EXAMPLE OF A PROJECT SPECIFIC SITE EVALUATION GUIDELINE

STANDARD OPERATING PROCEDURE:
PERENNIAL STREAMS AND RIVERS ASSESSMENT
SITE EVALUATION GUIDELINES

1.0 Pre-evaluation Information

A. **Data Forms**

All original documents and related information are stored onsite in a secure location. Copies of these forms can be made to take in the field or as necessary. Data should be transferred to a spreadsheet or database if desired. Dossiers are made for each of the eight regions to organize all paperwork, letters and forms. Three forms have been created for all phases of the evaluation and reconnaissance process.

1) Primary Site Evaluation-Office Data Form
2) Secondary Site Evaluation Form
3) Field Visit Form

B. **Site Information Materials**

A probabilistic site list draw is needed to conduct evaluations. The site list or lists provided should contain the following information relevant to the evaluator:

- Specific project and individual site codes
- GPS coordinates for each site
- Stream Strahler order
- Coded Geographic region
- GIS Landcover Type
- Stream name if known

Materials necessary/useful in conducting site evaluations:

- USGS topographic maps(paper/electronic eg. TOPO!/Garmin)
- Other topographic maps (USFS, BLM, State Park, NPS, etc.)
- Access to county assessor roll (Parcel Quest, Landvision, ArcView, County websites etc.)
- Aerial or satellite imagery(Google Earth, LandVision etc.)
- Street Maps (DeLorme, Atlas, Thomas Guide, etc.)
- ESRI ArcView® 8 or update and relevant layers
- CDEC/USGS stream gage data http://waterdata.usgs.gov/ca/nwis/
- Resource managers and Governmental agency phone numbers
- Google or web based search engines
- Excel/Access database sheet designed to track each sites' status

2.0 Procedures for completing the Primary Site Evaluation

A. Locate the site on a topographic map

Each site is referred to as the “X-site”. Stream sampling points are chosen from the “blue line” stream network represented on 1:100,000 scale USGS maps or National Hydrologic dataset (NHD) applications. Locate the index site on the appropriate topographic map or program. **Note:** *It is often the best use of time to load up all potential sites for the coming sampling season on a mapping program to easily view and organize them for future evaluations.*

B. Complete the Primary Site Evaluation Form

For all sites to be evaluated, complete Sections **I.**, **II.** and **III.** of the Primary Site Evaluation Form.

Section 1: Enter all appropriate heading information. All information for this section can be gathered from the probabilistic site list and transposed to the primary site evaluation form.

Section 2: Determine Channel Status

- For each site, select one of the three target status categories and check the proceeding box that best classifies the channel status.
  Note: *In the Primary Site Evaluation form the goal is to quickly “weed out” sites that are obviously Non-Target in status, hence, no ownership information will be gathered to expedite the process unless ownership is obvious (e.g. USFS property or tribal ownership). In future steps, a more comprehensive ownership evaluation will be performed with the use of the Secondary Site Evaluation Form.*

  - Target Sampleable: check the Target Sampleable box if all information gained from maps, aerial photos and resource mangers lead to the possibility that the site **MAY** be sampleable. The criteria for PSA Target Sampleable at level one eval is as follows:
    - Perennial
    - Permission may be attainable
    - Physically accessible
    - Safely entered

  - Target Non Sampleable: check the Target Non Sampleable box if It meets all the criteria of Target Sampleable but cannot be sampled during the current eval period or season because the site is
    - Temporarily Inaccessible
    - Other legitimate reason

    Note: *Occasionally a site meets all the criteria to sample but, there are temporary road closures, fires, floods etc. that may put off sampling of that site to the following year. Sites rarely meet this criterion at this level.*

  - Non Target : check the Non Target box if all information gathered meets any of the following listed reasons for Non Target status. Select the most appropriate:
    - Non Perennial (site does not flow all year)

- Watercourse not present (when coordinates are entered into a mapping program there is no obvious watercourse present at site location)
- Impoundment (site falls on a lake, reservoir ,or pond)
- Tidally influenced (site is obviously influenced by brackish water content)
- Conveyance (site was not originally a natural watercourse)
- Boatable (site is too deep at 50% of length to be wadeable)
- Inaccessible (unable to reach site due to physical barriers or safety)
- Pipeline (site is located in a enclosed underground/aboveground pipe)
- Other (any obvious impediment preventing sampling)

