

Common elements of the Alaska Hydrography Database

v2.7 – July 17th, 2017

Hydrography (surface water mapping) updates in Alaska are accomplished through a stewardship model known as the Alaska Hydrography Database or AK Hydro. AK Hydro has two goals: first, update the NHD in Alaska to national high-resolution standards and second, meet the surface water mapping needs of Alaskan agencies. AK Hydro streamlines the task of updating the NHD by centralizing NHD maintenance services within a single group for all of Alaska. In doing so, the numerous agencies participating in surface water mapping across the state no longer need to run the complex NHD GeoConflation or update tools. Instead, partners and editors provide updated hydrography data that meet statewide and national standards to AK Hydro. Data stewards at AK Hydro then use the NHD Update and GeoConflation tools to submit updates back to the NHD. This workflow ensures that the updates that are happening throughout the state make their way into the NHD in a timely and consistent manner, and allows for partners throughout the state to include important and necessary attributes with their mapped water data.

The purpose of this document is to describe the common data elements that are included in the statewide Alaska Hydrography Database (AK Hydro).

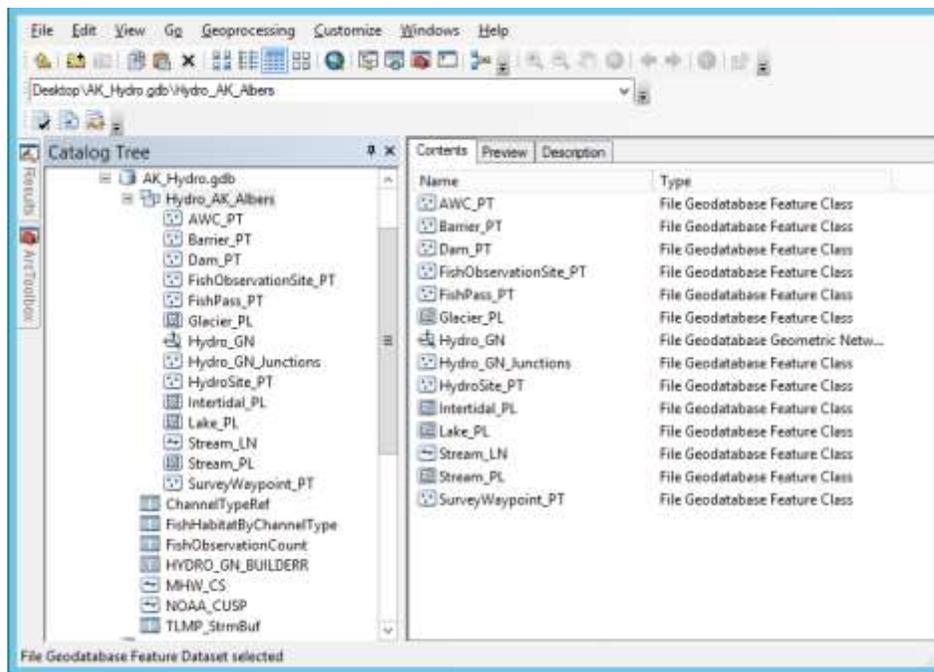
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Overview of AK Hydro content

The AK Hydro database schema contains a variety of hydrographic datasets and content related elements including:

- Thematic featureclasses containing the core suite (the most commonly used datasets) of hydrographic information
- Database tables (serving particular AK Hydro partner agency requirements) which contain reference information particular to core AK Hydro featureclasses
- A geometric network linking some of the core featureclasses
- Attribute domain and subtype information which control the range of available attribute values within the database



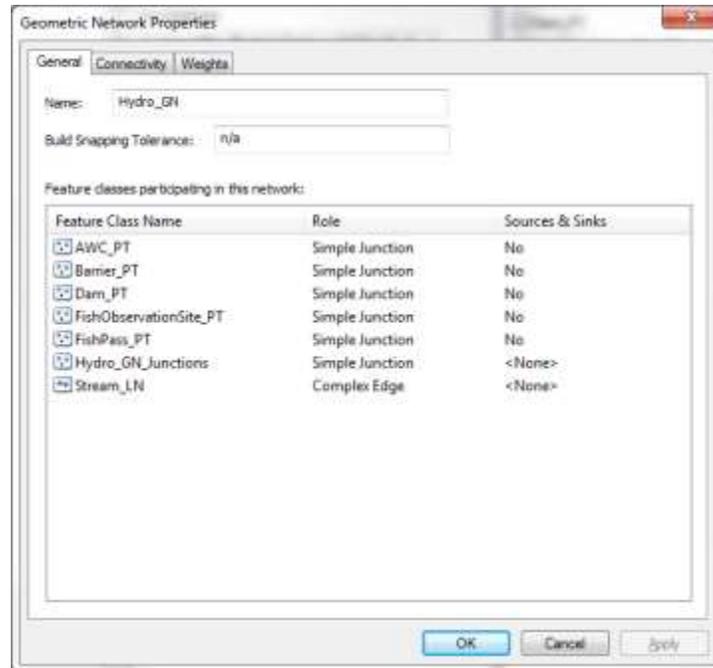
Hydro AK Albers Feature Dataset

The “Hydro_AK_Albers” feature dataset contains the core operational/transactional feature classes of the AK Hydro database. This feature dataset utilizes the NAD83 Alaska Albers projected coordinate system and ensures that all of the core AK Hydro geospatial content conforms to this spatial reference. Each of the feature classes residing in this feature dataset has a detailed description in the next section of this document.

Unlike the NHD, which combines like various types of thematic content into feature classes and sub-classifies the content by type, AK Hydro separates content into individual thematic feature classes. The core suite of AK Hydro feature classes includes:

- [AWC_PT](#) – point feature class
- [Barrier_PT](#) – point feature class
- [Dam_PT](#) – point feature class
- [FishObservationSite_PT](#) – point feature class
- [FishPass_PT](#) – point feature class
- [Glacier_PL](#) – polygon feature class
- [Hydro_GN](#) – geometric network
- [Hydro_GN_Junctions](#) – point feature class
- [HydroSite_PT](#) – point feature class
- [Intertidal_PL](#) – polygon feature class
- [Lake_PL](#) – polygon feature class
- [Stream_LN](#) – polyline feature class
- [Stream_PL](#) – polygon feature class
- [SurveyWaypoint_PT](#) – point feature class

The AK Hydro database also utilizes a geometric network, titled Hydro_GN within the Hydro_AK_Albers feature dataset, to maintain topologic and analytical integrity of feature classes including Barrier_PT, Dam_PT, FishObservationSite_PT, FishPass_PT, AWC_PT, Hydro_GN_Junctions and Stream_LN. The ability to perform network analyses is maintained by ensuring that each of these feature classes participate in the network. Essentially the network enforced relationship ensures that those point features are coincident with their associated Stream_LN features – this allows the point features to function as network nodes from which the network can be analyzed.



Feature classes within the Hydro AK Albers Feature Dataset

A detailed description of the feature classes and their attributes **currently** occurring within the AK_Hydro feature dataset is provided below.

