Division 512 Rulemaking: Ground Water Regulation for the Malheur Lake Administrative Basin

Oregon Water Resources Department

Rules Advisory Committee Meeting

November 13, 2024

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Ground Rules

- You are here to express your viewpoint.
- Treat others respectfully.
- If online, remain muted when not speaking.
- Use “raise hand” feature to indicate that you would like to speak.
- If in-person, raise hand to indicate that you would like to speak.
- RAC only participates in RAC meeting and Public only participates in comment period.

RAC Operating Guidelines

RAC Role

- Attend and participate in meetings at the horseshoe or online.
- Provide input/advice and help the Department consider various perspectives.

Public Role

- Listen only during the presentations and RAC discussions from the audience or online.
- Provide input/advice during the designated comment time.

Department Role

- Foster meaningful dialog and conversation
- Consider RAC and public feedback.
- Draft final rules

Facilitator Role

- Foster meaningful dialog and conversation by all RAC participants.
- Ensure all parties have a safe space to express their viewpoints in a respectful environment.

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Morning Meeting Agenda

8:00 AM (15 min)	Welcome and Introductions
8:15 AM (60 min)	Criteria to Help Evaluate Management Scenarios
9:15 AM (75 min)	Presentation: Model Run Results
10:30 AM (10 min)	Break
10:40 AM (80 min)	Discussion: Comparison of Model Results
12:10 AM (40 min)	Lunch

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Afternoon Meeting Agenda

12:50 PM (60 min)	Discussion: Optimization of the 5 RAC-Identified Management Scenarios
1:50 PM (10 min)	Break
2:00 PM (60 Min)	Discussion: Serious Water Management Problem Area
3:00 PM (10 min)	Break
3:10 PM (10 min)	Update on Fiscal Impact
3:20 PM (20 min)	Voluntary Agreements
3:40 PM (10 min)	Public Comment
3:50 PM (10 min)	Meeting Wrap Up/ Adjourns

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Goals of Today's Meeting

1. Gather feedback around criteria for management scenario selection
2. Build a shared understanding around model results
3. Build a shared understanding of different management element tradeoffs
4. Feedback on how to balance trade offs in future scenarios
5. Gather feedback around outstanding SWMPA questions
6. Answer any questions around Voluntary Agreement Guidance Document

Future RAC Schedule

- RAC Number 12, December 18, 2024: 8 a.m. – 3 p.m.
- RAC Number 13, January 22, 2025: 8 a.m. – 3 p.m.

Criteria to Evaluate Management Scenarios

Criteria to Evaluate Management Scenarios

Goals of Conversation

- Gather feedback around what criteria should be used for management scenario selection
- Gather feedback on how OWRD assess and/or weight the criteria
- **Level of Participation**

Involve/Consult

Criteria to Evaluate Management Scenarios

November Meeting

- Establish Criteria
- Discuss methods for weighting criteria
- Run method for weighting criteria

December Meeting

- Review optimized scenarios considering criteria weighting
- Discuss how criteria were used for selection

January Meeting

- Draft Rule language

Criteria to Evaluate Management Scenarios

Criteria

- Impact to domestic wells
- Impact to natural groundwater discharge
- Impact to small businesses and the economy
- Timelines to achieving groundwater level trends
- Strictly following prior appropriation
- Creating room for voluntary agreement

Criteria to Evaluate Management Scenarios

RAC Roundtable:

1. Are there any other criteria OWRD should be considering?

Criteria to Evaluate Management Scenarios

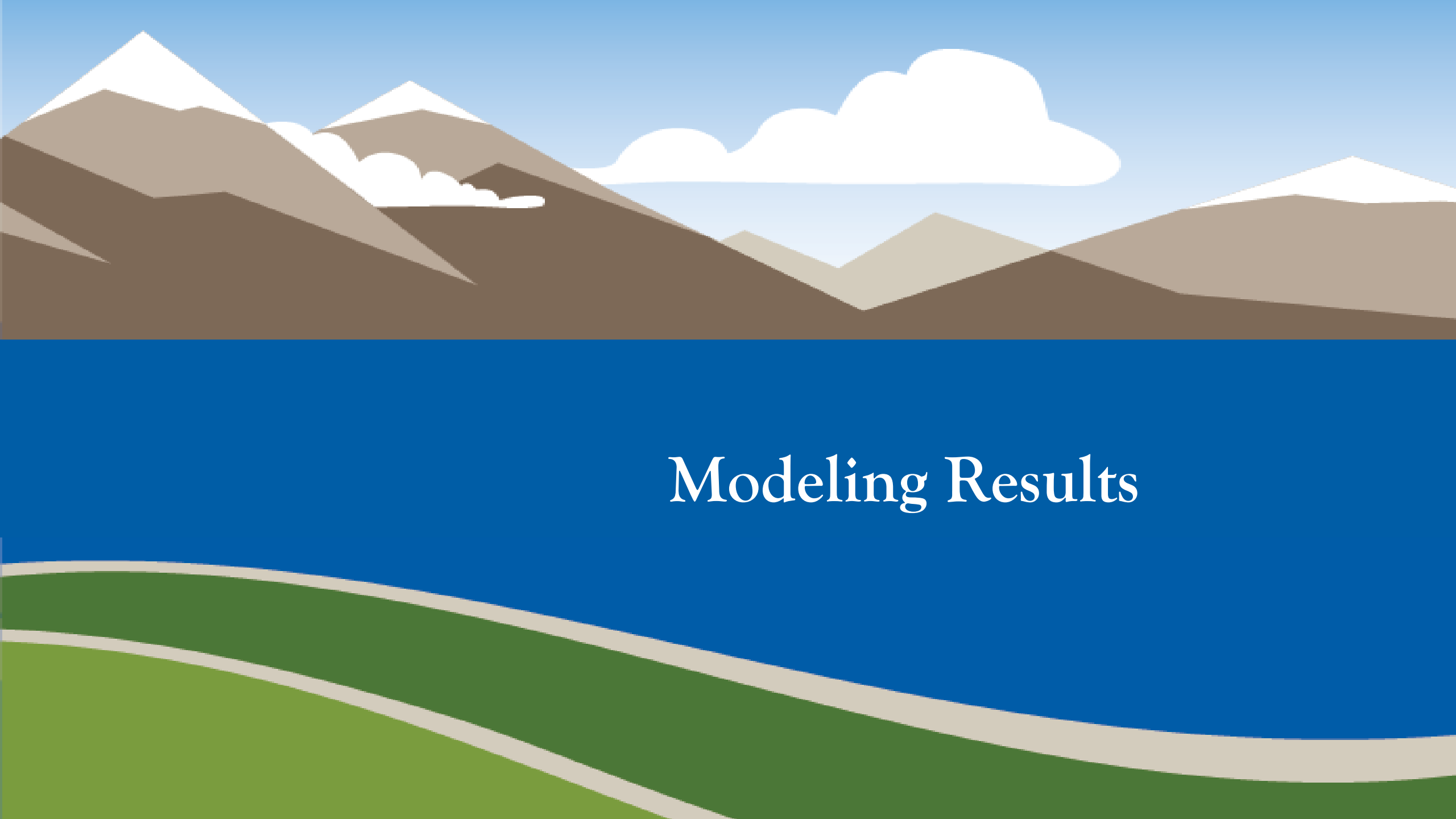
Potential methodologies

1. Pair-wise method
2. Sliding Scale

Criteria to Evaluate Management Scenarios

RAC Roundtable:

1. Do you have any feedback on methodology for criteria weighting?



Modeling Results

Modeling Results

Goals of Conversation

- Build a shared understanding of the results from five modeled scenarios
- Explore how management elements impact results

Level of Participation

- Inform

Agenda for Model Results

- Summary of model inputs (4 slides)
- Results from scenarios A-E (20 slides)
- Comparison of scenario results (20 slides)
  - Hydrographs
  - Natural discharge
  - Groundwater storage
  - Comparison of rate of change by subarea at different time intervals
  - Impacts of allocation method
  - Impacts of phase-in duration for PTW

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Management Scenarios

Scenario	A. Targeted reductions immediately using 15 subareas	B. Balanced reductions phased in over 30 years	C. Balanced reductions, minimize impacts to ecosystem and exempt uses phased in over 30 years.	D. Balanced reductions, recover supply for ecosystem and exempt uses	E. Reductions to 1990 pumpage
Where – Management Areas	15 subareas	6 subareas			One area
How Much - Volume of pumping reductions	Pumping reductions for 6 subareas; 9 subareas with no reduction from 2018 estimated pumpage	Pumping reductions focused in 3 subareas	Pumping reductions spread across all but 1 subarea	Pumping reductions spread across all but 1 subarea	Reduce pumping to 1990 estimated pumpage
When - Start time and intervals of reduction	2030 start; no phasing	2030 start; phased reductions over a 30-year period		2030 start; no phasing	

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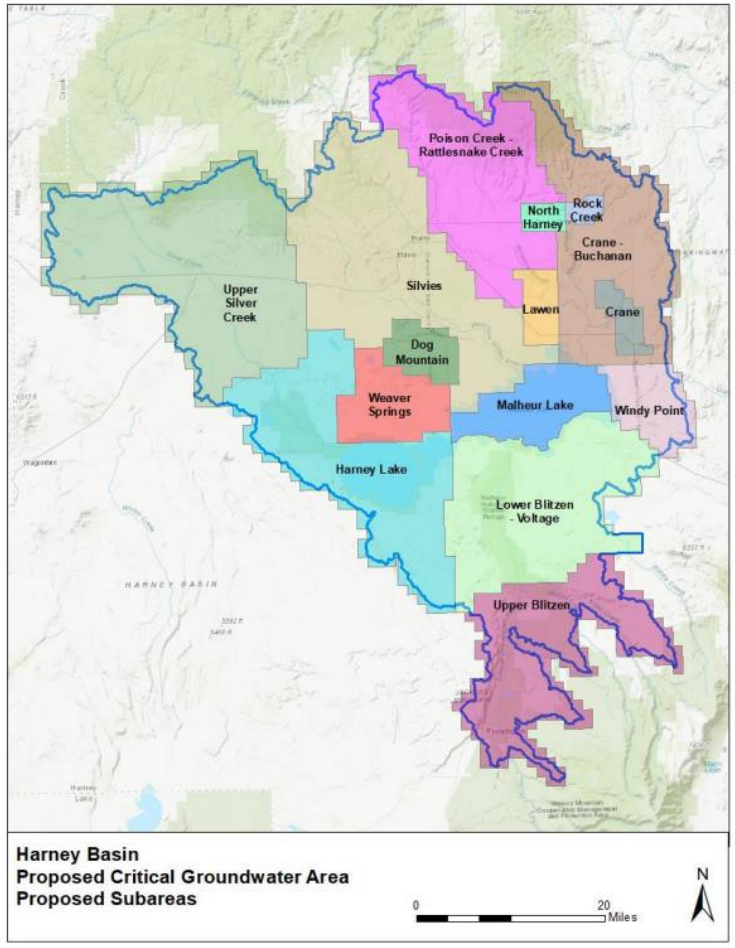
Scenarios B, C, & D Pumpage Reductions

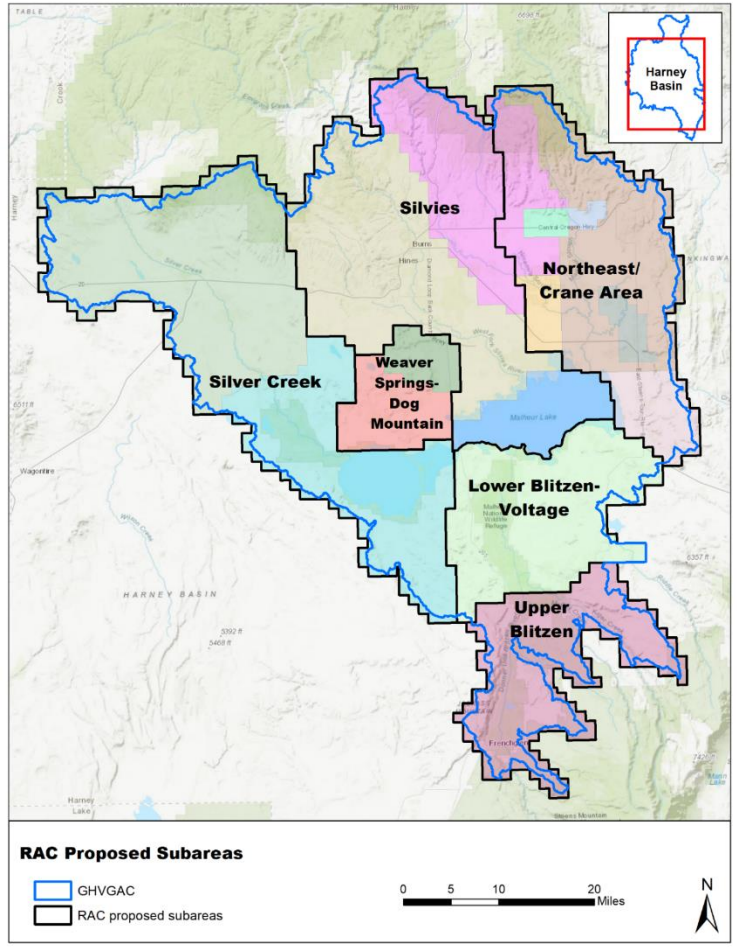
6 Subareas	B. Balanced reductions phased in over 30 years	C. Balanced reductions, minimize impacts to ecosystem and exempt uses phased in over 30 years.	D. Balanced reductions, recover supply for ecosystem and exempt uses
Weaver Springs/Dog Mountain	54% reduction from estimated 2018 pumpage implemented over 30 year period (18% each decade)	75% reduction from estimated 2018 groundwater pumpage implemented over 30 year period (25% each decade)	65% reduction from estimated 2018 groundwater pumpage implemented in 2030
Northeast/Crane Area	30% reduction from estimated 2018 pumpage over 30 year period (10% each decade)	45% reduction from estimated 2018 groundwater pumpage implemented over 30 year period (15% each decade)	40% reduction from estimated 2018 groundwater pumpage implemented in 2030
Silver Creek	9% reduction from estimated 2018 pumpage over 30 year period (3% each decade)	24% reduction from estimated 2018 groundwater pumpage implemented over 30 year period (6% each decade)	18% reduction from estimated 2018 groundwater pumpage implemented in 2030
Silvies	0% reduction from estimated 2018 pumpage	9% reduction from estimated 2018 groundwater pumpage implemented over 30 year period (3% each decade)	5% reduction from estimated 2018 groundwater pumpage implemented in 2030
Lower Blitzen/Voltage	0% reduction from estimated 2018 groundwater pumpage	9% reduction from estimated 2018 groundwater pumpage implemented over 30 year period (3% each decade)	5% reduction from estimated 2018 groundwater pumpage implemented in 2030
Upper Blitzen	0% reduction from estimated 2018 groundwater pumpage	0% reduction from estimated 2018 groundwater pumpage	0% reduction from estimated 2018 groundwater pumpage

