site Access Data - Wadeable Streams**

Site access data for wadeable streams are recorded on pages 1 and 2 of the site access data form (Appendix A). The procedures to obtain and record these data are presented in Table 1. Mark your choices on the data form by placing either an "X" in the box next to the selected category, and/or fill-in the blank line. It is critical that the stream ID be transferred accurately onto the form because this number is the link between these access data and the site evaluation data collected previously. Site access data can be obtained from local resource contacts, state or Tribal agency personnel, regional and/or state water resource agencies, rafting guides/outfitters, recreation managers, local people, watershed councils, and irrigation districts. If a site falls within a tribal Reservation boundary, a Tribal Environmental staff person should be the initial contact, as in most cases they will be most familiar with conditions at a site. They can also make further referrals to other contacts.

Physical access to wadeable streams will generally be accomplished by vehicle travel followed by hiking or walking to the X-site. Complete as much of the wadeable stream access form as possible, from beginning to end. Completed data forms may reduce the need for field reconnaissance, and will benefit future planning and sampling efforts.

Consult the 7.5 min topographic map with the marked X-site and evaluate the site's proximity to a road, trail, or other pathway. Determine the availability and types of roads leading to the X-site area. Roads generally do not lead directly to an X-site, therefore evaluate the best hiking or walking access route to the X-site when the site is located a distance from a road. On the appropriate map(s), visually scan a broad area surrounding the X-site and identify any alternate access routes; outline these on the map and record them on the data form in the route description.

Determine potential hazards and difficulties associated with accessing a wadeable stream site. Safety hazards may include topography (e.g., steep mountains), terrain (e.g., uneven, slippery

**TABLE 1. PROCEDURES FOR COMPILING ACCESS INFORMATION FOR THE  
WADEABLE STREAM PORTION OF THE SITE ACCESS DATA FORM**

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12. Record the 10-character Stream ID and stream name for the site from the site information materials.
  13. Record the date of the evaluation (MM/DD/YYYY), the name of the evaluator (e.g., J. Doe, U.S. EPA, Corvallis, OR), and where the evaluation occurred.
  14. Classify access to the X-site based on the X-site's proximity to a road, trail, or other pathway.
    - A. *Classify access to the X-site based solely on distance:*
      1. X-site is within 1 km; X-site is within 1 - 2 km; X-site is > 2km
    - B. *Classify access to the X-site based on terrain and topography:*
      1. Very close to a road or trail.
      2. Characterized by, but not limited to, generally favorable overland terrain, a limited number of obstacles or hazards, and hiking/walking time of 1 hour or less, one way.
      3. Characterized by, but not limited to, substantial trail or off-trail hiking distance and/or great distances from a road or trail, isolation in a steep canyon or draw, and hiking time is 1 hour or greater, one way.
  15. Determine the method (s) of transportation to the X-site. Identify the primary method, and if needed, a secondary or tertiary method.
    - A. From a landmark such as a town or highway junction, record the estimated driving distance to the X-site (km) on paved and unpaved roads.
      1. Determine these distances from maps, gazetteers, and atlas.
      2. Contact a local resource person for this information, if needed.
    - B. From the point at which vehicle travel is no longer possible (e.g., end of a gravel road, gated road), estimate the distance and hiking time from the parked vehicle to the X-site. For example, how far and how long would it take to hike or walk from the vehicle to the X-site?
      1. Determine these distances from maps, gazetteers, and atlases.
      2. Contact a local resource person for this information, if needed.
    - C. Determine the optimum and most direct route to the X-site from the maps, aerial photos, and consultation with local resource contacts. Mark all boxes that apply.
      1. Mark the "Maintained trail" box if accessing the X-site can be achieved by hiking a known trail (e.g., USFS, BLM, or NPS numbered trail).
      2. Mark the "Unmaintained trail" box if accessing the X-site is only possible by hiking an unmaintained trail (e.g., a trail no longer maintained, a game trail).
      3. Mark the "Impassable road/logging road/railroad grade" box if accessing the X-site can be achieved by walking an abandoned or vehicle-impassable road or grade.
      4. Mark the "Overland terrain" box if accessing the X-site can only be achieved by trekking public or private overland terrain (e.g., trails, roads, and railroad grades are not present).
      5. Mark the "Pack animals" box if accessing the X-site is best achieved by using a horse, llama, or mule pack team (e.g., a trail may be present, but the X-site is a great distance away and using animals is the most feasible method of travel. Often, a pack animal team can deliver and stow sample equipment a day preceding the scheduled sampling visit).
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TABLE 1 (Continued)

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6. Mark the "Stream channel" box if accessing the X-site is best accomplished by walking up or down a stream channel and/or adjacent floodplain or terrace. This method is most applicable if the X-site is a short distance from the vehicle and there is a lack of trails or roads.
  7. Mark the "Other" box if accessing the X-site can be achieved another way, not described in 1c-6c above.
- D. Consult local resource contacts and maps to determine if there may be seasonal or restricted access to the X-site. Examples include road or trail closures due to snow, slides, and construction, and restricted access to military installations, Tribal Lands, and wildlife refuges. If a site falls within a tribal Reservation boundary, a Tribal Environmental staff person should be the initial contact, as in most cases they will be most familiar with conditions at a site. They can also make further referrals to other contacts.
1. Mark the "Yes" or "No" box as necessary and if "Yes," specify the type and location of the seasonal or restricted access.
16. Determine the primary access route, then identify any safety hazards associated with accessing a site using any means necessary (e.g., consulting local resource contacts, maps, aerial photos). If necessary, determine a secondary or tertiary route and any associated hazards.
- A. Mark all boxes that apply to access and safety hazards.
1. Mark the "Steep and/or unstable terrain" box if accessing a site requires crossing such topography (e.g., a talus slope, volcanic debris - lava rocks, and slippery soils).
  2. Mark the "Canyons, gullies" box if accessing a site requires hiking steep, or otherwise absent, trails to a canyon or gully floor. Pay particular attention to vertical canyon walls; adjust access route(s) accordingly.
  3. Mark the "Instream waterfalls, rapids, debris dams/jams" box if such features exist en route to a site. Generally, these hazards will be encountered when hiking a stream channel to locate an X-site.
  4. Mark the "Bank slope vegetation (re-vegetation plot, clearcut, poison oak/ivy, brambles)" box if accessing a site requires crossing such terrain.
  5. Mark the "Wildlife, livestock" box if animals such as rattlesnakes or bulls may be encountered.
  6. Mark the "None" box if safety hazards do not exist.
  7. Mark the "Other" box if safety hazards cannot be identified or differ from those listed in 1-6 above; record in the space provided.
17. Based on the information gathered in Steps 3-5, determine if an additional crew member(s) will be required to assist with sampling (e.g., pack in equipment). For example, if an X-site is located in a wilderness area 10 km from a trailhead, an extra person would be very useful for packing equipment.
- A. Mark the "Yes" or "No" box as necessary and if "Yes," specify the number of additional crew member(s).
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**TABLE 1 (Continued)**

