StreamNet Steering Committee Meeting

February 20-21, 2024

ODFW Headquarters
4034 Fairview Industrial Dr. SE
Salem, OR 97302

Microsoft Teams meeting: link
Meeting ID: 297 867 202 562
Passcode: Lnt2wy

Or call in (audio only)
+1 (207) 387-0436
Phone conference ID: 711 307 587#

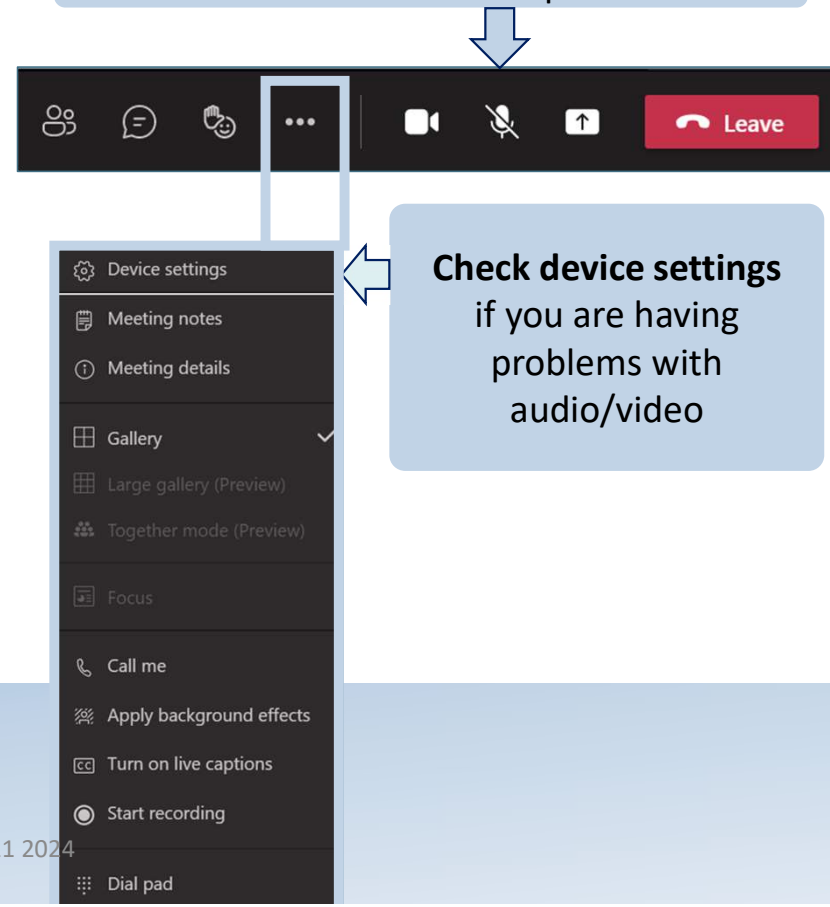
Welcome and Introductions

Please leave web cameras on to facilitate discussion

All participants,

please use the chat to introduce yourself (name and affiliation)

Please mute yourself when not speaking.
Use *6 to mute phone audio.
Use the microphone icon on the control bar to mute computer audio.



Check device settings if you are having problems with audio/video

Agenda

(times are approximate, Pacific Standard Time)

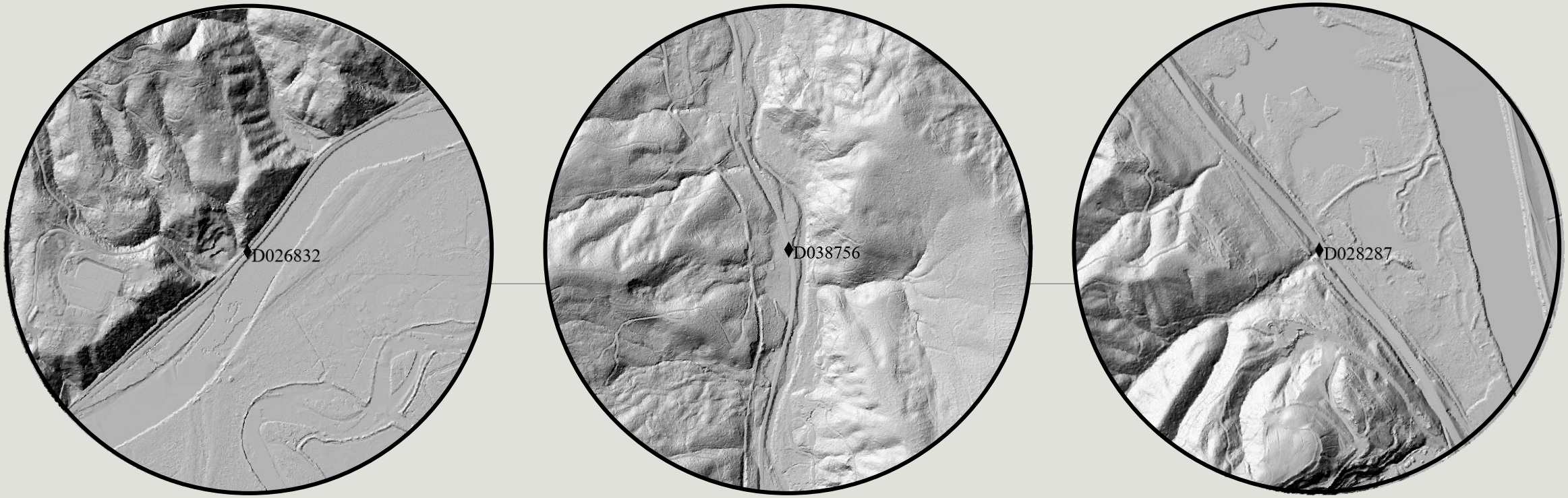
DAY 1 – 2/20/2024	
TIME	AGENDA ITEM
1PM	Welcome and introductions (Mari Williams)
1:15	Spotlight: ODFW Early Predication Method for Native Migratory Fish Presence at Small Culverts - Courtney Zambory
1:45	HCAX updates (Mike Banach, Jen Bayer, Mari, Greg Wilke)
2:15	Fish Monitoring Work Group Task Updates (Meg Dethloff)
2:30	Stretch Break
2:45	StreamNet Website updates (Mari)
3:00	Member Updates
5:00	End Day 1
6:00	Dinner and Celebration of Cedric Gilgamesh Brewing 503-584-1789 2065 Madrona Ave, SE, Salem, OR

DAY 2 – 2/21/2024	
TIME	AGENDA ITEM
9AM	Welcome and introductions (Mari)
9:10	Spotlight: Latest from NHD, Tom Carlson (USGS National Geospatial Program Liaison for ID, OR, & WA)
9:30	StreamNet Technical Team (Mike)
10:00	Data QA/QC task progress (Greg)
10:15	Stretch Break
10:30	BPA annual report (Mari)
11:15	CAP workshop tasks (Jen, Mari)
11:45	Next SN SC Meeting
12:00	Adjourn

Spotlight: ODFW

Early Predication Method for Native Migratory Fish Presence at Small Culverts - Courtney Zambory

Early Predication Method for Native Migratory Fish Presence at Small Culverts

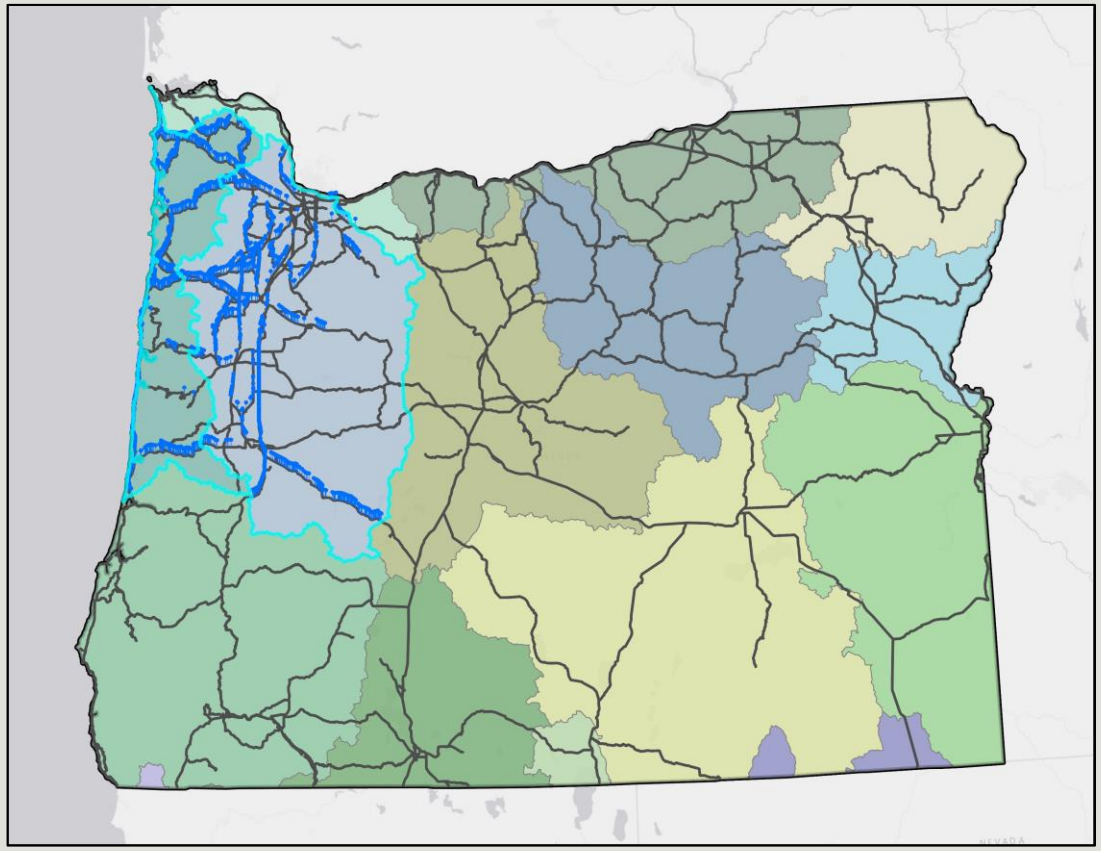


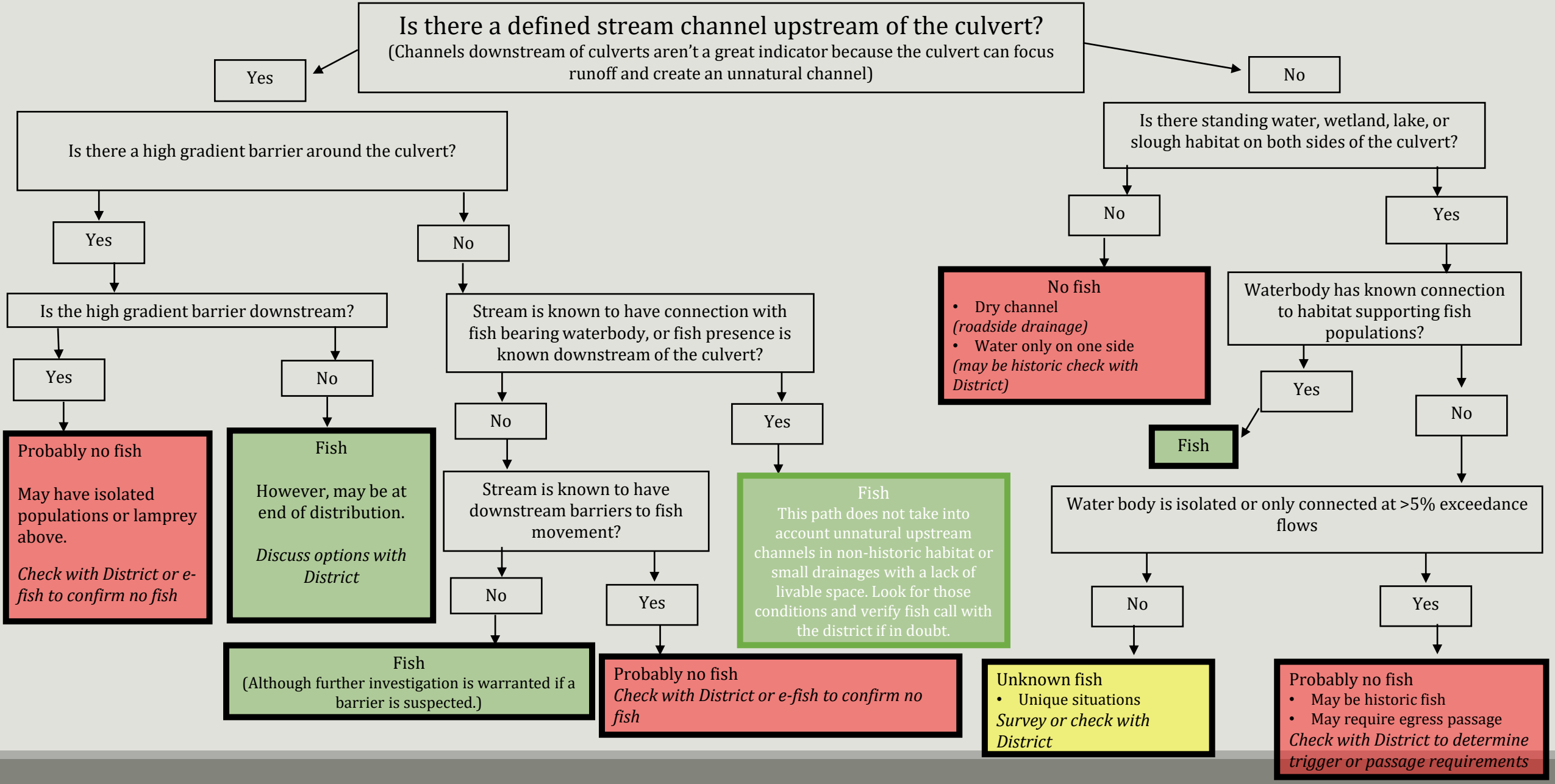
Introduction

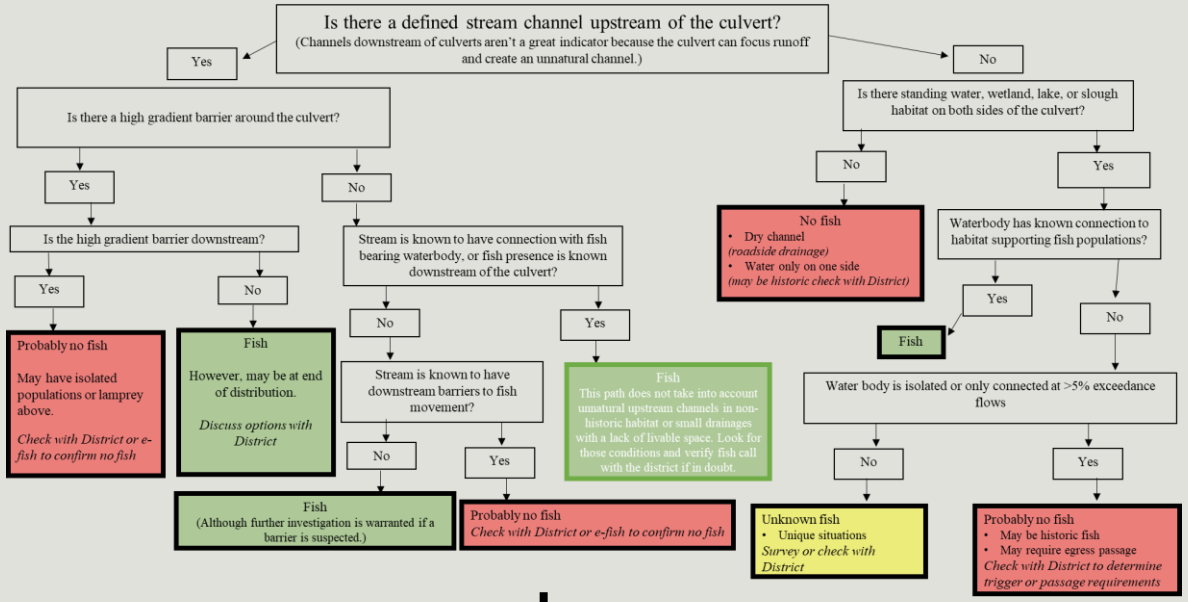
- Aid in the statewide prioritization planning of culverts for repair or restoration
- Assess culvert fish access
- To provide a decision support tool (DST) that will assist ODOT's ability to plan or deliver Statewide Transportation Improvement Program (STIP) and culvert repair and replacement projects statewide
- Models were integrated into a Python-based ArcGIS toolbox to facilitate use

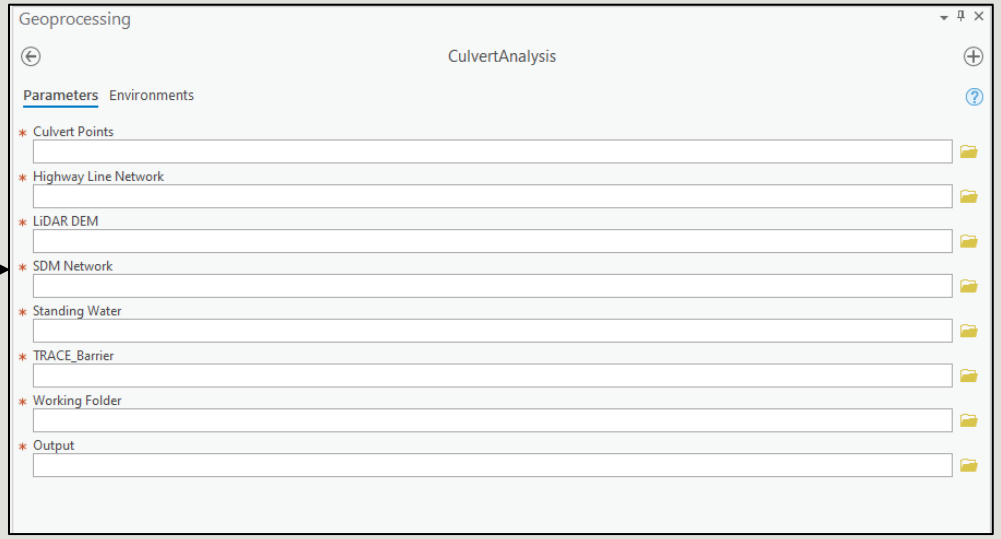
Oregon Highway System

- 51% of the Oregon highway system has been surveyed for culverts
- Project focuses on culverts < 3ft in diameter
- ODOT Culvert Data Delivery (12,644)

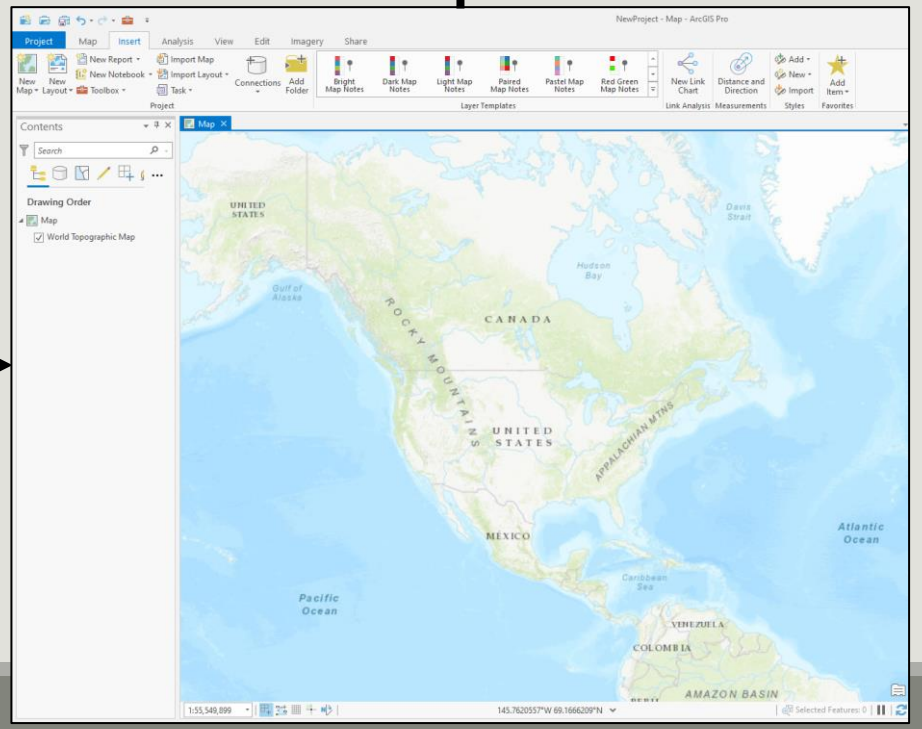



Is there a defined stream channel upstream of the culvert?
(Channels downstream of culverts aren't a great indicator because the culvert can focus runoff and create an unnatural channel)
Yes
No
Is there a high gradient barrier around the culvert?
Yes
No
Is the high gradient barrier downstream?
Yes
No
Probably no fish
May have isolated populations or lamprey above.
Check with District or e-fish to confirm no fish
Fish
However, may be at end of distribution.
Discuss options with District
Stream is known to have connection with fish bearing waterbody, or fish presence is known downstream of the culvert?
No
Yes
Stream is known to have downstream barriers to fish movement?
No
Yes
Fish
(Although further investigation is warranted if a barrier is suspected.)
Probably no fish
Check with District or e-fish to confirm no fish
Fish
This path does not take into account unnatural upstream channels in non-historic habitat or small drainages with a lack of livable space. Look for those conditions and verify fish call with the district if in doubt.
Is there standing water, wetland, lake, or slough habitat on both sides of the culvert?
No
Yes
No fish
• Dry channel (roadside drainage)
• Water only on one side (may be historic check with District)
Waterbody has known connection to habitat supporting fish populations?
Yes
No
Fish
Water body is isolated or only connected at >5% exceedance flows
No
Yes
Unknown fish
• Unique situations
Survey or check with District
Probably no fish
• May be historic fish
• May require egress passage
Check with District to determine trigger or passage requirements






```
Attribute_List = ["ChannelU", "ChannelD", "HighGradU", "HighGradD",
                  "Anthro","BarrierD", "WaterU", "WaterD","FishConn", "IsoWater"]


for Attribute in Attribute_List:                                    # Add each attribute in the list above to your output feature
    arcpy.AddField_management(output_feature, Attribute, 'TEXT')


DFID_tracking = 0                                                   # Start the DFID tracking
for x in DFID_list:
    DFID = str(x)                                                   # Get DFID name of the culvert
    path = inputpath + "\\" + str(DFID) + "\\"                      # Create a separate folder that contains all the information for this DFID
    if not os.path.exists(path):
        os.makedirs(path)
    DFID_tracking = DFID_tracking + 1
    arcpy.AddMessage('Processing DFID ' + str(DFID) +
                     " which is # " + str(DFID_tracking) + ' of ' +
                     str(DFID_list_length) + ' culverts...')
    arcpy.env.extent = "Default"
    temp = arcpy.MakeFeatureLayer_management(culverts, "strm_netix")    # Select the individual culvert from the list of the culverts
    selection =' "DFID" = ' + "'" + x + "'"
    arcpy.SelectLayerByAttribute_management(temp, "NEW_SELECTION", selection)
    culvert_location = arcpy.CopyFeatures_management(temp, path + "culvert.shp")    # Create a shapefile with only the single culvert point
    arcpy.AddField_management(culvert_location, "UID", "Double")    # Add a UID field - this will help distinguish the culvert from the other points
    field_id = ["UID"]
    with arcpy.da.UpdateCursor(culvert_location, field_id) as cursor2:    # The culvert UID will be 0
        for each_row in cursor2:
            each_row[0] = 0

    buffered_culvert = arcpy.Buffer_analysis(culvert_location, 'in_memory' + "\\buffer", "0.5 MILES")    # Buffer the individual culvert to a search distance of 0.5 mile
    DEM_extracted = ExtractByMask(DEM, buffered_culvert)                # Extract the DEM to this buffered distance
    DEM_extracted.save('in_memory' + "\\" + str(DFID) +  "extdem")      # Save the DEM
    arcpy.env.extent = DEM_extracted                                    # Get the extent of the extracted DEM to limit the size of the processing
    cellsize = float(arcpy.GetRasterProperties_management(DEM_extracted, "CELLSIZEX").getOutput(0))    # Get the cell size of the extracted DEM to limit the size of the processing


    def flow_network_creation (DEM):
            DEMFill = Fill(DEM_extracted)                               # Fill the DEM
            DEMFill.save(path + str(DFID) +  "DEM_fill.tif")
            D8FlowDir = FlowDirection(DEMFill, "", "")                  # Create the Flow Direction for the DEM
            D8FlowDir.save(path +  "DEM_flowdir.tif")
            D8Accumulation = FlowAccumulation(D8FlowDir)                # Create the Flow Accumulation for the DEM
            D8Accumulation.save(path + str(DFID) +  "DEM_flowacc.tif")
            HillshadeOut = Hillshade(DEM_extracted, "", "", "", 1)      # Create the Hillshade of the DEM
            HillshadeOut.save(path + str(DFID) + "Hillshade.tif")


    flow_network_creation(DEM_extracted)


    DEMFill = path + str(DFID) +  "DEM_fill.tif"                        # Fill the DEM
    D8FlowDir = path +  "DEM_flowdir.tif"                               # Create the Flow Direction for the DEM
    D8Accumulation = path + str(DFID) +  "DEM_flowacc.tif"              # Create the Flow Accumulation for the DEM
    HillshadeOut = path + str(DFID) + "Hillshade.tif"                   # Create the Hillshade of the DEM
```



Culvert shapefile with a unique "DFID“ attribute

Highway ArcGIS Line network. This shapefile will be used to delineate one side of the culvert from another.

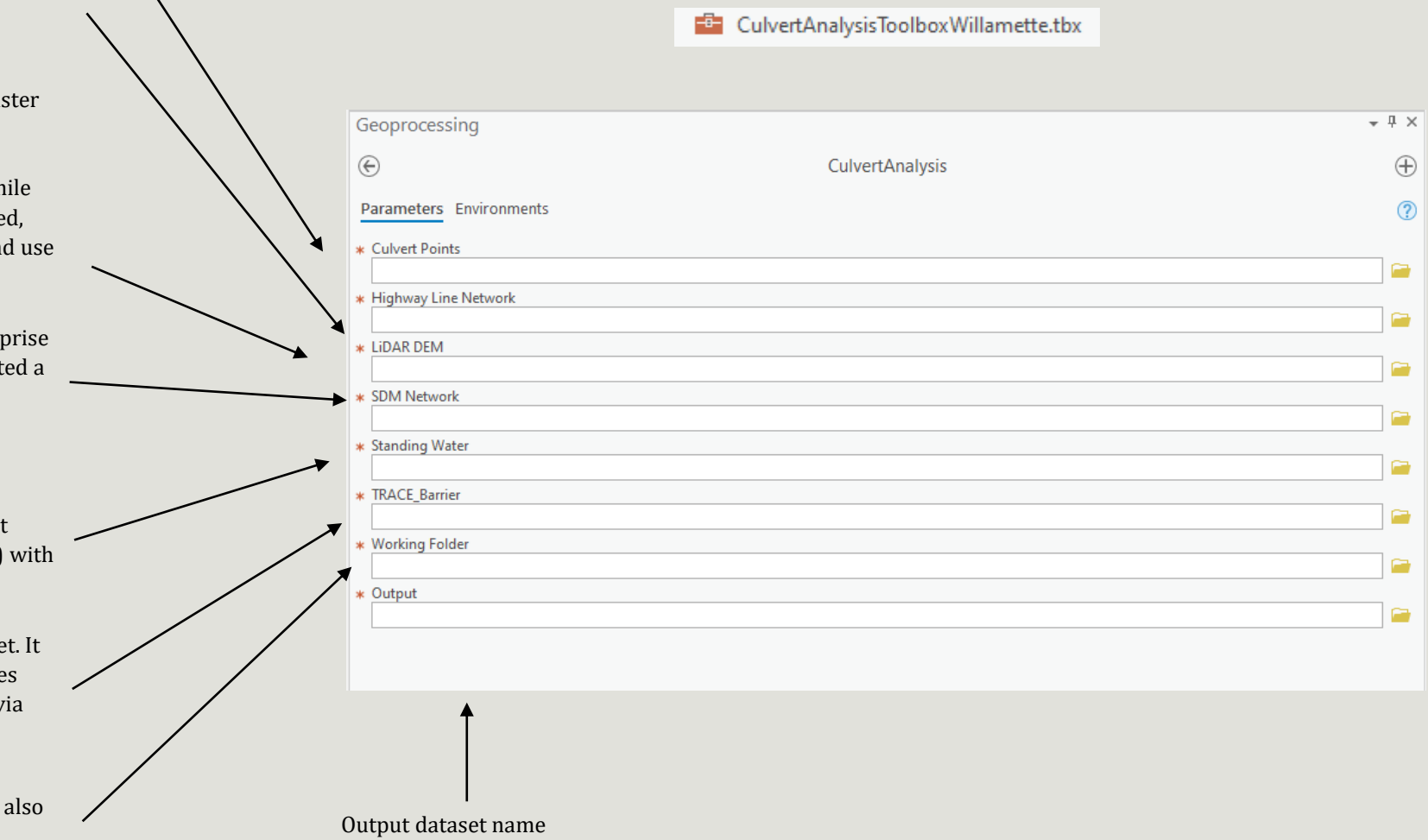
LiDAR bare earth digital elevation model. This should be in raster format and can be downloaded from the DOGMAI website (https://gis.dogami.oregon.gov/maps/lidarviewer/) as quadrangles. Ensure that the LiDAR data covers at least 1/2 mile around culverts of interest. If multiple culverts will be analyzed, mosaic multiple bare earth LiDAR rasters to a single raster and use that mosaicked product as this input.

