# Mid-Coast Bacteria TMDL: Fifteenth TWG Meeting

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Oregon DEQ
April 22, 2015

## Meeting Objectives

- Action Items from previous meeting
- Review of work scheduling for LDC watersheds and get feedback from TWG
- Review and discuss current watershed modeling results
- Next Steps

## Beaches – Current Status

- Remember, we are seeking feedback through the forms and Google Earth
- 8 responses so far
- Review period ends May 1, 2015

# Action item information from Feb 2015 Meeting

- Develop work schedule for LDC TMDL watersheds (discuss today)
- Revisions of cattle information for watershed modeling (conduct after discussion of current modeling results)
- Review of Yachats River LDC results (Volunteers?)

# Work Scheduling for LDC watersheds

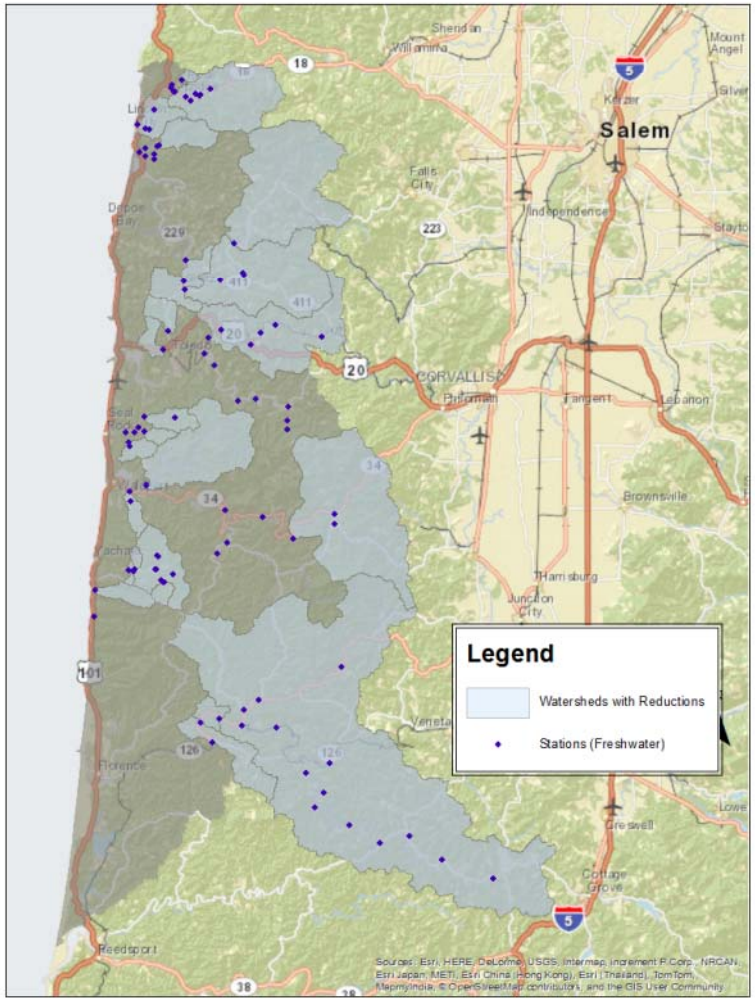
- Develop TMDL documents and Implementation plans for watersheds within the Mid-Coast Basins
- Watersheds are better size for implementation than entire Mid-Coast Basins
- Work done in parallel for watersheds
- Learn from earlier watershed work to improve process
- Consider multiple factors when scheduling work

# Work Scheduling for LDC Watersheds: Criteria

- On 2010 list of impaired waters
- On-site systems a potential source
- Shellfish growing impacted
- TWG feedback available
- Current restoration work
- Available resources
- Stakeholder support
- …Suggestions

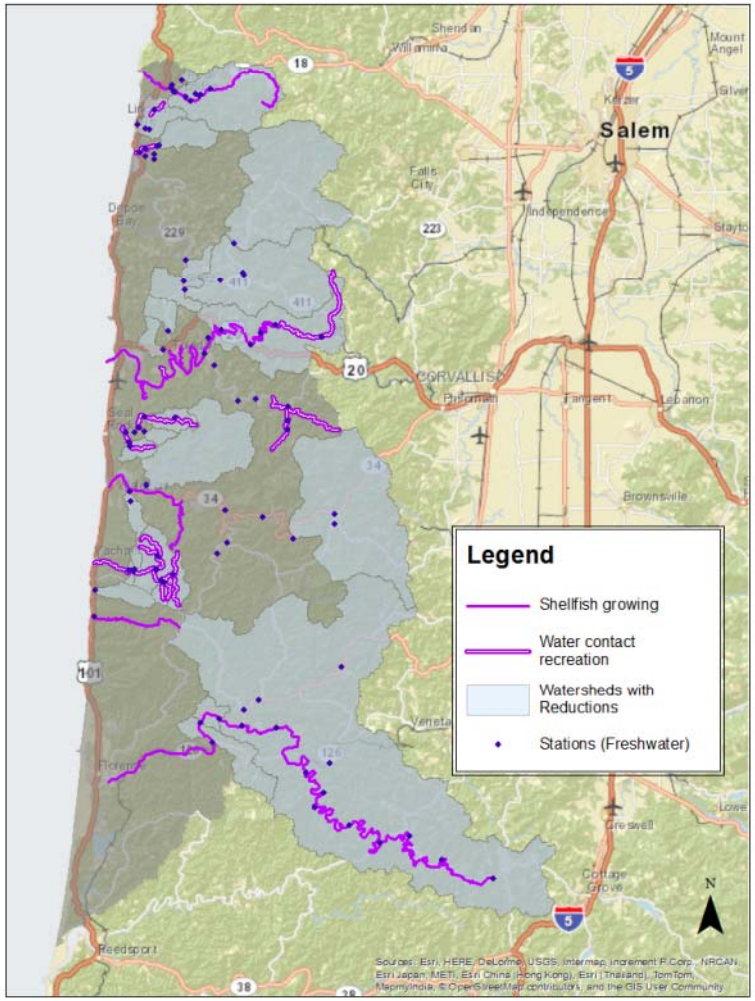
# Work Scheduling for LDC Watersheds: Results

- Found 46 out of 93 stations with reductions
- Found 13 out of 15 basins in the Mid-Coast with reductions

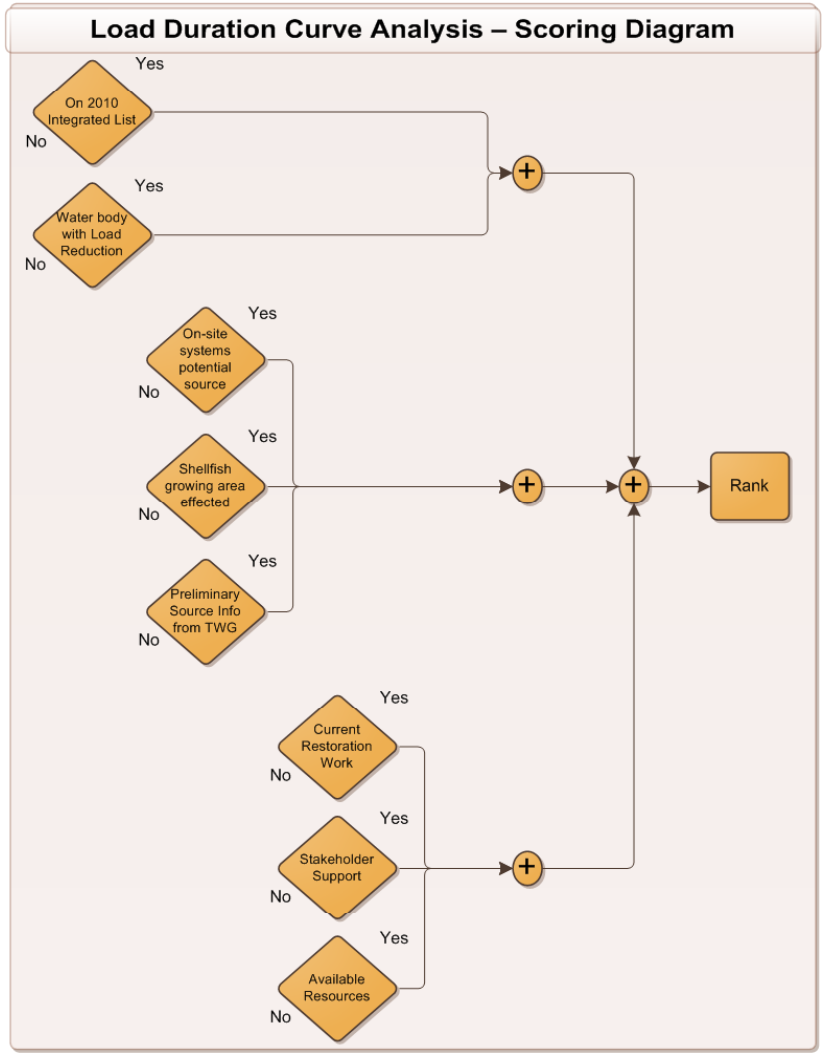


# Work Scheduling for LDC Watersheds: Currently Listed Waters

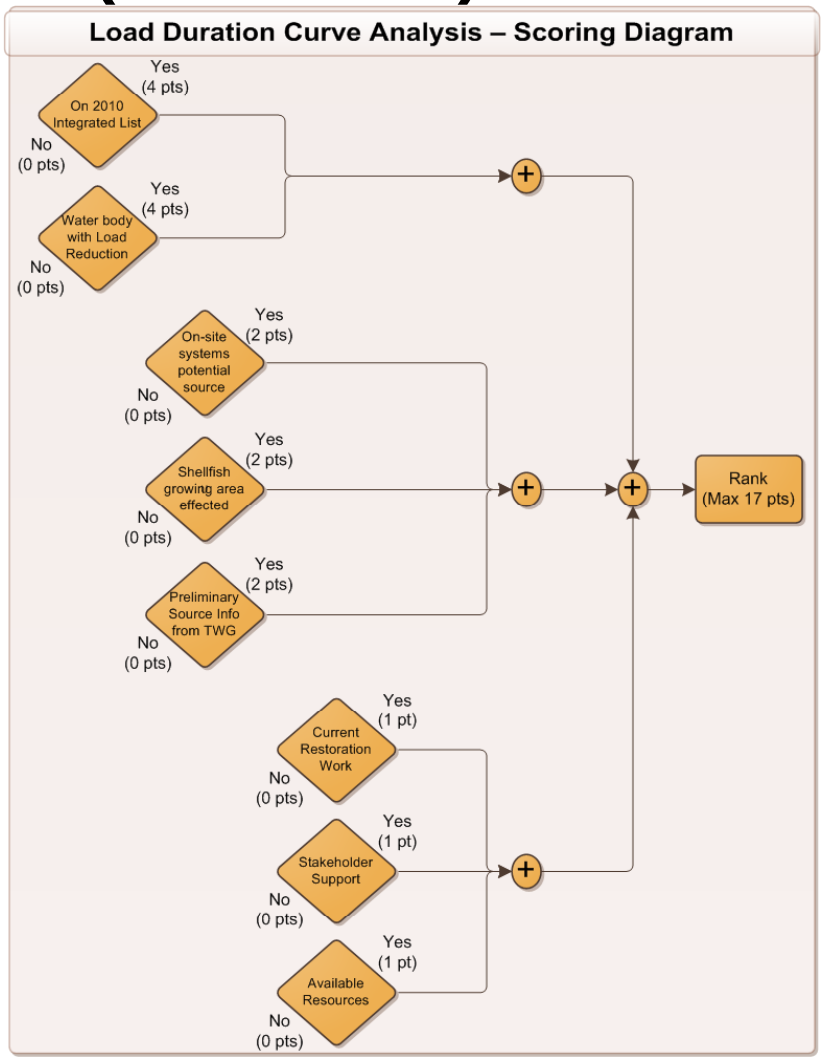
- Shellfish growing
- Water contact recreation



