

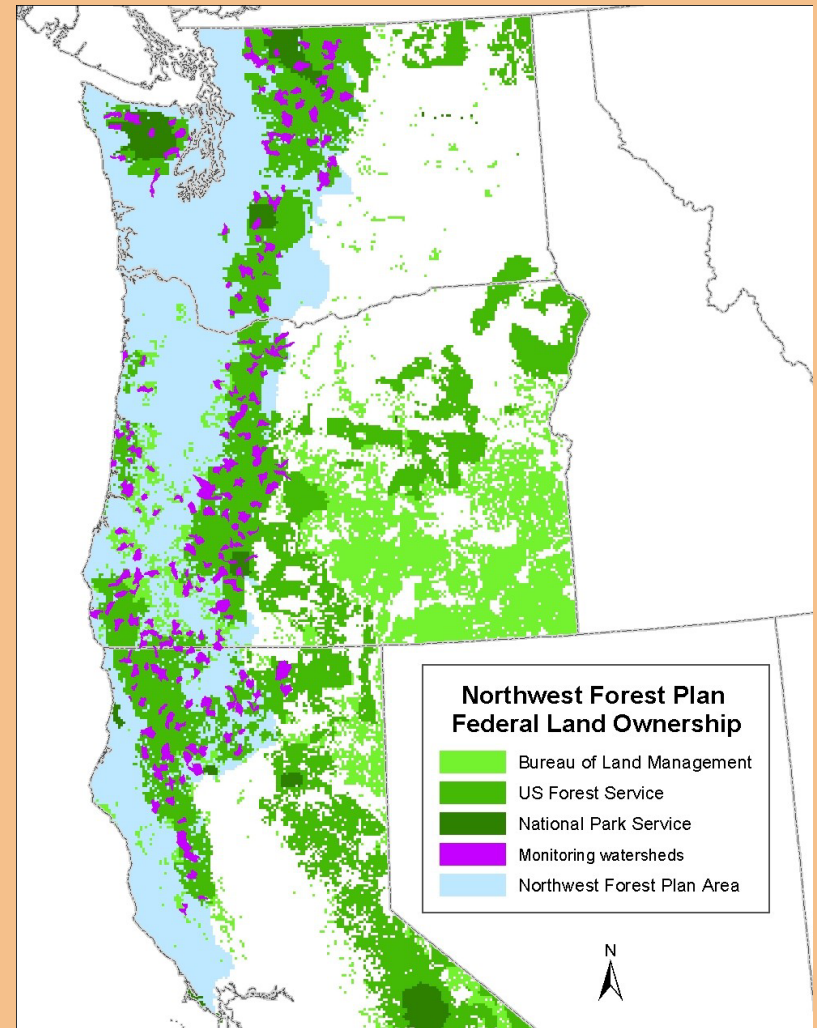
# Reliability of Data Used for Conducting Watershed Condition Assessments at a Landscape Scale



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# Problems associated with study area

- ✦ Merging multiple agencies
- ✦ Merging Oregon and Washington with California
- ✦ No data standards across ownerships and sometimes not within agencies
- ✦ Generally less information on private land