AWC_PT

The AWC_PT layer (i.e. ScnAWC_PT, SeaAWC_PT, etc.) provides an abstract of the Anadromous Waters Catalog (AWC) point data which are used to specify the water bodies referred to in AS 16.05.871 for the protection of waters important for the spawning, rearing or migration of anadromous fishes. The points in this layer are not authoritative AWC content and, in some instances, have been moved from their original position so that they integrate with the AK Hydro stream and networked features – specifically, points within 10m of existing AK Hydro stream features have been snapped so they participate in the geometric network.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**X_COORD**” attribute indicates the X coordinate in Alaska Albers, meters.
- The “**Y_COORD**” attribute indicates the Y coordinate in Alaska Albers, meters.
- The “**LAT**” attribute indicates the latitude in decimal degrees.
- The “**LONG_**” attribute indicates the longitude in decimal degrees.
- The “**TYPE**” attribute provides the AWC convention used to describe the type of point.
- The “**QUAD**” attribute indicates the corresponding USGS 1:63,360 topo map quad name.
- The “**StreamCode**” attribute indicates the numerical codes assigned by ADF&G Anadromous Waters Catalog to streams occurring in the State’s AWC.
- The “**NAME**” attribute indicates the common name for streams where a name has been formally allocated and recorded.
- The “**SPECSTR**” attribute indicates species data associated with each point.
- The “**MTRS**” attribute indicates the Meridian, Township, Range and Section information associated with each point.
- The “**PLOTSYM**” attribute indicates the AWC symbology convention to be use with each point.
- The “**AWC**” attribute indicates how the record is categorized in relation the authoritative AWC content administered outside of AK Hydro – the range of values for this attribute is controlled by the “[AWC Status](#)” domain. While all of these points originate from the authoritative AWC, this attribute is included so agencies can note features they want to draw AWC administrators’ attention to.
- The “**Comments**” attribute contains any notable remarks that the editor wants communicated with a particular record.
- The “**Enabled**” attribute indicates whether or not a record participates in the Hydro_GN geometric network. The “Enabled” attribute occurs by default in each feature class that participates in the geometric network.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme

- The “**SHAPE**” attribute is a system default that identifies the type of feature geometry for each record.

Barrier_PT

The Barrier_PT layer describes the locations and attributes of bedrock waterfalls that are potential barriers to fish passage. Waterfalls less than 1 meter are not mapped nor are those caused only by wood or debris jams.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.
- The “**SourceAgency**” attribute indicates the agency responsible for changing a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**DataSource**” attribute indicates what information was used in creating the record – the range of values for this attribute is controlled by the “[DataSource](#)” domain.
- The “**HztlAccuracy**” attribute indicates horizontal map accuracy and appropriate map scale associated with the type of information used in creating or updating the record – the range of values for this attribute is controlled by the “[HorizontalAccuracy](#)” domain.
- The “**BarrierPtr**” attribute provides a unique ID for relating external ancillary observation info about a particular Barrier record.
- The “**Type**” attribute indicates the abbreviation for the type of falls and an estimate of its impact on fish species – the first two characters define the falls type and the third character indicates the passability of the barrier. The range of values for this attribute is controlled by the “[BarrierType](#)” domain.
- The “**Height**” attribute indicates the vertical height of the barrier in meters.
- The “**Source**” attribute indicates the shorthand version of the survey which cataloged the barrier information.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme
- The “**Enabled**” attribute indicates whether or not a record participates in the Hydro_GN geometric network. The “Enabled” attribute occurs by default in each feature class that participates in the geometric network.
- The “**Comments**” attribute contains any notable remarks that the editor wants communicated with a particular record.
- The “**SHAPE**” attribute is a system default that identifies the type of feature geometry for each record.

Dam_PT

The Dam_PT layer describes the locations and attributes of dams. Currently this information is sourced from the U.S. Army Corps of Engineers and the Federal Emergency Management Agency’s National Inventory of Dams database.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.
- The “**SourceAgency**” attribute indicates the agency responsible for changing a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**RecordID**” attribute provides a unique ID that stakeholders can use to link ancillary data to outside of the AK Hydro database.
- The “**DamName**” attribute indicates the US ACoE name for each dam.
- The “**OtherName**” attribute indicates the local name for each dam.
- The “**Enabled**” attribute indicates whether or not a record participates in the Hydro_GN geometric network. The “Enabled” attribute occurs by default in each feature class that participates in the geometric network.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme
- The “**SHAPE**” attribute is a system default that identifies the type of feature geometry for each record.

FishObservationSite_PT

The FishObservationSite_PT layer describes the locations and attributes of all fish capture and effort activities undertaken by the Resource Mapping and Inventory Group (RMIG) of ADF&G, Division of Sport Fish specific to multiple project areas in Southeast Alaska. The dataset denotes locations of observations where any species of fish was captured or observed OR where any fish capture equipment was employed, but no fish were captured or observed. The dataset is intended to work in conjunction with the FishObservationCount table in AK Hydro to provide the associated species information, life-stage information, life history strategy information, a numerical summary of the fish encountered, and the associated dates recorded for each point location. In this way, the dataset provides absolute and confirmed presence of fish, as well as identifying those locations where fish capture/observation effort was applied, yet no fish were captured or observed.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.
- The “**WHOLEID**” attribute indicates the ADF&G, Sport Fish Division’s 10 character alpha-numeric code which consists of a unique Project Code (1st 5 characters) concatenated with a unique Survey Identifier code (last 5 characters). This code is intended for internal ADF&G purposes and provides the ability to extract additional and relevant information only captured in the ADF&G, Division of Sport Fish database (Odyssey) through related tables, or attribute joining functions or queries.
- The “**Enabled**” attribute indicates whether or not a record participates in the Hydro_GN geometric network. The “Enabled” attribute occurs by default in each feature class that participates in the geometric network.

- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme
- The “**SHAPE**” attribute is a system default that identifies the type of feature geometry for each record.

FishPass_PT

The FishPass_PT layer describes the locations and attributes of current or historical fish passes and channel modifications aimed towards anadromous fish passage.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.
- The “**SourceAgency**” attribute indicates the agency responsible for changing a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**YRCompleted**” attribute indicates the year that the fish pass was put in service.
- The “**Operator**” attribute identifies the organization responsible for maintenance of the fish pass (0 = Unknown, 1 = USFS, 2 = State/Other)
- The “**Status**” attribute indicates coded values about the operational state of the fish pass.
- The “**Comments**” attribute contains any notable remarks that the editor wants communicated with a particular record.
- The “**District**” attribute denotes the Ranger District responsible for the fish pass.
- The “**FishPassName**” attribute indicates the local name of the fish pass – usually the stream name and a location when there are multiple passes on the same system.
- The “**Comments**” attribute contains any notable remarks that the editor wants communicated with a particular record.
- The “**Type**” attribute indicates the general character of a particular Fish Pass – the range of values for this attribute is controlled by the “[FPTYPE](#)” domain.
- The “**Enabled**” attribute indicates whether or not a record participates in the Hydro_GN geometric network. The “Enabled” attribute occurs by default in each feature class that participates in the geometric network.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme.
- The “**Shape**” attribute is a system default that identifies the type of feature geometry for each record.

Glacier_PL

This dataset depicts glaciers and ice fields. Sourced from the global [Randolph Glacier Inventory](#), this dataset also includes user submitted geometric updates.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.

- The “**SourceAgency**” attribute indicates the agency responsible for changing a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**DataSource**” attribute indicates what information was used in creating the record – the range of values for this attribute is controlled by the “[DataSource](#)” domain.
- The “**HztlAccuracy**” attribute indicates horizontal map accuracy and appropriate map scale associated with the type of information used in creating or updating the record – the range of values for this attribute is controlled by the “[HorizontalAccuracy](#)” domain.
- The “**GNIS_Name**” attribute identifies the corresponding USGS Geographic Names Information System value where available.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme
- The “**Shape**” attribute is a system default that identifies the type of feature geometry for each record.
- The “**SHAPE_Length**” attribute is a system default that identifies the length of the feature.
- The “**SHAPE_Area**” attribute is a system default that identifies the area of the feature.

Hydro_GN

Hydro_GN is the geometric network within AK Hydro that enables various network analyses. Hydro_GN uses the Stream_LN featureclass for the spatial framework the enables spatial relationships between Steam_LN, AWC_PT, Barrier_PT, Dam_PT, FishObservationSite_PT, FishPass_PT, and Hydro_GN_Junctions. This database element is not directly edited and is either controlled by database administrators and the underlying database.

