

# AQUATIC RESOURCE DELINEATION REPORTS – MINIMUM STANDARDS FOR ACCEPTANCE

Regulatory Program Workshop  
Sacramento District  
Regulatory Division

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Cody Barnes & Lauren Skube  
Regulatory Project Managers  
California South Section



US Army Corps  
of Engineers®





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# WHAT IS AN AQUATIC RESOURCE DELINEATION (ARD)?



- A process for identifying and locating aquatic resources (including wetlands) within a review area.
  - Determine type of aquatic resource
  - Determine extent of boundaries
- Under Section 404 of the Clean Water Act: The Corps regulates the discharge of dredged or fill material into **all waters of the United States, including wetlands**
  - An ARD is the first step in determining the extent of Corps involvement in a project



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# MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS



- An aquatic resources delineation is required for all projects authorized by the Corps, including:
  - Jurisdictional Determination (JD) requests
  - Aquatic Resource Verifications
  - General Permit or Standard Permit applications
- The Corps verifies (or conducts) the delineation before making any permit decision.
- Aquatic Resource Delineations are submitted in the form of an ARD report
- **All aquatic resources delineation reports must be in accordance with the Minimum Standards.**





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# MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS



- Dated January 2016
- Available at:  
<https://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Aquatic-Resources-Delineation/>



## MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS

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January 2016

The U.S. Army Corps of Engineers, through its Regulatory Program, regulates certain activities in waters of the United States. Waters of the U.S. are defined under 33 CFR Part 328. In order for the Corps to determine the amount and extent of waters of the United States at a site, aquatic resources must first be delineated in accordance with established regulatory standards, guidance and protocol, such as the 1987 Corps of Engineers Wetlands Delineation Manual and appropriate regional supplements. Before making any permit decision, the Corps is responsible for conducting or verifying the delineation and determining which of the aquatic resources have the potential to fall under federal jurisdiction.

Due to limited staffing and resources, the Corps' Sacramento District recommends permit applicants employ the services of individuals experienced in delineating aquatic resources. Permit applicants are further encouraged early in the project planning stages to submit the delineation, along with a request for a preliminary or approved jurisdictional determination, and engage in a pre-application consultation with their local District office. Early consultation may help identify potential concerns and result in a quicker permit decision.

The District has established minimum standards for delineation reports to insure consistency and accuracy in the delineation of aquatic resources, which will minimize potential delays. The standards are based on years of experience conducting and verifying delineations, as well as the best practices of environmental consultants. Delineations submitted for verification must follow the standards, unless determined to not be practical on a case-by-case basis. Situations where adherence to the standards may not be practical include activities with small permanent or temporary impacts to aquatic resources (under 0.10 acre), applicants with limited financial resources, and emergencies. The District will notify the requestor for delineation submittals that do not contain sufficient information to accurately identify the limits of waters of the U.S.

Aquatic resources delineation reports submitted to the District must include the following:

- ☐ A cover letter requesting a jurisdictional determination. The letter must specify whether a preliminary or approved jurisdiction determination is requested.
- ☐ A signed statement from the property owner(s) allowing Corps personnel to enter the property and to collect samples during normal business hours. If the property is land-locked, the owner or proponent must obtain permission from the adjacent property owner(s) to provide access for Corps personnel.
- ☐ A statement that the delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and appropriate regional supplement(s). The regional supplement(s) used must be identified. For ordinary high water mark (OHWM) delineations, a statement identifying the use of the OHWM field guide must be included.








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# PURPOSE OF THE MINIMUM STANDARDS

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- Inform public and agencies of our requirements 
- Improve accuracy of and justification for aquatic resource boundaries 
- Obtain adequate information to begin review 
- Improve consistency 
- Reduce review times and minimize delays 



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# WHAT IS REQUIRED?

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- For standalone JD requests: Cover letter stating what type of review is being requested
  - » Approved JD
  - » Preliminary JD
  - » Aquatic Resource Delineation Verification
- Contact us if you're unsure which to request, or refer to Regulatory Guidance Letter 16-0, located at:  
<https://www.usace.army.mil/missions/civil-works/regulatory-program-and-permits/guidance-letters/>