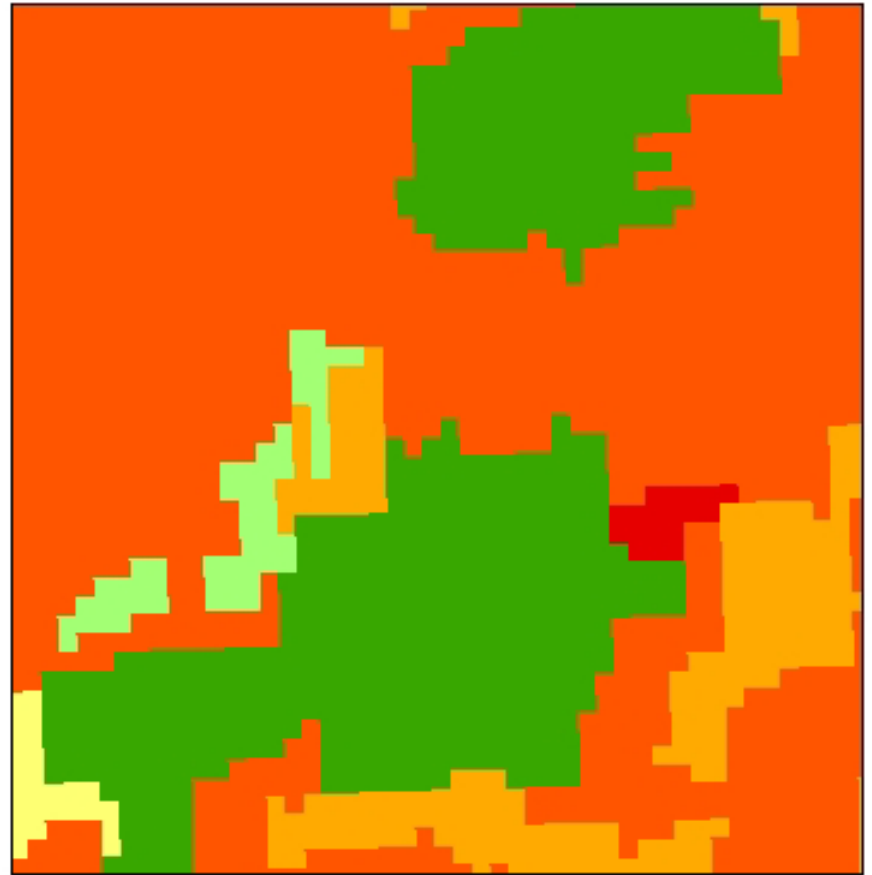
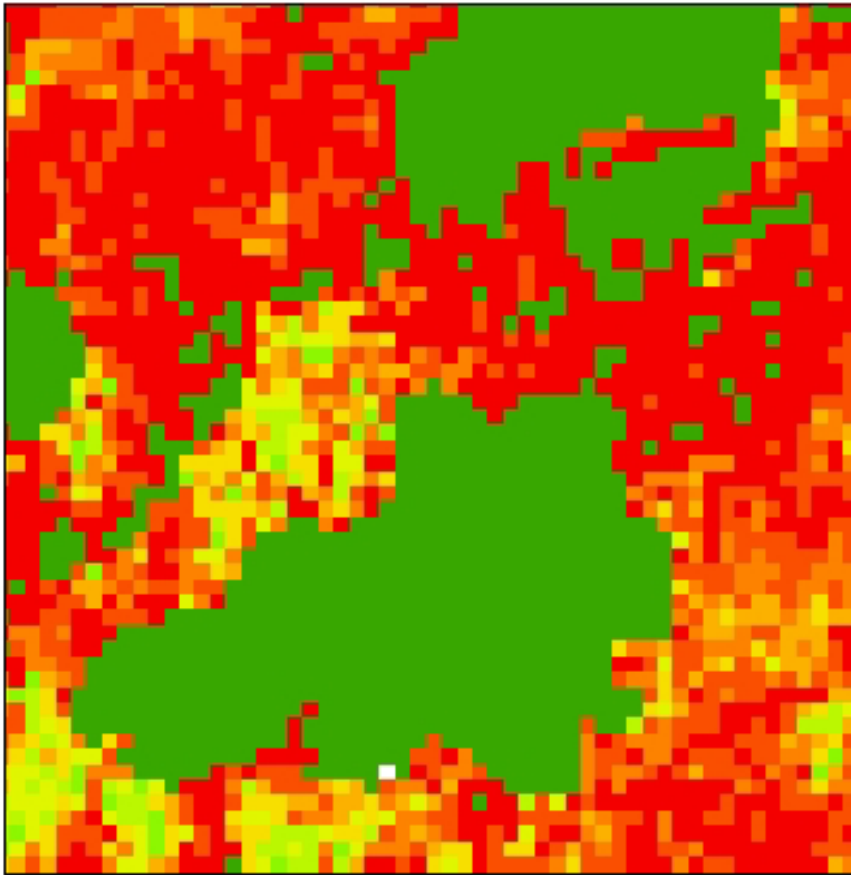
# Vegetation



# Baseline vegetation data

Interagency Vegetation  
Mapping Project (IVMP)