Model Inputs – Where

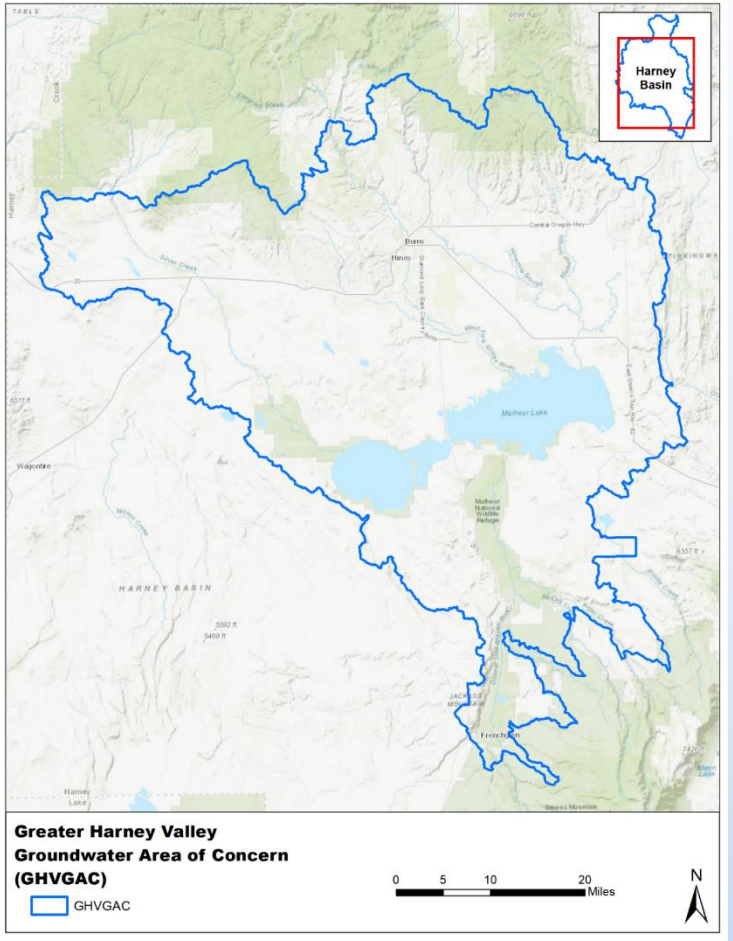
Scenario A
15 subareas



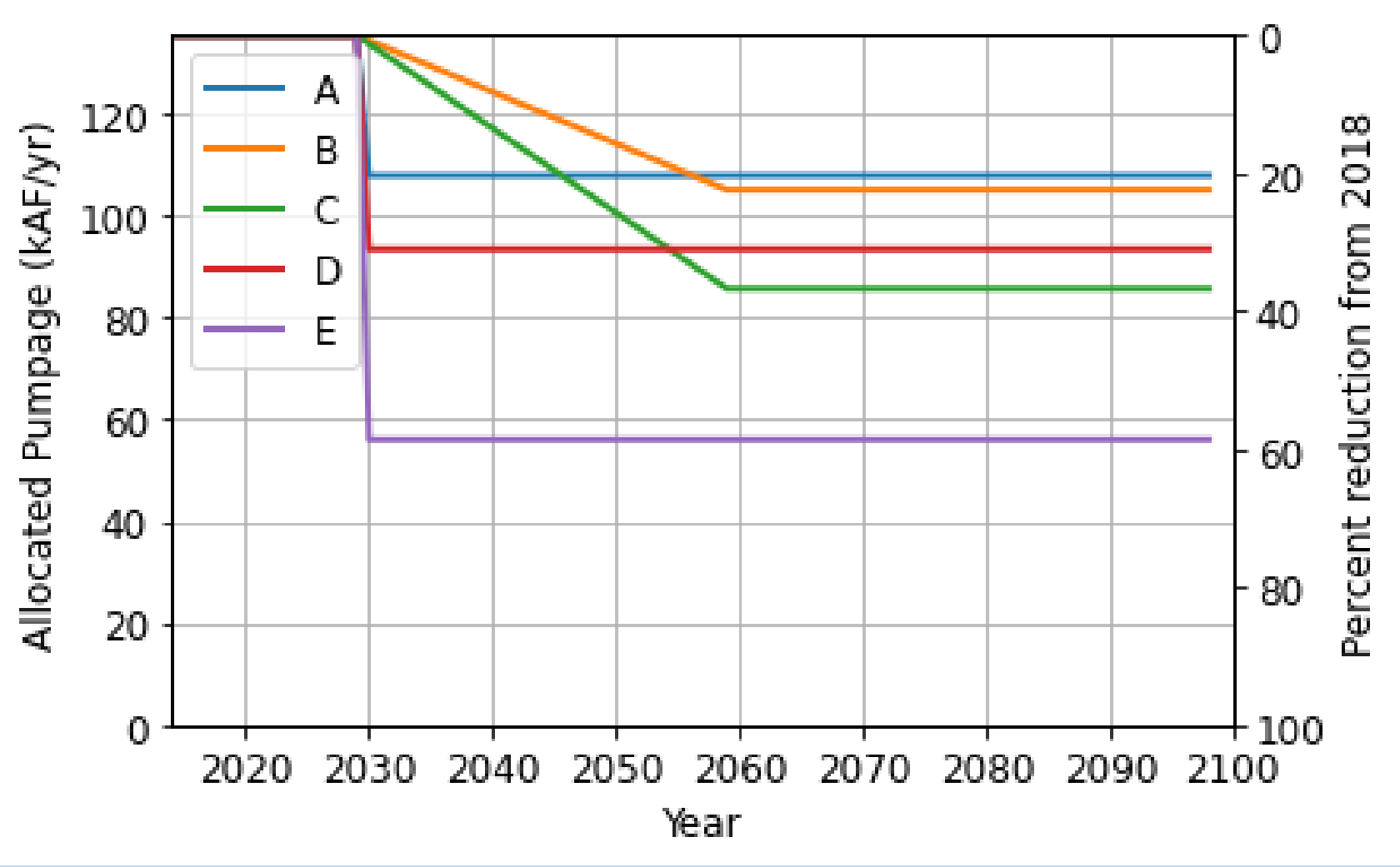
Scenarios B, C, & D
6 subareas



Scenario E
1 area



Model Inputs – How Much and When



Scenario	% reduction from 2018 pumpage basin-wide
A	19%
B	22%
C	37%
D	31%
E	59%

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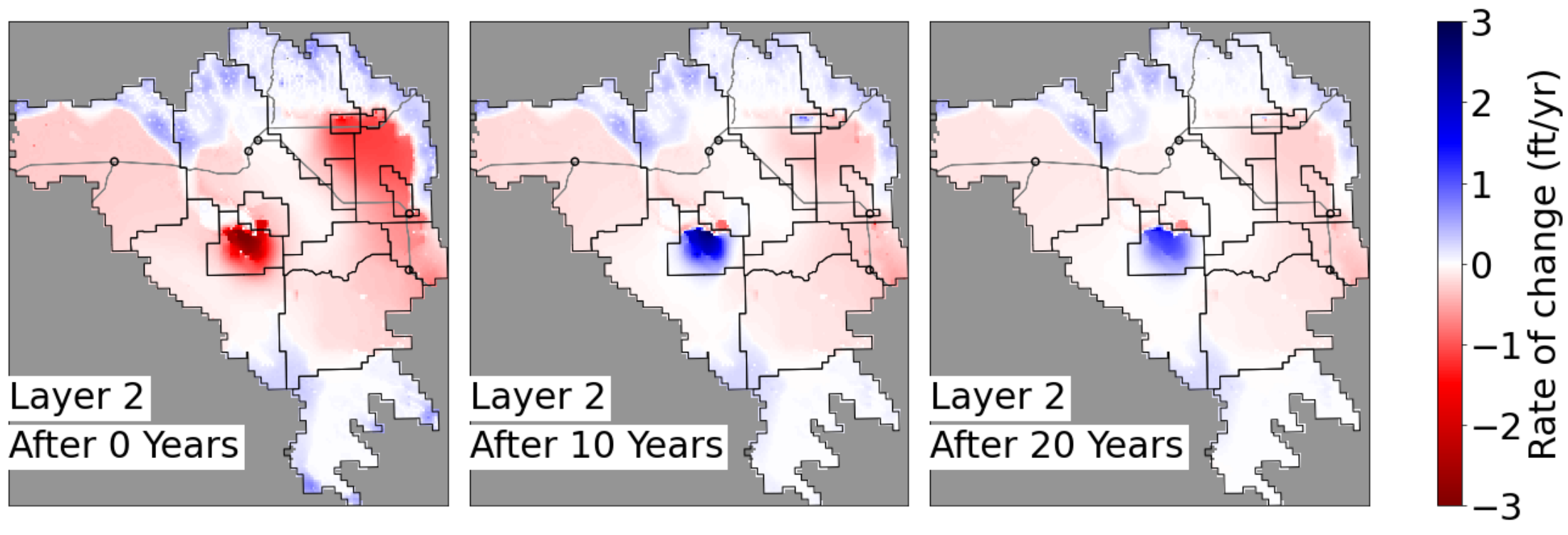
Model Layers

- 10 layers in the model representing different depths
  - Layers 1-5 are each 100 feet thick
  - Layers 6-10 vary in thickness from 135 – 1,397 feet thick
  - Bottom of model grid is at 2,085 ft elevation
- We're going to review information in a variety of different layers today

Results – Scenario A

Where	15 Subareas
How much	• 19% basin-wide reduction from 2018 pumpage; • Focused in 6 subareas • Allocated by priority date
When	Reductions fully implemented in 2030

Scenario A – Layer 2 rate of change



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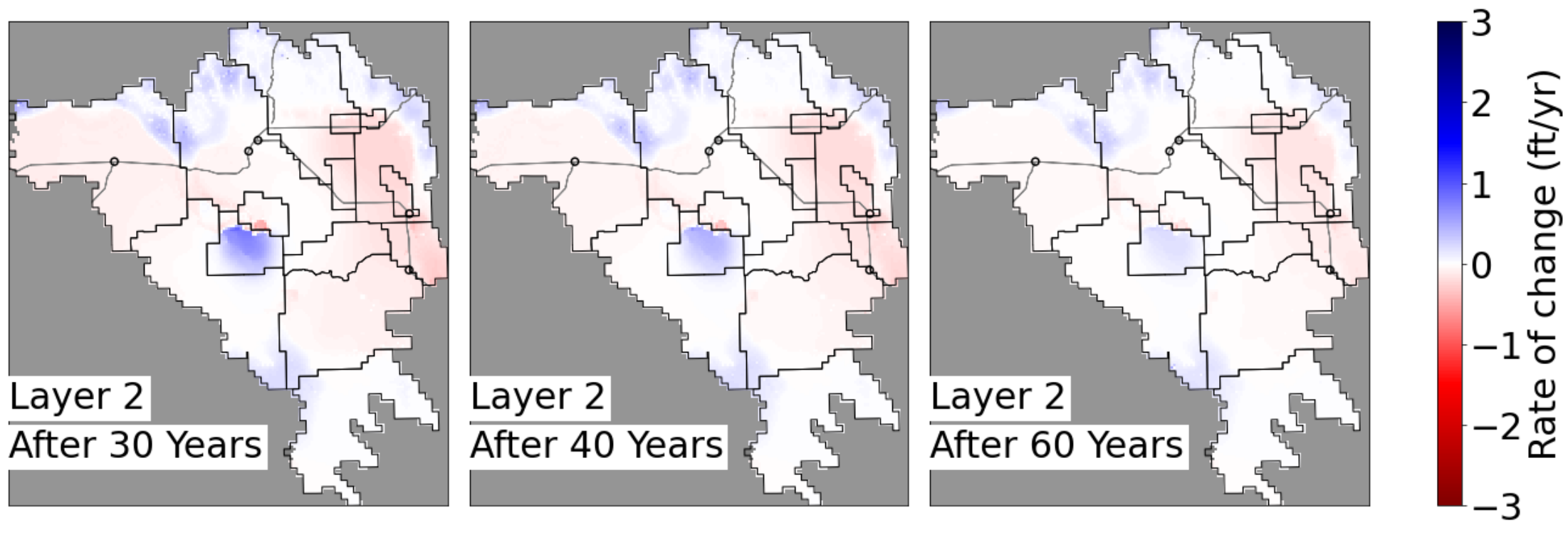
Scenario A – Layer 2 rate of change



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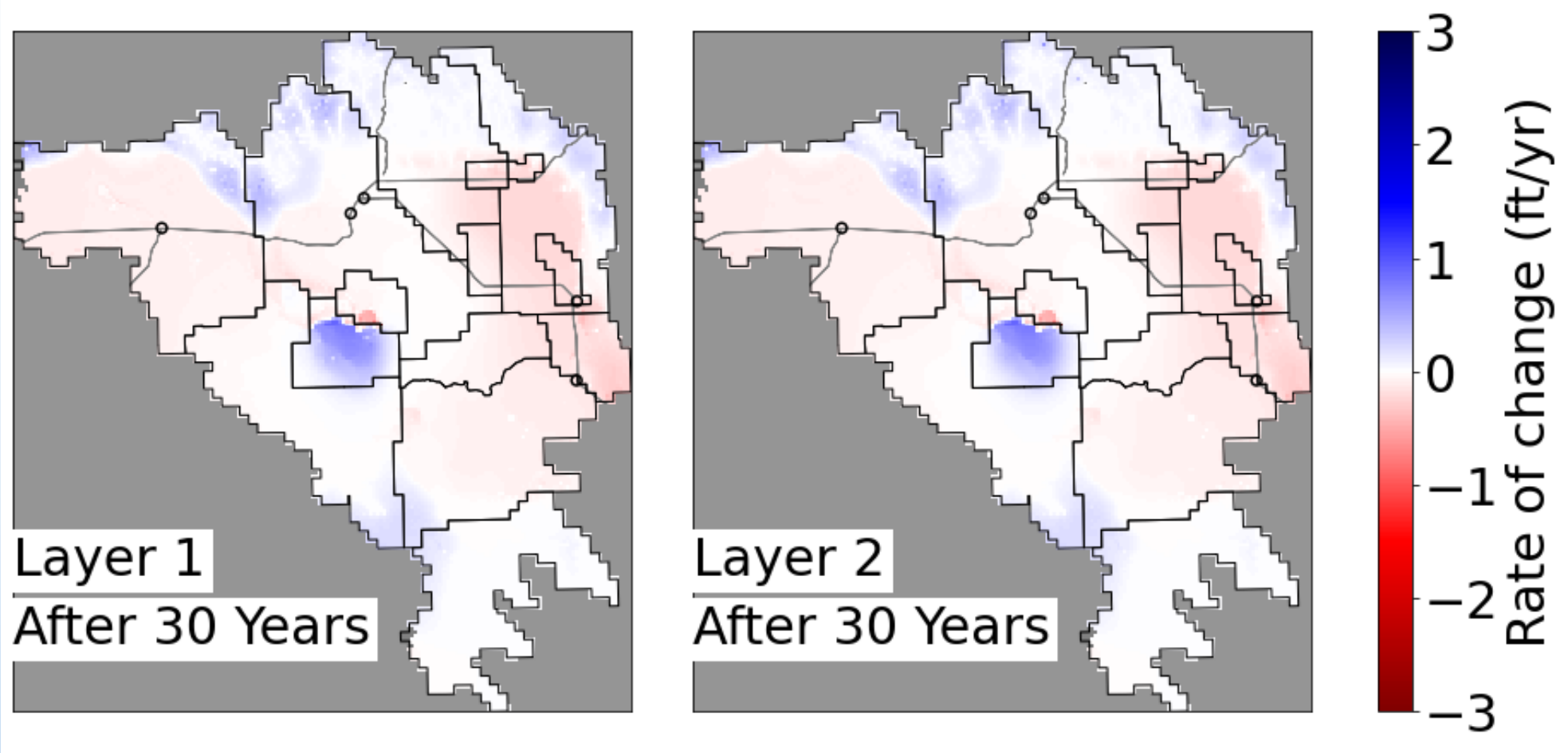
Scenario A – Layer 1 and 2 rate of change



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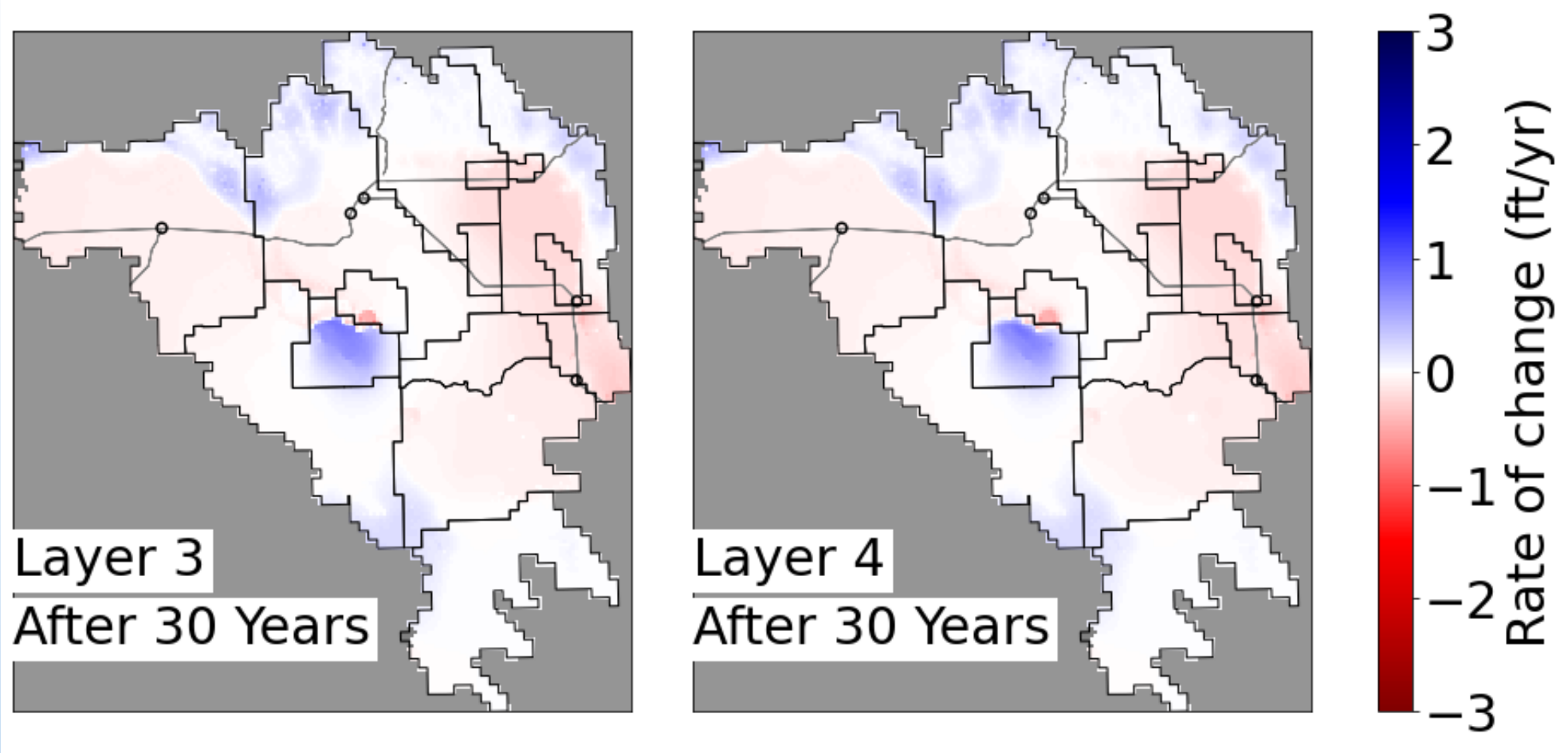
Scenario A – Layer 3 and 4 rate of change



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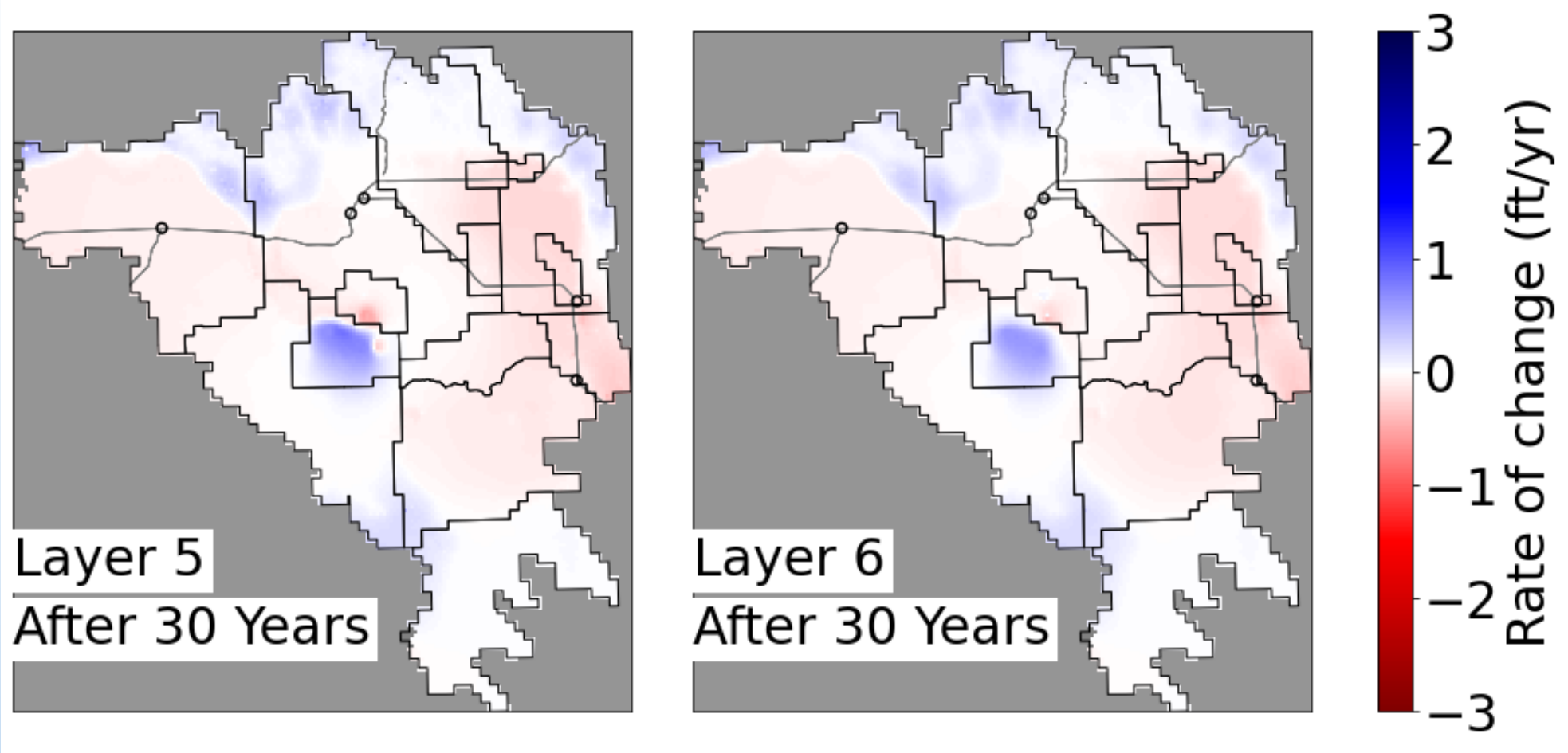
Scenario A – Layer 5 and 6 rate of change