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18. Consult local resource contacts, maps, and aerial photos to determine if site access is affected by gated roads or special access requirements. *For example, many roads on industrial forest lands are gated and closely monitored. Not only will a gate key be required for travel on these roads, but often a special permit and vehicle inspection will be required.*
- If a site falls within a tribal Reservation boundary, a Tribal Environmental staff person should be the initial contact, as in most cases they will be most familiar with conditions at a site. They can also make further referrals to other contacts.
- A. Mark the “Yes” or “No” box as necessary and if “Yes,” specify the access requirements.
19. Describe the driving route to the X-site area.
- A. Gather the maps needed to identify the optimum driving route and record the type and names in the spaces provided (e.g., 7.5 min map, 15 min map, fire map, gazetteer).
- B. From a known landmark (e.g., a town or highway junction), record the point-to-point vehicle directions to an area where the vehicle can be parked and the crew can access the site (e.g., end of a road, landing, trailhead).
- C. Record road names, road numbers, and road spurs on each line after the directions.
- D. If necessary, repeat Steps A-C for alternate driving routes.
- E. Mark or highlight the driving route(s) on the appropriate map(s).
20. Describe the walking/hiking route to the X-site.
- A. Gather the maps needed to identify the optimum walking route and record the type and names in the spaces provided (e.g., 7.5 min map, 15 min map, fire map, trail map).
- B. From the end of vehicle travel (e.g., end of a road, landing, trailhead), record the point-to-point walking/hiking directions to the X-site.
- C. Record directions such that a new line is used at each junction or course change.
- D. If necessary, repeat Steps A-C for alternate walking/hiking routes.
- E. Mark or highlight the walking/hiking route(s) on the appropriate map(s).
21. Record the sources of information used to determine site access.
- A. Mark all boxes that apply to the various sources you have used to obtain all the access information, including maps (7.5 and/or 15 min scale, federal fire maps), contact persons, literature sources such as guide books for hiking, and aerial photographs.
1. If literature sources are used, provide a citation of each in the “General Comments” section on page 2 of the site access data form.
- B. Mark the “Other” box if you have used additional sources of information other than those described in A above. Provide a brief description in the space provided. If necessary, write “See Comments” here and describe in the general comments section on page 2 of the form.
22. Contact information: Enter the name(s), organization and address, telephone number (FAX number also if available), and email address (if available), for one or more contacts familiar with the site.
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landscape), and animals. Based on the site's location relative to a road, the availability of access routes, and access hazards determine if additional crew member(s) are necessary for sampling.

Describe the point-to-point vehicle route, and point-to-point hiking or walking directions to the X-site. If alternate access routes are identified, do the same for these.

## **2.2 Site Access Data - Non Wadeable Streams**

Site access data for non-wadeable streams are recorded on pages 3 and 4 of the site access data form (Appendix A). The procedures to obtain and record these data are presented in Table 2. Mark your choices on the data form by placing either an "X" in the box next to the selected category and/or fill-in the blank line. In addition to local resource contacts, other sources who might be able to provide assistance with access reconnaissance include state or Tribal agency personnel, regional and/or state water resource agencies, rafting guides/outfitters, recreation managers, local people, watershed councils, and irrigation districts. If a site falls within a tribal Reservation boundary, a Tribal Environmental staff person should be the initial contact, as in most cases they will be most familiar with conditions at a site. They can also make further referrals to other contacts.

Physical access to non-wadeable streams for sampling will be accomplished by vehicle travel to a launch site (e.g., public boat ramp), placing the raft or boat into the stream, and floating downstream from one launch to another while sampling. Note that inflatable rafts outfitted for EMAP sampling are very heavy and require four persons to move. Therefore, target access locations where overland raft portages are minimized. Complete as much of the non-wadeable stream access form as possible, from beginning to end. Completed data forms may reduce the need for field reconnaissance, and will benefit future planning and sampling efforts.

Consult the 7.5 min topographic map with the marked X-site and bracketed reach length. If the reach length is not bracketed, use a map wheel to delineate the reach length based on the average stream width at the X-site. Identify potential boat launch sites both up- and downstream of the X-site, and located outside the bracketed reach. If launches are absent, search for places along the stream where a road closely approaches the channel. If a launch exists within the bracketed reach segment and is the most logical access point, adjust or "slide" the reach up- or downstream to accommodate this point. Note that the X-site must remain within the reach length, and the distance between the launch sites (e.g., float length) must accommodate the reach length (e.g., the reach must "fit" within the float length). Circle the launch sites on the 7.5 minute map. Next, determine the float length between the launch sites and the float length of the reach.

**TABLE 2. PROCEDURES FOR COMPILING ACCESS INFORMATION FOR THE  
NON-WADEABLE STREAM PORTION OF THE SITE ACCESS DATA FORM**

Obtain the 7.5 minute topographic map with the marked X-site and the bracketed reach length based on the average bankfull width at the X-site (e.g., ruler measurement where 1 mm = 10 m on land). If the reach has not been bracketed, do so now. Multiply the average width by 100 to obtain the total reach length. Using a map wheel, trace along the non-wadeable stream line for the reach length, ensuring that the X-site is centered within the reach. Bracket the reach ends.