# Work Scheduling for LDC Watersheds: Scoring Method



# Work Scheduling for LDC Watersheds: Scoring Method (Continued)



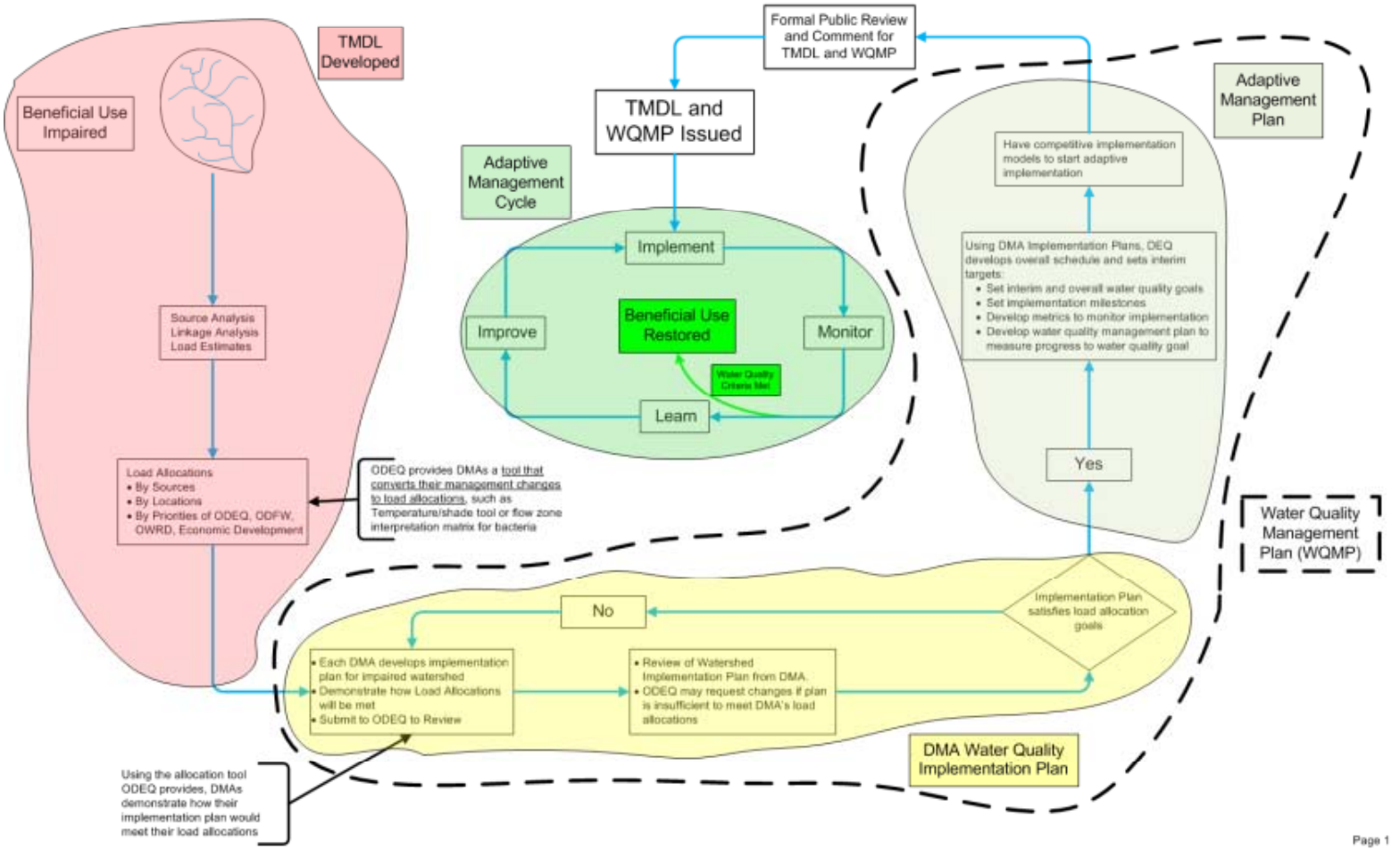
# Work Scheduling for LDC Watersheds: Scores and Ranks

| Rank | Watershed | Score |
|---|---|---|
| 1 | Salmon River | 17 |
| 2 | Devils Lake | 15 |
| 3 | Upper Yaquina River | 14 |
| 4 | Schooner Creek | 12 |
| 5 | Siuslaw | 12 |
| 6 | Tenmile Creek | 12 |
| 7 | Yachats River | 12 |
| 8 | Beaver Creek | 10 |
| 9 | Upper Alsea River | 10 |
| 10 | Eckman Lake | 8 |
| 11 | Lower Drift Creek | 8 |
| 12 | Lower Yaquina River | 8 |
| 13 | Siletz River | 6 |

# Work Scheduling for LDC Watersheds: On-going

- Can change over time
- Re-evaluate criteria
- Add additional criteria
- …

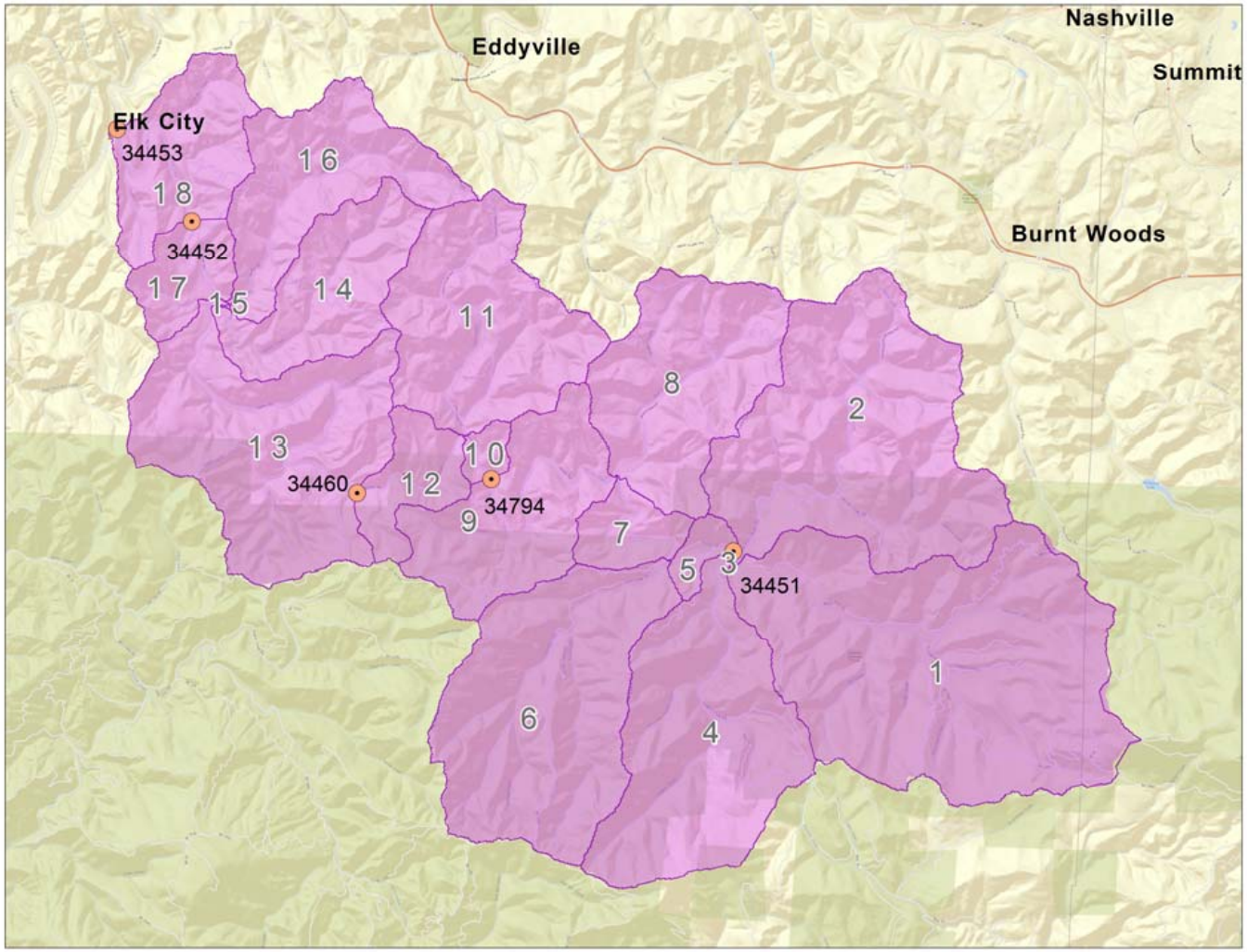
# Work Scheduling for LDC Watersheds: Adaptive Management



# Watershed Modeling

- General description of current status
- Extension of meteorological data time-period to Nov-2014
- Inclusion of new water quality data
- Current time-periods
  - Observed data time-period: 2007 to 2010
  - Simulation time-period: 1995 to 2010

