



ESPAM2.2 Improvements

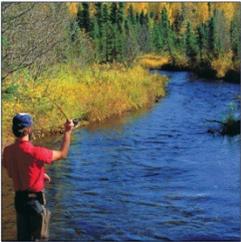
Allan Wylie IDWR

26 June 2013



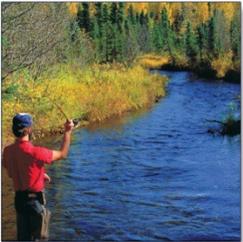
Outline

- Compile suggested improvements
- Obtain ESHMC feedback
 - Rankings by committee members
- Assign scores to rankings
- Recommendation to ESHMC

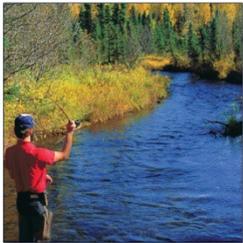


Compile Suggested Improvements

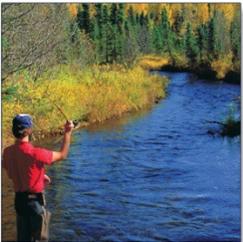
- Read past meeting notes and compile all suggested improvements
- E-mail list to ESHMC and request additional suggestions



ESHMC feedback



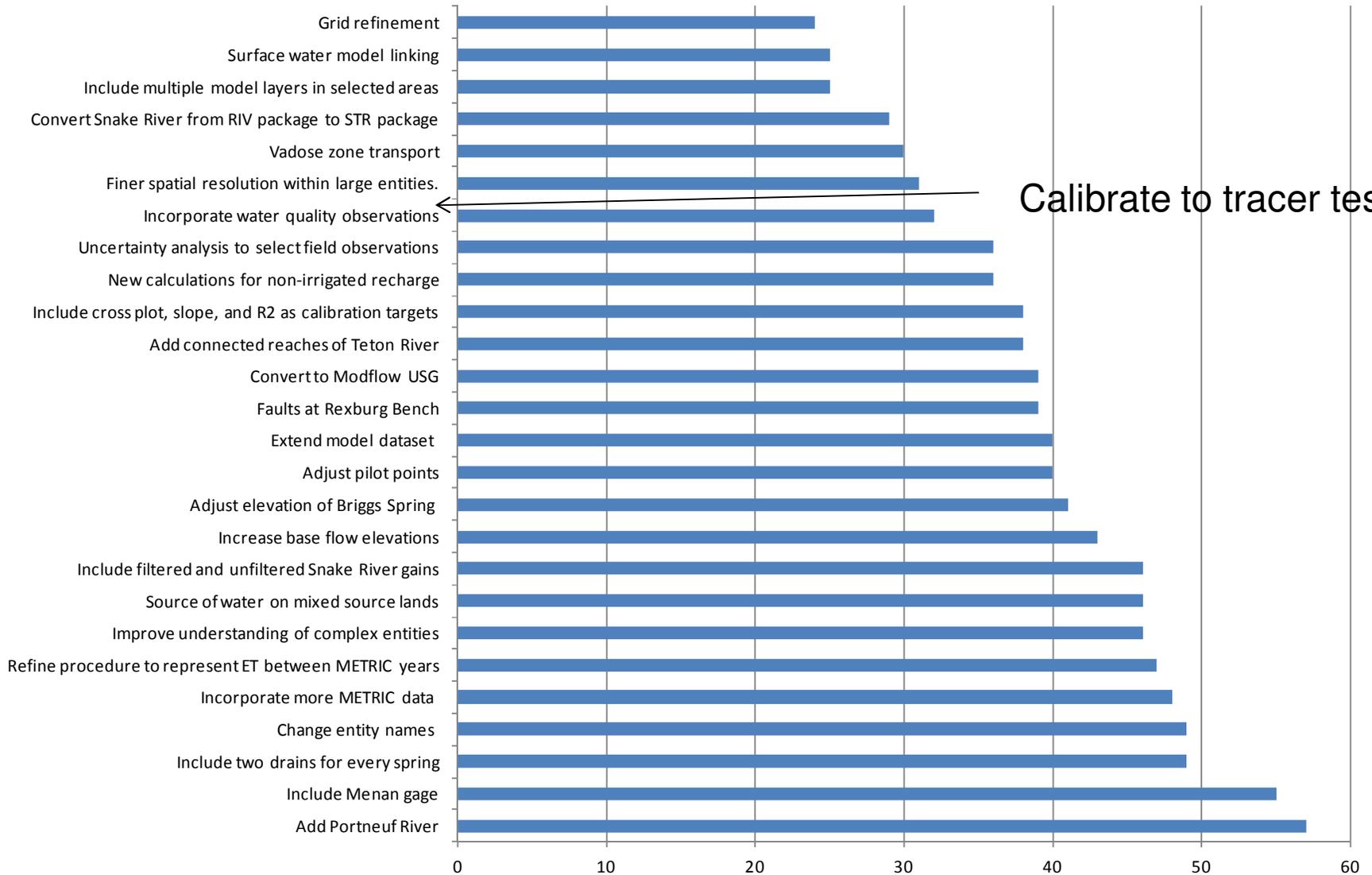
- E-mailed list of improvements
- Requested a ranking of the suggested improvements
- Eight responses