Note: *Do not be surprised by the sheer number of site rejections. Most sites fall under the Non Target/ Non Perennial selection. For example, most years PSA has a Target success rate of 10-30% of all sites evaluated. A low Target success rate has created the need for a level 1 evaluation to help quickly weed out sites, allowing a further more comprehensive investigation by level 2 evaluations.*

- All Target-Sampleable, Target –Non Sampleable and Non-Target selections must have a justification or verifiable reason in order to proceed further. **Note:** *The most commonly used techniques for determining site status at level 1 evaluations are aerial mapping programs, Regional Conservation District websites, Google, and USGS stream gage data. It may be necessary to make an initial phone call to the appropriate agency or resource managers to confirm site status. Please denote which method was used in the information sources box. If a call has been made please note contact person, agency and phone number in the information sources box. For QA/QC purposes, all sites should include legitimate contacts to confirm or deny channel status. In some cases the evaluator may have significant site knowledge to eliminate the need for a second information contact .If in doubt as to whether the site is perennial or non perennial mark perennial, and re-evaluate the site at level 2 evaluations.*

Section 3: Preliminary Ownership Information

- Four check box options have been provided under the Preliminary Ownership heading. Choose the most appropriate response. **Note:** *If the site has been determined Non Target, then most likely the Not Applicable box will be checked because ownership information will not be required to be identified. Next, the site will be removed from the sampling sites list when the data form is completed. Likewise, if the site has been checked as Target-Sampleable then the Unknown box may be checked unless ownership is obvious from site placement on the map.*

- Priority for Second Evaluation forms box is checked “not needed” if the site has been found to be Non Target and no further information needs to be gathered. If the site have been marked Target Sampleable then further investigation **MAY** be needed. Mark the “required” box if a level 2 evaluation is necessary. **Note:** *When a site has been determined to be Target Sampleable, sometimes a level 2 evaluation and recon may NOT be needed. This situation happens when all info for the site has been gathered in level one. For example, a site (e.g. a commonly known perennial stream with no permission needed) may not* *need further evals or recon because the site has been visited in prior years, the site has public access and there are no foreseeable problems that may occur. In this situation checking the "not needed" box would be appropriate, and the site would become Target not needing any continuing work until sampling occurred.*

- If Sections 1, 2 and 3 are complete, continue filling out level one evaluations for all sites planned for sampling in the coming season. Based on past success rates for your region, make sure you evaluate enough sites to give you more than enough potentially sampleable sites at the end of all evaluations and reconnaissance work. Work the sites by consecutive numerical order, never leaving out single or large groups of sites. If this rule is violated, the statistical power is diminished and problems will occur in the final results report. Continue to update electronic spreadsheets with the current appropriate channel status as you progress with the evaluations. **Note:** *It may seem redundant to have paper copies and electronic forms; this method has proven invaluable in QA/QC to check for data entry errors, and loss of electronic files and is generally accepted by DFG as standard.*

3.0 Procedures for completing the Secondary Site Evaluation

A. Locate the site on a topographic map
   See section 2.0 A

B. Complete the Secondary Site Evaluation Form

Section 1: Enter all appropriate heading information. All information for this section can be gathered from the Primary Site Evaluation form and transposed to the secondary site evaluation form.

Section 1 continued: Determine **Channel Status**
For each site, select one of the two target status categories and check the proceeding box that best classifies the channel status.
Note: *In the Primary Site Evaluation form the goal was to quickly "weed out" sites that are obviously Non-Target in status. On the Secondary Site Evaluation form, more comprehensive analysis should be performed. A resource manager or manager should be contacted to confirm flow status (perennial/non perennial) and entry details if possible. In many cases the managers may know the landowner if private and may help ease entry access.*

Target Sampleable: check the Target Sampleable box if all information gained from maps, aerial photos and resource mangers etc. lead to the possibility that the site **MAY** be sampleable. The criteria for PSA Target Sampleable at level one evaluation is as follows:

- Perennial
- Permission may be attainable
- Physically accessible
- Safely entered

Target Non Sampleable: There is no Target- Non sampleable box on the secondary evaluation form. If the site is Target Non Sampleable but, cannot be sampled during the season mark the Target Sampleable box and update the electronic forms so that the site will be first to be evaluated beginning next seasons sampling**.**