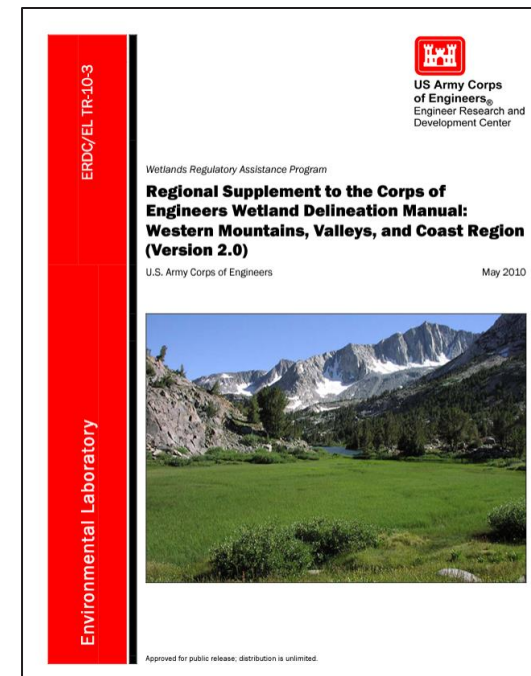
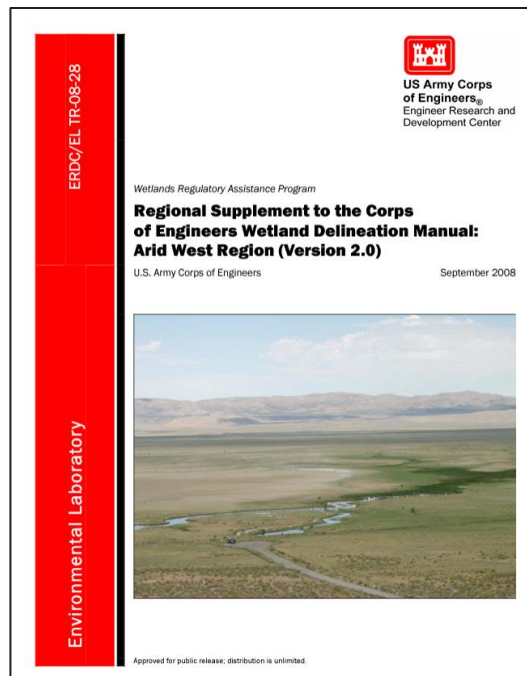
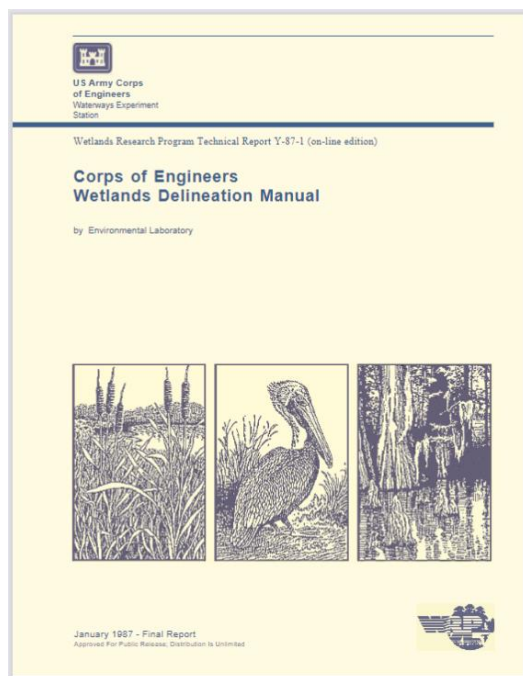


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# WHAT IS REQUIRED?

- Signed approval from property owner(s) for Corps to access property and collect samples
- Statement that delineation was performed in accordance with 1987 Wetland Delineation Manual, appropriate regional supplement(s), and/or OHWM field guide(s).
- The Manual and regional supplements are available at:  
<https://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Aquatic-Resources-Delineation/>







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# REQUIREMENTS, CONTINUED

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- Directions to the survey area
- Contact information for the applicants, property owners, and agents
- Total acreage of the survey area
- Date(s) field work completed







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# REQUIREMENTS, CONTINUED

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- Narrative describing all aquatic resources and explanation of mapped boundaries
  - Especially important for aquatic resources with complex transition zones
  - Erosional features, upland swales, or any other upland areas that appear “wet” on aerial imagery
  - Explain if paired data points of a ‘representative wetland’ were used to determine boundaries of other proximal similar wetlands
  - Inclusion or exclusion of any features not immediately clear to the Corps



# REQUIREMENTS, CONTINUED



- Table listing all aquatic resources with lat/long (in decimal degrees), Cowardin type, acreage and/or linear footage
- Description of existing field conditions – current land use, flood/drought, irrigation practices, site modifications, and atypical characteristics