Hydro_GN Junctions

This dataset depicts connection nodes that occur between feature classes participating in the geometric network (Hydro_GN) in AK Hydro – i.e. the nodes in this dataset act as connectors for the geometric network that spatially relate individual segments. This dataset is automatically updated/edited whenever the geometric network is updated.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**Enabled**” attribute indicates whether or not a record participates in the Hydro_GN geometric network. The “Enabled” attribute occurs by default in each feature class that participates in the geometric network.
- The “**SHAPE**” attribute is a system default that identifies the type of feature geometry for each record.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme

HydroSite_PT

This dataset can be used to describe spatial locations where NHD contributors are collecting data or monitoring characteristics of the hydrography. This feature class would allow agencies to link locally

stored information, such as water quality samples or stream gauge readings to existing NHD core elements without overburdening the AK Hydro Database with large volumes of additional data.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.
- The “**Source_Agency**” attribute identifies agency responsible for maintaining each record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**Unit_Code**” attribute is currently particular to the NPS and identifies the alphabetic code representing an NPS organizational unit – the range of values for this attribute is controlled by the “[dUnit_Code](#)” domain.
- The “**Site_Type**” attribute currently identifies the type of monitoring regime for each point within the dataset – the range of values for this attribute is controlled by the “[dSite_Type](#)” domain.
- The “**Site_Name**” attribute is used by the administering agency to assign a name to each of the features in the dataset.
- The “**Site_ID**” attribute is used by the administering agency to assign a unique identifier to each of the features in the dataset.
- The “**Site_Desc**” attribute provides a short description of the site and the equipment used to collect data there.
- The “**Site_Visit_Date**” attribute identifies the date the site was last visited.
- The “**Site_Contact**” attribute provides contact information for the knowledgeable person or agency related to a particular site – information may include agency website, contact email address, and/or phone number.
- The “**Create_By**” attribute identifies the user at a particular agency who created the feature.
- The “**Create_Date**” attribute indicates the date the feature was created.
- The “**Edit_By**” attribute identifies the agency and user that most recently edited the feature.
- The “**Edit_Date**” attribute indicates the date when the record was last edited, updated, or reviewed.
- The “**Map_Method**” attribute identifies the method in which the geospatial feature was created or derived – the range of values for this attribute is controlled by the “[DataSource](#)” domain.
- The “**Map_Source**” attribute provides information about the source from which the geospatial feature was created. This includes the source agency, map, or specific device used to collect the spatial information – formatted as free text.
- The “**Map_Source_Date**” attribute indicates the date of the map source material. This is primarily used for digitization from paper maps, but would also be used when data is derived from another digital data source.
- The “**Map_Source_Scale**” attribute indicates the numeric denominator of the scale of the map source. Unknown is an allowed value – e.g. “24000” for a 1:24,000 map scale.
- The “**Horizontal_Error**” attribute provides an estimate of the measurement of error in the X or horizontal dimension – measured in meters.

- The “**Vertical_Error**” attribute provides an estimate of the measurement of error in the Y or vertical dimension – measured in meters. The range of values for this attribute is controlled by the “dError” domain.
- The “**Use_Restriction**” attribute indicates any usage restriction of the feature. The range of values for this attribute is controlled by the “[dUse_Restriction](#)” domain.
- The “**Feature_Notes**” attribute indicates any notes or remarks regarding important aspects of the data not captured in any other attribute.
- The “**Metadata_ID**” attribute provides a URL that links to the metadata record (e.g. IRMA) associated with the geospatial object.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme.
- The “**Shape**” attribute is a system default that identifies the type of feature geometry for each record.

Intertidal_PL

This dataset contains polygons describing high and low tide shorelines with delineated intertidal areas.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.
- The “**SourceAgency**” attribute indicates the agency responsible for changing a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**DataSource**” attribute indicates what information was used in creating the record – the range of values for this attribute is controlled by the “[DataSource](#)” domain.
- The “**HztlAccuracy**” attribute indicates horizontal map accuracy and appropriate map scale associated with the type of information used in creating or updating the record – the range of values for this attribute is controlled by the “[HorizontalAccuracy](#)” domain.
- The “**Description**” attribute identifies whether a polygon in this feature class depicts Saltwater, a Salt Chuck or an Intertidal area – the range of values for this attribute is controlled by the “[IntertidalDescript](#)” domain.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme
- The “**Shape**” attribute is a system default that identifies the type of feature geometry for each record.
- The “**SHAPE_Area**” attribute is a system default that identifies the area of the feature.
- The “**SHAPE_Length**” attribute is a system default that identifies the length of the feature.

Lake_PL

This dataset contains polygons that depict lakes, reservoirs and swamps with the inclusion of attributes as defined by the Alaska Hydrography Technical Working Group.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.
- The “**SourceAgency**” attribute indicates the agency responsible for changing a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**DataSource**” attribute indicates what information was used in creating the record – the range of values for this attribute is controlled by the “[DataSource](#)” domain.
- The “**HztlAccuracy**” attribute indicates horizontal map accuracy and appropriate map scale associated with the type of information used in creating or updating the record – the range of values for this attribute is controlled by the “[HorizontalAccuracy](#)” domain.
- The “**LakeNo**” attribute provides functionality for unique numerical identifier to be assigned when required.
- The “**LakeName**” attribute identifies the name for those lakes that are named.
- The “**Type**” attribute indicates whether the polygon represents a lake, a reservoir or a swamp – the range of values for this attribute is controlled by the “[LakeType](#)” domain.
- The “**GNIS_Name**” attribute identifies the corresponding USGS Geographic Names Information System value where available.
- The “**Comments**” attribute contains any notable remarks that the editor wants communicated with a particular record.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme.
- The “**SHAPE**” attribute is a system default that identifies the type of feature geometry for each record.
- The “**SHAPE_Area**” attribute is a system default that identifies the area of the feature.
- The “**SHAPE_Length**” attribute is a system default that identifies the length of the feature.

Stream LN

This dataset portrays one dimensional linear water features, with the inclusion of USFS geomorphologic classifications, fish habitat information, stream class information and classifications particular to the State Anadromous Waters Catalog.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.
- The “**SourceAgency**” attribute indicates the agency responsible for changing a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**DataSource**” attribute indicates what information was used in creating the record – the range of values for this attribute is controlled by the “[DataSource](#)” domain.
- The “**HztlAccuracy**” attribute indicates horizontal map accuracy and appropriate map scale associated with the type of information used in creating or updating the record – the range of values for this attribute is controlled by the “[HorizontalAccuracy](#)” domain.

- The **“Surveyed”** attribute indicates whether or not a particular record within the dataset has received additional verification to confirm accuracy – the range of values for this attribute is controlled by the [“Survey”](#) domain.
- The **“Comments”** attribute contains any notable remarks that the editor wants communicated with a particular record.
- The **“Name”** attribute indicates the common name for streams where a name has been formally allocated and recorded.
- The **“GNISName”** attribute identifies the corresponding USGS Geographic Names Information System value where available.
- The **“TradName”** attribute identifies the traditional/native name where available.
- The **“FlowType”** attribute indicates flow characteristics that describe the type of flow occurrence for a particular channel – the default values is “Perennial” and the range of values for this attribute is controlled by the [“FlowType”](#) domain.
- The **“TypeClass”** attribute indicates the subtype classification which is a combination of ChannelType and StreamClass – the range of values for this attribute is controlled by the subtype values set against this attribute.
- The **“StreamClass”** attribute is a classification code used to categorize anadromous fish habitat ranging in value from 1-4 – the range of values for this attribute is controlled by the [“StreamClass”](#) domain.
- The **“ChannelType”** attribute indicates the classification value as defined by the Alaska Stream Reach Classification – the range of values for this attribute is controlled by the [“ChannelType”](#) domain.
- The **“ProcessGroup”** attribute indicates the geomorphic process group portion of the ChannelType attribute classification – the range of values for this attribute is controlled by the [“ProcessGroup”](#) domain.
- The **“ChanTypeLink”** attribute provides a URL web link to documentation explaining the use of ChannelType and Process Group attributes.
- The **“StreamCode”** attribute indicates the numerical codes assigned by ADF&G Anadromous Waters Catalog to streams occurring in the State’s AWC.
- The **“AWC”** attribute indicates how the record is categorized according to the AWC classification system in SEAK Hydro – the range of values for this attribute is controlled by the [“AWC Status”](#) domain.
- The **“Enabled”** attribute indicates whether or not a record participates in the Hydro_GN geometric network. The “Enabled” attribute occurs by default in each feature class that participates in the geometric network.
- The **“GlobalID”** attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme.
- The **“SHAPE”** attribute is a system default that identifies the type of feature geometry for each record.
- The **“SHAPE_Length”** attribute is a system default that identifies the length of the feature.

