

EXPLANATION FOR WETLAND PERMIT DATA

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This explanation describes data from the U.S. Army Corps of Engineers' (Army Corps) permitting database obtained through Freedom of Information Act (FOIA) requests. The Utah Geological Survey (UGS) is required to publish these data, pursuant to Utah House Bill 118 – Wetland Amendments (2022). These data are minimally processed from the original data received from the Army Corps, and the UGS does not make any claims to the accuracy or completeness of the data. The data include information from permit applications received by the Army Corps starting in January 2012 and through the most recent FOIA request date.

DATA OVERVIEW

We are presenting the data from the Army Corps in three files to make interpretation of the impacts to and compensatory mitigation for Utah's aquatic resources possible. The original data from the Army Corps was delivered as a single flat file with over 70 columns and a row for each impact and mitigation action. One project listed under a single permit ID (DA_Number) can have many impacts and mitigation records. We split the data into **Projects**, **Impacts**, and **Mitigation** tables. The projects table has data summarized by permit ID, including the extent of impacts and extent of mitigation activities. The impacts table has comprehensive data on the extent, duration, and type of impacts to aquatic resources. The mitigation table details the extent and type of compensatory mitigation activities carried out for each project. Most of the fields in these tables are extracted directly from the Army Corps data file, but we have modified or added fields to facilitate summarization and better understanding of the data. We added new fields to the projects table to provide project-wide summaries of information such as the total number and acres of impacts and mitigations for each project. The "permit_data_metadata.xlsx" file defines all fields in the dataset, whether the source for the field is directly from the original data, new, or modified.

DETAILED DATA DESCRIPTION

Projects Table

The projects table has one record per unique project number ("DA_Number"). This table includes basic descriptive information about each project, including the county, waterway, and watersheds associated with the project. The file also contains new summary fields calculated by the UGS to show the overall project impacts and mitigation. Note that summary information will exclude any impacts or mitigation on a project that was approved before January 2012, the date of our earliest data request. Data on impacts are separated into impacts that required mitigation and those that did not. Mitigation is reported separately as acres of required mitigation and the number of mitigation credits purchased from a mitigation bank or in-lieu-fee wetland mitigation program.

Identification Fields (DA_Number, Project_Name, Project_Worktype)

The DA_Number is a unique identifier that is assigned to each project. A single project may require multiple permits, occur over more than one year, and include one or more impacts and mitigation sites. Project names and work types are brief descriptions provided by applicants for the type of work that permitting is sought for.

Location Fields (State, County, GNIS_Waterway, HUC8, HUC10)

State, county, waterway, river sub-basin, and watershed where permitted projects take place.

Impacts and Mitigation Fields (Num_Impacts_No_Mitigation, Num_Impacts_Mitigation, Num_Mitigation_Records)

Summary fields calculated by the UGS based on data in Impacts and Mitigation tables. These fields summarize the number and extent of impacts, whether the impacts required compensatory mitigation, and the number of mitigation records per project.

Impacts Table

The impacts file contains records from the Army Corps database related to aquatic resource impacts, including the permit type obtained by the applicant, permit data, impact location, resource type impacted, and acres of impact. The following is an explanation of key fields of interest to data users out of the 59 fields included in the data table.

Permit Details (Action_Type, PNN, Nationwide_Permit_Type)

The permit data included comes from applications for five different types of permits (Action_Type) the Army Corps issues to regulate impacts to aquatic resources. Depending on the type of activity and the extent of impacts, permittees may seek a Letter of Permission (LOP), Nationwide Permit (NWP), Programmatic General Permits (PGP), Regional General Permits (RGP), or Standard Permit (SP). NWP, RGP, and PGP are all classified as general permits, which are issued for projects that will only have minimal adverse effects. These permits are valid for five years and then must be reissued to remain in effect. NWPs are issued nationally to streamline authorization of projects such as commercial developments, utility lines, or road improvements that have only a small impact on aquatic resources. RGPs are similar to the NWP, but are issued for a smaller geographic area. PGPs are based on existing state, local, or other programs to avoid duplication of that program. LOPs and SPs are both individual permits. SPs are issued for projects with more substantial impacts and involve more agency and public review, including a formal public comment period. LOPs are an abbreviated version of this process that still involves some coordination with public entities but without the public comment period. The Permit Name and Number (PNN) field lists the specific permit type for the general permits. All the PGPs in Utah are associated with minimal impact activities permitted under the State of Utah's [Stream Alteration Program](#). Each NWP falls into one of 57 permitted activities, which is listed in the Nationwide_Permit_Type field.

