# Minimum Standards for Aquatic Resource Delineations

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Sacramento District Regulatory Program Workshop

31 May 2018











### Delineation Report Minimum Standards

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/jd/minimum-standards/Minimum\_Standards\_for\_Delineation\_with\_Template-final.pdf



#### MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG

January 201

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, aguatic 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 Corps is responsible to conducting or verifying the delineation and determining which of the Agustic 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 board District office. Larly consultation may help identify potential concerns and result in a quicker permit decision.

The Definct has established minimum standards for defineation reports to insure consistency, and accuracy in the defineation of aquatic resources, which will minimize potential delays. The standards are based on years of experience conducting and verifying defineations, as well as the best practices of environmental consultance. Defineations 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 imited financial resources, and emergencies. The District with notify the requestor for defineation submittats 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 defineation has been conducted in accordance with the 1907 Corps of Engineers Wetlands Defineation Manual and appropriate regional supplement(s). The regional supplement(s) used must be identified. For ordinary high water mark (CHWM) defineations, a statement indentifying the use of the CHWM field guide must be included.



- Directions to the survey area.
- Contact information for the applicant(s), property owner(s), and agent(s)
- A nametive describing all aquatic resources at the site and an explanation for the mapped boundaries, especially for resources containing complex transition zones. If the site contains resources that meet one or two webland criteria or do not exhibit a clear CHWM, describe the rationale for not defineating these features. Examples microide erosonal features, upland swales, and other upland greas that appear "well" on satellite or serial imageny.
- The total acreage of the survey area.
- Date(s) field work was completed.
- A table listing all aquatic resources. The table will include the name of each aquatic resource, its Cowardin type, acreage, and location (latitude/longitude). For linear features, the table must show both acreage and linear feet.
- A description of existing field conditions. The field condition description may include current land use, lood/drought conditions, imgation practices, modifications to the site, and any characteristics considered altopical.
- A discussion of the frightology at the site, including all known surface or subsurface sources, drainage gradients, surface water connections to the nearest traditional navigable waterway or indestate water, and any potential influence for manmade water sources, such as impation. The discussion should also identify the nearest "blue-line" waterway or other feature found on the most proport USCS map.
- If remote sensing was used in the delineation, provide an explanation of how it was used and include the name, date and source of the tools used and copies of applicable maps/photographs.
- A discussion of plant communities and habital types present at the sile and a list of the scientific name, common name, and wetland indicator status of all plants.
- Soil descriptions, soil map(s), and a discussion of hydric soils or soils with hydric inclusions at the site.
- Any observed or documented interstate or foreign commerce associated with aquatic resources found on the site, specifically recreation or other use by interstate or foreign travelers, sale of fish or shellfish in interstate or foreign commerce, and use by industries operating in interstate or foreign commerce.

U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT, 1925 J ST., SACRAMENTO, CA 95614 SYMMODIL STOLEN





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#### Useful Links

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Aquatic Resources Delineation

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Letters of Permission

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Mitigation

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Cultural Resources

Tribal Consultation

Environmental Impact Statements

Clean Water Act Section 404 Exemptions

Section 214 of WRDA

Six County Aquatic Resources

### The Regulatory Mission

The Department of the Army's Regulatory Program is one of the oldest in the federal government. Initially, it served a simple purpose: to protect and maintain the navigable capacity of the nation's waters. Changing public needs, evolving policy, court decisions and new statutory mandates have changed several aspects of the program including its breadth, complexity and authority.

The U.S. Army Corps of Engineers, through the Regulatory Program, administers and enforces Section 10 of the Rivers and Harbors Act of 1899 (RHA) and Section 404 of the Clean Water Act (CWA). Under RHA Section 10, a permit is required for work or structures in, over or under navigable waters of the United States. Under CWA Section 404, a permit is required for the discharge of dredged or fill material into waters of the United States. Many waterbodies and wetlands in the nation are waters of the United ubject to the Corps' regulatory authority.

The Regulatory Program is committed to protecting the Nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the Nation's waters, including wetlands



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### Our Commitment to Public Service

Public Service is a Public Trust. We, as Corps Regulators, Must Earn This Trust, and to Keep This Trust,





### US Army Corps of Engineers

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#### Aquatic Resources Delineation

The Corps of Engineers receives thousands of requests each year to perform aquatic resources delineations for potential applicants for permits under Section 404 of the Clean Water Act.

Due to limited staff and resources, response time can be several months or longer.

To expedite this process, the District encourages applicants to use consultants to conduct preliminary wetland delineations, especially for large and/or complex areas.

Delineations, which meet our minimum standards may then be submitted to the District for review and verification.

- Madorial Welland Plant List (NWPL)
- Minimum Standards for Acceptance of Aquatic Resources Delineation Reports
- Updated wap and Braning Standards for the Seath Facility Division Regulatory Program
- · List of Wetland Consultants

#### Aquatic Resource Upload Sheet

A completed copy of the Aquatic Resources Excel spreadsheet, found in the ZIP archive linked below, is required by the Sacramento District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports. This spreadsheet facilitates efficient and accurate data entry of the aquatic resources into the Corps' database. The spreadsheet contains validation tools to ensure accuracy of the data before submitting to the Corps. Performing the validation upfront will alleviate the need for back-and-forth correspondence between the requester and the Corps to correct any possible errors in the data.