Stream PL

This dataset provides a 2 dimensional cartographic representation of "wide" linear water features and is used to represent the freshwater area of large river systems where a linear feature would be inadequate.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.
- The “**SourceAgency**” attribute indicates the agency responsible for changing a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**DataSource**” attribute indicates what information was used in creating the record – the range of values for this attribute is controlled by the “[DataSource](#)” domain.
- The “**HztlAccuracy**” attribute indicates horizontal map accuracy and appropriate map scale associated with the type of information used in creating or updating the record – the range of values for this attribute is controlled by the “[HorizontalAccuracy](#)” domain.
- The “**Type**” attribute indicates whether the polygon represents a Stream/River, an area of Complex Channels or Rapids – the range of values for this attribute is controlled by the “[StreamPL_Type](#)” domain.
- The “**Name**” attribute indicates the common name for streams where a name has been formally allocated and recorded.
- The “**GNIS_Name**” attribute identifies the corresponding USGS Geographic Names Information System value where available.
- The “**Comments**” attribute contains any notable remarks that the editor wants communicated with a particular record.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme
- The “**SHAPE**” attribute is a system default that identifies the type of feature geometry for each record.
- The “**SHAPE_Area**” attribute is a system default that identifies the area of the feature.
- The “**SHAPE_Length**” attribute is a system default that identifies the length of the feature.

SurveyWaypoint PT

This dataset contains ADFG-Sport Fish survey points associated with various stream habitat surveys conducted throughout Alaska. This dataset is available for any other AK Hydro partner agencies wanting to include/record survey information/observations in the state hydrography database. All survey points were spatially captured in the field using hand-held consumer grade GPS units and were associated with aquatic habitat or riparian input features (e.g., stream confluences, stream reach breaks, barriers of multiple types, etc) encountered during habitat surveys and assessments.

- The “**OBJECTID**” attribute is a system default that provides a unique ID for each record in the dataset.
- The “**RevDate**” attribute indicates the date when a record was updated or changed.

- The “**SourceAgency**” attribute indicates the agency responsible for changing a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.
- The “**WaypointID**” attribute represents a unique 10 character code identifying an individual GPS waypoint collected in the field. The unique code is combination of codes found in both PROJCODE and SURVIDENT attributes which (attributes not described here) are used internally by ADFG. Original field name used by ADFG was WHOLEID.
- The “**WaypointCode**” attribute indicates the feature of interest observed in the field that is associated with each GPS waypoint. This field was initially identified as WPFEATCODE for ADFG internal purposes and contained 3-character codes which identified the feature of interest. The range of values for this attribute is controlled by the “[WaypointCode](#)” domain.
- The “**SurveyDate**” attribute indicates the date that a GPS waypoint was captured in the field and thus represents the date that a feature of interest was observed in the field.
- The “**GPSError**” attribute indicates the estimated positional margin of error in meters (as identified on the GPS unit) associated with individual GPS waypoints captured in the field.
- The “**Datum**” attribute indicates the geographic datum that the GPS waypoint was captured in or converted to – NAD83/WGS84 are were the standard used for all points.
- The “**Locator**” attribute indicates the relationship of the feature of interest to the stream course (always noted in downstream orientation) and identified with a 2-character code (e.g., RB=right bank; LB=left bank; BB=both banks; SS=spans stream width). The range of values for this attribute is controlled by the “[Locator](#)” domain.
- The “**MacroHabitat**” attribute indicates the type of aquatic macro-habitat associated with the feature/GPS waypoint and identified with a 3-character code (e.g., BPM=beaver pond margin; MCH=main channel; SCH=side channel; SLO=slough); generally identifies where on a stream network a feature of interest was observed. The range of values for this attribute is controlled by the “[MacroHabitat](#)” domain.
- The “**Comments**” attribute contains any notable remarks that the editor wants communicated with a particular record.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme
- The “**SHAPE**” attribute is a system default that identifies the type of feature geometry for each record.

AK Hydro Geodatabase Domain Values

The tables below describe the attribute domains utilized within the AK Hydro schema and the range of values allowed in each of those domains. Within these tables, *Coded Values* describe the integer or text set used by the database to record an associated value; *Values* describe the text set which is visible in the attribute table; and *Description* informs users about the meaning of a particular value.

Agency		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	USGS	United States Geological Survey
2	USFS	United States Forest Service
3	ADFG	Alaska Department of Fish and Game – Sport Fish Division
5	USFWS	United States Fish & Wildlife Service
6	UA	University of Alaska
7	KWF	Kenai Watershed Forum
8	SMUMN	Saint Mary's University of Minnesota
9	NPS	National Park Service
10	ADNR	Alaska Department of Natural Resources
11	ADEC	Alaska Department of Environmental Conservation
12	ADoTPF	Alaska Department of Transportation and Public Facilities
13	NOAA	National Oceanic and Atmospheric Administration
16	TNC	The Nature Conservancy
17	BLM	The Bureau of Land Management
18	US Army	The United States Army
99	Unknown	Unknown

Attribute		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Natural.Mean High Water	Natural.Mean High Water
2	Natural.Apparent.Marsh Or Swamp	Natural.Apparent.Marsh Or Swamp
3	Man-made.Bulkhead Or Sea Wall	Man-made.Bulkhead Or Sea Wall
4	Natural.Great Lake Or Lake Or Pond	Natural.Great Lake Or Lake Or Pond
5	Man-made.Rip Rap	Man-made.Rip Rap
6	Natural.River Or Stream	Natural.River Or Stream
7	Man-made.Ramp	Man-made.Ramp
8	Man-made.Wharf Or Quay	Man-made.Wharf Or Quay
9	Man-made.Canal.Navigable	Man-made.Canal.Navigable
10	Undetermined.Approximate	Undetermined.Approximate
11	Natural.Mean High Water.Approximate	Natural.Mean High
12	Man-made	Man-made
13	Natural.Apparent.Mangrove Or Cypress	Natural.Apparent.Mangrove Or
14	Breakwater.Bare	Breakwater.Bare

15	Groin.Bare	Groin.Bare
16	Man-made.Bulkhead Or Sea Wall.Ruins	Man-made.Bulkhead Or Sea Wall.Ruins
17	Jetty.Bare	Jetty.Bare
18	Man-made.Canal.Non-navigable	Man-made.Canal.Non-navigable
19	Natural.River Or Stream.Approximate	Natural.River Or Stream.Approximate
20	Natural.Mean Water Level	Natural.Mean Water Level
21	Man-made.Wharf Or Quay.Ruins	Man-made.Wharf Or Quay.Ruins
22	Undetermined	Undetermined
23	Man-made.Slipway	Man-made.Slipway
24	Man-made.Drydock.Permanent	Man-made.Drydock.Permanent
25	Stream.Perennial	Stream.Perennial
26	Man-made.Lock	Man-made.Lock
27	Natural.Great Lake Or Lake Or Pond.Approximate	Natural.Great Lake Or Lake Or
28	Man-made.Canal.Navigable.Approximate	Man-
29	Natural.Glacier	Natural.Glacier
30	Undetermined.Estimated	Undetermined.Estimated
31	Marsh Or Swamp.Extent	Marsh Or Swamp.Extent