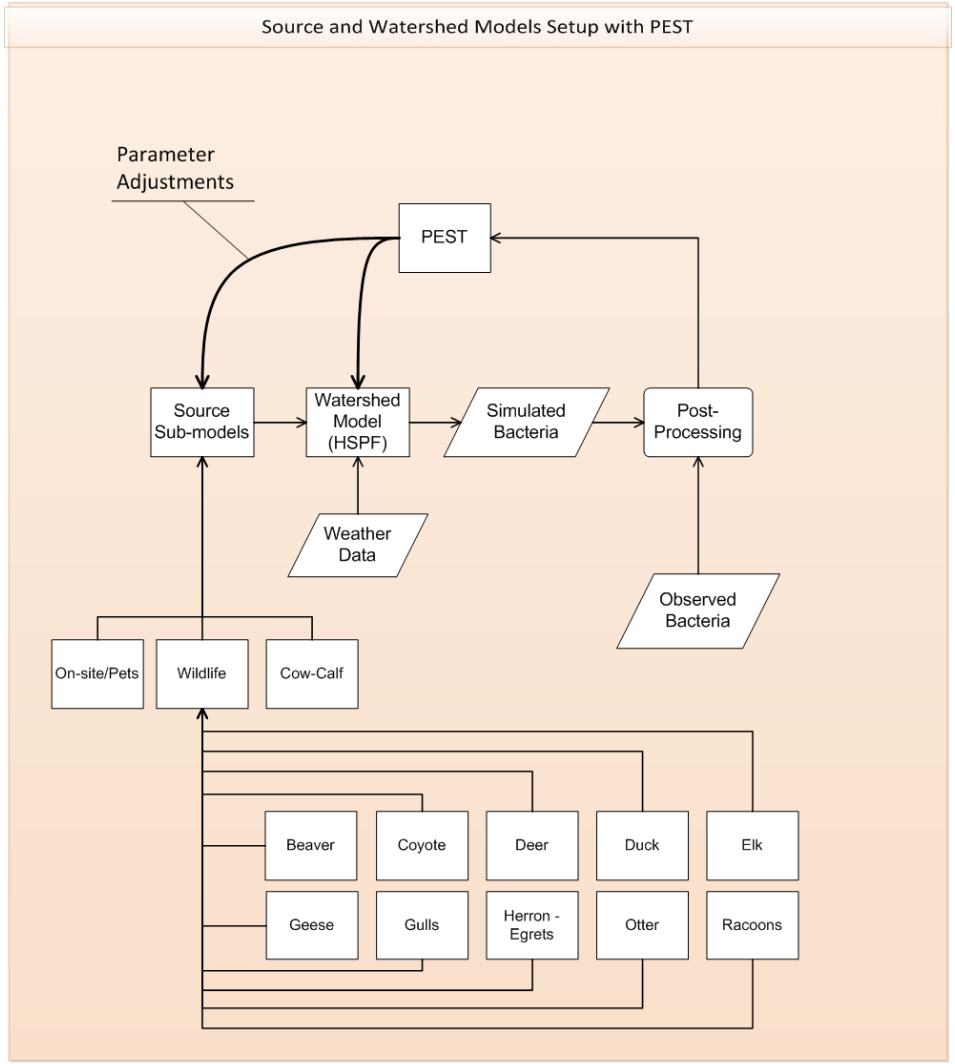
# Watershed Modeling: Big Elk Creek Basemap



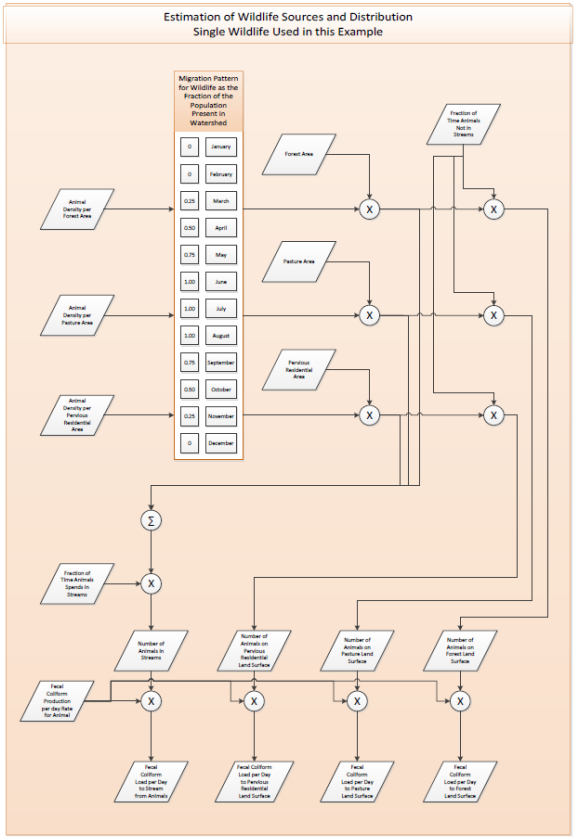
# Obs Data Stations

| Reach | Station | Description |
|---|---|---|
| 04 | 34451 | Big Elk Creek at Feagles Creek Road bridge near Harlan |
| 09 | 34794 | Big Elk Creek at Bridge 0.9 miles above Jackass Creek |
| 12 | 34460 | Big Elk Creek at Salado Road Bridge |
| 17 | 34452 | Big Elk Creek at Harlan Road Bridge |
| 18 | 34453 | Big Elk Creek at Elk City Road Bridge in Elk City |