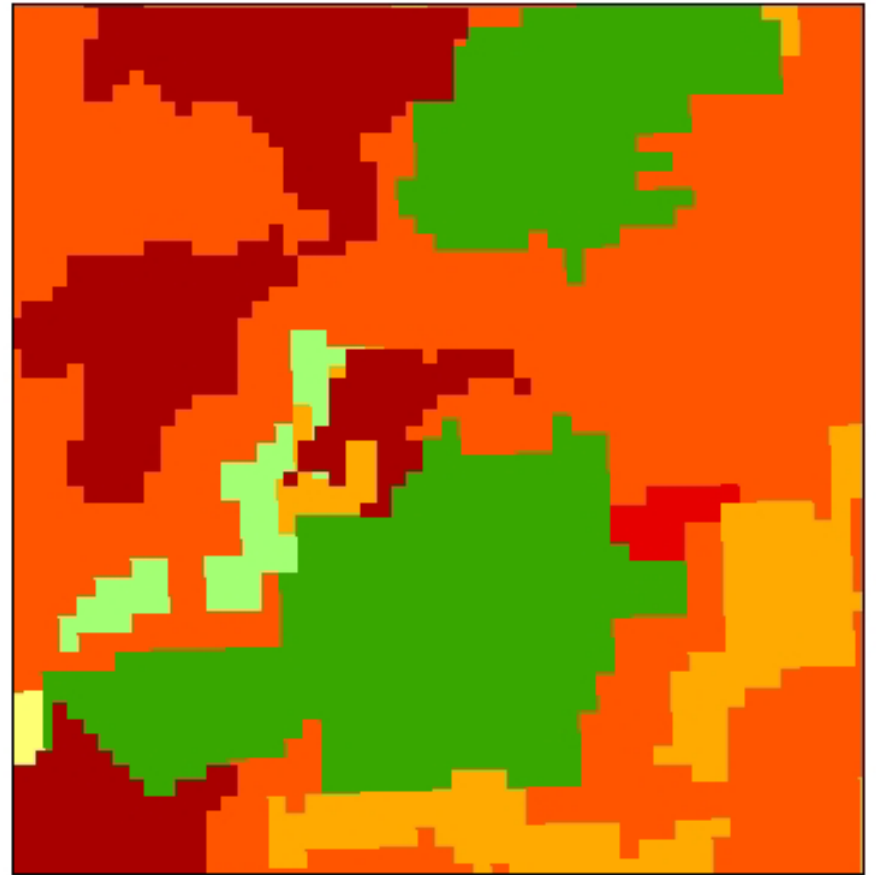
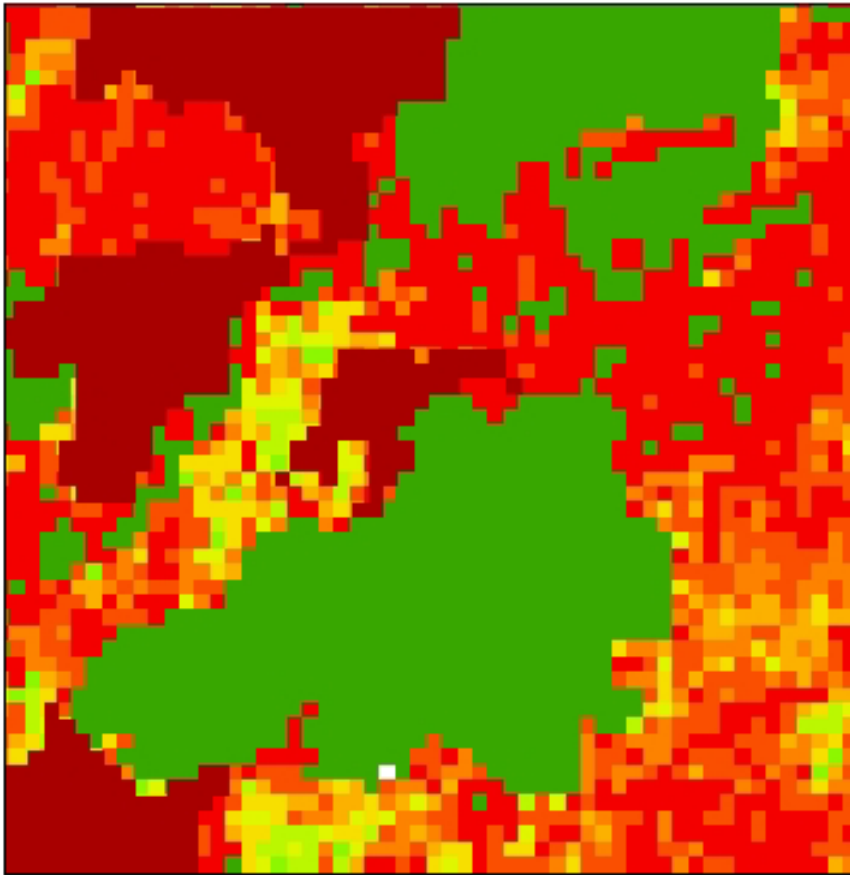
CalVeg