Non Target: check the Non Target box if all information gathered meets any of the following listed reasons for Non Target status. Select the most appropriate:

- Permission Denied(Landowners deny entry permission)
- Non Perennial (site does not flow all year)
- Watercourse not present (when coordinates are entered into a mapping program there is no obvious watercourse present at site location)
- Impoundment (site falls on a lake, reservoir ,or pond)
- Tidally influenced (site is obviously influenced by brackish water content)
- Conveyance (site not originally a natural watercourse)
- Boatable (site is too deep at 50% of length to be wadeable)
- Inaccessible (unable to reach site due to physical barriers or safety)
- Pipeline (site is located in a enclosed underground/aboveground pipe)
- Not Accessible(Physical barrier or unsafe conditions prevent access)
- Other (any obvious impediment preventing sampling)

Note: *All the same codes exist as in the Primary Evaluation form, except for adding Permission Denied. The PD code is rarely used on the actual form, but needs to be there just in case the evaluator does get denied entry permission at this stage. Having entry permission denied usually follows after the Secondary Evaluation Form is filled out and permission forms sent out have been returned denied.*

Section 2: Source information

As with the Primary Evaluation Form all Target-Sampleable, and Non-Target selections must have a justification or verifiable reason in order to proceed further. Choose the checkbox that fits the information source best. Additional space is located on the back of the Secondary Evaluation sheet to list additional contacts. If agency personnel or resource managers have been contacted, please list all relevant information.

Section 3: Ownership Information

Property ownership information must be determined and verified for ALL potential target sites. Permission from all land owners, land managers, or agency must be obtained before entering any private property at, or surrounding, the x-site.

Ownership must also be verified for public lands. There are often private land holdings inside national forest boundaries or other public lands. Crossing on to private land without permission is trespassing. For each x-site record all information requested in the site ownership information field. The parcel number should be recorded in the specific county format if possible as they are unique amongst counties.

Ownership information can be obtained in the following ways:

1. Visiting the county assessor office and utilizing their resources.
   At each county assessors office locate the county index map. The index map will have the UTM township/range grids located on it. The USGS topographical map will also have the township and range of the given X-site on the border of the map. Correlate the township and range of the X-site with that of the index map and locate the X-site. The X-site will lie in a region on the index map where ownership information can be assessed. This region or area of information can be found in the "plat" map book. The "plat" map book number represents a book of information that contains land parcels for a specific region on the index map. Plat maps also depict parcels, ownership boundaries, tax lot numbers, and the subsequent acreage contained within a tax lot number.
   Align the X-site on the topographic map with that of the plat map book. Record the name, mailing address, site address, and any additional information from the landowner at the X-site and any adjacent landowners that may provide access. Often multiple owners may need to grant permission in order to reach the "x-site"

2. Using a certified map assessor program (Parcelquest, Landvision)
   There are several companies that offer online services, or have parcel information on CD. These companies offer subscriptions or the ability to purchase information. These Assessor mapping programs offer a slight learning curve, but are much quicker and easier to use and offer greater usability than visiting the assessor's office. **Note:** *This methodology is highly recommended if the evaluator is assessing site locations over many different counties. It also offers the ability to go back and recheck ownership information at a later date if either an error was made or not enough sites were evaluated in the Primary Evaluation form.*

3. Up-to-date GIS data available from the county
   GIS data may be obtained by contacting the individual counties and making arrangements to obtain relevant information. Information is generally offered as ARC layers with a database of APN numbers.

4. Online assessor information available from county websites
   Online assessor information is available for ***some*** counties and is getting better with time and technology. The assessor's office may be contacted by phone or by visiting the assessor's website to find the most current information available. The county assessor sites operate similarly to ParcelQuest/Landvision but are free on the World Wide Web.

After all sites evaluated by the secondary evaluation form have had ownership information gathered, transfer all ownership address info into a separate excel spreadsheet allowing each portion of information its own field for use in the mail merge feature.