1. Identify potential raft or boat launches both up- and downstream of the X-site (put-in and take-out). Consult maps, gazetteers, local contacts, river guides, rafting books, and aerial photos. Record findings on page 3 of the site access data form. If a site falls within a tribal Reservation boundary, a Tribal Environmental staff person should be contacted, as in most cases they will be most familiar with potential launch and landing sites.
  - A. Search for public launches outside the bracketed reach and allow enough distance between launches for the sampling distance. Public boat launches are usually identified in state or county boating guides, and are often marked in gazetteers and county maps. They are not, however, typically identified on 7.5 min. maps.
  - B. If public put-in and take-out launches exist both up-and downstream of the X-site, and are **outside** the reach, identify as:
    1. Are both public ramps maintained (e.g., well used, paved)?
    2. Are both public ramps un-maintained (e.g., gravel, used often)?
    3. Is one public ramp maintained and the other un-maintained?
    4. Circle launch sites on the 7.5 minute map for reference.
  - C. Identify potential private put-in and take-out locations **outside** the bracketed reach. If there are no apparent launches, search for places along the stream where a road closely approaches the water. Circle potential launch site(s) on the 7.5 minute map.
    1. Note if the private access locations appear to be favorable (e.g., the crew can closely approach the stream and unload a raft relatively easily), unfavorable (e.g., cannot closely approach a stream), or very limited (e.g., steep slopes, and long portage from vehicle to the water).
  - D. If launch sites do not exist outside the bracketed reach, look within the bracketed reach for access locations. For example, if there is a public put-in outside and upstream of the reach bracket (e.g., 2 km upstream) and a potential private take-out within the bracket at the downstream end of the reach, adjust or "slide" the bracket upstream to accommodate this downstream take-out point, ensuring that the upstream put-in remains outside the reach. The X-site must remain within the bracketed reach, but it is acceptable for the X-site to be at the up- or downstream edge of a reach.
  - E. If access points do not exist outside and within the bracketed reach, check the "None" box on page 3 of the site access data form.
2. Determine the float distance(s) from a launch point(s) to the reach area if an inflatable raft will be used for sampling. If a motorized boat is used for sampling, proceed to step 3 (e.g., one launch site is sufficient for motorized boats; float distances are not needed).
  - A. Determine the float distance from the put-in to the start of the reach. Use a map wheel to trace this distance on a 7.5 minute map. Record on page 3 of the form.
  - B. Determine the float distance from the end of the reach to the take-out. Use a map wheel to trace this distance on a 7.5 minute map. Record on page 3 of the form.

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TABLE 2 (Continued)

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- C. Estimate the time to float the reach (e.g., between bracket ends) and the time to float from one launch to another. Record on page 3 of the form.
3. Determine the method(s) of transportation to the X-site area. The X-site area includes boat launches, and the X-site. If needed, identify a secondary method.
- A. From a landmark such as a town or highway junction, record the estimated driving distance to the X-site area (km) on paved and unpaved roads.
1. Determine these distances from maps, gazetteers, and atlas.
  2. If needed, contact a local resource person for this information.
- B. Estimate the driving distance from a main road to the nearest put-in and take-out access point.
- C. If possible, identify the need for a 4-wheel drive vehicle and estimate the driving distance on such roads.
- D. Consult local resource contacts and maps to determine if there may be seasonal or restricted access to the X-site. Examples include road closures due to snow, slides, and construction, and restricted access to military installations, tribal lands, and wildlife refuges.
- E. Mark the "Cannot access with boat and trailer" box on page 3 of the form if vehicle access to a launch area appears limited or non-existent.
4. Use any means necessary (e.g., consulting literature sources such as whitewater books, local resource contacts, maps, aerial photos, recreation guides) to identify safety hazards associated with accessing a site. Also determine any hazards associated with floating a non-wadeable stream. Determine the primary access route, then identify any safety hazards. If necessary, determine a secondary access route and any associated hazards.
- A. Mark all boxes that apply to access, floating, and safety hazards.
1. If established boat ramps are absent, and access to a launch site(s) is only possible from a road near, but elevated above, the stream channel mark the "Steep, unstable, slick banks" box.
  2. If accessing a launch site and/or floating a stream require carrying the raft overland, or dragging through the stream channel, mark the "Long portage in and out of water" box.
  3. Mark the "Excessively long sample day" box if there is a substantial float distance between the put-in and start of reach, and/or between the end of the reach and the take-out. Also note that driving distance and road condition contribute to the length of a sample day.
  4. If the stream reach contains volumes of woody debris, mark the "Large woody debris and potential hydraulic effects (sweepers, keepers)" box.
  5. Mark the "Rapids, falls, dams, diversions" box if such conditions are suspected within the sample and float length
  6. Mark the "Other" box if safety hazards cannot be identified or differ from those listed in 1-5 above; record in the space provided.
  7. Mark the "None" box if safety hazards do not exist.

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TABLE 2 (Continued)

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5. Consult local resource contacts, maps, and aerial photos to determine if site access is affected by gated roads or special access requirements. *For example, many roads on industrial forest lands are gated and closely monitored. Not only will a gate key be required for travel on these roads, but often a special permit and vehicle inspection will be required.*

If a site falls within a tribal Reservation boundary, a Tribal Environmental staff person should be the initial contact, as in most cases they will be most familiar with conditions at a site. They can also make further referrals to other contacts.

    - A. Mark the “Yes” or “No” box as necessary and if “Yes,” specify the access requirements.
  6. Describe the put-in location.
    - A. Gather the maps needed to identify the put-in location and record the types and names in the spaces provided (e.g., 7.5 min map, 15 min map, fire map, gazetteer).
    - B. Record the name or description of the put-in location.
    - C. From a known landmark (e.g., a town or highway junction), record the point-to-point vehicle directions to the put-in location.
    - D. Record road names, road numbers, and road spurs on each line after the directions.
    - E. If necessary, repeat Steps A-D for alternate driving routes.
    - F. Mark or highlight the put-in location on the 7.5 minute map and gazetteer or atlas.
  7. Describe the take-out location.
    - A. Gather the maps needed to identify the take-out location and record the type and names in the spaces provided (e.g., 7.5 min map, 15 min map, fire map, gazetteer).
    - B. Record the name or description of the take-out location.
    - C. From a known landmark (e.g., a town or highway junction), record the point-to-point vehicle directions to the take-out location.
    - D. Record road names, road numbers, and road spurs on each line after the directions.
    - E. If necessary, repeat Steps A-D for alternate driving routes.
    - F. Mark or highlight the take-out location on the 7.5 minute map and gazetteer or atlas.
  8. Record the sources of information used to determine site access.
    - A. Mark all boxes that apply to the various sources you have used to obtain all the access information, including maps (7.5 and/or 15 min scale, federal fire maps), contact persons, literature sources such as guide books for hiking, and aerial photographs.
      1. If literature sources are used, provide a citation of each in the “General Comments” section on page 2 of the site access data form.
    - B. Mark the “Other” box if you have used additional sources of information other than those described in A above. Provide a brief description in the space provided. If necessary, write “See Comments” here and describe in the general comments section on page 2 of the form.
  9. Contact information: Enter the name(s), organization and address, telephone number (FAX number also if available), and email address (if available), for one or more contacts familiar with the site.
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Determine the availability and types of roads leading to the launch areas. If necessary, identify any alternate access routes and outline on the appropriate map(s).