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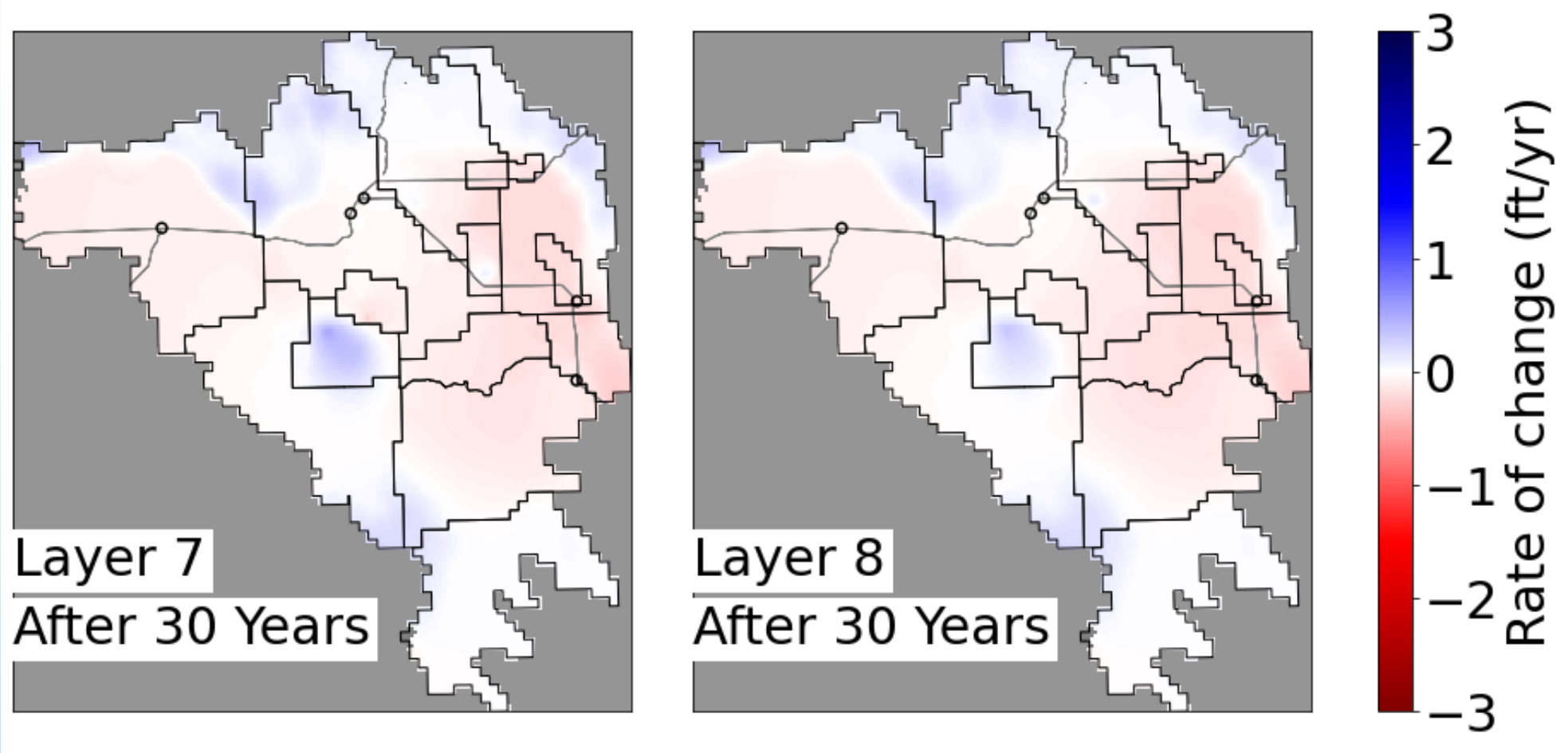
Scenario A – Layer 7 and 8 rate of change



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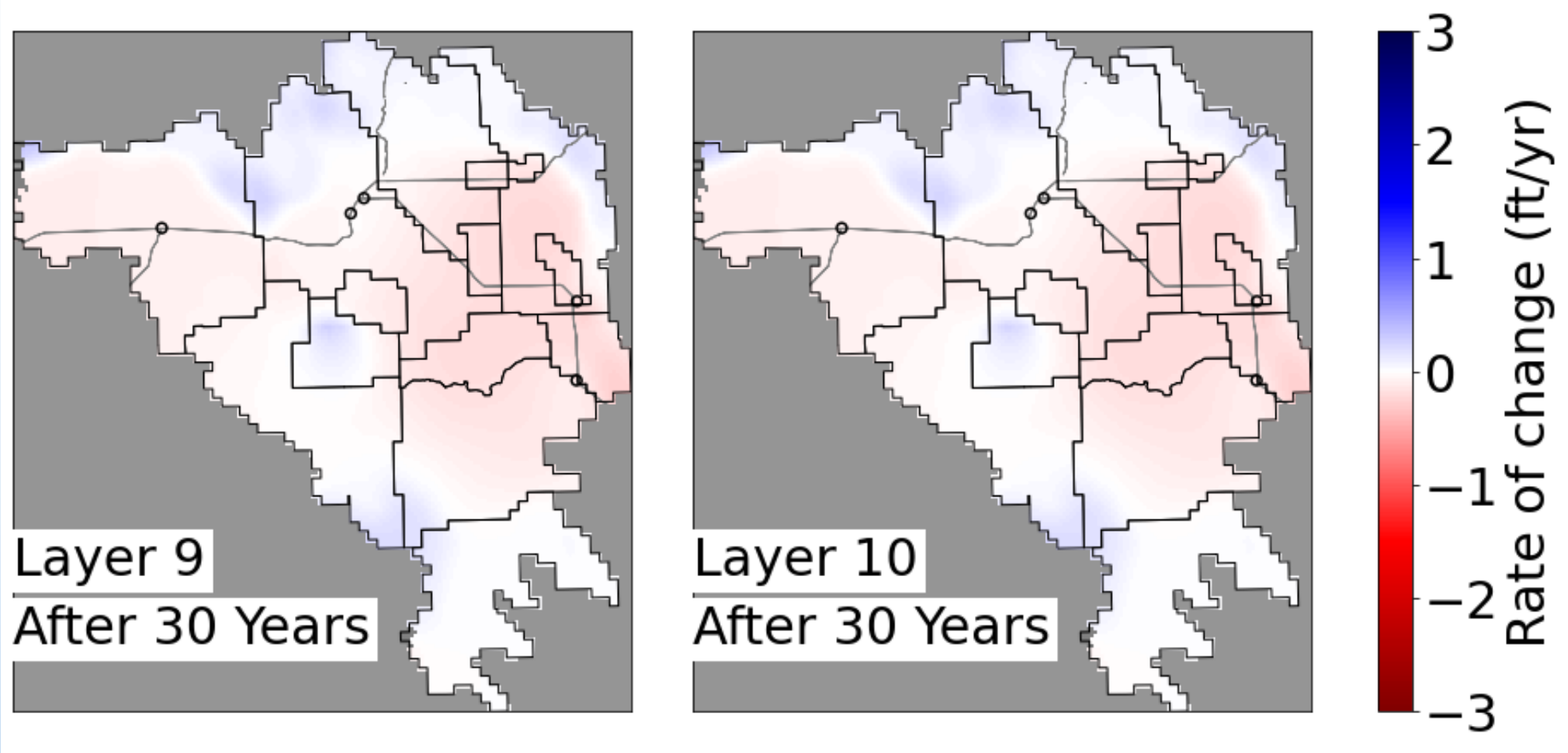
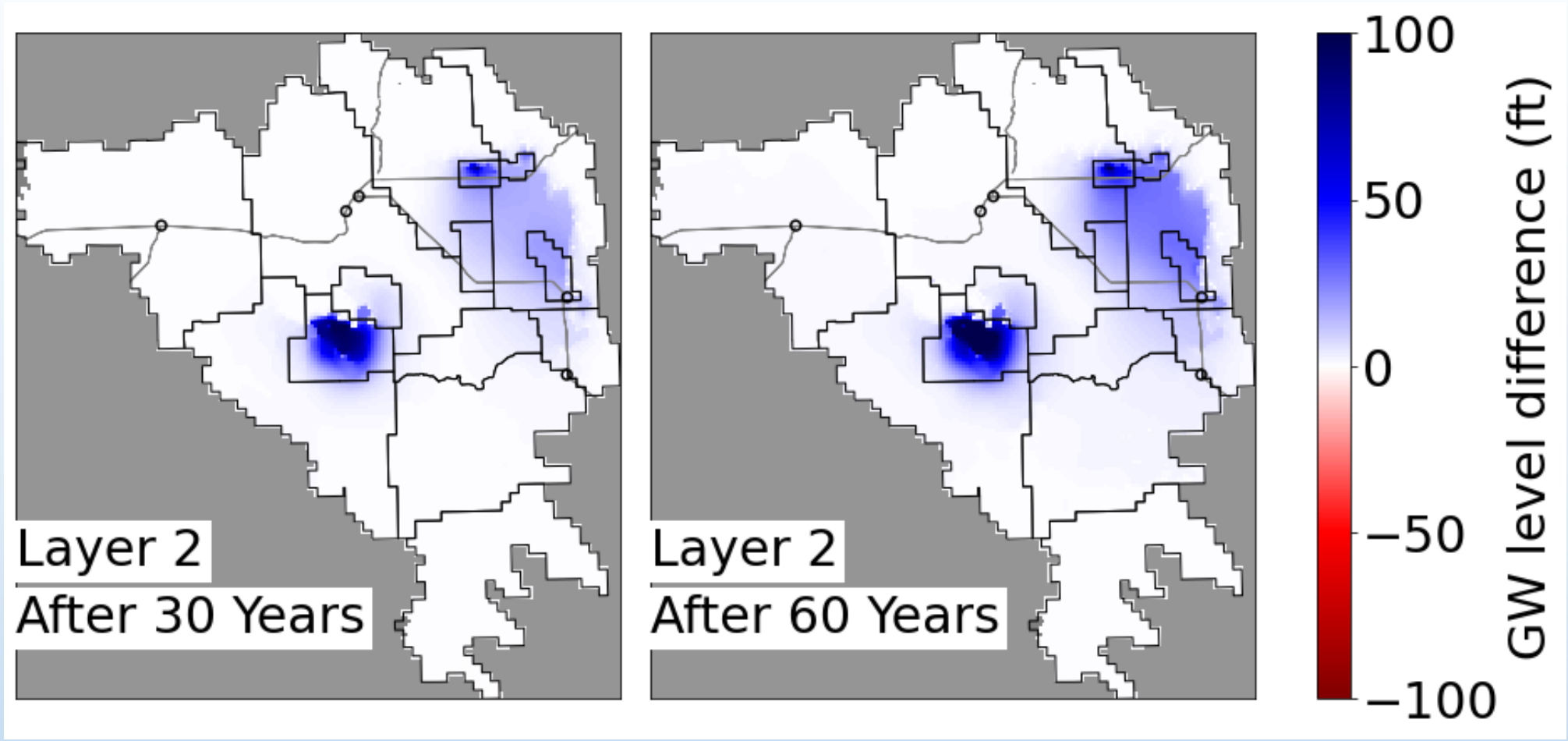
Scenario A – Layer 9 and 10 rate of change



Scenario A – Water levels compared to USGS full pump scenario



Results – Scenario B

Where	6 Subareas
How much	• 22% basin-wide reduction from 2018 pumpage • Focused in 3 subareas • Allocated by priority date
When	Phased reductions over 30 years starting in 2030

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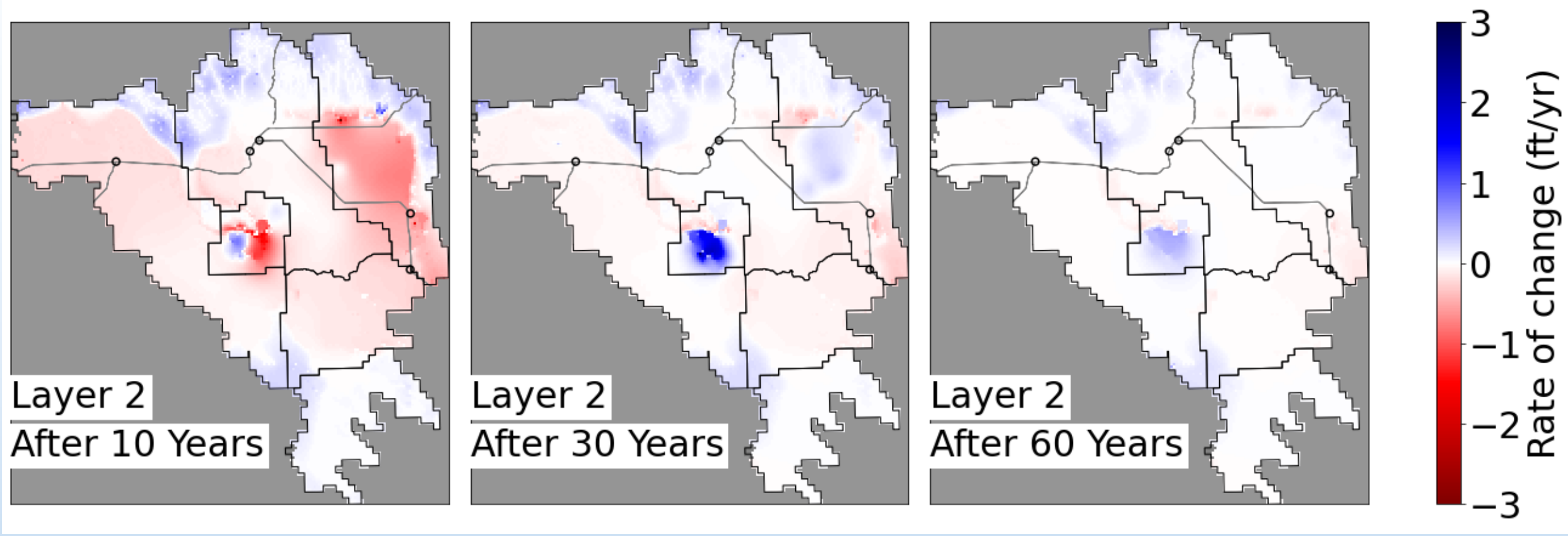
Scenario B – Layer 2 rate of change



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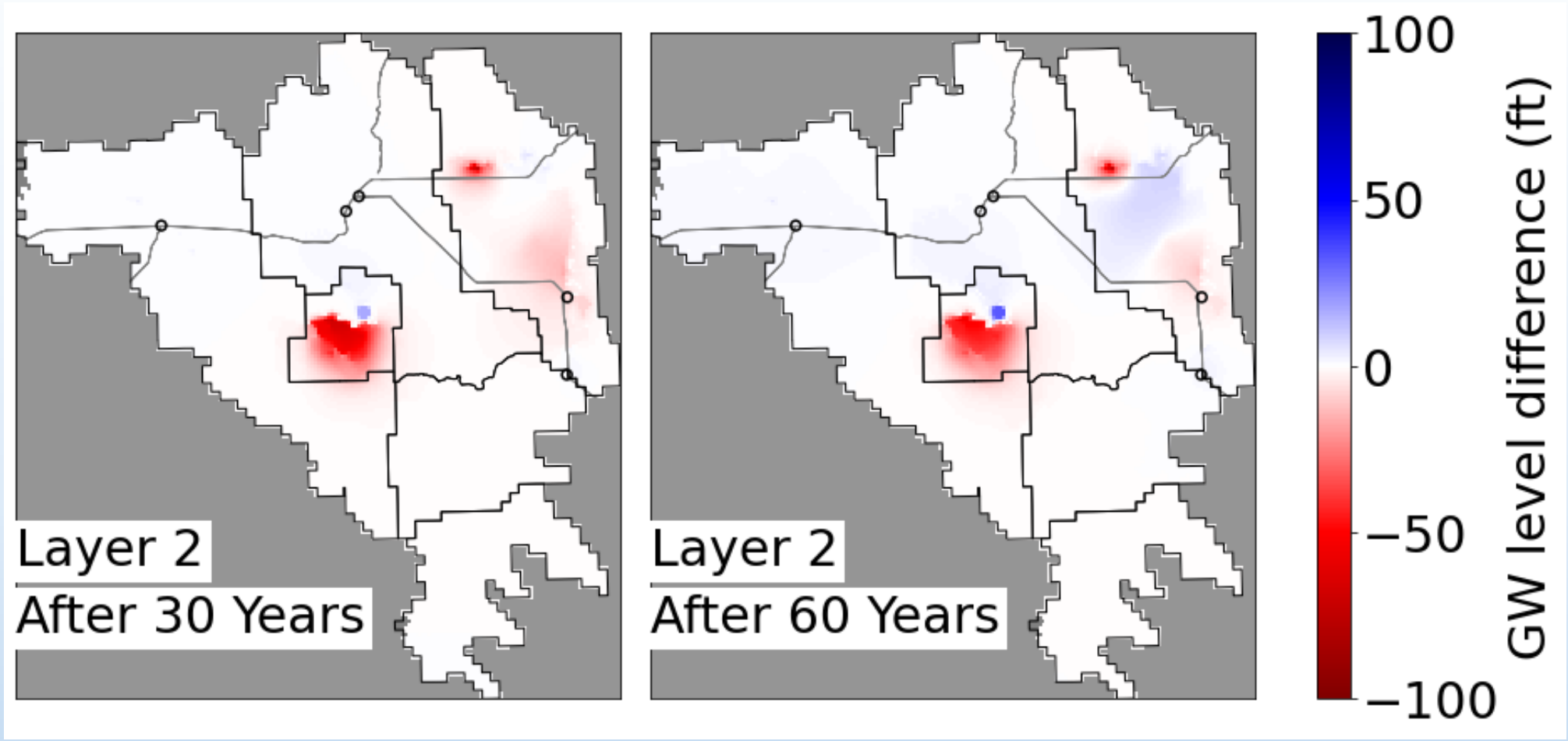
Compare B against A – water levels



Results – Scenario C

Where	6 Subareas
How much	• 37% basin-wide reduction from 2018 pumpage • Reductions spread across all but one subarea • Allocated by priority date
When	Phased reductions over 30 years starting in 2030