# Model Setup and Parameter Estimation

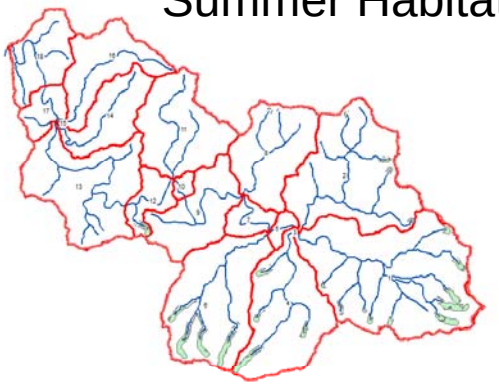


# Example of Wildlife-Elk habitat and sub-model

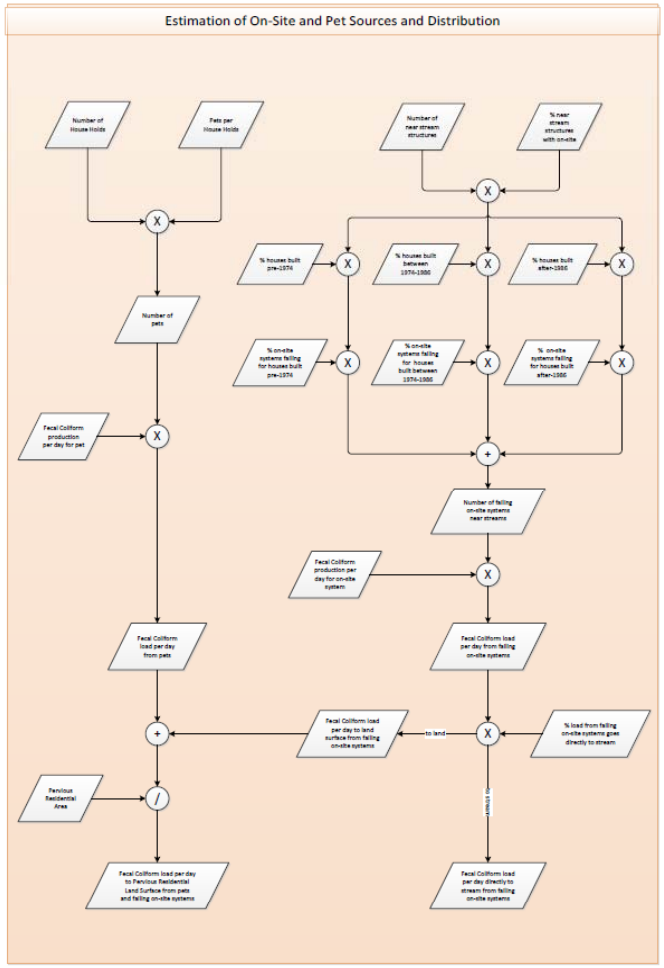



Winter Habitat

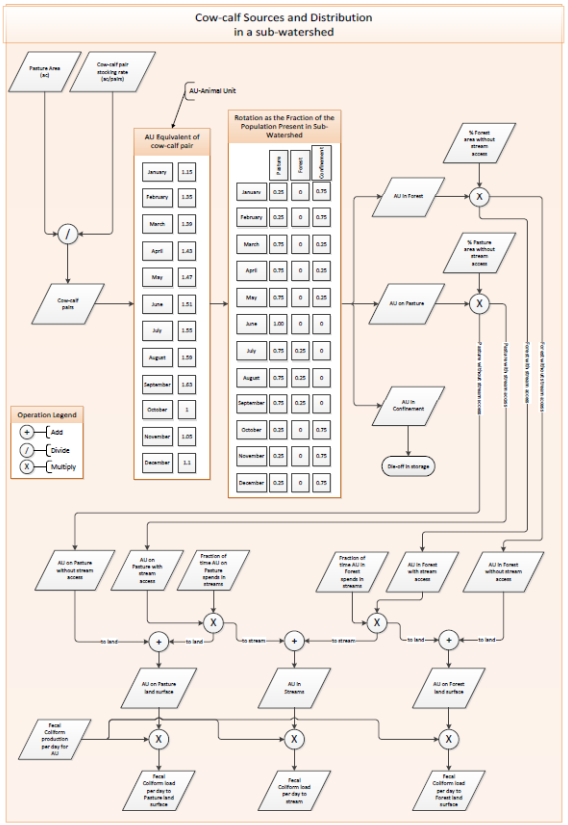
Summer Habitat

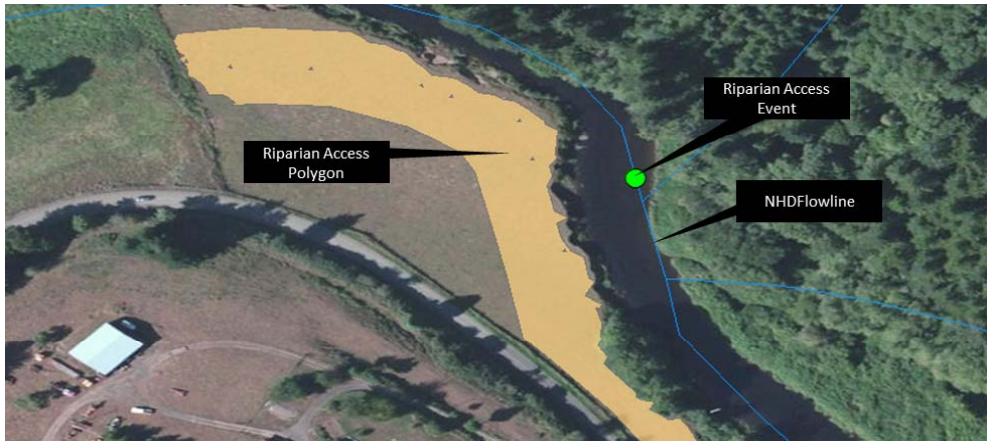


# On-site estimation and sub-model



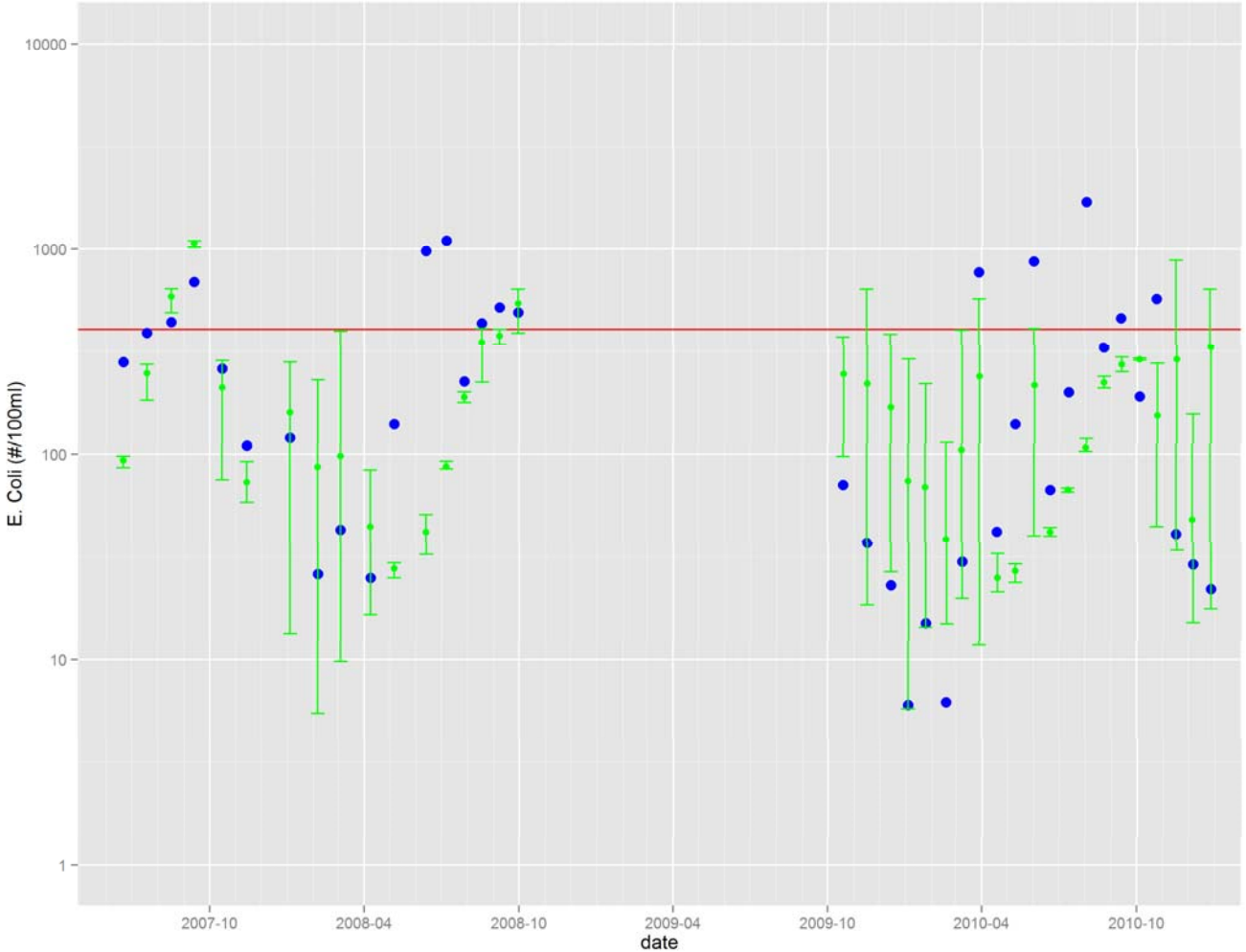