Input the SDM network included in this package. It should comprise of a NHD High-Res network version with each segment attributed a probability (where there was data) of each of the 32 Native Migratory Fish (NMF) that would trigger a fish passage law.

Input the standing water polygon shapefile included in this package. This is simply the National Wetland Inventory dataset (https://www.fws.gov/wetlands/data/State-Downloads.html) with all riverine features excluded.

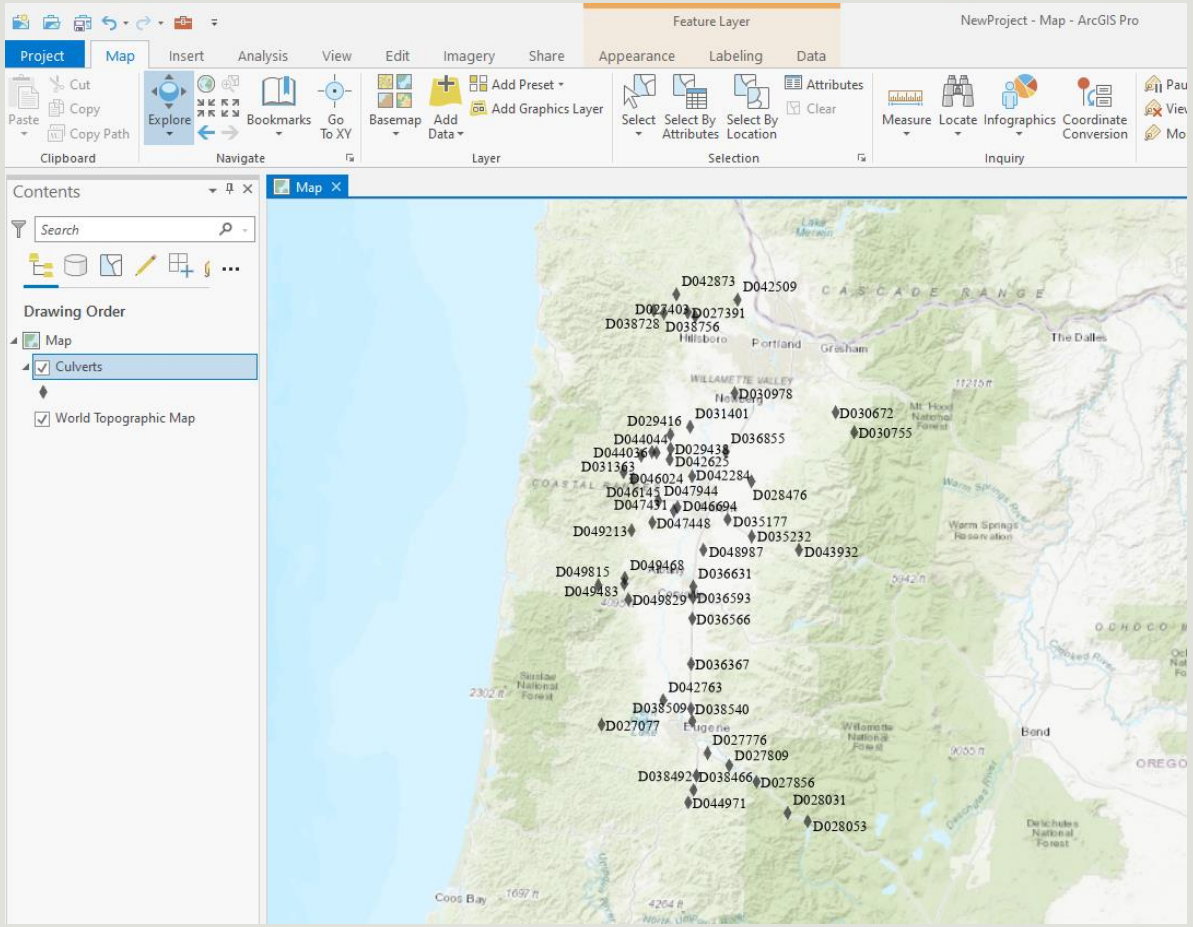
The Trace Network was derived from the NHD High-Res dataset. It has been converted from a geometric to Trace network. Reaches that have natural falls barriers that were fully blocked (found via the ODFW barrier database) have a value of 1.

The folder to which the final dataset will be written - this will also act as the folder that will hold all the temporary files.



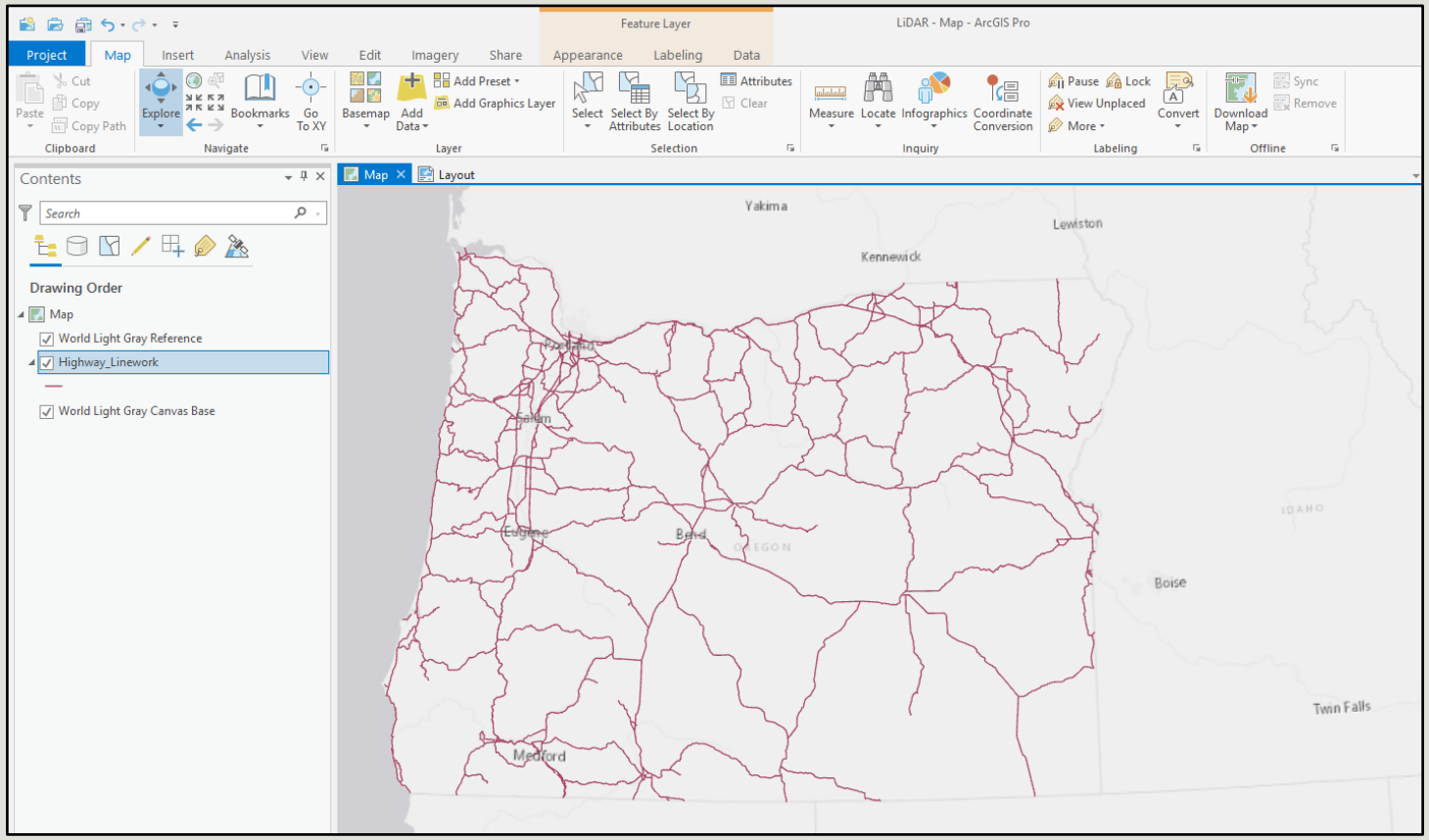
Data Inputs

- Culvert data can be requested from ODOT, just be sure to specify you need the DFID, Latitude, and Longitude



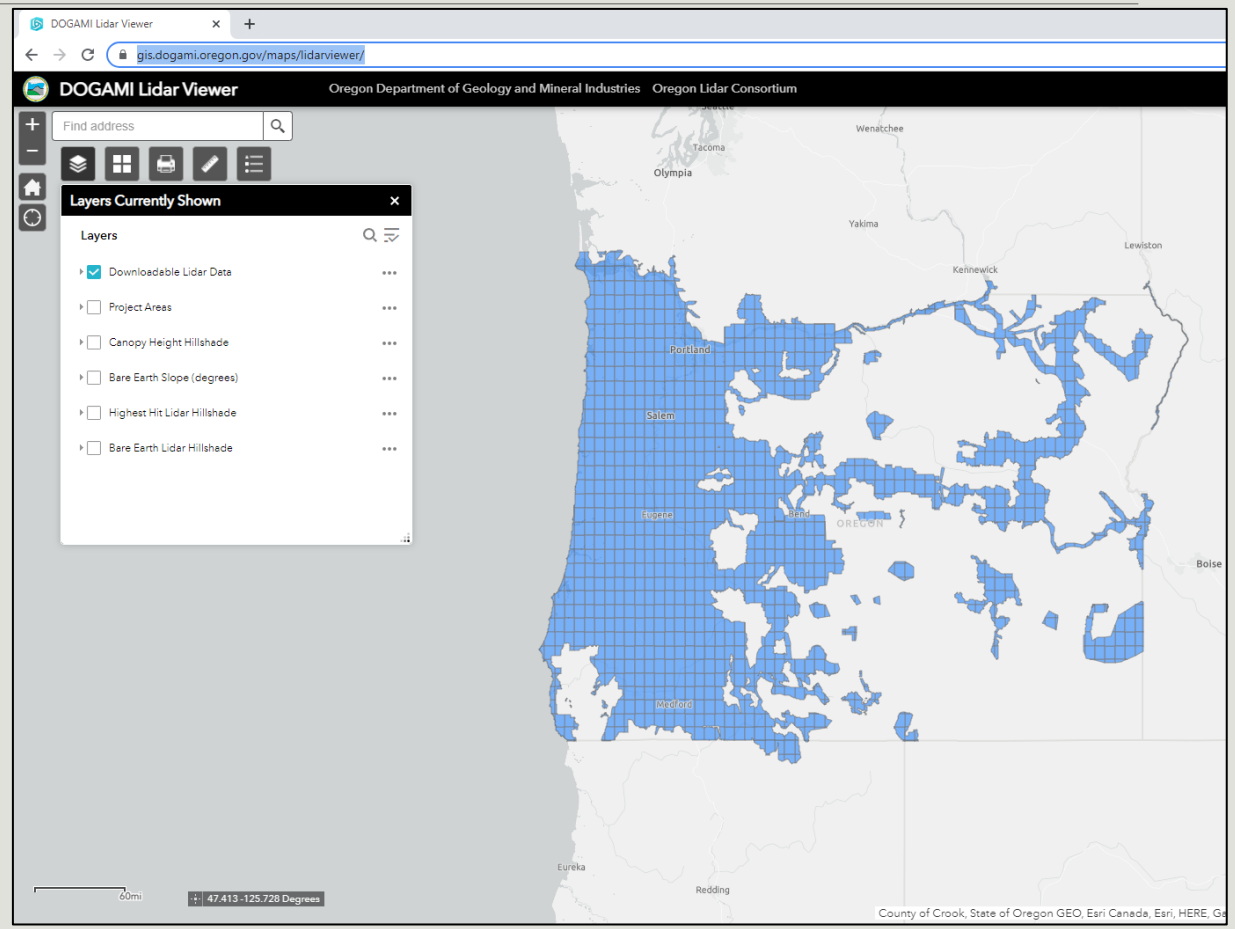
Data Inputs – Highway Network

- The highway network is used in this code to cut a culvert path across the highway to facilitate flow from one side of the highway to the other.
- This input must be a line shapefile, but it does not need any special attributes.
- A highway network can be downloaded at the following website : https://spatialdata.oregonexplorer.info/geoportal/details;id=4a85376345144876ac9135aec76eb0de



Data Inputs – LiDAR – derived Digital Elevation Models

- The digital elevation model (DEM) is essential to the successful execution of the culvert analysis toolbox.
- https://gis.dogami.oregon.gov/maps/lidarviewer/
- LiDAR data has not yet been collected for the entire state of Oregon – areas with blue rectangles have data available.
- This dataset is updated on an ongoing basis, so check back at the website for added data.



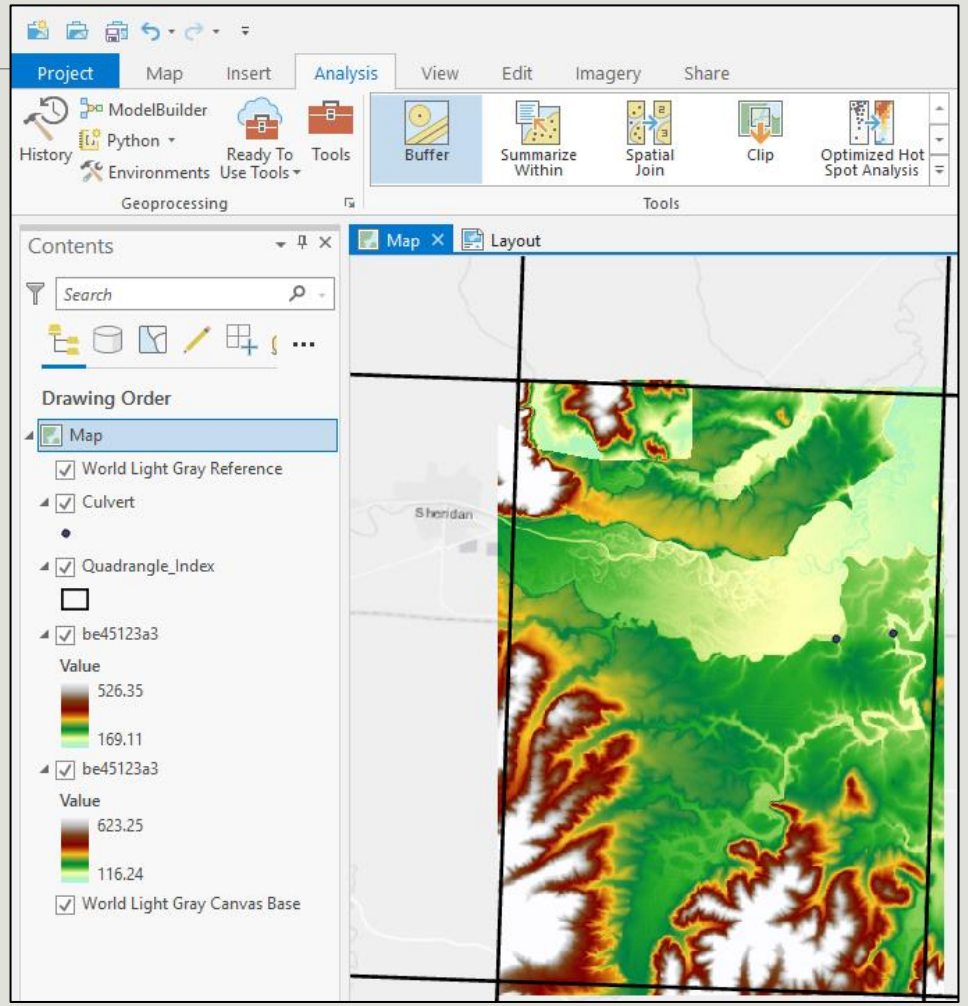
Data Inputs – LiDAR – derived Digital Elevation Models

- The digital elevation model (DEM) is essential to the successful execution of the culvert analysis toolbox. It relies on high resolution LiDAR data for Oregon which can be found at:

- https://gis.dogami.oregon.gov/maps/lidarviewer/

- LiDAR data has not yet been collected for the entire state of Oregon – areas with blue rectangles have data available.

- This dataset is updated on an ongoing basis, so check back at the website for added data.

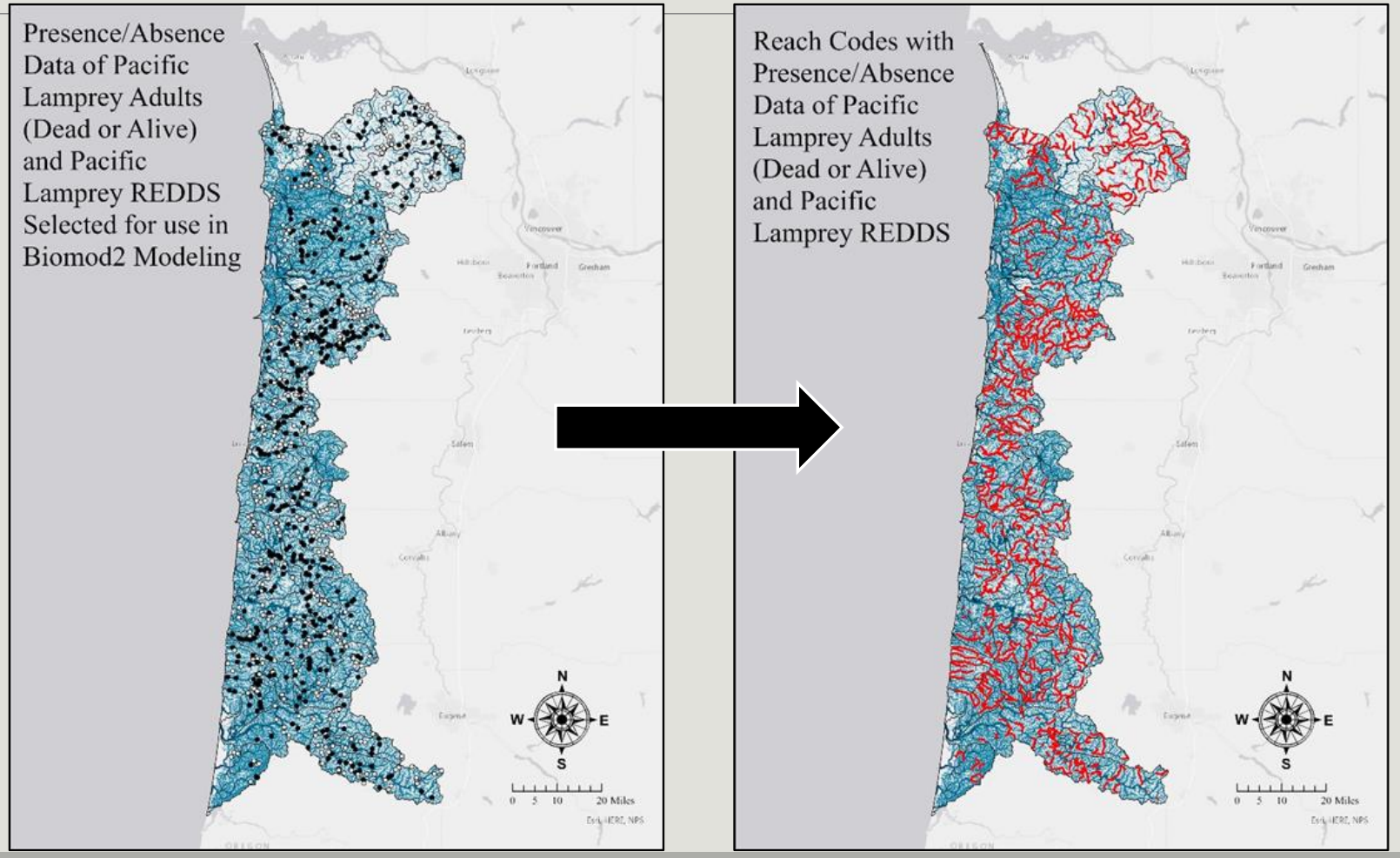


Data Inputs – Species Distribution Model Network

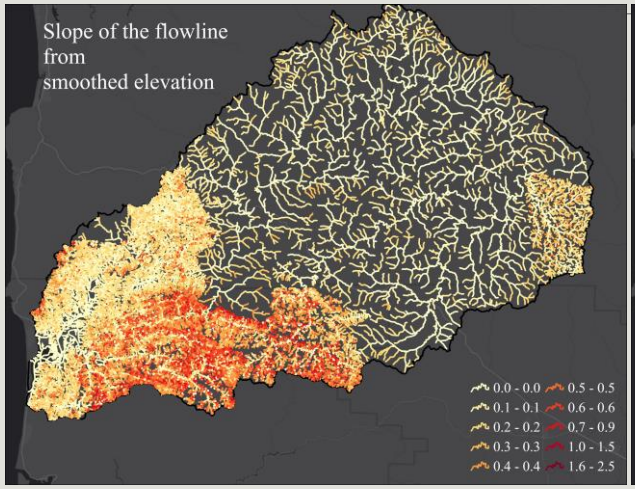
1. *Acipenser medirostris*.....Green sturgeon
2. *Acipenser transmontanus*.....White sturgeon
3. *Amphistichus rhodoterus*.....Redtail surfperch
4. *Catostomus columbianus*.....Bridgelip sucker
5. *Catostomus luxatus/Deltistes luxa*tus.....Lost River sucker
6. *Catostomus macrocheilus*.....Largescale sucker
7. *Catostomus microps*.....Modoc sucker
8. *Catostomus occidentalis*.....Goose Lake sucker
9. *Catostomus platyrhynchus*.....Mountain sucker
10. *Catostomus rimiculus*.....Klamath smallscale sucker
11. *Catostomus snyderi*.....Klamath largescale sucker
12. *Catostomus tahoensis*.....Tahoe sucker
13. *Catostomus warnerensis*.....Warner sucker
14. *Chasmistes brevirostris*..... Shortnose sucker
15. *Hypomesus pretiosus*.....Surf smelt
16. *Lampetra ayresi*..... River lamprey
17. *Lampetra lethophaga*.....Pit-Klamath lamprey
18. *Lampetra minima*.....Miller Lake lamprey
19. *Lampetra similes*.....Klamath River lamprey
20. *Lampetra tridentate*.....Pacific lamprey
21. *Oncorhynchus clarki*.....Coastal cutthroat
22. *Oncorhynchus keta*.....Chum salmon
23. *Oncorhynchus kisutch*.....Coho salmon
24. *Oncorhynchus mykiss*..... Steelhead, rainbow and redband trout
25. *Oncorhynchus nerka*.....Sockeye salmon/kokanee
26. *Oncorhynchus tshawytscha*.....Chinook salmon
27. *Prosopium williamsoni*.....Mountain whitefish
28. *Ptychocheilus oregonensis*..... Northern pikeminnow
29. *Ptychocheilus umpquae*.....Umpqua pikeminnow
30. *Salvelinus confluentus*.....Bull trout
31. *Spirinchus thaleichthys*.....Longfin smelt
32. *Thaleichthys pacificus*.....Eulachon

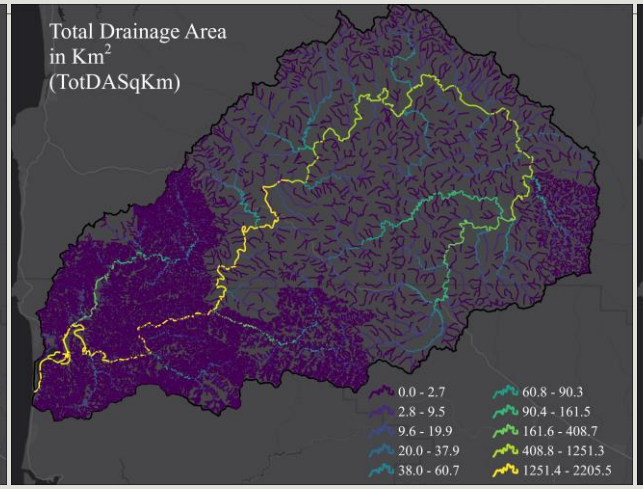
Data Inputs – Species Distribution Model Network

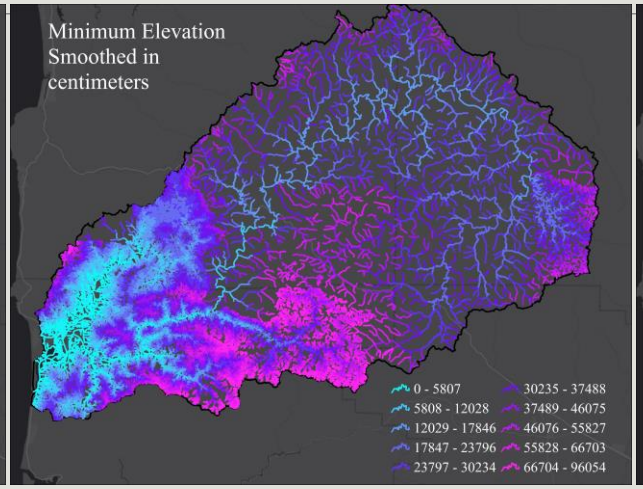
- Sampling data for each species were filtered so that a presence at any location indicates a true presence
- Absences were treated as true absences
- In the selected dataset there are **531** presences (48.05%), **574** true absences (51.95%)

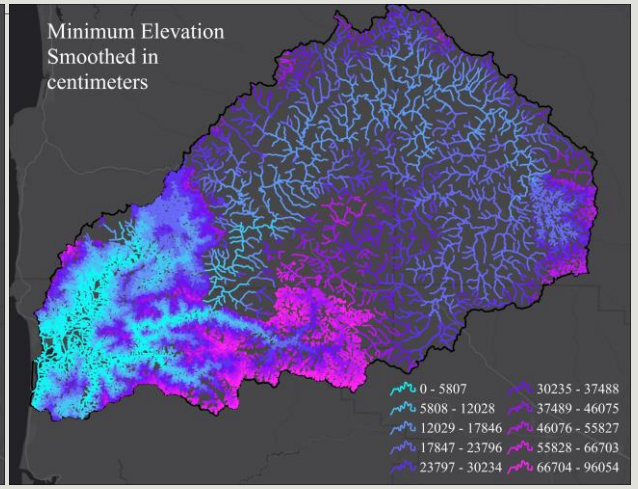


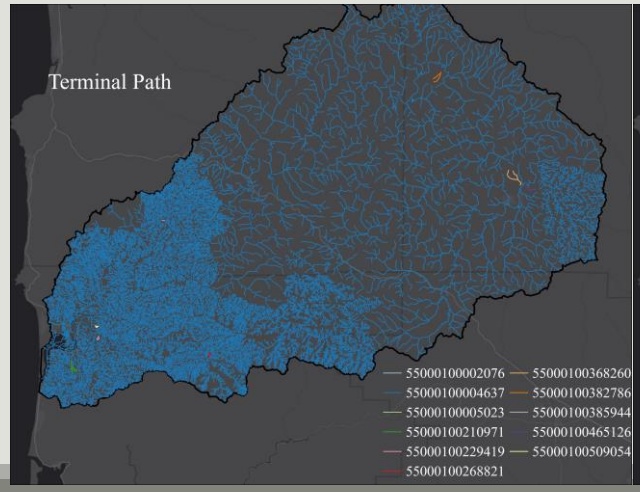
Covariates

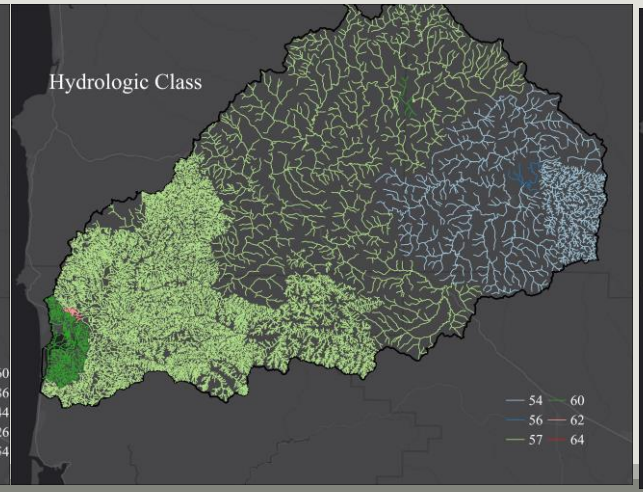

Slope of the flowline from smoothed elevation
0.0 - 0.0
0.1 - 0.1
0.2 - 0.2
0.3 - 0.3
0.4 - 0.4
0.5 - 0.5
0.6 - 0.6
0.7 - 0.9
1.0 - 1.5
1.6 - 2.5

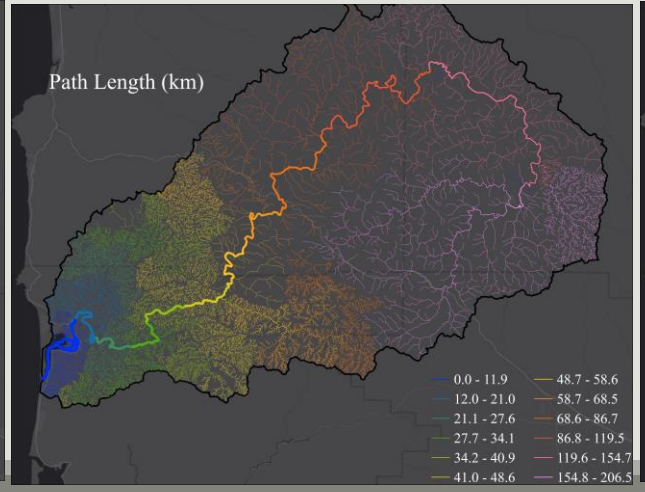

Total Drainage Area in Km2 (TotDASqKm)
0.0 - 2.7
2.8 - 9.5
9.6 - 19.9
20.0 - 37.9
38.0 - 60.7
60.8 - 90.3
90.4 - 161.5
161.6 - 408.7
408.8 - 1251.3
1251.4 - 2205.5