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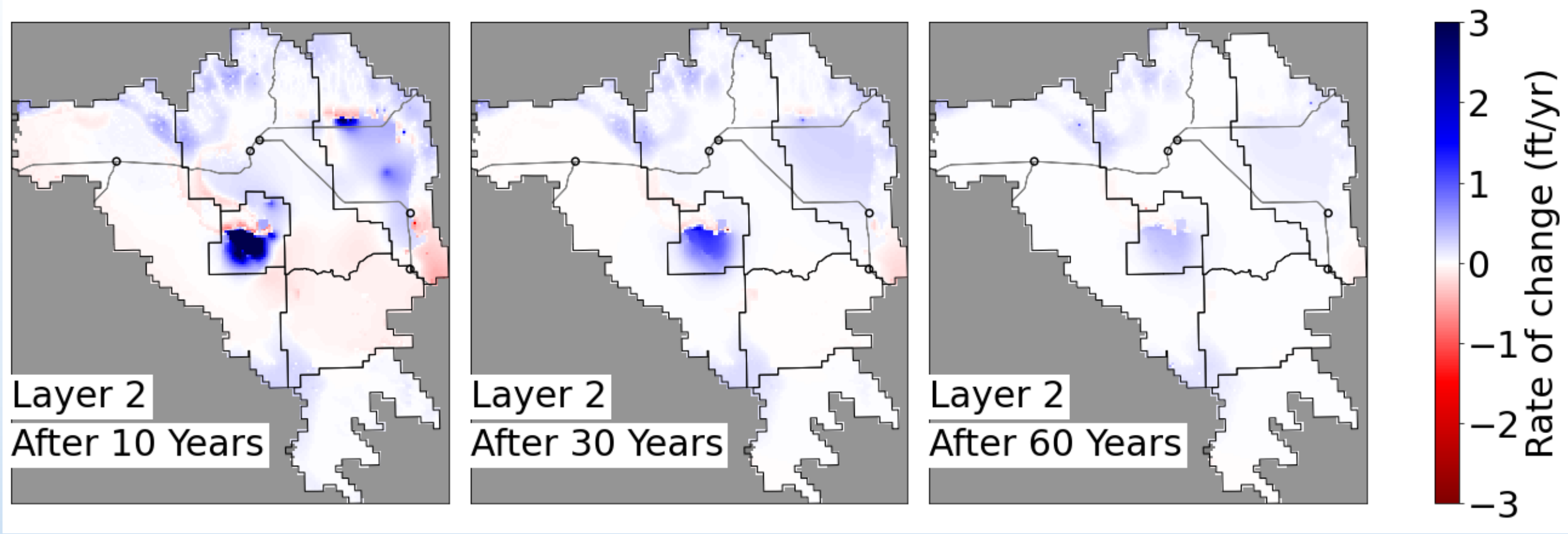
Scenario C – Layer 2 rate of change



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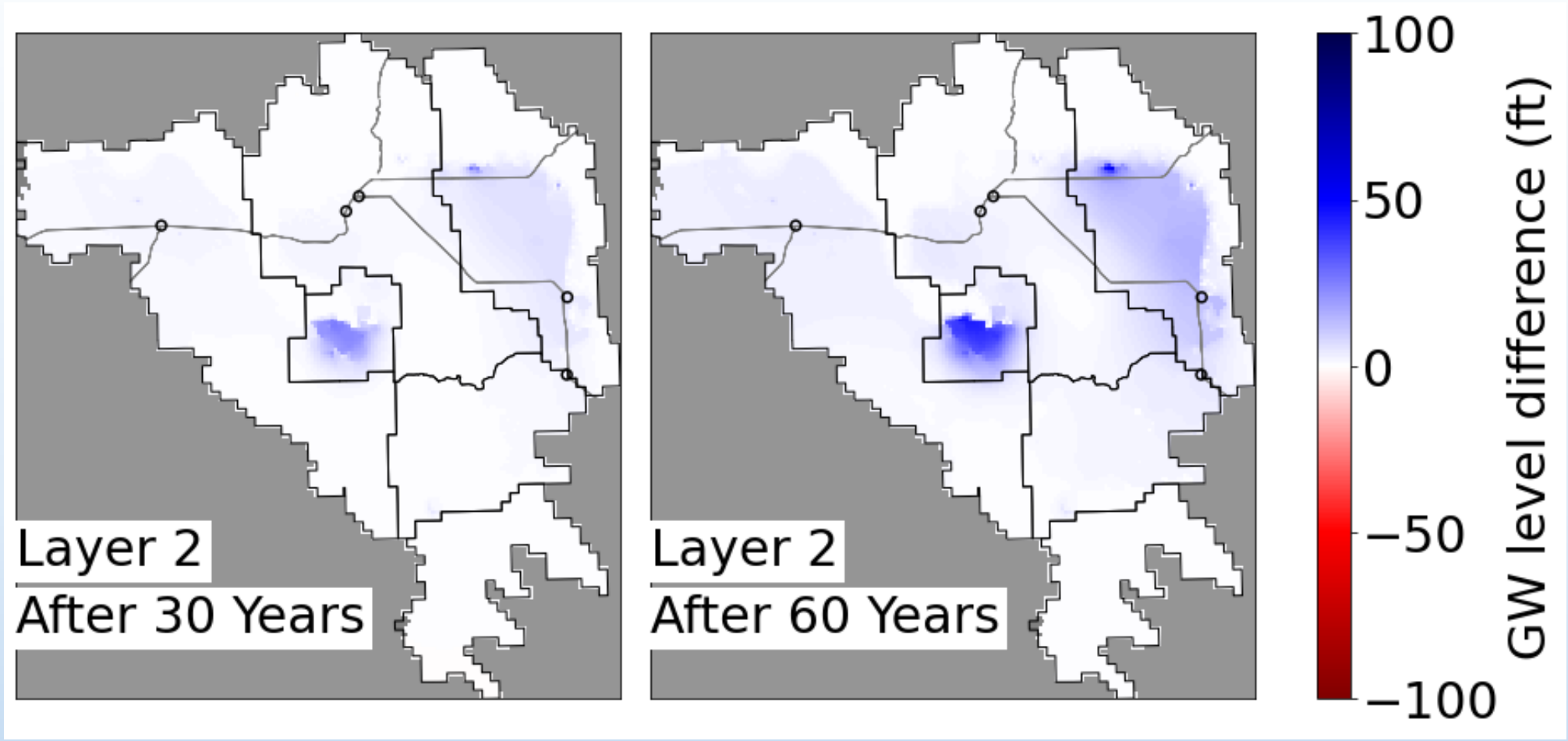
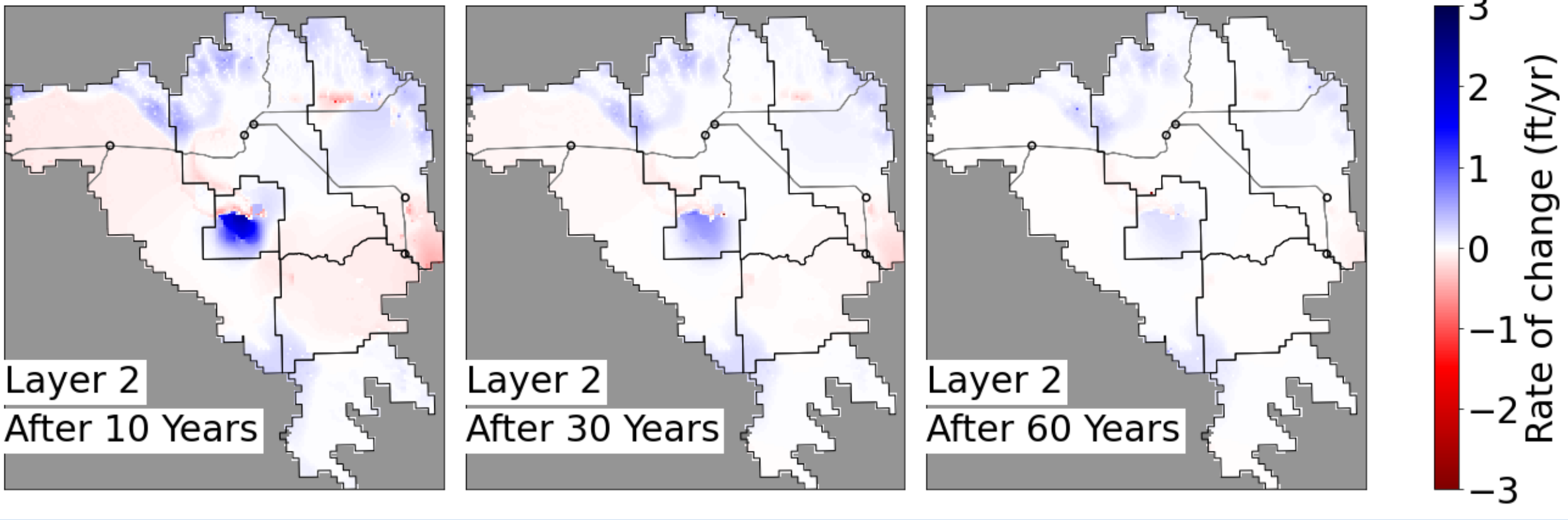
Comparison of C vs. B



Results – Scenario D

Where	6 Subareas
How much	• 31% basin-wide reduction from 2018 pumpage • Reductions spread across all but one subarea • Allocated by priority date
When	Reductions fully implemented in 2030

Scenario D – Layer 2 rate of change



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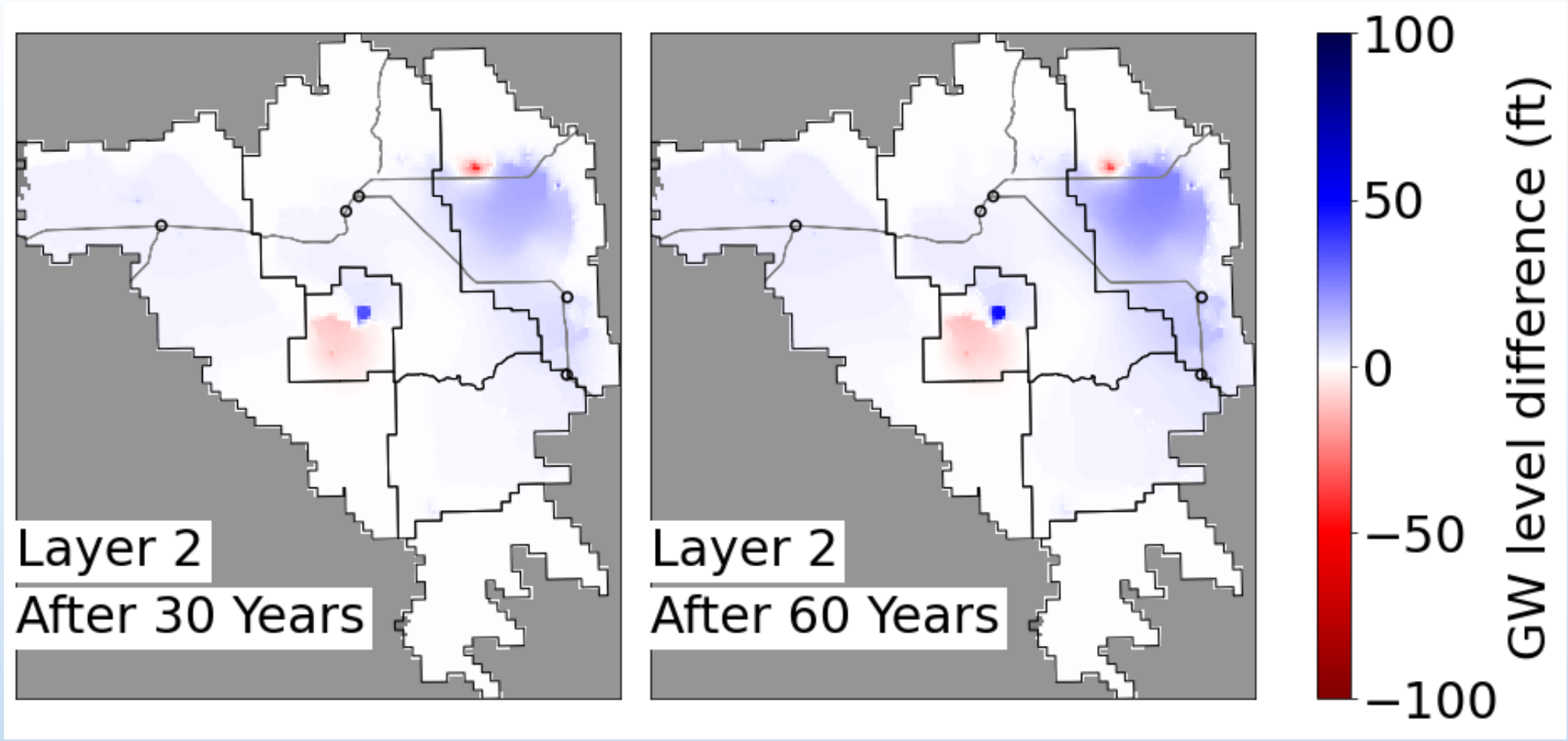
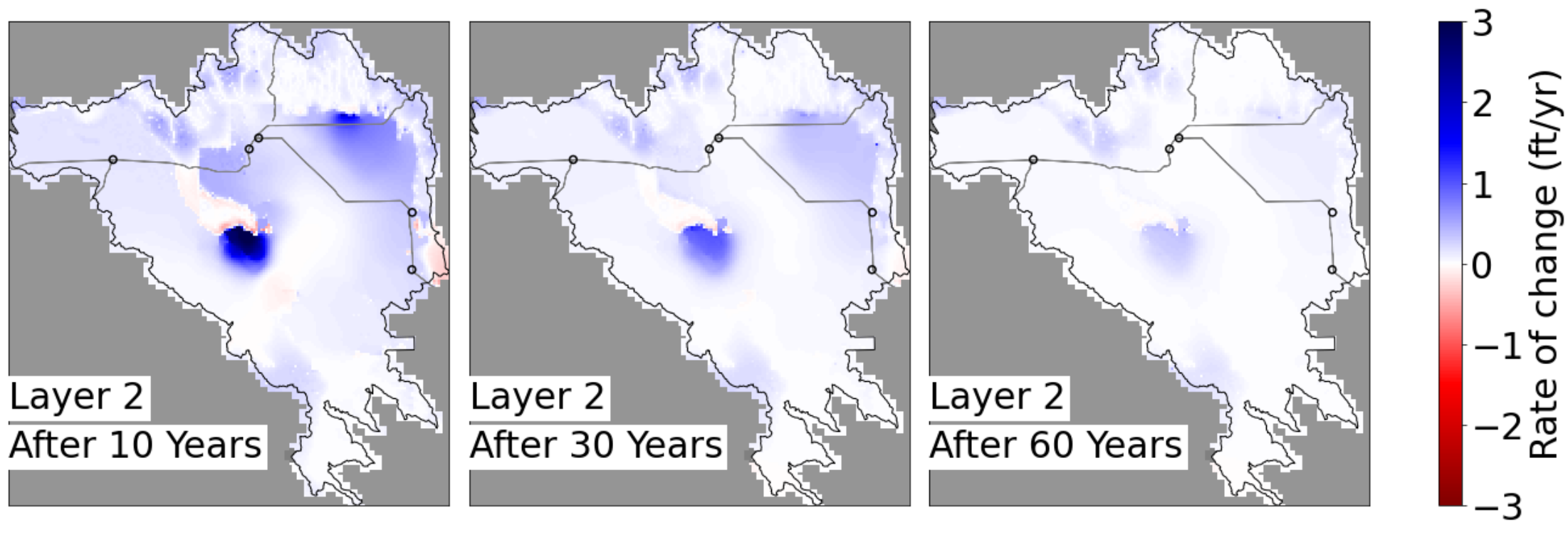
Comparison of D vs. A



Results – Scenario E

Where	1 management area
How much	• 59% basin-wide reduction from 2018 pumpage; • Reductions spread across entire basin • Allocated by priority date
When	Reductions fully implemented in 2030

Scenario E – Layer 2 rate of change



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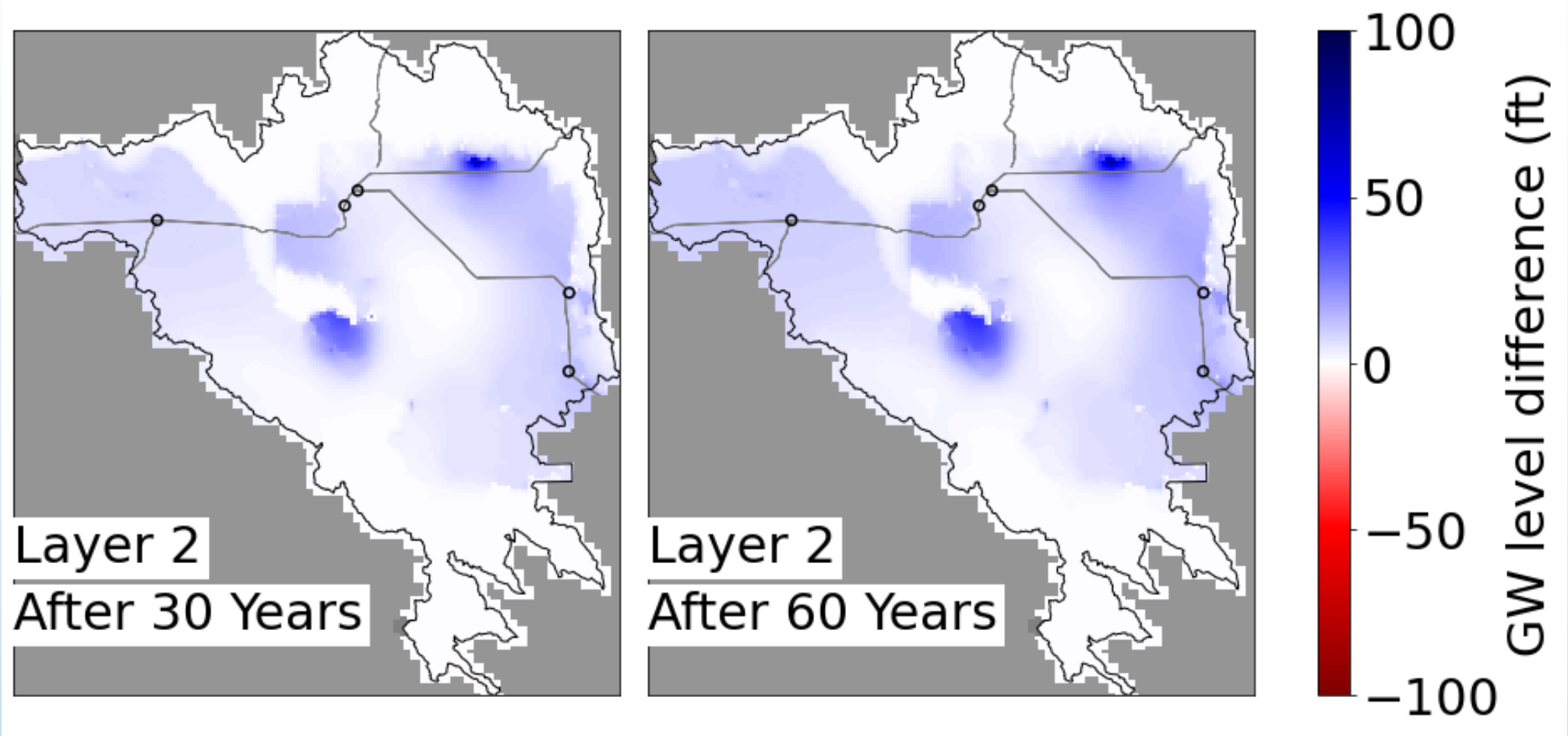
Compare E vs. D



Model Results
Comparison of Scenarios

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Results – Scenario Comparisons

- Impacts of different scenarios on:
  - Groundwater level trends
  - Natural groundwater discharge
  - Groundwater storage
- Impacts of specific management elements:
  - Statistical thresholds (median rate vs 80th percentile)
  - Allocation method (priority or equal distribution)
  - Reduction timeline (phased-in vs immediate)