Determine potential hazards and difficulties associated with accessing and floating a non-wadeable stream. Safety hazards may include topography and terrain (e.g., steep, slick stream banks, instream or overland portages), and stream hydraulics. It is important that sufficient information is gathered from several reliable sources (e.g., whitewater guides, rafting guides, local resource contacts) to ensure safe sampling while floating non-wadeable streams.

Describe the point-to-point vehicle directions to the put-in and take-out access points. If alternate access routes are identified, do the same for these.

### **2.3 Ownership Data**

Ownership data for wadeable and non-wadeable streams are recorded on pages 1 and 2 of the ownership data form (Appendix B). The procedures to obtain and record these data are presented in Table 3. The majority of ownership information is recorded in the landowner table on page 2 of the form. A list of potential landowner types is presented on page 1 of the data form. Most landowner information is obtained through publicly available sources such as county tax assessor offices. Some information may also be obtained from local resource agency personnel, as well as local residents. Land ownership will generally include three types: 1) private, such as individuals, corporations, and Tribal Nations; 2) public, such as the USFS and BLM; and 3) public-restricted, such as military reservations, national wildlife refuges, and irrigation districts. If a site falls within a tribal Reservation boundary, a Tribal Environmental staff person should be the initial contact, as they will be most familiar with ownership at a site. They can also make further referrals to other contacts.

First, consult the 7.5 min topographic map with the marked X-site and bracketed reach length. Identify the township, range and section numbers containing the X-site, access routes and boat launches; these are the coordinates needed to locate the names and addresses of landowners. Accessing wadeable streams requires landowner information at the X-site as well as any access routes taken to reach the X-site (e.g., overland hiking). Accessing non-wadeable streams requires landowner information at each boat launch. Landowner information can be obtained for landowners adjacent to non-wadeable streams if desired, though it is not required because sampling is achieved while floating streams.

**TABLE 3. PROCEDURES FOR COMPILING OWNERSHIP DATA FOR THE  
OWNERSHIP DATA FORM**

1. Record the Township, Range, and Section number from the 7.5 minute topographic map on page 1 of the ownership data form. Also record the State and County (or Tribal Nation) for which ownership data are requested.
2. Landowner information is stored at county tax assessor offices in each state. To access this information, the township, range, and section numbers (TRS) must be known for the desired area. Each tax assessor office has large books organized by TRS numbers. Within each book are many pages of maps, organized within the range of TRS numbers labeled on the book's cover. The map on each page is a plat map, or parcel map, and is available in large (18 x 20") and small (8.5 x 11") sizes. Plat map pages can be an index page showing several section numbers in the same T and R or can represent one section within a T and R. In some instances, an index page may be all that is available. Each plat map contains tax lot numbers, which are frequently located above the lot acreage and are required for obtaining landowner names and addresses.  
For Tribal lands, contact a Tribal Environmental staff member for guidance on what information is required to obtain ownership information.
3. Organize site overlay sheets and 7.5 minute topographic maps for Wadeable and non-Wadeable sites by state and county.
4. Within each county, determine the TRS numbers for each site where landowner information is needed. For Wadeable streams, landowner information is needed for the entire area surrounding the X-site and reach, in addition to the access route(s). For non-Wadeable streams which will be rafted or boated to reach a sample site, landowner information needed for the launch sites is identified in Table 2. Because reach lengths are usually quite long, it often requires more than one plat map to isolate launch sites. Most non-Wadeable sampling occurs in a boat or raft, thus crews rarely need to walk on land outside of the high water mark of non-Wadeable streams. Therefore, ownership is technically only required for the launch sites, not necessarily for land adjacent to a non-Wadeable stream.  
Note: Plat maps must be obtained for all areas in and adjacent to streams. Some maps might overlap, or the desired area map might be on a map margin. In many cases, more than one map may be needed.
5. To obtain landowner information from county tax assessor offices or a Tribal agency when a personal visit to an office IS NOT possible:
  - A. Telephone the county tax assessor office with the TRS number(s) and request the applicable plat map(s). The county will either have the exact page needed (precise TRS), or they will have an index page with the T and R and several section numbers. It is preferable to obtain the 18 x 20" size maps, which will have to be mailed from the assessor office. Alternatively, the office may prefer to FAX 8.5 x 11" maps. For Tribal lands, contact a Tribal Environmental staff member for guidance.

(continued)

TABLE 3 (Continued)

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- 
- B. After obtaining the necessary plat maps, determine whether the requested map pages are sufficient to cover the area in question, including launch sites and access routes through adjacent tax lots, if applicable. If so, proceed to Step E. If the assessor office sent an index page and it is not possible to isolate the required site region, proceed to the next step.
  - C. From the index page, identify the required plat map (e.g., the section number) by isolating the region that contains the X-site. Use landmarks such as roads names, tributary names, etc. to aid in identifying the correct plat map.
  - D. Telephone the assessor office and request the desired plat map page(s).
  - E. Review the plat map pages to ensure the correct maps have been sent. Record on the Ownership Data Form the book number and page number (TRS).
6. To obtain landowner information from county tax assessor offices or Tribal agency when a personal visit to an office IS possible:
    - A. Proceed to the tax assessor office with the appropriate quad map(s), X-site(s), and TRS, and locate the tax assessor book containing the range of TRS numbers.
    - B. Identify the appropriate plat map(s), ensure that the X-site and adjacent area is covered, and photocopy the page(s).
  7. To process landowner information for **wadeable** streams:
    - A. Organize by state and Site ID number all tax assessor information gathered thus far (e.g., the plat maps).
    - B. Mark the X-site on the stream on the plat map page(s).
    - C. Locate the nearest road(s), trails, landmarks, etc., and make sure these agree with the features on the 7.5 min topographic map(s).
    - D. Circle the tax lot number where the stream's X-site is located AND any tax lot numbers adjacent to the X-site where access may be possible. Shade the tax lot acreage(s) with a colored pencil to easily identify the area. Identify and record many tax lot numbers through which access routes may lie and identify the alternate access routes.
    - E. Record on the Ownership Data Form all relevant tax lot numbers. Circle "X" for X-site owner and/or "A" for access owner.
  8. To process landowner information for **non-wadeable** streams:
    - A. Organize by state and Site ID number all tax assessor information gathered thus far (e.g., the plat maps).
    - B. Mark the X-site on the stream on the plat map page(s).
    - C. Transfer launch sites (identified earlier in Table 2) from the 7.5 minute topographic maps, to plat map(s).
    - D. Circle the tax lot number(s) where both launch sites (put-in and take-out) occur, based on the quad map location. Also circle the tax lot number(s) adjacent to both sides of the non-wadeable stream along the reach length.
    - E. Record on the Ownership Data Form all relevant tax lot numbers. Circle "P" for the put-in owner, "T" for the take-out owner, and "A" for access owner (if applicable).

