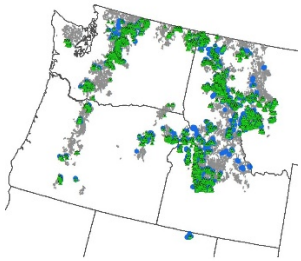
Species occurrence data from the Range-Wide Bull Trout eDNA Project

Shapefile



Tags

occurrence, Natural Resource Management & Use, Hydrology, watersheds, sedimentation, biota, study, Monitoring, climatologyMeteorologyAtmosphere, bull trout, bull trout habitat, western United States, Oregon, location, environmental DNA, Inventory, Monitoring, & Analysis, Wildlife (or Fauna), Idaho, sample, presence, environment, Climate change, status, Landscape management, Habitat management, fish, Fish, eDNA, Nevada, Forest & Plant Health, population, Invasive species, Washington, survey, Climate effects, Montana, Ecology, Ecosystems, & Environment, inlandWaters

Summary

Results from collected eDNA field sample locations indicating presence or absence of bull trout. The points represent lab results starting in 2014 and updated at least once a year based on participation. This metadata document is abbreviated. To see a full version, including quality control and lineage, see the metadata on the Forest Service Research Data Archive page.

VERSION 06/05/2021.

Description

These data include 2014 - 2020 eDNA field sample points indicating lab results for presence or absence of bull trout. Sample sites are spaced at a 1 kilometer interval throughout the historical range of bull trout. eDNA stream samples are collected and species presence/absence is determined by analyses at the National Genomics Center. Results are recorded in the feature attribute table of the eDNA sample site shapefile.

One point feature in the shapefile was generated for each 1 kilometer sample point in the bull trout eDNA feature class. Where multiple samples were collected at a single eDNA sample site, replicate point features will occur at a single location in the shapefile. The bull trout is an ESA-listed species with a historical range that encompasses many waters across the Northwest. Though once abundant, bull trout have declined in many locations and are at risk from a changing climate, nonnative species, and habitat degradation. Informed conservation planning relies on sound and precise information about the distribution of bull trout in thousands of streams, but gathering this information is a daunting and expensive task. To overcome this problem, we coupled 1) predictions from the range-wide, spatially precise Climate Shield model on the location of natal habitats of bull trout with 2) a sampling template for every 8-digit hydrologic unit in the historical range of bull trout, based on the probability of detecting bull trout presence using environmental DNA (eDNA) sampling (McKelvey et al. 2016). The template consists of a master set of geospatially referenced sampling locations at 1-kilometer intervals within each cold-water habitat. We also identified sampling locations at this same interval based on the U.S. Fish and Wildlife Service's (USFWS) designation of critical spawning and rearing habitat. Based on field tests of eDNA detection probabilities conducted by the National Genomics Center for Wildlife and Fish Conservation, this sampling approach will reliably determine the presence of populations of bull trout, as well as provide insights on non-spawning habitats used by adult and subadult fish. The completed bull trout eDNA survey results are available through an interactive ArcGIS Online Map. The map provides the ability to zoom in and look at an area of interest, as well as to create queries or select an area to download points as a shapefile.

Credits

Funding for this project was provided by USDA Forest Service, Rocky Mountain Research Station, AWAE Program (Air, Water, and Aquatic Environments Program). Funding was also provided by the USDA Forest Service, National Genomics Center for Wildlife and Fish Conservation (https://www.fs.fed.us/research/genomics-center/edna/).

Use limitations

If you use these data in a publication, presentation, or other research product please use the following citation: Young, Michael K.; Isaak, Daniel J.; McKelvey, Kevin S.; Schwartz, Michael K.; Carim, Kellie J.; Fredenberg, W.; Wilcox, Taylor M.; Franklin, T.; Chandler, Gwynne L.; Nagel, David E.; Parkes-Payne, Sharon L.; Horan, Dona L.; Wollrab, Sherry P. 2017. Species occurrence data from the Range-Wide Bull Trout eDNA Project. Fort Collins, CO: Forest Service Research Data Archive. Updated 05 June 2021. https://doi.org/10.2737/RDS-2017-0038