# Cow-calf estimation and sub-model



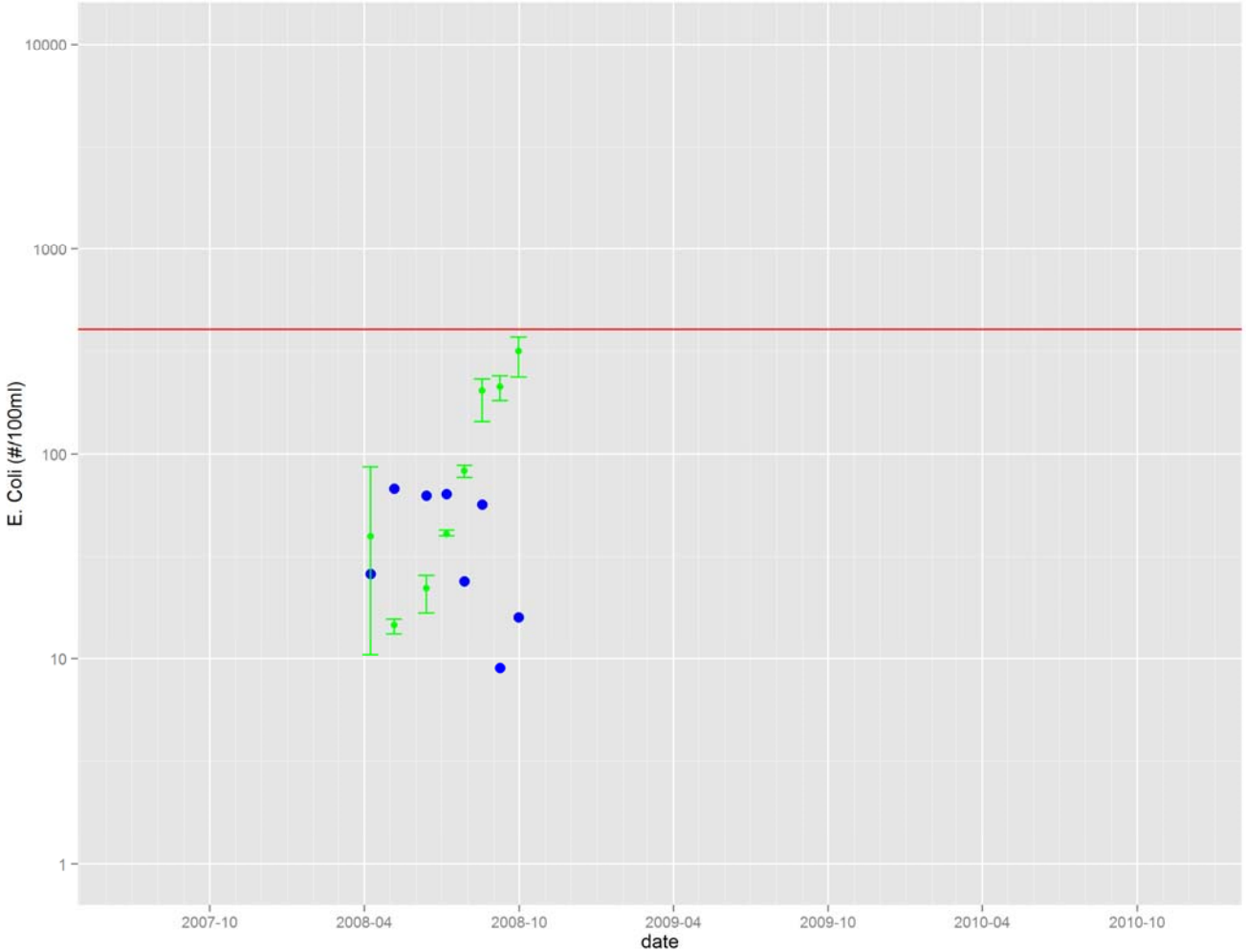
# Results for Reach 04

## 34451-Big Elk Creek at Feagles Creek Road bridge near Harlan



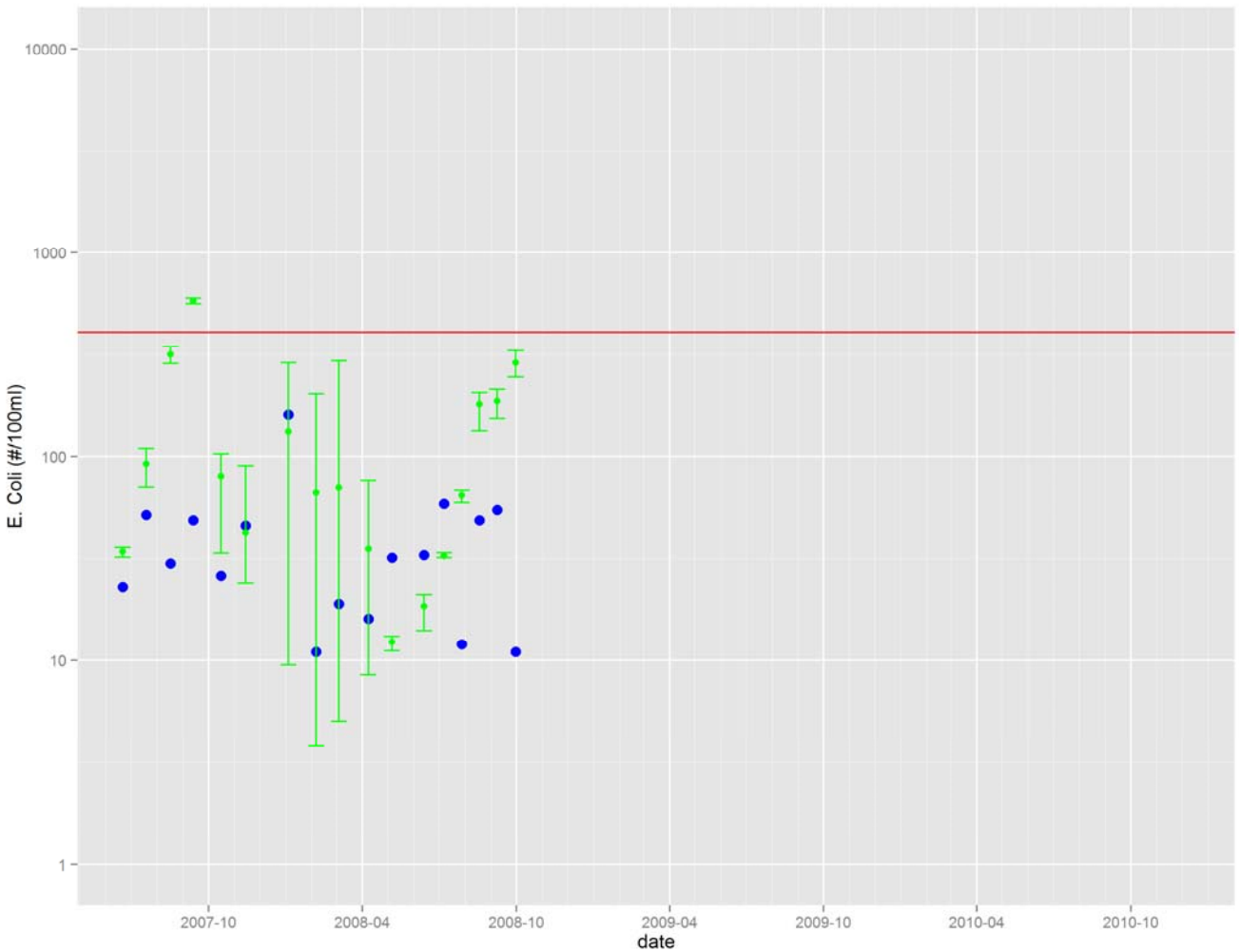
# Results for Reach 09

## 34794-Big Elk Creek at Bridge 0.9 miles above Jackass Creek



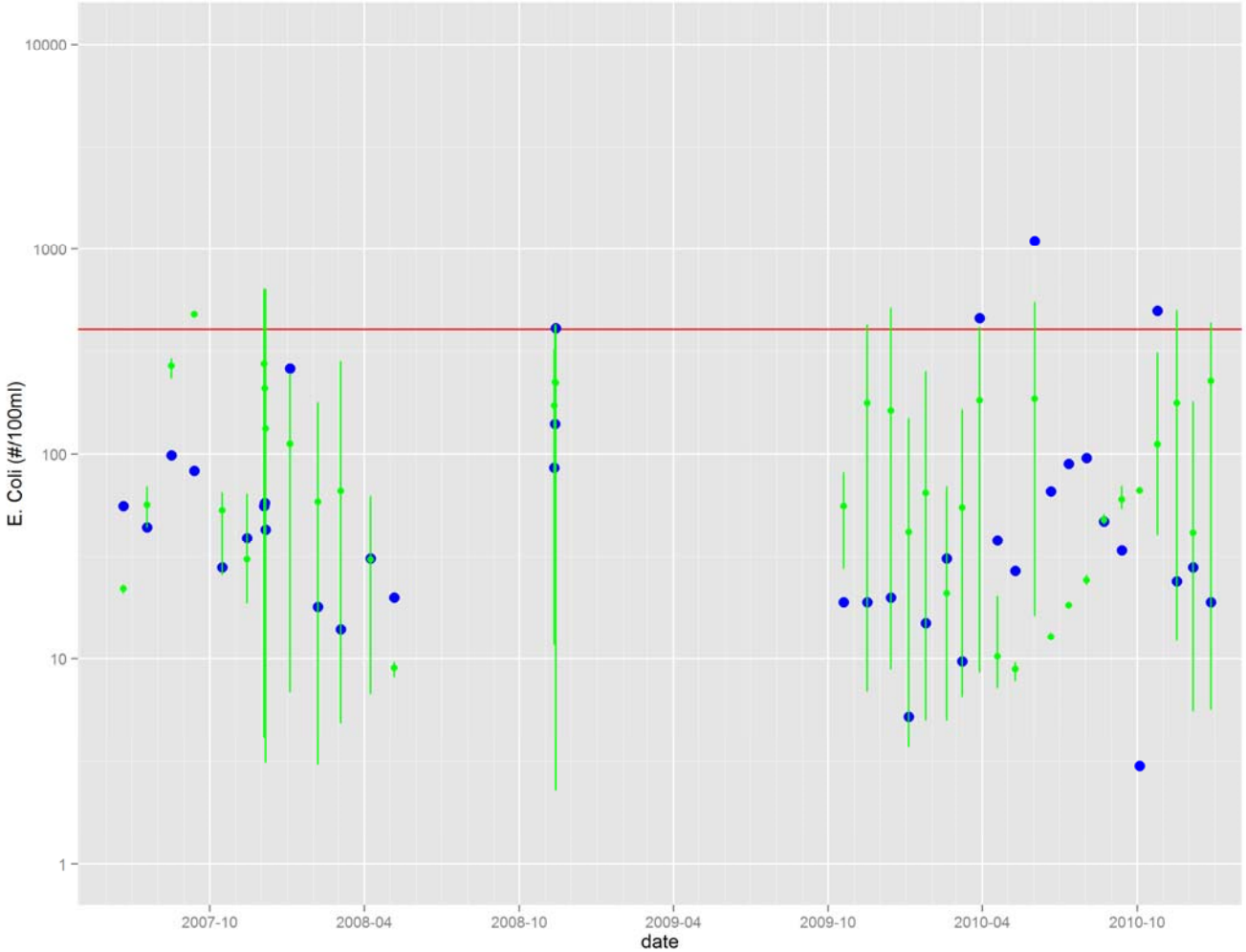