To run the validation tool, first enter all data in the appropriate columns and tabs. Ensure that that for each aquatic resource, the amount field contains a value greater than zero. If data is copied into the worksheet using the Paste Tool, ensure that you paste only the values, as other paste methods can alter the format and cause the validation to fail. Once you have completed entering the data and have saved the document as a XLSM file, click the gold shield at the top of the workbook window. The tool has a tool-tip showing "Validate Worksheets." After clicking this button, validation of data is performed and any possible errors are added to the Validation tab. This tab is opened after the process is complete to allow the user to see the output. The validation output includes the tab (data type), column, and cell for where the possible error was found and a brief explanation of the issue. The majority of the validation checks are captured in the Rules tab of the workbook.

If you encounter any issues in using the validation tool or the new workbook, or if you have any questions, please contact your local Point of Contact, who can be found using the interactive map available on our Contact Your Local Office page.

· Aquatic Resources Excel Spreadsheet





### Minimum Standards

- New as of January 2016
- Necessary due to limited staff and resources
- Designed to improve quality and consistency of delineations







### What are the minimum standards?

- A cover letter requesting a jurisdictional determination (or a delineation verification)
- A signed statement <u>from property owner(s)</u> allowing Corps personnel to enter the property and collect samples







#### REQUEST FOR AQUATIC RESOURCES DELINEATION VERIFICATION

#### OR JURISDICTIONAL DETERMINATION

A separate jurisdictional determination (JD) is not necessary to process a permit. An Approved Jurisdictional Determination (AJD) is required to definitively determine the extent of waters of the U.S. and is generally used to disclaim jurisdiction over aquatic resources that are not waters of the U.S., in cases where the review area contains no aquatic resources, and in cases when the recipient wishes to challenge the water of the U.S. determination on appeal. Either an Aquatic Resources Delineation Verification or a Preliminary Jurisdictional Determination (PJD) may be used when the recipient wishes to assume that aquatic resources are waters of the U.S. for the purposes of permitting. In some circumstances an AJD may require more information, a greater level of effort, and more time to produce. If you are unsure which product to request, please speak with your project manager or call the Sacramento District's general information line at (916) 557-5250.

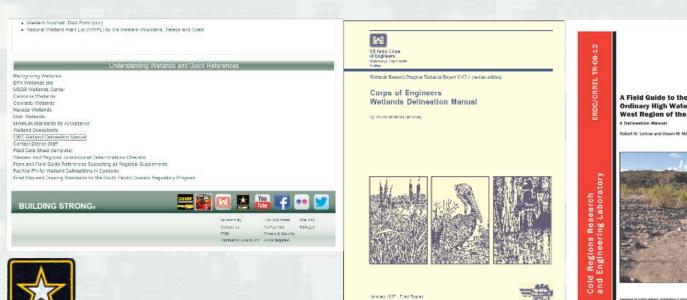
I am requesting the product indicated below from the U.S. Army Corps of Engineers, Sacramento District, for the review area located a