Compile and score feedback

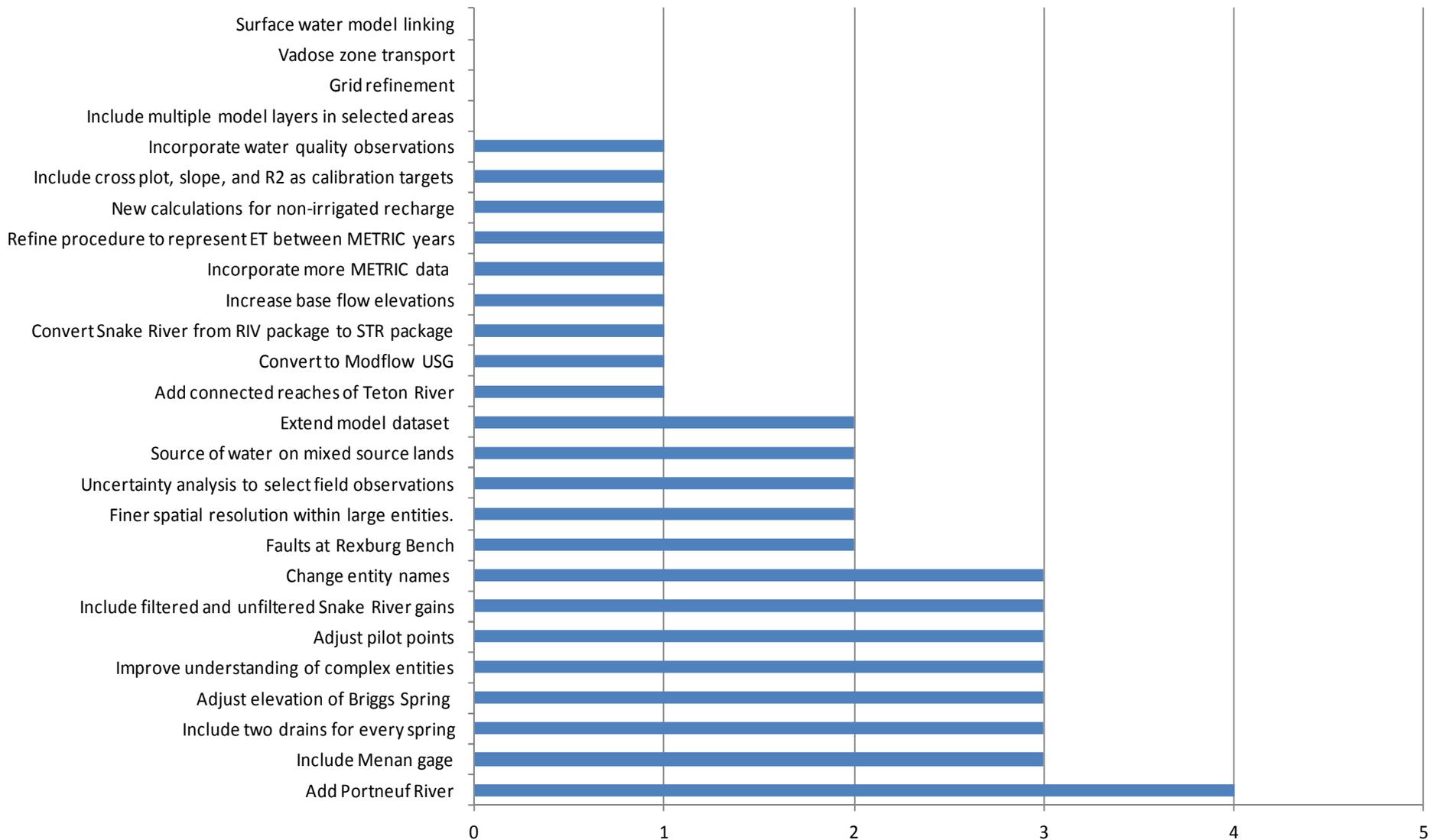
- Individual ranking schemes varied
 - 1-10
 - High, medium, low
 - High = ranking of 1, medium = ranking of 5, low no rank
 - Multiple 1, 2, 3, 4, 5, ...
 - Etc
- Score
 - Rank of 1 = 9, rank of 2 = 8, rank of 3 = 7, etc
 - Sum for total score
 - Number of times each category ranked 1
 - Number of times each category ranked 2