Permitted activities (Worktype1-3)

The work type fields indicate the type of work associated with each impact. The Army Corps work type data is hierarchical in nature with up to three additional levels of detail nested under the ten main types. The main types include 1) Structure, 2) Dredging, 3) Transportation, 4) Development, 5) Other, 6) Mitigation, 7) Agriculture, 8) Mining and Drilling, 9) Energy Generation, and 10) Aquaculture.

Impacts to aquatic resources (Impact_Perm_Loss, Final_Resource_Type)

The Impact_Perm_Loss field indicates which impacts were considered permanent losses. The UGS created a field called 'Final_Resource_Type' that categorizes the types of resources that are impacted through permitted actions. This field combines data from multiple fields that were not recorded in a consistent manner over the period of record. The UGS developed three broad classes of aquatic resources: stream (noted as river/stream in Resource_Type or a Riverine System Cowardin Class),

wetland (Non-Tidal Wetland, Tidal Wetland, or a Cowardin palustrine system vegetated wetland), or waterbody (Lake, Pond, Cowardin lacustrine system wetlands and palustrine open water).

Quantified impacts to aquatic resources (Auth_Fill_Acres, Auth_Linear_ft, Auth_Fill_Length_Ft, Auth_Fill_Width_Ft)

Impacts were quantified in a variety of ways over the period of record, but are most consistently presented as acres of authorized fill impacts (Auth_Fill_Acres). In some cases, the Auth_Fill_Length_Ft and Auth_Fill_Width_Ft are helpful in quantifying impacts to linear resources like streams. Prior to 2017, linear resource impacts were primarily recorded in the Auth_Linear_Ft field.

Mitigation requirements (Comp_Mit_Rqd, Mit_Perm_Resp)

Compensatory mitigation offsets unavoidable adverse impacts to aquatic resources through actions such as restoring, creating, enhancing, or preserving wetlands, streams, and other aquatic resources. Small impacts (<0.1 acres), impacts only resulting in temporary loss, and impacts allowed under certain permits, including the PGP, RGP, and some of the NWPs, rarely require mitigation. When mitigation is required, the mitigation can be carried out by the permittee (permittee-responsible mitigation) or by a third party through the purchase credits from programs set up to mitigate for aquatic resource impacts, either a mitigation bank or an in-lieu-fee mitigation program.

Impact timing and location: Date (Impact_Name, End_Date, Proj_Latitude, Proj_Longitude)

All impact actions in a project are listed with a name, the date of Army Corps approval, and the coordinates of where the impact occurred. These data are helpful in analyzing temporal and spatial trends in impacts.

Mitigation Table

The mitigation table contains records from the Army Corps database related to mitigation that was carried out to compensate for impacts to aquatic resources, including what entity carried out the mitigation, what type of mitigation was carried out, and the mitigation acres or credits purchased. Note that some fields are the same as fields contained in the impacts data. Within the 48 fields included in the table, the following fields are of primary interest:

Mitigation timing and location (Mitigation_Name, End_Date, Proj_Latitude, Proj_Longitude)

All mitigation actions in a project are listed with a name, the date the mitigation action was approved the by Army Corps, and the coordinates of the mitigation activities. These data are helpful in analyzing temporal and spatial trends in compensatory mitigation.

Mitigation responsibility (Mitigation_Type)

The three options for compensatory mitigation of permitted impacts are mitigation banks, in-lieu fee programs, and permittee-responsible mitigation. A mitigation bank is authorized to provide compensation for future aquatic resource impacts by developing a mitigation site before the impacts occur. Permittees can then purchase credits from the mitigation bank instead of having to develop their own mitigation. In-lieu fee programs are authorized to collect fees from (i.e., sell credits to) permittees that need mitigation and pool those fees to establish future mitigation sites. Permittee-responsible mitigation occurs when the permittee develops mitigation rather than using an existing program. Permittee-responsible mitigation actions are further categorized as taking place at the same location as the impact (on-site) or off-site.