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Extent

West -124.775558 **East** -111.232095
North 50.310857 **South** 40.661766

Scale Range

Maximum (zoomed in) 1:5,000
Minimum (zoomed out) 1:150,000,000

ArcGIS Metadata ►

Topics and Keywords ►

THEMES OR CATEGORIES OF THE RESOURCE biota, environment, health, inlandWaters, climatologyMeteorologyAtmosphere, location

* CONTENT TYPE Downloadable Data

PLACE KEYWORDS western United States, Oregon, Idaho, Nevada, Washington, Montana

THEME KEYWORDS biota, climatologyMeteorologyAtmosphere, environment, inlandWaters

THESAURUS ►
TITLE ISO 19115 Topic Category

THEME KEYWORDS Natural Resource Management & Use, Hydrology, watersheds, sedimentation, Monitoring, Inventory, Monitoring, & Analysis, Wildlife (or Fauna), Climate change, Landscape management, Habitat management, Fish, Forest & Plant Health, Invasive species, Climate effects, Ecology, Ecosystems, & Environment

THESAURUS ►
TITLE National Research & Development Taxonomy

THEME KEYWORDS occurrence, study, bull trout, bull trout habitat, location, environmental DNA, sample, presence, status, fish, eDNA, population, survey

Citation ►

TITLE Species occurrence data from the Range-Wide Bull Trout eDNA Project
PUBLICATION DATE 2017

PRESENTATION FORMATS digital map
FGDC GEOSPATIAL PRESENTATION FORMAT vector digital data

OTHER CITATION DETAILS
Updated 24 July 2020

Resource Details ►

DATASET LANGUAGES English (UNITED STATES)
DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format

STATUS under development
SPATIAL REPRESENTATION TYPE vector

SUPPLEMENTAL INFORMATION
For more information on The Range-Wide Bull Trout eDNA Project see:
https://www.fs.fed.us/rm/boise/AWAE/projects/BullTrout_eDNA.html

Original metadata date was 08/15/2017. Minor metadata updates were made on 09/01/2017.

On 07/03/2018 the metadata was updated to denote that 2018 data are now included. On 04/09/2019 the metadata was updated to reflect changes made to the data on 03/14/2019: added more sample results as well as added the Sample_Visit field to indicate if a sample was collected at more than one time at a single location on the sample day.

On 09/18/2019 more sample results were added, as well as changing the Sample_Visit field name to SampleVisi. Some location field names were added or edited to clarify sample grid locations from field collection locations. On 11/08/2019 the metadata was updated to reflect changes made to the data.

On 07/24/2020 an "ID_Tag" field to specify for the Lab which Unique ID was assigned to the sample for the PCR run. Additional minor metadata updates were included. More sample results were added, as well as changing the Sample_Visit field name to Samp_Visit.

On 6/5/2021 the metadata was updated to reflect the changes in the attribute table. There are two new fields: Field_Lon and Field_Lat. Those and other coordinate attribute definitions were edited to clarify which were grid point coordinates and which were GPS coordinates the contributor gave as the location of the field sample. The Samp_Visit field was deleted since the ID_Tag can be used to differentiate between samples at the same location and date.

* PROCESSING ENVIRONMENT Version 6.2 (Build 9200) ; Esri ArcGIS 10.5.1.7333

CREDITS
Funding for this project was provided by USDA Forest Service, Rocky Mountain Research Station, AWAE Program (Air, Water, and Aquatic Environments Program). Funding was also provided by the USDA Forest Service, National Genomics Center for Wildlife and Fish Conservation (https://www.fs.fed.us/research/genomics-center/edna/).