Table 1. Aquatic Resources within the Survey Area

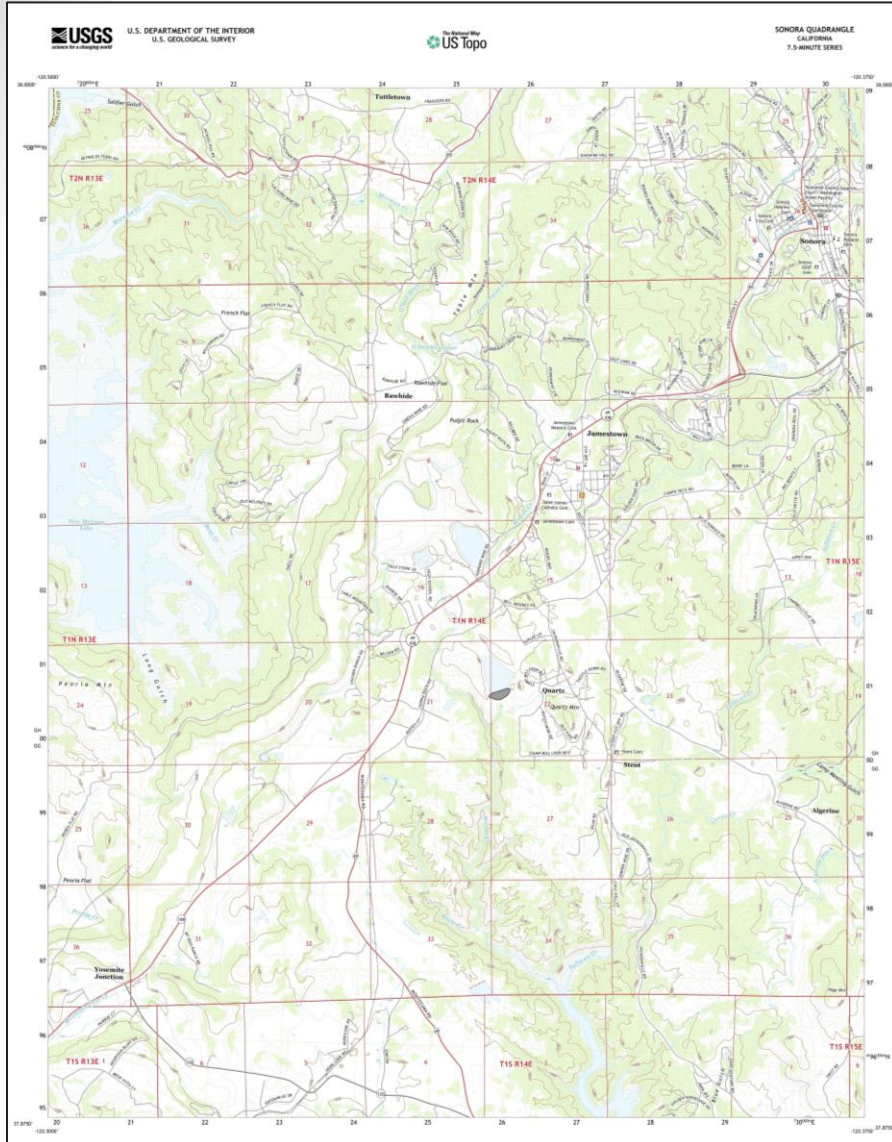
Aquatic Resource Name	Aquatic Resources Classification		Aquatic Resource Size (acre) Required for all resources	Aquatic Resource Size (linear feet) Required for only stream channels
	Cowardin	Location (lat/long)		
Total				



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# REQUIREMENTS, CONTINUED

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- Discussion of hydrology at the site, including:
  - All known surface or subsurface sources
  - Drainage gradients
  - Surface water connections to nearest traditional navigable water (TNW) or interstate water
  - Any influence by manmade water sources
  - Nearest “blue-line” waterway





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# REQUIREMENTS, CONTINUED

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- Explain how remote sensing was used.
  - Include name, date, and source of tools used.
  - Include copies of applicable maps/photos
- Discussion of plant communities and habitat types present.
  - Include scientific name, common name, and wetland indicator status of all plants.
- Provide soil descriptions, soil maps, and discussion of hydric soils.