# Results for Reach 12

## 34460-Big Elk Creek at Salado Road Bridge



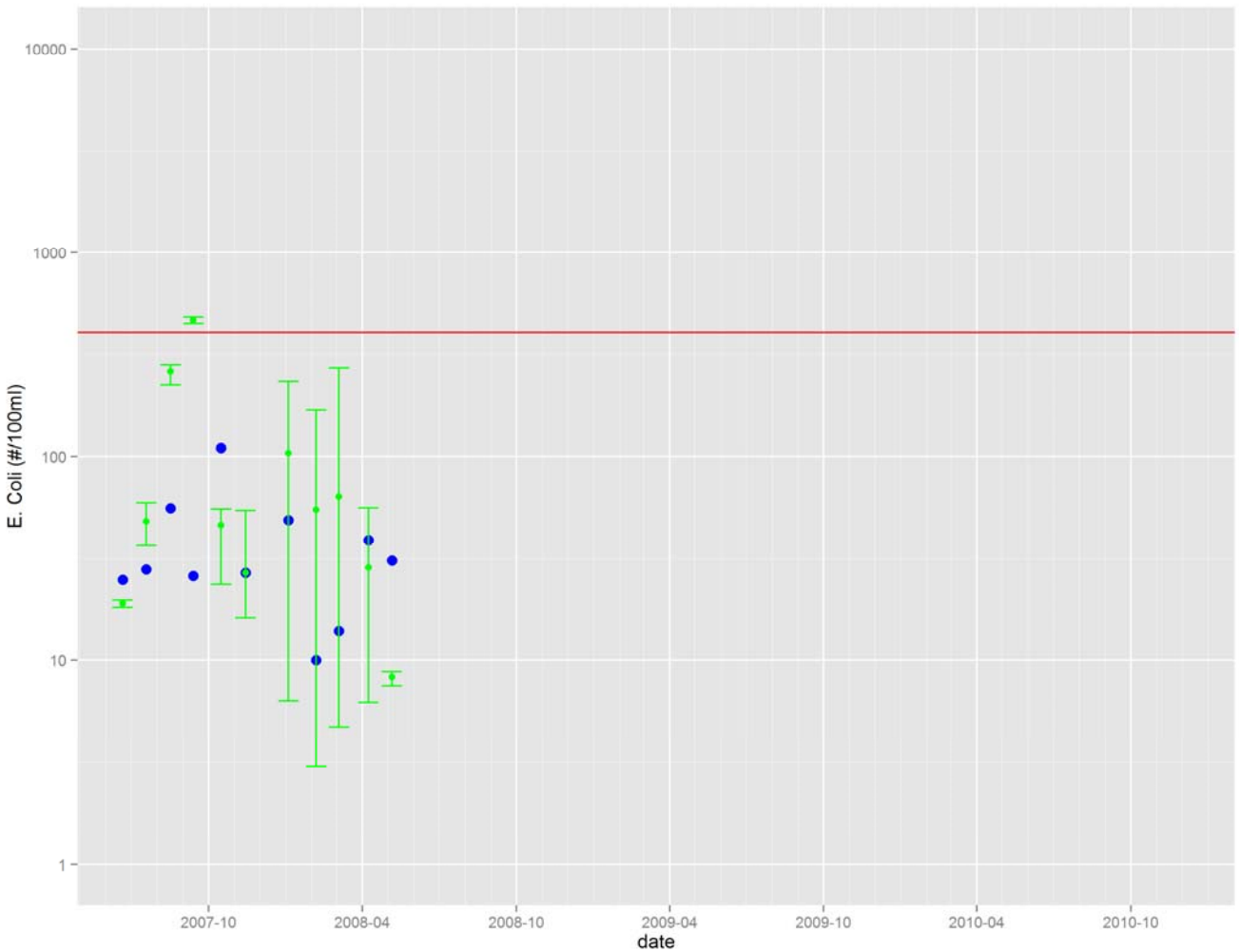
# Results for Reach 17

## 34452-Big Elk Creek at Harlan Road Bridge

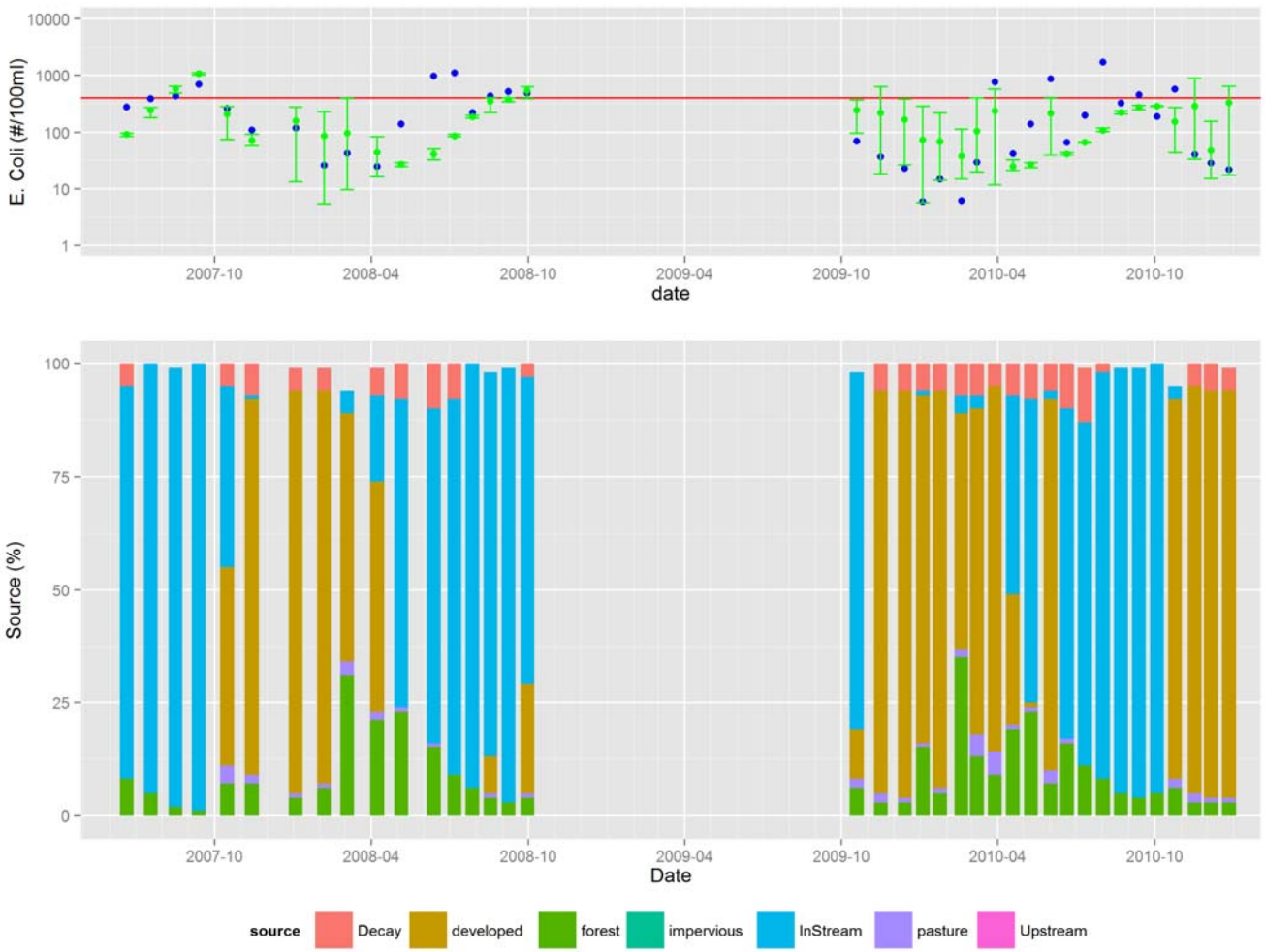


# Results for Reach 18

## 34453-Big Elk Creek at Elk City Road Bridge in Elk City

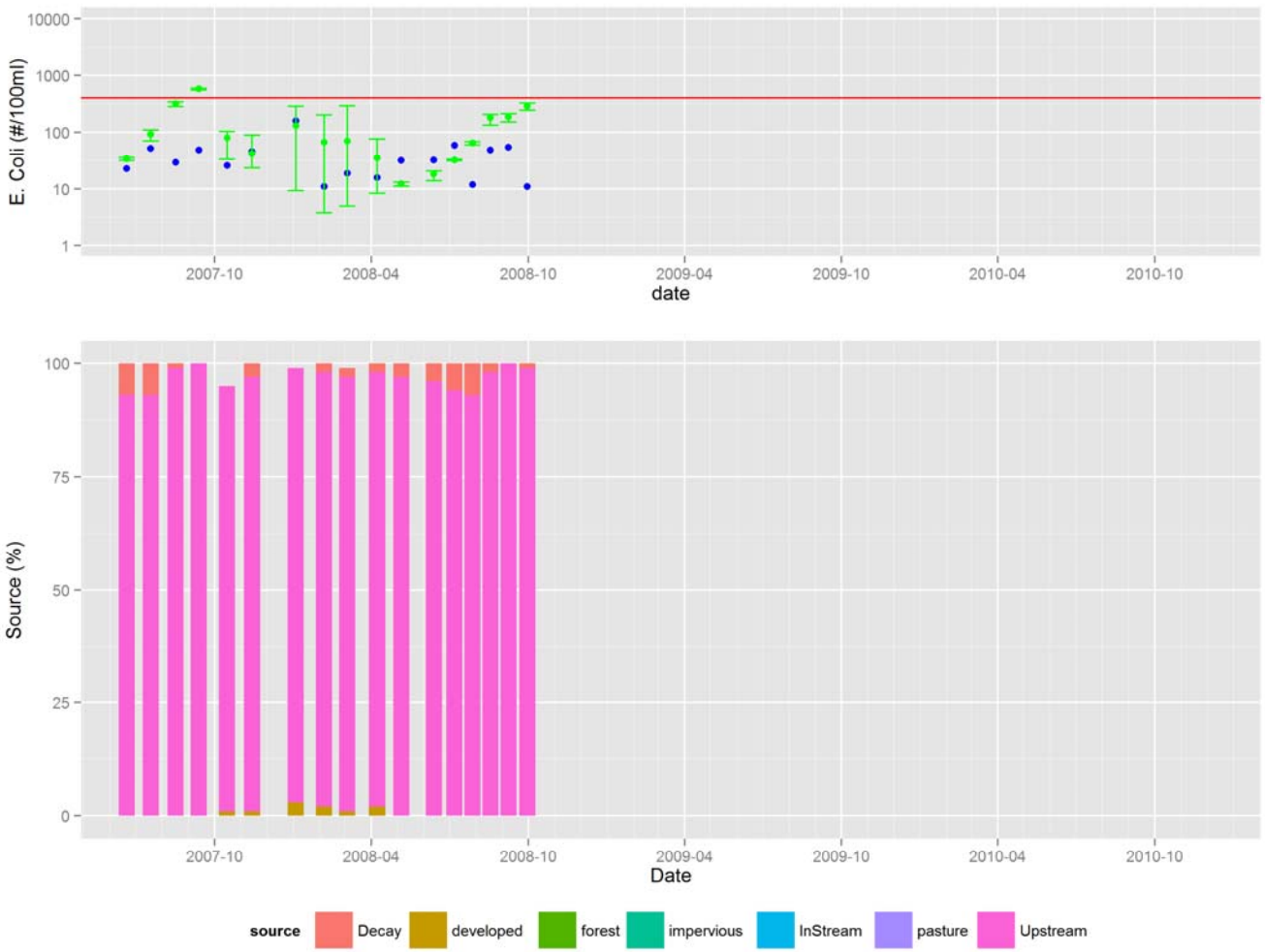


