

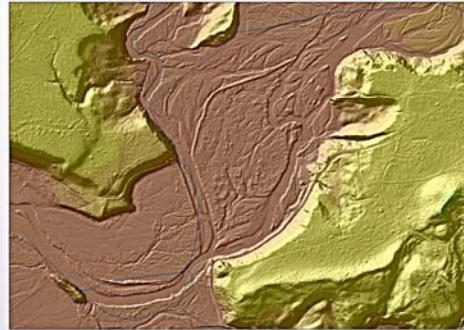
Lower Columbia River and Estuary Fish Passage Barrier Inventory

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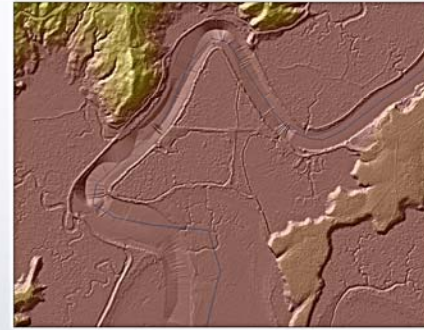
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Barrier Types:

- Dikes
- Breached dikes
- Tidegates
- Culverts
- Roadways
- Fill/Dredge Material (or "sidecast")



LiDAR can show how breached dikes can still have an impact on hydrology and fish habitat (Image: Gray's River)



In complex dike and fill situations, LiDAR needs to be supplemented by local knowledge (Image: Deep River)



Methodology: 1. LiDAR allows for recognition of most linear fish barrier features and also assists with feature type classification*



Hard copies of the dataset are used in participatory mapping meetings with local experts

2. Participatory mapping with local experts and field reconnaissance fill in those data gaps where LiDAR is limited



Aerial imagery is an essential tool when determining hydrology patterns and possible barrier types

*Linear Feature Classifications:

Man-Made Dike, Sidecast of Significance, Elevated Road, Breached Dike, Natural Levee, Natural levee with Man-Made Enhancements

3. Other tools used: several previously existing tidegate inventories, aerial photography, USDA Soil Survey maps, USGS Topography maps, USACE National Levee Database

4. Assumptions can be made about the location of some culverts based on road and stream locations

Outcome: A geo-spatial dataset that will support efforts to identify and prioritize habitat restoration projects from the mouth of the Columbia River up to the Bonneville Dam. It will also aid in localized floodplain hydraulic modeling efforts for restoration sites, as well aid in comparisons of hydrologic impairment conditions with restoration sites.

Some of the supporting attribute data collected for each linear and point feature: structure manager and owner, associated Diking District (if any), dual use function (if any), structure materials, structure classification, fish access status and type (if any), structure size and shape, and any problems or comments on the structure generated from field work and participatory mapping efforts.