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(continued)

**TABLE 3 (Continued)**

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9. Request ownership information (landowner name(s) and address) for each tax lot number from each tax assessor office.
  10. Locate telephone number(s) for each land owner (county tax assessor offices do not supply telephone numbers). Access to local telephone books is preferred but not realistic with distant counties. Options for locating telephone numbers include the Internet white and yellow pages, telephone directory services, county libraries, and local contacts.
  11. Record all landowners' names, addresses, and phone numbers on the Ownership Data Form. Also record any comments relating to each landowner (e.g., landowner codes suggest property is leased to someone else, there are several dwellings listed - who is the owner?, recent ownership transfer of the real property).
  12. Record the sources of information used to determine land ownership.
    - A. Mark all boxes that apply to the various sources you have used to obtain all the ownership information, including maps (plat maps, 7.5 maps, federal district, and state maps), and contact persons.
    - B. Mark the "Other" box if you have used additional sources of information other than those described in A above. Provide a brief description in the space provided. If necessary, write "See Comments" here and describe in the general comments section on page 2 of the form.
  13. Contact information: Enter the name(s), organization and address, telephone number (FAX number also if available), and email address (if available), for one or more contacts familiar with the site.
- 
-



Next, contact by telephone, or personally visit, county tax assessor offices to obtain the county map(s) that will eventually produce ownership data. The landowner names and addresses are stored at tax assessor offices, and individual public or private landowners can be identified initially by viewing “plat” maps. Plat maps depict ownership boundaries, tax lot numbers, and subsequent acreage contained within a tax lot number. Transfer the X-site and/or boat launch location(s) from the 7.5 minute map to the plat map so that a tax lot number(s) can be identified. Make sure to obtain enough plat maps such that all access routes and boat launch areas are covered. Note that each tax lot number refers to a specific landowner(s), and is the only method for identifying landowners at county tax assessor offices.

Finally, obtain each landowner’s name and address for the tax lots identified from the plat map(s). Also obtain the telephone number for each landowner by consulting telephone directory services or local phone books (landowner telephone numbers are not available at county tax assessor offices).

### **3 FIELD ACTIVITIES**

The procedures for field reconnaissance are presented in Table 4. Data gathered during field reconnaissance will be compared to the data collected in Section 2 (e.g., site directions, access routes and descriptions, and ownership information). Field reconnaissance crews should assemble a site dossier containing the completed or near-completed access form, ownership form, site evaluation forms (e.g., office core and secondary data), and maps (e.g., 7.5 min, plat, gazetteer). There is no field reconnaissance data form; instead, make any changes and/or additions to the access and ownership data forms used during the office activities.

#### **3.1 BASE LOCATION ACTIVITIES**

Several tasks must be addressed before a field site can be reconnoitered. Each task should be completed at a central base location prior to making field visits. First, prioritize sites for field reconnaissance based on data gaps identified during the office activities and the completeness of the access and ownership data forms. Next, consult the EMAP-GIS state map with site distribution and group together sites requiring field reconnaissance. Determine the best and most direct mode of travel (e.g., vehicle, foot, boat, air) for locating and accessing a field site. Lastly, identify “base camps” (e.g., remote towns, centrally located near field sites) whereby crews could lodge for extended periods of time, if necessary.

#### **3.2 PRE-FIELD VISIT ACTIVITIES**

These activities are intended for gathering final site information directly preceding field reconnaissance activities. Any information not obtained during the office activities should be obtained here (e.g., state and federal agency information regarding access, safety, and logistics, county assessor maps and land owner information). Most state, federal, and assessor offices should have already been contacted during the office activities. However, there will be situations where not enough information was gathered, the correct personnel were not located, or some information is lacking from the tax assessor offices. For these sites, visiting local agency and tax assessor offices while in the field will result in compilation of

**TABLE 4. PROCEDURES FOR FIELD RECONNAISSANCE**

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**Base Location Activities**

1. Prioritize sites for field reconnaissance based on data gaps identified during the office activities, and the completeness of the access and ownership data forms
2. Consult the prioritized list of sites organized by state and county, and the EMAP-GIS 8 ½ x 11" state maps with candidate site distribution. It is anticipated that candidate sites will be spread out over large distances and that the number of sites which a crew can physically visit in 1 day is limited to between two and four, depending upon their proximity to one another.
3. Group together the highest priority sites in clusters of two to four and in such a way that distance between sites is minimized. This may not be possible in every situation, therefore group high priority sites with lower priority sites if this will minimize travel distances and maximize efficiency.
4. Determine what mode of travel (i.e., vehicle, foot, boat, air), or combination of, is best for locating and reaching each site. Most sites should fall into the overland access category. However, the groupings may reveal very remote sites which may only be accessed by air over-flights. If overland travel will be used, determine the type of vehicle required (e.g., 4x4, 4x2) to locate the X-site and approximate travel times. Also, estimate any hiking or boating distances and their transit times. Compare these times to those recorded on the access data form; record the revised times if different.
5. Based on the locations of priority groupings, establish satellite base camps (e.g., a populated area with support services) in a logical fashion such that the sites cluster around the base camp and the crew could be dispatched while staying in these central locations. It is recommended that field crews remain stationed at the satellite base camps for extended periods of time during field reconnaissance instead of moving in and out several times. Crews can be flown to the base camp area, and from there, travel mostly by vehicle to the sites.

**Pre-Field Visit Activities**

6. If complete site information is still insufficient, visit local and/or regional resource offices such as the state fish and wildlife, state department of natural resources, USFS district offices, or BLM district offices. Visits can be made by field crews en route to site visits or as a stand alone procedure preceding any field visits. The decision should be based on the proximity of sites relative to office locations and crew base camps, as well as time constraints associated with vehicle travel and field reconnaissance budgets.