Total Score

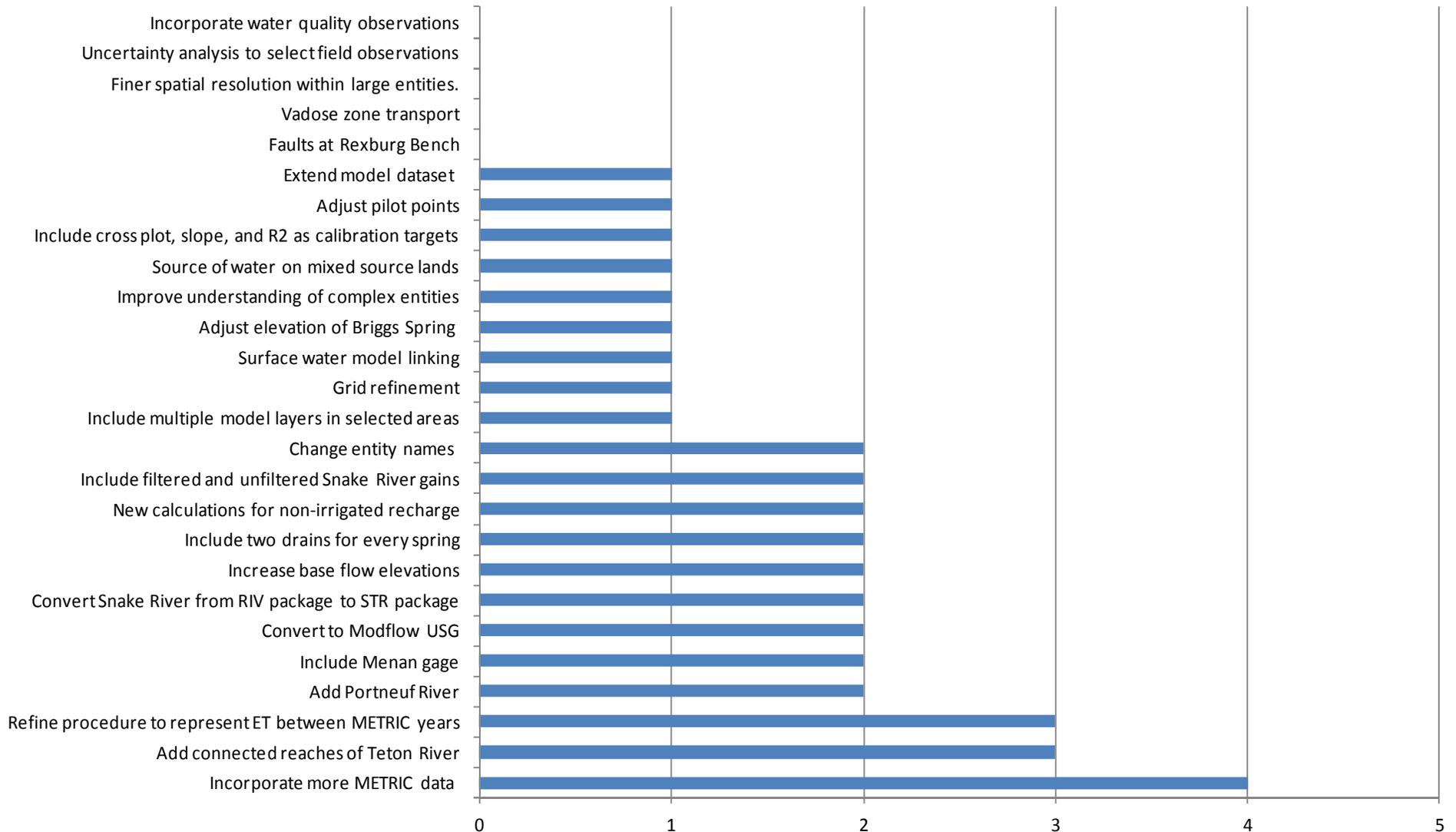


Calibrate to tracer tests

Ranking = 1

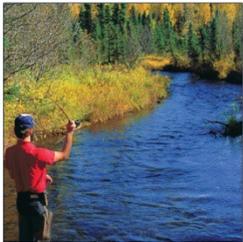


Ranking= 2



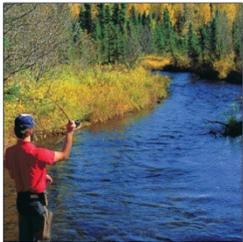
Total Score	Number 1 votes	Number 2 votes
Add Portneuf River	Add Portneuf River	Incorporate more METRIC data
Include Menan gage	Include Menan gage	Add connected reaches of Teton River
Include two drains for every spring	Include two drains for every spring	Refine procedure to represent ET between METRIC
Change entity names	Adjust elevation of Briggs Spring	Add Portneuf River
Incorporate more METRIC data	Improve understanding of complex entities	Include Menan gage
Refine procedure to represent ET between METRIC	Adjust pilot points	Convert to Modflow USG
Improve understanding of complex entities	Include filtered and unfiltered Snake River gains	Convert Snake River from RIV package to STR pack
Source of water on mixed source lands	Change entity names	Increase base flow elevations
Include filtered and unfiltered Snake River gains	Faults at Rexburg Bench	Include two drains for every spring
Increase base flow elevations	Finer spatial resolution within large entities.	New calculations for non-irrigated recharge
Adjust elevation of Briggs Spring	Uncertainty analysis to select field observations	Include filtered and unfiltered Snake River gains
Adjust pilot points	Source of water on mixed source lands	Change entity names
Extend model dataset	Extend model dataset	Include multiple model layers in selected areas
Faults at Rexburg Bench	Add connected reaches of Teton River	Grid refinement
Convert to Modflow USG	Convert to Modflow USG	Surface water model linking
Add connected reaches of Teton River	Convert Snake River from RIV package to STR packa	Adjust elevation of Briggs Spring
Include cross plot, slope, and R2 as calibration target	Increase base flow elevations	Improve understanding of complex entities
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Incorporate water quality observations	New calculations for non-irrigated recharge	Adjust pilot points
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Vadose zone transport	Incorporate water quality observations	Faults at Rexburg Bench
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Surface water model linking	Vadose zone transport	Uncertainty analysis to select field observations
Grid refinement	Surface water model linking	Incorporate water quality observations

Voted on by one individual



Calibrate to Springs in Springfield/Fort Hall areas
tributary underflow update
Consider modeling largest canals with STR package
Represent thinning along edge of aquifer by reducing transmissivity
Representation of local geologic structure
Specify layer type as unconfined
Fix bug in SMPSTAT
Allow for vertical anisotropy
Seepage study along Milner-King Hill reach
Sensitivity analysis of poorly understood water budget parameters
Additional tracer tests above spring complexes.
Compare model calibrated conductances and flow directions with those derived from water level and spring flow data.
Consider direct cell assignment and calibration of transmissivities at edges of model domain
Review and revise weighting of calibration targets.
Additional calibration targets based on unused data, local observations, and common sense .