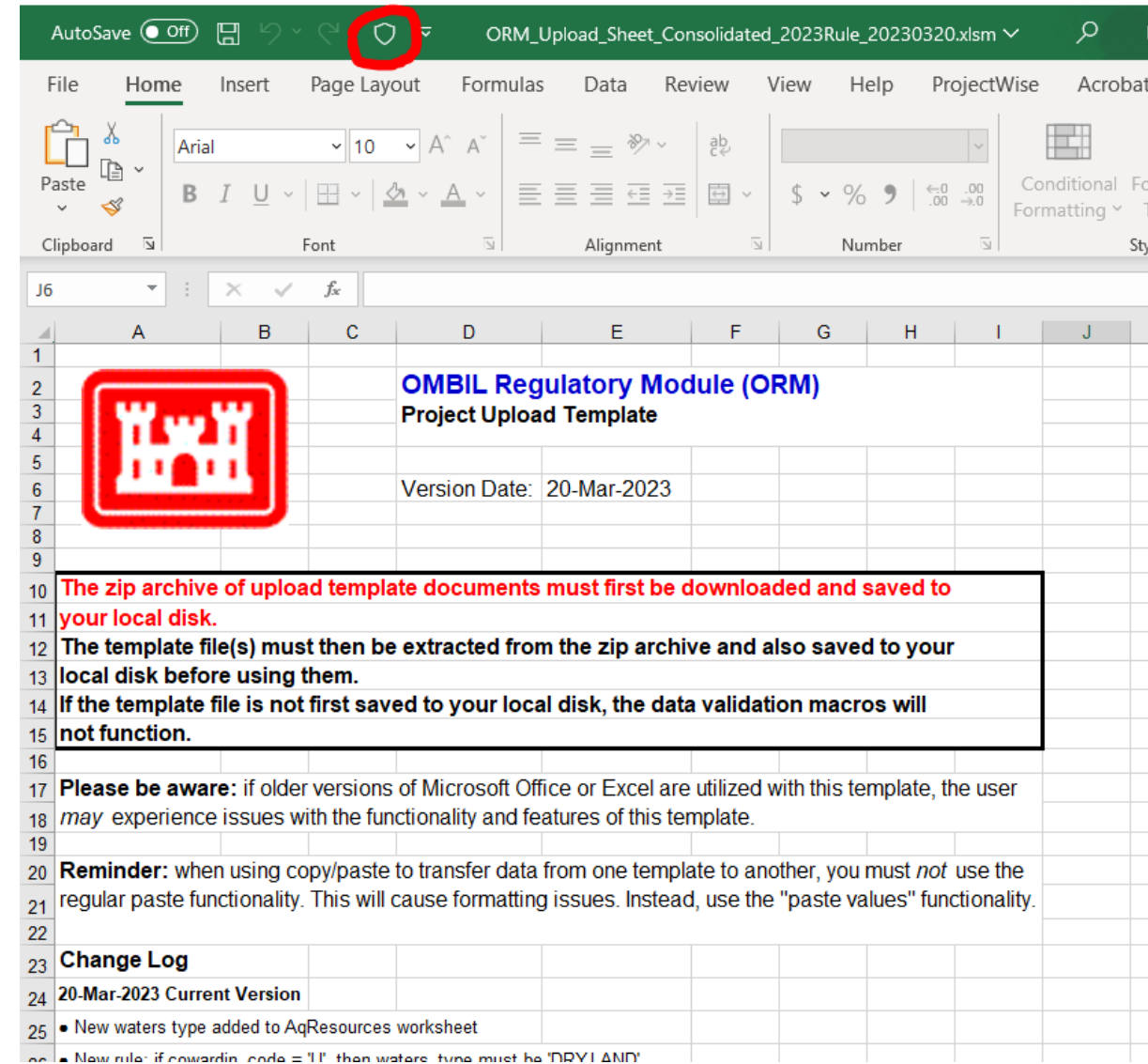
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# REQUIREMENTS, CONTINUED

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- Site location map on a 7.5-minute U.S. Geological Survey topographic quadrangle
- Completed copy of the Aquatic Resources Excel spreadsheet (available at <https://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Aquatic-Resources-Delineation/>)
  - Use the most recent version.
  - If in CA or NV, use the 'Amended 2023 Rule' version
  - If in UT, use the 'Pre-2015' version



# REQUIREMENTS, CONTINUED

- Completed data forms
- Description of methods used to survey the aquatic resource boundaries. Typically, sub-meter accurate GPS required.
- Digital data for the site and aquatic resource boundaries, and data point/transect locations in GIS format (ESRI Shape-files preferred).