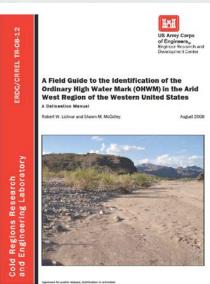
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State: Zip: Section: Township: _	Range:
Latitude (decimal degrees): Longitude (decimal	degrees): The
Street Address: Zip: Section: Township: Latitude (decimal degrees): Longitude (decimal approximate size of the review area for the JD isac_ac_	res. (Please attach location map)
· · · · · · · · · · · · · · · · · · ·	
Choose one:	Choose one product:
I own the review area	OI am requesting an Aquatic Resources Delineation Verification
I hold an easement or development rights over the review area	OI am requesting an Approved JD
OI lease the review area	ol am requesting a Preliminary JD
I plan to purchase the review area	OI am requesting additional information to inform my decision
I am an agent/consultant acting on behalf of the requestor	about which product to request
O Other:	·
Reason for request: (check all that apply)	
need information concerning aquatic resources within the review	area for planning purposes
intend to construct/develop a project or perform activities in this	
resources.	review area willon would be designed to avoid all aquallo
Intend to construct/develop a project or perform activities in this	review area which would be designed to avoid those aquatic
resources determined to be waters of the U.S.	
Intend to construct/develop a project or perform activities in this	review area which may require authorization from the Corps: this
request is accompanied by my permit application.	
I intend to construct/develop a project or perform activities in a na	vigable water of the U.S. which is included on the district's list of
navigable waters under Section 10 of the Rivers and Harbors A	
My lender, insurer, investors, local unit of government, etc. has in	dicated that an aquatic resources delineation verification is
inadequate and is requiring a jurisdictional determination.	
I intend to contest jurisdiction over particular aquatic resources ar	nd request the Corps confirm that these aquatic resources are or
are not waters of the U.S.	
believe that the review area may be comprised entirely of dry lar	nd.
Other:	=
Attached Information:	
Maps depicting the general location and aquatic resources within	the review area consistent with Man and Drawing Standards for
the South Pacific Division Regulatory Program (Public Notice F	
	ices-and-References/Article/651327/updated-map-and-drawing-
standards/)	and Hororonocon Habita Oct 10217 apacted map and drawing
Aquatic Resources Delineation Report, if available, consistent with	h the Sacramento Dietrict's Minimum Standards for Acceptance
	Title dadramento bistrict's Minimum Standards for Acceptance
(Public Notice January 2016, http://l.usa.gov/1V68IYa)	·
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[Public Notice January 2016, <a href="http://fu.sa.gov/1/68INa">http://fu.sa.gov/1/68INa</a> ) By signing below, you are indicating that you have the authority, or a such authority, to and do hereby grant Corps personnel right of entra affirmation that you possess the requisite property rights for this req "Signature: Data Name: Company Address: Company Address: Company Address: Company Address: Email: Suthorities: Rivers and Histors Act. Section 10, 33 USC 403. Clean Water Act. Section 404, 33 USC program of the US. Army Corps of Engineers. Final Rule for 33 CFR Parts 320-323. Customer of the US. Army Corps of Engineers. Final Rule for 33 CFR Parts 320-323.	are acting as the duly authorized agent of a person or entity with y to legally access the review area. Your signature shall be an uest on the subject property.  e: name: 1344. Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413. Regulator, which is the whether there are any aquatic resources within the project area subject to federal jurisdiction, and local dovernment agencies, and the oublic, and may be made available as part of a bubblic.
Chublic Notice January 2016, <a href="http://fi.usa.gov/1/68INa">http://fi.usa.gov/1/68INa</a> )   Sy signing below, you are indicating that you have the authority, or a such authority, to and do hereby grant Corps personnel right of entraffirmation that you possess the requisite property rights for this req "Signature:	are acting as the duly authorized agent of a person or entity with y to legally access the review area. Your signature shall be an uest on the subject property.  e: name: 1344. Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413. Regulator, which is the whether there are any aquatic resources within the project area subject to federal jurisdiction, and local dovernment agencies, and the oublic, and may be made available as part of a bubblic.





- The delineation must be conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual and appropriate regional supplement
- For ordinary high water mark delineations (waters other than wetlands), a statement identifying the use of the OHWM field guide must be included (if applicable)







- Directions to survey area
- Contact information for the applicant(s), property owner(s), and agent(s)
- Total acres of survey area
- Date field work was completed





- A narrative describing all aquatic resources on site and an explanation for the mapped boundaries; especially for resources containing complex transition zones.
- If the site contains resources that meet only one or two wetland criteria or no not exhibit a clear OHWM, describe the rationale for <u>not</u> delineating these features
- A table listing all aquatic resources



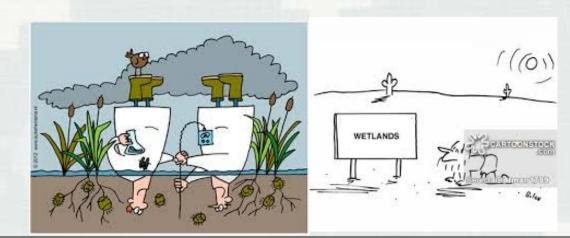


- A description of existing field conditions
- A discussion of the hydrology at the site
  - ► All known surface/subsurface water sources/drainage gradients;
  - Surface water connections to the nearest traditional navigable water or interstate water;
  - ► Any potential for man-made water sources, such as irrigation;
  - ► Identify the nearest "blue-line" waterway or other feature found on the most recent USGS map.





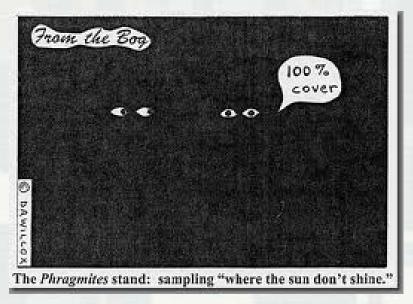
- A discussion of plant communities and habitat types present at the site
- Soil descriptions, soil map(s), and a discussion of hydric soils or soils with hydric inclusions at the site
- Any observed or documented interstate or foreign commerce associated with aquatic resources at the site







If remote sensing was used in the delineation, provide an explanation of how it was used and include the name, date and source of the tools used and copies of applicable maps/photographs