Section 4: Permits

Potential target sites that are not private and have no public access permission require an encroachment permit to be obtained. During the Source information and Site Ownership phase it should be obvious which county, city, and or agency will hold ownership and or management roles of the stream or river. Make sure to denote the agency in section 4. **Note:** *examples of agencies requiring entry permits are The National Park Service, State Parks, All county and city managed waterways in the state, Sanitation districts, and Utility Districts etc.*

Vertebrate collection permits may be necessary from agencies such as US Fish and Wildlife, and National Marine Fisheries Service under the section 12 and 4D programs. Agencies such as Cal. Dept. of Fish and Game are exempt form benthic macroinvertebrate collection. If collecting under University Foundation's or other entities per contract purposes, a permit will be required.
Update all permit contact information in the spreadsheet to track witch agency needs to be contacted.

4.0 Obtaining site access entry permission

A. Contact landowners/ land managers

After ownership information is obtained via the secondary site evaluation form, contact needs to be made with the landowners or land managers. Permission packets are sent to the owners of ALL privately owned sites and any agency or company requesting a letter or information about sampling activities. The permission packet includes: a cover letter with a brief description of project goals, a permission form that the party completes, a self-addressed stamped envelope and (optional) a map of the x-site (it is helpful for landowners to confirm the location of the x-site on their property.

For public ownership the proper agency and personnel must be contacted to determine if a permit, entry agreement or permission letter is needed. A complete effort needs to be made to determine who and what agency manages the targeted waterway. Contact all possible agencies and land managers to inform them of sampling activities.
Permission to sample can be denied in the following ways:

- The permission letter is returned denying access to the site, with the "no" permission granted box is checked.
- Any required permits are not received in time, or are denied.
- Permission has been denied over the phone.
- The permission letter is not returned, returned with no response, or mailed back unopened.

If the target site meets any of these criteria, check the "no" box in the letter status field in the secondary site evaluation form, remove the site from the target list and stop evaluation of the site.

Permission to sample can be granted in the following ways:

- The permission letter has been returned with a "yes" marked in the appropriate box, granting access to the site.

- A required permit has been submitted and approved by the agency that manages the target sample location.
- Permission has been granted over the phone. The sample site has been thoroughly researched and confirmed to be managed by the person who has given the permission.

If the target site meets any of the previous criteria, the landowner may request further information identified in the site information fields.

- Check the appropriate box in the letter status box in the secondary site evaluation form if entry permission is granted.
- Check appropriate box for wants data. Often the land owner or land manager requests copies of data after the sampling event occurs.
- Gate, key, or special requirements. This information needs to be transferred from the permission letter or from any phone calls. Follow any and all requests from land owners.

It is very important to contact land managers and private property owners to obtain as much information as possible. Most of the time spent in the office will be used making telephone calls and emailing information to scientists and resource managers. The more time spent acquiring office based information results in less time spent on field reconnaissance, in turn, resulting in more sites being evaluated efficiently by sampling season.

All returned owner permission letters are filed in a “permission returned” folder and a copy made is attached to all prior and current evaluation forms.

Update all entry permission information into a spreadsheet. If the site held Target status and permission has been approved, the site keeps Target status and possibly moves into the reconnaissance phase. If the site held Target status and permission was denied, change the site status to Non Target and collect no further information regarding the site.

On occasion, enough information ***may*** be obtained in the secondary evaluation form that a field visit may not be required. Although, more often than not a field visit will need to be made in order to make for a smooth and efficient visit during sampling season.

5.0 Procedures for completing a Site Visit

A. Determine if a site visit is necessary

In most cases, a site visit is necessary to confirm stream status and access. Reconnaissance will confirm or contradict any office evaluation information received. Reconnaissance should attempt to get as close as possible to the X-site without trespassing. If entry permission has been obtained, the evaluator should attempt to visit the x-site if safety permits.

The following are common situations that require site reconnaissance:

- Contact persons are unknowledgeable of core data requirements found in primary and secondary evaluation forms and a site visit is the only method of determining target status.
- Digital aerial photos may not show seasonal variations and are unable and inaccurate regarding perennial and non-perennial site status. A site visit near sampling season will help clarify and confirm flow status.
- Insufficient data was obtained during the primary and secondary evaluation. A site visit is required to complete the data.
- Entry to the X-site appears to be very complicated. A site visit is required to simplify and document the best way to enter to the site.
- Confirm any information received. Information received from land owners and managers are often incorrect and inaccurate.
- Coordinate a visit to local resource managers with a site visit if possible.