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(continued)

TABLE 4 (Continued)

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- A. Site dossiers with all relevant information (maps, Office Evaluation data) should accompany the crew to each resource office. Crews should attempt to meet with knowledgeable individuals (biologist, hydrologist, researcher, supervisor, manager, engineer, road/trail maintenance) while at the resource office seeking data to address data gaps. Subjects to address include:
    - 1. target status of candidate site (s) (is it sampleable),
    - 2. flow pattern (perennial or not perennial) and duration of flow,
    - 3. most favorable overland site access route,
    - 4. primary method for reaching a site (type of vehicle, foot, boat),
    - 5. potential road closures and detours,
    - 6. presence of gated roads,
    - 7. special directions,
    - 8. special considerations such as conservation or land partnerships; private in-holdings; watershed councils, and
    - 9. unknown ownership.
  - B. There are sources of information each reconnaissance crew should procure from resource offices prior to visiting a field site. These include:
    - 1. federal fire maps with extensive road networks,
    - 2. federal district maps,
    - 3. state district maps, and
    - 4. tribal, timber, and other special maps as needed.
  - C. Also, if available, crews should consult the agency's aerial photos (if not already viewed during the office phase), orthophoto quads, and data from any previous stream or river surveys conducted on a candidate site's watercourse (i.e., USFS, BLM, or state stream surveys).
  - D. Visiting resource personnel is an important step in securing reliable site information. There may be occasions when these personnel cannot help, but they often know who can and should be able to refer a reconnaissance crew to this person or agency (e.g., sister agency, recreation guide). It is preferable to visit district or local offices (versus larger, more regional offices) because the personnel are usually more familiar with the area(s) than EMAP-WP crews.
7. Visit county tax assessor offices to obtain landowner information. These visits can be completed by field crews en route to site visits or as a stand alone procedure preceding field visits. The decision should be based on the proximity of sites relative to office locations and crew base camps, as well as time constraints associated with vehicle travel and field reconnaissance budgets.
- A. Materials to accompany a crew when visiting a county tax assessor office include the site dossier with maps and data gathered during the office activities (ownership data form).
  - B. Make corrections or additions to landowner information (obtained in the office) on the ownership form.
  - C. Obtain the phone numbers for each land owner for a targeted candidate study site. The office activities may have already produced some phone numbers for land owners, but crews may have more success gathering phone numbers from local phone books.
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(continued)

TABLE 4 (Continued)

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Field Activities

8. Identify landowners whose property surrounds, abuts, and/or contains a candidate site slated for a field visit. Determine if and how a site can be visited for reconnaissance without trespassing.
  - A. Successful site access depends in large part on whether the land is public or private. Many sites will be located on federal or state lands where access permission is nearly always granted. However, other sites will be located on private lands such as small and large farms, ranches, timber lands, irrigation districts, counties, cities, etc. Reconnaissance crews should attempt to get as close as possible to the X-site marked on the 7.5 min topographic map without illegally trespassing.
  - B. Procedures to acquire formal access permission (e.g., through an EPA prepared and signed letter and follow-up phone call) from private land owners will not be undertaken for the field reconnaissance effort. Instead, every effort will be made to physically observe a stream or river without formal EPA contact. For example:
    - Talk to state natural resource agencies about the site in question. State resource agencies are often familiar with abutting private land and the condition of a waterway, the private land owner's willingness to allow access without prior notice, and the best access route. The result may be a direct referral to a land owner by agency personnel, and escort to the site, or enough office information that a personal site visit is not needed.
  - C. Telephone the land owner directly and informally request access to a site through the owner's property. If there is no other access route or means to closely approach any segment of a candidate site except through a private land owner's property, this is the only option.
  - D. Target a bridge, adjacent road, cliff, or other vantage point near the X-site without crossing private land, thereby eliminating the need to request permission for access. Depending upon the distance from the site, binoculars might allow site classification.
  
9. Identify the best access route: ground approach (overland travel) or air approach (over flights). Most candidate sites should be accessible by overland travel (vehicle, foot, boat), however a few extremely remote sites where little or no information is known may require air overflights. The objectives are:  
For ground approach:
  - A. Identify the mode of transportation: 4 x 4 or 4 x 2 vehicles, foot travel on and/or off trail, motor boat, pack animals.
  - B. Identify the most direct and least hazardous route to the site from maps and aerial photos.
  - C. Estimate the time required to complete a trip into and out from the site. If, for example, a stream's X-site is a 1.5 hour off-trail hike from a road and another 1.5 hour hike out, this time and effort may preclude visiting the X-site. Instead, the stream could be characterized at another point closer to a road yet still proximate to the X-site, saving much time and effort while still obtaining the required information.
  - D. Before traveling to the site, telephone the resource area office responsible for road maintenance and ensure that roads are open and accessible. This is especially important for USFS, BLM, state land, and industrial timber roads where slides, snow, downed trees, road maintenance (e.g., culvert replacement), or logging operations may unexpectedly make roads impassable. Also, make sure to obtain any keys or permits required for travel on industrial forest lands.

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(continued)

TABLE 4 (Continued)

For air approach:

- A. Before initiating an aerial over-flight reconnaissance effort, consult every available aerial photograph covering the geographic area of the intended site. This may produce the desired result.
  - B. Obtain charter flight information for the region scheduled for an over-flight. Consult with pilot to discuss most effective approach. Group extremely remote sites together, by region, and estimate the time (hours, days) required to complete.
10. Assemble equipment. An inventory list of suggested equipment follows:

## Maps

Site dossiers should include all information already collected (e.g., forms, procedures, preliminary data)

## GPS unit

Aerial photos

Binoculars

Cell phone

Compass

Camera and film

Stopwatch

Day pack

Clipboard, pencils, flagging

First aid kit

11. Separate the access strategy for wadeable and non-wadeable sites.

**GROUND APPROACH:**

During field reconnaissance, assessing access and determining ownership for wadeable and non-wadeable streams will be verified. For wadeable streams, determining classification of, and access to, the X-site is the primary objective.

For non-wadeable streams, X-site classification is desired, but locating suitable launch sites up- and downstream of the X-site is equally important.