AWC_Status		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
0	Intertidal	Indicates the arc occurs within the intertidal zone and is connected to an AWC recognized arc but is not generally included in the current AWC.
1	No	Indicates the arc is not currently included in the AWC and there is no supporting information to propose its inclusion.
2	AWC Nominated	Indicates the arc has been added to the AWC through the public submission process but has not yet gone through the AWC approval/review process.
3	Confirmed	Indicates the arc is included in the AWC and has been confirmed by the public review process.
4	Lake	Indicates the arc is an artificial path has been added to connect streams across lakes and is not formally recognized in the
5	Pending Geometry	Indicates the arc has an updated geometry that has been changed at least by 20 meters in at least some portion of the arc and requires review by the AWC.
6	Significant Point Issue	Indicates the arc is to be used for identifying AWC points where points do not coincide with updated streams that already occur in the AWC.
7	AK Hydro Proposed	Indicates the arc has been added as part of the editing/update process and should be considered for the AWC nomination process due to accompanying "fish in hand" data.
8	Unknown	Indicates that the stream arc is not currently included in the AWC, but may have implications for AWC consideration.

BarrierType		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
cf	Chute/CascadeFalls	Chute/Cascade Falls – gradient < 75%, unknown impediment to upstream migration by anadromous species
cfc	Chute/CascadeFalls - complete	Chute/Cascade Falls – gradient < 75%, complete barrier – no upstream migration by any anadromous species
cfi	Chute/CascadeFalls - incomplete	Chute/Cascade Falls – gradient < 75%, incomplete barrier – stops pink and chum salmon while passes coho and steelhead
dam	Artificial Structure	Artificial structure that stops upstream migration by anadromous species
fp	Fish-pass	Artificial structure that permits upstream migration by anadromous species
vf	Vertical Falls	Vertical Falls – Gradient > 75%, unknown impediment to upstream migration by anadromous species
vfc	Vertical Falls - complete	Vertical Falls – Gradient > 75%, complete barrier – no upstream migration by any anadromous species
vfi	Vertical Falls - incomplete	Vertical Falls – Gradient > 75%, incomplete barrier – stops pink and chum salmon while passes coho and steelhead
ukn	Unknown	Unknown barrier type or impediment to upstream migration by anadromous species

ChannelType		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
AFH	AFH	High Gradient Alluvial Cone Channel
AFM	AFM	Moderate Gradient Alluvial Fan Channel
AFO	AFO	Micro Alluvial Fan Channel
CULV	CULV	Culvert
ESL	ESL	Large Estuarine Channel
ESLc	ESLc	Large Estuarine Channel – Cobble/Boulder Phase
ESLd	ESLd	Large Estuarine Channel – Sand Dune Association
ESM	ESM	Medium Estuarine Channel
ESO	ESO	Micro Estuarine Channel
ESS	ESS	Small Estuarine Channel
ESSc	ESSc	Small Estuarine Channel – Cobble/Boulder Phase
ESSg	ESSg	Small Estuarine Channel – Gravel Substrate Phase
ESSs	ESSs	Small Estuarine Channel – Sand/Silt Substrate Phase
FPB	FPB	Foreland Uplifted Beach Channel
FPBf	FPBf	Foreland Uplifted Beach Channel – Foreland Forested Phase
FPBh	FPBh	Foreland Uplifted Beach Channel – Shrub, Non-forested Phase
FPE	FPE	Foreland Uplifted Estuarine Channel
FPEf	FPEf	Foreland Uplifted Estuarine Channel – Foreland Forested Phase
FPEh	FPEh	Foreland Uplifted Estuarine Channel – Shrub, Non-forested Phase
FPEv	FPEv	Foreland Uplifted Estuarine Channel – Shrub, Non-forested Phase
FPL	FPL	Large Flood Plain Channel
FPLc	FPLc	Large Flood Plain Channel – Boulder or Cobble Substrate Phase
FPLf	FPLf	Large Flood Plain Channel – Foreland Outwash Forested Phase
FPLh	FPLh	Large Flood Plain Channel – Foreland Outwash Shrub Phase

FPLr	FPLr	Large Flood Plain Channel – Bedrock Phase
FPLw	FPLw	Large Flood Plain Channel – Wetland Phase
FPM	FPM	Medium Flood Plain Channel
FPMa	FPMa	Medium Flood Plain Channel – Volcanic Ash Phase
FPMc	FPMc	Medium Flood Plain Channel – Boulder or Cobble Substrate Phase
FPMf	FPMf	Medium Flood Plain Channel – Foreland Outwash Forested Phase
FPMh	FPMh	Medium Flood Plain Channel – Foreland Outwash Shrub Phase
FPMw	FPMw	Medium Flood Plain Channel – Wetland Phase
FPO	FPO	Micro Flood Plain Channel
FPS	FPS	Small Flood Plain Channel
FPSf	FPSf	Small Flood Plain Channel – Foreland Forested Phase
FPSH	FPSH	Small Flood Plain Channel – Shrub, Non-forested Phase
FPSw	FPSw	Small Flood Plain Channel – Wetland Phase
GAF	GAF	Glacial Alluvial Fan Channel
GES	GES	Glacial Estuarine Channel
GOB	GOB	Large Braided Glacial Outwash Channel
GOC	GOC	Glacial Cirque Channel
GOL	GOL	Large Meandering Glacial Outwash Channel
GOM	GOM	Medium Glacial Outwash Channel
GSC	GSC	Glacial Outwash Side Channel
HCD	HCD	High Gradient Contained Deep Incision Channel
HCDi	HCDi	High Gradient Contained Deep Incision Channel - Glacial/Debris Flow Phase
HCDw	HCDw	High Gradient Contained Deep Incision Channel – Wetland Phase
HCL	HCL	High Gradient Contained Low Incision Channel
HCLh	HCLh	High Gradient Contained Low Incision Channel - Foreland Outwash Shrub Phase
HCLw	HCLw	High Gradient Contained Low Incision Channel – Wetland Phase
HCM	HCM	High Gradient Contained Moderate Incision Channel
HCO	HCO	Micro High Gradient Contained Channel
HCV	HCV	High Gradient Contained Upper Valley Channel
HCVi	HCVi	High Gradient Contained Upper Valley Channel – Glacial/Debris Flow Phase
HCVw	HCVw	High Gradient Contained Upper Valley Channel – Wetland Phase
ICE	ICE	Artificial connector under glacier, position unknown
K	K	Karst – Subterranean Connector
L	L	Lake – Connector
LCL	LCL	Large Low Gradient Contained Channel
LCM	LCM	Medium Low Gradient Contained Channel
LCMI	LCMI	Medium Low Gradient Contained Channel – Glide Phase
LCS	LCS	Small Low Gradient Contained Channel
MCD	MCD	Deep Incision Moderate Gradient Contained
MCL	MCL	Large Moderate Gradient Contained Channel
MCM	MCM	Medium Moderate Gradient Contained Channel
MCMr	MCMr	Medium Moderate Gradient Contained Channel – Bedrock Phase
MCO	MCO	Micro Moderate Gradient Contained Channel
MCS	MCS	Small Moderate Gradient Contained Channel
MCSw	MCSw	Small Moderate Gradient Contained Channel – Wetland Phase
MMM	MMM	Medium Moderate Gradient Contained Channel
MMMh	MMMh	Medium Moderate Gradient Contained Channel – Shrub, Non-forested Phase
MMMw	MMMw	Medium Moderate Gradient Contained Channel – Wetland Phase
MMO	MMO	Micro Moderate Gradient Contained Channel