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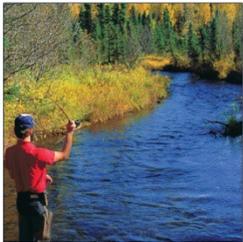
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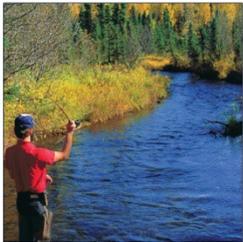
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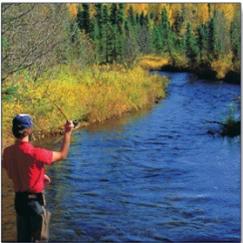
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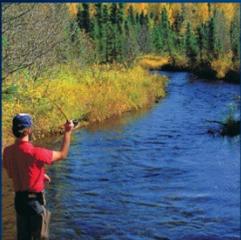
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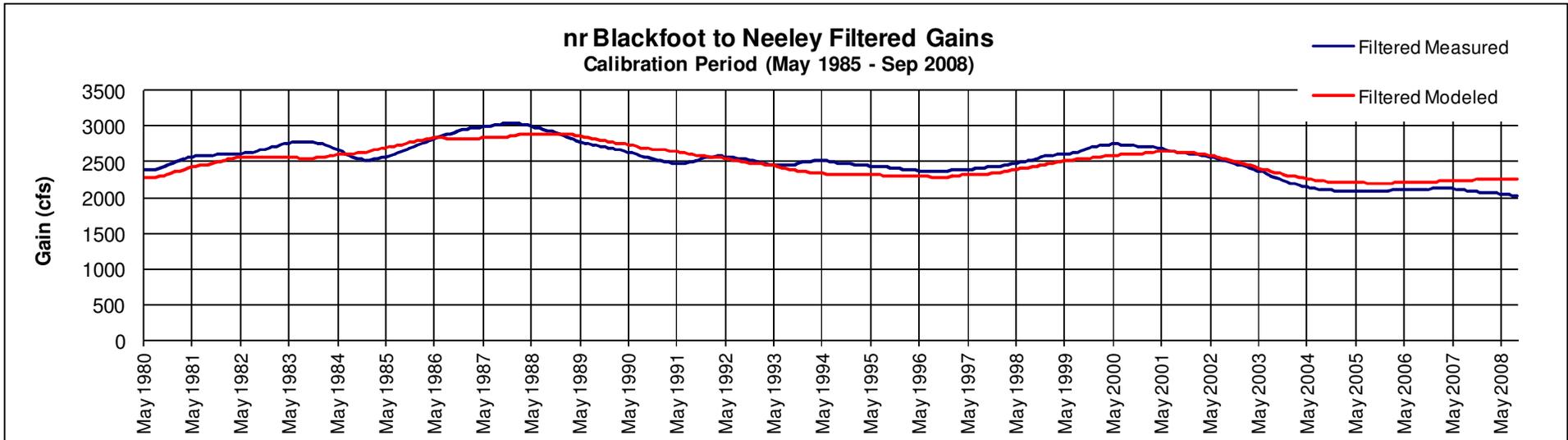
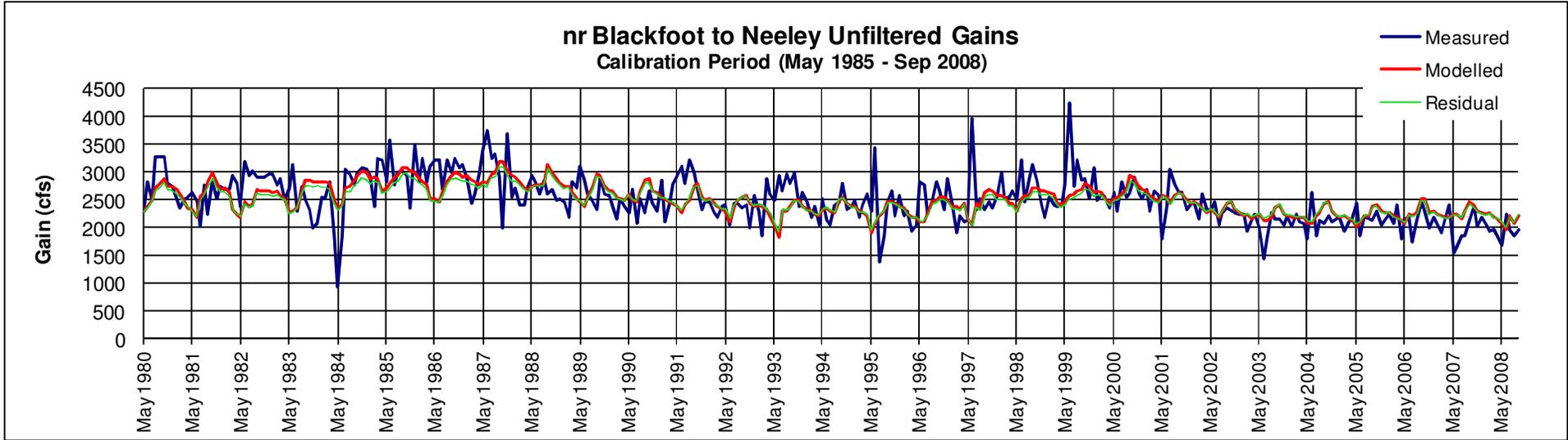
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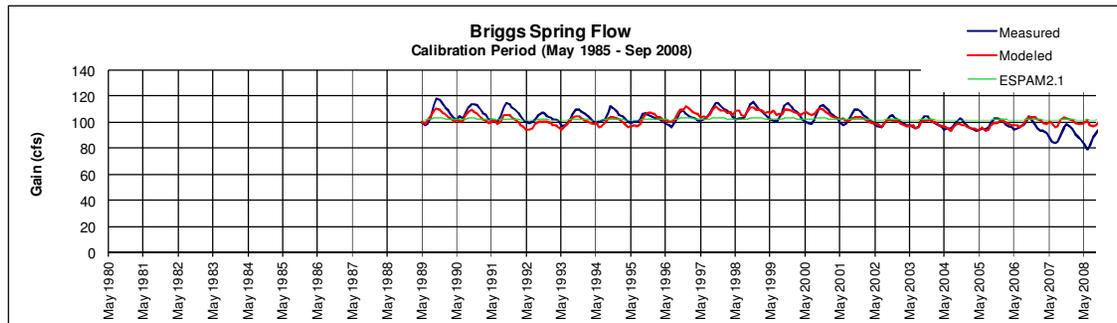