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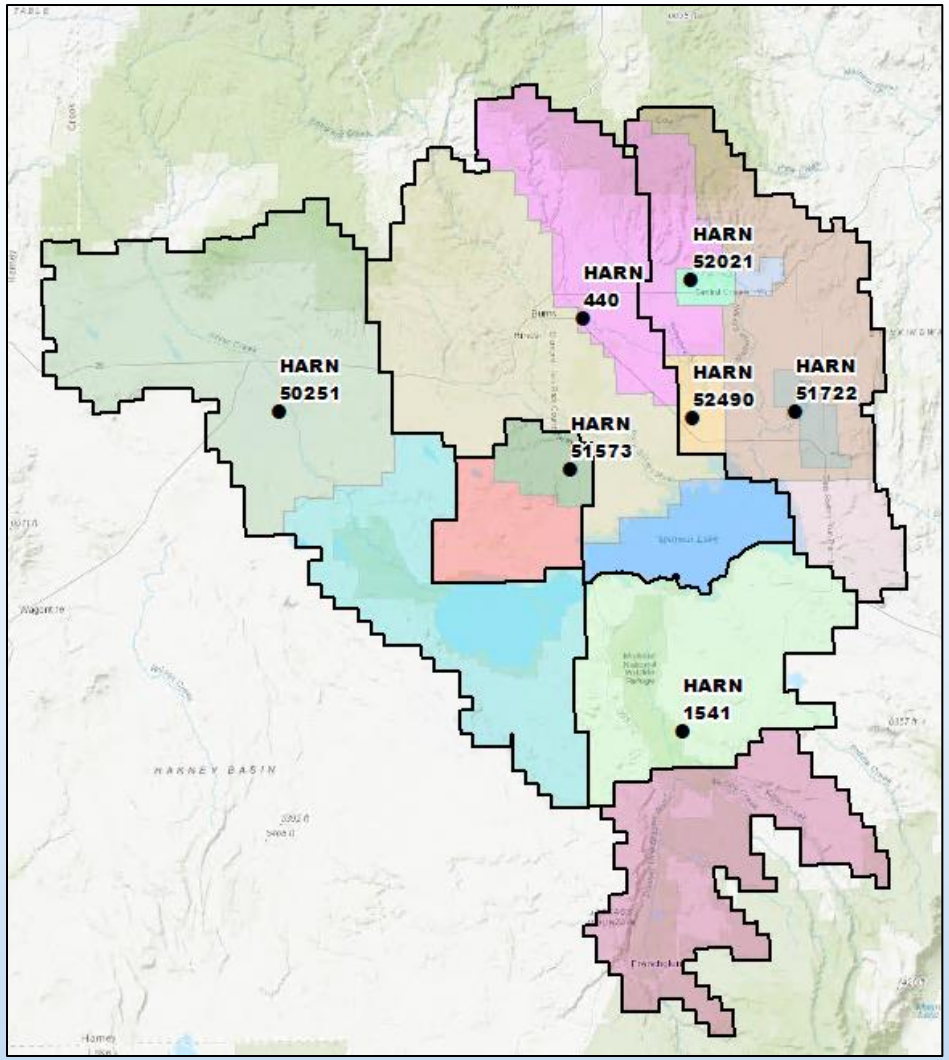
Compare Scenarios: hydrographs



- Example hydrographs chosen to:
  - Demonstrate a range of responses to different scenarios and management elements
  - Provide time series data for comparing scenarios

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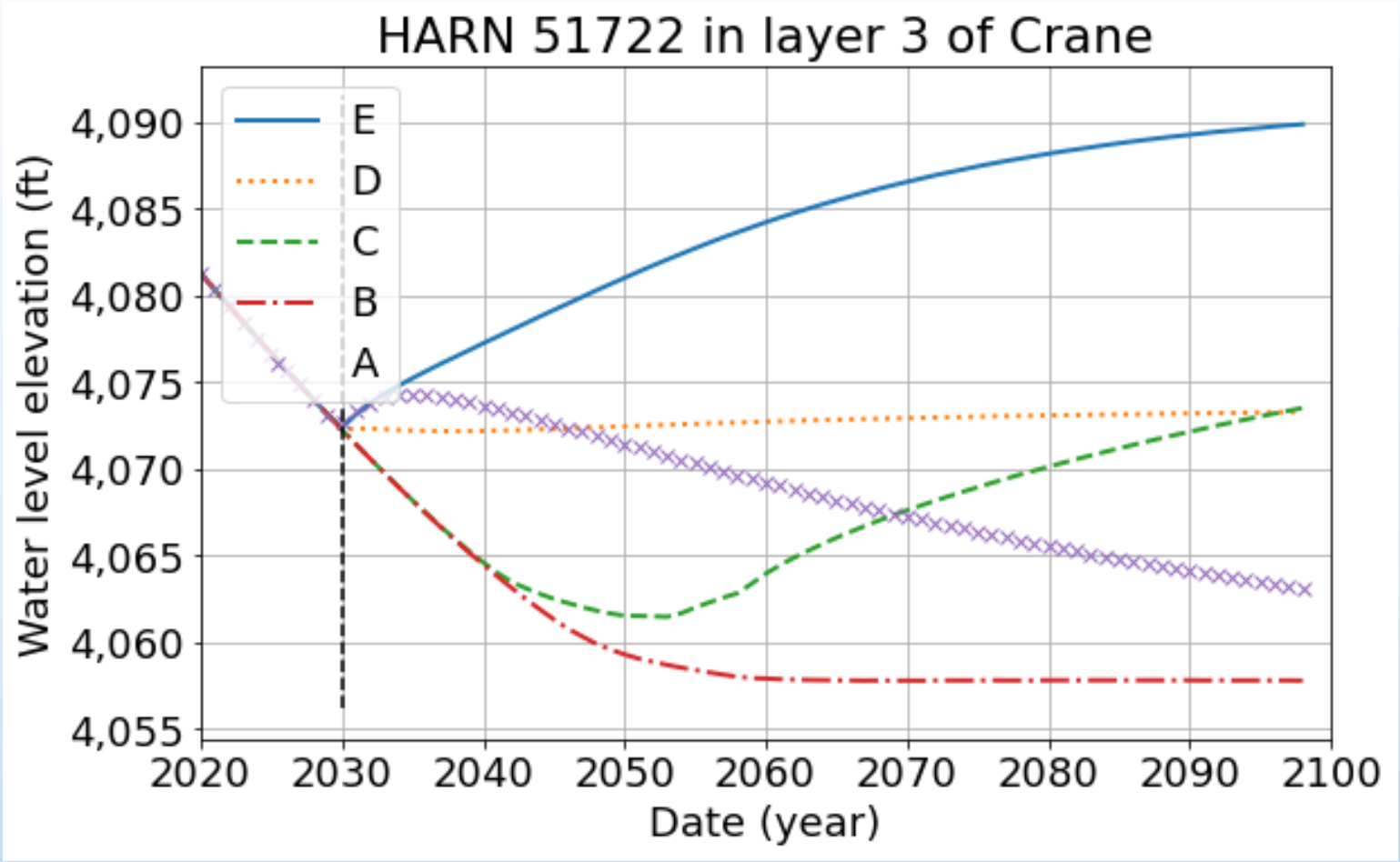
Compare Scenarios: hydrographs



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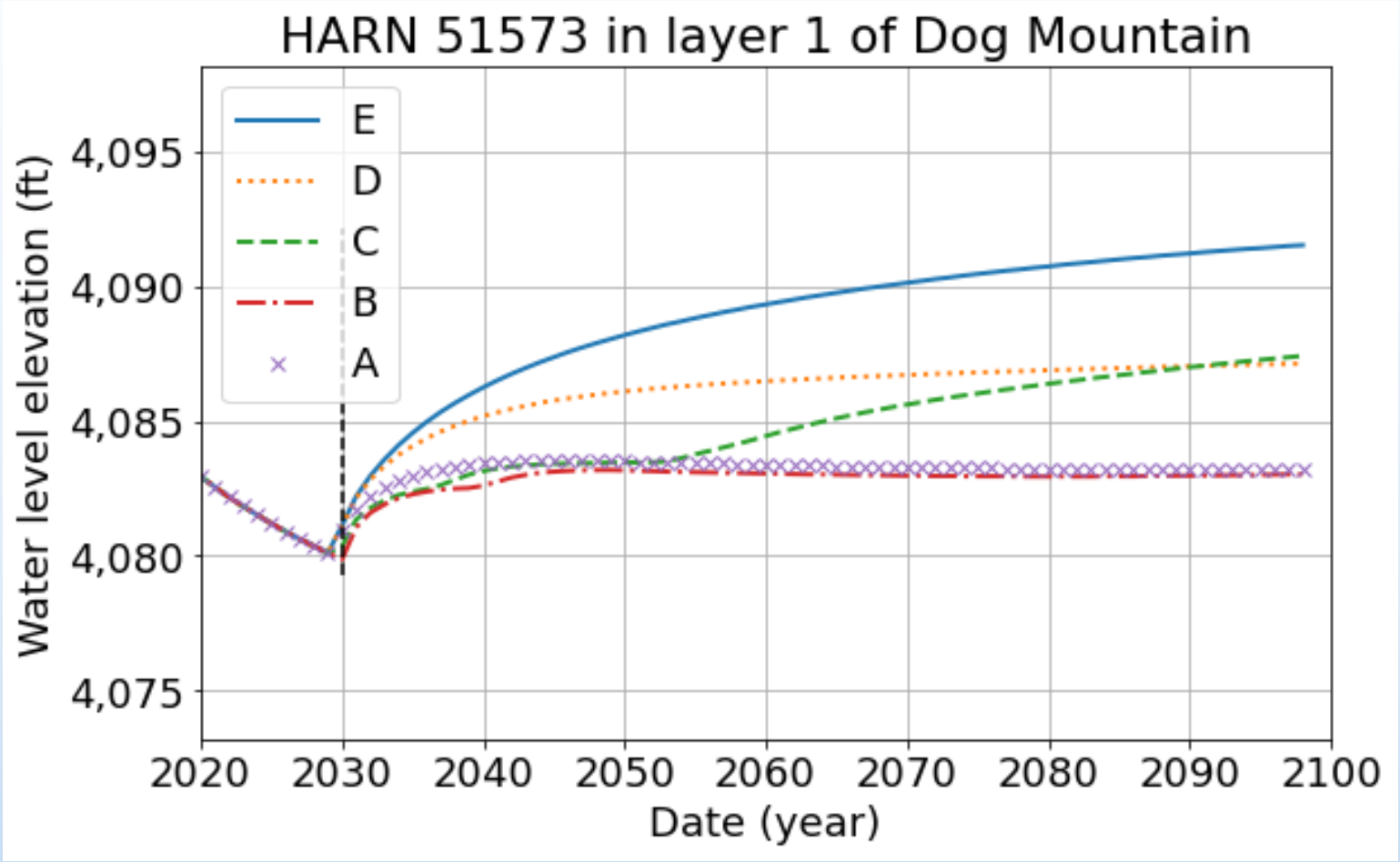
Compare Scenarios: hydrographs



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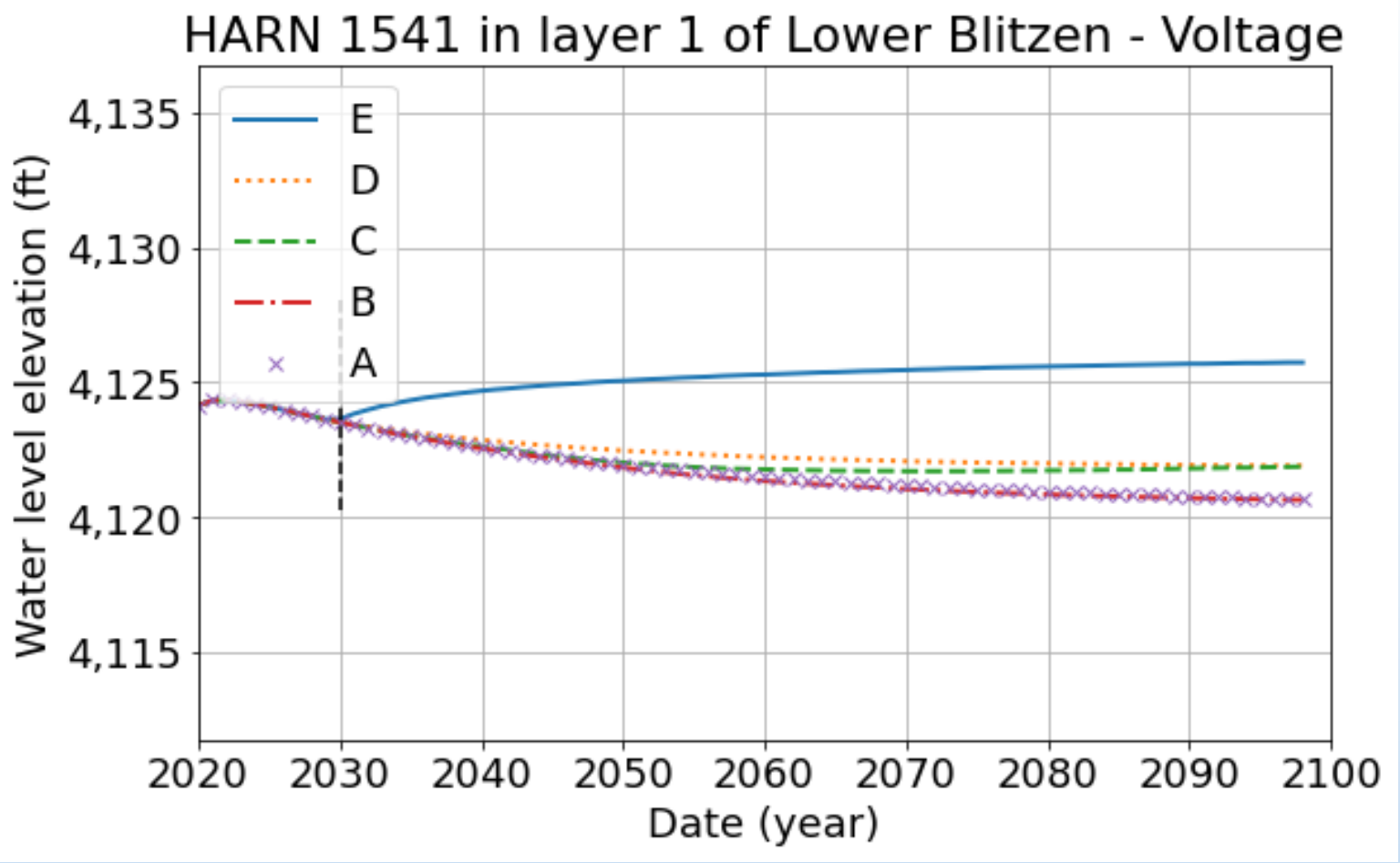
Compare Scenarios: hydrographs



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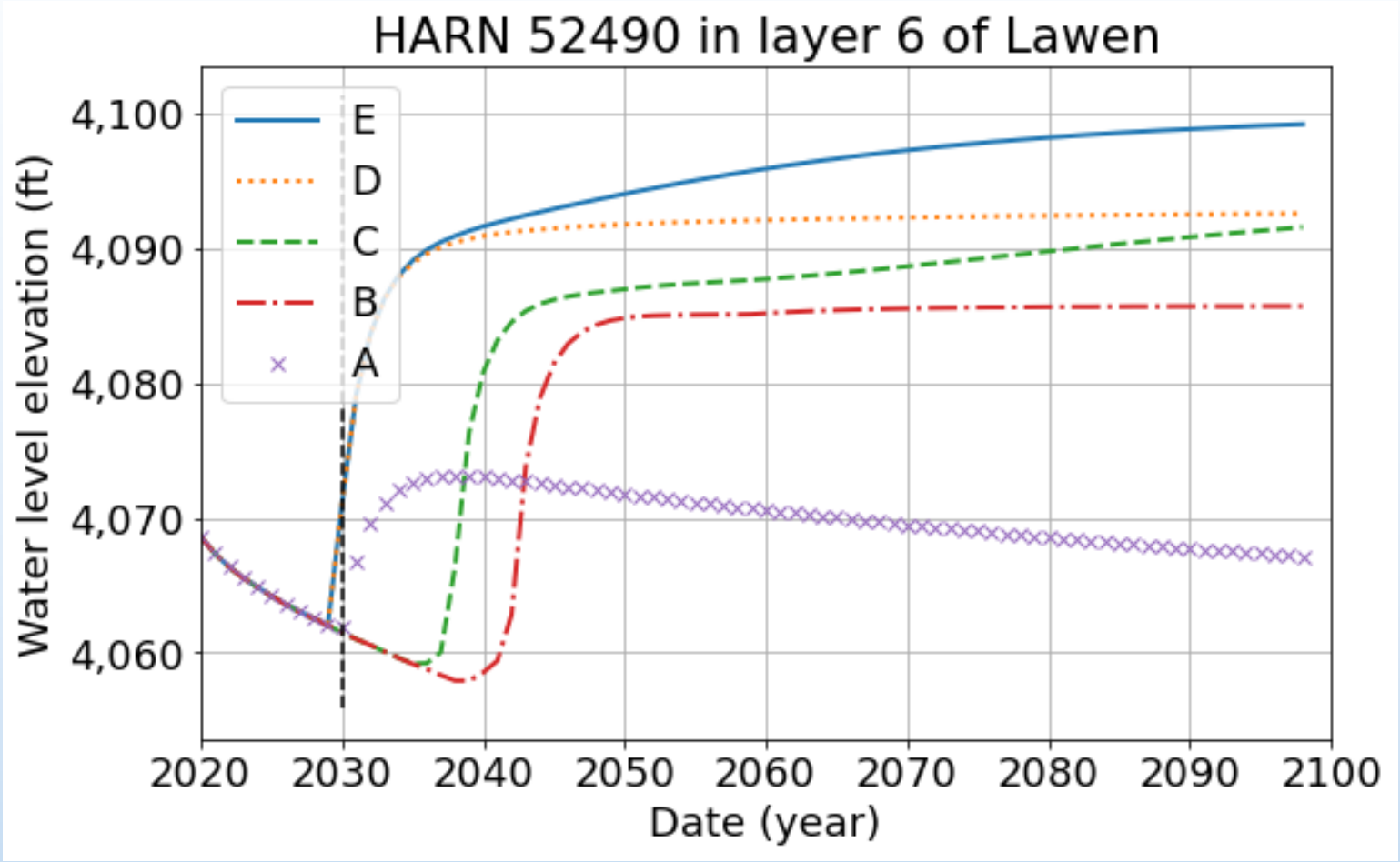
Compare Scenarios: hydrographs