Extents ►

EXTENT
GEOGRAPHIC EXTENT
BOUNDING RECTANGLE
WEST LONGITUDE -124.21406
EAST LONGITUDE -112.31333
SOUTH LATITUDE 41.78174
NORTH LATITUDE 48.99968

EXTENT
DESCRIPTION
Observed

TEMPORAL EXTENT

BEGINNING DATE 2014
ENDING DATE 2020

EXTENT
GEOGRAPHIC EXTENT
BOUNDING RECTANGLE
EXTENT TYPE Extent used for searching
* WEST LONGITUDE -124.775558
* EAST LONGITUDE -111.232095
* NORTH LATITUDE 50.310857
* SOUTH LATITUDE 40.661766
* EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM
* WEST LONGITUDE -2119472.350200
* EAST LONGITUDE -1241737.887500
* SOUTH LATITUDE 2248177.694800
* NORTH LATITUDE 3144479.026900
* EXTENT CONTAINS THE RESOURCE Yes

Resource Points of Contact ►

POINT OF CONTACT
INDIVIDUAL'S NAME Sharon Parkes-Payne
ORGANIZATION'S NAME USDA Forest Service, Rocky Mountain Research Station, Boise Aquatic Sciences Lab
CONTACT'S POSITION GIS Specialist
CONTACT'S ROLE point of contact

CONTACT INFORMATION ►
PHONE
VOICE 208-373-4356
ADDRESS
TYPE both
DELIVERY POINT 322 East Front Street
CITY Boise
ADMINISTRATIVE AREA ID
POSTAL CODE 83702
COUNTRY US
E-MAIL ADDRESS sharon.l.payne@usda.gov

Resource Maintenance ►

RESOURCE MAINTENANCE
UPDATE FREQUENCY biannually

Resource Constraints ►

LEGAL CONSTRAINTS
LIMITATIONS OF USE
Metadata documents have been reviewed for accuracy and completeness. Unless otherwise stated, all data and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. However, neither the author, the Archive, nor any part of the federal government can assure the reliability or suitability of these data for a particular purpose. The act of distribution shall not constitute any such warranty, and no responsibility is assumed for a user's application of these data or related materials. The metadata, data, or related materials may be updated without notification. If a user believes errors are present in the metadata, data or related materials, please use the information in (1) Identification Information: Point of Contact, (2) Metadata Reference: Metadata Contact, or (3) Distribution Information: Distributor to notify the author or the Archive of the issues.

CONSTRAINTS

LIMITATIONS OF USE

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Spatial Reference ►

ARCGIS COORDINATE SYSTEM

* TYPE Projected
* GEOGRAPHIC COORDINATE REFERENCE GCS_North_American_1983
* PROJECTION NAD_1983_Albers
* COORDINATE REFERENCE DETAILS

PROJECTED COORDINATE SYSTEM

X ORIGIN -16901100
Y ORIGIN -6972200
XY SCALE 266467840.99085236
Z ORIGIN -100000
Z SCALE 10000
M ORIGIN -100000
M SCALE 10000
XY TOLERANCE 0.001
Z TOLERANCE 0.001
M TOLERANCE 0.001
HIGH PRECISION true
WELL-KNOWN TEXT

PROJCS["NAD_1983_Albers",GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Albers"],PARAMETER["False_Easting",0.0],PARAMETER["False_Northing",0.0],PARAMETER["Central_Meridian",-96.0],PARAMETER["Standard_Parallel_1",29.5],PARAMETER["Standard_Parallel_2",45.5],PARAMETER["Latitude_Of_Origin",23.0],UNIT["Meter",1.0]]

REFERENCE SYSTEM IDENTIFIER

* VALUE 0

Spatial Data Properties ►

VECTOR ►

* LEVEL OF TOPOLOGY FOR THIS DATASET geometry only

GEOMETRIC OBJECTS

FEATURE CLASS NAME BullTrout_eDNA_FieldSampleResults

* Object type point
* Object count 42310

ArcGIS Feature Class Properties ►
Feature class name BullTrout_eDNA_FieldSampleResults
* Feature type Simple
* Geometry type Point
* Has topology FALSE
* Feature count 42310
* Spatial index FALSE
* Linear referencing FALSE

Fields ►

Details for object BullTrout_eDNA_FieldSampleResults ►
* Type Feature Class
* Row count 42310
Definition
Attribute Table

Definition source
ESRI

Field FID ►
* Alias FID
* Data type OID
* Width 4
* Precision 0
* Scale 0
* Field description
Internal feature number.

* Description source
Esri

* Description of values
Sequential unique whole numbers that are automatically generated.