Recommendation

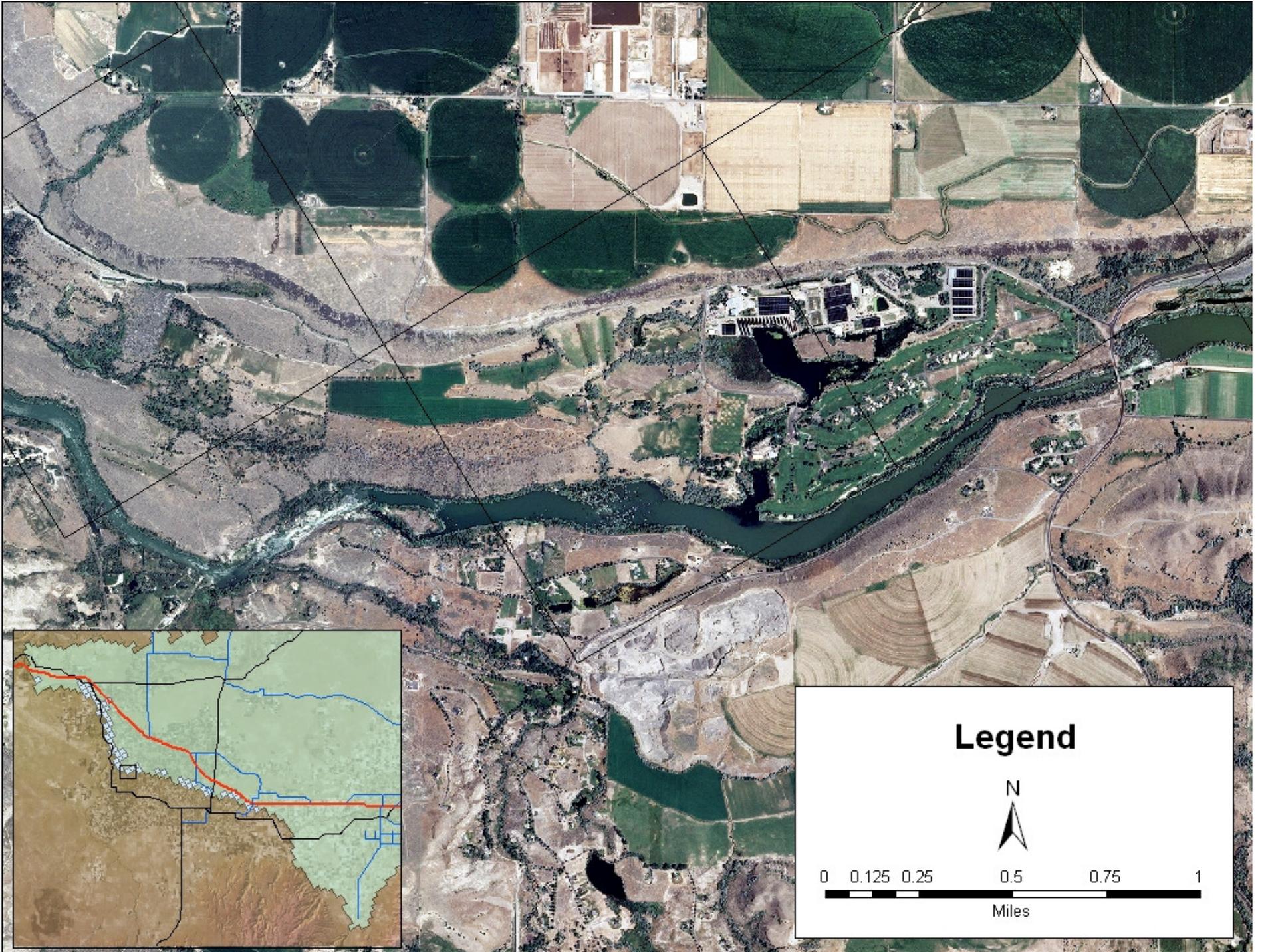
- IDWR pursue all low effort recommendations on the list with a bias toward higher ranking recommendations
- Resource intensive updates should come from recommendations that scored higher in one or more of the rankings
 - Total score
 - Number of ranking =1
 - Number of ranking =2