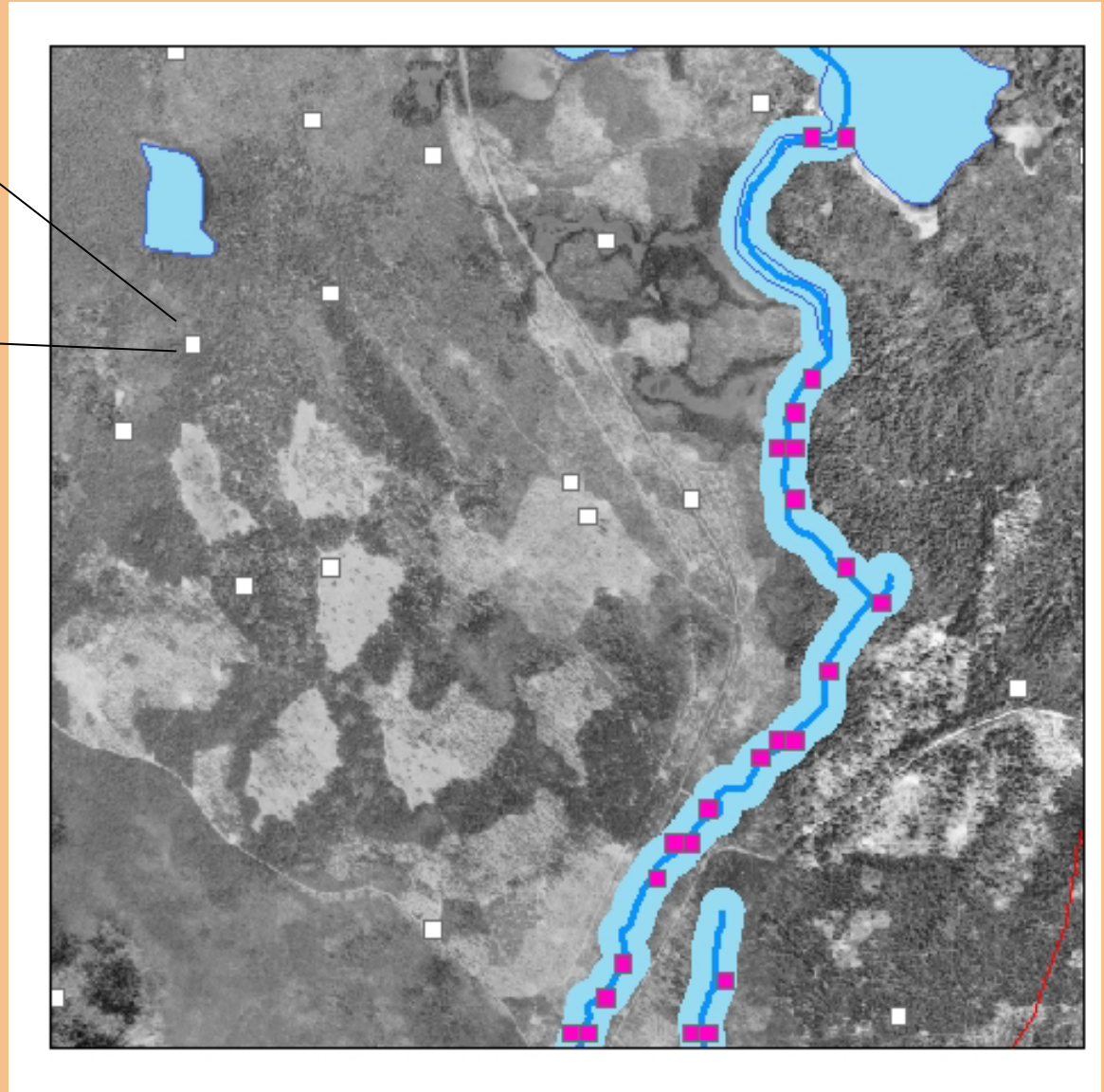
# Change vegetation data

Interagency Vegetation  
Mapping Project (IVMP)

CalVeg



# Vegetation accuracy assessment



- ✦ 9 vegetation pixels to each sample point
- ✦ 100 sample points each for riparian (100 meter buffer) and upslope
- ✦ 14 watersheds

# Vegetation accuracy assessment results

Classes used:

Riparian : < 20 inches, > 20 inches

Upslope : < 10 inches, > 10 inches

Riparian  
% agree

Upslope  
% agree

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Mean                    64.5

71.8

Range    49.3 - 97.3

56.8 - 86.3

# Roads





# Road information

## Oregon and Washington

- ✦ Used the BLM GIS ground transportation layer with Forest Service data inserted in