Field Shape ►
* Data type Geometry
* Width 0
* Precision 0
* Scale 0
* Alias Shape
Field description
Feature geometry.

Description source
ESRI

Description of values
Coordinates defining the features.

Field OBJECTID ►
* Alias OBJECTID
* Data type Integer
* Width 10
* Precision 10

* Scale 0

Field eDNA_ID ►
* Data type String
* Width 25
* Precision 0
* Scale 0
* Alias eDNA_ID

Field description
Full eDNA Project ID number for the sample point derived from concatenating the HUC8 number and the unique eDNA sample Site_ID

Description source
USDA Forest Service

Field HUC8 ►
* Data type String
* Width 10
* Precision 0
* Scale 0
* Alias HUC8

Field description
Watershed Boundary Dataset 8-digit subbasin number

Description source
USDA Forest Service (via USGS - https://water.usgs.gov/GIS/wbd_huc8.pdf)

Field HUC8_Name ►
* Data type String
* Width 60
* Precision 0
* Scale 0
* Alias HUC8_Name

Field description
Watershed Boundary Dataset 8-digit subbasin name

Description source
USDA Forest Service (via USGS - https://water.usgs.gov/GIS/wbd_huc8.pdf)

Field Site_ID ►
* Data type String
* Width 254
* Precision 0
* Scale 0
* Alias Site_ID

Field description
eDNA Field sample point unique ID

Description source
USDA Forest Service

Field COMID ►
* Data type Integer
* Width 10
* Precision 10
* Scale 0
* Alias COMID

Field description
Common identifier (COMID) of the underlying NHDFlowline (version 2).

DESCRIPTION SOURCE
USDA Forest Service (via NHD, EPA, USGS)

FIELD GNIS_NAME ▶

* DATA TYPE String
* WIDTH 65
* PRECISION 0
* SCALE 0
* ALIAS GNIS_NAME

FIELD DESCRIPTION
Feature Name from the Geographic Names Information System (GNIS_NAME) NHD Plus version 2

DESCRIPTION SOURCE
USDA Forest Service (via NHD, EPA, USGS)

FIELD REACHCODE ▶

* DATA TYPE String
* WIDTH 14
* PRECISION 0
* SCALE 0
* ALIAS REACHCODE

FIELD DESCRIPTION
REACHCODE of the underlying NHD Plus version 2 NHDFlowline

DESCRIPTION SOURCE
USDA Forest Service (via NHD, EPA, USGS)

FIELD TotDASqKM ▶

* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* ALIAS TotDASqKM
* SCALE 0

FIELD DESCRIPTION
Total Upstream Cumulative Drainage Area, in square kilometers, at the downstream end of the NHDFlowline feature.

DESCRIPTION SOURCE
USDA Forest Service (via NHD, EPA, USGS)

FIELD DD_X ▶

* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
* ALIAS DD_X

FIELD DESCRIPTION
grid point x-coordinate in Decimal Degrees - contributor field coordinates

DESCRIPTION SOURCE
USDA Forest Service

FIELD DD_Y ▶

* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
* ALIAS DD_Y

FIELD DESCRIPTION
grid point y-coordinate in Decimal Degrees - contributor field coordinates

DESCRIPTION SOURCE
USDA Forest Service

FIELD UTM_Zone ▶

* DATA TYPE String
* WIDTH 254
* PRECISION 0
* SCALE 0
* ALIAS UTM_Zone

FIELD DESCRIPTION
UTM Zone

DESCRIPTION SOURCE
USDA Forest Service

FIELD UTM_X ▶

* ALIAS UTM_X
* DATA TYPE String
* WIDTH 254
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION
UTM x-coordinate; Universal Transverse Mercator (UTM) conformal projection uses a 2-dimensional Cartesian coordinate system to give locations on the surface of the Earth

DESCRIPTION SOURCE
USDA Forest Service

FIELD UTM_Y ▶

* DATA TYPE String
* WIDTH 254
* PRECISION 0
* ALIAS UTM_Y
* SCALE 0

FIELD DESCRIPTION
UTM y-coordinate; Universal Transverse Mercator (UTM) conformal projection uses a 2-dimensional Cartesian coordinate system to give locations on the surface of the Earth