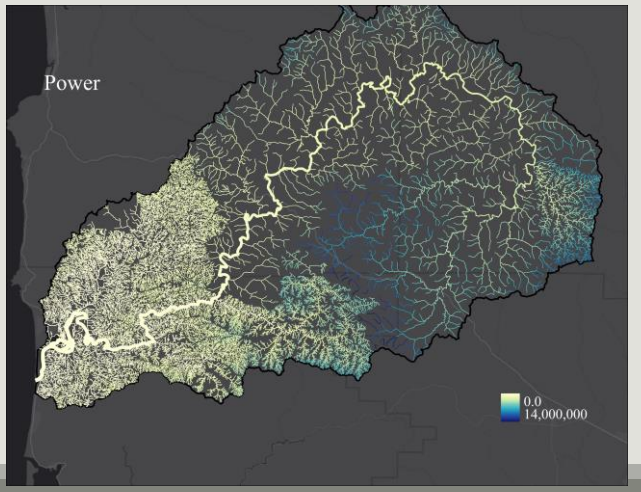

Minimum Elevation Smoothed in centimeters
0 - 5807
5808 - 12028
12029 - 17846
17847 - 23796
23797 - 30234
30235 - 37488
37489 - 46075
46076 - 55827
55828 - 66703
66704 - 96054


Minimum Elevation Smoothed in centimeters
0 - 5807
5808 - 12028
12029 - 17846
17847 - 23796
23797 - 30234
30235 - 37488
37489 - 46075
46076 - 55827
55828 - 66703
66704 - 96054

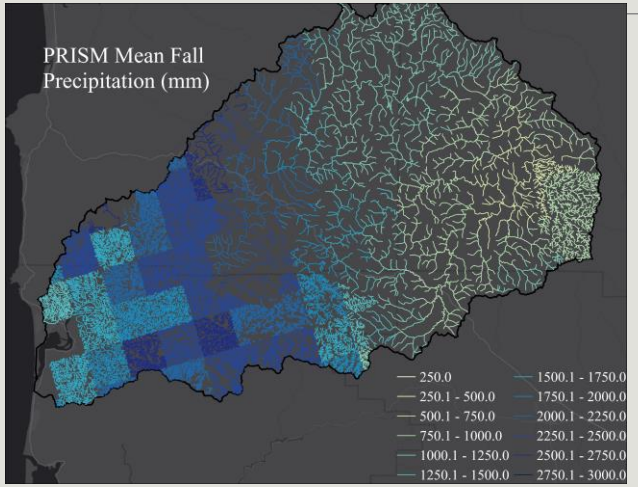

Terminal Path
55000100002076
55000100004637
55000100005023
55000100210971
55000100229419
55000100268821
55000100368260
55000100382786
55000100385944
55000100465126
55000100509054

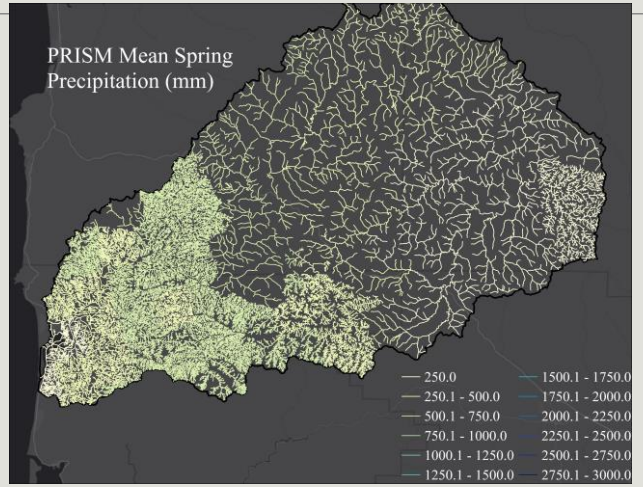

Hydrologic Class
54
56
57
60
62
64

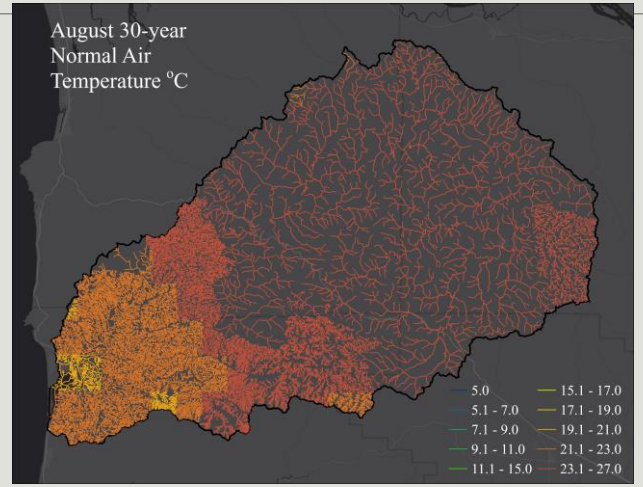

Path Length (km)
0.0 - 11.9
12.0 - 21.0
21.1 - 27.6
27.7 - 34.1
34.2 - 40.9
41.0 - 48.6
48.7 - 58.6
58.7 - 68.5
68.6 - 86.7
86.8 - 119.5
119.6 - 154.7
154.8 - 206.5

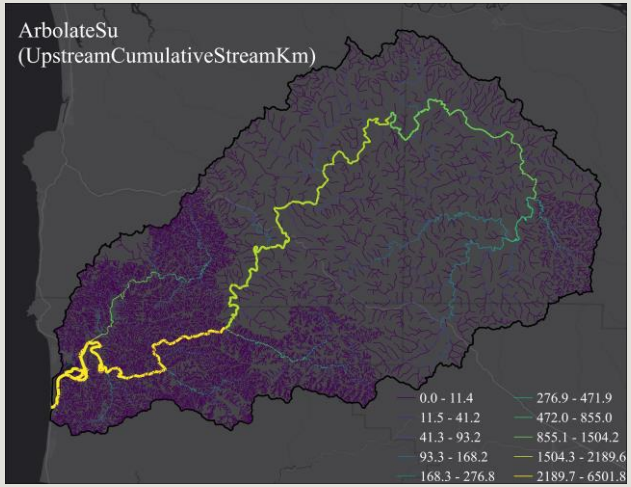

Power
0.0
14,000,000

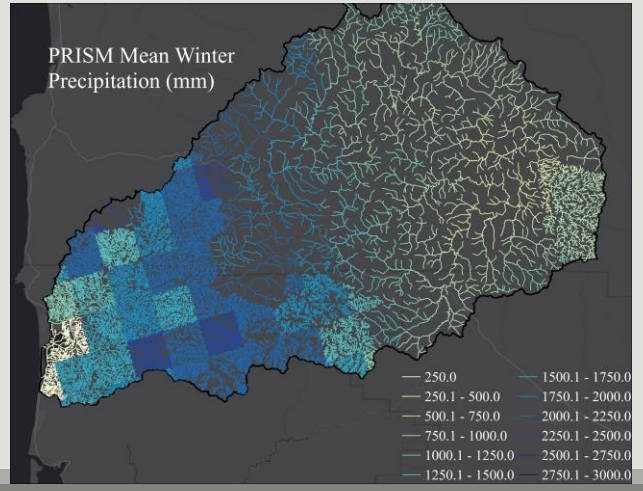
Covariates

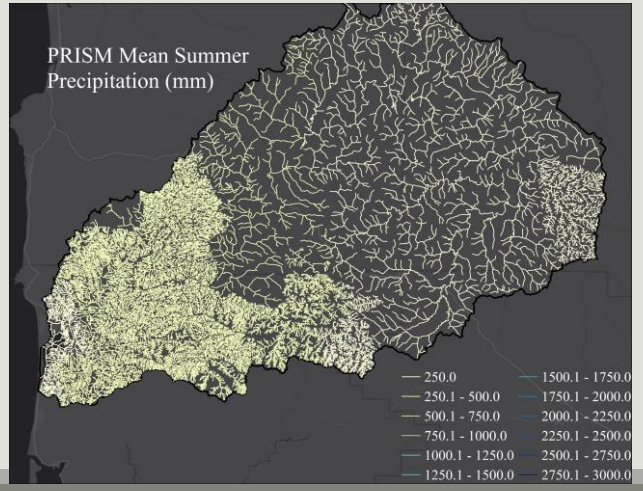

PRISM Mean Fall
Precipitation (mm)
250.0
250.1 - 500.0
500.1 - 750.0
750.1 - 1000.0
1000.1 - 1250.0
1250.1 - 1500.0
1500.1 - 1750.0
1750.1 - 2000.0
2000.1 - 2250.0
2250.1 - 2500.0
2500.1 - 2750.0
2750.1 - 3000.0

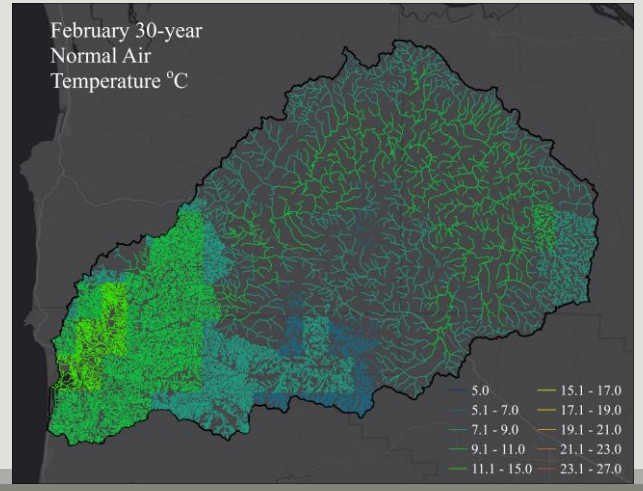

PRISM Mean Spring
Precipitation (mm)
250.0
250.1 - 500.0
500.1 - 750.0
750.1 - 1000.0
1000.1 - 1250.0
1250.1 - 1500.0
1500.1 - 1750.0
1750.1 - 2000.0
2000.1 - 2250.0
2250.1 - 2500.0
2500.1 - 2750.0
2750.1 - 3000.0


August 30-year
Normal Air
Temperature °C
5.0
5.1 - 7.0
7.1 - 9.0
9.1 - 11.0
11.1 - 15.0
15.1 - 17.0
17.1 - 19.0
19.1 - 21.0
21.1 - 23.0
23.1 - 27.0


ArbolateSu
(UpstreamCumulativeStreamKm)
0.0 - 11.4
11.5 - 41.2
41.3 - 93.2
93.3 - 168.2
168.3 - 276.8
276.9 - 471.9
472.0 - 855.0
855.1 - 1504.2
1504.3 - 2189.6
2189.7 - 6501.8

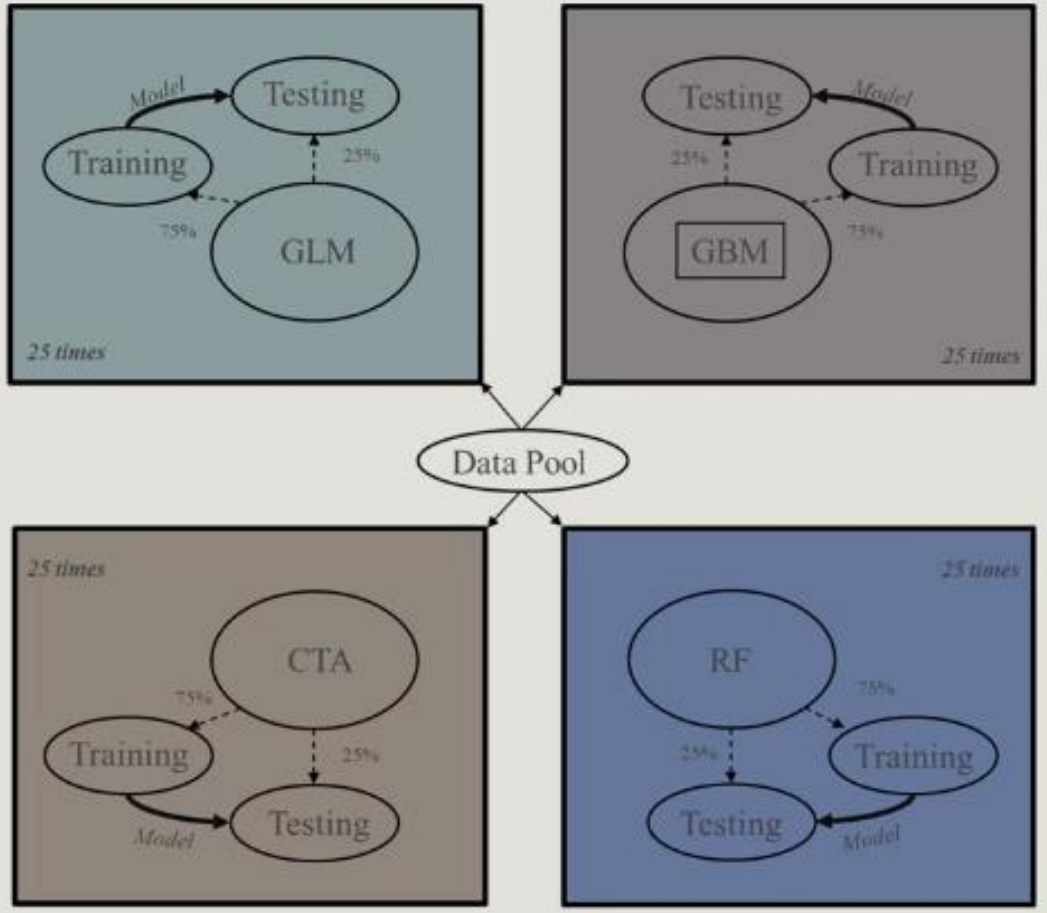

PRISM Mean Winter
Precipitation (mm)
250.0
250.1 - 500.0
500.1 - 750.0
750.1 - 1000.0
1000.1 - 1250.0
1250.1 - 1500.0
1500.1 - 1750.0
1750.1 - 2000.0
2000.1 - 2250.0
2250.1 - 2500.0
2500.1 - 2750.0
2750.1 - 3000.0


PRISM Mean Summer
Precipitation (mm)
250.0
250.1 - 500.0
500.1 - 750.0
750.1 - 1000.0
1000.1 - 1250.0
1250.1 - 1500.0
1500.1 - 1750.0
1750.1 - 2000.0
2000.1 - 2250.0
2250.1 - 2500.0
2500.1 - 2750.0
2750.1 - 3000.0


February 30-year
Normal Air
Temperature °C
5.0
5.1 - 7.0
7.1 - 9.0
9.1 - 11.0
11.1 - 15.0
15.1 - 17.0
17.1 - 19.0
19.1 - 21.0
21.1 - 23.0
23.1 - 27.0

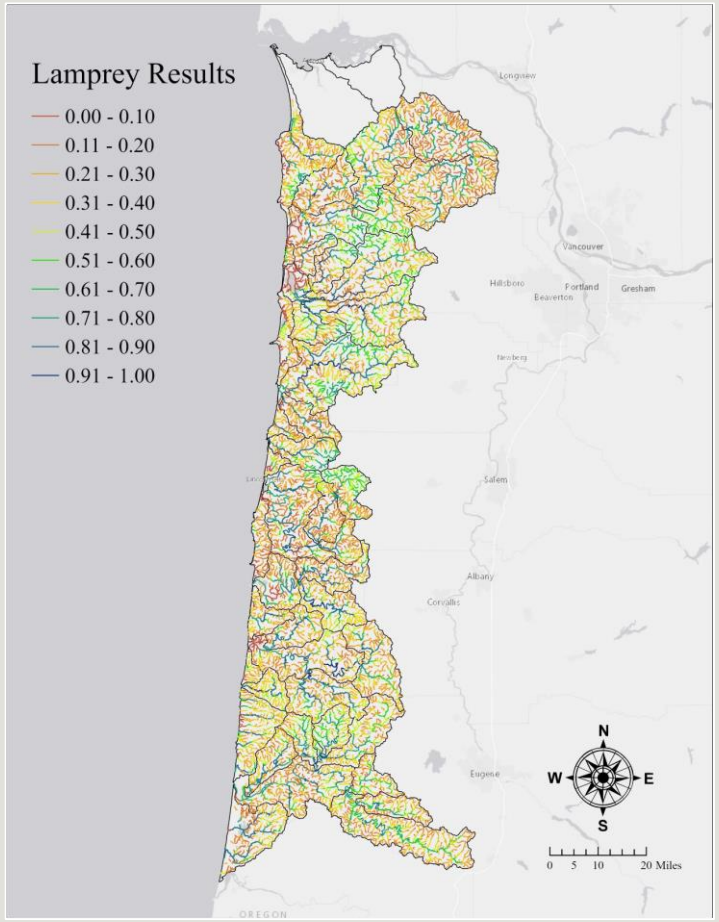
Data Inputs – Species Distribution Model Network

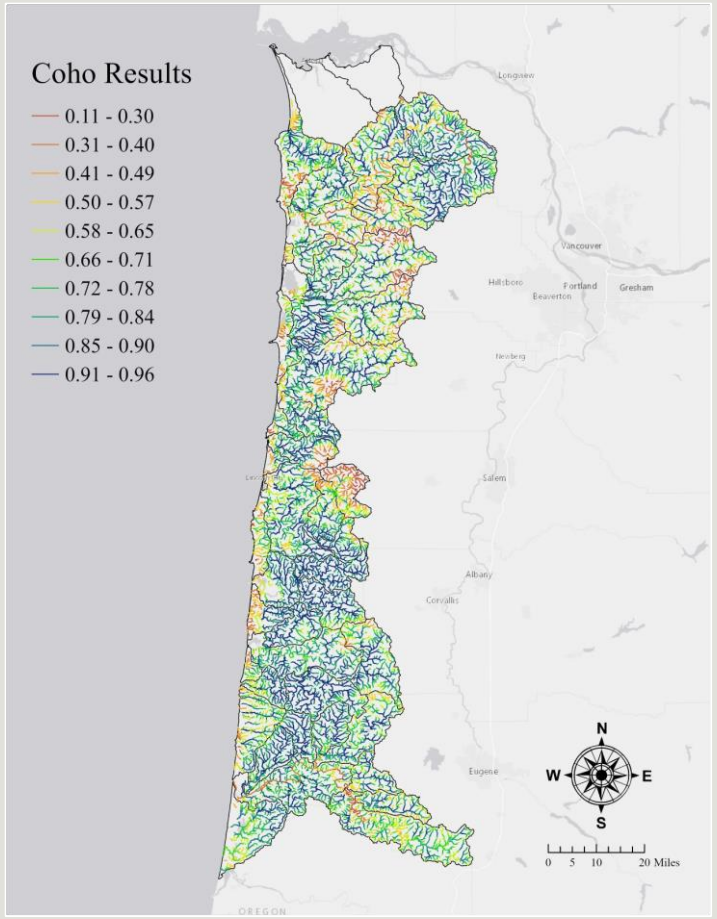
- 4 Model Types were selected, and each model was conducted on a 75/25 split
- Each model type were run 25 time for a total number of 100 individual models
- Models selected were:
  - GLM (quadratic with no interaction; model selection was conducted via a Stepwise procedure using AIC criteria)
  - GBM (Generalized Boosting Regression (2500 maximum different trees and 3 Fold Cross-Validation Loaded gbm 2.1.8)
  - CTA (Classification tree 5 Fold Cross-Validation)
  - RF (Breiman and Cutler's random forests for classification and regression)



Data Inputs – Species Distribution Model Network

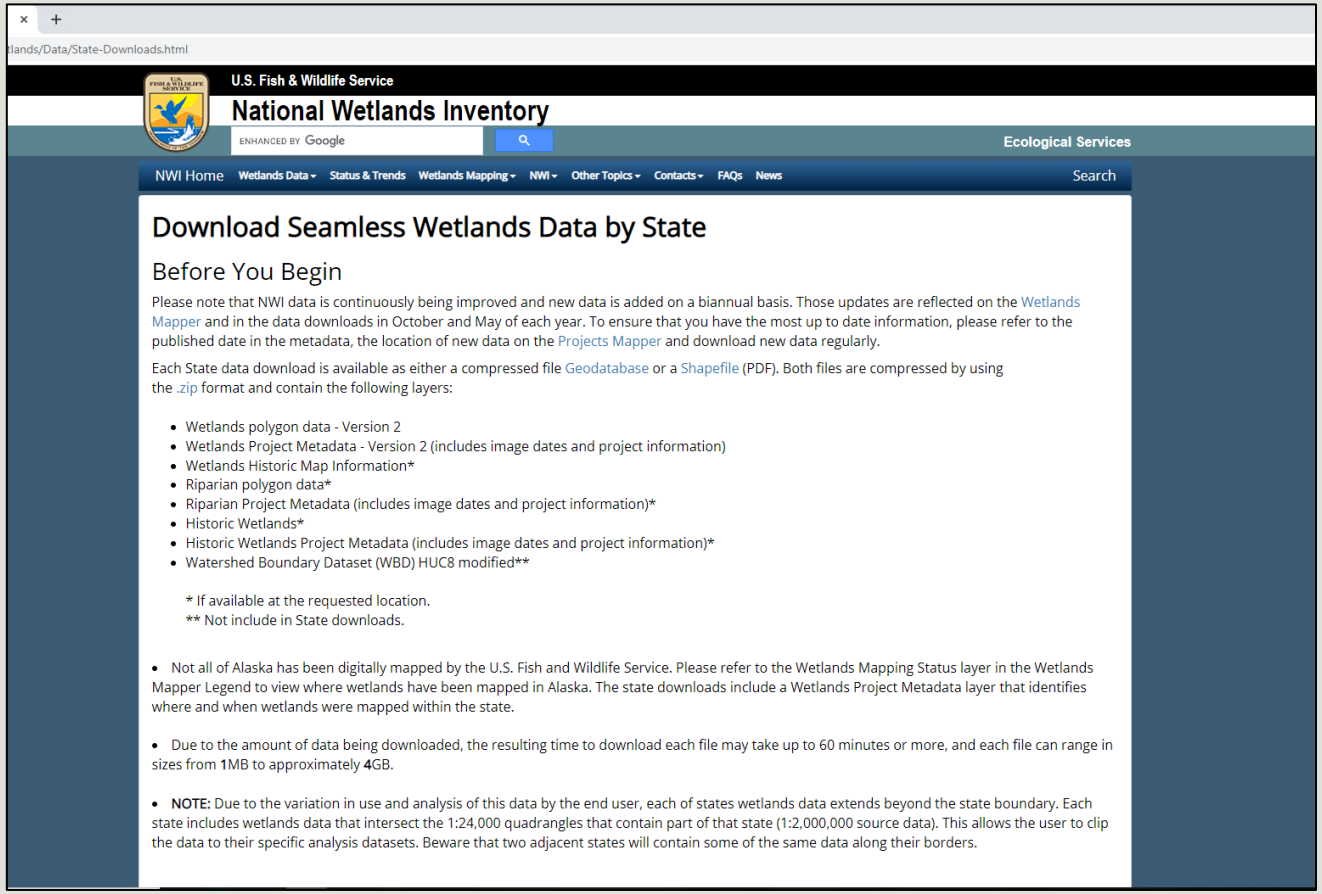
- Species distribution probabilities are delivered with the tool for the Willamette and Coastal regions
- Distribution probabilities range from 0.0 – 1.0 with 1.0 indicating higher probability of presence





Input Data – Standing Water

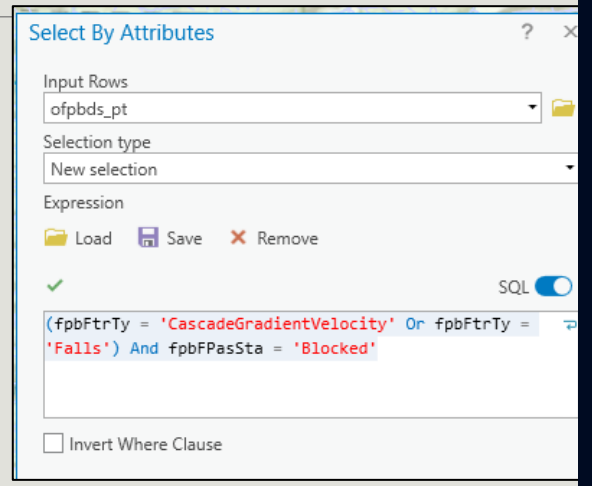
- Standing water is represented by polygons generated by the National Wetland Inventory with “riverine” features excluded
- Riverine features were excluded as the flowline generation accounts for river features already
- https://www.fws.gov/wetlands/

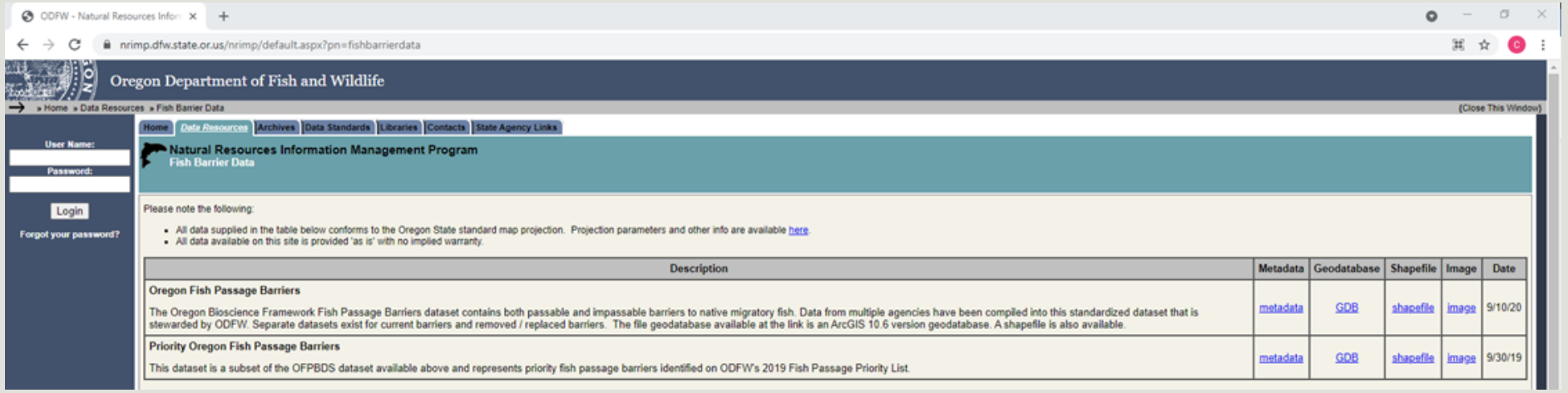


Input Data - Natural Barrier Trace Network

- Barrier data was derived from the ODFW barrier dataset

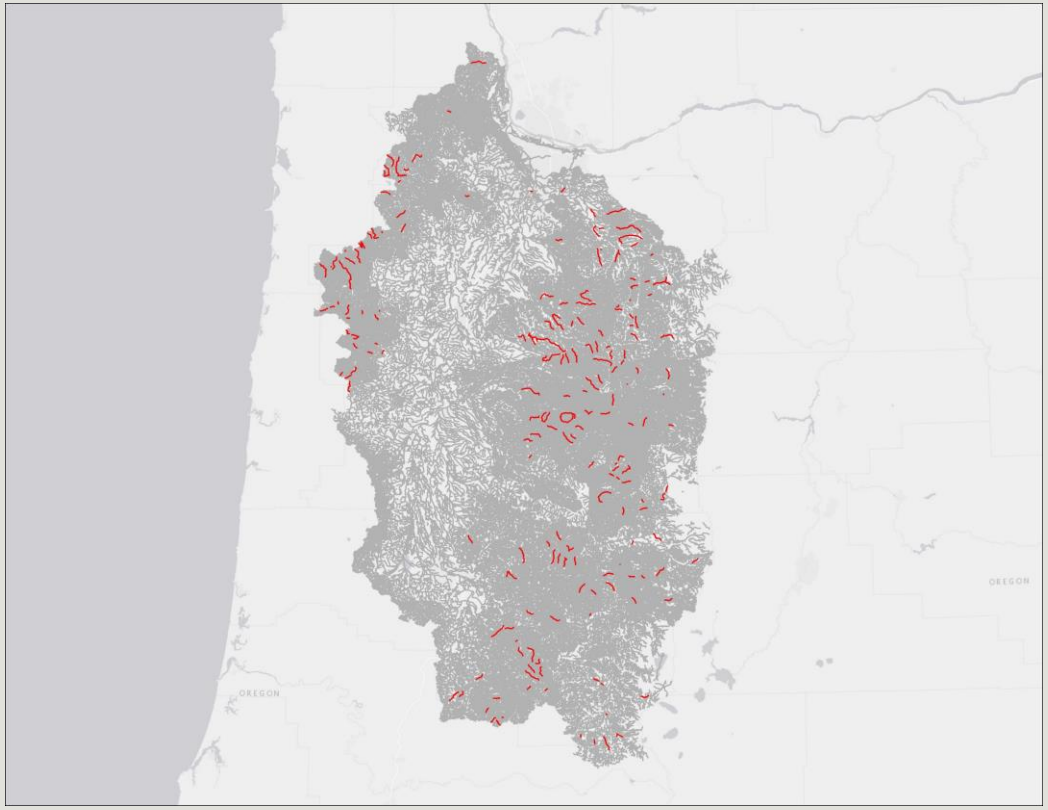
- Selected only natural barriers such as Falls or Cascade, Gradient, and Velocity barriers that are deemed “blocked”