MMS	MMS	Small Moderate Gradient Contained Channel
MMSH	MMSH	Small Moderate Gradient Contained Channel – Shrub, Non-forested Phase
MMSw	MMSw	Small Moderate Gradient Contained Channel - Wetland Phase
PAB	PAB	Beaver Dam/Pond Channel
PAG	PAG	Backwater Glacial Slough
PAH	PAH	Backwater Groundwater Fed Slough
PAHf	PAHf	Backwater Groundwater Fed Slough - Foreland Forested Phase
PAL	PAL	Large Palustrine Channel
PAM	PAM	Medium Palustrine Channel
PAO	PAO	Micro Palustrine Channel
PAS	PAS	Small Palustrine Channel
PASv	PASv	Small Palustrine Channel – Scrub Forest Phase
UAN	UAN	Unidentified Annette Island stream arc
UC	UC	Unverified Connector
UI	UI	Unverified Intertidal Connector
MML	MML	Large Moderate Gradient Contained Channel
Unkn	Unknown	Unknown Channel Type and/or Stream Class
CanD	CanD	Canal/Ditch
Pipe	Pipe	Pipeline
Tunn	Tunn	Tunnel
Conn	Conn	Connector
UndC	UndC	Under Ground Conduit - Karst

DataSource		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Digital Orthophotos	Digital Orthophotos
2	Digital Planimetric Data	Digital Planimetric Data
3	Digital Elevation Data	Digital Elevation Data
4	Digital SDMI Imagery	Digital SDMI Imagery
5	Field Verified Reference Data	Field Verified Reference Data
9	Other	Other

DataSourceNOAA		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Aerial Photography	Indicates the MHW data was created using digital orthophoto captured by airborne optical platforms
2	Satellite Imagery	Indicates the MHW data was created using digital imagery captured by satellite optical platforms
3	Lidar	Indicates the MHW data was created using LiDAR derived digital elevation data
4	IFSAR	Indicates the MHW data was created using IfSAR derived digital elevation data
5	HyperSpectral	Indicates the MHW data was created using hyperspectral imagery
6	Multispectral	Indicates the MHW data was created using multispectral imagery

7	Photogrammetric DEM	Indicates the MHW data was created using photographically derived digital elevation data
8	Compilation	Indicates the MHW data was created using a number of data types for input

dError		
An estimate of the measurement of error in the Y or vertical dimension.		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	> 10 meters	Vertical error is greater than 10 meters.
2	> 5 meters and <= 10 meters	Vertical error is greater than 5 meters but less than or equal to 10 meters.
3	> 1 meter and <= 5 meters	Vertical error is greater than 1 meter but less than or equal to 5 meters.
4	> 15 centimeters and <= 1 meter	Vertical error is greater than 15 centimeters but less than or equal to 1 meter.
5	<= 15 centimeters	Vertical error is less than or equal to 15 centimeters.
9	Unknown	The amount of vertical error is not known.

dSite_Type		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Intensively Monitored	Annually monitored site that is selected for intensive monitoring. They are sampled with multiple monitoring visits per year and multiple parameter data loggers. Subset of annually monitored sites.
2	Annually Monitored	Easily accessible site that is monitored every year. Annual monitoring should increase sensitivity to trends, but because these sites are not part of a probabilistic sample, those trends can't be extrapolated to unsampled sites. Small set of sites.
3	Rotating Synoptic	Remote site that is revisited every 10 years and selected using the GRTS (Generalized Random Tessellation Stratified) algorithm. Because they were selected probabilistically, results from these sites can be extrapolated to unsampled sites, but because they are only sampled infrequently, there will be less sensitivity to trends at each site. Large set of sites with only a few visited per year.
4	Synoptic	Remote site that is revisited irregularly/as needed

dUnit_Code		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
ALAG	ALAG	Alagnak Wild River
ALEU	ALEU	Aleutian World War II National Historic Area
ANIA	ANIA	Aniakchak National Monument and Preserve
BELA	BELA	Bering Land Bridge National Preserve
BERI	BERI	Beringia International Heritage Park
CAKR	CAKR	Cape Krusenstern National Monument

DENA	DENA	Denali National Park and Preserve
GAAR	GAAR	Gates of the Arctic National Park and Preserve
GLBA	GLBA	Glacier Bay National Park and Preserve
INUP	INUP	Inupiat Heritage Center
KATM	KATM	Katmai National Park and Preserve
KEFJ	KEFJ	Kenai Fjords National Park
KLGO	KLGO	Klondike Gold Rush National Historical Park
KOVA	KOVA	Kobuk Valley National Park
LACL	LACL	Lake Clark National Park and Preserve
NOAT	NOAT	Noatak National Preserve
SITK	SITK	Sitka National Historical Park
VALR	VALR	World War II Valor in the Pacific National Monument
WEAR	WEAR	Western Arctic National Parklands
WRST	WRST	Wrangell-St. Elias National Park and Preserve
YUCH	YUCH	Yukon-Charley Rivers National Preserve

dUse_Restriction		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Unrestricted	There are no restrictions on the release or distribution of the spatial data for the feature.
2	No 3 rd Party Release	The spatial data for the feature is restricted to a limited distribution of the data requestor only.
3	Agency Concurrence	The originating agency that created the feature spatial data must concur before the data is distributed.
4	Program Concurrence	The affected or affiliated program or data steward must concur before the feature spatial data is distributed.
5	No Release	The spatial data associated with the feature should not be released.

EnabledDomain		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
0	False	False
1	True	True

ExtractionMethod		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Stereo	Indicates that the data was generated via digitizing features from single image/mono-photogrammetry data.
2	Mono	Indicates that the data was generated via digitizing features from stereo-photogrammetry data.
3	Derived	Indicates that the data was generated from surface elevation type information – e.g. LiDAR Survey or DEM

FishSampling		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
MTR	MTR	minnow trap
NET	NET	net
OTH	OTH	other
PEF	PEF	portable electro-fisher
SEI	SEI	seine net
SRK	SRK	snorkel
UNK	UNK	unknown
VOG	VOG	visual observation ground

FlowType		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Perennial	Watercourse has perennial flow
2	Intermittent	Watercourse has intermittent flow
3	Ephemeral	Watercourse has ephemeral flow
99	Unknown	Type of flow in a watercourse is unknown

FPType		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Structure	Structure
2	Blast	Blast
3	Removed	Removed
4	Potential	Potential

HorizontalAccuracy		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Medium Resolution Satellite Derived	Minimum horizontal accuracy +/- 30 meters with a maximum appropriate map scale of 1:63,000
2	Photo Interpretive	Minimum horizontal accuracy +/- 10 meters with a maximum appropriate map scale of 1:25,000
3	IfSAR or LiDAR Derived	Minimum horizontal accuracy +/- 5 meters with a maximum appropriate map scale of 1:10,000
4	GPS Hand Held Reconnaissance	Minimum horizontal accuracy +/- 3 meters with a maximum appropriate map scale of 1:6,000
5	Continuous Map-Grade Survey	Minimum horizontal accuracy +/- 2 meters with a maximum appropriate map scale of 1:3,600
6	Controlled Land Survey	Minimum horizontal accuracy +/- 1 meter with a maximum appropriate map scale of 1:1,200

IntertidalDescript		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
SW	Saltwater	The polygon is categorized as permanent Saltwater below the Intertidal Area
INT	Intertidal Area	The polygon is categorized as Intertidal Area between the mean high water mark and mean low water mark
EST	Estuary	The polygon is categorized as an estuary is a partly enclosed coastal body of brackish water with one or more rivers or streams flowing into it, and with a free connection to the open sea.
CHK	Salt chuck	The polygon is categorized as a Salt Chuck, or near shore lake with a lens of fresh water sitting on a body of saltwater this is periodically inundated by the sea during maximum high tide events
UIT	Upper Intertidal Area	The polygon is categorized as Upper Intertidal Area occurring above the mean high water mark and below the maximum high tide mark

LakeType		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
0	Swamp	A swamp is a wetland with some flooding of large areas of land by shallow bodies of water.
1	Lake	A lake is a body of relatively still water of considerable size, localized in a basin, which is surrounded by land apart from a river, stream, or other form of moving water that serves to feed or drain the lake.
2	Reservoir	A reservoir is an artificial lake or impoundment upstream of a dam and is used to store water.