# Source Analysis for Reach 04

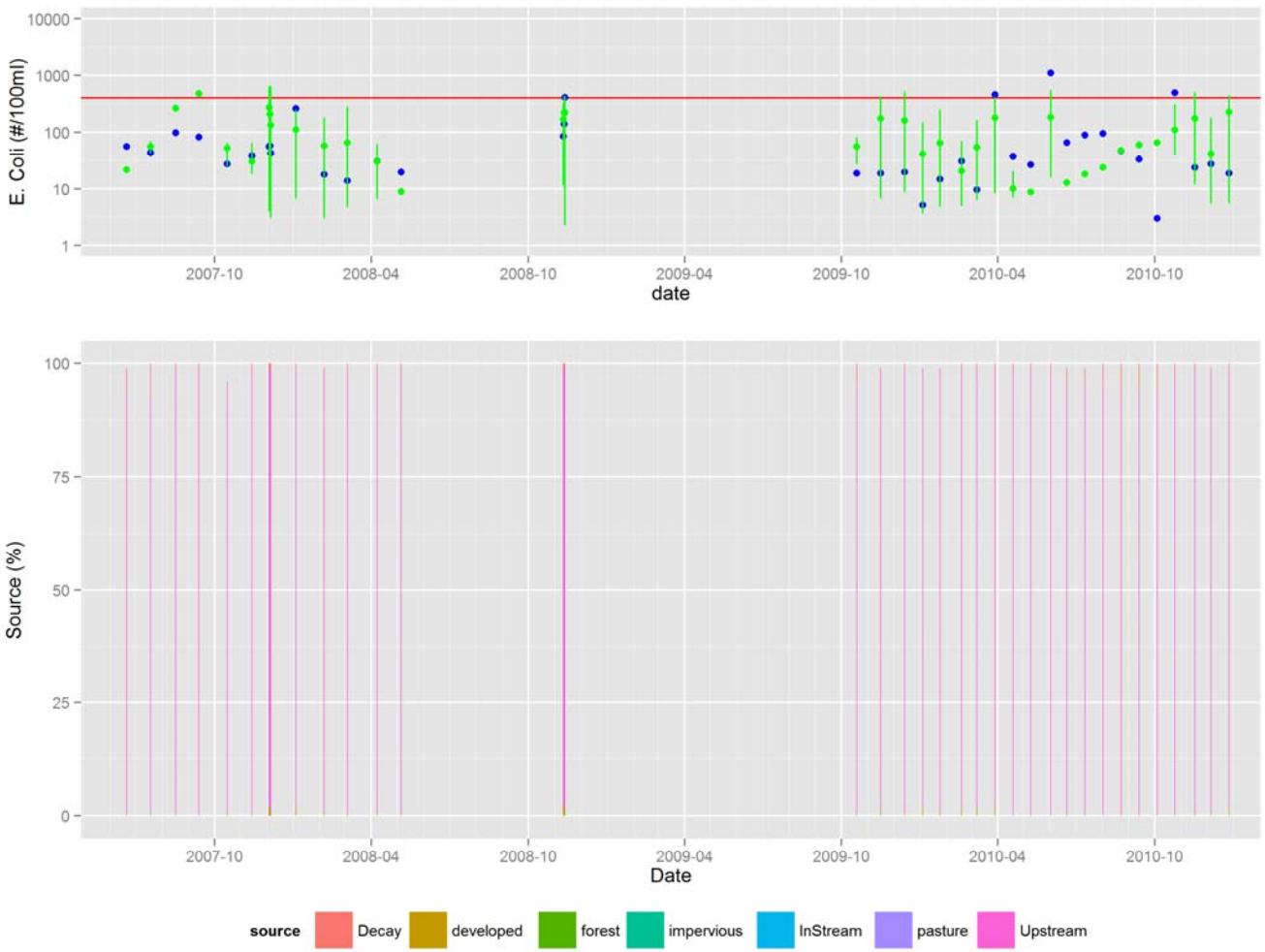


# Source Analysis for Reach 09

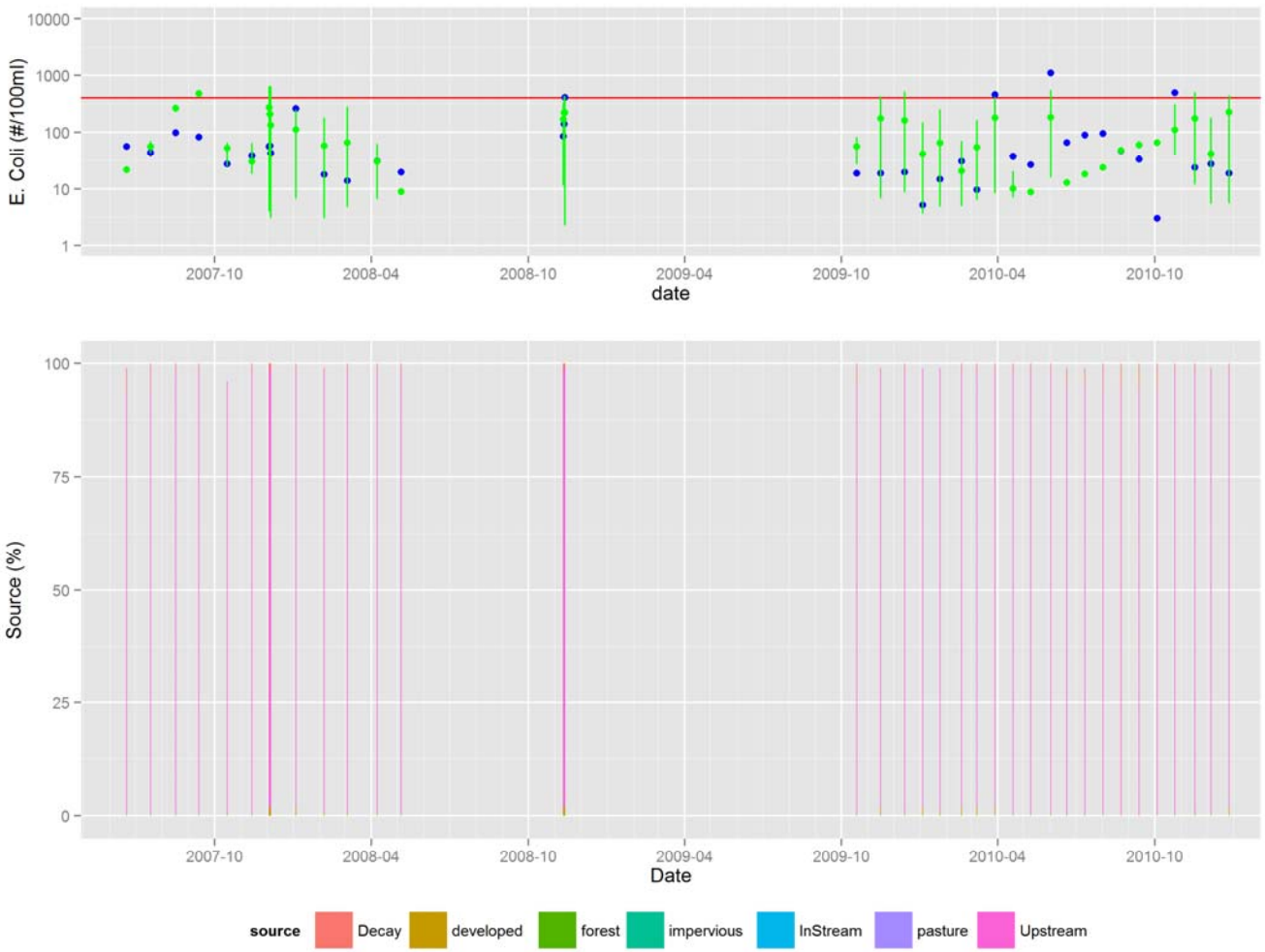
# Source Analysis for Reach 12



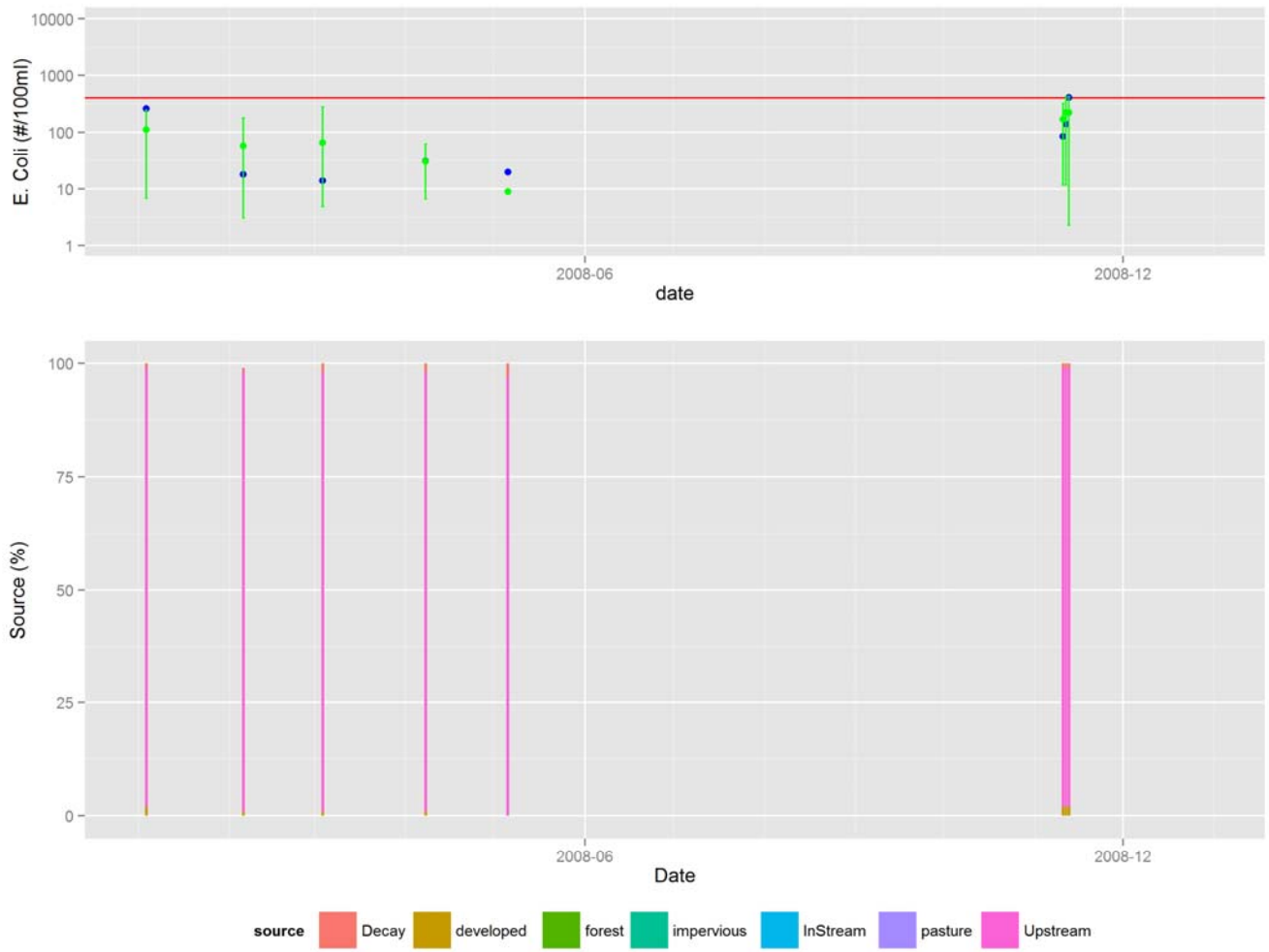
# Source Analysis for Reach 17



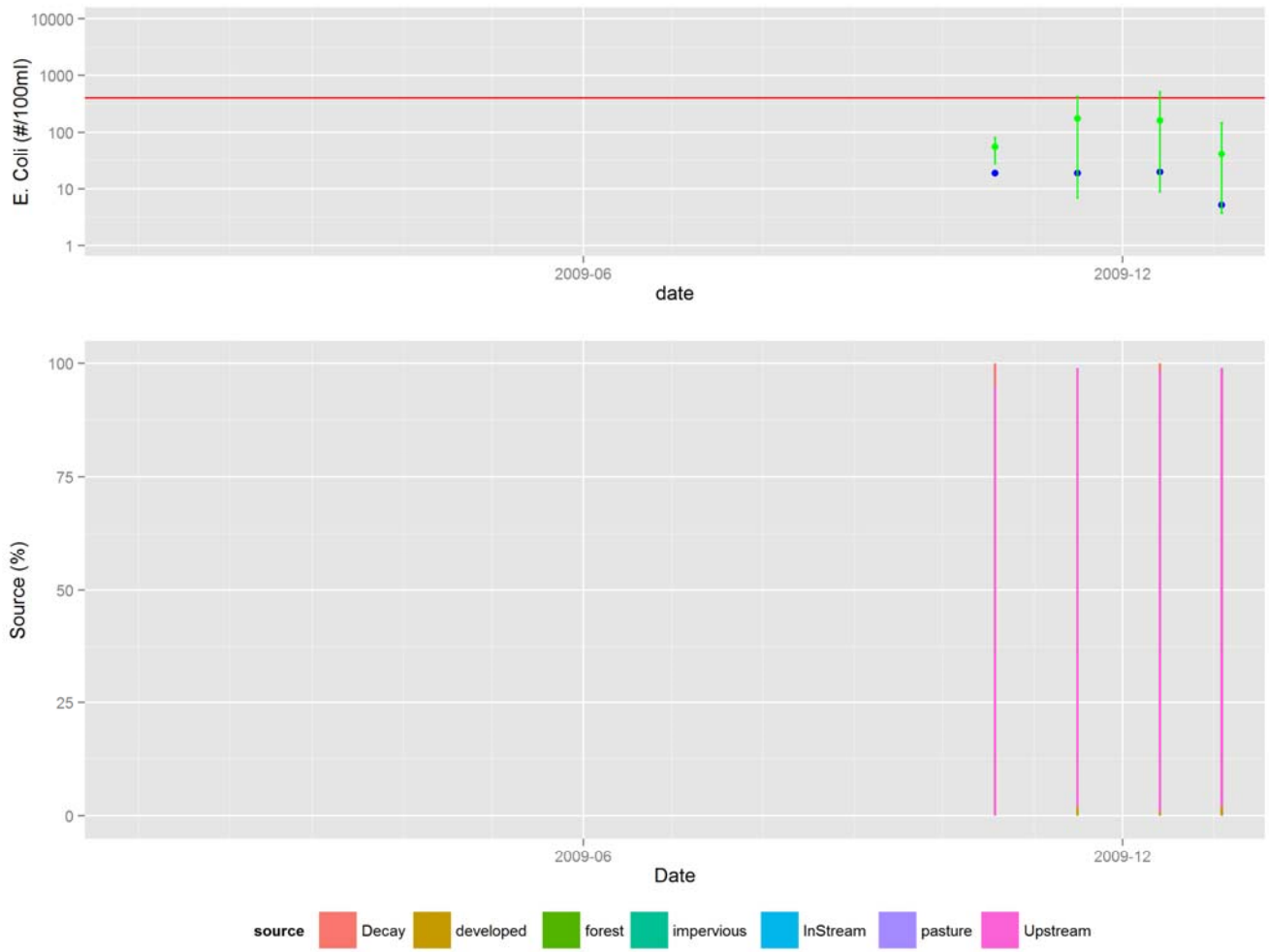
# Source Analysis for Reach 17 (2007)