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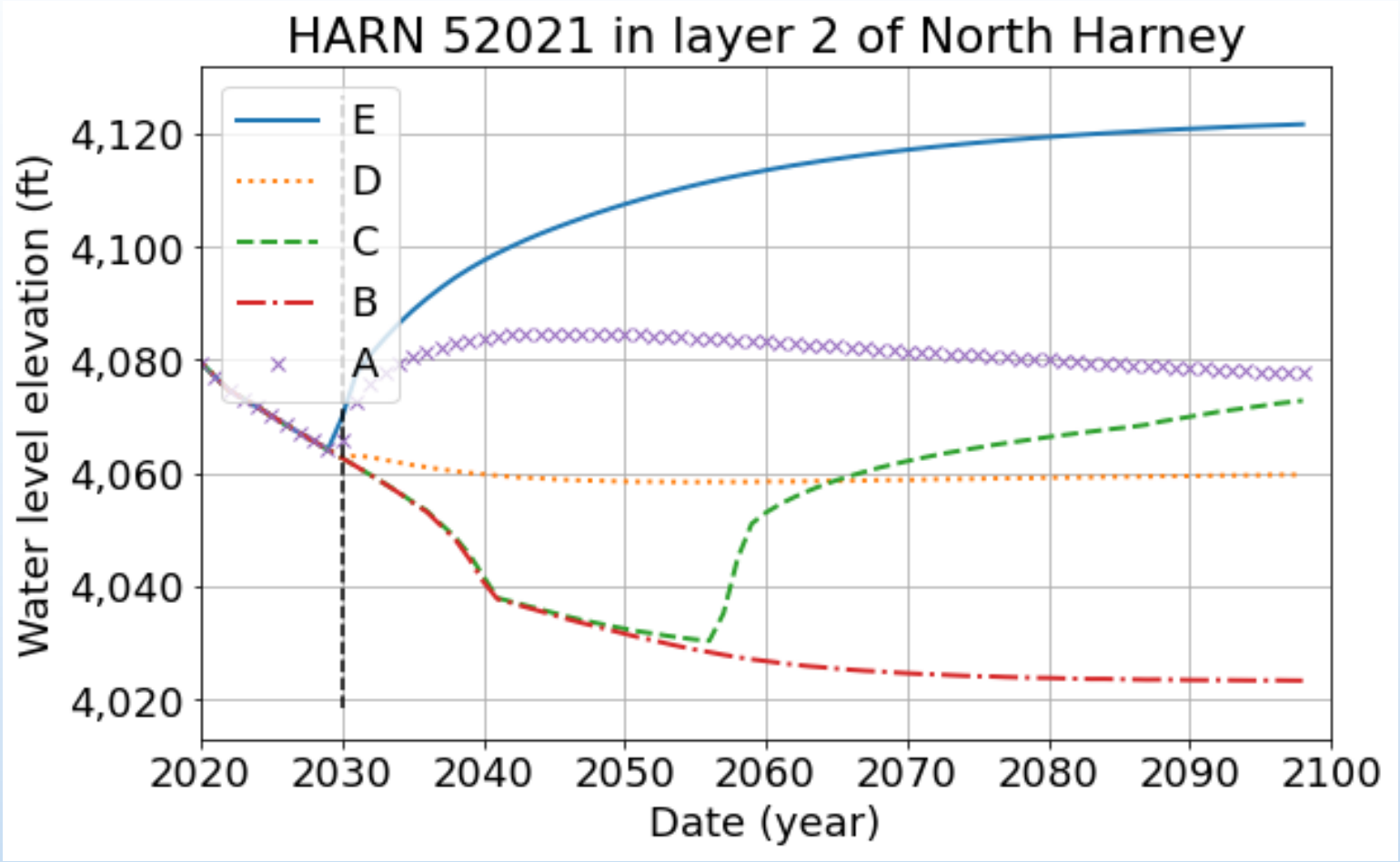
Compare Scenarios: hydrographs



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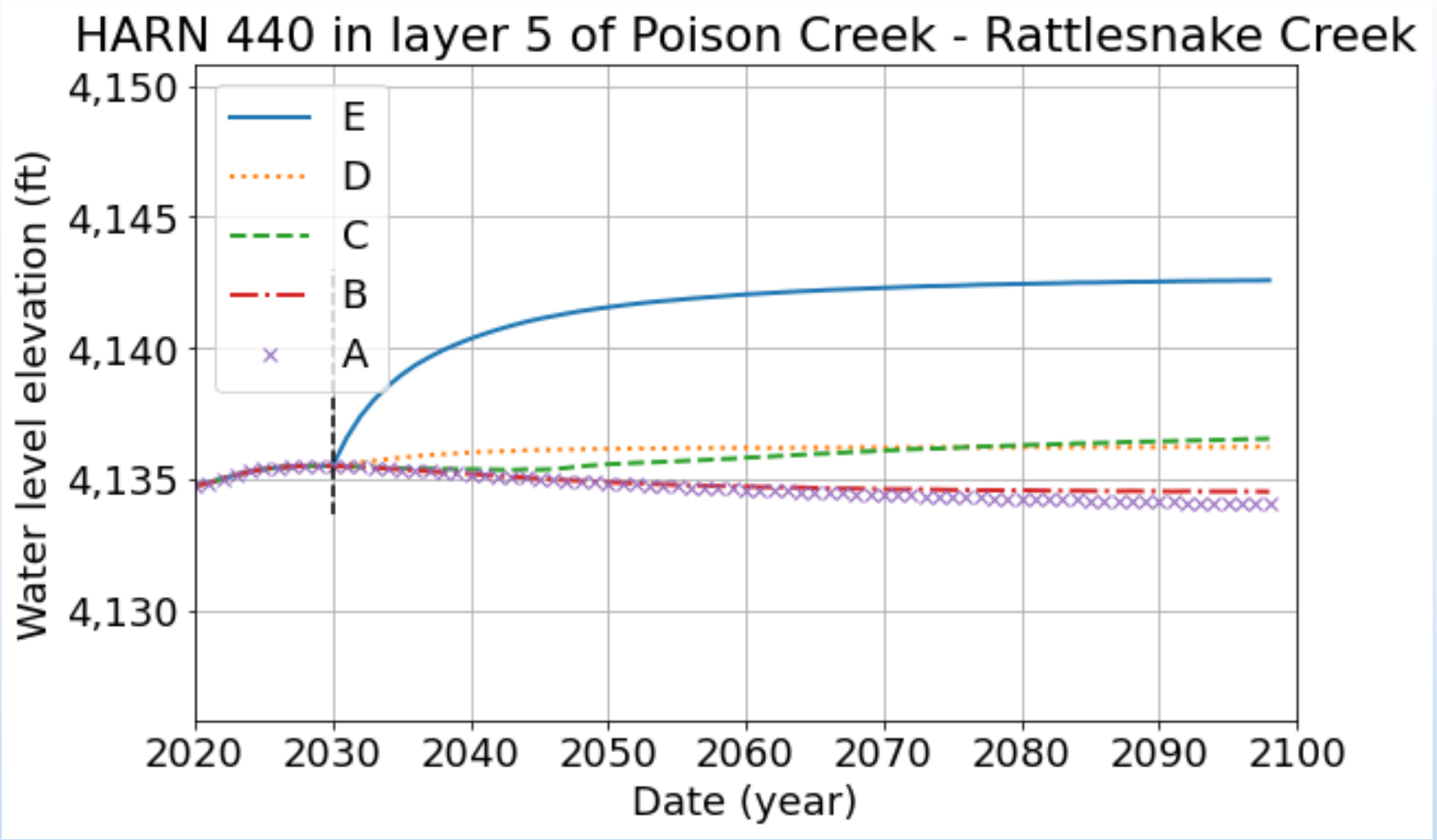
Compare Scenarios: hydrographs



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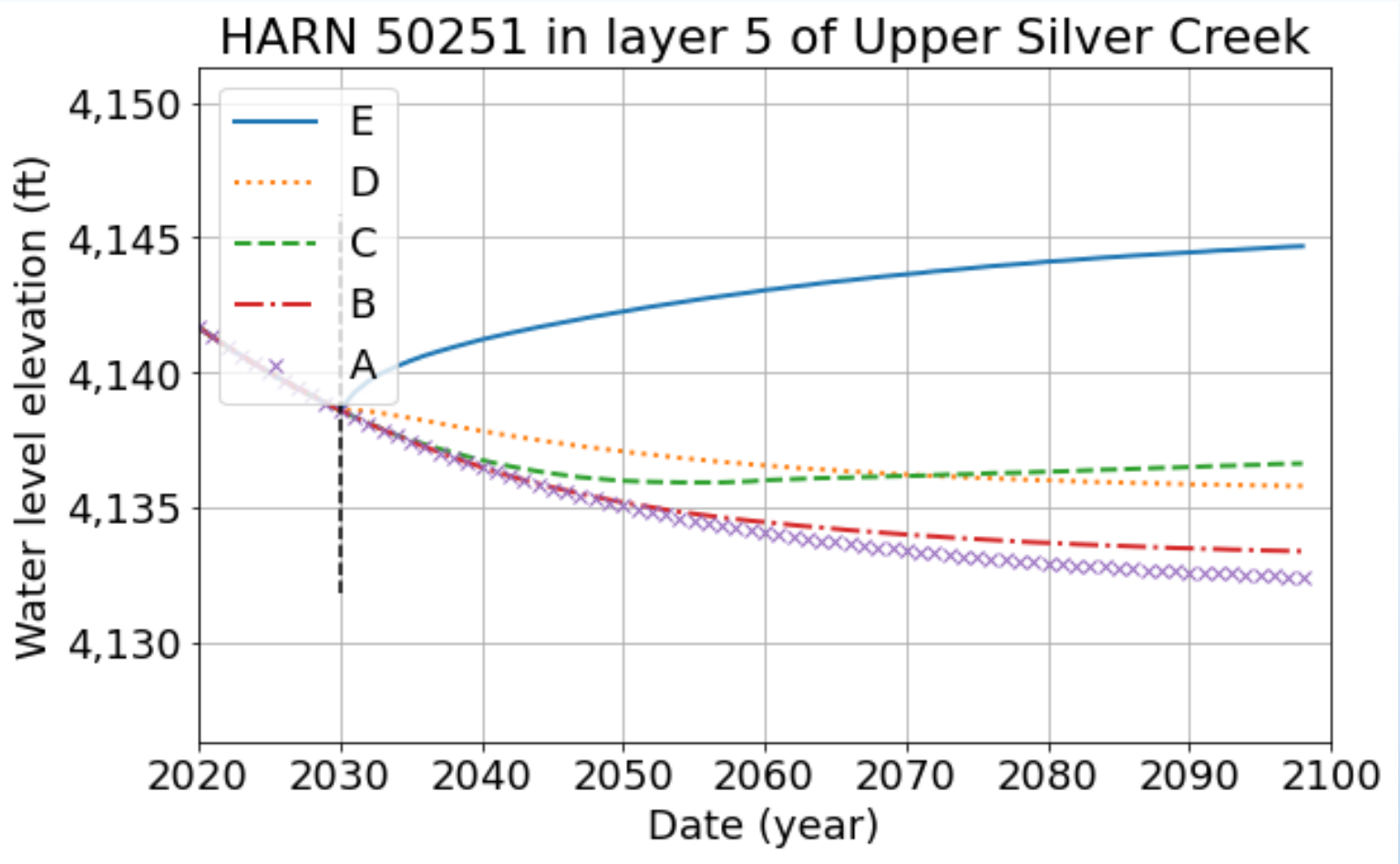
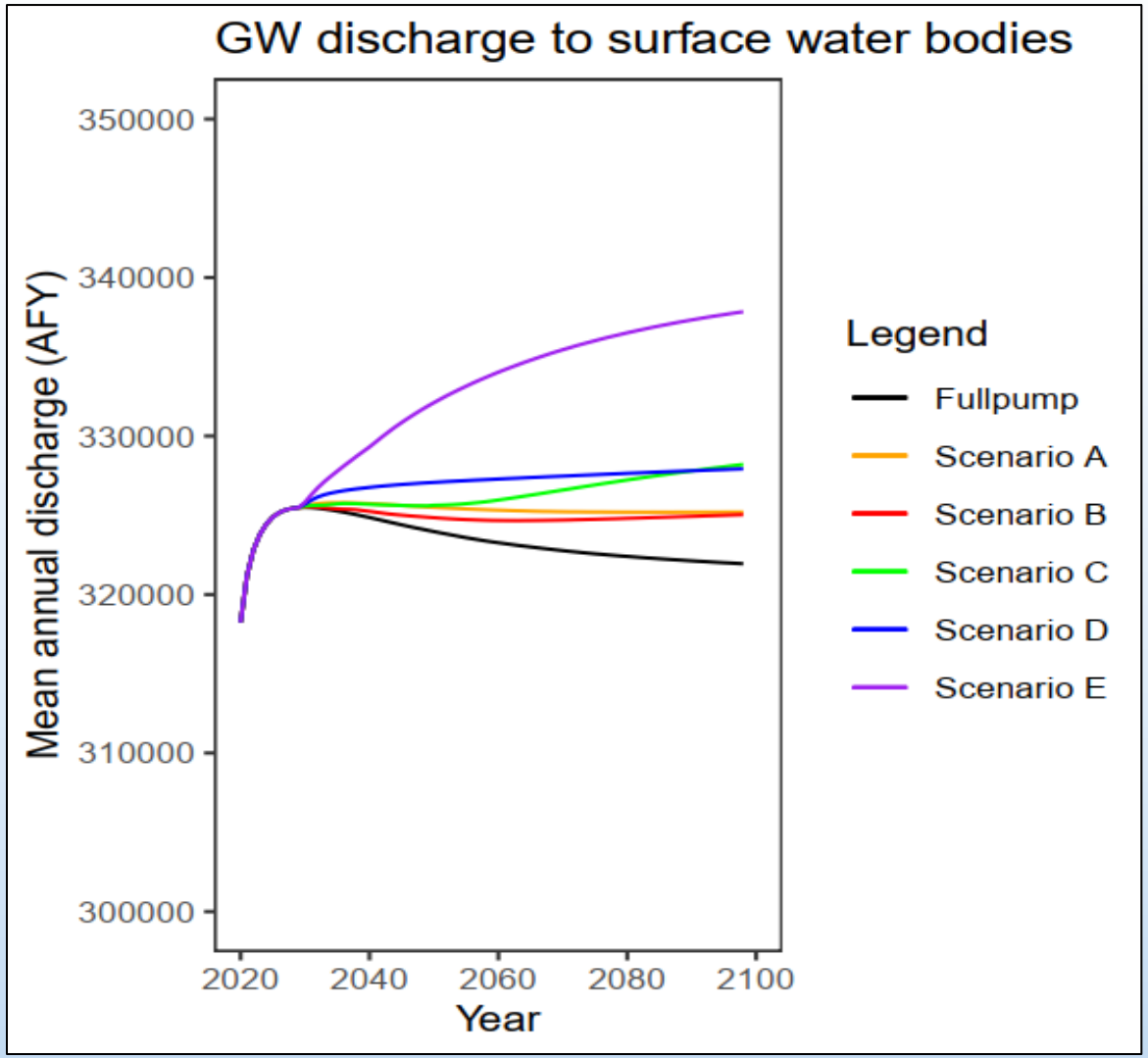
Compare Scenarios: hydrographs



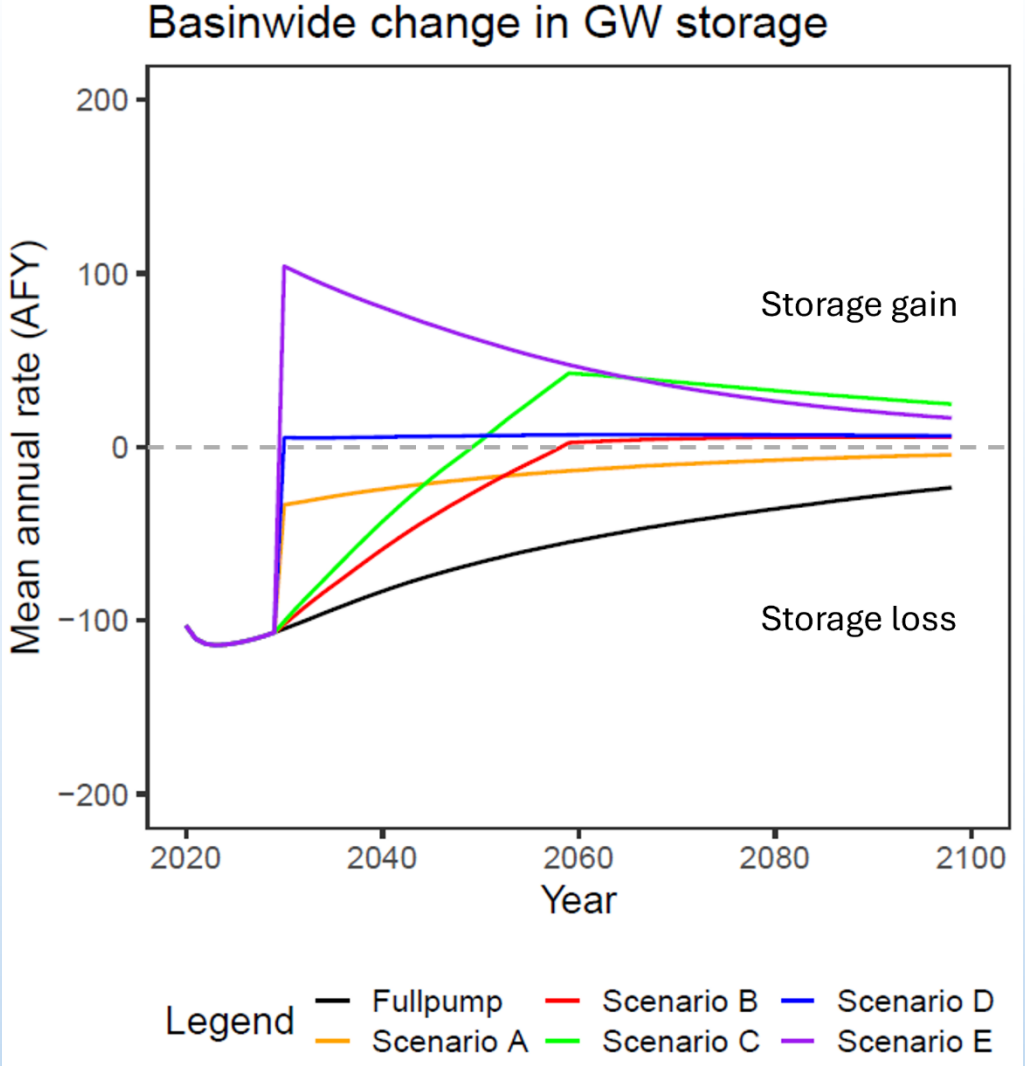
Water Budget – discharge to surface water

- Scenario A and B stabilize discharge to surface water
- Scenario C, D, and E increase discharge to surface water but at different time scales



Water Budget – change in groundwater storage

- Scenario A and B result in losses to storage with B resulting in no further losses after 30 years
- Scenario C results in a loss in storage during the phase in period followed by increases in storage after ~20 years.
- Scenario D results in immediate stabilization of storage and then little to no change over the duration of the model run
- Scenario E results in an increase in storage