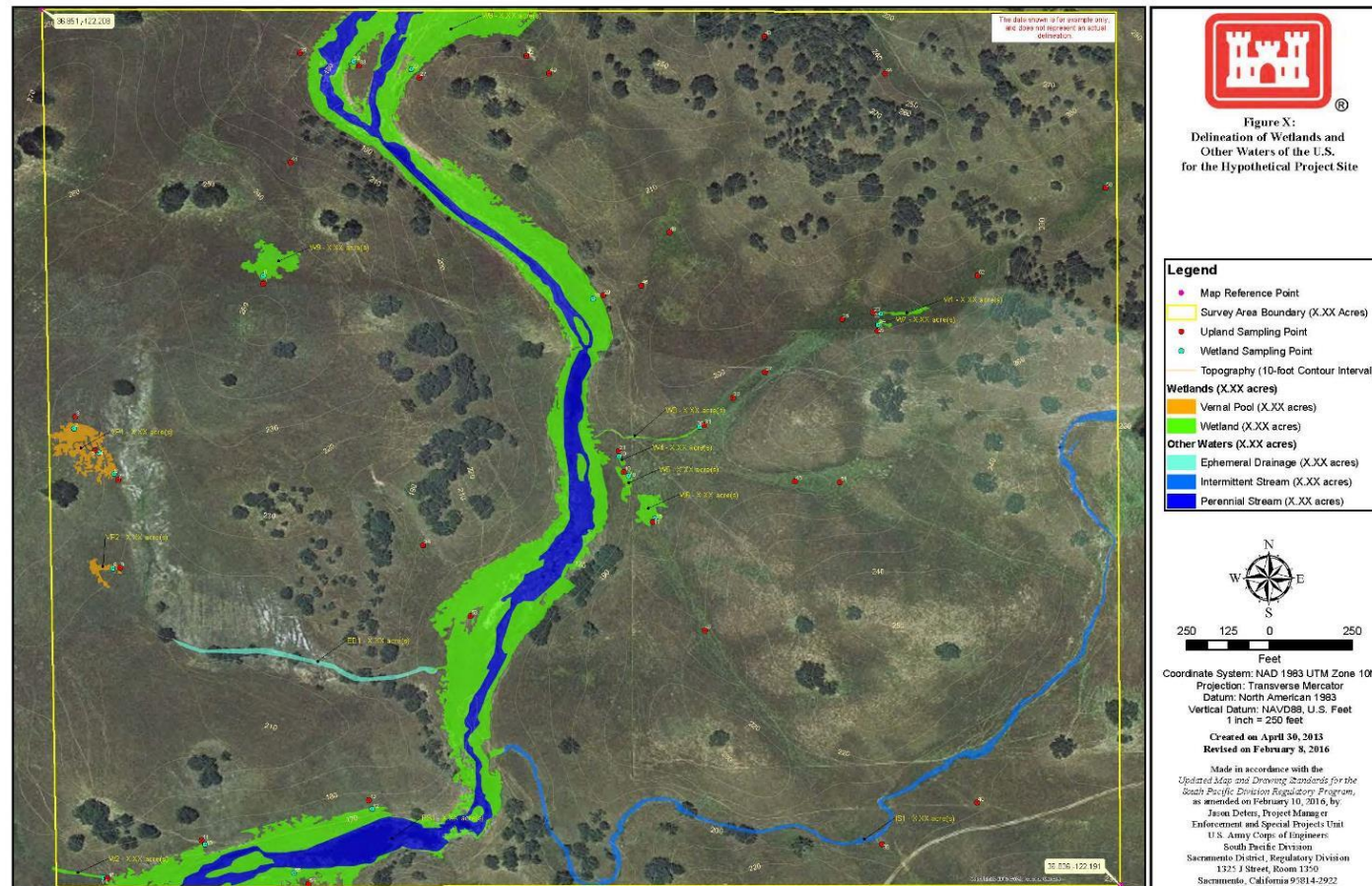


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# REQUIREMENTS, CONTINUED

- An Aquatic Resources Delineation Map in accordance with the South Pacific Division (SPD) Map and Drawing Standards





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# HELPFUL INFORMATION TO PROVIDE

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- LiDAR (LAS file format)
- Aerials or satellite imagery (both recent and historic)
- Topographic maps
- Floodplain maps
- Ground photographs
- National Wetland Inventory (NWI),
- Relevant Irrigation or Flood Conveyance Facility Maps
- Bathymetry
- Streamflow/Gauge data



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# DELINEATION REPORT TEMPLATE

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- Included with Minimum Standards, but not required
- Suggested format intended to assist preparation of a report
- If using, focus on elements pertinent to your AR delineation and required by the Minimum Standards

**DRAFT/FINAL** AQUATIC RESOURCE DELINEATION  
REPORT

**Survey Name**  
**Date**

**Prepared By:**

**Author's Name, Title**  
**Consulting Company /Region/Cooperating Agency Name**  
Address  
Phone Number  
email

**Prepared For:**

**Name (Role)**  
Company  
Address  
Phone Number  
email





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# LET'S TRANSITION TO AQUATIC RESOURCES DELINEATION SPATIAL DATA AND MAPPING



- Sources to be covered in this section:
  - <https://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Aquatic-Resources-Delineation/>
  - “Minimum Standards for Acceptance of Aquatic Resources Delineation Reports”
  - “Updated Map and Drawing Standards for the South Pacific Division Regulatory Program”



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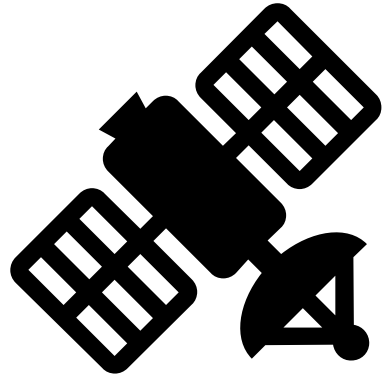




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# GEOGRAPHIC POSITIONING SYSTEMS (GPS) OVERVIEW

- GPS are navigation systems employing the use of orbiting satellites.
- The Sacramento District requires GPS equipment for collection of data.
  - Sub-meter ( $\leq 1\text{m}$ ) accuracy necessary, unless rationale is provided.







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# GPS DATA MUST BE SUBMITTED IN ORM AQUATIC RESOURCES SHEET



- The unique titles for each aquatic resource in ORM Aquatic Resources Sheet must match those in maps and GIS files submitted (topics covered next!).