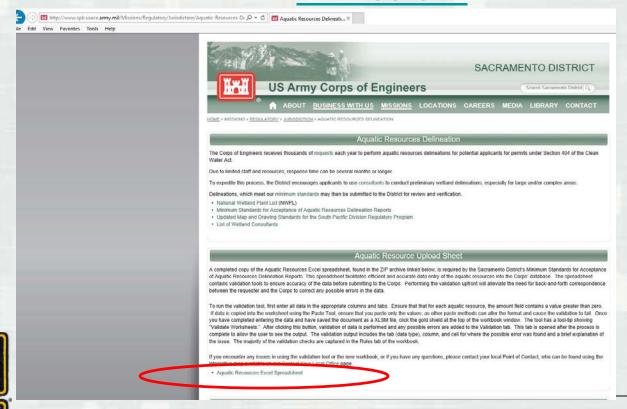
- A site location map on a 7.5-minute USGS quadrangle. The map must provide the name of the USGS quadrangle, Section, Township, Range, the UTM or latitude and longitude
- A map of all delineated aquatic resources ("Aquatic Resources Delineation Map") in accordance with the Final Map and Drawing Standards for the South Pacific Division Regulatory Program (Mapping Standards) and showing the following:
  - ► All aquatic resources delineated must be clearly shown on the map
  - ▶ At least one set of paired data points, documented in data forms, for each aquatic resource or complex. The paired data points must be located close to the delineated boundary
  - ► A reference block that identifies the site or project name, individual(s) who conducted the delineation, date of the map, and date(s) of any revisions
  - See Sacramento District Map and Drawing Standards
     (<a href="http://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/651327/updated-map-and-drawing-standards/">http://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/651327/updated-map-and-drawing-standards/</a>)





A completed copy of the Aquatic Resources Excel spreadsheet must be submitted. The current version of the spreadsheet can be found at the following website:

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/upload/ORM\_AR\_Upload.zip?ver=2017-05-08-114136-027





- A description of the methods used to survey the aquatic resource boundaries
- Completed data forms including all essential information to make a decision.

Project/Site:		City/County:		Sampling Date:
Applicant/Owner.				Sampling Point
Investigator(s):				
Landform (hillside, terrace, etc.):				Slope (%):
Subregion (LRR): Lat		Long:	· · ·	Datum:
Soll Map Unit Name:			NWI class	ification:
Are climatic / hydrologic conditions on the	site typical for this time of ve	r? Yes	No (If no. e	xolain in Remarks.)
Are Vegetation, Soil, or Hyd	niony significantly dish	irhed? Are "Normal (	ircumstances" present	? Yes No
Are Vegetation, Soil, or Hyd	niogy naturally problem	natic? (If needed ex	niain any answers in R	emarks )
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SUMMARY OF FINDINGS - Atta	on site map snowing s	ampling point lo	cations, transects	s, important reatures, e
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Hydric Soll Present? Yes	No X	within a Wetland	7 Yes	No X
Wetland Hydrology Present? Yes	No X			
Remarks:				
1				
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3.			Total Number of Dor	
4			Across All Strata:	minant Species(E
		tal Cover	Percent of Dominant	Species That
Sapling/Shrub Stratum (Plot size:	)		Are OBL, FACW, or	FAC:(A
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5.			FACW species	x2-
· ·	-To	tal Cover	FAC species	x3-
Herb Stratum (Plot size:	)		FACU species	x4
1.			UPL species	x 5 - (E
3.			Prevalence Index	- B/A -
4.				
5.			Hydrophytic Veget	ation indicators:
6.			Dominance Test	t 16 >50%
7.			Prevalence Inde	x is ≤3.0° daptations¹ (Provide supportin
a	-To	tal Cover		napiations (Provide supporting rks or on a separate sheet)
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2			be present, unless d	Isturbed or problematic.
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Remarks:	A COVER OF BROOK CO		110001117 100	
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Hydric Soll Indi	cators: (Applicabl	le to all LR	Rs, unless oth	erwise n	oted.)			Indicato	rs for Probler	matic Hydric S	olis <sup>3</sup> :
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Histic Epiper	don (A2)		Stripped	Matrix (SE	5)			2 cm	Muck (A10) (	LRR B)	
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Restrictive Lav	or (if observed):										
Type:	er (ir observed).										
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Digital data for the site, aquatic resource boundaries, and data point locations must be provided in a geographic information system (GIS) format, with ESRI Shape-files being the preferred format. If GIS data is unavailable or otherwise cannot be produced and the Corps determines that a site visit is necessary, the aquatic resource boundaries must be physically marked in the field with numbered flags or stakes



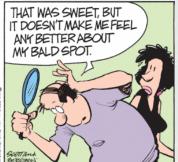


### Additional data sources

- USGS Topographic, soil survey reports, NWI Maps, NHD, and floodplain maps
- <u>Light Detection and Ranging (LiDAR)-</u> Remote sensing method that uses light in the form of a pulsed laser to measure ranges and generate precise,
   3D information about the shape of the Earth's surface
  - Limited due to cost and knowledge
- Historical Imagery to show various years of aerial photographs (Google Earth typically 1993-2015, UGS 1935-1980s)
  - Past land use
  - ▶ Trends/Changes
  - Help locating data points











# Minor Pitfalls

- Missing the Date and full legend on your map
- Not Showing a clearly defined study area boundary on the map
- Not putting the acreage of your study area boundary
- Not using unique Aquatic Resource feature names