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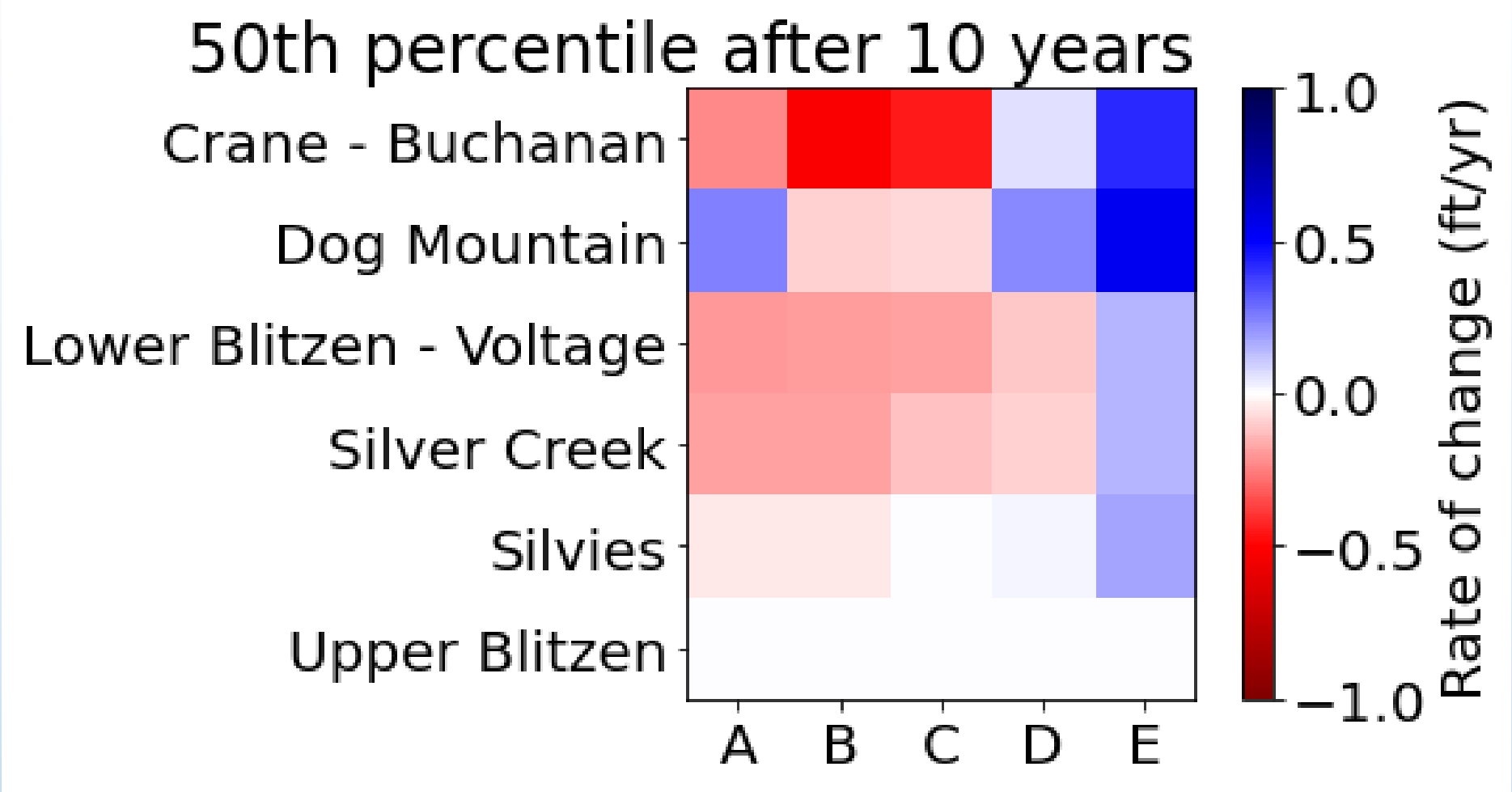
Comparing Rates Between Subareas



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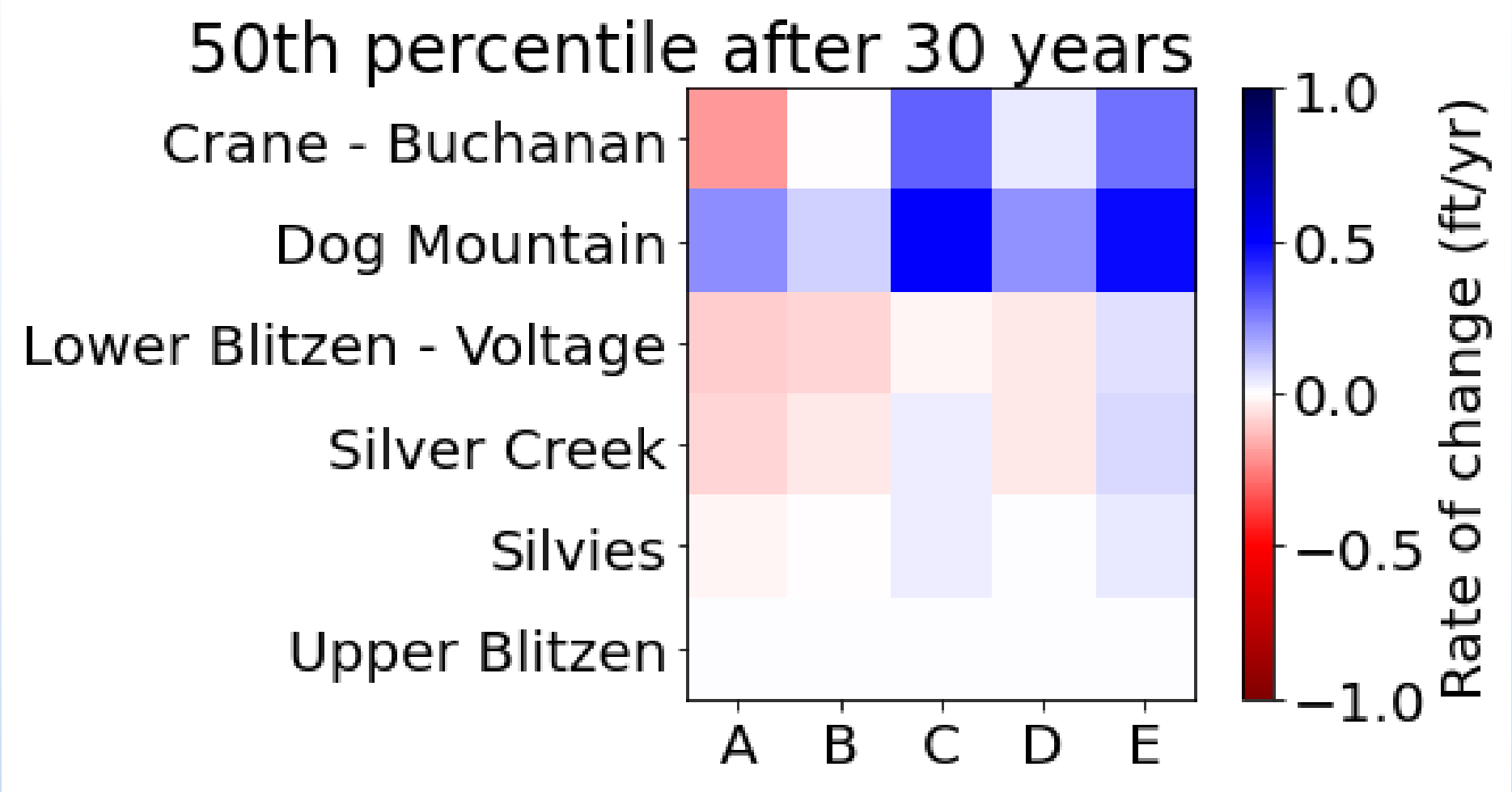
Comparing Rates Between Subareas



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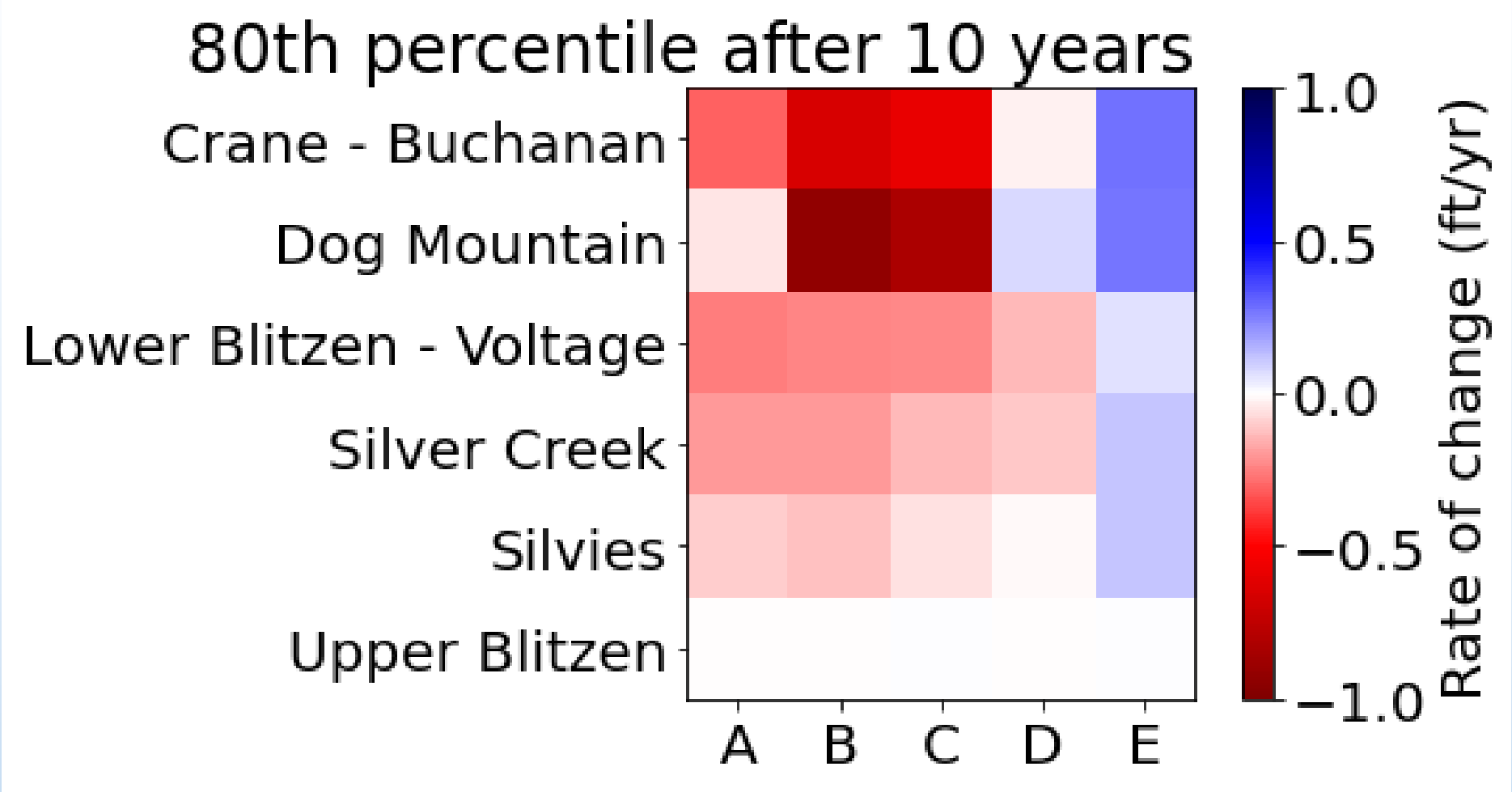
Comparing Rates Between Subareas



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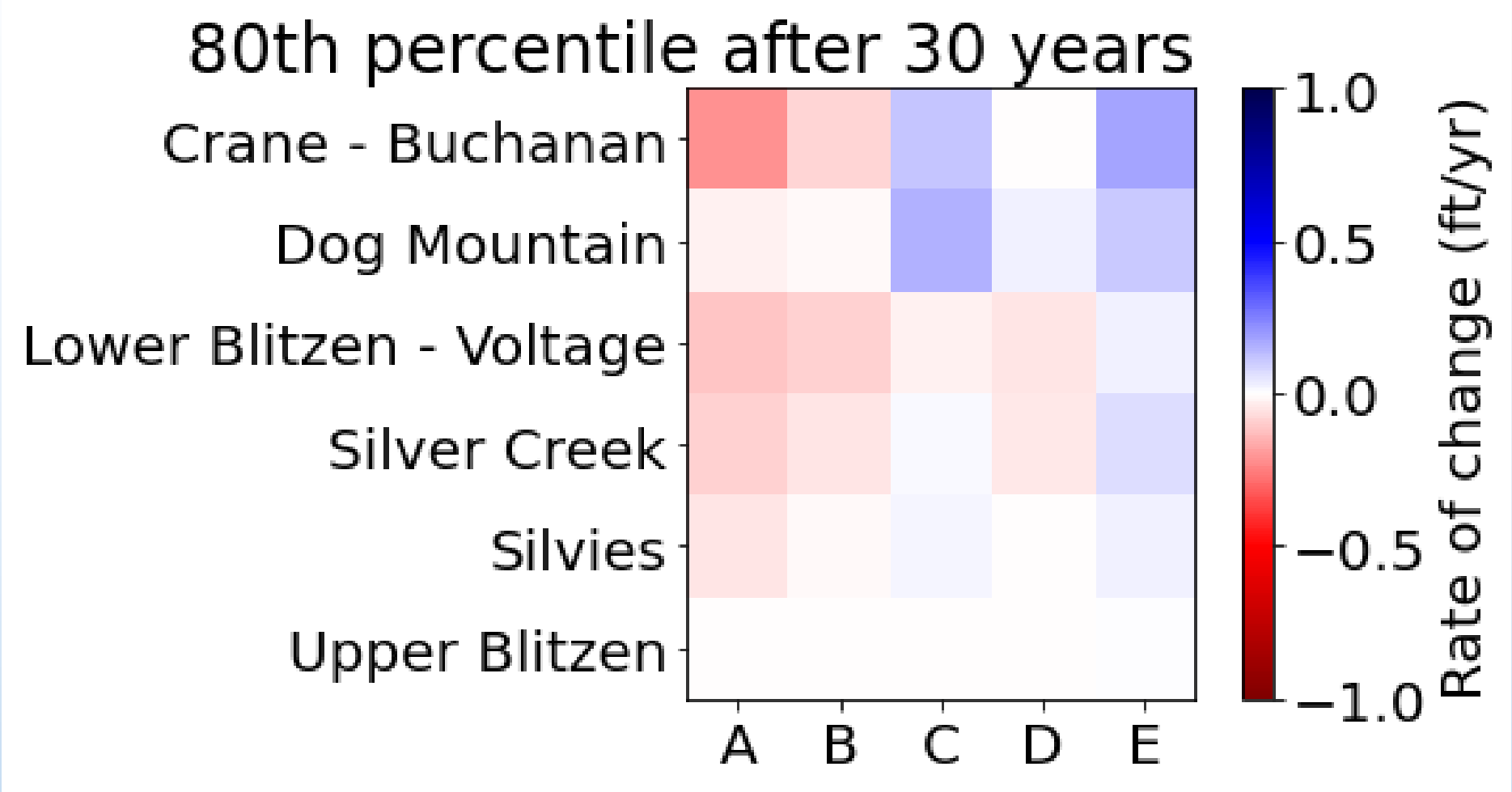
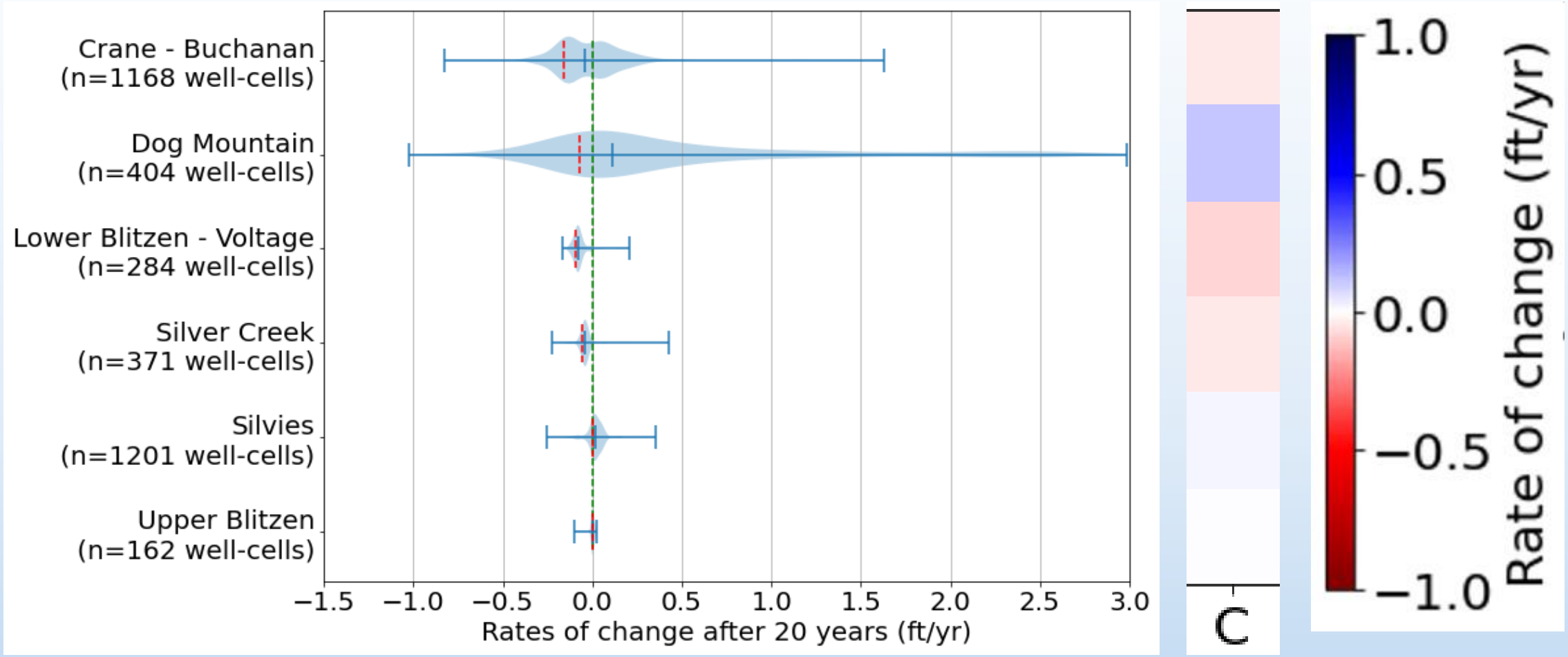
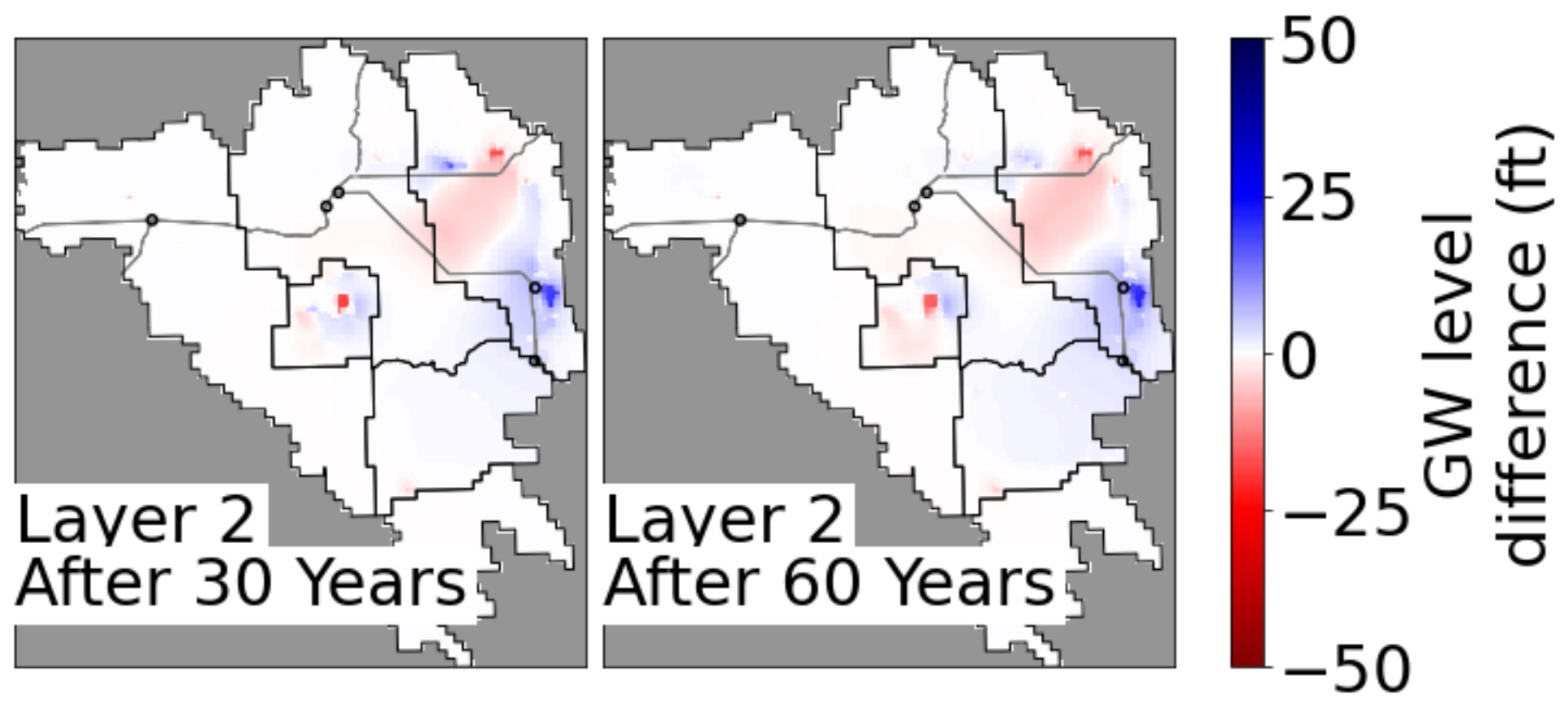
Comparing Rates Between Subareas