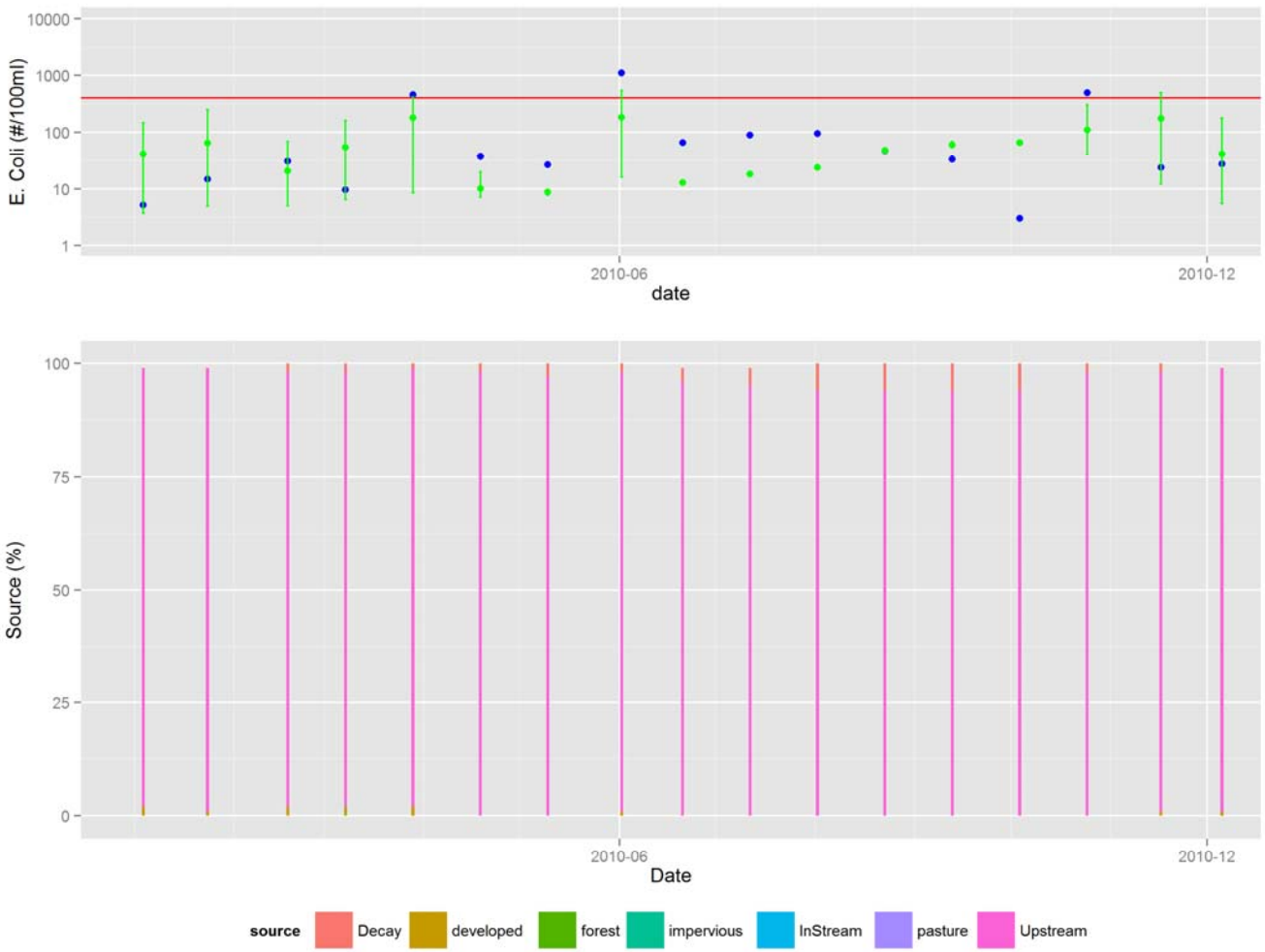
# Source Analysis for Reach 17 (2008)



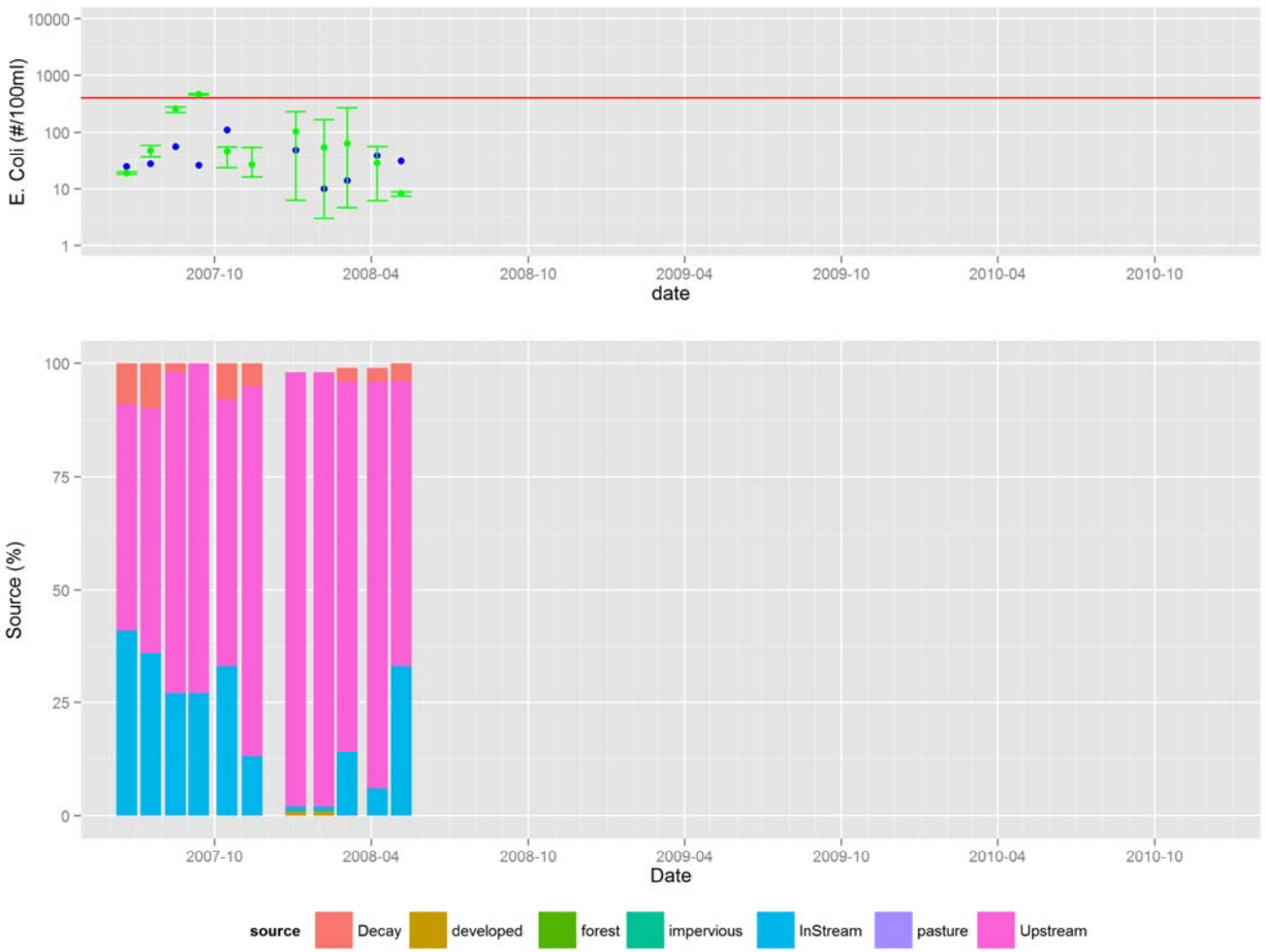
# Source Analysis for Reach 17 (2009)



# Source Analysis for Reach 17 (2010)



# Source Analysis for Reach 18



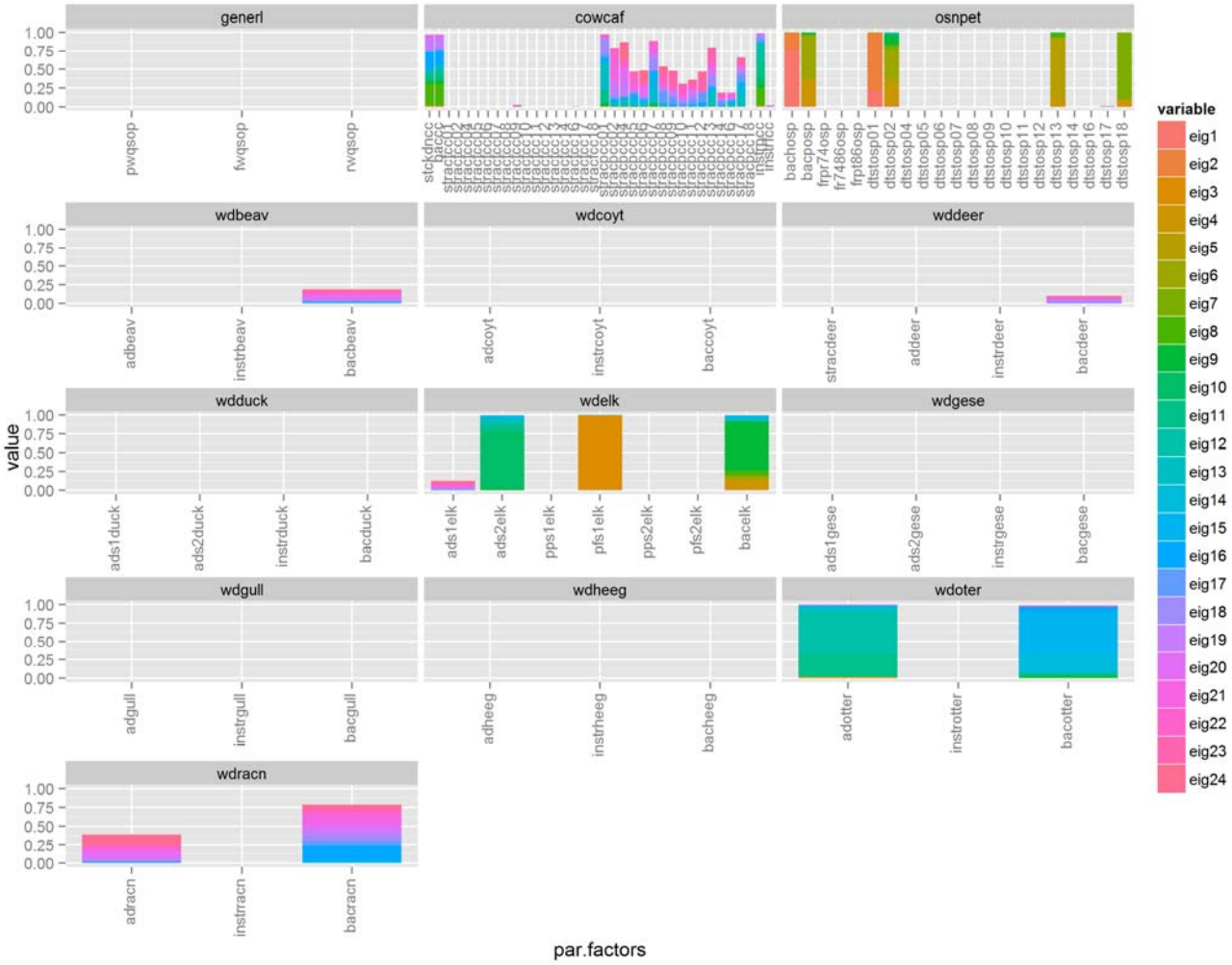
# Source Populations - Wildlife

| Source | Total |
|---|---|
| Beaver | 38 |
| Coyote | 0 |
| Deer | 27 |
| Duck | 0 |
| Elk | 501 |
| Geese | 0 |
| Gulls | 0 |
| Heron/Egret | 0 |
| Otter | 64 |
| Racoon | 81 |

# Source Populations – Human/Human related

| Source | Total |
|---|---|
| Cow-Calf pairs | 284 |
| Near Stream Structures | 156 |
| % Near Stream Structures Discharge Direct to stream | 2% |

# Identifiability



# Big Elk Creek Modeling – Next Steps

- Review refine cow-calf, on-site and other sub-models
- Extend simulation period to include more recent data
- Develop load allocation scenarios
- Conduct uncertainty analysis
- …

## Next Steps

- Develop TMDL reports for LDC of watersheds with listings
- Continue review of Beach data till May 1, 2015
- Watershed Modeling
  - Load allocations
  - Uncertainty analysis