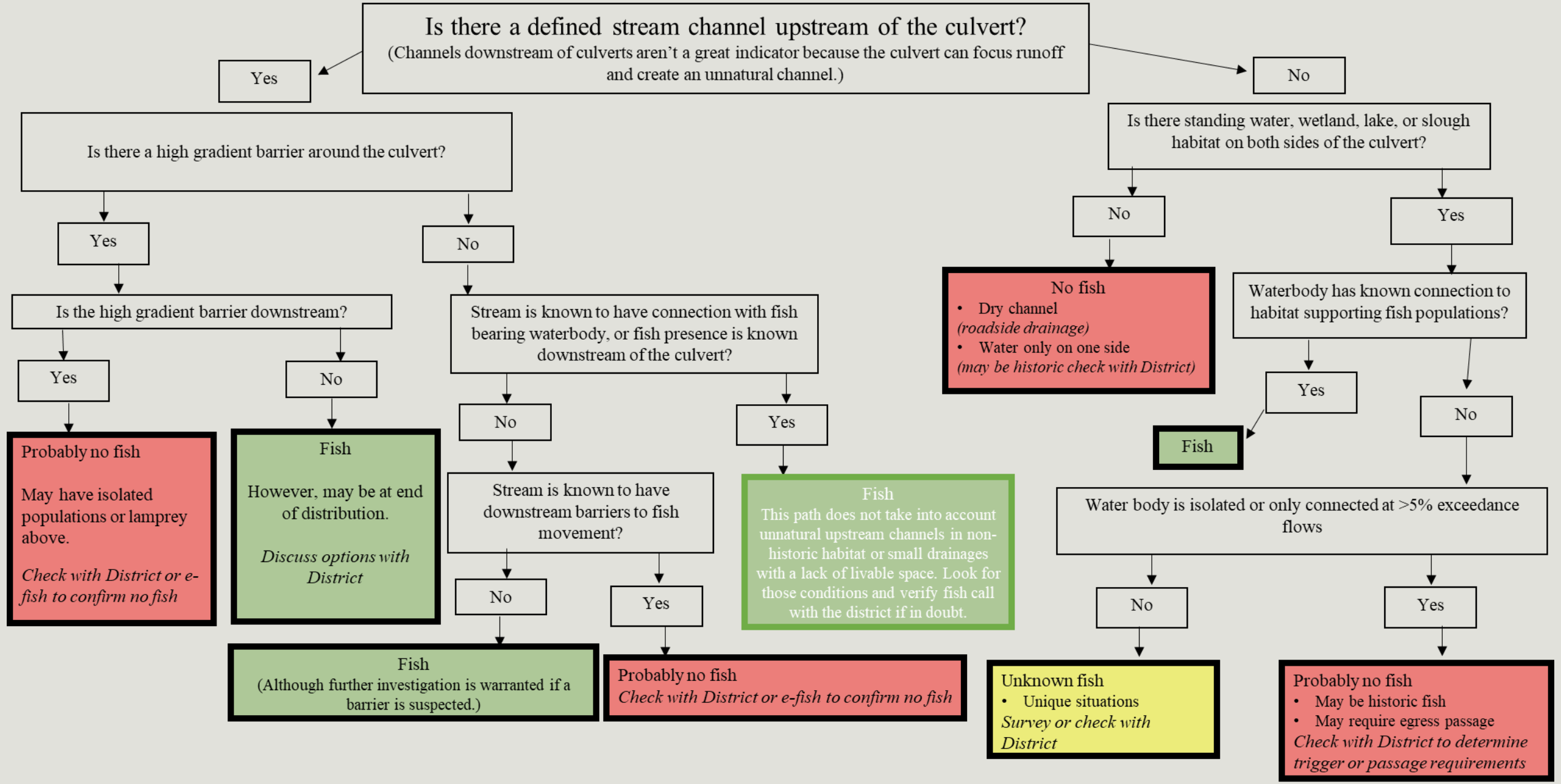




Input Data - Natural Barriers

- Tool comes with a Trace Network created with the appropriate barrier attributes, though it can be updated (directions in the manual)

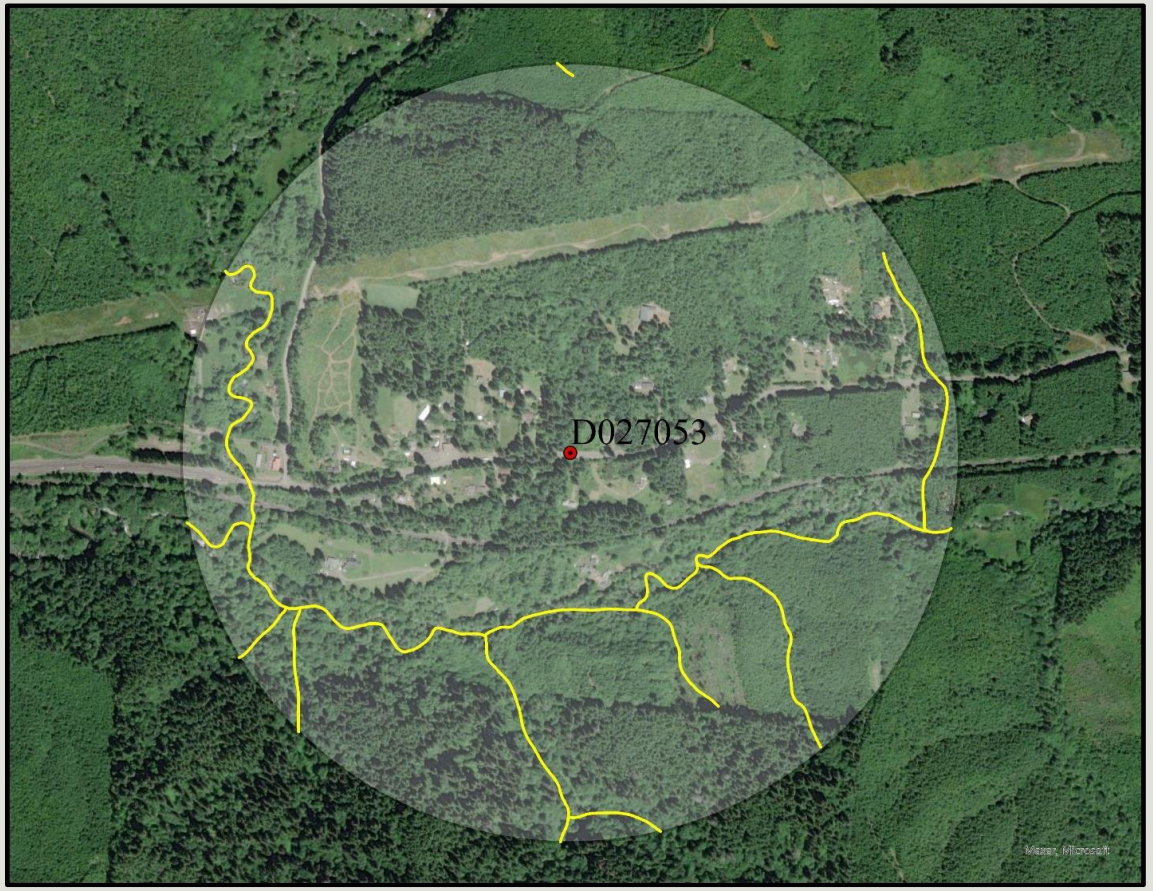



Is there a defined stream channel upstream of the culvert?
(Channels downstream of culverts aren't a great indicator because the culvert can focus runoff and create an unnatural channel.)
Yes
No
Is there a high gradient barrier around the culvert?
Yes
No
Is the high gradient barrier downstream?
Yes
No
Probably no fish
May have isolated populations or lamprey above.
Check with District or e-fish to confirm no fish
Fish
However, may be at end of distribution.
Discuss options with District
Stream is known to have connection with fish bearing waterbody, or fish presence is known downstream of the culvert?
No
Yes
Stream is known to have downstream barriers to fish movement?
No
Yes
Fish
(Although further investigation is warranted if a barrier is suspected.)
Probably no fish
Check with District or e-fish to confirm no fish
Fish
This path does not take into account unnatural upstream channels in non-historic habitat or small drainages with a lack of livable space. Look for those conditions and verify fish call with the district if in doubt.
Is there standing water, wetland, lake, or slough habitat on both sides of the culvert?
No
Yes
No fish
• Dry channel
(roadside drainage)
• Water only on one side
(may be historic check with District)
Waterbody has known connection to habitat supporting fish populations?
Yes
No
Fish
Water body is isolated or only connected at >5% exceedance flows
No
Yes
Unknown fish
• Unique situations
Survey or check with District
Probably no fish
• May be historic fish
• May require egress passage
Check with District to determine trigger or passage requirements

Culvert Identification
Is there a defined stream channel upstream of the culvert?

- 1st Problem – the NHD does not cover all small culverts

- To comply with the flow chart, we much generate flow lines around the culvert to evaluate water movement

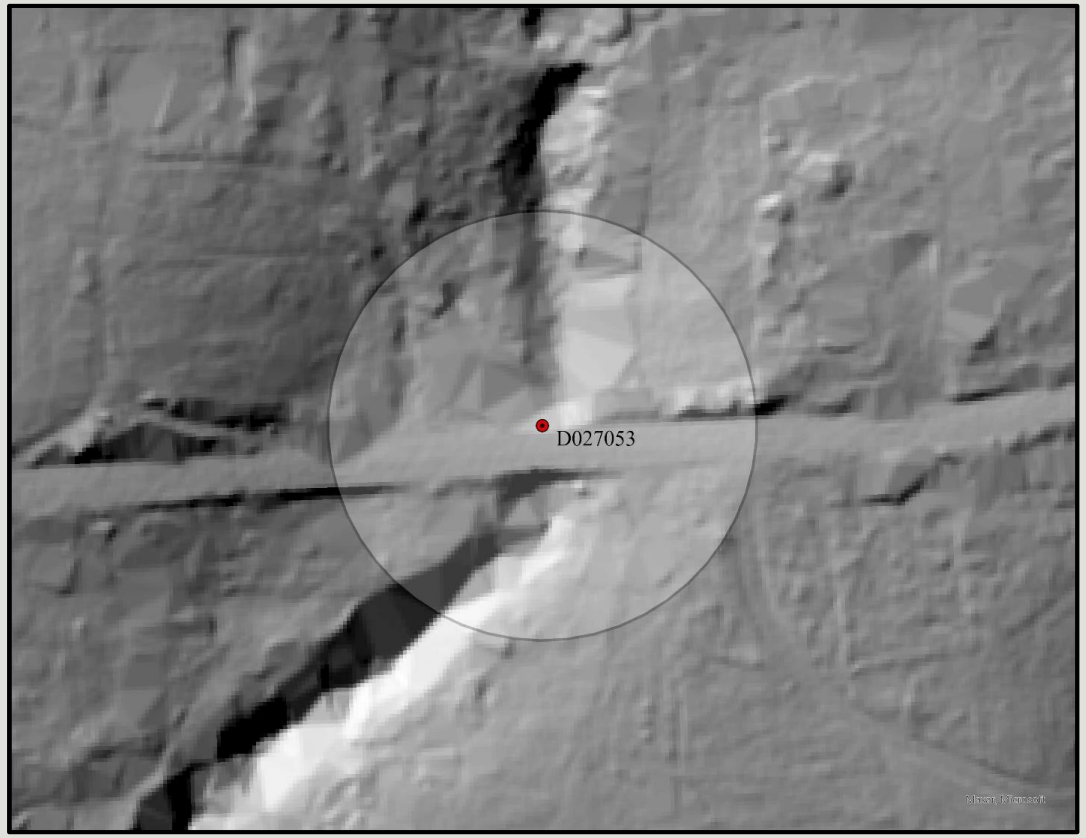


Culvert Identification

Is there a defined stream channel upstream of the culvert?

- Extract DOGMAI LiDAR data (resolution is 1 meter) to the search area

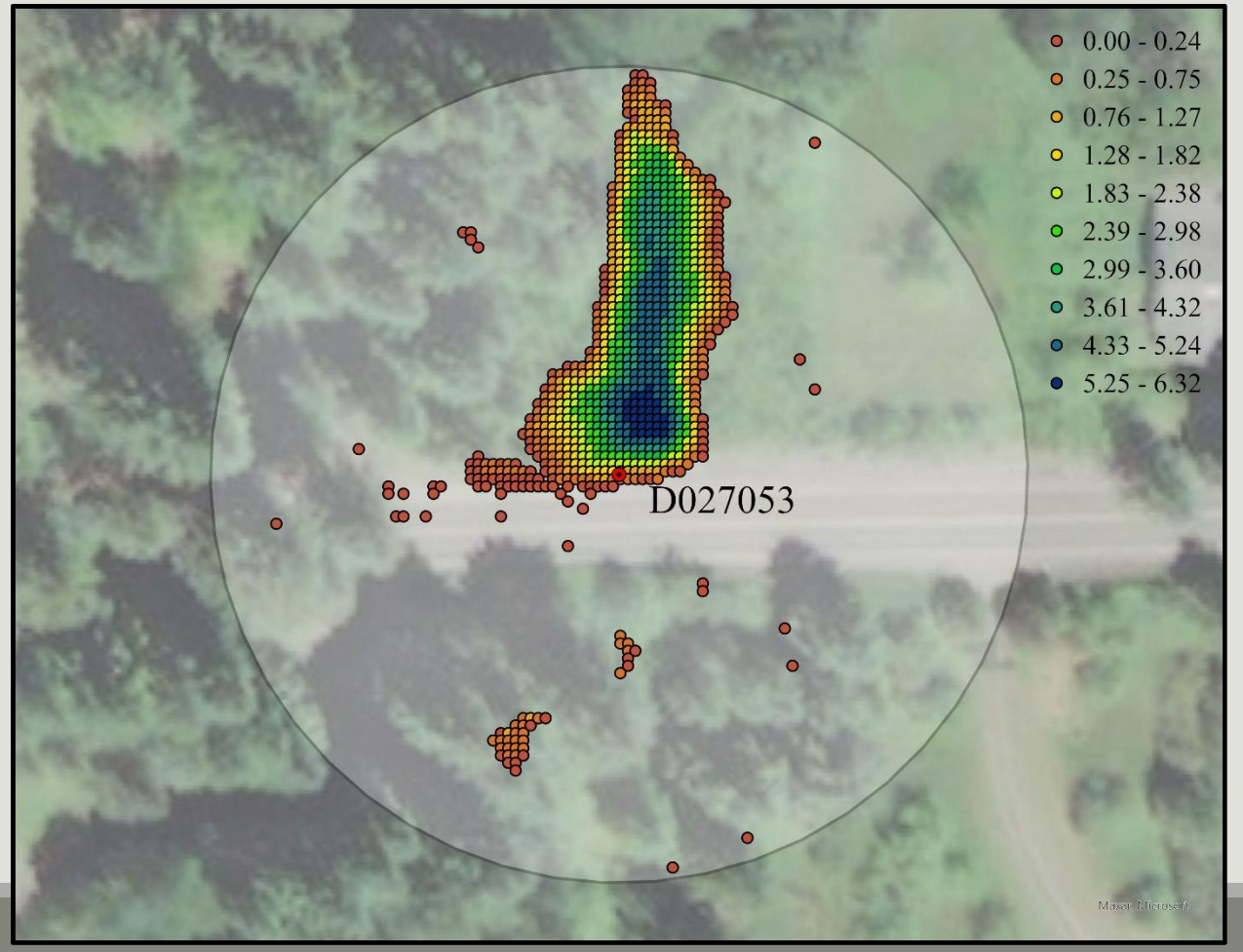
- However, Lidar doesn't penetrate through water or concrete – this can cause back-up behind the culvert



Culvert Identification

Is there a defined stream channel upstream of the culvert?

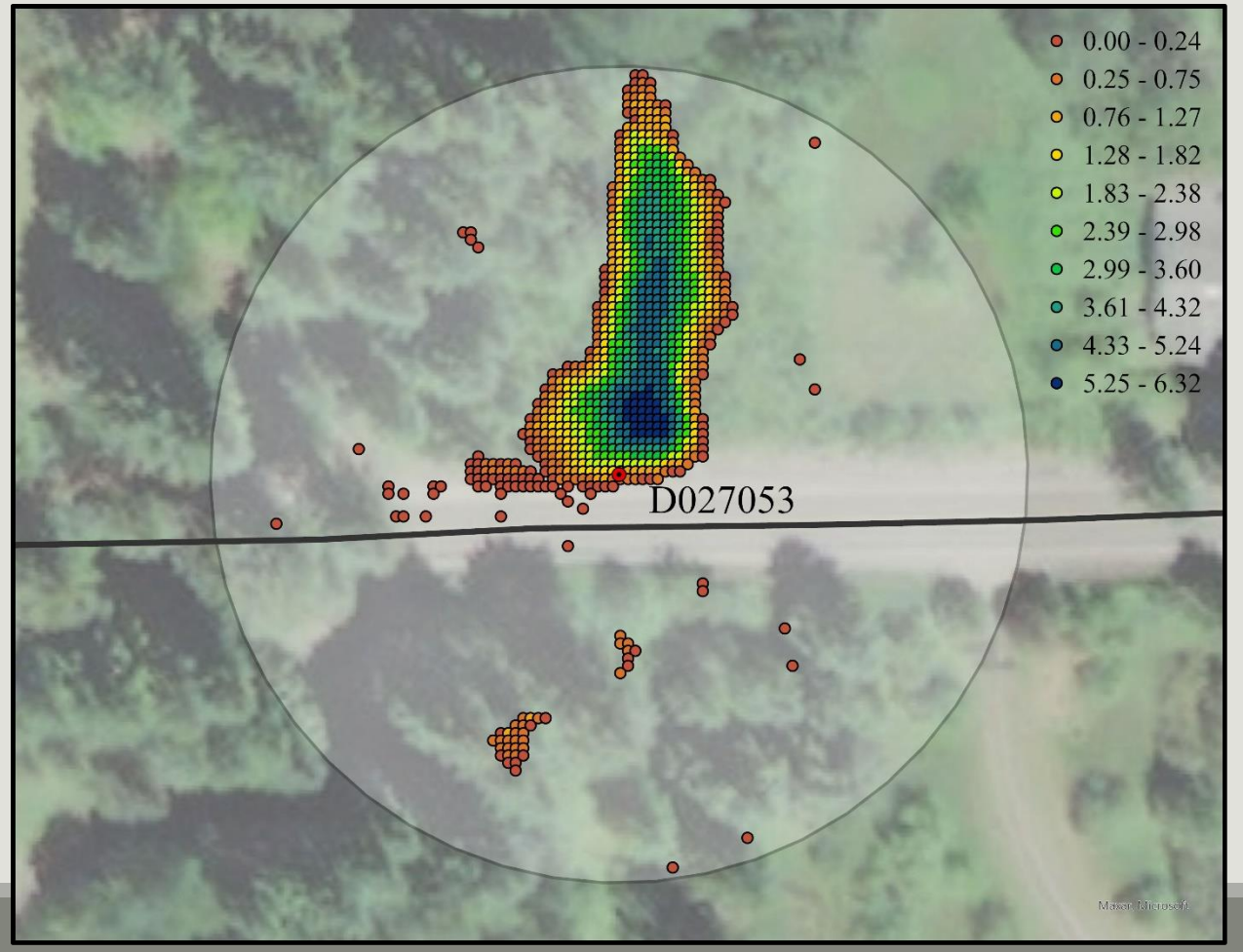
- To automate this process, search within 100ft of the culvert
- Calculate the depth of each cell (DEMFILL – DEM)



Culvert Identification

Is there a defined stream channel upstream of the culvert?

- Use the Highway centerline to define each side of the highway to bisect



Culvert Identification

Is there a defined stream channel upstream of the culvert?

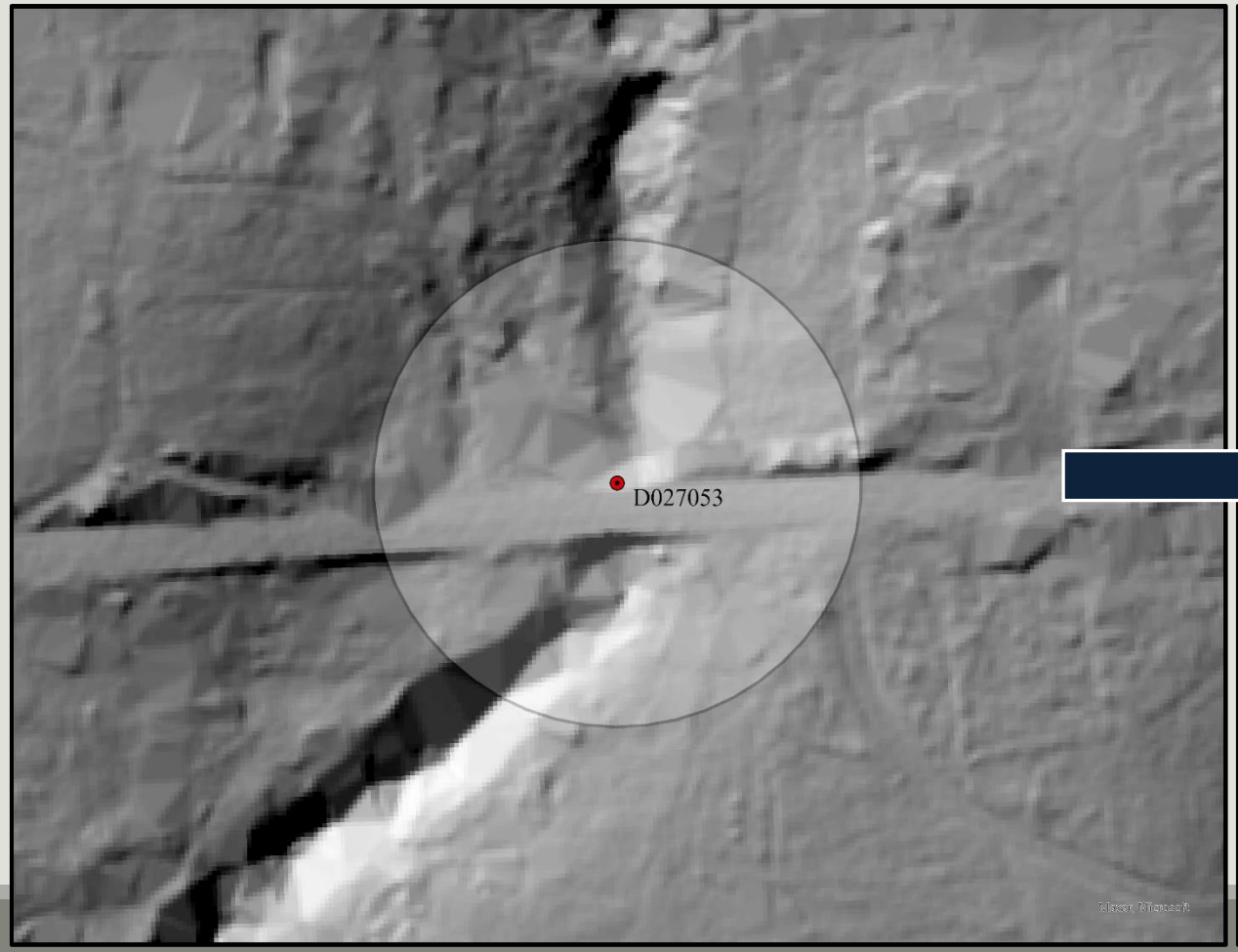
- Find the greatest depth of either side and use those as the start and end of a cut line through the highway

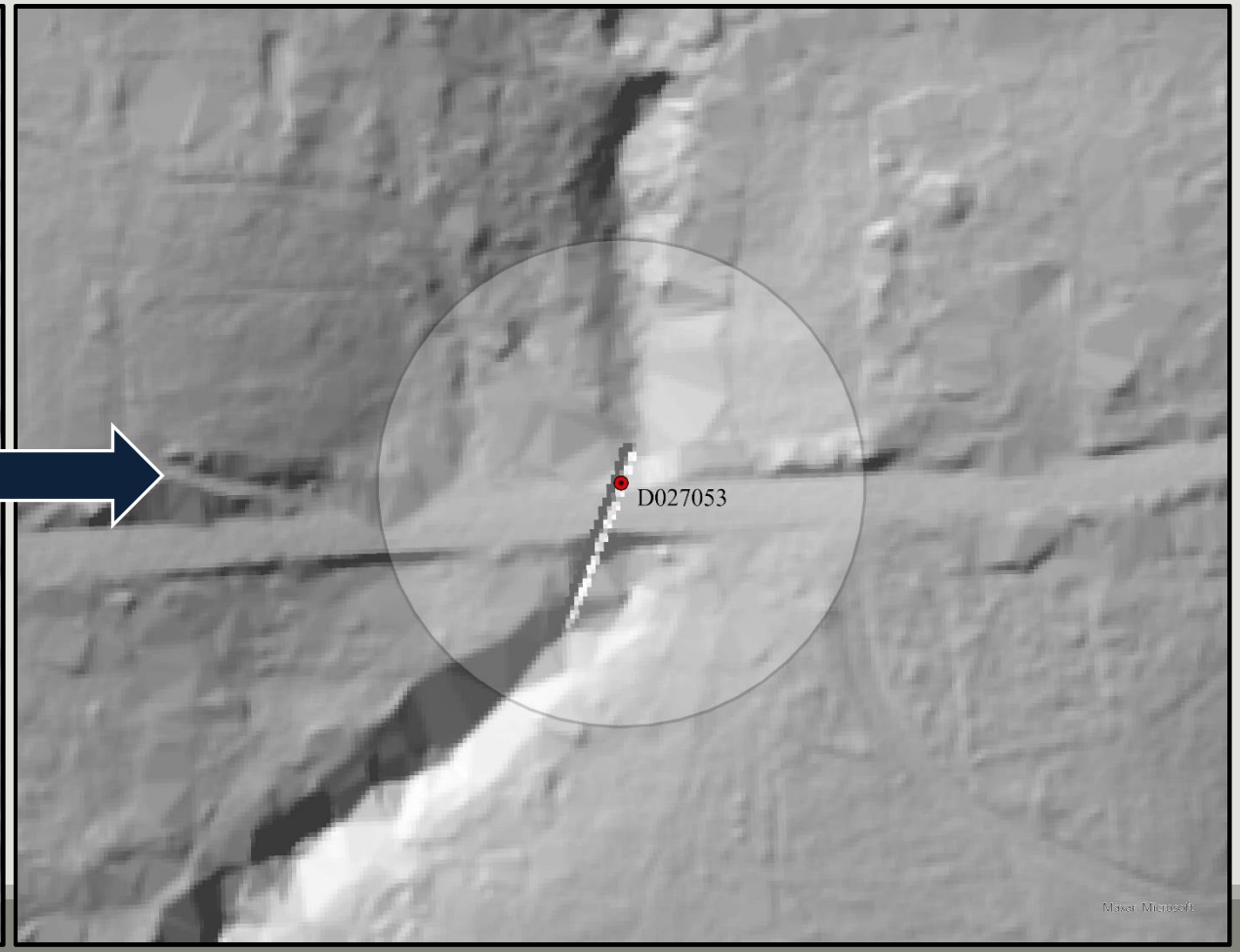
Culvert Identification

Is there a defined stream channel upstream of the culvert?