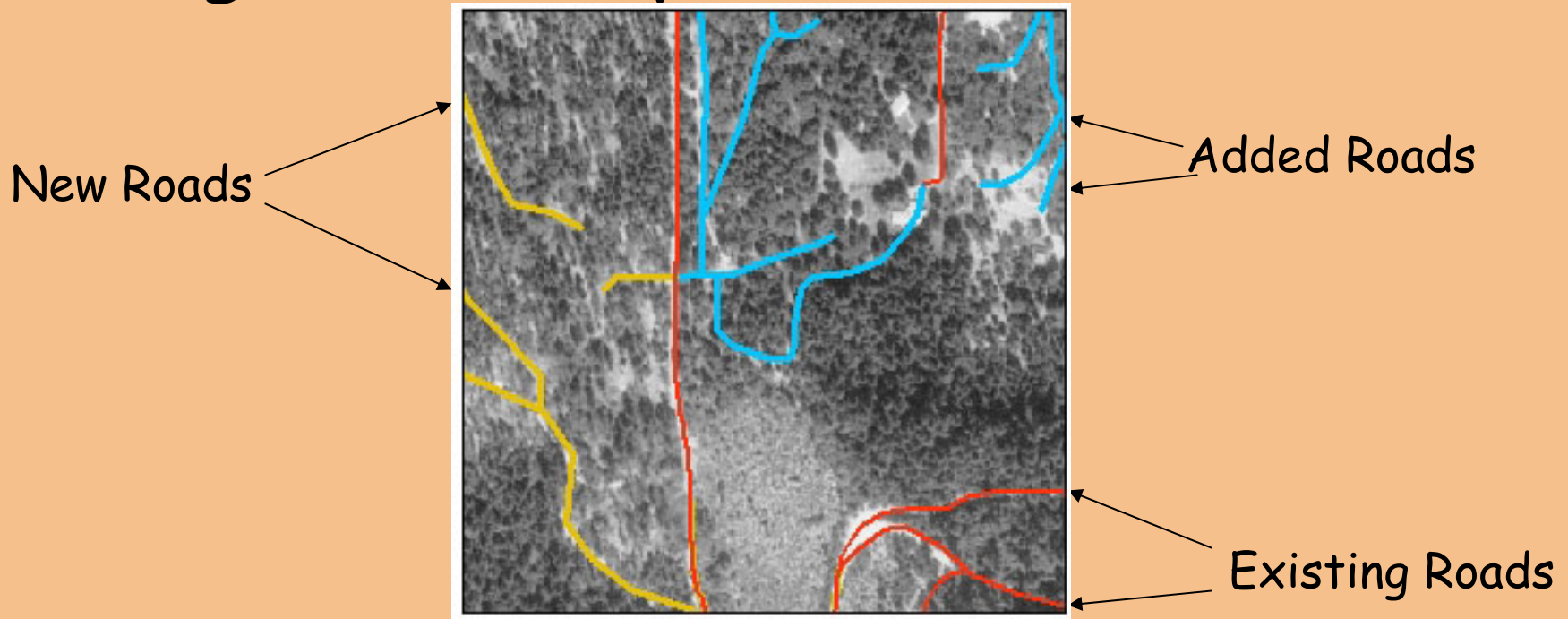
## California

- ✦ Data put together by the Forest Service Pacific Southwest Region Remote Sensing Lab
- ✦ Collection of Forest Service data joined with digital line graphs (DLGs) from U.S. Geological Survey

# Road data concerns

- ✦ Change in road data not fully represented on federal lands
- ✦ No information on change in road data on non-federal lands
- ✦ Suspected that not all roads were mapped, especially on non-federal lands
- ✦ Updating by unit varies

# Digital orthoquad road evaluation



Time 2 (2000)

- ✦ Pairs of DOQs, one from time1 (1994), one from time 2 (2000), for 40 watersheds
- ✦ Added - Road on time 1, not in existing GIS layer.
- ✦ New - Road on time 2, but not on time 1