B. Organize site visits

Suggested site reconnaissance materials:

- Field Visit Forms
- Site dossiers with all available information to access the site
- Site spreadsheets with access info.
- Mapping program or maps with all sites placed in proper locations
- Forest Service and State Park maps
- Laptop with topographical or other useful maps
- Map ruler for 7.5 minute topographical maps
- Notebook for notes
- Agency and landowner information and phone lists
- G.P.S. and auto based navigation units
- Cell phone
- Digital Camera
- Binoculars
- Any form of identification identifying you as a Fish and Game employee
- Back pack with provisions for safety during hiking trips
- Proper hiking attire
- Safety and emergency equipment
- Four wheel drive vehicle
- Appropriate permits
- Private property entry permission letters

Determine the mode of travel (i.e., vehicle 4x4 or 4x2, foot, boat, air), or combination of, is best for locating and reaching each site. Most sites will be able to be accessed with a vehicle. However, some sites may be very remote and only able to be accessed by air over-flights.

Proper timing of the reconnaissance phase is essential to success. Depending on the start of sampling, all reconnaissance should be done last and as close to the sampling period as possible in order to establish flow conditions that represent conditions that mimic the actual stream sampling event. **Note:** *Often times the site will have reconnaissance performed as late as possible, but the sampling event lies somewhere else further down in the index period. In these cases it may be necessary to either call resource managers, landowners or recon the site again to establish realistic flow regimes.*

Plan a route for visiting multiple sites. This includes coordinating overnight accommodations, driving directions, obtaining keys and permits, and anticipating road closures due to weather conditions or construction. Estimate the time required to complete the trip into and out from the site. **Note:** *Proper route placement of all sites visited is the key to making efficient site visits, often there are numerous sites to visit and there are always outliers. Please make the attempt to visit those, as it becomes very easy to become complacent when said site may be hours out of the way.*

Determine if a site can be visited for reconnaissance without trespassing. Every effort should be made to physically observe a stream or river without formal contact to the landowner. Targeting a bridge, adjacent road, cliff, or other vantage point near the X-site without crossing private land will eliminates the need (and save time) to request permission for access. Depending upon the distance from the site, binoculars might allow site classification.

If reconnaissance requires entering private property, make sure landowner permission has been obtained on or near the property that surrounds or abuts the X-site. The evaluator may call the land owner directly and informally request access to the site through the owner's property before the field visit. If contact cannot be made and every effort has been attempted to communicate with the landowner then the site must be considered inaccessible and dropped from the site list.

C. Complete Field Visit Form

- After visiting and evaluating the site, complete the Field Visit Form.
- Fill out all heading information requested on the form as denoted in the secondary site evaluation form.
- Check the new channel status code applicable to the site visited. During major and minor drought seasonal fluctuations, many variations will exist from the norm. Be prepared for major differences in information gathered in the office evaluation portions of the work. **Note:** *As stated repeatedly, there are often great differences in month to month changes of some waterbodies. It will take some forethought to anticipate flow conditions at the time of sampling. More information gathered in the office phase will yield better results in the recon phase.*
- Anticipate when the best base flow conditions exist for sampling and check the box that represents the best month for sampling.
- In the Directions to site box write down the best way to enter the site. Make sure to include which side of the creek is best or the only way to enter. If street names apply please use them. Auto Navigation units are very helpful at getting as close to the site as possible. **Note:** *Please refrain from using the terminology "left "and "right" when writing down directions as those terms only work if you are heading in the same direction or are approaching the site in the same manner as the crew who may be sampling. Please use formal terms north, south, west and east. (e.g. west on 680 exit Monroe drive and head north).*

- Other special needs such as gates and keys should be noted and written clearly, especially gate combinations. Please enter this info in the box provided.

Be as specific as possible when filling out the form. The person performing the reconnaissance may not be the person who will return to sample the site. Giving detailed instructions and site information will help the returning team access the site quickly and efficiently and will be greatly appreciated by other crew members.

As with previous forms, the latest information gathered trumps previous information as time proceeds closer to the sampling period of the site.
After all reconnaissance activities are complete, update all spreadsheets and Secondary evaluations sheets with the correct information and channel status.

Make sure to have sufficient sites in reserve over the target number to be sampled. Unforeseen events that prevent sites from being sampled will and always occur.