- Route a cutline through the highway and the culvert to act as a pseudo culvert line under the highway and burn it into the DEM

Toolbox Generation

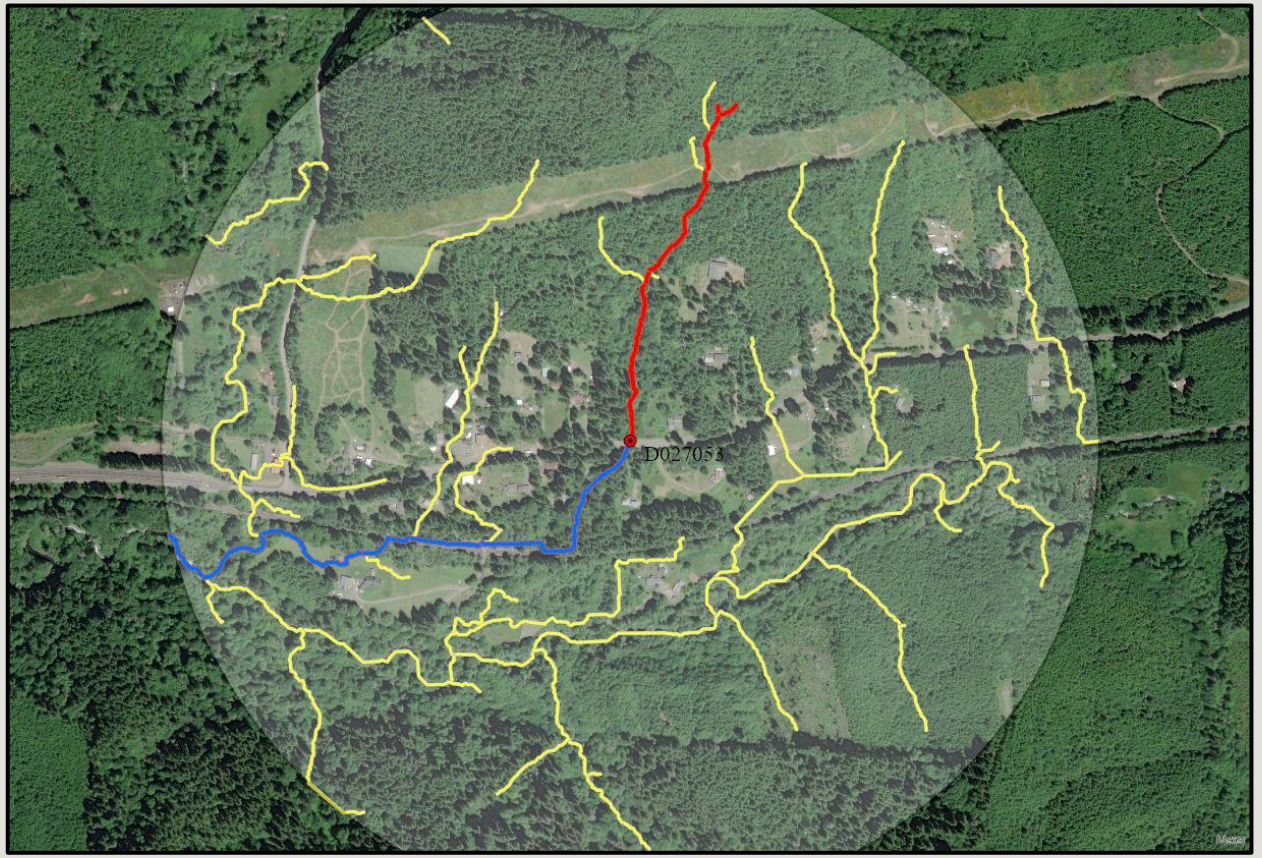




Streamline cleanup

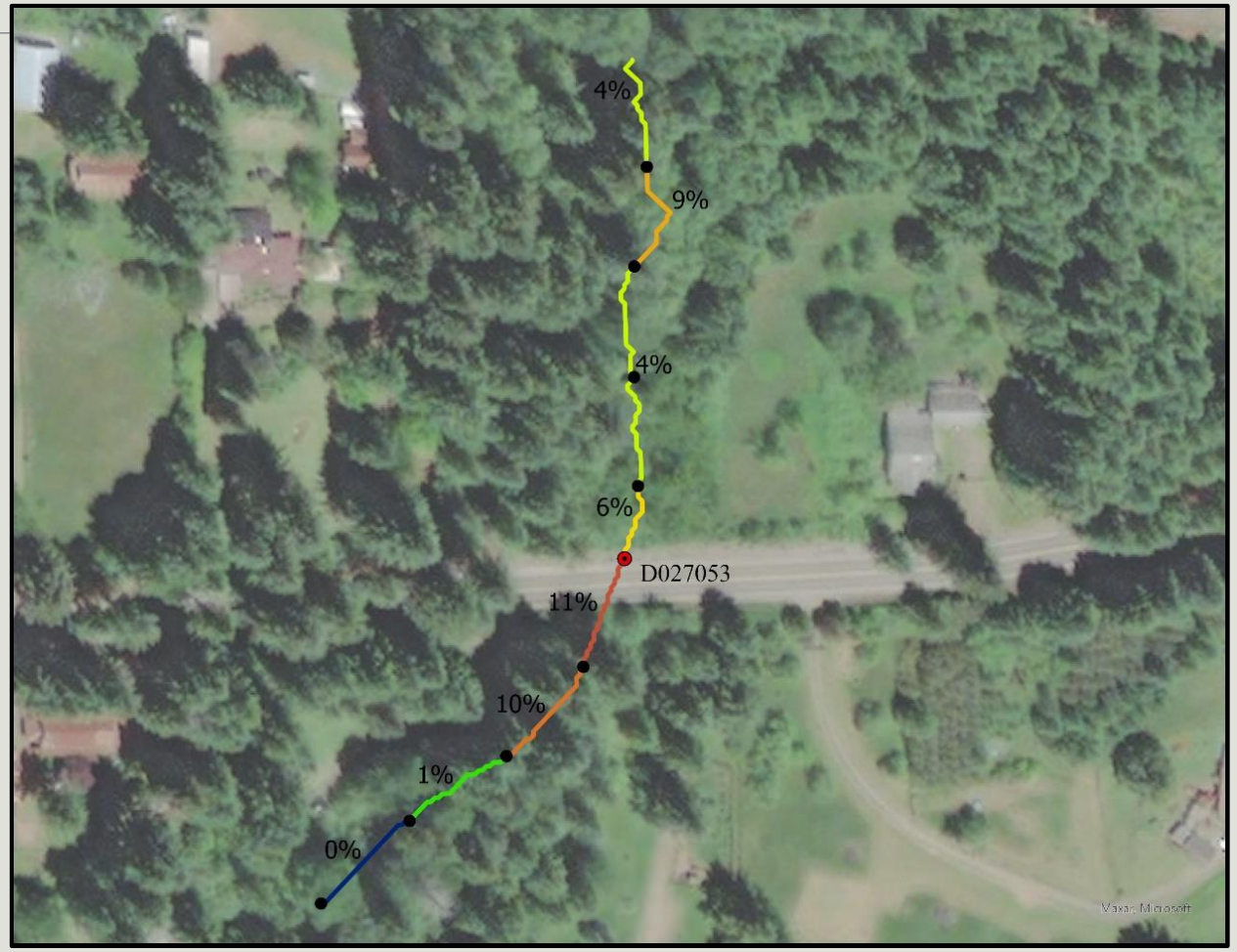
Identify Upstream and Downstream Nodes

- Evaluate if there is a defined upstream channel



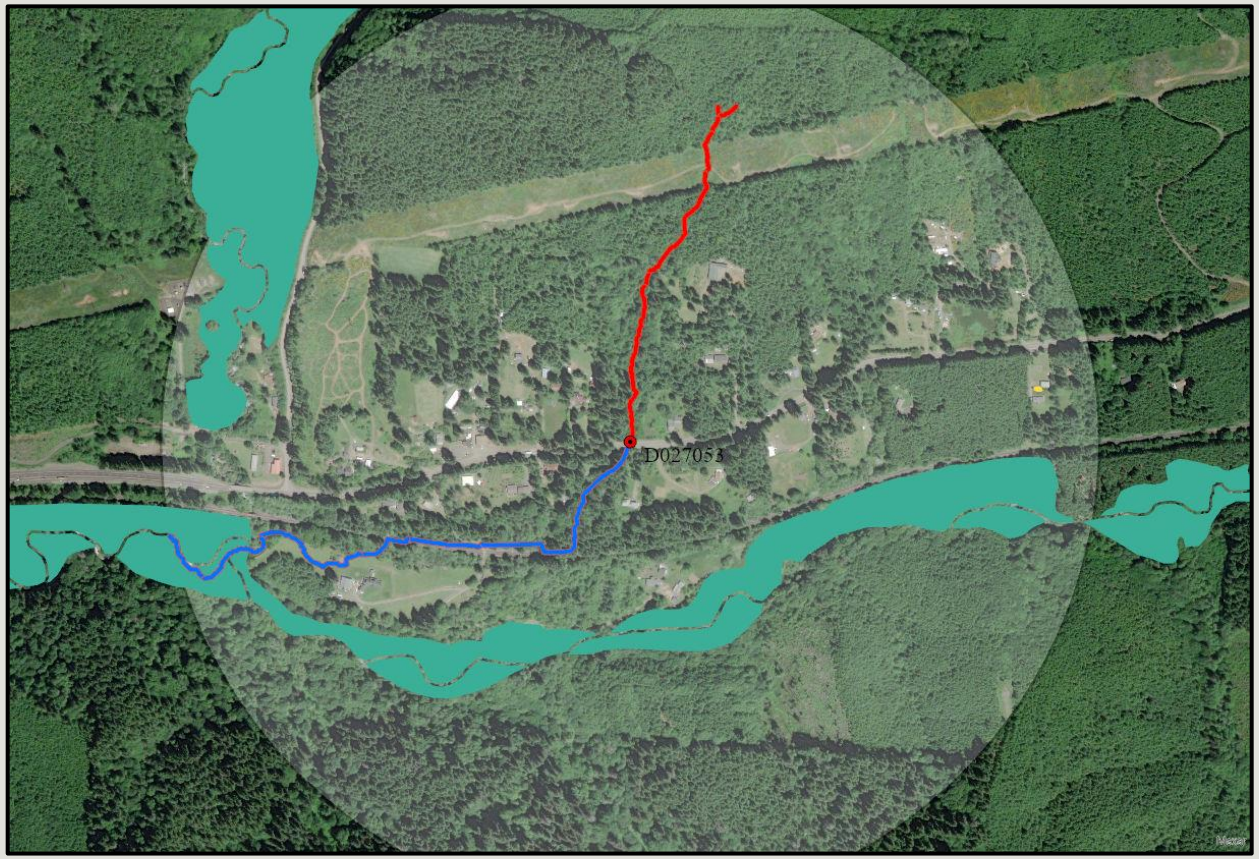
Gradient Barriers

- Identify if there are high gradient barriers preventing access to the culvert



Search for Standing Water/Wetlands on either side of the culvert

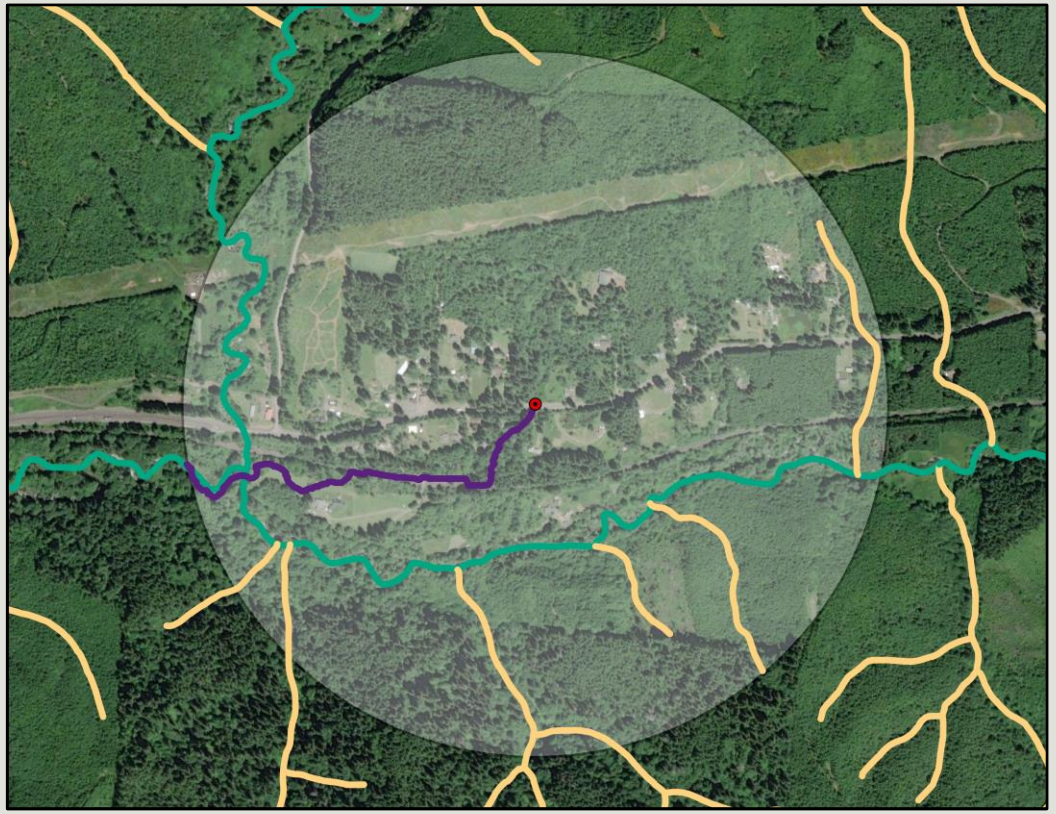
- Look for intersection of wetland polygons on both the upstream and downstream segments



Connection with a habitat supporting fish population

- Using cut-off values generated via the development of the species distribution models, the probability of presence is converted to a binary value of 0 or 1.

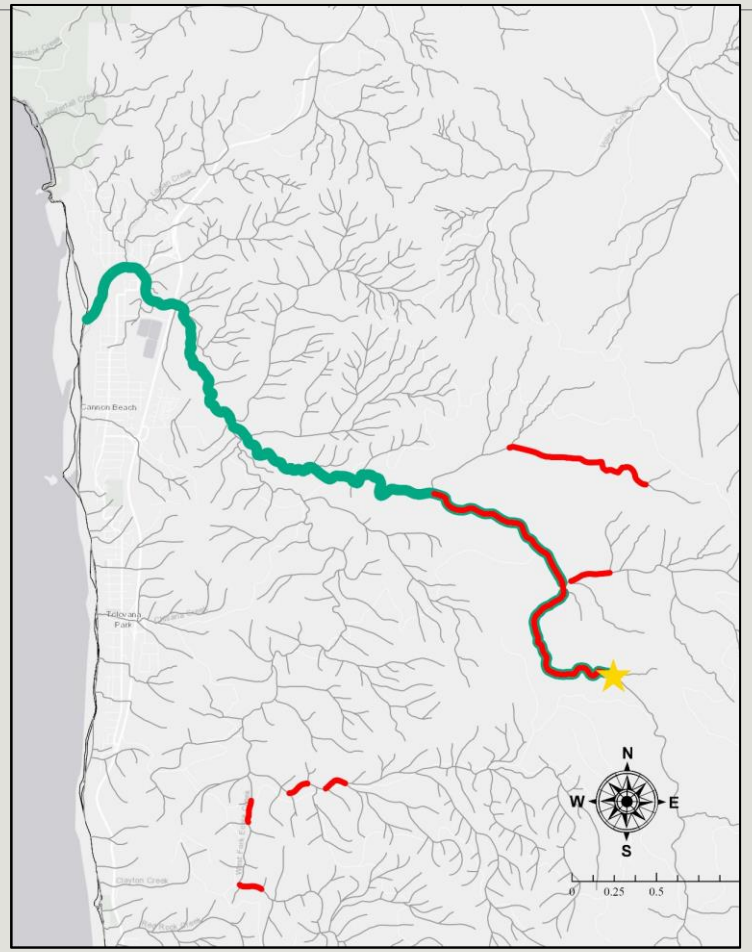
- Look for the intersection of the downstream segment and the species distribution model – if the value is a 1 for any of the species, it is considered to have a connection

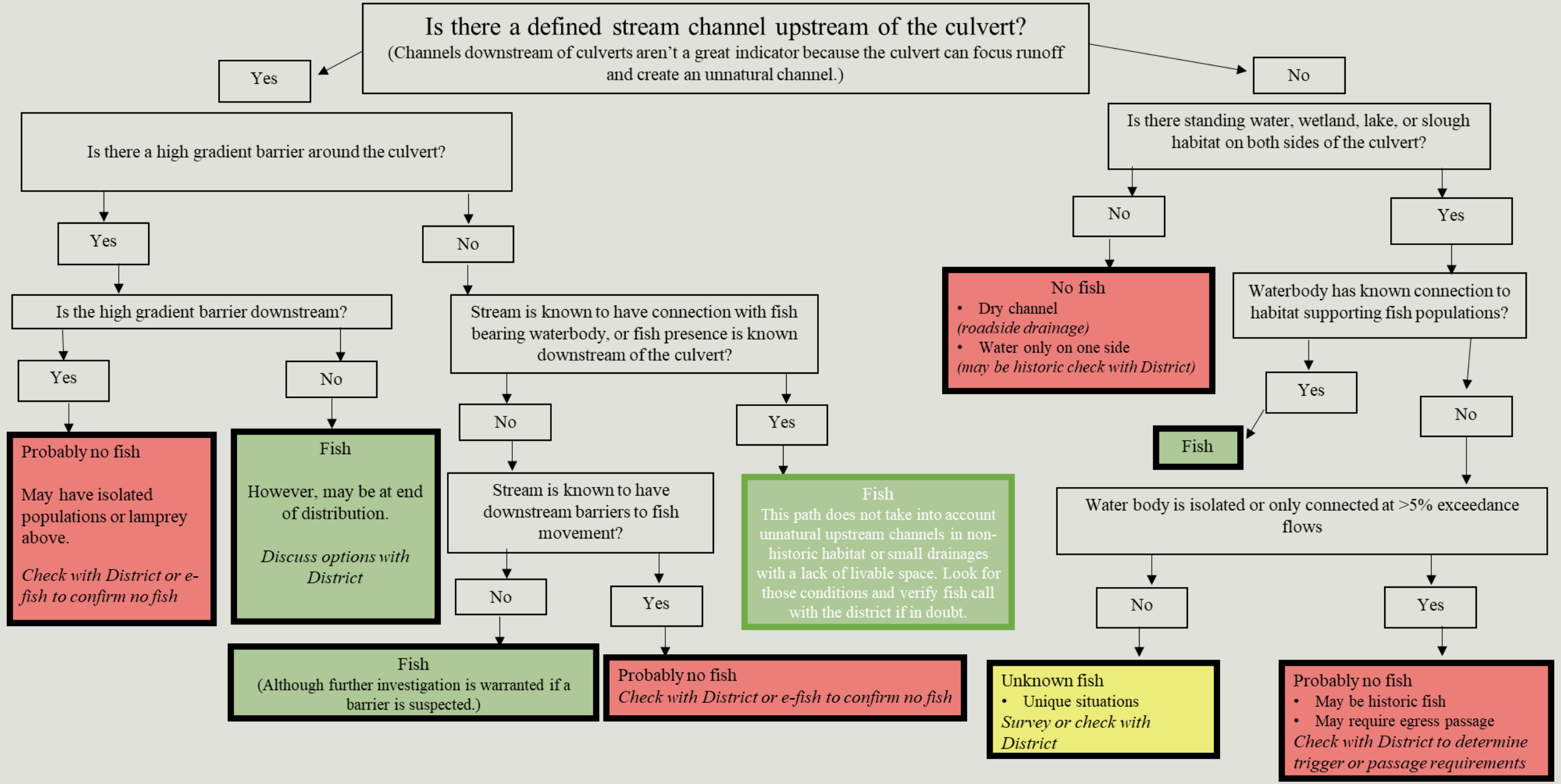


Search for a natural barrier downstream

- To account for the limitations presented by natural barriers (meant to represent “historical” distribution) used “Falls” barriers in the barrier database

- Use the “TRACE” Function in ArcPro to move down the stream network

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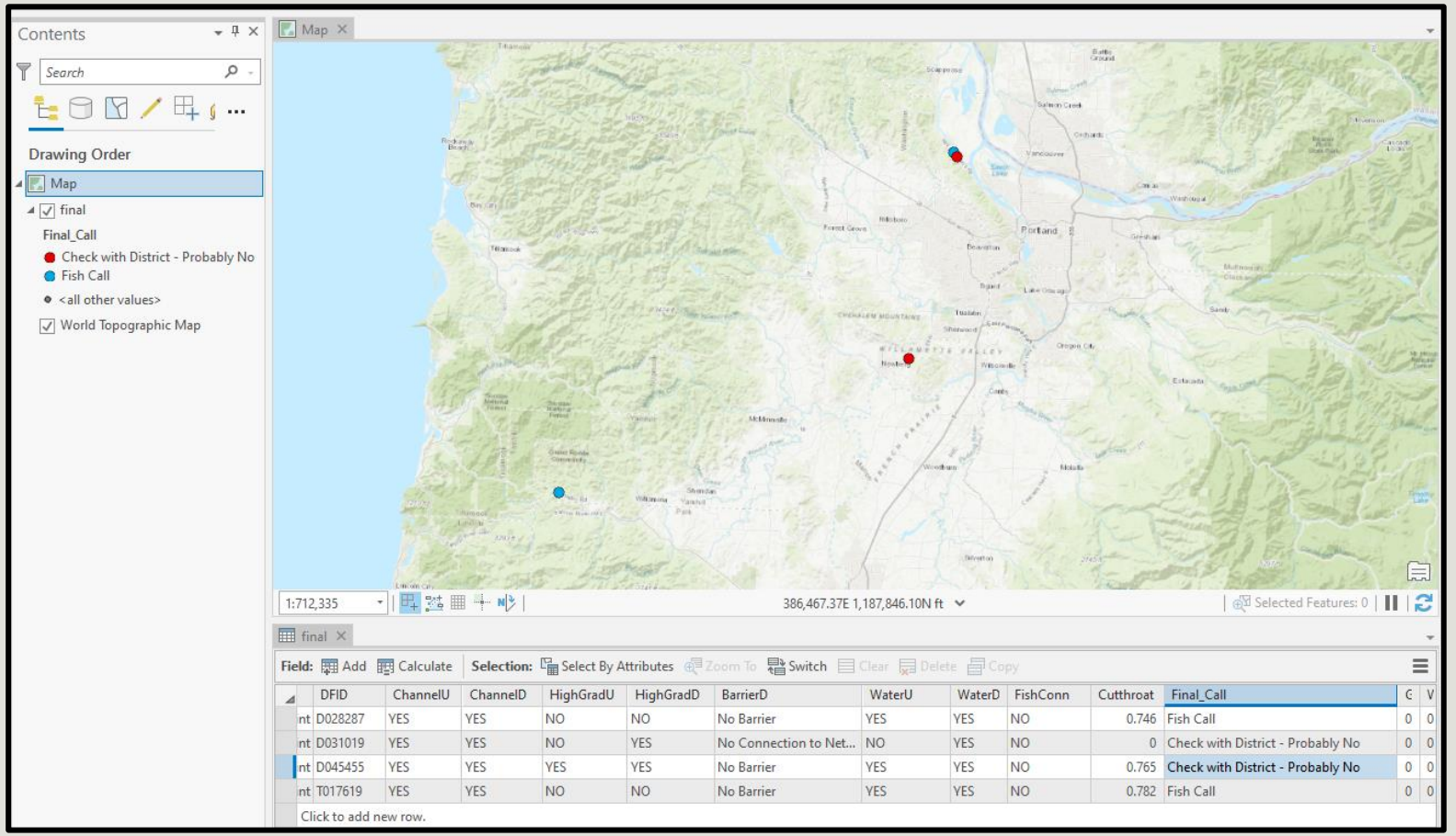
Yes
No
Fish
Water body is isolated or only connected at >5% exceedance flows
No
Yes
Unknown fish
• Unique situations
Survey or check with District
Probably no fish
• May be historic fish
• May require egress passage
Check with District to determine trigger or passage requirements

Results

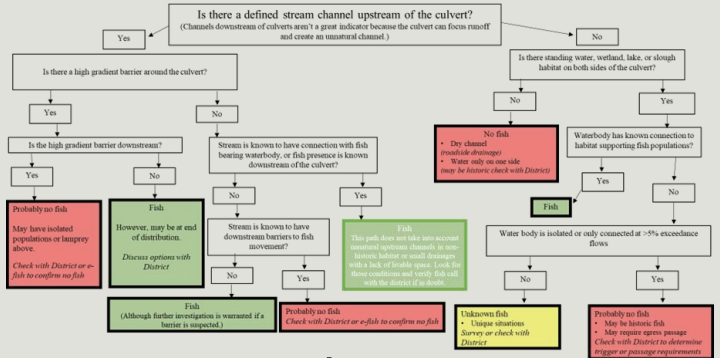
Willamette	
Accuracy	72.97%
Specificity	70.37
Sensitivity	80%

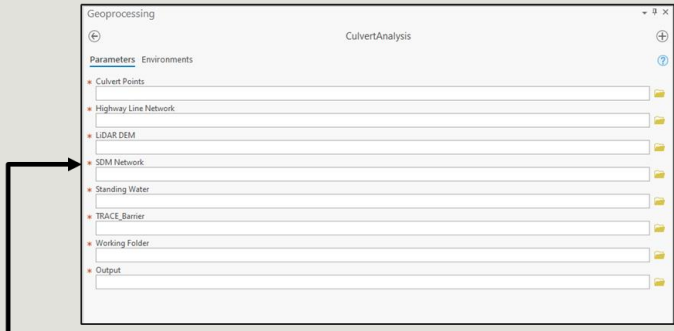
Coastal	
Accuracy	72.92%
Specificity	86.67%
Sensitivity	50%

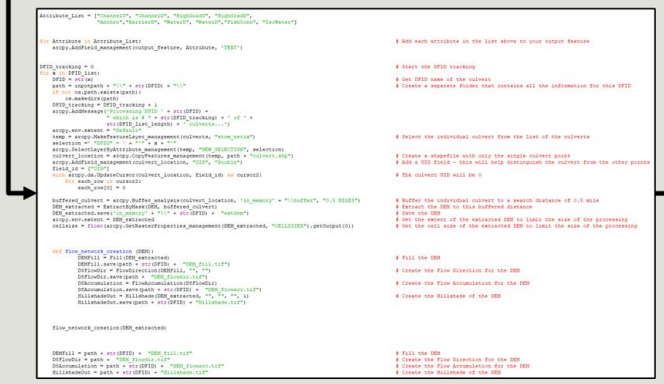


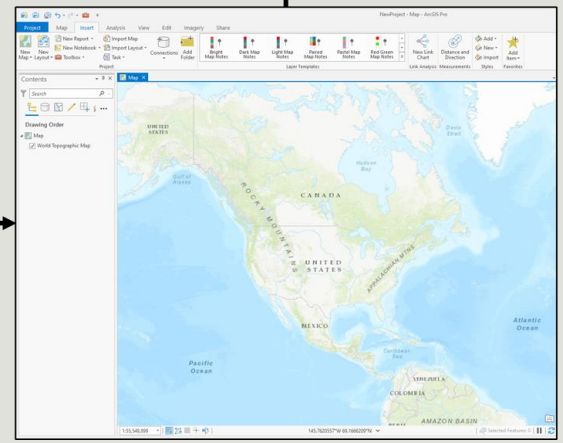
Applicability to other areas

- Customizable!
- This provides a framework for identifying culverts using point files, fish presence networks
- Code and toolboxes can be requested from ODOT or myself, code is annotated and designed to be updated with new species data referred to









HCAX Updates

Mike Banach, Jen Bayer, Mari Williams, Greg Wilke

HCAX Timeline

- Workshop May 21st 10:30-12:30

- Deliverables
  - Data Exchange Standard
  - Documentation of Metadata
  - XML schema
  - DSA and DUA update

- End date August 30, 2024

Mike's HCAX updates

- DES tables for:
  - Hatchery programs (Lookup)
  - Stocks (Lookup)
  - Stock X Hatchery (More or less a lookup)
  - Returns (stock, program, locations, hatchery)
    - Hatchery & strays & unmarked & natural origin, ♂ & ♀ & jacks & jennies.
      - All combinations of those.
  - Spawning information (stock, program, locations, hatchery)
    - Hatchery and natural origin ♂ & ♀ & jacks
    - pHOB / pNOB, IJ & EJ
  - Releases (stock, program, locations, hatchery, life stage)
  - SARs (stock, program, locations, hatchery)
    - Essentially the same as the natural origin SAR, with a slight hatchery flavor.
- Database development
  - All tables made. All the backup infrastructure made.
  - All validation rules made, and API ready to receive data.
- Data so far
  - Program lookup table: 19 records, all from ODFW.
  - Stock lookup table: 453 records (with help from Ray Beamesderfer)
  - Stock X Hatchery table: 19 records, all from ODFW.
  - Zero in main HLI tables: Returns, Spawning, Releases and SAR.
  - The contract was for creating the system and testing it, not for significant data development. But we do still need at least one or two test records for each table from everyone involved.
    - CCT 95% ready to go.
    - IDFG thinks by end of September they should have data.
    - MFWP has data pulled from a database and ready to go. Just hasn't pushed to central database yet.
    - WDFW has people working on a database.
- Query system
  - Not started yet. Can start programming once we have data. Our next step is a general design.

Data Sharing/Use Agreement Update

- Data Policy and Agreements - StreamNet

Data Sharing/Use Agreement

CAP Fish HLI (CAX) Data Policy, Data Use Agreement, and Data-Sharing Agreements *(updated 2021)*

The Coordinated Assessments Exchange Network (CAX) will reside at StreamNet and will serve as a secure, shared repository for both indicator and metric level data. The StreamNet Steering and Executive committees have reviewed this DSA and will remain avenues to discuss any changes or concerns that participants may have about access to these data.

Metadata, including citations to individual agencies or tribes, biologists, databases, and reports, will be linked to the indicator and metric level data on StreamNet through links that auto-generate a list of citations for each metric in the data-exchange standard (DES) upon downloading. In addition, a listing of all agencies and tribes that provide data will be prominently displayed when data are downloaded.

This DSA. DUA and policy are intended for use with CAX data sets that have passed QA and are ready for dissemination online.

Specific webpage(s) on StreamNet will be maintained for the CAP Fish HLI (CAX) data and will clearly reference all of the organizations and data providers.

As users access these pages, they will be presented with a Data Use Agreement (DUA) requiring agreement before access to the site is granted. Upon accepting this DUA, data users will be allowed free access to the metric and indicator level data in the CAX database. The expectation is that these data have been derived, quality checked, shared between multiple entities, and generally collected through the expenditure of public funds.

Metadata, including protocols used to calculate the indicators for each population, will be available on the StreamNet website.

Data Sharing/Use Agreement

CAP Fish HLI (CAX) Data Policy, Data Use Agreement, and Data-Sharing Agreements ***(updated 2021)***

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Specific webpage(s) on S
providers.

As users access these pa
accepting this DUA, data
have been derived, quality

Metadata, including protc

- **Data Use Agreement**
- **Info Provided by Data Compilers**
- **Metadata**
- **DSA Input / Output Summary**

Data Sharing/Use Agreement Update

- DS/UA file to be emailed after the meeting
- Review and provide feedback by April 15th
- Revise and send out on May 1 for review by May 10th
- Present at workshop for further feedback

Fish Monitoring Working Group Updates

Meg Dethloff

PNAMP
Fish Monitoring
Work Group (FMWG)

StreamNet Steering Committee
February 20, 2024

Washington/British Columbia/Idaho American Fisheries Chapter Meeting

April 29th – May 2nd in Spokane, Washington

Data Longevity Achieved! Reproducibility throughout the lifecycle and beyond

-Co-sponsored by Pacific Northwest Aquatic Monitoring Partnership, StreamNet, and Fisheries and Oceans Canada

Join our symposium, contact Meg Dethloff

Abstract submission due February 29!