LifeHistory		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
AND	AND	Anadromous
ANF	ANF	Adfluvial
MAR	MAR	Marine
NAP	NAP	Not apparent
NRC	NRC	Not recorded
RES	RES	Resident
UNK	UNK	Unknown

LifeStage		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
ADT	ADT	adult – fish at, or approaching sexual maturity.
ALV	ALV	alevin – pre-emergent sac-fry within the interstices of the substrate
ASP	ASP	adult spawning – adults observed in the act of spawning
CAR	CAR	carcass – post-spawning adult carcass

FXA	FXA	fixed egg – non-adherent, bouyant or nearly so, eggs drifting with currents
JUV	JUV	juvenile – sexually immature free-swimming fish
JOA	JOA	juvenile/adult – free swimming fish whose sexual maturity is not determined
KLT	KLT	kelt – post-spawning iteroparous anadromous fish in freshwater prior to return to marine water
NAP	NAP	not applicable – no fish observed or general information record only
NRD	NRD	not recorded – life stage not recorded
PLE	PLE	planktonic egg – non-adherent, bouyant or nearly so, eggs drifting with currents
PLL	PLL	planktonic larvae – hatched juveniles drifting with currents and with no, or poorly, developed volitional swimming capabilities
SMT	SMT	smolt – juvenile anadromous fish on first emigration from fresh to marine water
UNK	UNK	unknown
YOY	YOY	young of the year – sexually immature free-swimming fish in its first year of life

Locator		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Left bank	The observed feature was located on the left bank of the stream while facing downstream
2	Right bank	The observed feature was located on the right bank of the stream while facing downstream
3	Both banks	The observed feature was located on both sides of the stream bank
4	Spans both banks	The observed feature spanned the entire stream width and both sides of the stream bank

MacroHabitat		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Main stem or primary channels	Channels that have flow year round and contain the majority of the flow/volume compared to other connected channels
2	Side or secondary channels	Channels that may or may not have flow year round but are connected to mainstream or primary channels with an upstream and downstream connection
3	Tributaries or channels draining into larger downstream primary or	Channels draining into larger downstream primary or secondary channels
4	Beaver pond margins and other palustrine habitats	Beaver pond margins and other palustrine habitats

ProcessGroup		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
AF	AF	Alluvial Fan
CU	CU	Culvert, long underground structures
ES	ES	Estuarine
FP	FP	Flood Plain
GA	GA	Combination of Glacial Outwash and Alluvial Fan process groups
GE	GE	Combination of Glacial Outwash and Estuarine process groups
GO	GO	Glacial Outwash
GS	GS	Glacial Outwash Side Channels
HC	HC	High Gradient Contained
IC	IC	Ice (for unverified connectors under glaciers)
K	K	Karst (for subterranean connectors)
L	L	Lake (for connectors within lakes)
LC	LC	Low Gradient Contained
MC	MC	Moderate Gradient Contained
MM	MM	Moderate Gradient Mixed Control
PA	PA	Palustrine
UA	UA	Unidentified Annette (any stream on Annette Island)
UC	UC	Unverified Connector
UI	UI	Unverified Intertidal (intertidal channel that has not been typed)
GW	GW	Ground Flow Connector
9	Unknown	Unknown (channels that have not been typed)

SpeciesCodes		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
ACI	ACI	sturgeon-unspecified
ATG	ATG	green sturgeon
ATW	ATW	white sturgeon
CAC	CAC	arctic char
CBT	CBT	brook trout
CDV	CDV	dolly varden
CHR	CHR	char-unspecified
CLK	CLK	lake trout
DAL	DAL	alaska blackfish
ERC	ERC	trout-perch
FAR	FAR	arctic flounder
FLN	FLN	righteye flounders - unspecified
FST	FST	starry flounder
GAD	GAD	cod-unspecified
GAR	GAR	arctic cod
GBR	GBR	burbot
GPA	GPA	pacific cod

GRA	GRA	arctic grayling
GSA	GSA	saffron cod
HAM	HAM	american shad
HER	HER	herrings-unspecified
HPA	HPA	pacific herring
IDA	IDA	salmon, trout, char, grayling or whitefish, undifferentiated
KNS	KNS	ninespine stickleback
KSB	KSB	stickleback-unspecified
KTS	KTS	threespine stickleback
LAC	LAC	arctic-alaskan brook lamprey paired species
LAK	LAK	alaskan brook lamprey
LAR	LAR	arctic lamprey
LMO	LMO	atlantic salmon
LMP	LMP	lamprey-unspecified
LPC	LPC	pacific lamprey
LRV	LRV	american river lamprey
LWB	LWB	western brook lamprey
MIN	MIN	lake chub
NOS	NOS	longnose sucker
OEU	OEU	eulachon
OLS	OLS	longfin smelt
OPS	OPS	pond smelt
ORM	ORM	rainbow smelt
OSM	OSM	smelt-unspecified
OSS	OSS	surf smelt
PIK	PIK	northern pike
QQQ	QQQ	other species not listed
SAM	SAM	pacific salmon-unspecified
SCK	SCK	chinook salmon
SCM	SCM	chum salmon
SCO	SCO	coho salmon
SPI	SPI	pink salmon
SSE	SSE	sockeye salmon
STH	STH	stealhead
TCT	TCT	cutthroat trout
TRB	TRB	rainbow trout
TRT	TRT	trout-unspecified
UCR	UCR	coastrange sculpin
UFH	UFH	fourhorn sculpin
ULP	ULP	sculpin-unspecified
UNK	UNK	general fish observation, no species information
UPR	UPR	prickly sculpin
UPS	UPS	pacific staghorn sculpin
USH	USH	sharpnose sculpin

USL	USL	slimy sculpin
VVV	VVV	no collection effort
WAK	WAK	alaska whitefish
WAR	WAR	arctic cisco
WBC	WBC	bBering cisco
WBD	WBD	broad whitefish
WHB	WHB	humpback whitefish
WHC	WHC	humpback whitefish complex
WHF	WHF	whitefish-unspecified
WIN	WIN	inconnu
WLC	WLC	least cisco
WLK	WLK	lake whitefish
WPG	WPG	pygmy whitefish
WRN	WRN	round whitefish
XXX	XXX	no fish collected or observed
YMA	YMA	shiner perch
YYP	YYP	yellow perch
ZZZ	ZZZ	general fish observation, no species information

StreamClass		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	1	Streams with anadromous (fish ascending from oceans to breed in fresh water) or adfluvial (fish ascending from fresh water lakes to breed in streams) lake and stream habitat. Also included is the habitat upstream from migration barriers known to be reasonable enhancement opportunities for anadromous fish and habitat with high value resident
2	2	Streams with resident fish populations and generally steep (often 6-15 percent) gradient (can also include streams from 0-5 percent gradient where no anadromous fish occur). These populations have limited sport fishery values. These streams generally occur upstream of migration barriers or are steep gradient streams with other habitat feature that preclude anadromous fish use.
3	3	Streams with no fish populations but which have potential water quality influence on the downstream aquatic habitat.
4	4	Water quality stream without water quality influence on the downstream aquatic habitat.
9	Unknown	Unknown

StreamPL_Type		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
0	StreamRiver	Polygon depicts an area categorized as a Stream or River with a single or simple channel complex.
1	Complex Channels	Polygon depicts an area categorized as a Stream or River with a multiple or braided channel complex.

