WDFW Fish Passage Data

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Overview

- A brief history

- Schema

- Interacting with FPDSI data

- Future state and enhancements

History

Fish Passage and Diversion Screening Inventory (FPDSI) has origins from a variety of other sources

- SSHEARBase (Salmonid Screening Habitat Enhancement and Restoration = SSHEAR) 1998

- Jefferson County Barrier Culvert Inventory (1997)

- Thurston County Barrier Culvert Inventory (1996)

- WSDOT Barrier Culvert Inventory (1992)

- Fishway Inspection (1986)

- Unresolved Fish Passage Problem (1986)

Schema

Schema

Tables (more or less)

- Site
  - Fish Passage Status
    - Culvert
    - Non-culvert Crossing
    - Dam
    - Natural Barrier
    - Other
    - Fishway
  - Diversion
  - Owner
  - Habitat
  - Species
  - Repair

Schema

Tables (more or less)

- **Site**
  - Fish Passage Status
    - Culvert
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- Highest level table

- Location, location, location
  - Coordinates
  - Stream name (and tributary to name)
  - County
  - Water Resource Inventory Area
 - Road

- Fish use

Schema

Tables (more or less)

- Site
  - **Fish Passage Status**
    - Culvert
    - Non-culvert Crossing
    - Dam
    - Natural Barrier
    - Other
    - Fishway
  - Diversion
  - Owner
  - Habitat
  - Species
  - Repair

- Between Site and fish passage feature tables

- Data source

- Barrier status

- Barrier reason

- Percent passable

- Field review date

Schema

Tables (more or less)

- Site
  - Fish Passage Status
    - **Culvert**
    - **Non-culvert Crossing**
    - **Dam**
    - **Natural Barrier**
    - **Other**
  - Fishway
- Diversion
- Owner
- Habitat
- Species
- Repair

- Fish passage features tables
  - Attributes specific to the type of feature
  - For any one site, there can be only one of these types
    - But culvert can have many culverts
  - Culvert = culverts, Dam = dams
  - Non-culvert crossings: bridges, fords, puncheons, abandoned crossings
  - Natural barriers: waterfalls, cascades, subsurface flow
  - Other: flumes, roughened channels, levees, tide/flood gates, and so much more

Schema

Tables (more or less)

- Site
  - Fish Passage Status
    - Culvert
    - Non-culvert Crossing
    - Dam
    - Natural Barrier
    - Other
    - **Fishway**
- Diversion
- Owner
- Habitat
- Species
- Repair

- Fishway makes a fish passage feature passable

- Business rules require on of the five fish passage features to be present in order to create a fishway in database

Schema

Tables (more or less)

- Site
  - Fish Passage Status
    - Culvert
    - Non-culvert Crossing
    - Dam
    - Natural Barrier
    - Other
    - Fishway
- **Diversion**
- **Owner**
- **Habitat**
- **Species**
- **Repair**

- Other higher level tables
  - Most have 1:1 relationship with Site, diversion and species are exceptions
  - Repair has 1:1 relationship with site, but that doesn't mean a site can't be repaired more than once