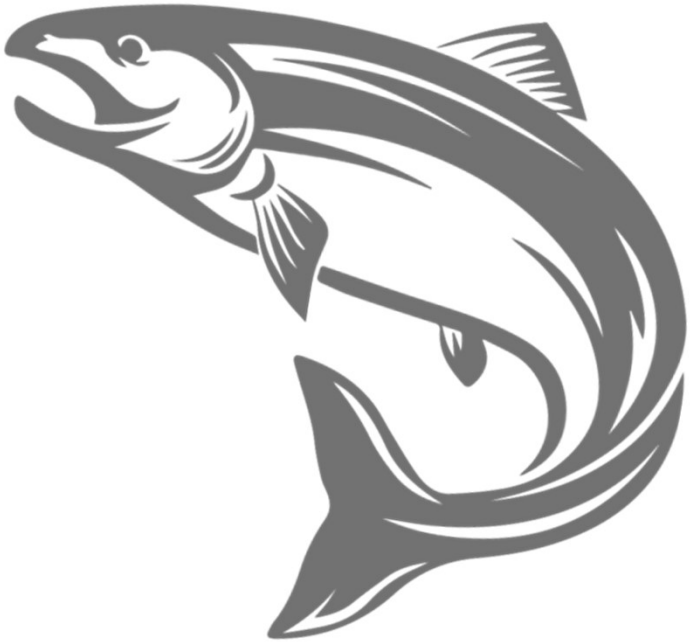
Image: 2024 WA/BC/ID AFS logo

Task Team Updates

For more information on the PNAMP Fish Monitoring Work Group, visit
https://www.pnamp.org/project/fish-monitoring-work-group

Tasks:

- Carrying Capacity Standards
- Rotary Screw Trap (RST) Data Collection
- PIT Tag Array Data and Related Data Analyses
- Juvenile Density (Snorkel & Electrofishing)
- Coordinated Assessments Partnership (CAP) Support



Icon: clipartkey.com

Carrying Capacity Standards

Purpose: This task aims to recommend standard inputs and outputs to support expansion of carrying capacity models to larger geographic extents and share the results in formats that are consumable for use and comparison of outputs.

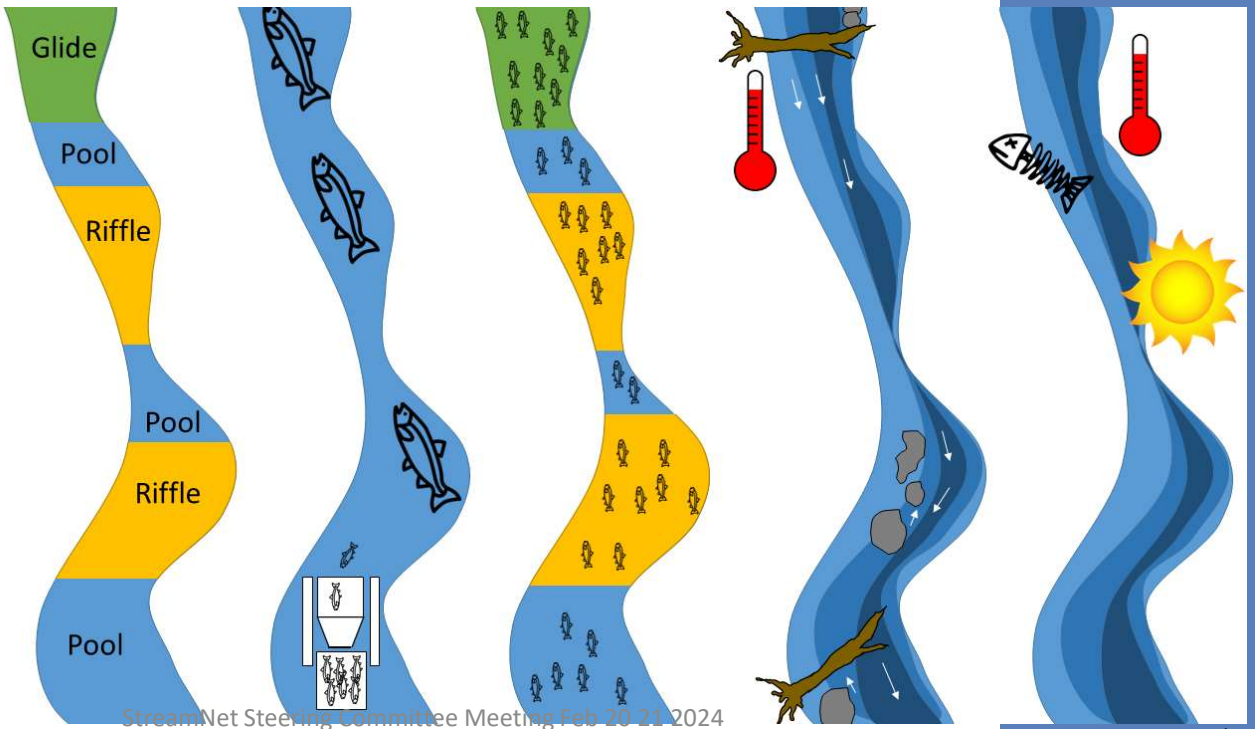


Image: Morgan Bond

Task Leads:

Morgan Bond (NOAA)
morgan.bond@noaa.gov

Tim Copeland (IDFG)
tim.copeland@idfg.idaho.gov

Russell Scranton (BPA)
rwscranton@bpa.gov

Rotary Screw Trap (RST) Data Collection

Purpose of the StreamNet ESRI Rotary Screw Trap Dashboard: This component of the task was to assess potential for combining data from multiple regional systems and sources into a dashboard.

Progress:

- Nancy Leonard (PSMFC/StreamNet) presented the development of dashboard to the StreamNet Steering and Executive Committees
- StreamNet's Executive Committee has approved the tool; there is consensus on displaying sensitive data discreetly, and with agency understanding and approvals

Next Steps:

- StreamNet's Technical Team will update the dashboard with recommendations
- PNAMP FMWG will reconvene biologists to validate accuracy of data in the tool and verify that nothing is missing

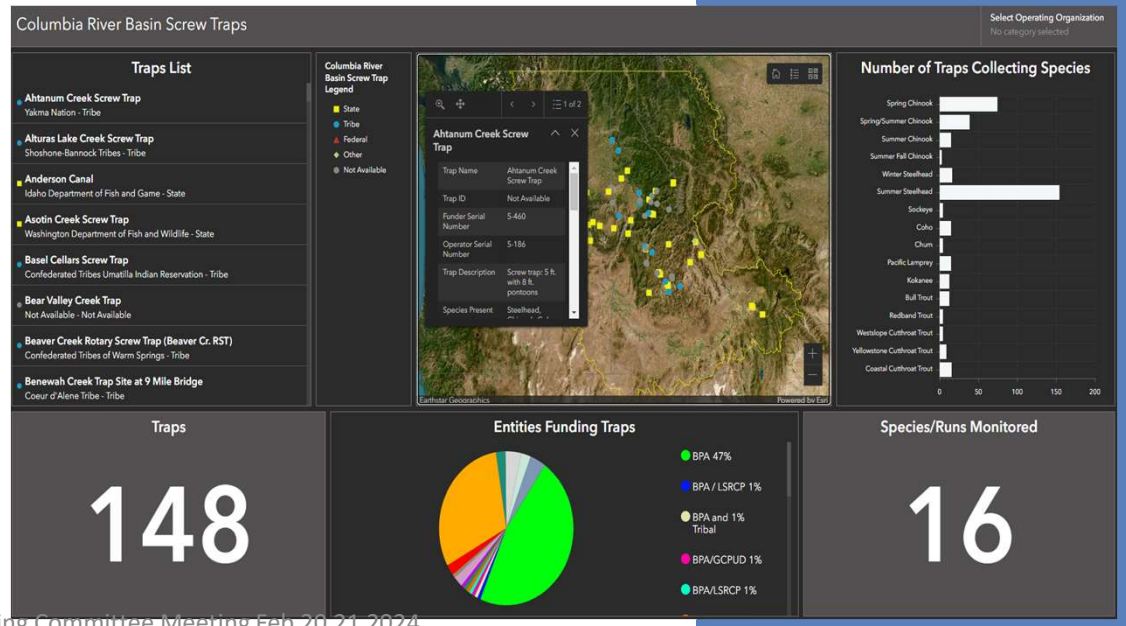


Image: StreamNet

Task Leads:

Kasey Bliesner (ODFW)
kasey.bliesner@odfw.oregon.gov

Russell Scranton (BPA)
rwscranton@bpa.gov

Nancy Leonard (PSMFC)
nleonard@psmfc.org

PIT Tag Array Data and Related Data Analyses

Purpose: This task is focused on documenting and recommending improvements to data management and analytical methods and tools for PIT tag array data.

Task Leads:

Marika Dobos (IDFG)
marika.dobos@idfg.idaho.gov

Russell Scranton (BPA)
rwscranton@bpa.gov

Photo: M Dethloff

Juvenile Density (Snorkel & Electrofishing)

Purpose: This effort will work to create a data crosswalk between existing fish density data collection efforts and use existing data standards (e.g. from CAP DES) to propose a standard vocabulary, documentation, and a DES for fish distribution/density data. Population names and data provider standards will be referenced from CAP DES. Biologists on the Task Team will work towards agreement on standards and propose and evaluate a common data portal for shared storage and access.

Task Leads:

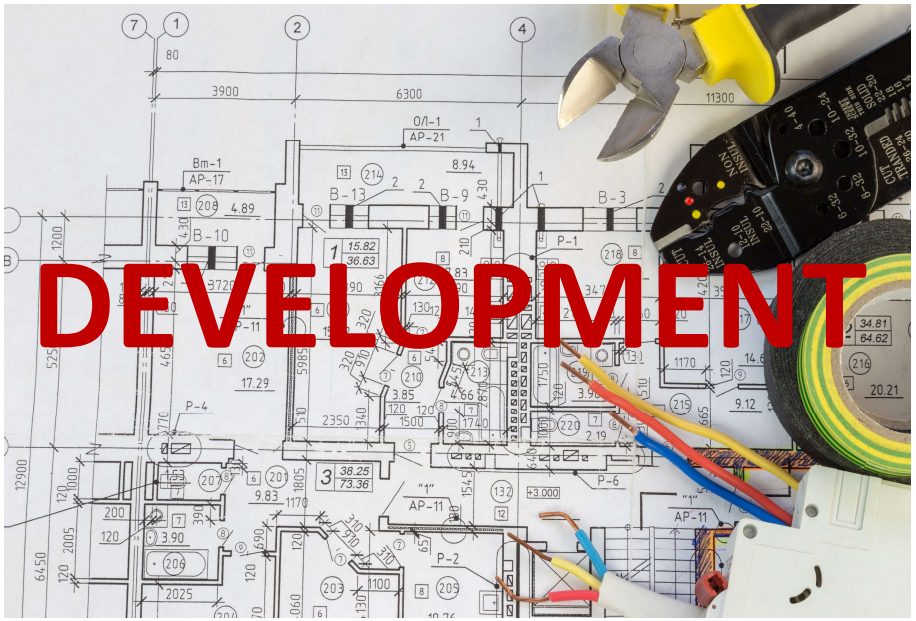
Kasey Bliesner (ODFW)
kasey.bliesner@odfw.oregon.gov

Russell Scranton (BPA)
rwscranton@bpa.gov

Photo: M Dethloff

Review of Terms and Definitions Used in CAP Data Standards

Purpose: This task is focused on providing support for the Coordinated Assessments Partnership Workshop outcomes



Task Leads:

Jen Bayer (USGS/PNAMP)
jbayer@usgs.gov

Mari Williams (PSMFC)
mwilliams@psmfc.org

Image: CAP logo and Microsoft Stock

Task Leadership

Task Lead	Task #
Mike Banach (PSMFC)	7
Jen Bayer*	1,4
Kasey Bliesner* (ODFW)	2,7,10
Morgan Bond (NOAA)	1
Evan Brown (IDFG)	9
Tim Copeland (IDFG)	1
Marika Dobos* (IDFG)	3
Lara Erikson* (PSMFC)	6,8
Polly Gibson (ODFW)	2
Van Hare (PSMFC)	9
Kris Homel (NPCC)	8
Tom Iverson (consultant)	5
Nancy Leonard* (PSMFC)	2,5,6
Russell Scranton* (BPA)	1,2,3,7, 10
Mari Williams* (PSMFC)	4

ACTIVE

1. Carrying Capacity Standards
2. Rotary Screw Trap (RST) Data Collection
3. PIT Tag Array Data and Related Data Analyses
4. Review of Terms and Definitions Used in CAP Data Standards

COMPLETED

5. Data Display
6. Data Display: Implementation
7. CAP DES Juvenile Outmigrant Refinement: Define Smolt Equivalent
8. MAFAC and NPCC SPI
9. Fish Management Units Boundaries and Attributes
10. Juvenile Density (Snorkel & Electrofishing)

*indicates participation in FMWG Core Team

Stretch Break

back at 2:45 (PST)

StreamNet Webpage Updates

Mari

StreamNet Website Updates

- Estimated Data Update Ranges

StreamNet
Fish Data for the Northwest

Data & Maps ▾ CAP ▾ Comr

Estimated Data Update Ranges

Home > CAP > HLI Catego

The estimated date ranges provided here are general times of the year when updates are routinely available and sent to StreamNet by the data providers. If you have questions about current updates that are not yet available, please **contact** the StreamNet data steward for the agency that provides the data. Data update estimates were voluntarily provided by data stewards that had time available to develop them. Data providers that are not funded by StreamNet are not required to provide this information. This information will be updated if other date estimates are provided or date estimates are modified.

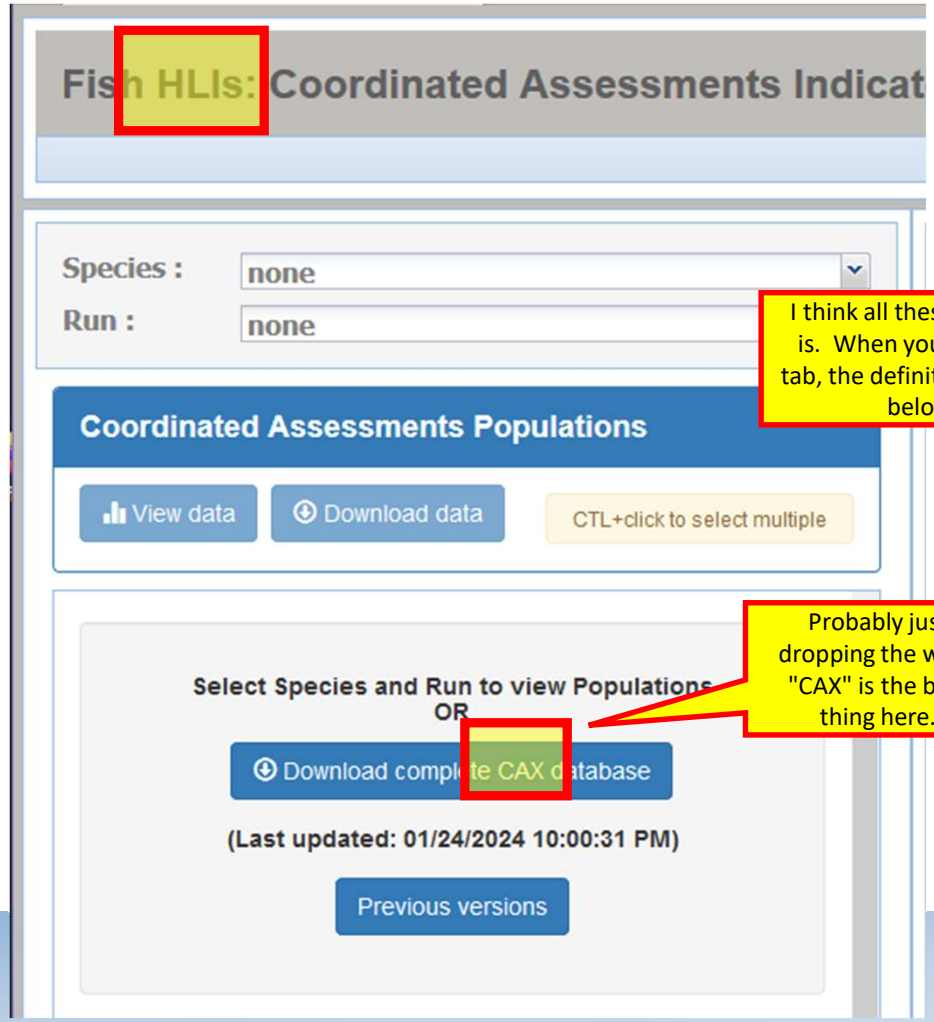
Agency	Data Set	Data Category	Species	Run	Compiled By	Target Date Range
IDFG	Coordinated Assessments (natural origin)	Juvenile Outmigrants	Chinook	Spring/Summer	IDFG	6/1-6/15
IDFG	Coordinated Assessments	Juvenile Outmigrants	Steelhead	Summer	IDFG	6/1-6/15

Estimated Data Update Ranges - StreamNet

StreamNet Website Updates

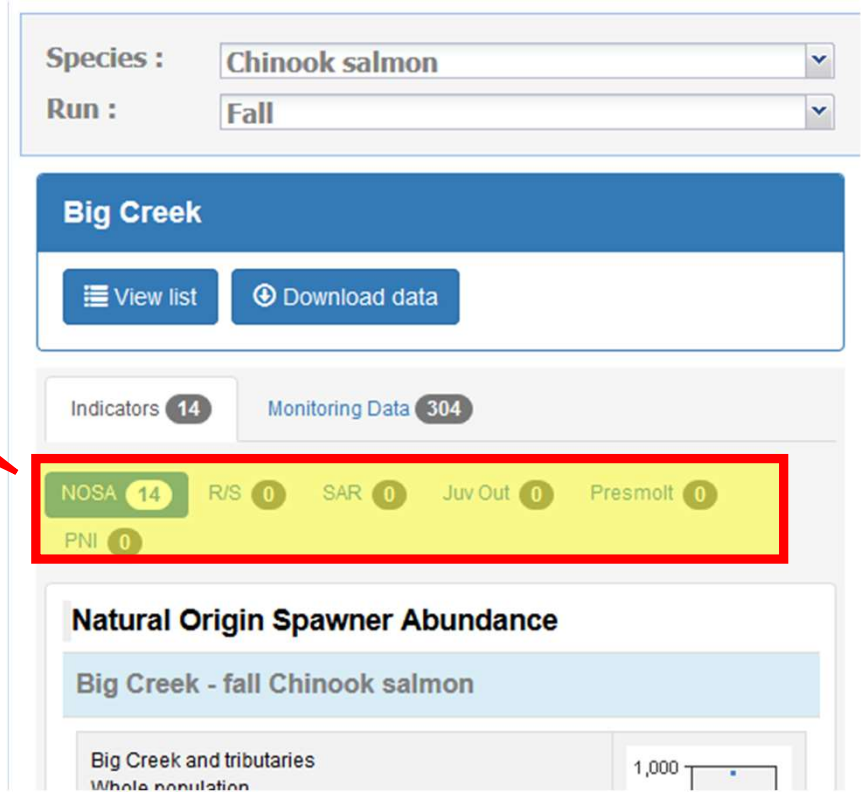
- Estimated Data Update Ranges

- Replace acronyms with real words



I think all these are ok as is. When you click on a tab, the definition appears below.

Probably just dropping the word "CAX" is the best thing here.



StreamNet Website Updates

- Estimated Data Update Ranges
- Replace acronyms with real words across webpages
- Query and download acronym translation

Big Creek - fall Chinook salmon

Chart | Data

Spawning Year	NOSA EJ	NOSA IJ	NOSA unavailable	Last updated
2011	132		No	2021/03/01 08:55:24
2010	896		No	2022/04/27 03:53:13
2009	0		No	2021/03/01 08:55:31

Catherine Creek -

Chart | Data

Outmigration Year	Rearing Type	SAR	Smolts	SAR Type	SAR unavailable	Last updated
2018	Natural	1.25	17321	Including jacks	No	2023/07/25 07:55:02
2017	Natural	0.67	12562	Including jacks	No	2022/09/09 01:32:55
2016	Natural	0.48	12100	Including jacks	No	2021/09/29 02:39:03

Wenatchee River - spring Chinook salmon

Chart | Data

Spawning Year	PNI EJ	PNI IJ	PNI unavailable	Last updated
2020		0.6	No	2023/11/03 09:04:35
2019		0.42	No	2023/11/03 09:04:35
2018		0.34	No	2023/11/03 09:04:33

Member Updates and Announcements

ODFW: Cedric Cooney

IDFG: Angie Schmidt, Evan Brown

CRITFC Library: Tami Wilkerson

CRITFC: Sheryn Olson and Denise Kelsey

PNAMP: Jen Bayer

USFWS: Todd Gilmore

Shoshone-Bannock Tribes: Kurt Tardy

WDFW: Brodie Cox

NOAA: Katie Barnas

MFWP: Dawn Anderson

Colville Tribes: George Batten

NPCC: Kris Homel

BPA: Brady Allen, Russell Scranton

StreamNet: **Nancy**, Greg, Mike, Mari, Monica, Van

Celebrating Cedric

- Cedric Cooney's Kudoboard | Kudoboard

End Day 1

Join us at 6pm

Gilgamesh Brewing
503-584-1789
2065 Madrona Ave, SE
Salem, OR

[Cedric Cooney's Kudoboard | Kudoboard]

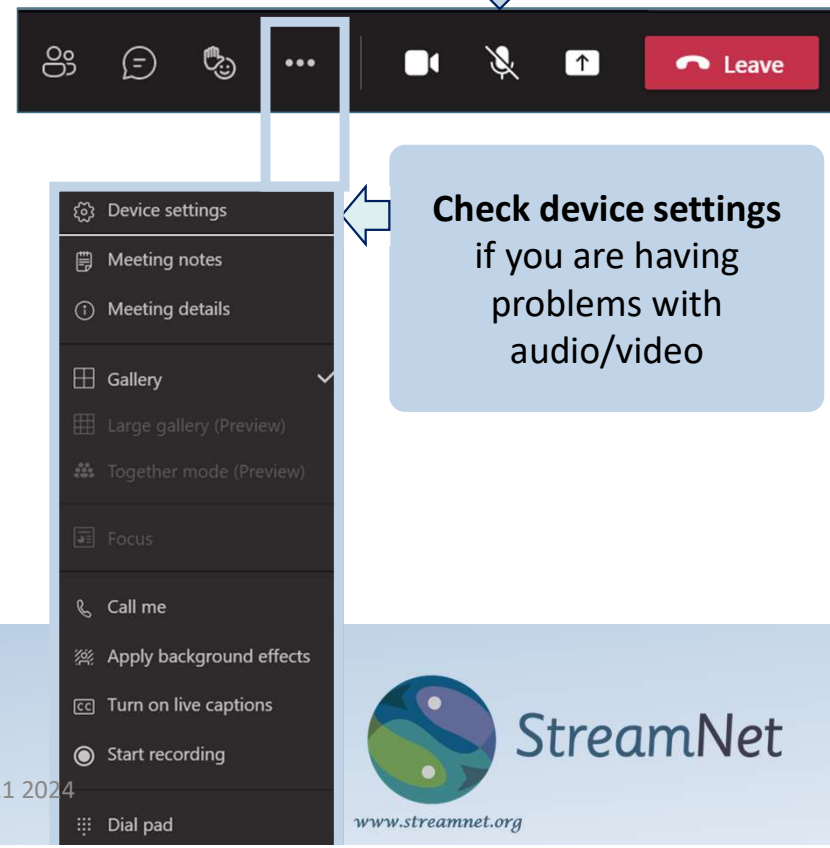
Welcome
Day 2

Please leave web cameras on to facilitate discussion

All participants,

please use the chat to introduce yourself (name and affiliation)

Please mute yourself when not speaking.
Use *6 to mute phone audio.
Use the microphone icon on the control bar to mute computer audio.



Check device settings if you are having problems with audio/video

StreamNet
www.streamnet.org

Agenda

(times are approximate, Pacific Standard Time)

DAY 1 – 2/20/2024	
TIME	AGENDA ITEM
1PM	Welcome and introductions (Mari Williams)
1:15	Spotlight: ODFW Early Predication Method for Native Migratory Fish Presence at Small Culverts - Courtney Zambory
1:45	HCAX updates (Mike Banach, Jen Bayer, Mari, Greg Wilke)
2:15	Fish Monitoring Work Group Task Updates (Meg Dethloff)
2:30	Stretch Break
2:45	StreamNet Website updates (Mari)
3:00	Member Updates
5:00	End Day 1
6:00	Dinner and Celebration of Cedric Gilgamesh Brewing 503-584-1789 2065 Madrona Ave, SE, Salem, OR

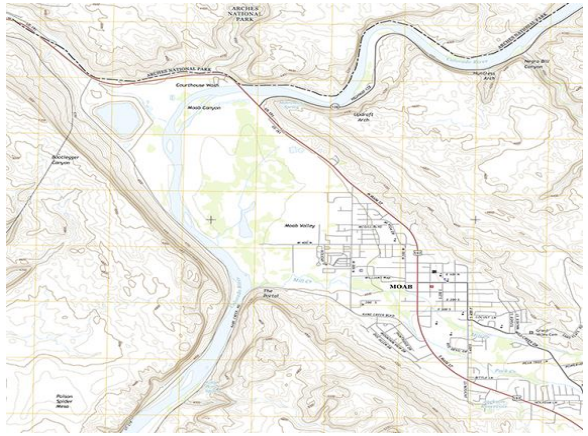
DAY 2 – 2/21/2024	
TIME	AGENDA ITEM
9AM	Welcome and introductions (Mari)
9:10	Spotlight: Latest from NHD, Tom Carlson (USGS National Geospatial Program Liaison for ID, OR, & WA)
9:30	Next SN SC Meeting (moved up and switched with Data QA/QC)
9:45	StreamNet Technical Team (Mike)
10:15	Stretch Break
10:30	BPA annual report (Mari)
11:15	CAP workshop tasks (Jen, Mari)
11:45	Data QA/QC task progress (Greg) (switched)
12:00	Adjourn

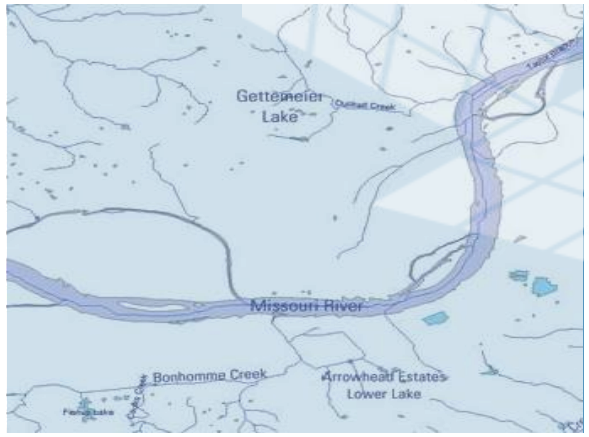
Spotlight: Latest from NHD

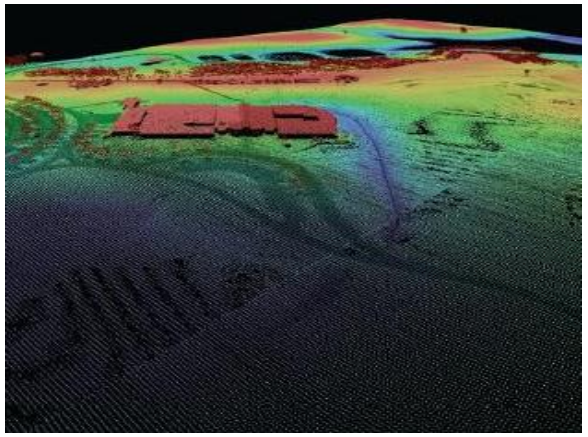
Tom Carlson

USGS National Geospatial Program Liaison for ID, OR, & WA

The National Hydrography Dataset transition to 3D Hydrography Program - NHD to 3DHP







3D Hydrography Program: https://www.usgs.gov/3d-hydrography-program

3DHP DCA Help desk: 3dhp_dca@usgs.gov

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The National Map
Your Source for Topographic Information

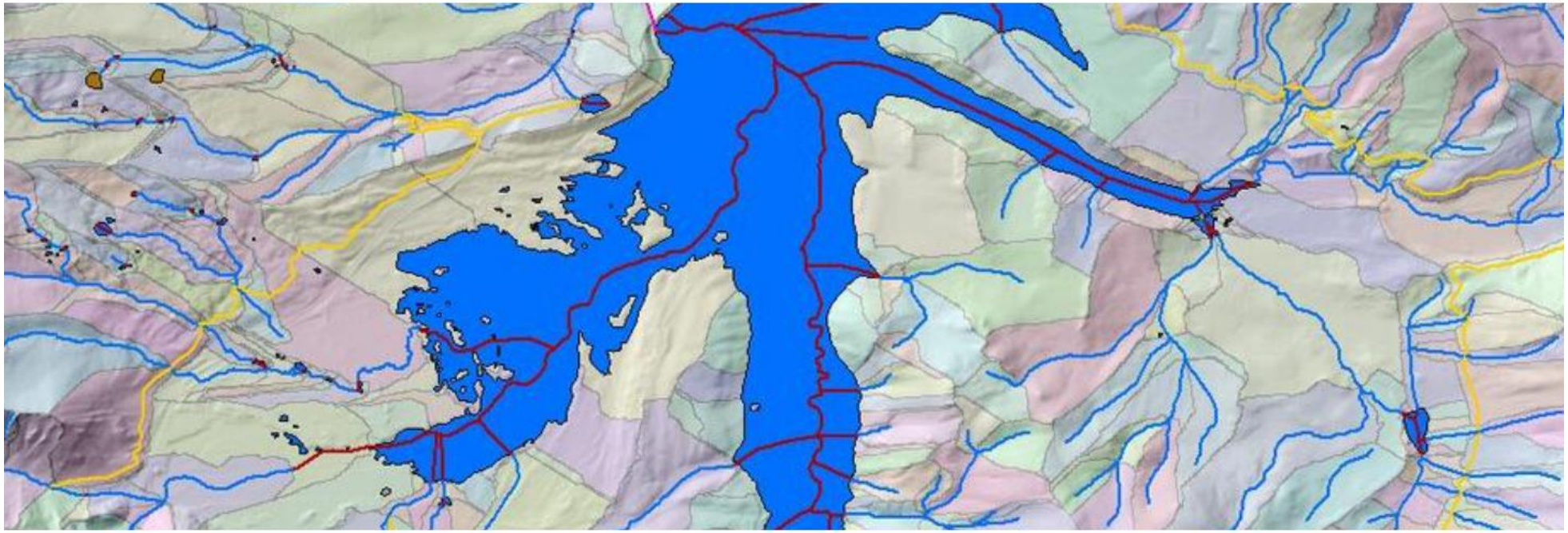
Tom Carlson
U.S. Geological Survey
National Geospatial Program
February 21, 2024
tcarlson@usgs.gov

usgs.gov/national-hydrography/national-hydrography-dataset

NATIONAL HYDROGRAPHY | ABOUT NATIONAL HYDROGRAPHY PRODUCTS

National Hydrography Dataset

By National Hydrography



HOME

CURRENT PROGRAM - 3DHP

ABOUT NATIONAL HYDROGRAPHY PRODUCTS

NHDPlus High Resolution

The National Hydrography Dataset (NHD) represents the water drainage network of the United States with features such as rivers, streams, canals, lakes, ponds, coastline, dams, and streamgages.