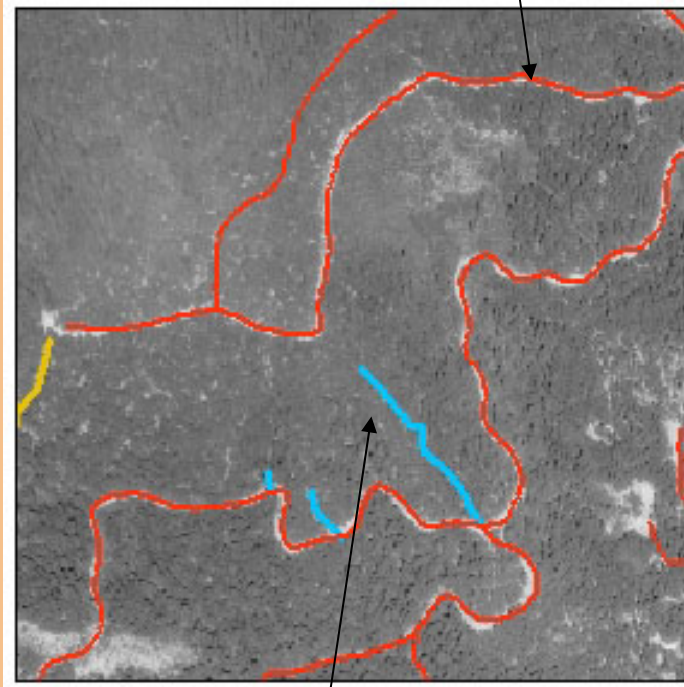
# Limitations of DOQ evaluation

- ✦ Definition of a road
- ✦ Effect of canopy cover



# DOQ road evaluation results

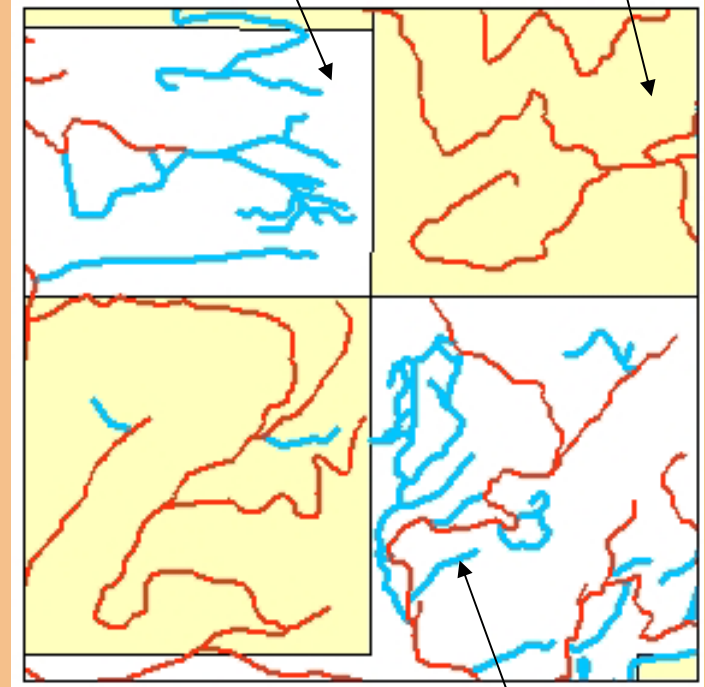
Existing Road Layer



Missing roads

private lands

BLM lands



Existing road layer

Missing roads

Federal GIS layers are missing 10 - 15% of the "roads."

Federal GIS layers are missing 37% of the roads on non-federal lands.