DESCRIPTION SOURCE
USDA Forest Service

FIELD SummerQ ▶

* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
* ALIAS SummerQ

FIELD DESCRIPTION
Mean summer flow in cubic feet per second (cfs) at the sample point from the VIC flow model - https://www.fs.fed.us/rm/boise/AWAE/projects/modeled_stream_flow_metrics.shtml

DESCRIPTION SOURCE
USDA Forest Service

FIELD eDNA_Slope ▶

* DATA TYPE Double
* WIDTH 19
* PRECISION 0

* SCALE 0
* ALIAS eDNA_Slope

FIELD DESCRIPTION

Stream channel slope averaged to the next upstream field sample point or tributary

DESCRIPTION SOURCE

USDA Forest Service

FIELD Ownership ►

* DATA TYPE String
* WIDTH 60
* PRECISION 0
* SCALE 0
* ALIAS Ownership

FIELD DESCRIPTION

Land ownership at the field sample point from the Protected Areas Database of the United States (PADUS).

DESCRIPTION SOURCE

USDA Forest Service (via USGS - See PAD-US Standards Manual Document, https://gapanalysis.usgs.gov/padus/data/standards)

FIELD Field_Zone ►

* DATA TYPE Integer
* WIDTH 10
* PRECISION 10
* SCALE 0
* ALIAS Field_Zone

FIELD DESCRIPTION

UTM zone for the coordinates where the sample was collected in the field.

DESCRIPTION SOURCE

USDA Forest Service

FIELD Field_East ►

* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
* ALIAS Field_East

FIELD DESCRIPTION

UTM easting (X) coordinate where the sample was collected in the field.

DESCRIPTION SOURCE

USDA Forest Service

FIELD Field_Nrth ►

* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
* ALIAS Field_Nrth

FIELD DESCRIPTION

UTM northing (Y) coordinate where the sample was collected in the field.

DESCRIPTION SOURCE

USDA Forest Service

FIELD Field_Lon ►

* ALIAS Field_Lon

* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

Sample point x-coordinate in Decimal Degrees where the sample was collected in the field. Contributor field coordinates.

DESCRIPTION SOURCE

USDA Forest Service

FIELD Field_Lat ►

* ALIAS Field_Lat
* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

Sample point y-coordinate in Decimal Degrees where the sample was collected in the field. Contributor field coordinates.

DESCRIPTION SOURCE

USDA Forest Service

FIELD Date_Coll ►

* DATA TYPE Date
* WIDTH 8
* PRECISION 0
* SCALE 0
* ALIAS Date_Coll

FIELD DESCRIPTION

Date the sample was collected in the field. A NULL value indicates the collection date is not known or the site location has not yet been sampled.

DESCRIPTION SOURCE

USDA Forest Service

FIELD Datasource ►

* DATA TYPE String
* WIDTH 254
* PRECISION 0
* SCALE 0
* ALIAS DataSource

FIELD DESCRIPTION

Agency of the individual who collected the field sample.

DESCRIPTION SOURCE

USDA Forest Service

FIELD ID_Tag ►

* ALIAS ID_Tag
* DATA TYPE String
* WIDTH 254
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

Unique ID assigned to each eDNA sample stored/processed at the National Genomics Center for Wildlife and Fish Conservation.

DESCRIPTION SOURCE
USDA Forest Service

FIELD BT_Present ▶

* DATA TYPE Integer
* WIDTH 10
* PRECISION 10
* SCALE 0
* ALIAS BT_Present

FIELD DESCRIPTION
Indicates if a site has been sampled and if bull trout is present.