# Potential Hold-Ups for Delineation Reviews

- Features observed via remote tools not adequately described in report;
- Not enough data points along complex boundaries;
- Ordinary high water mark widths not shown with corresponding measurement, in feet
- Data forms contain inconsistent information
- Sub-optimal sampling season/dry weather
- Difficult/problem situations (Chapter 5)



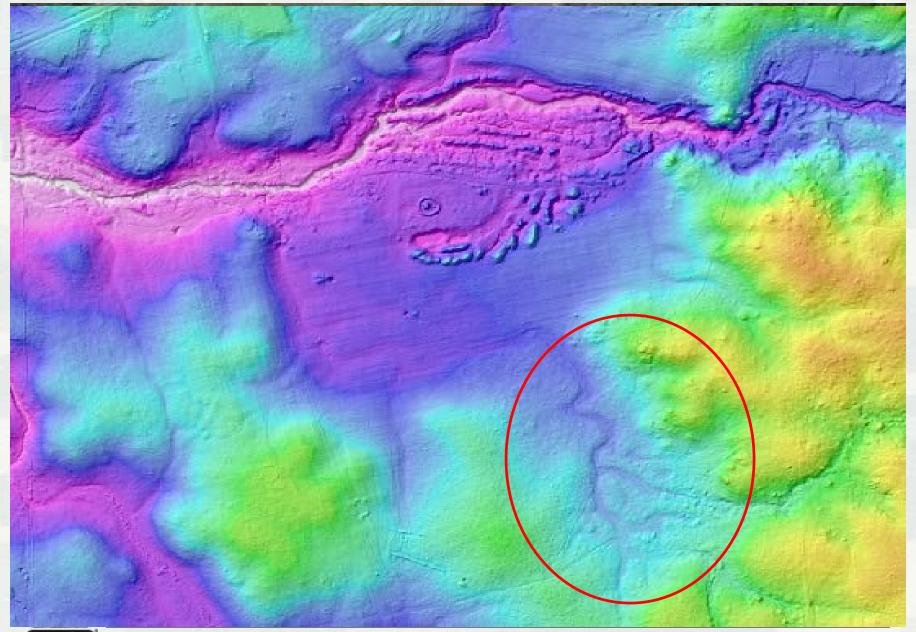


- Features observed via remote tools not adequately described in report;
  - Dark signatures on aerial photos (including historical aerials);
  - ▶ Valleys or low spots on topo maps;
  - ► NWI-mapped wetlands;
  - ► NHD-mapped drainages;
  - ► Hydric soil polygons;
  - ▶ Linear features;











- Not enough data points along complex boundaries:
  - ► At least one set of paired data points per feature or complex is required, however;
    - Rule of thumb: if the feature is large and the boundary is not uniform and clear based on aerial photography or other data, then additional data points should be considered.





- Ordinary high water mark widths not shown with corresponding measurement, in feet (see map and drawing standards, section 5f);
- Note: The Nevada-Utah section generally requires corresponding cross-section for each OHWM delineation.





- Data forms contain inconsistent information.
  - ▶ Vegetation:
    - 50/20 rule calculated incorrectly;
    - Indicator status incorrect
    - indicator status uses wrong land resource region;
    - Dominant species does not consider all strata
    - Unbalanced observations (e.g. 1% cover)

Project/Site:			City/County:		Sampling Date:
Applicant/Owner:					Sampling Point
investigator(s):			Section, Township, R		
Landform (hillside, terrace,	etc.);				Slope (%):
Subregion (LRR):	Lat		Long:		Datum:
Soll Map Unit Name:				NWI clas	
Are climatic / hydrologic co	nditions on the site typ	ical for this time of yea	r? Yes		
Are Vegetation . Soil	, or Hydrology	significantly distu	rbed? Are "Normal	Circumstances" preser	t? Yes No
Are Vegetation , Soil					
					s. important features. etc
			T	,	s, important reatures, etc
Hydrophytic Vegetation P	resent? Yes	No X	is the Sampled within a Wetian	Area	
Hydric Soll Present? Wetland Hydrology Prese		No X	within a Wetland	17 Yes	No_X
Remarks:	nt? Tes	NO_X_			
memarks.					
VEGETATION - Use	scientific names				
Tree Stratum (Plo	t stze:		ominant Indicator	Dominance Test w	
1 (Pio	t size)	% Cover S	pecies? Status	Number of Domina	
2				Are OBL, FACW, or	
3.				Total Number of Do	minant Species
4.				Across All Strata:	(8)
	Office of the control	та	tal Cover	Percent of Dominar Are OBL, FACW, or	nt Species That r FAC: (A/E
Sapilng/Shrub Stratum  1.	(Mot size:			Are OBL, FACIV, O	(AVE
2				Prevalence Index	worksheet:
а.			==	Total % Cover	of: Multiply by:
4				OBL species	x1
5.			al Cover	FACW species	x2
Herb Stratum (Plo	t stze:		al Cover	FACIL species	x4-
1.				UPL species	¥5-
2				Column Totals:	(A) (B)
3.				Prevalence Inde	x - B/A -
4					
6				Hydrophytic Vege Dominance Ter	
7				Prevalence Ind	
8.				Morphological a	Adaptations <sup>1</sup> (Provide supporting
		-To	tal Cover		arks or on a separate sheet)
Woody Vine Stratum		)			drophytic Vegetation1 (Explain)
1					soil and wettand hydrology must disturbed or problematic.
			ni Count		assurbed or problematic.
				Hydrophytic Vegetation	
% Bare Ground in Herb S	tratum	% Cover of Blotic Cr	ust	Present? Ye	No_X
Remarks:					