# Streams



# Stream information

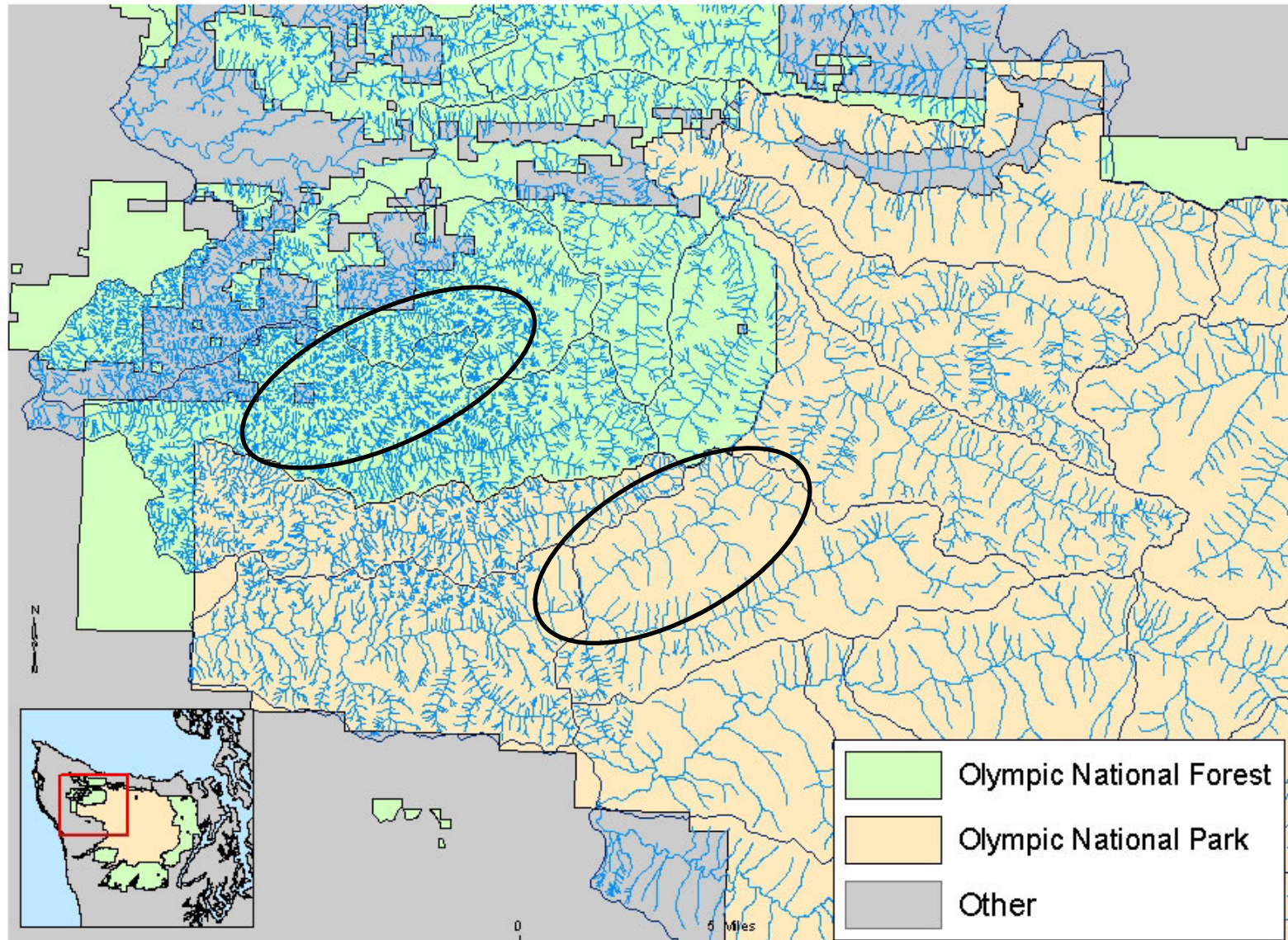
## Oregon and Washington

- ✦ Used preliminary data from the R6 national hydrography dataset
- ✦ Best available data from units was produced by using a wide range of methods and densities

## California

- ✦ Best available data from Forest Service units were pieced together by the Forest Service Pacific Southwest Region Remote Sensing lab
- ✦ Digital line graphs were used to fill gaps in the stream layer