The screenshot displays the Microsoft Excel interface. The ribbon at the top includes tabs for File, Home, Insert, Page Layout, Formulas, Data, Review, View, Help, ProjectWise, and Acrobat. The 'Home' tab is currently selected, showing various toolbars for Clipboard, Font, Alignment, Number, Styles, Cells, Editing, Sensitivity, Add-ins, and Adobe Acrobat. Below the ribbon, the worksheet grid is visible, showing columns A through K. The headers for columns A through J are: Waters\_Name, State, Cowardin\_Code, HGM\_Code, Meas\_Type, Amount, Units, Waters\_Type, Latitude, and Longitude. Column K is labeled Local\_Waterway. The 'AqResources' tab is selected in the bottom tab bar.



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# GEOGRAPHIC INFORMATION SYSTEMS (GIS) OVERVIEW



- GIS are systems used to create, manage, analyze, and map diverse geographic data types (Source: ESRI).
- Many different GIS software are freely-available or can be purchased.



**GRASS** GIS





# GIS DATA ARE REQUIRED FOR ARD SUBMISSIONS

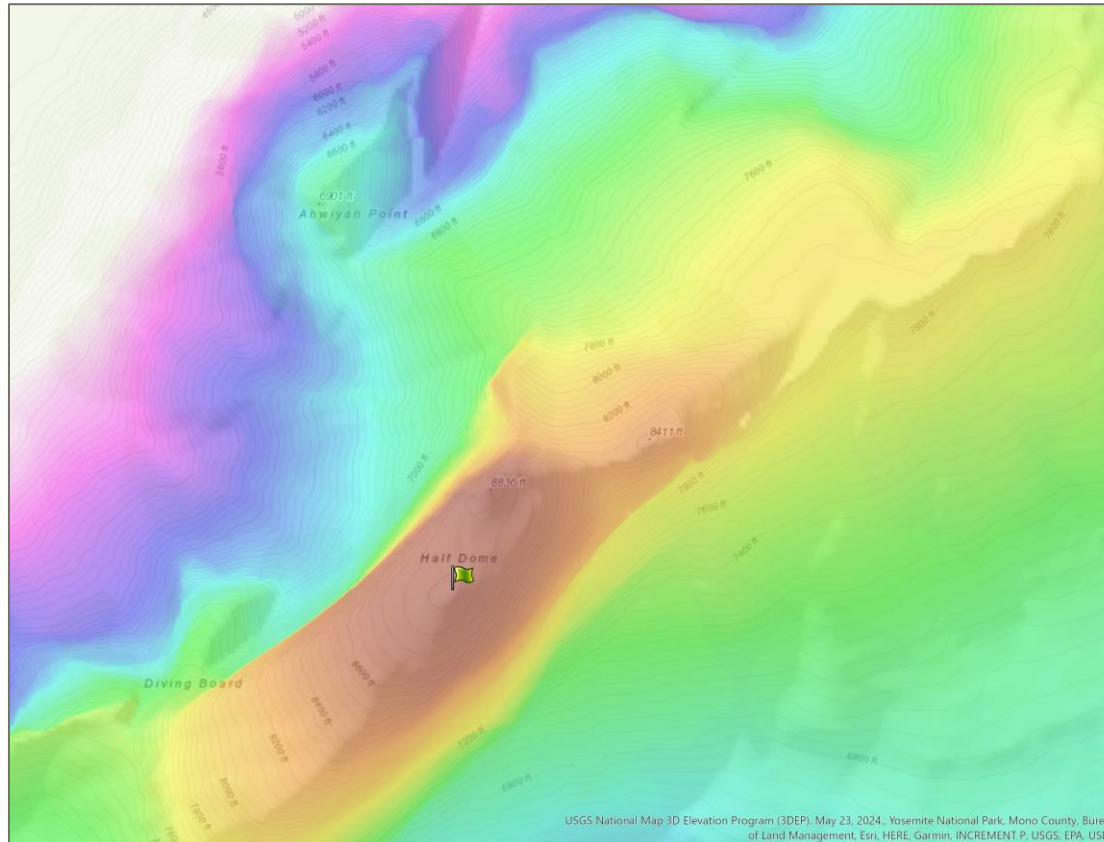


- Site, aquatic resource boundaries, and data point locations must be provided in a GIS format.
- ESRI shapefile is the preferred GIS format.
  - Other formats include database, KML, Google Earth compressed KMZ, or CSV for points.
- An accompanying text metadata file must include datum, projection, and mapper contact information.

# SEVERAL OTHER GIS TYPES CAN INFORM REVIEW



- Light Detection and Ranging (LiDAR), satellite, aerial and ground photographs, floodplain maps, and others can be informative!