- Data forms contain inconsistent information.
  - ► Soil:
    - Texture column left blank
    - Soil indicator checked as being met, but not supported by description;
    - Description supports indicators that are not checked;

roffle Description: (Describe to the dept	h needed to document the indicator or	r confirm the absence of Indicators.)
leoth Matrix	Redox Features	
nches) Color (moist) %	Color (moist) % Type1 Loc	Texture Remarks
		<del></del>
Type: C-Concentration, D-Depletion, RM-		
ydric Soll Indicators: (Applicable to all L		Indicators for Problematic Hydric Solis <sup>5</sup> :
Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (LRR C)
Histic Epipedon (A2)	Stripped Matrix (S5)	2 cm Muck (A10) (LRR B)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Iron-Manganese Masses (F12) (LRR D)
Hydrogen Suffide (A4)	Loamy Gleved Matrix (F2)	Reduced Vertic (F18)
Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)	Red Parent Material (F21)
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)	Very Shallow Dark Surface (F22)
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	Redox Depressions (F8)	Other (Explain in Remains)
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)		
Sandy Gleyed Maltrix (S4) Indicato	rs of hydrophytic vegetation and wetland	hydrology must be present, unless disturbed or problematic.
Depth (inches):		Hydric Soll Present? Yes No X
	gional Supplement Version 2.0 to include	the NRCS Field indicators of Hydric Solis, Version 8.0, 2016.
his data sheet is revised from Arid West Re	gional Supplement Version 2.0 to include	the NRCS Field Indicators of Hydric Solis, Version 8.0, 2016.
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his data sheet is revised from Arid West Re YDROLOGY /etland Hydrology Indicators:		the NRCS Field indicators of Hydric Solls, Version 8.0, 2016.  Secondary indicators (minimum of two requires
his data sheet is revised from Arid West Re YDROLOGY /etland Hydrology Indicators:		, · ·
his data sheet is revised from Arid West Re YDROLOGY Felfand Hydrology Indicators: finany Indicators minimum of one is require	ect, check all that apply)	Secondary Indicators (minimum of two required
his data sheet is revised from Arid West Re YDROLOGY Felland Hydrology Indicators: frimary Indicators: minimum of one is require Surface Water (Ari)	ect check all that apply) Sait Crust (811)	Secondary indicators (minimum of two required Water Marks (81) (Ritvertine)
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- Data forms contain inconsistent information.
  - ► Hydrology:
    - Field observations not consistent with checked indicators (e.g. water table present and observed at 6 inches but A2and A3 not checked).
    - Remarks does not account for sub-optimal sampling season.

Profile Description: (Describe to the depth	needed to document the indicator or	confirm the absence	of Indicators )
Deoth Matrix	Redox Features	COMMINI UID EDCONICO	or manualoru.
inches) Color (moist) %	Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>	Texture	Remarks
Type: C-Concentration, D-Depletion, RM+R tydric Soll Indicators: (Applicable to all LF			cation: PL=Pore Lining, M=Matrix. ors for Problematic Hydric Solis <sup>3</sup> :
Histosol (A1)	Sandy Redox (SS)		n Muck (A9) (LRR C)
Histic Epipedon (A2)	Stripped Matrix (S6)		n Muck (A10) (LRR B)
Black Histic (A3)	Loamy Mucky Mineral (F1)		-Manganese Masses (F12) (LRR D)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)		luced Vertic (F18)
Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)		Parent Material (F21)
1 cm Muck (A9) (LRR D)	Redox Dark Surface (F6)		y Shallow Dark Surface (F22)
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	Oth	er (Explain in Remarks)
Thick Dark Surface (A12)	Redox Depressions (F8)		
Sandy Mucky Mineral (S1)			
	s of hydrophytic vegetation and wetland I	lydrology must be pres	sent, unless disturbed or problematic.
Restrictive Layer (If observed):		1	
Type:			
	_	1	
Depth (inches):	gional Supplement Version 2.0 to include	Hydric Soil Preseithe NRCS Field Indica	
Depth (Inches):  Remarks:  This data sheet is revised from Arid West Reg			
Depth (Inches):  Remarks:  This data sheet is revised from Arid West Reg	gional Supplement Version 2.0 to include		
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- Sub-optimal sampling season/dry weather
  - Problematic hydrophytic vegetation due to seasonal conditions or drought;
  - ► Transient (short-lived) indicators of wetland hydrology)





### Continued...

### Weather and Site Condition Considerations:

- What time of year are you visiting the site?
- Consider recent rain events. Did it rain immediately before your site visit and how much has it rained?
- Has long-term precipitation been normal?
- Is the site irrigated?