# Stream density problems

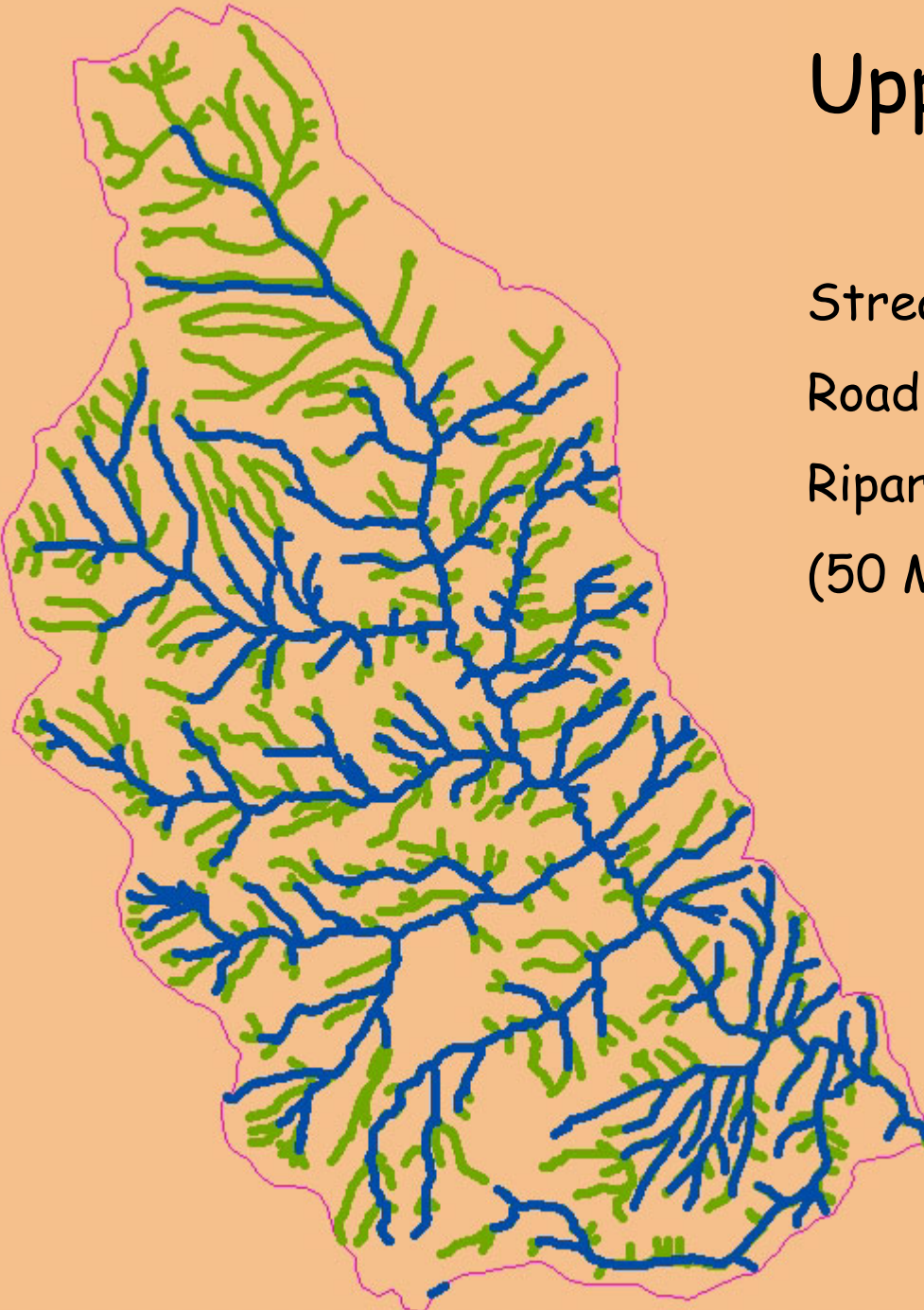




# Upper Trail Creek

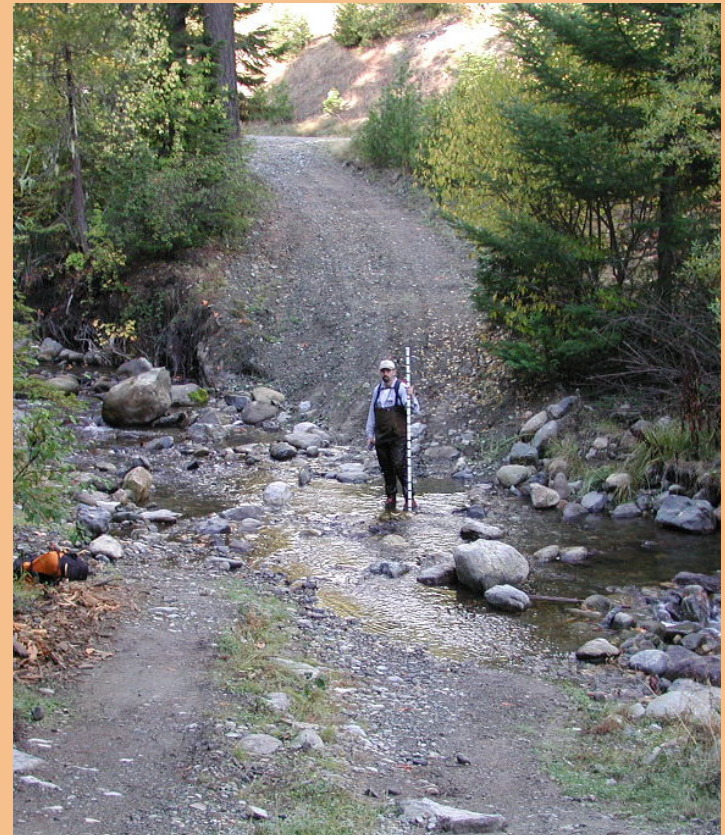
Undensified    Densified

Stream miles	76	138
Road crossings	168	314
Riparian SQ miles (50 Meter Buffer)	4.6	8.2



# Problems resulting from spatial layers

- ✦ Could not confidently map riparian areas
- ✦ Could not map riparian reserves
- ✦ Road density parameters unreliable on non-federal land
- ✦ Road change not fully represented by the data
- ✦ Vegetation 65% accurate



# Analysis adjustments

- ✦ Correlated model results with expert opinions of watershed condition.
- ✦ Considered stream mapping intensities when building province models

# Conclusion

- ✦ Building and creating better GIS datasets across agency boundaries is everyone's challenge !