DESCRIPTION SOURCE
USDA Forest Service

LIST OF VALUES

VALUE 1
DESCRIPTION not sampled
ENUMERATED DOMAIN VALUE DEFINITION SOURCE USDA Forest Service

VALUE 2
DESCRIPTION sampled, bull trout absent
ENUMERATED DOMAIN VALUE DEFINITION SOURCE USDA Forest Service

VALUE 3
DESCRIPTION sampled, bull trout present
ENUMERATED DOMAIN VALUE DEFINITION SOURCE USDA Forest Service

VALUE 4
DESCRIPTION sampled, being processed. Note that the July 2020 update does not have any samples that have been taken and not processed.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE USDA Forest Service

FIELD S1_93_11 ▶

* DATA TYPE Double
* WIDTH 19
* PRECISION 0
* SCALE 0
* ALIAS S1_93_11

FIELD DESCRIPTION
NorWeST - Scenario 1, modeled stream temperature from 1993-2011 at the sample point.

https://www.fs.fed.us/rm/boise/AWAE/projects/NorWeST.html

DESCRIPTION SOURCE
USDA Forest Service

FIELD BTPresentT ▶

* DATA TYPE String
* WIDTH 50
* PRECISION 0
* SCALE 0
* ALIAS BTPresentT

FIELD DESCRIPTION
Bull Trout Present - text corresponding to the BT_Present attribute.

DESCRIPTION SOURCE
USDA Forest Service

LIST OF VALUES

VALUE not sampled
DESCRIPTION The National Genomics Center for Wildlife and Fish Conservation indicates they have not received a sample from this location. If you would like to contribute a sample at this location, see https://www.fs.fed.us/rm/boise/AWAE/projects/BullTrout_eDNA/Participating.html.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE USDA Forest Service

VALUE sampled, bull trout absent
DESCRIPTION The National Genomics Center for Wildlife and Fish Conservation indicates they have received a sample from this site and have tested it to find no bull trout eDNA present.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE USDA Forest Service

VALUE sampled, bull trout present
DESCRIPTION The National Genomics Center for Wildlife and Fish Conservation indicates they have received a sample from this site and have tested it to find bull trout eDNA present at the location.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE USDA Forest Service

VALUE sampled, being processed Note that the July 2020 update does not have any samples that have been taken and not processed.
DESCRIPTION The National Genomics Center for Wildlife and Fish Conservation indicates they have received a sample from this site and the sample is still being processed.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE USDA Forest Service

OVERVIEW DESCRIPTION ►
ENTITY AND ATTRIBUTE DETAIL CITATION
See the User Guide for more specifics: https://www.fs.fed.us/rm/boise/AWAE/projects/BullTrout_eDNA/SurveyStatus.html.

ENTITY AND ATTRIBUTE OVERVIEW
The data available for download from the ArcGIS Online map contain bull trout eDNA lab results from field samples contributed to National Genomics Center for Wildlife and Fish Conservation, as well as information about the date and agency that collected the genetic material. This attribute table also contains other useful information including slope, stream temperature, and other additional about the sample site location.

Hide Overview Description ▲

Hide Fields ▲

Metadata Details ►

METADATA LANGUAGE English (UNITED STATES)
METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format

SCOPE OF THE DATA DESCRIBED BY THE METADATA dataset
SCOPE NAME * dataset

* LAST UPDATE 2020-07-21

ARCGIS METADATA PROPERTIES
METADATA FORMAT ArcGIS 1.0
METADATA STYLE FGDC CSDGM Metadata
STANDARD OR PROFILE USED TO EDIT METADATA FGDC

CREATED IN ARCGIS FOR THE ITEM 2020-07-16 13:59:49
LAST MODIFIED IN ARCGIS FOR THE ITEM 2020-07-21 14:46:20

AUTOMATIC UPDATES
HAVE BEEN PERFORMED Yes
LAST UPDATE 2020-07-21 14:45:31

Metadata Contacts ▶

METADATA CONTACT
- INDIVIDUAL'S NAME Sharon Parkes-Payne
- ORGANIZATION'S NAME USDA Forest Service, Rocky Mountain Research Station, Boise Aquatic Sciences Lab
- CONTACT'S POSITION GIS Specialist
- CONTACT'S ROLE point of contact
- CONTACT INFORMATION ▶
  - PHONE
    - VOICE 208-373-4356
  - ADDRESS
    - TYPE both
    - DELIVERY POINT 322 East Front Street
    - CITY Boise
    - ADMINISTRATIVE AREA ID
    - POSTAL CODE 83702
    - COUNTRY US
    - E-MAIL ADDRESS sharon.l.payne@usda.gov