FPDSI New Sites by Year

Schema
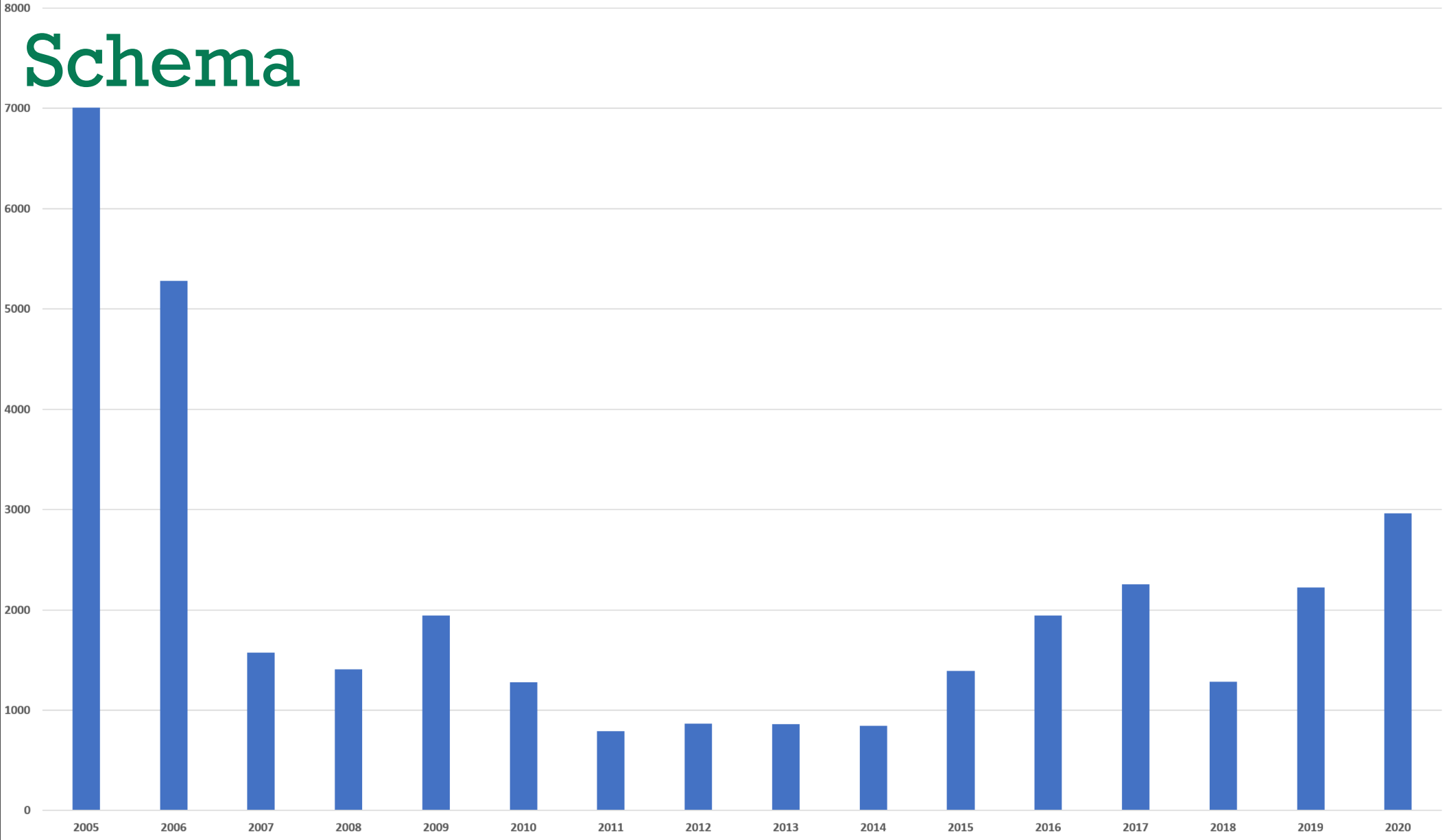
Interacting with FPDSI data

- WDFW staff use an Access front end

- Coming soon, mobile data collection!
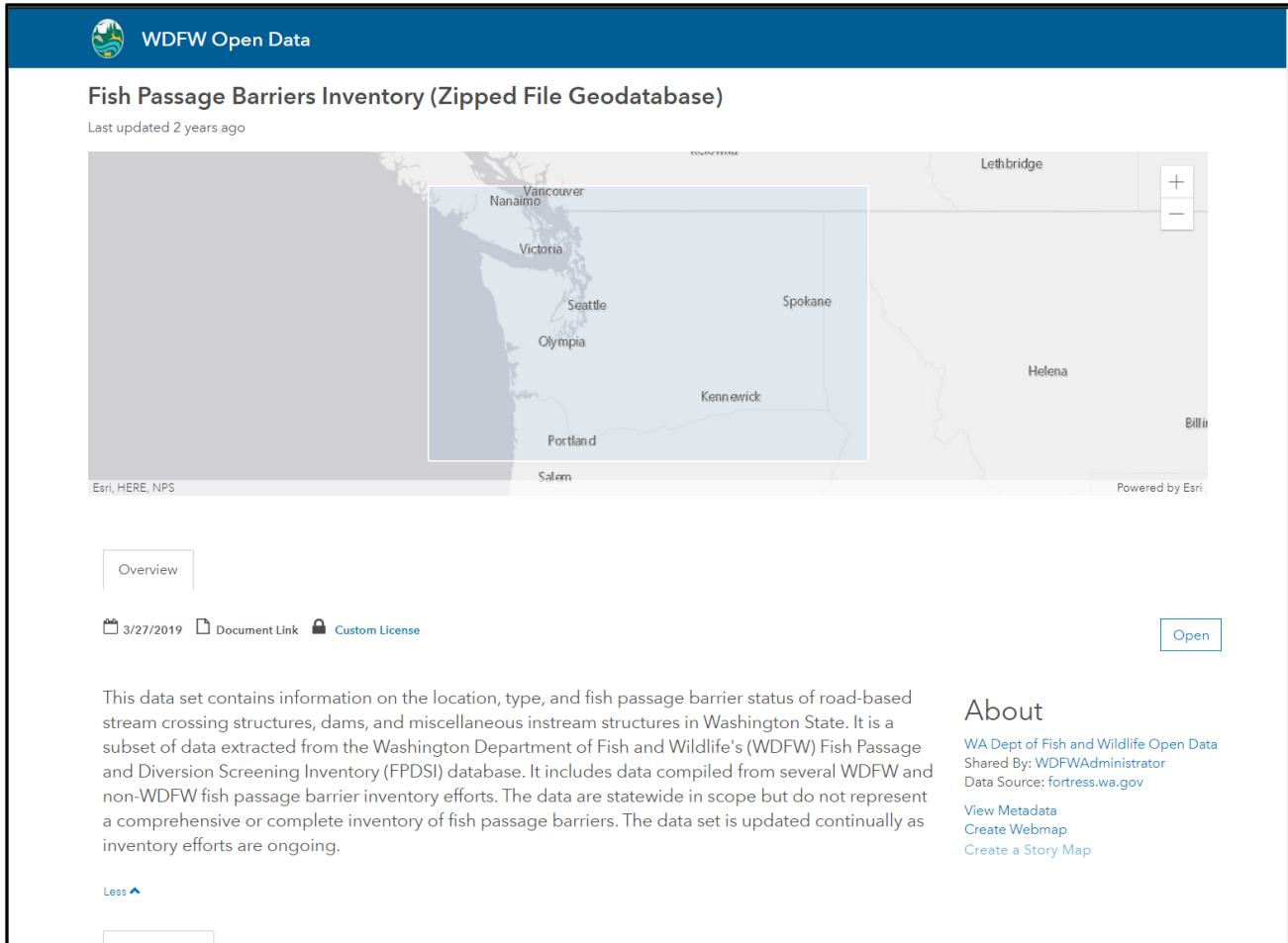
Interacting with FPDSI data
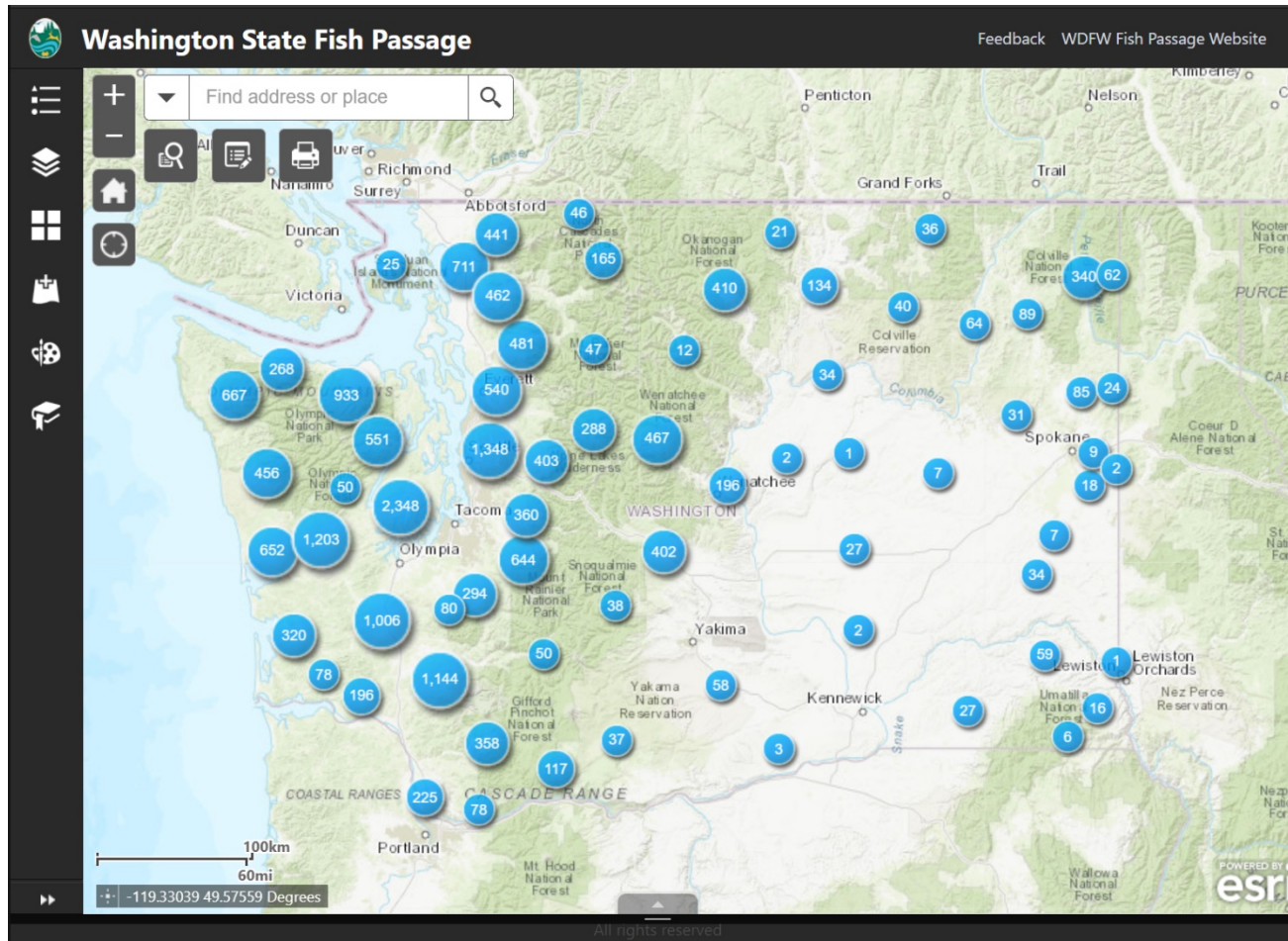
https://geodataservices.wdfw.wa.gov/hp/fishpassage/index.html

Interacting with FPDSI data

https://data-wdfw.opendata.arcgis.com/datasets/fish-passage-barriers-inventory-zipped-file-geodatabase

Interacting with FPDSI data

https://arcg.is/1bvTiO

Future state

Recently completed/planned work:

- Mobile data collection
- SQL backend updates to reflect updated methodology
- Frontend updates to accommodate mobile data collection
- Additional project specific map services
- Network analysis tools to find most downstream barrier or barriers upstream from a site

Some other ideas for future:

- Utilize SQL spatial data types
- Exposing of closer to full schema for web services
- StreamStats API integration in web app
- Better reporting (SSRS or custom)

https://arcg.is/1C901a

Questions?

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