# **Evaluating Normal Rain Fall**

### WETS tables

- USDA National Water and Climate Center (http://www.wcc.nrcs.usda.gov/climate/navigate\_wets.html)
- Analyze monthly precipitation data from >8,000 National Weather Service stations
- Based on a standard 30 years of rainfall data
- Provide monthly and annual thresholds for:

Below normal rainfall (lowest 3 years in 10) Above normal rainfall (highest 3 years in 10)







US Army Corps of Engineers.

Engineer Research and Development Center

Wetlands Regulatory Assistance Program

### Accessing and Using Meteorological Data to Evaluate Wetland Hydrology

Steven W. Sprecher and Andrew G. Warne

April 2000







### CALIFORNIA

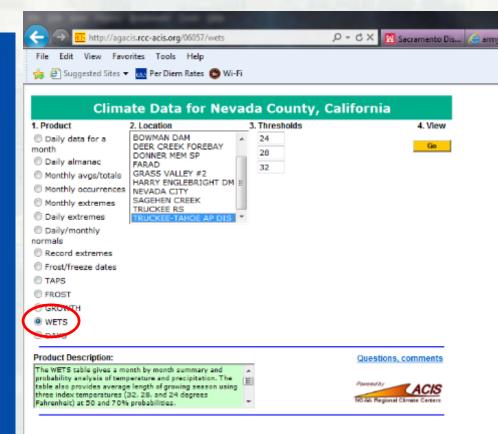
COUNTIES and FIPS CODES

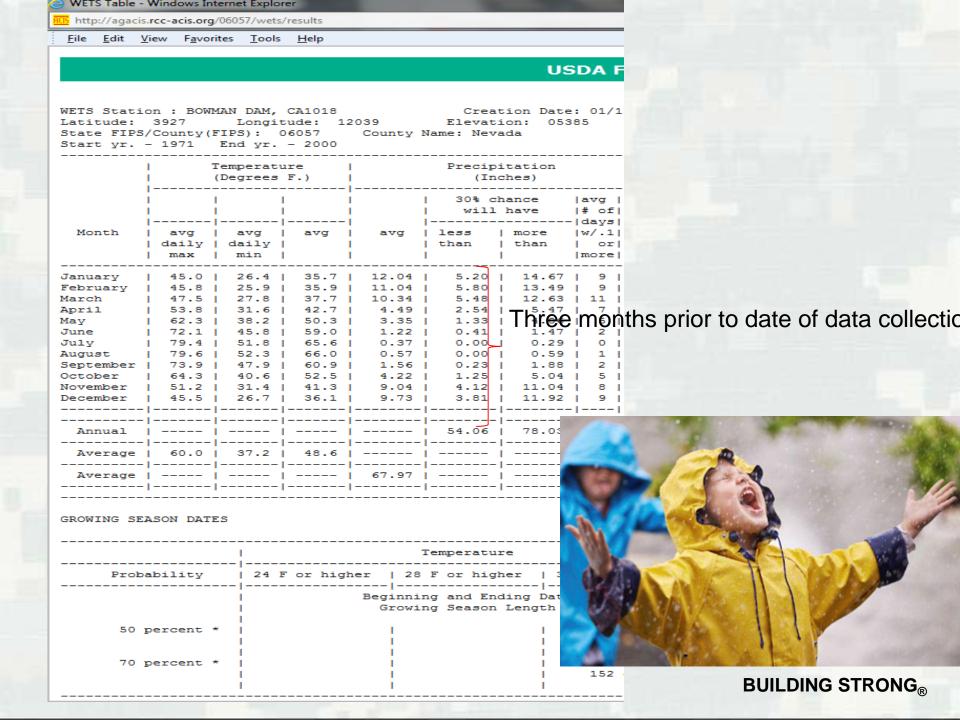


NATIONAL WEATHER SERVICE WESTERN REGION

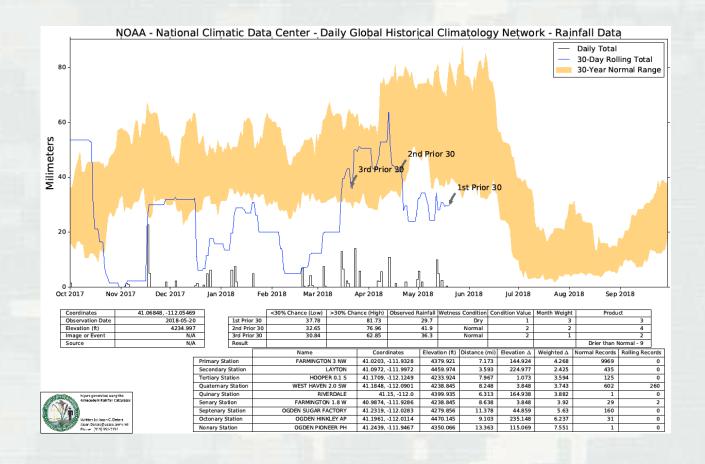








# Antecedent Rainfall







### Potential Hold-Ups for Delineation Reviews

- Difficult/problem situations (Chapter 5):
  - ▶ Vegetation:
    - Temporal shifts in vegetation (seasonal/drought)
    - Areas affected by grazing
    - Managed plant communities
  - ► Soils:
    - Moderately to very strongly alkaline soils
       (https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/survey/class/data/?cid=nrcs142p2\_053587)
    - Volcanic ash
    - Seasonally ponded soils
  - ► Hydrology:
    - Site visits during the dry season
    - Periods with below-normal rainfall
    - · Drought years
    - Years with unusually low snowpack