Note – As of October 1, 2023, the NHD was retired. NHD data will continue to be available, but no longer maintained. The most current data will be available through the 3D Hydrography Program (3DHP)

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https://www.usgs.gov/national-hydrography/national-hydrography-dataset

Where NHD came from…

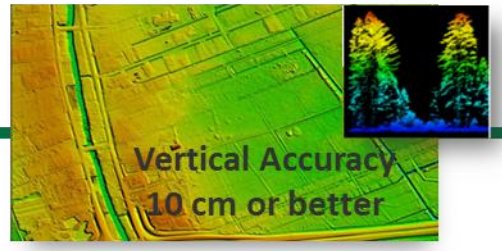
- Topographic maps included inherently integrated data – ***USGS collected data to make maps***
- We harvested data from those maps to develop NHD and early elevation – ***USGS maps made the data***
- We are now able to collect new, high accuracy 3DEP data and derive new, aligned hydrography data – **USGS back again to collecting data to make maps**

Topographic mapping began began at the USGS

1884

1976

1st Digital Elevation Model
1st Digital Line Graph (DLG)
Digitized from contours and delivered as 24k tiles

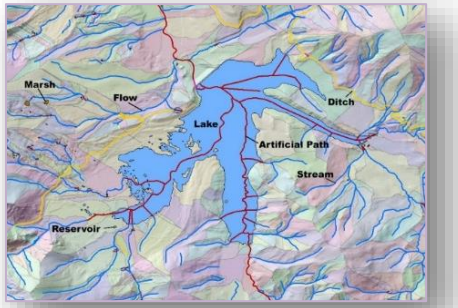


1st full year of 3DEP Production
Including lidar point cloud as a product

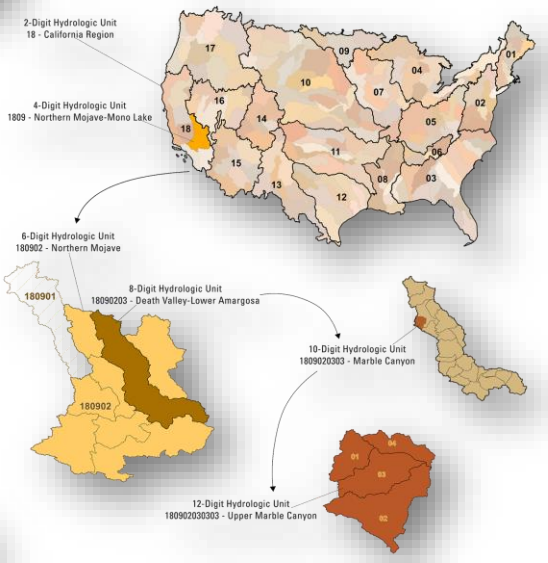
2016

Legacy National Hydrography Datasets-Issues

- The National Hydrography Dataset (NHD) portfolio of datasets is the most comprehensive and current data of the Nation's surface waters – *Best available data at the time*
  - 9.4 million miles stream of network, including 8 million waterbodies and over 130,000 nested hydrologic units
- NHD and Watershed Boundary Dataset (WBD) leverage local knowledge and updates through a stewardship program with participants from 41 states and Washington DC
- Updates are not uniform
  - Some areas have been updated, others untouched and based on older information – sometimes 40+ years old
  - National consistency of data quality has decreased over time
  - NHD surface water features don't align well with highly accurate 3D Elevation Program data



National Hydrography Dataset



Watershed Boundary Dataset

NHDPlus High Resolution

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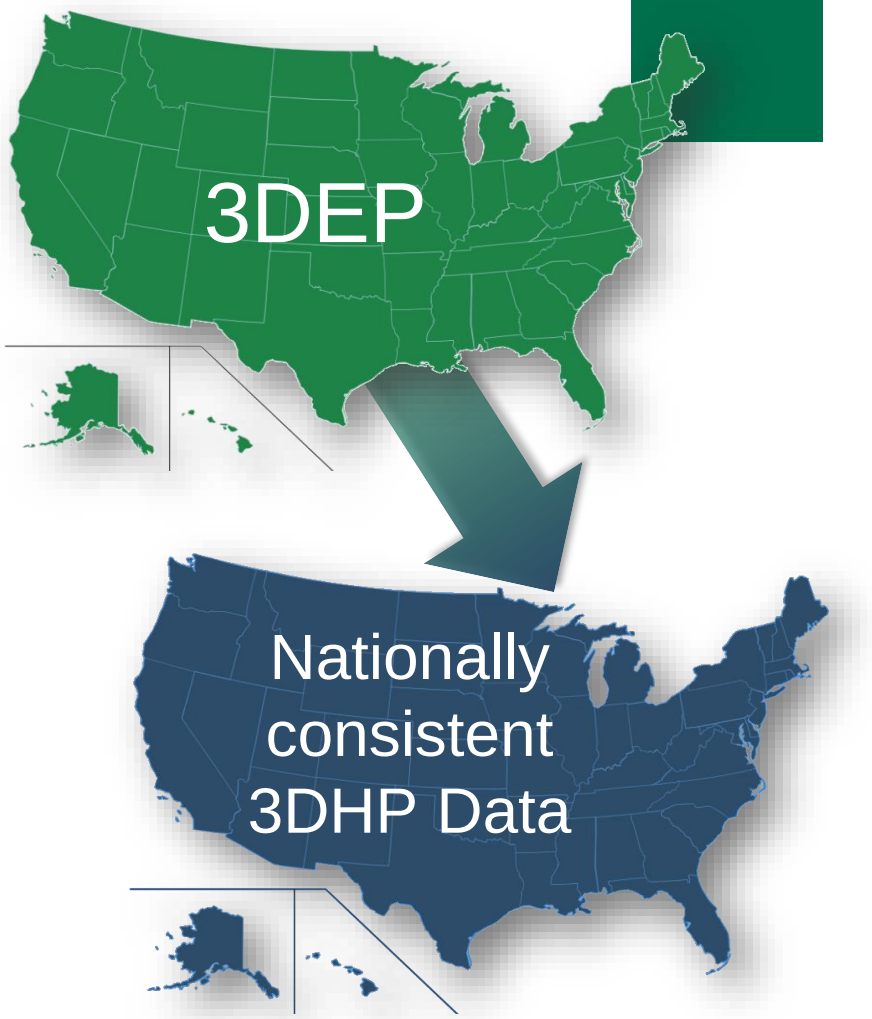
Hydrography Derived from Elevation Offers a Solution

Introducing the 3D Hydrography Program (3DHP)

- 3DHP will provide national consistency while meeting local needs
- Goal to acquire new hydrography standardized to align vertically, horizontally, and temporally with 3DEP data, as well as other improvements
  - Supports national and regional-level issues like flooding, contaminant spills, water quality and quantity, drought, climate change, etc.
  - Supports more accurate, updated modeling and analysis capabilities
  - Supports sharing of water data as the geospatial framework underpinning the internet of water
- Data acquisition process to follow 3DEP Best Practices including coordinated governance and data acquisition
- Building on decades of work and concepts from current hydrography products



Benefits to updating National Hydrography Datasets

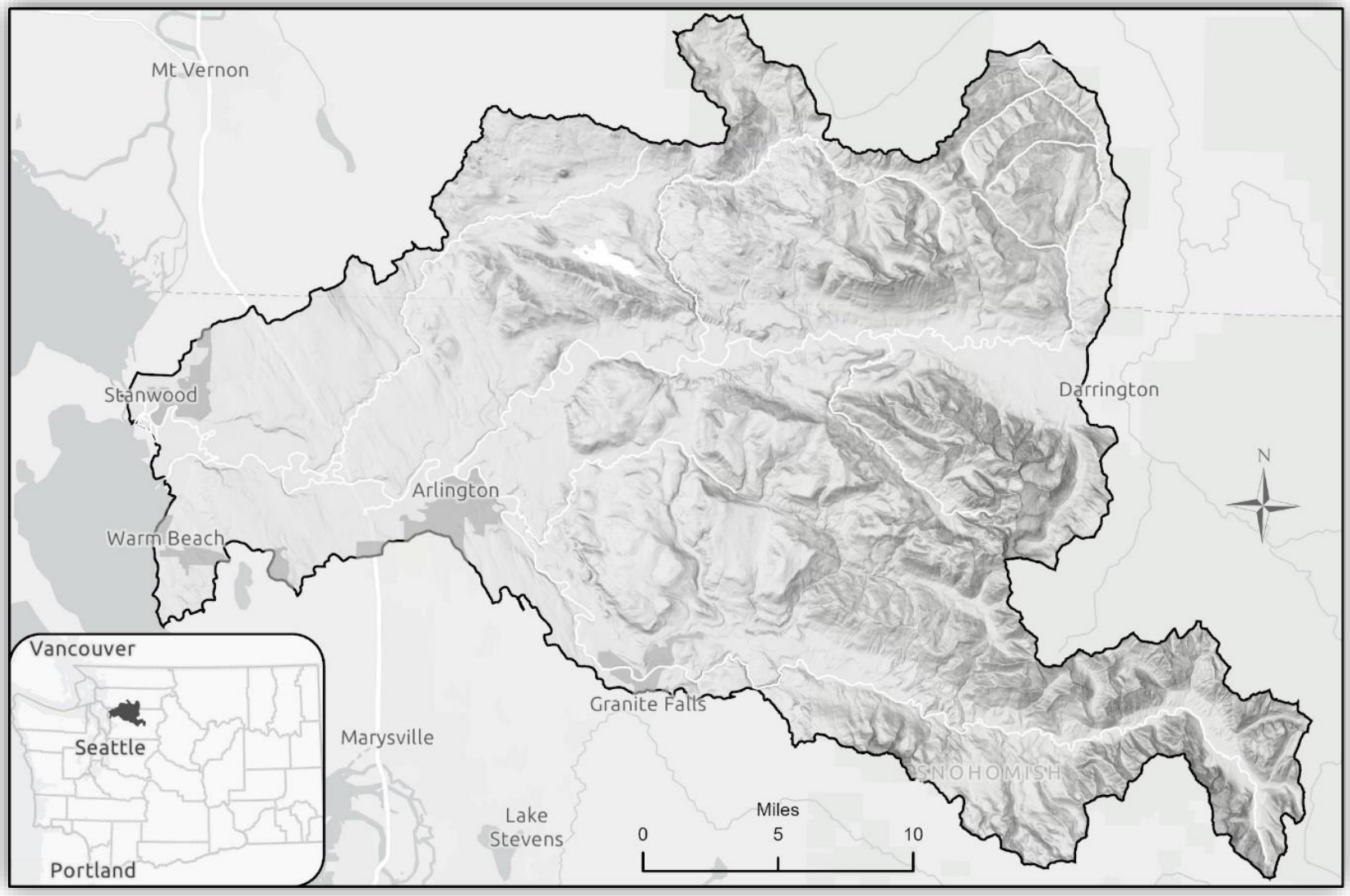
- **Hydrography Requirements and Benefits Study (HRBS; 2016)** documented 420 mission critical business uses with 23 Federal agencies, 50 states, 8 Tribal governments and 3 national associations
- HRBS found that hydrography data are essential to a broad range of critical applications and the current program provides $538M annual benefits
- A modernized 3D-enabled hydrography program could provide up to $1.14 billion annually in benefits if all user requirements are met

Local PNW example – Stillaguamish watershed

Stream Mapping Assessment Project

Washington Dept of Ecology –

funded by Washington State



Josh Greenberg, WA ECY NHD Steward, josg461@ecy.wa.gov

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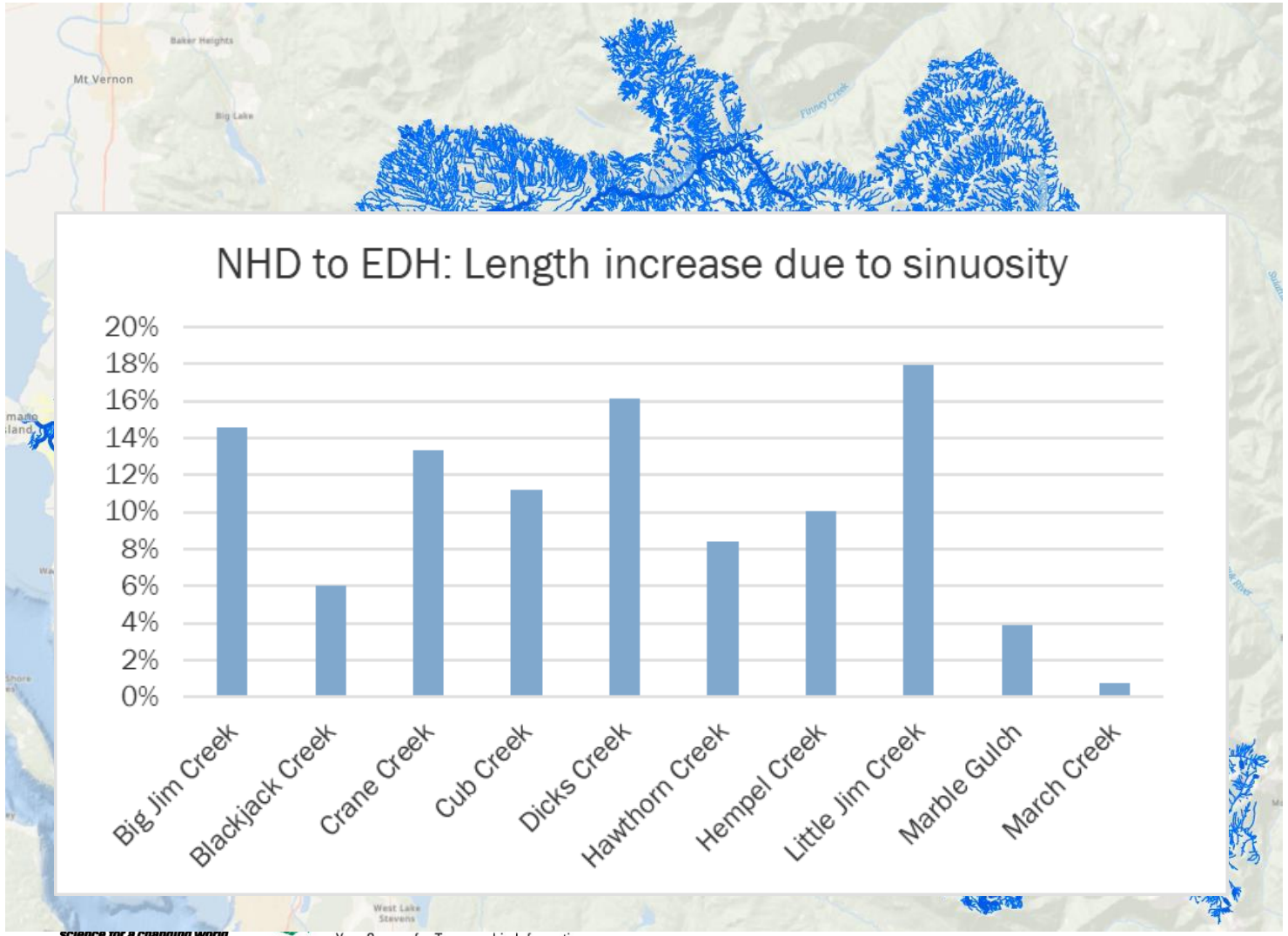
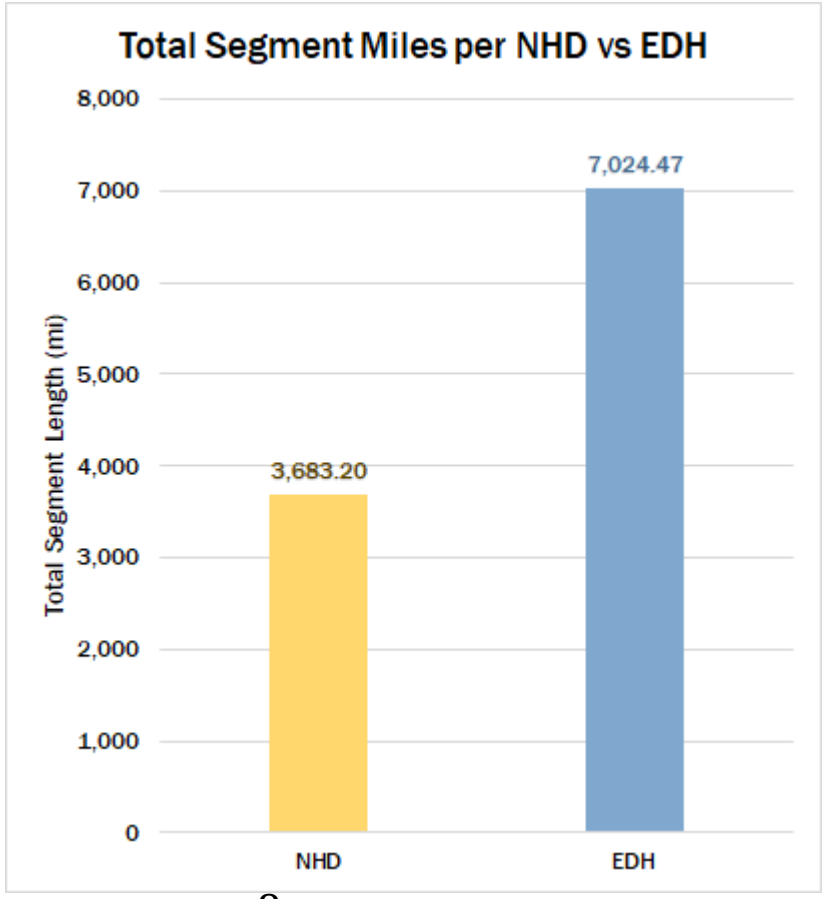
Pilot evaluation

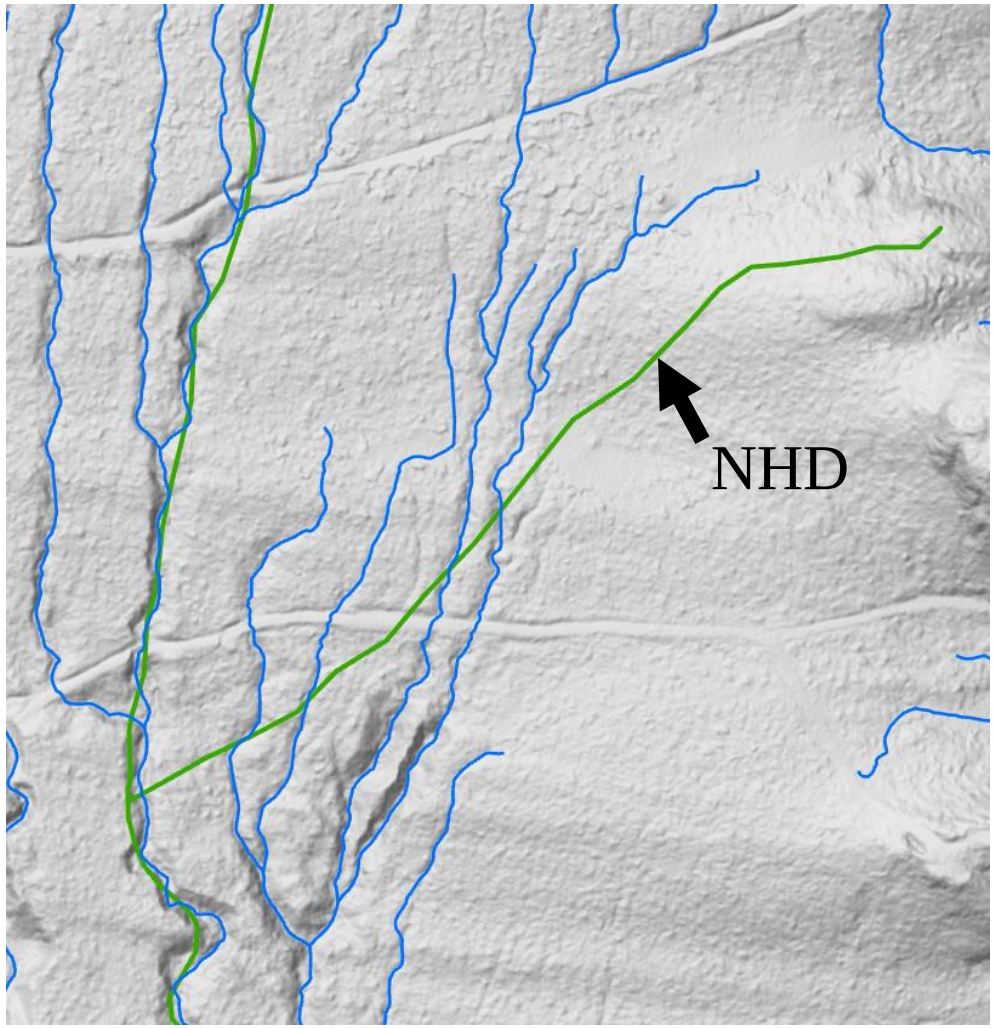


About 7,000 total miles



Pilot evaluation continued…

Challenges of Conflation



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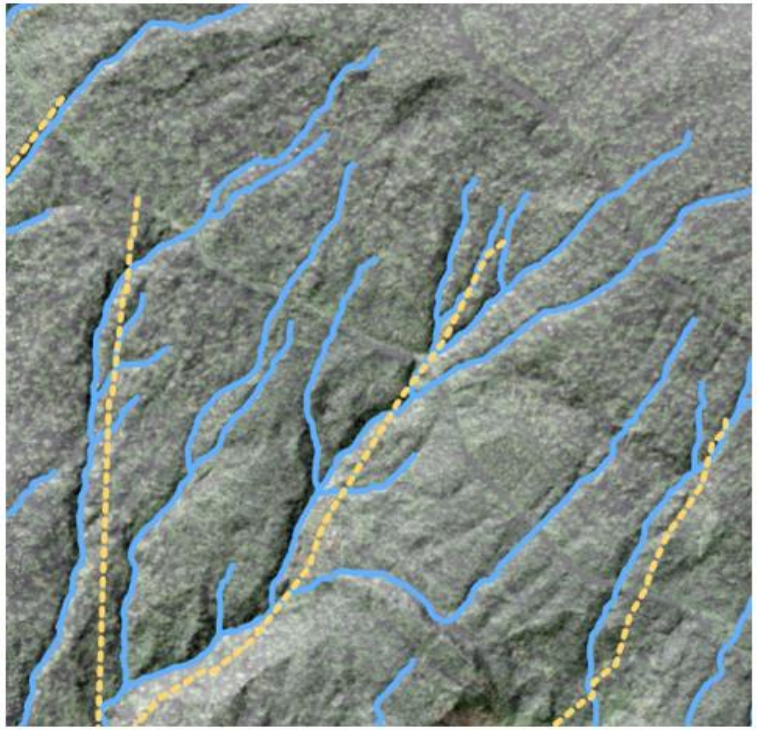
Pilot evaluation continued…

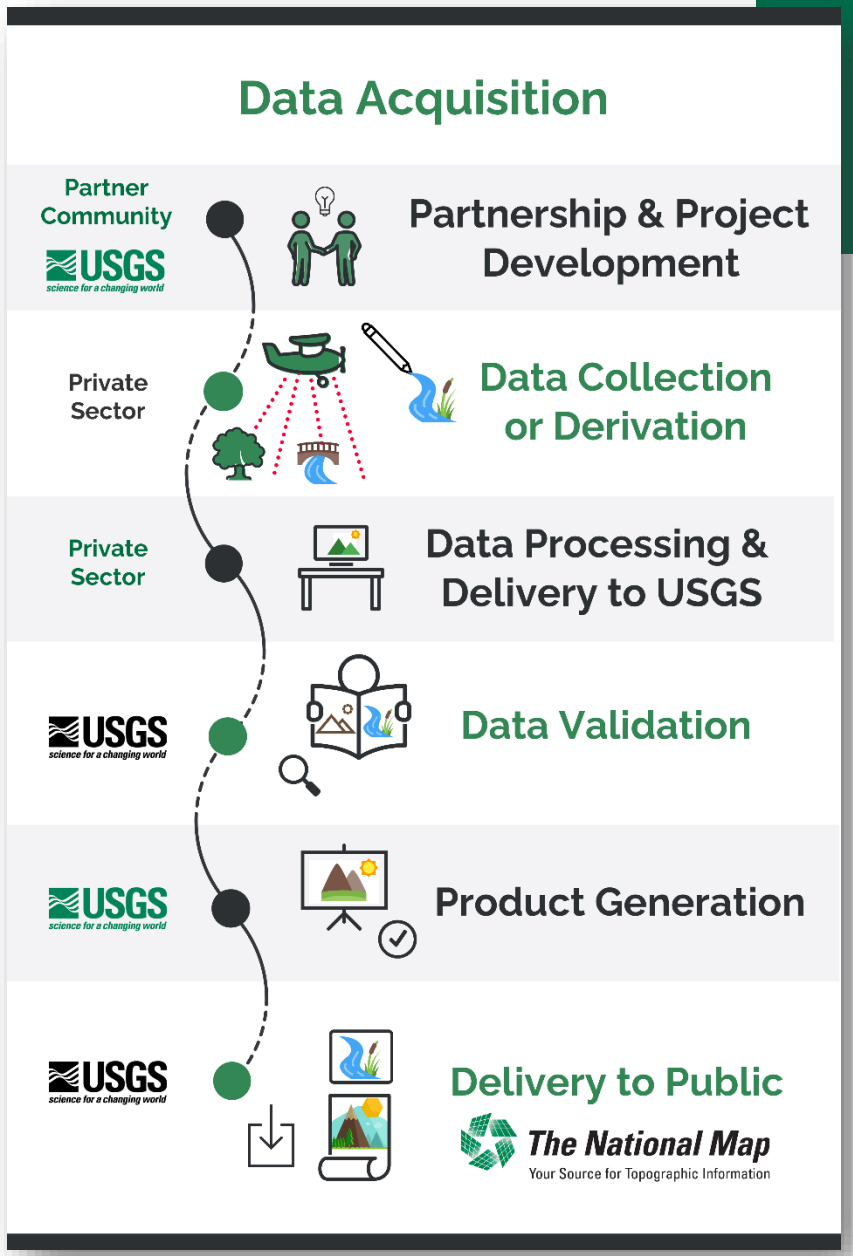
ngth



Building 3D Hydrography Program

3DHP will follow 3DEP

- Establish 3DHP governance to develop and coordinate partnerships and acquisition plans
- Add 3DHP to the 3DEP Data Collaboration Announcement (DCA) to solicit partnerships in the broad community
- Contract acquisition of 3DHP data primarily through the USGS Geospatial Products and Services Contracts (GPSC)
- Allow for co-operative data acquisition and contributed data
- Provide current and additional 3DHP specifications



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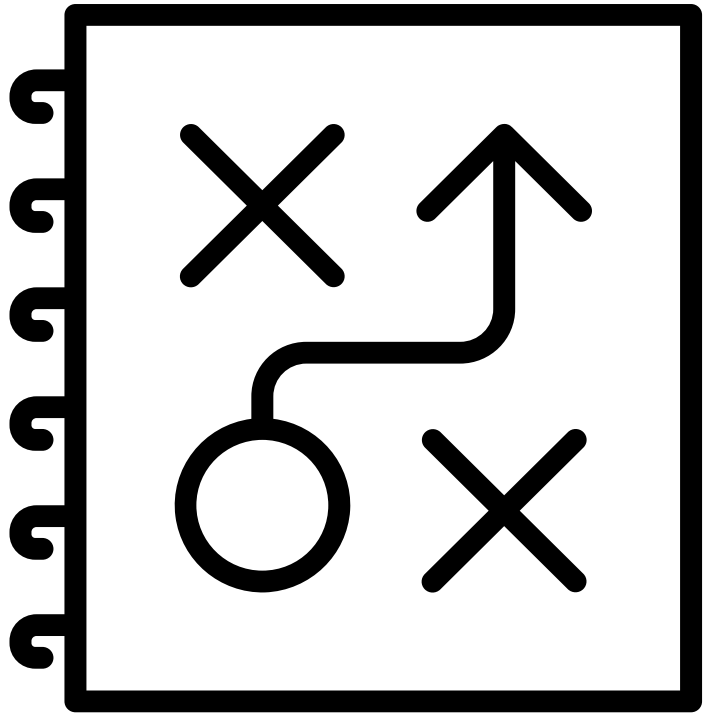
Transition plan – FY2023 and 2024