**Access**

Proceed to a candidate X-site or launch site, confirming the detailed directions and other access information recorded earlier on the Access Data Form. If different, make changes on the form. It is recommended that crews sketch on the 7.5 minute topographic map the access route taken to reach an X-site and/or launch site(s). Photograph areas containing safety hazards, launch locations, etc., as necessary.

(continued)

**TABLE 4 (Continued)**

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*Wadeable Streams:*

1. Verify the distance in miles traveled to the X-site on paved and unpaved roads.
2. Verify the detailed directions to each site, noting road names and numbers, distances between turns, and detours.
3. Verify transit time to each site from the base location or other appropriate landmark.
4. Verify foot travel route description and time based on hiking from the vehicle/road into the site. Provide an access difficulty ranking based on distance (e.g., within 1 km, within 1 - 2 km, > 2 km) and terrain/topography (e.g., very close, difficult)
5. Verify and record any difficulties and/or hazards such as steep canyons, waterfalls, or inaccessible terrain.
6. Record if unable to access the site because of private land owner's denial or because of an inability to locate the land owner.
7. Record any special access information, including gates, keys required, extra equipment or additional crew member required.

*Non-wadeable Streams*

1. Scout and isolate reasonable stream access points such as public boat ramps to assure that the most suitable launch sites are chosen.
2. Verify and record 1-3 and 5-7 above for the put-in and take-out sites, as well as the X-site.
3. Estimate the float distance from the put-in to the beginning of the stream reach and the distance from the end of the reach to the take-out.
4. Observe and record any possible hazards such as wood debris or log jams, rapids, sweepers and keepers, low-lying objects such as bridges and rock, and potential portage locations.

**AIR APPROACH (SMALL PLANE OVER FLIGHTS):**

Very remote candidate sites may require aerial over-flights. If it is necessary to conduct over-flights, group the remote sites together such that several can be viewed in one trip. Planning should be coordinated with the charter service and the plane's pilot.

The extent to which a site can be characterized from an airplane depends on the flight altitude, terrain, canopy cover, sun glare, and general flight path. It is predicted that binoculars will be required for visual observations. Site characterization may include presence/absence of water, size of river or stream, impoundments, waterfalls, diversions, access potential, and drainage basin characteristics (tributaries, land use). Record any new or different information learned from the over-flights on the access data form.

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complete site descriptions. Each field reconnaissance crew should conduct these activities in the appropriate counties while stationed at a base camp or en route to a site(s).

### **3.3 FIELD ACTIVITIES**

The primary objective of field reconnaissance is to definitively answer all remaining questions about the site relating to access, ownership, safety, and logistics. If not already completed during the office evaluation or earlier field visit, a second objective is to confirm stream classification and verify sampling status by visual observation (in-stream activities are not required).

Identify landowners in and adjacent to the X-site, access route, and/or boat launch locations. Seeking EPA formal access permission from landowners will not be undertaken for field reconnaissance. Instead, attempt to reconnoiter field sites without illegally trespassing (e.g., observe the stream from a road or bridge, talk to local resource agencies about a site). Photograph the X-site and/or boat launch areas and obtain GPS coordinates from the X-site and/or boat launch areas. Also photograph any safety hazards. Consult the office-complete access and ownership data form and compare what is observed in the field to the office collected information (e.g., was the driving route(s) the same? access route(s)? boat launch location(s)?). Make any changes on the existing data forms.

After completing field reconnaissance, and in anticipation of field sampling, organize the reconnaissance forms, maps, and dossiers by Site ID number and state. Incorporate the following into a three-ring binder organized by state, with Site ID tabs: field reconnaissance forms (access and ownership), copies of the office evaluation and field visit forms (core and secondary data), plat maps, plus all other information learned during this process. Develop film and add slides to the three-ring binders when processed. Ensure that all slides are marked so that the site, date, etc., can be identified (e.g., keep a photo log so that sites can be identified at a later time).



**APPENDIX A**

**SITE RECONNAISSANCE AND ACCESS FORMS**

Site ID number: \_\_\_\_\_ Stream Name: \_\_\_\_\_

Evaluator: \_\_\_\_\_ Date of Evaluation: \_\_\_\_\_

Location of data collection: \_\_\_\_\_

**Access Data (WADEABLE STREAMS)** (Go to next section if Non-wadeable)

**Classify access based on the X-site's proximity to a road, trail, or other pathway**

*Classify based on distance (X one):*

- X-site is within 1km
- X-site is within 1 - 2 km
- X-site is > 2.0 km

*Classify based on terrain and/or topography (X one):*

- X-site is very close to a road or trail - e.g., parallel road along a stream.
- The overland terrain is generally favorable, obstacles and/or hazards are limited, and hiking/walking time is 1 hour or less, one-way.
- Characterized by substantial trail or off-trail hiking distance and/or great distances from a road or trail, obstacles and/or hazards are present, x-site is isolated in a steep draw or canyon, and hiking time is 1 hour or greater, one-way.

**Method of transportation to the X-site (all that apply)**

Estimated driving distance on paved roads \_\_\_\_\_ unpaved roads \_\_\_\_\_

Estimated distance from end of vehicle travel to the X-site \_\_\_\_\_

Estimated hiking distance \_\_\_\_\_ hiking time \_\_\_\_\_

Maintained trail       Unmaintained trail       Impassable road/logging road/railroad grade \_\_\_\_\_

Overland terrain       Pack animals       Stream channel  Other \_\_\_\_\_

Seasonal or restricted access ?  Yes       No      If yes, \_\_\_\_\_

**Safety hazards (all that apply)**

Steep and/or unstable terrain       Canyons, gullies       Instream waterfalls, rapids, debris dams/jams

Bank slope vegetation (re-vegetation plot, clearcut, poison oak, brambles)       Wildlife, livestock

None       Other \_\_\_\_\_

**Is an extra crew member(s) required to successfully sample this site ?**       Yes       No

If yes, explain \_\_\_\_\_

**Gate(s), key(s), and/or special access requirements?**       Yes       No

If yes, \_\_\_\_\_

\_\_\_\_\_

**Wadeable streams - Driving route description (preliminary; based on office evaluation only)**

Maps: 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

Point-to-point VEHICLE directions (note road names, numbers, and spurs)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_

Mark driving route on appropriate map(s).

**Walking/Hiking route description (preliminary; based on office evaluation only)**

Maps: 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

Point-to-point WALKING directions - new line at each junction or course change

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_

Mark walking/hiking route on 7.5 min USGS topo or aerial photo.