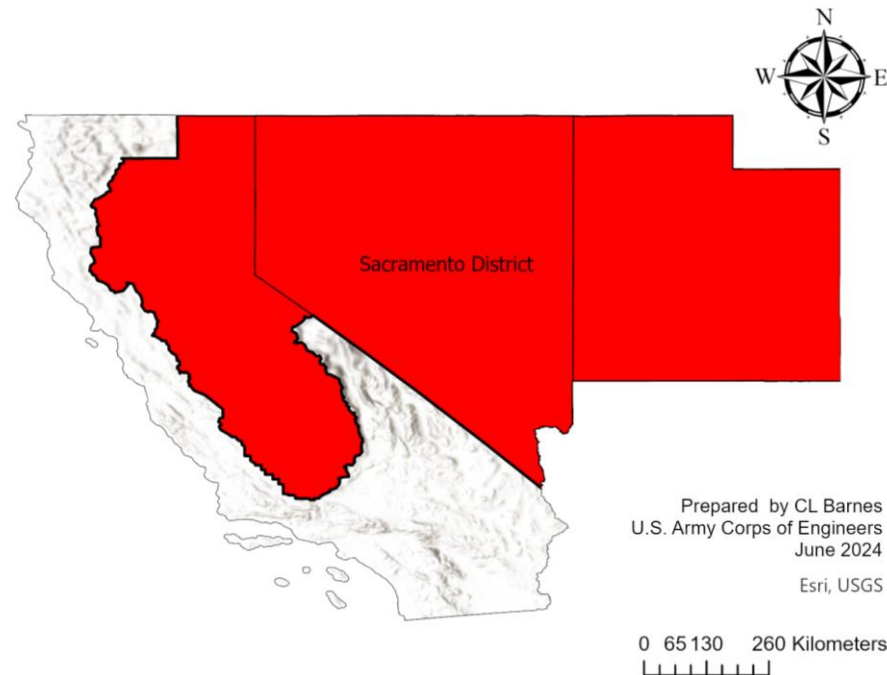
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# GPS ARE REQUIRED TO BE COLLECTED AND GIS TO BE PRODUCED FOR USACE REVIEW BECAUSE THEY ARE USEFUL

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- GPS/GIS are important for ensuring efficient and consistent review of delineations.
- USACE Project Managers frequently interface GPS/GIS data with USFWS NWI, USGS NHD+, and other interagency sources.



# AQUATIC RESOURCES DELINEATION MAP MUST SHOW:

- Aquatic resources delineated must be shown clearly, without assertion of jurisdiction (only the Corps determines this).
  - Rationale for jurisdiction or not should instead be described in the report, not the map.
- Paired data points for each aquatic resource must be documented in data forms and identified in the map.
  - Typically, a series that includes a negative control point (upland) and a procedural observation point (aquatic resource).
- The map(s) must align with the SPD Map and Drawing Standards.



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# THE SOUTH PACIFIC DIVISION (SPD) MAP AND DRAWING STANDARDS ESTABLISH GUIDELINES FOR THE QUALITY AND CONSISTENCY OF DELINEATIONS

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- Plan-view maps must be provided.
- The survey boundary must be clearly shown and enclose the spatial area for which the jurisdictional determination is being requested.
- The location and extent of potential waters of the U.S. must be clearly identified as polygons, using unique names, with acreage.
- Field-derived GPS data must be shown.
  - Ordinary high water mark widths must be represented by transects with measurement labels (for non-tidal waters).
  - Mean High Water and High Tide Lines must be represented with elevation and vertical datum (for tidal waters).



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## THE BASIC PLAN VIEW MAP REQUIREMENTS ARE:

- Two GPS points (control and wetland), with the Latitude and Longitude.
- Symbolization of north direction.
- A bar and text scale, the latter not to exceed 1 inch= 400 feet.
- A legend with descriptor for each mapped element.
- The date map was either prepared or revised.
- The name and affiliation of the map preparer.
- Inclusion of landmarks for reference, such as nearby roads.