Developing 3DHP data products

- FY2023
  - Implement 3DHP 1.0 data model…….still developing
  - Populate with EDH data
  - Use a pruned NHD “skeleton” to connect network outside of EDH areas
- FY2024
  - Make necessary revisions to data model
  - Develop criteria for pre-EDH data inclusion
  - Release data service
  - Develop and implement markup functionality
  - Develop Hydro-addressing capability
  - Release initial raster products
  - Transition hydrologic units to 3DHP



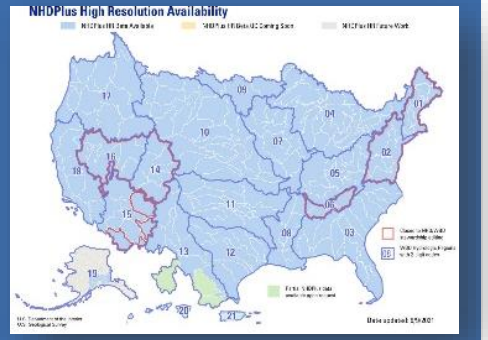
3D National Topography Model (3DNTM)

Integrates elevation and hydrography to model the Nation's topography in 3D – where we are and we we're going…

National Baseline Datasets

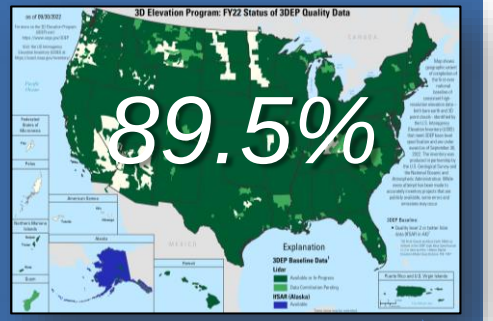
NHDPlus High Resolution (NHDPlus HR) hydrography framework

CONUS and southern AK completed, transitioning to 3DHP

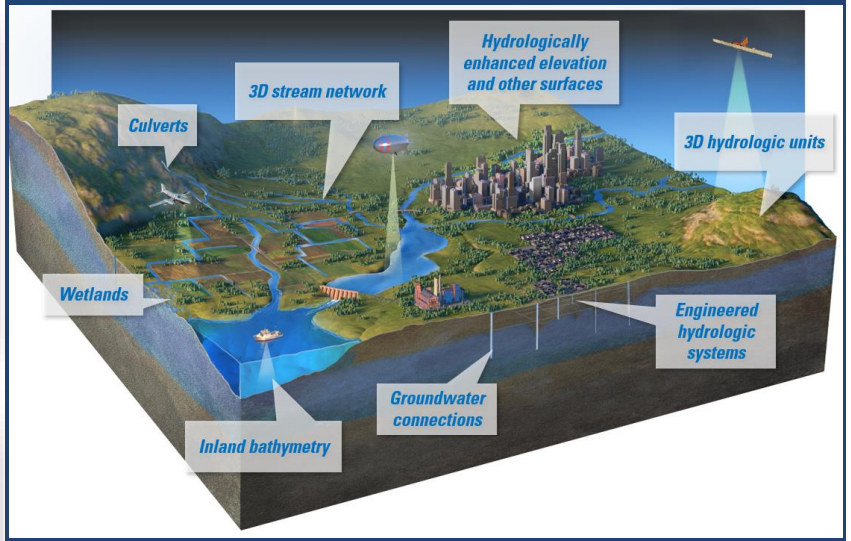


3D Elevation Program (3DEP) first national high-resolution elevation baseline

On track to complete acquisition by FY26

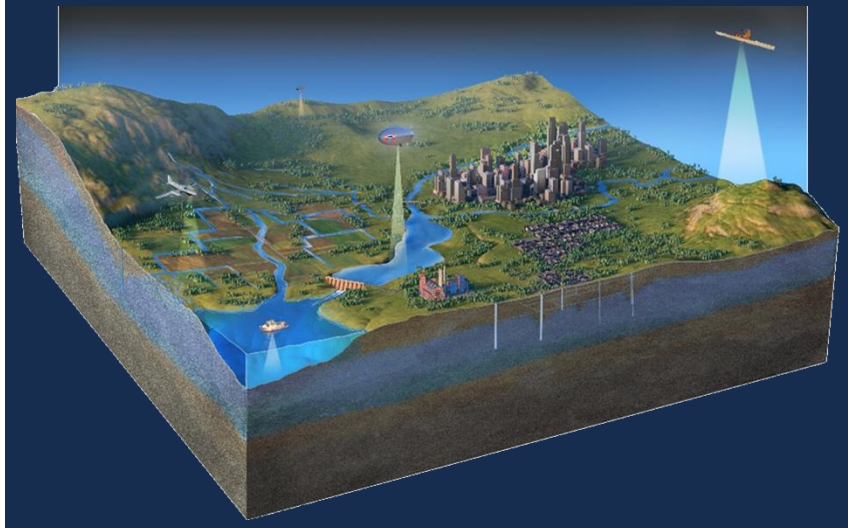


Next Generation Programs



- **3D Hydrography Program**
- Next generation 3D Elevation Program - *New quality levels and refresh cycles*

Integrated 3D Model



- Research and develop a 3D data model to fully integrate 3DHP and Next Gen 3DEP
- Integrate other data from *The National Map*

Ongoing

Under development

Longer-term goal

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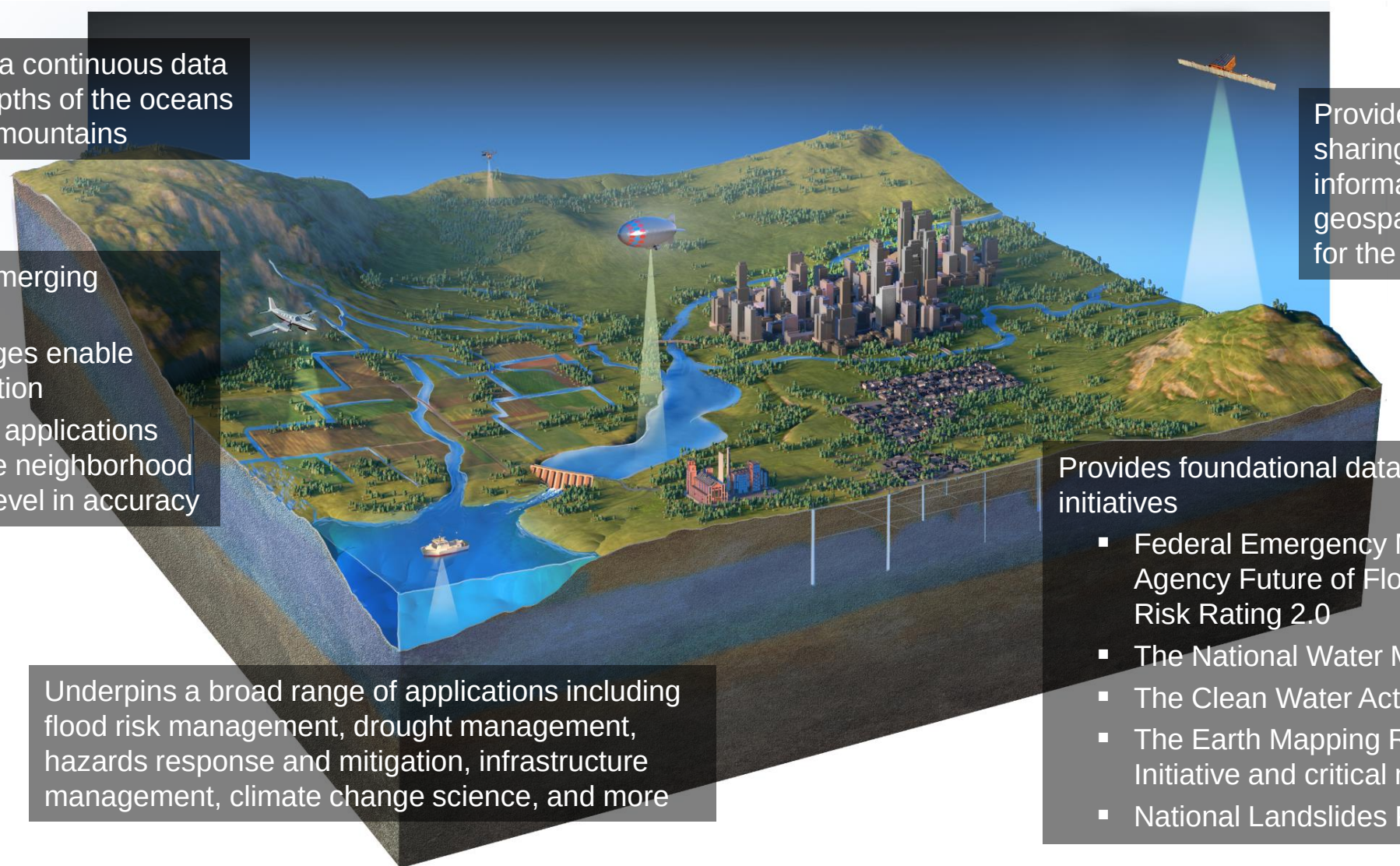
3D National Topography Model (3DNTM)

The National Map
Your Source for Topographic Information

Topography is defined by elevation and hydrography; elevation shapes hydrography, and hydrography shapes elevation. To support a broad range of applications, the **3D National Topography Model** integrates U.S. Geological Survey (USGS) elevation and hydrography datasets to model the Nation's topography in 3D.

3D Nation vision of a continuous data surface from the depths of the oceans to the peaks of the mountains



Provides universal sharing of water information as the geospatial foundation for the Internet of Water

Enables new and emerging applications

- Multiple vintages enable change detection
- Water-related applications move from the neighborhood to the street-level in accuracy

Provides foundational data to critical initiatives

- Federal Emergency Management Agency Future of Flood Risk Data and Risk Rating 2.0
- The National Water Model
- The Clean Water Act
- The Earth Mapping Resources Initiative and critical minerals
- National Landslides Preparedness Act

Underpins a broad range of applications including flood risk management, drought management, hazards response and mitigation, infrastructure management, climate change science, and more

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THANK YOU!

3D Hydrography Program: https://www.usgs.gov/3d-hydrography-program
3DHP DCA Help desk: 3dhp_dca@usgs.gov

Tom Carlson
USGS National Geospatial Program

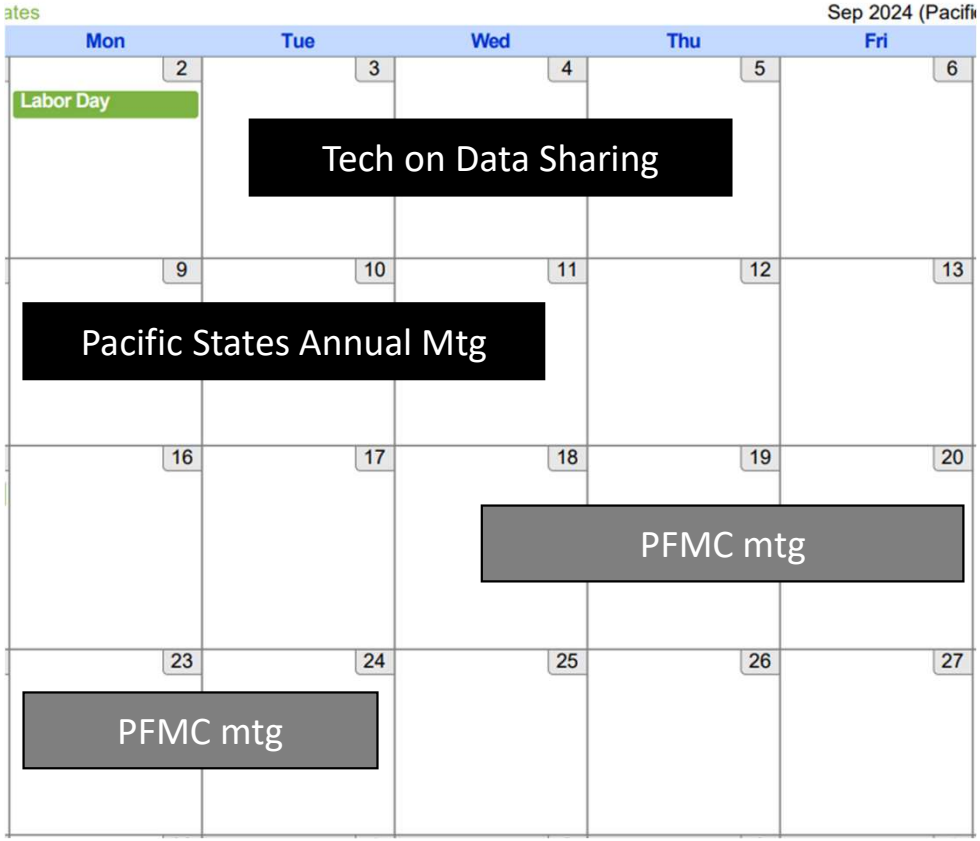
tcarlson@usgs.gov

Next Meeting

Montana!

September/October 2024 SC meeting

- **Fall 2024 SC meeting**
- Montana
- Dates?
- *Note: ExCom to be held jointly with PNAMP SC November 6, 7, & 8th*



August???

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
19	20	21	22	23
26	27	28	29	30

Holidays in United States

Oct 2024 (Pacific Time - Los Angeles)

Mon	Tue	Wed	Thu	Fri
30	1	2	3	4
7	8	9	10	11
14 Indigenous Peoples' Day	15	16	17	18
21	22	23	24	25
28	29	30	31 Halloween	1 First Day of American

RecFin

StreamNet Tech Team updates

Mike

Technical Committee updates (30 min)

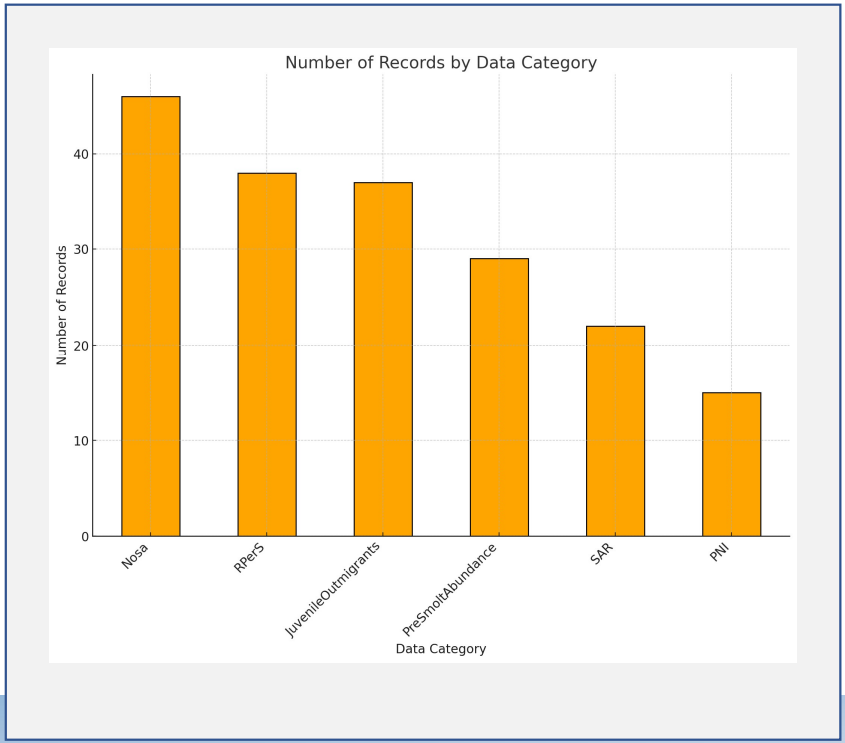
- We had a Tech Committee meeting on October 4, to discuss the CA DES and related issues.
    - The membership of the CA DDT has changed, and nobody was quite sure who all the current members were. We identified changes in DDT members for CCT, IDFG, NMFS, ODFW, USFWS, and WDFW.
    - We ran through a bunch of mainly minor topics and got agreement on most of them. Among the most significant were the following.
        - We will recommend to the CA DDT to remove CBFWApopName from all the tables.
        - We agreed to recommend to the CA DDT to add TimeSeriesID to all the appropriate HLI tables.
            - This will cure some query system data delivery problems because records meant to be used together can be easily identified.
        - We had another discussion of the "harvest" and "removal" fields in the HLI tables. No decisions were made. Kasey and Mike were given the assignment to knock this around some more. They spoke after the November SNEC meeting. This topic is still important, and how to deal with it still under consideration with Kasey's leadership.
        - We agreed to recommend to the CA DDT to replace the term "smolt equivalent" with "outmigrant" in the JuvOut.SmoltEqLocation field. This is because this table can track life stages other than smolts.
- We had another meeting January 10.
    - We discussed data expectations for the HCAX: Just one or a few test records. This was discussed earlier.
    - We discussed if there are complications related to avoiding changes to TrendID.
        - A decision was made to not change TrendID when a trend is transferred to a different organization.
        - We will pursue "trend groups" as a possible mechanism to help track other occurrences, such as splits/joins of trends.
    - We discussed how to use trend groups, and how we might display them on query systems and downloaded data.
        - Making these pretty for the end user will be difficult.
        - Trend groups could be a good way to associate CA HLI data to individual trends.
        - No decisions or directions decided on, but a good discussion.
    - PSMFC reported on extensive database infrastructure changes for moving to a new database and implementing the new StreamNet DES starting February 1, 2024. Everyone said they were ready to go.
        - Since the meeting ODFW encountered an issue with validation rule problems for the Trend table. We'll get it figured out.
    - We made progress toward showing information online about when annual data updates can be expected.
    - Tami now has a web-based interface that Greg made for her, allowing her to take over Reference table records. She gave a run-down on the process.

    - We discussed use of the "BestValue" field in the HLI tables at both these Tech Committee meetings.
        - My understanding was there should be only one per population X year X data organization for each HLI table. Others say it IS appropriate to have BestValue=Yes for more than one.
        - We didn't come to any final recommendations for the CA DDT, but it was generally felt that BV=Yes is ok for PopFit=Portion and for Same and for Multiple.
- Our next meeting will be March 14.

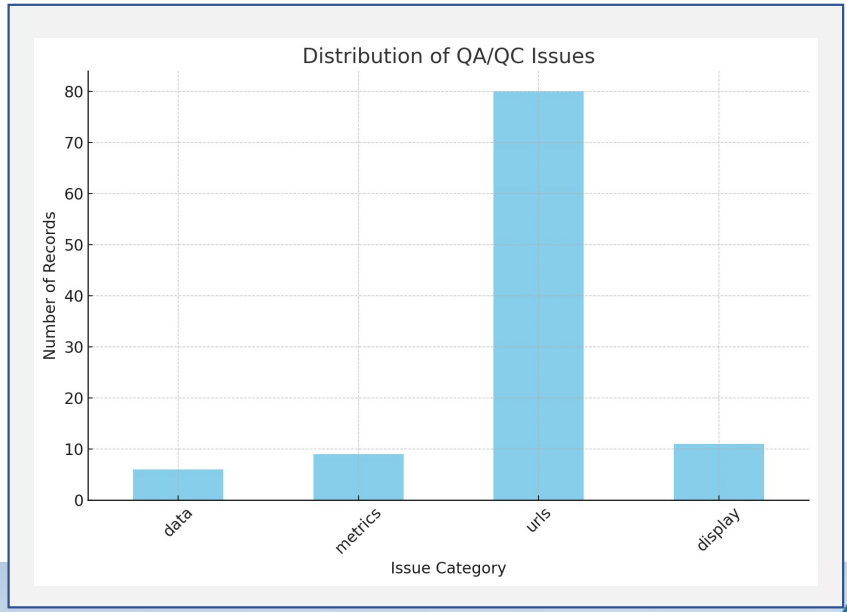
Data QA/QC task updates

Greg

Coordinated Assessments HLI Record QA/QC Project Results



The chart illustrates the distribution of QA/QC issues across the different categories within the dataset. It clearly shows that issues related to URLs are the most common, followed by display issues, metrics issues, and data issues, respectively.



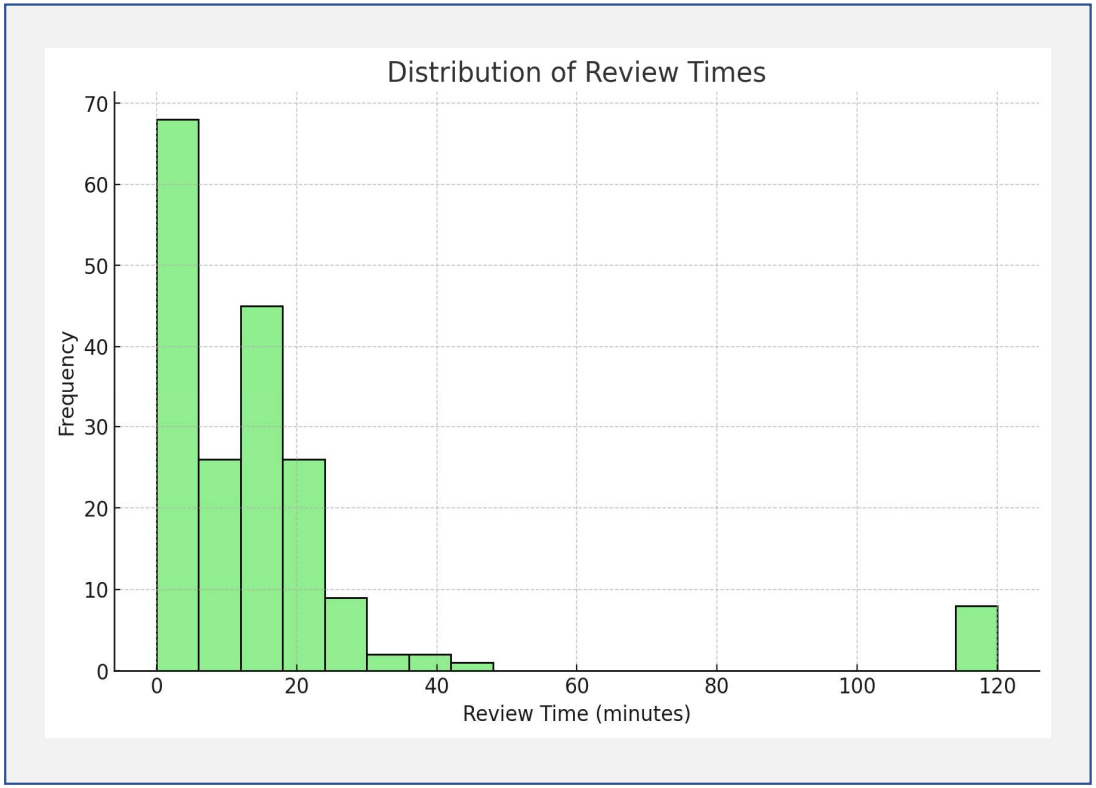
There were 86 unique populations reviewed in the dataset.

Count: There were 187 records after cleaning.

Mean: The average review time was approximately **15.94 minutes**.

75th Percentile: 75% of the reviews were completed in 18 minutes or less.

Maximum: The longest review time was 120 minutes.



The distribution of review times shows that most reviews were completed relatively quickly, with a significant number of reviews taking 10 minutes or less.

QA/QC Task Feedback

- Value add?
- Requested modifications?
- Recommended frequency?
  - Annual? Biannual?
- Recommended number of records?
- Other?

Stretch Break back at 10:30 PST

BPA Annual Report

Mari

BPA Annual Report

- Content provided via web report page and emails to come
- Doc updated
- Discussing Recommendations today
- Timeline for Draft Review

BPA Annual Report

I. Table of Contents

Recommendations

Jump to file

BPA Annual Report Due Dates

Due Date	Item
Feb 16 ✓	Webform populated by funded members
Feb 19	1st draft report sent to SN SC members
March 5	Non-webform content from external partners
March 5	Input from SN SC members on 1st draft
March 12	2nd draft report sent to SN SC members
March 25	Final input from SN SC member due
April 1	Final report submitted to BPA and sent to SN SC members

CAP Workshop Tasks

Jen and Mari

CAP Work Plan

- We received a lot of input from 60+ participants!
- We have organized it by topic, task and who is needed to do that task (eg StreamNet staff, PNAMP staff, CAP, SN Tech Team, FMWG, etc.)
- Also organized by sequence/priority, as this is multiple years' work

CAP Work Plan 2024 Priorities

- **Improvements to SN/CAP HLI User interfaces** – PSMFC internal staff work
  - Plain language, data dictionary, avoid acronyms
  - Missing landing page before query; context!
  - Dynamic data system explanation
- **Terms & Definitions** PNAMP lead, PSMFC staff support, CAP & FMWG participants engaged
  - review terms and also improve access to DES
  - question from Russ: does the ‘ESU classification/region’ names recommendations to improve searching component get folded in here?

CAP Work Plan 2024 Priorities

- **Citations**
  - Paper (Katie Barnas et al) & presentation at AFS (Katie)
  - Improve automation at SN systems to generate citations for data downloads & better instructions as to 'how to do it' >>pending adoption of the next CAP DES
  - Invite Tami Wilkerson
- **Outreach** - ongoing
  - Mari has been talking to the world about CAP!
  - Think about sharing where data are being used…e.g. NOAA, OWEB, etc.
  - Provide materials for others to do Outreach
- Example **Statement of purpose** talking points/paragraphs to use for grants, supervisor questions, etc.
- Generic slide shows about CAP, SN, etc

CAP Work Plan 2024 Priorities

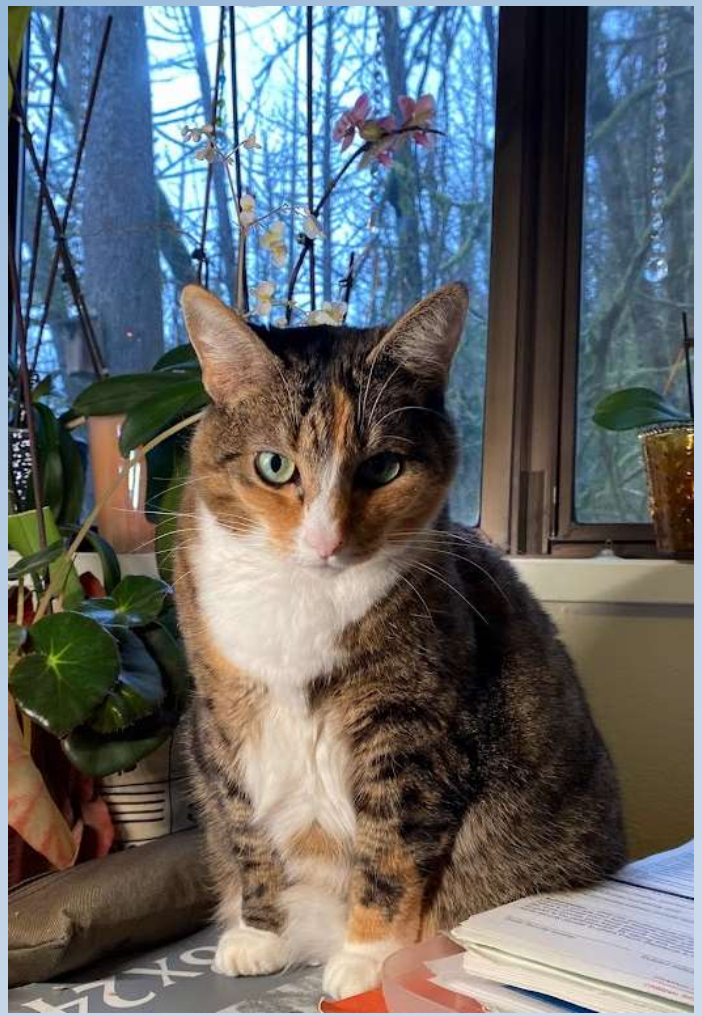
- **Develop resource landing page** (place to host a "Tool Kit")
  - Training materials for how to upload, access data, more context to ensure appropriate use
  - Explanatory materials such as acronyms lists, data dictionaries
  - Data Forms (survey 1,2,3) and best practices
  - Position descriptions/skill set list
  - Data publishing, versioning, citation guidance
  - QA/QC strategies/procedures
  - Scripts for data access and analysis
  - Link to community GitHub site
  - Easy to find links to data standards
  - Position descriptions for data steward/data scientist/related positions
  - Other ideas??

CAP Work Plan 2024 Priorities

- **Training/support materials** for data consumers
  - Publishing data and metadata
  - Access and analytical tools – using CAX, PITAGIS, other
  - Reproducible workflows using R/Quarto/Jupyter notebooks/GitHub

Review due dates

Due Date	CY2022 Annual Report	HCAX	FY24-25 budget and SOW
Feb 16	Webform populated		
Feb 22nd	1st draft report emailed out	Data Sharing/Use Agreement draft emailed to group	
March 5th	Non-webform content from external partners		
March 5th	Input from SN SC members on 1st draft		
March 12th	2nd draft report sent to SN SC		
March 25th	Input on 2nd draft from SN SC due		
April 1st	Final report submitted to BPA & SN SC		
April 15th		DS/UA Review due	
May 1st		DS/UA emailed for final review	
May 6th			Confirm with Nancy status your FY24 budget and any revisions to your FY25 budget
May 10th		DS/UA final review due	
May 21st		HCAX Final Workshop	
June 3rd			Nancy submits revised budget FY24/FY25 to BPA
Aug 30th		End of EN Grant Contract	
Oct 1st			Start of FY25 Time&cost amended contracts; Except MFWP receives a new contract



The End!