LOCATION FORD
Established Series
Rev. JMW-DLT-MJD-JVC

#### FORD SERIES

The Ford series consists of moderately deep to a petrocalcic horizon, somewhat poorly drained soils that formed in alluvium and lacutstime deposits derived from limestone, quartzite, and gneiss. Ford soils are on low lake terraces. Slopes are 0 to 1 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 48 degrees F.

TAXONOMIC CLASS: Coarse-loamy, mixed, superactive, mesic Petrocalcic Palexerolls

TYPICAL PEDON: Ford loam--pastureland. (Colors are for dry soil unless otherwise noted.)

A=0 to 9 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; strongly efferevescent; 11 percent calcium carbonate equivalent; very strongly alkaline (pH 9.9); clear smooth boundary. (3 to 12 inches thick)

Bk1.-9 to 16 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; violently effervescent; 18 percent calcium carbonate equivalent; very strongly alkaline (pH 9.4); clear smooth boundary. (5 to 12 inches thick)

Bk2.–16 to 34 inches; pinkish gray (7.5YR 6/2) fine sandy loam, brown (7.5YR 5/2) moist; massive; slightly hard, very finble, slightly sticky and nonplastic; violently effervescent; 15 percent calcium carbonate equivalent; very strongly alkaline (pH 9.1); abrupt smooth boundary (0 to 20 inches thick)

Bkm.-34 to 44 inches; light gray (10YR 7/2) cemented material, grayish brown (10YR 5/2) moist, weakly to strongly cemented by secondary carbonates; hard and brittle; violently effervescent; 17 percent calcium carbonate equivalent; strongly alkaline (pH 8.8); abrupt wavy boundary. (6 to 12 inches thick)

B'k-44 to 52 inches; pinkish gray (7.5YR 6/2) fine sandy loam, brown (7.5YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; violently effervescent; 17 percent calcium carbonate equivalent; very strongly alkaline (pH 9.2); abrupt smooth boundary. (7 to 10 inches thick)

B'km-52 to 60 inches; pale brown (10YR 6/3) cemented material; moderately cemented by secondary carbonates; strongly effervescent.



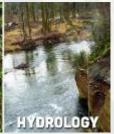


### Potential Hold-Ups for Delineation Reviews:

- Difficult Wetland Situations in the Arid West (Sept 2008, Regional Supplement to USACE Delineation Manual)
- Lacking one factor:
  - Problematic Hydrophytic Vegetation (grazing, managed plant communities, riparian areas, sparse and patchy vegetation, etc.)
  - ▶ Problematic Hydric Soils
  - Wetlands that Periodically Lack Indicators of Wetland Hydrology
- Disturbance, normal seasonal or annual variability, or permanent changes
- Essentially, lacking one of the three criteria does not exclude the Aquatic Resource from being a wetland
  - ► Example: Arid West Regional Supplement, Chapter 5 (page 104): "If the site visit occurred during the dry season on a site that contains hydric soils and hydrophytic vegetation and no evidence of hydrologic manipulation (e.g., no drainage ditches, dams, levees, water diversions, etc.), then consider the site to be a wetland."











## SPD Irrigated Wetlands Delineation Procedures (12510-SPD)

- Goal: Establish and document normal circumstances
- Absent irrigation, irrigated areas would revert to all wetlands, no wetlands, or a mixture of wetlands and non-wetlands;
- Option 1: Discontinue irrigation and monitor site hydrology;
- Option 2: Continue irrigation; this increases the likelihood of falsepositive for hydrology



12510-SPD SOUTH PACIFIC DIVISION REGULATORY PROGRAM WETLANDS DETERMINATION AND DELINEATION PROCEDURES FOR IRRIGATED LANDS



Table of Contents

To provide guidance for determining whether, and to what extent, wetlands occurring on irrigated land would persist in the absence of irrigation and meet the definition of wetlands under the 1987 Corps of Engineers (Corps) Wetland Delineation Manual (1987 Manual) and the

This process applies to wetland determinations or delineations made or verified by South Pacific Division (SPD) subordinate Districts on irrigated land. This includes, but is not limited to, areas

This guidance is intended solely to address identifying wetlands that would exist absent irrigation. It is not intended to address the jurisdictional status of any such wetlands, issues

Current Approved Version: 10/31/2012. Printed copies are for "Information Only." The controlled version resides on the SPD OMS SharePoint Portal.

PD QMS 12510-SPD Irrigated Wetlands Delineation Procedures 1 of 12





# Questions?