2	Rapids	Polygon depicts an area categorized as Rapids within a Stream or River.
3	CanalDitch	Polygon depicts an area categorized as a man-made ditch or canal

Survey		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Field	Data has been field verified
2	Digital	Data has been digitally verified
3	None	No additional verification has been undertaken

WaypointCode		
<u>Coded Values</u>	<u>Values</u>	<u>Description</u>
1	Bridge, Undefined	Bridge, Undefined
2	Stream Reach Break	Stream Reach Break
3	Barrier	Barrier
4	Begin Stream Survey	Begin Stream Survey
5	Corrugated Metal Pipe Arch (squash pipe)	Corrugated Metal Pipe Arch (squash pipe)
6	Corrugated Metal Pipe	Corrugated Metal Pipe
7	Confluence	Confluence
8	Corrugated Plastic Pipe	Corrugated Plastic Pipe
9	Channel Type Verification Point	Channel Type Verification Point
10	Divergence of Water	Divergence of Water
11	Ephemerally Fixed Barrier, Beaver Dam	Ephemerally Fixed Barrier, Beaver Dam
12	Ephemerally Fixed Barrier, Debris Jam	Ephemerally Fixed Barrier, Debris Jam
13	Ephemerally Fixed Barrier, Other	Ephemerally Fixed Barrier, Other
14	End of Stream Survey	End of Stream Survey
15	Geologically Fixed Barrier, Chute-High Gradient	Geologically Fixed Barrier, Chute-High Gradient
16	Geologically Fixed Barrier, Cascade-High Gradient	Geologically Fixed Barrier, Cascade-High Gradient
17	Geologically Fixed Barrier, Other	Geologically Fixed Barrier, Other
18	Geologically Fixed Barrier, Waterfall	Geologically Fixed Barrier, Waterfall
19	Human Induced Barrier, Other	Human Induced Barrier, Other
20	Point Where Stream Enters Lake	Point Where Stream Enters Lake
21	Log Culvert	Log Culvert
22	Log Stringer Bridge	Log Stringer Bridge
23	Modular Bridge	Modular Bridge
24	Point Where Stream Exits a Lake	Point Where Stream Exits a Lake
25	Permanent (long-term) Bridge	Permanent (long-term) Bridge
26	Side-channel Attributing Point	Side-channel Attributing Point

Ancillary database content within AK Hydro

The tables and feature class described below reside within the AK Hydro Database, but outside of the feature dataset containing the transactional feature classes. Each of the tables correspond to transactional feature classes within the Hydro_AK_Albers feature dataset – similarly, the feature class below, is used as input for the Intertidal_PL featureclass in the Hydro_AK_Albers feature dataset.

ChannelTypeRef

This database table provides the full range of USFS geomorphologic classifications, as well as shows the relationship between the attributes supporting each geomorphologic classification. This table is also used as the framework for the attribute subtype variables used within Stream_LN. The table can be related to the Stream_LN featureclass via the TypeClass attribute.

FishHabitatByChannelType

Currently only utilized within the Southeast region of AK Hydro. This database table provides a model of species specific fish utilization on the basis of geomorphological channel classification as developed by the Tongass National Forest.

FishObservationCount

Currently only utilized within the Southeast region of AK Hydro, this database table provides fish species information, life-stage information, life history, strategy information, a numerical summary of the fish encountered, and the associated dates recorded for each point location within the FishObservationSite_PT featureclass. This table can be related to the FishObservationSite_PT feature class via the WHOLEID attribute present in either element.

HYDRO_GN_BUILDERR

This database table identifies and classifies any errors that are encountered when the geometric network, “Hydro_GN” in AK Hydro, is created or updated. The table can be used to help locate and identify the features needing correction within the network. Creation and maintenance of the table is automated within the database whenever Geometric Networks are present.

MHW_CS

This featureclass contains user contributed MHW shorelines that will be subject to review by NOAA for potential inclusion in their Continuously Updated Shoreline Product (CUSP). Its title, MHW_CS, stands for “Mean High Water – Combined Source”.

- The “**OBJECTID**” attribute is a system generated unique object ID attribute
- The “**RevDate**” attribute indicates the date when a record was added or edited. If an arc is edited/updated multiple times, the date in this field should reflect the most recent edit.
- The “**Editor**” attribute should indicate the first initial and last name of person (with no spaces) who added or edited the arc. If arc is updated multiple times, this field should reflect the name of the person who made the most recent edit. Example: “JDoe” for John Doe.
- The “**SourceAgency**” attribute indicates the agency that added or edited a particular record – the range of values for this attribute is controlled by the “[Agency](#)” domain.

- The “**Attribute**” field describes the category of the feature that is being represented by the corresponding line feature (e.g. Natural.Mean High Water, Man-made.Wharf, etc) – [the range of values is defined by NOAA](#) and is controlled by the “[Attribute](#)” domain.
- The “**ExtractionMethod**” attribute denotes the extraction method that was used to generate the corresponding line feature (e.g. Derived, Mono or Stereo) – the range of values is defined by NOAA and is controlled by the “[ExtractionMethod](#)” domain.
- The “**DataSource**” attribute describes the source data type (e.g. Aerial Photography, Satellite Imagery, Lidar, IFSAR, SAR, HyperSpectral, or Multispectral imagery) indicating what information was used to create the record – the range of values for this attribute is controlled by the “[DataSourceNOAA](#)” domain.
- The “**SourceDate**” field provides YYYYMMDD HHMMSS formatted date information that corresponds to the data source of the shoreline – i.e. the date of the shoreline.
- The “**HztlAccuracy**” attribute indicates horizontal map accuracy and appropriate map scale associated with the type of information used in creating or updating the record – the range of values for this attribute is controlled by the “[HorizontalAccuracy](#)” domain.
- The “**CalcAccuracy**” attribute reports values, where calculated and available, which describe measures of how accurate mapped accuracy corresponds to reality.
- The “**NOAA_SourceID**” field provides a unique ID that either corresponds to the features within NOAA's CUSP dataset or NOAA administered projects.
- The “**SourceVerDate**” field denotes the date of verification for the source imagery that was used to confirm existing position of feature from more recent imagery than compilation date.
- The “**Source_GSD**” field denotes the ground sample distance in meters that was used for compiling the corresponding line feature.
- The “**Comments**” attribute contains any notable remarks that the editor wants communicated with a particular record.
- The “**LineSource**” attribute provides a USFS description of the reference source data for the shoreline arc.
- The “**SourceYearStart**” attribute details the four-digit year, if known, of the shoreline source data in LineSource. If source data is from a range of years, enter the earliest 4-digit year here. If source data is only associated with a single year, enter the year value here **and** in SourceYearEnd.
- The “**SourceYearEnd**” attribute details the four-digit year, if known, of the shoreline source data in Line Source. If source data is from a range of years, enter the latest 4-digit year here. If source data is only associated with a single year, enter the year value here **and** in SourceYearStart.
- The “**EditNotes**” attribute provides notes about the edit, such as describing what was changed (what the previous line source was), or reasons for the edit, etc (ex: *Edited NOAA MHW map PH148E where shoreline arc was labeled "approximate".*)
- The “**SourceShort**” field provides a short version of the line source data described in the LineSource field.
- The “**GlobalID**” attribute provides a unique ID for each record in the dataset and is required for each versioned dataset that participates in a replication scheme
- The “**Shape**” attribute is a system default that identifies the type of feature geometry for each record.
- The “**Shape_Length**” attribute is a system default that identifies the length of the feature.

NOAA_CUSP

This featureclass includes a static copy of NOAA's Continuously Updated Shoreline Product for the State of Alaska. The data is periodically updated when NOAA publishes new content particular to Alaska's coastline. For details about the CUSP data used withn AK Hydro, the following URL provides authoritative information - <https://shoreline.noaa.gov/data/datasheets/cusp.html>

TLMP_StrmBuf

Currently only utilized within the Southeast region of AK Hydro. This database table provides content used by the riparian management area delineation on the Tongass National Forest. Its follows the criteria set out by the Tongass in its Forest Management Plan, Watershed Management Standards and Guidelines document.