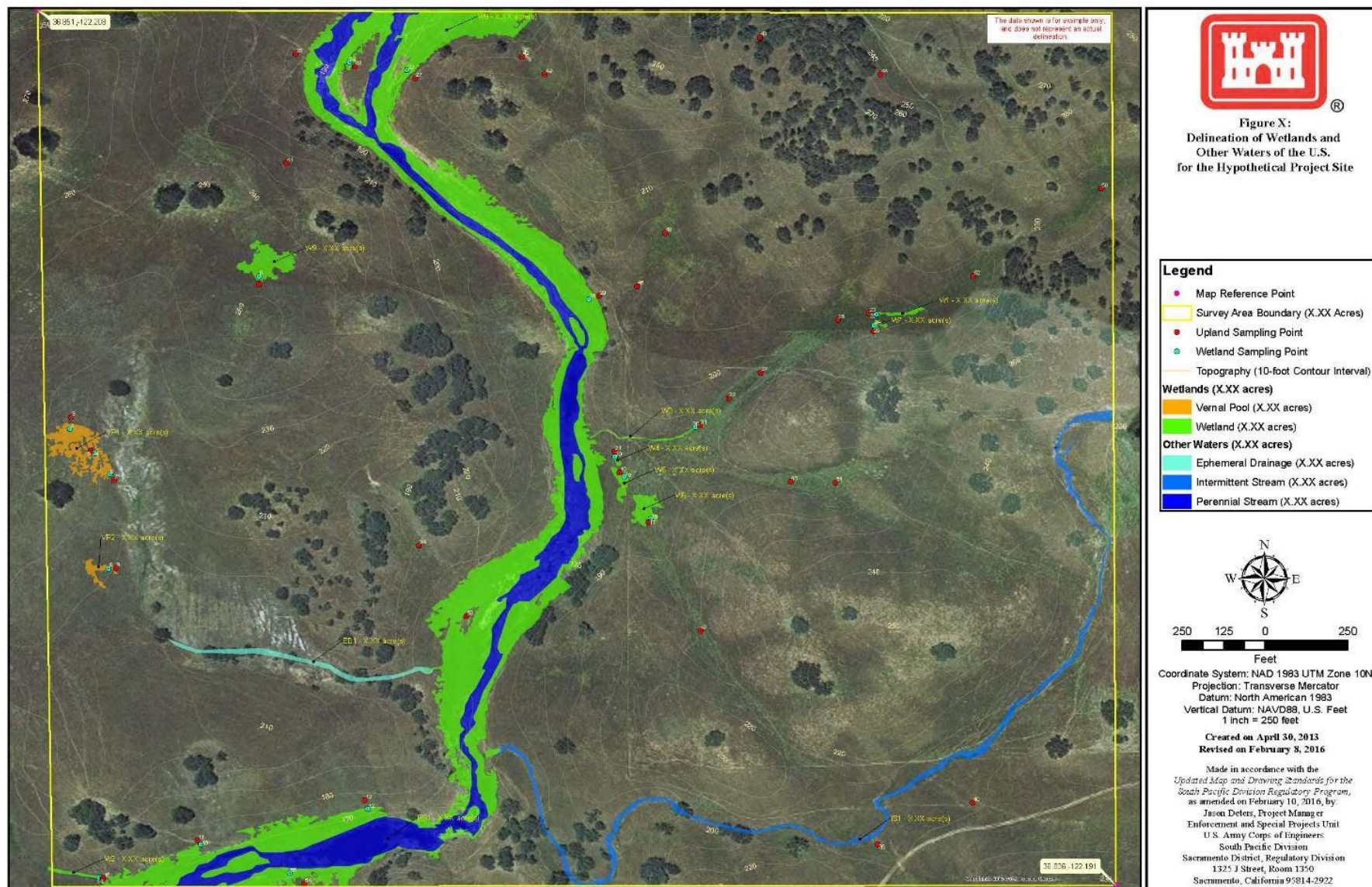




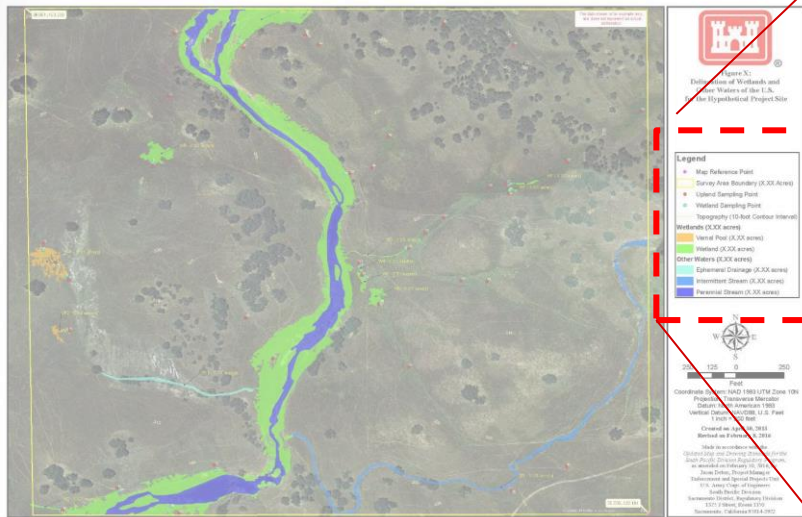
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# EXAMPLE MAP DEMONSTRATING THE STANDARDS

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# LET'S GO OVER THE STANDARD ELEMENTS IN THE EXAMPLE MAP



## Required Elements:

-Survey boundary area is symbolized, with acreage.



-Control and wetland sampling ("paired") points are apparent.



-Unique identifiers (name and color) used for each aquatic feature, with acreage.



-Does not mention assertions of jurisdiction or not.









**QUESTIONS?**