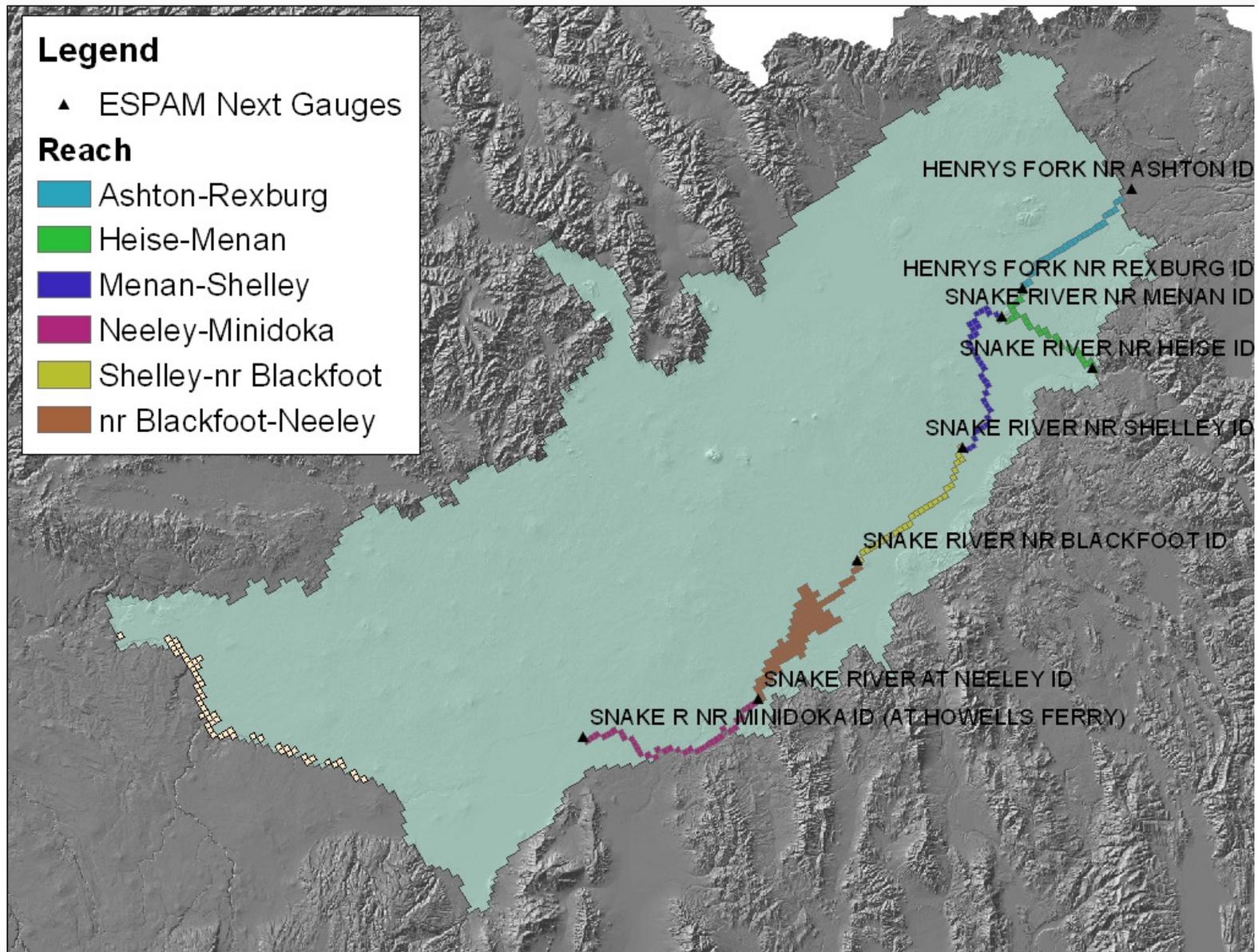


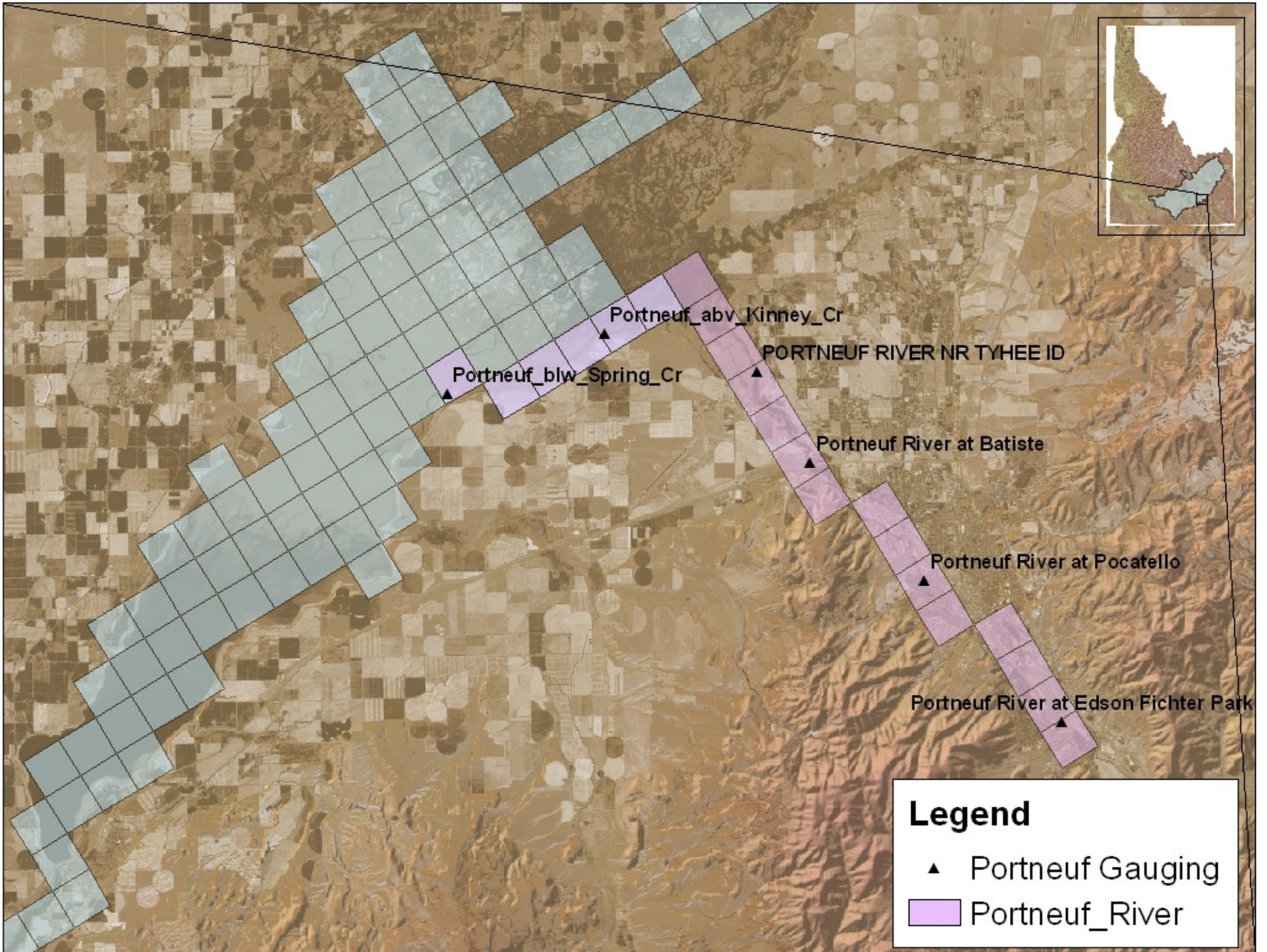
Adjust Elevation of Briggs Sp



- Elevation of Briggs is for the USGS gauge
- Spring emerges at a higher elevation
- Higher elevation will allow model to replicate observed seasonal variation









Feedback

- Rick Raymondi
- Jairo Hernandez
- Bryce Contor
- Chuck Brendecke
- Chuck Brockway
- Jennifer Sukow
- Dave Colvin
- Greg Sullivan