General access comments \_\_\_\_\_

**Access classification based on (check or mark all that apply):**

- 7.5 min map       15 min map       Local/regional resource people       Guide/hiking books
- Aerial photos       Federal fire maps       Other: \_\_\_\_\_

**Specific source for obtaining information (e.g., state or federal agency personnel)**

(Record name, address, affiliation, phone, fax, email) \_\_\_\_\_

\_\_\_\_\_

**General Comments:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Access locations up- and downstream of X-site (put-in and take-out) - X only one

- Maintained public boat ramp at the put-in and take-out
- Maintained public boat ramp at one location only. Specify \_\_\_\_\_
- Unmaintained public boat ramp at the put-in and take-out
- Unmaintained public boat ramp at one location only. Specify \_\_\_\_\_
- Combination public and private access
- Private landowner access - favorable conditions (e.g., easy and close launch)
- Private landowner access - unfavorable conditions
- Very limited (steep slopes, long portage from vehicle to water)
- None

Does the bracketed reach on the 7.5 min map center the X-site ?  Yes  No

Will the crew have to float any distance from the put-in to the start of the reach?  Yes  No

If yes, how far? \_\_\_\_\_

Will the crew have to float any distance from the end of the reach to the take-out?  Yes  No

If yes, how far? \_\_\_\_\_

Estimated time to float the reach \_\_\_\_\_ and between launch sites \_\_\_\_\_

Transit to the Site:

Estimated driving distance on paved roads \_\_\_\_\_ unpaved roads \_\_\_\_\_

- 4-wheel drive distance \_\_\_\_\_
- Seasonal access
- Cannot access with boat and trailer

Estimated driving distance to nearest put-in \_\_\_\_\_ and take-out \_\_\_\_\_ from a main road.

Safety hazards associated with accessing a site and floating a reach (X all that apply)

- ~~Steep, unstable, slick banks~~  ~~Long portage in and out of water~~  ~~Excessively long sample day~~
- Large woody debris and potential hydraulic effects (sweepers, keepers)  Rapids, falls, dams, diversions
- Other \_\_\_\_\_
- None

Gate(s), key(s), and/or special access requirements?  Yes  No

If yes, \_\_\_\_\_  
\_\_\_\_\_

**Put-in location (preliminary; based on office evaluation only)**

Maps: 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

Name or description of put-in location \_\_\_\_\_

Point-to-point directions to the **put-in** (note road names, numbers, spurs)

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_

Mark put-in location on the map(s).

Launch site notes: \_\_\_\_\_

**Take-out location (preliminary; based on office evaluation only)**

Maps: 1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_

Name or description of take-out location \_\_\_\_\_

Point-to-point directions to the **take-out** (note road names, numbers, spurs)

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_

Mark take-out location on the map(s)

Launch site notes: \_\_\_\_\_

**Classification based on (all that apply):**

- 7.5 min map       15 min map       Local/regional resource people       Guide/hiking books
- Aerial photos       Federal fire maps       Other: \_\_\_\_\_

**Specific source for obtaining information (e.g., state or federal agency personnel)**

(Record name, address, affiliation, phone, fax, email) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**General Comments:** \_\_\_\_\_

\_\_\_\_\_

OWNERSHIP DATA FORM

Site ID number: \_\_\_\_\_ Stream Name: \_\_\_\_\_

Evaluator: \_\_\_\_\_ Date of Evaluation: \_\_\_\_\_

Location of data collection: \_\_\_\_\_

Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_

State \_\_\_\_\_ County \_\_\_\_\_

Potential Landowner types (may or may not include all potential types - use only as a guide):

Private: Individuals(s), Corporate (e.g., timber, mining, industrial, commercial, agricultural), Tribal (single and confederated), and City departments,

Public (accessible without special permission):

- 1. Forest lands: USFS (plus USFS wilderness areas), State, Other (county, municipal)
2. BLM: protected area, special use area, railroad lands, general use

Public (restricted access):

- 1. Military reservation (Dept. of Defense)
2. Park: National (plus monument, recreation), State, Local
3. NWR: Federal, State
4. Irrigation districts
5. Water agency
6. Army Corps of Engineers
7. Dept. of Transportation
8. Dept. of Energy
9. Bureau of Reclamation
10. Flood control district
11. Soil conservation districts
12. Public Utilities
13. University/other research areas or plots

Record all landowner information on the back side of this page (page 2).

Does access to this site and reach require multiple permissions ? [ ] Yes [ ] No

Classification based on (all that apply):

- [ ] Plat (parcel) map [ ] Local/regional resource people [ ] 7.5 min map
[ ] Federal district map [ ] State map [ ] Other: \_\_\_\_\_

Specific source for obtaining information (e.g., state or federal agency personnel)

(Record name, address, affiliation, phone, fax, email) \_\_\_\_\_
\_\_\_\_\_
\_\_\_\_\_

General Comments: \_\_\_\_\_
\_\_\_\_\_
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**Landowner Information**

**US EPA ARCHIVE DOCUMENT**

<b>LANDOWNER 1:</b>	<b>Book:</b>	<b>Tax Lot:</b>	<b>Page:</b>	<b>X A P T</b>
<b>L1 Name:</b>				
<b>L1 Address:</b>				
<b>L1 Phone:</b>				
<b>L1 Comments:</b>				
<b>Permission Required? Y N</b>				

<b>LANDOWNER 2:</b>	<b>Book:</b>	<b>Tax Lot:</b>	<b>Page:</b>	<b>X A P T</b>
<b>L2 Name:</b>				
<b>L2 Address:</b>				
<b>L2 Phone:</b>				
<b>L2 Comments:</b>				
<b>Permission Required? Y N</b>				

<b>LANDOWNER 3:</b>	<b>Book:</b>	<b>Tax Lot:</b>	<b>Page:</b>	<b>X A P T</b>
<b>L3 Name:</b>				
<b>L3 Address:</b>				
<b>L3 Phone:</b>				
<b>L3 Comments:</b>				
<b>Permission Required? Y N</b>				

<b>LANDOWNER 4:</b>	<b>Book:</b>	<b>Tax Lot:</b>	<b>Page:</b>	<b>X A P T</b>
<b>L4 Name:</b>				
<b>L4 Address:</b>				
<b>L4 Phone:</b>				
<b>L4 Comments:</b>				
<b>Permission Required? Y N</b>				

X = x-site owner      A = access owner *Non-wadeable only*; P = put-in owner; T = take-out owner