Spatial Variability within Subareas



Impacts of Allocation Method – Scenario C
Equal Curtailment vs. by Priority Date



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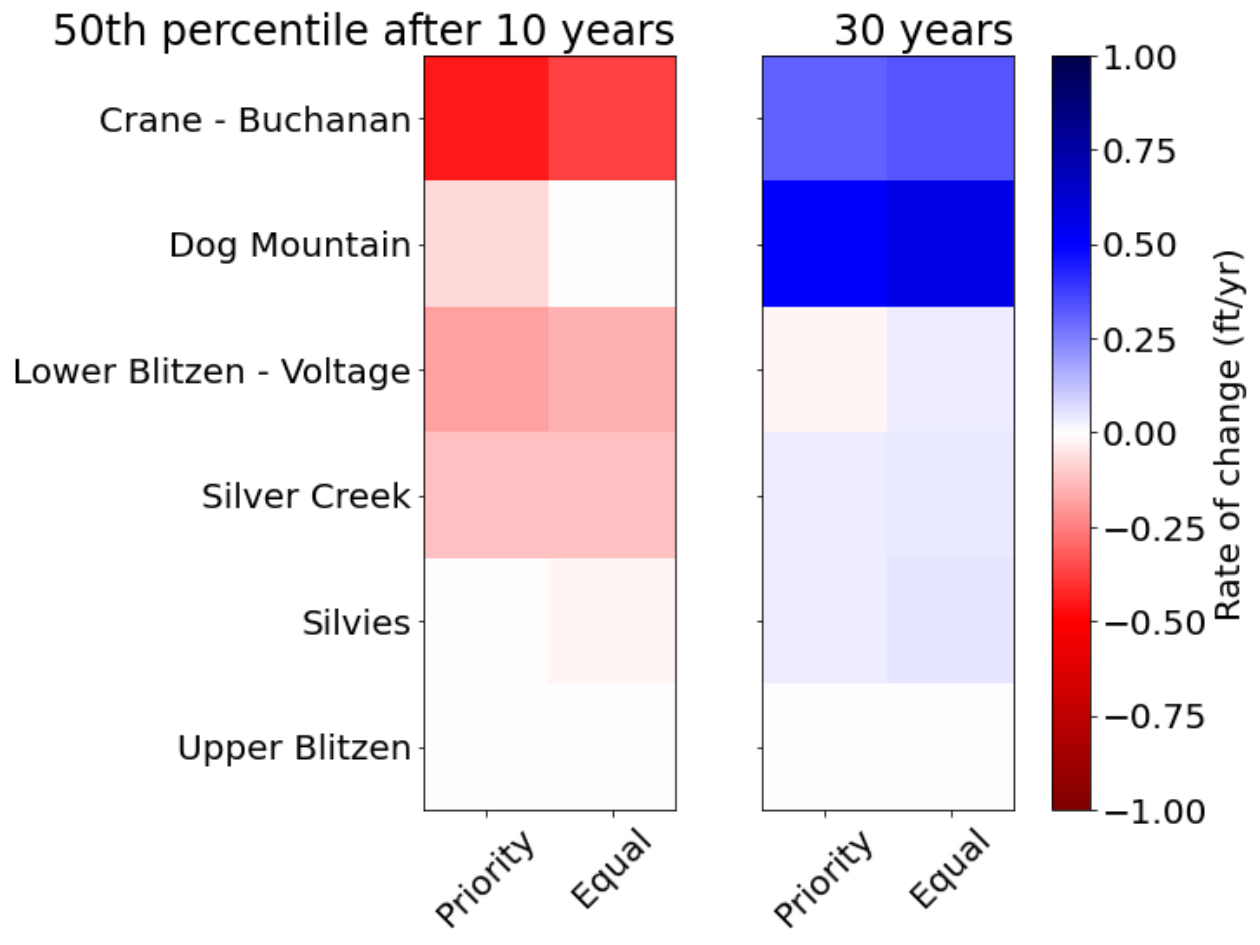
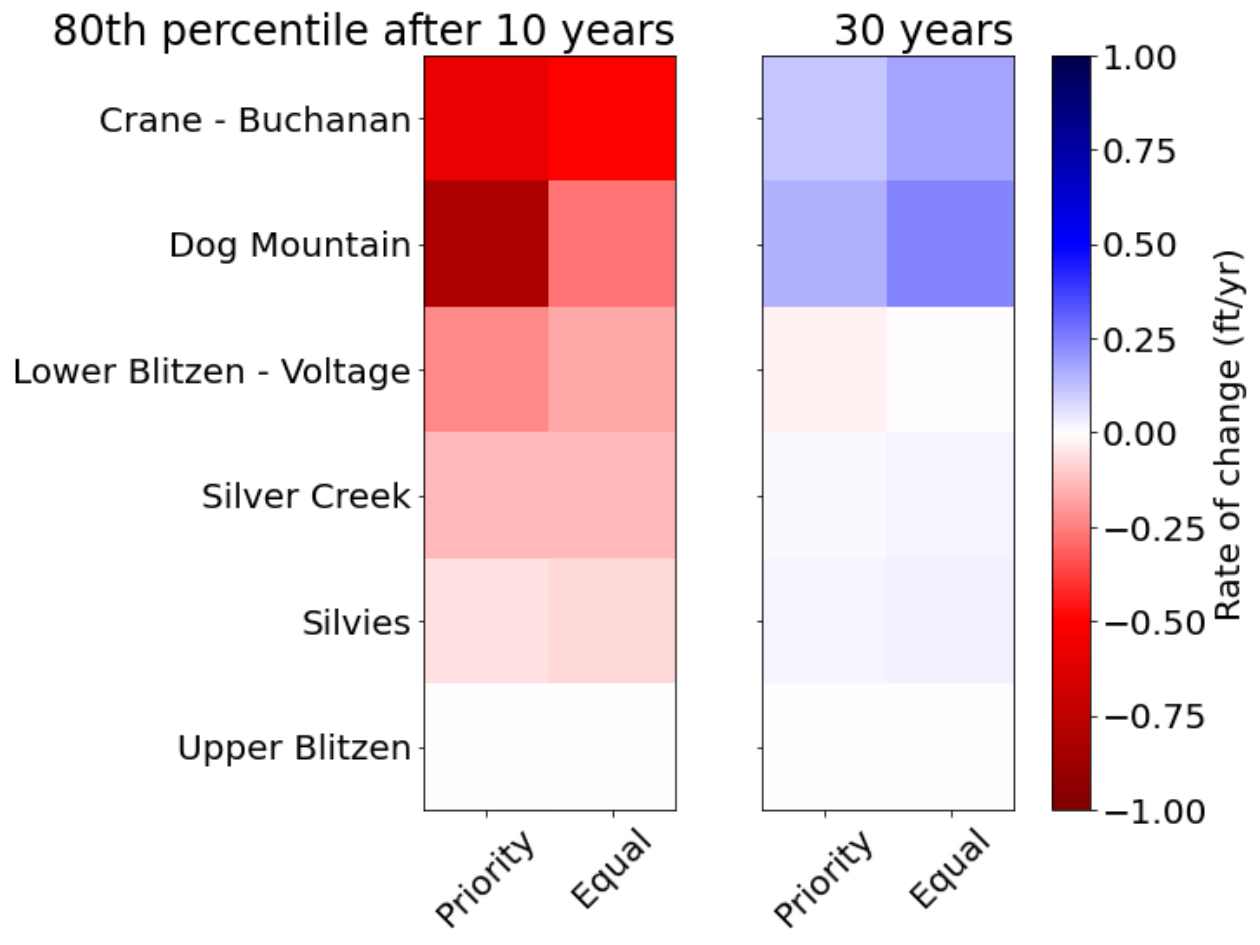
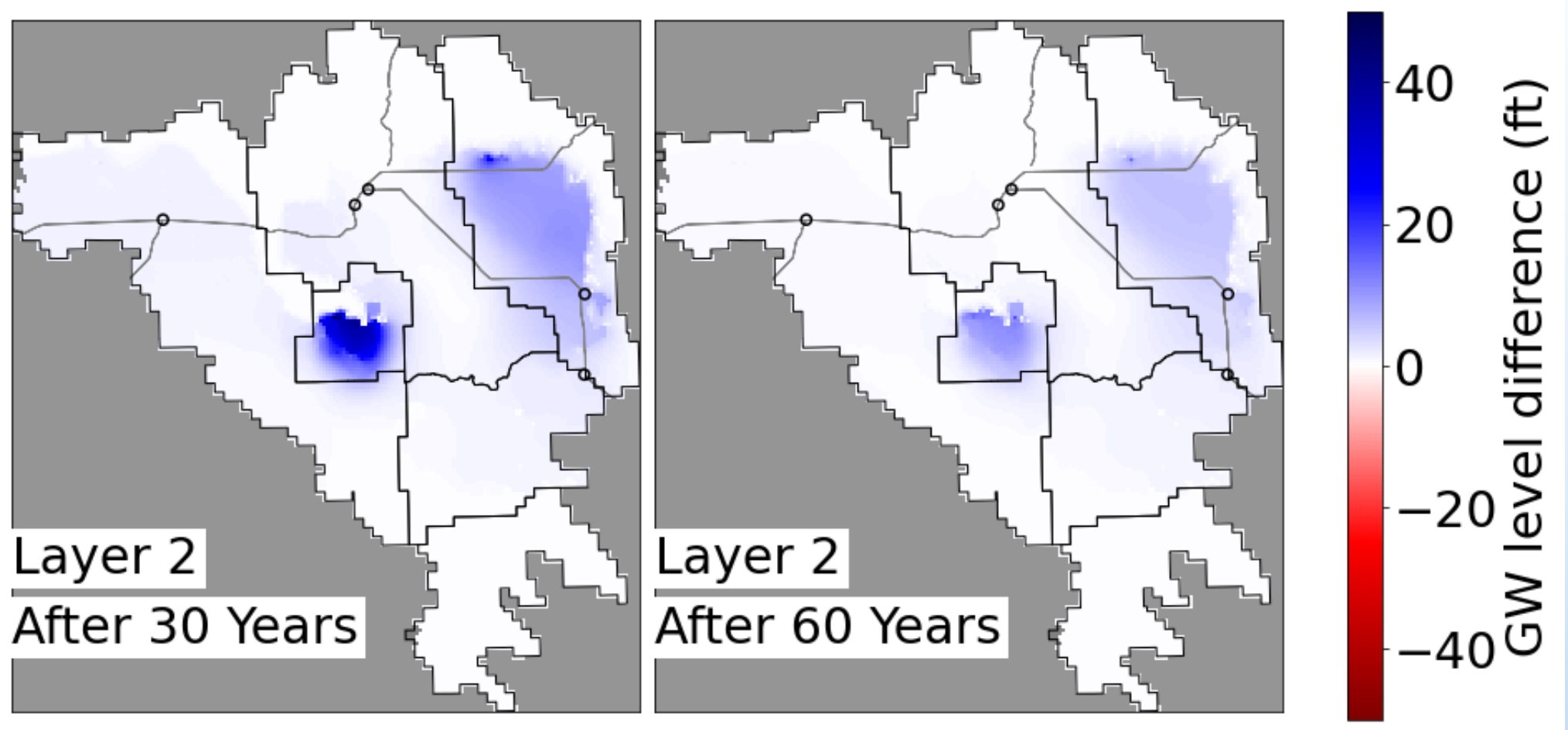
Allocation Method Checkerboard Plot
Scenario C priority date vs equal curtailment



Allocation Method Checkerboard Plot
Scenario C priority date vs equal curtailment



Impacts of Phase-In Duration – Scenario C
10-year vs 30-year phase-in



Public Comment


Lunch (40 Mins)

Discussion: Optimization of Management Scenarios

Results – Optimization

Goals of Conversation

- Build a shared understanding of optimization methods and results
- Explore how management elements impact results

Level of Participation

- Consult

Optimization Key Take-Aways

- Optimization maximizes PTW while stabilizing declines
- Requiring a larger percent of wells to be stable:
  - Decreases PTW
  - Raises water levels
- Using more subareas focused on declines:
  - Increases PTW in some cases
  - May increase conflicts of priority date

Optimization Method

Goal: maximize PTW while requiring stability

1. Pick an initial PTW for each subarea and run the model
2. Iterate until all subareas are stable:
   a) For each subarea:
      i. Evaluate rates of change at the desired time (e.g. 30 years after start) and spatial averaging (e.g. median, 80th percentile)
      ii. Check if the subarea is stable
      iii. If not, look at rates and PTWs tested so far and pick the new PTW that most likely achieves stability
   b) If any subareas not stable, re-run the model with the new PTWs

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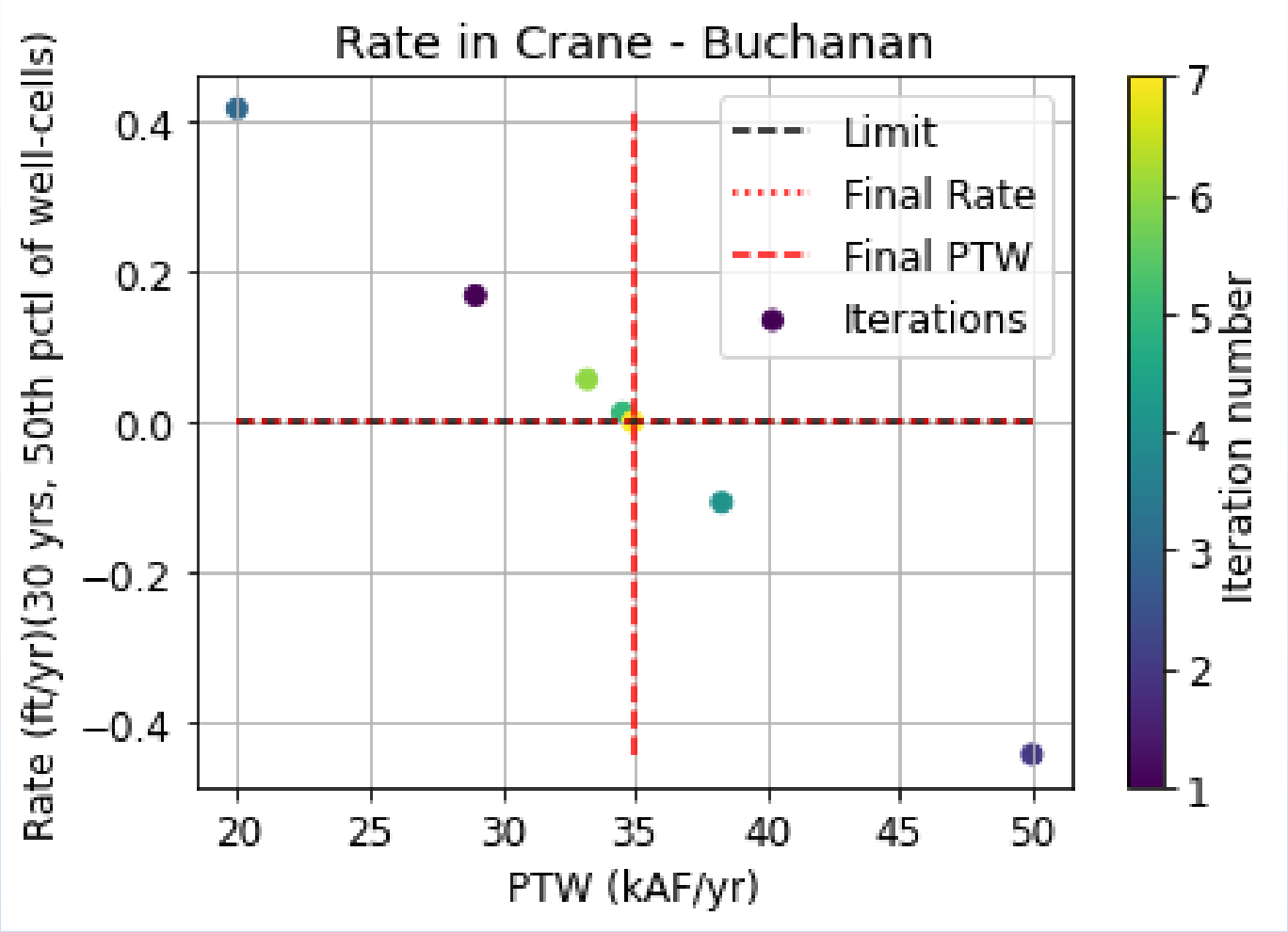
Rate vs. PTW in Crane-Buchanan



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Optimization Curtailments by Subarea: 15 WRD-Proposed Subareas

Subarea	Scenario A	Optimized	Difference
Crane	60%	66%	5%
Crane - Buchanan	0%	10%	10%
Dog Mountain	24%	47%	23%
Harney Lake	1%	20%	19%
Lawen	60%	63%	3%
Lower Blitzen - Voltage	1%	36%	35%
Malheur Lake	0%	0%	0%
North Harney	64%	66%	2%
Poison - Rattlesnake	0%	6%	6%
Rock Creek	43%	49%	6%
Silvies	0%	6%	7%
Upper Blitzen	0%	0%	0%
Upper Silver Creek	0%	31%	31%
Weaver Springs	74%	35%	-38%
Windy Point	0%	14%	14%
All	20%	28%	8%

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Optimization Curtailments by Subarea: 6 RAC-Proposed Subareas

Subarea	B	C	D	Optimized
Crane - Buchanan	30%	45%	40%	34%
Dog Mountain	54%	75%	65%	38%
Lower Blitzen - Voltage	0%	9%	5%	31%
Silver Creek	9%	24%	18%	31%
Silvies	0%	9%	5%	5%
Upper Blitzen	0%	0%	0%	0%
All	**22%**	**37%**	**31%**	**29%**

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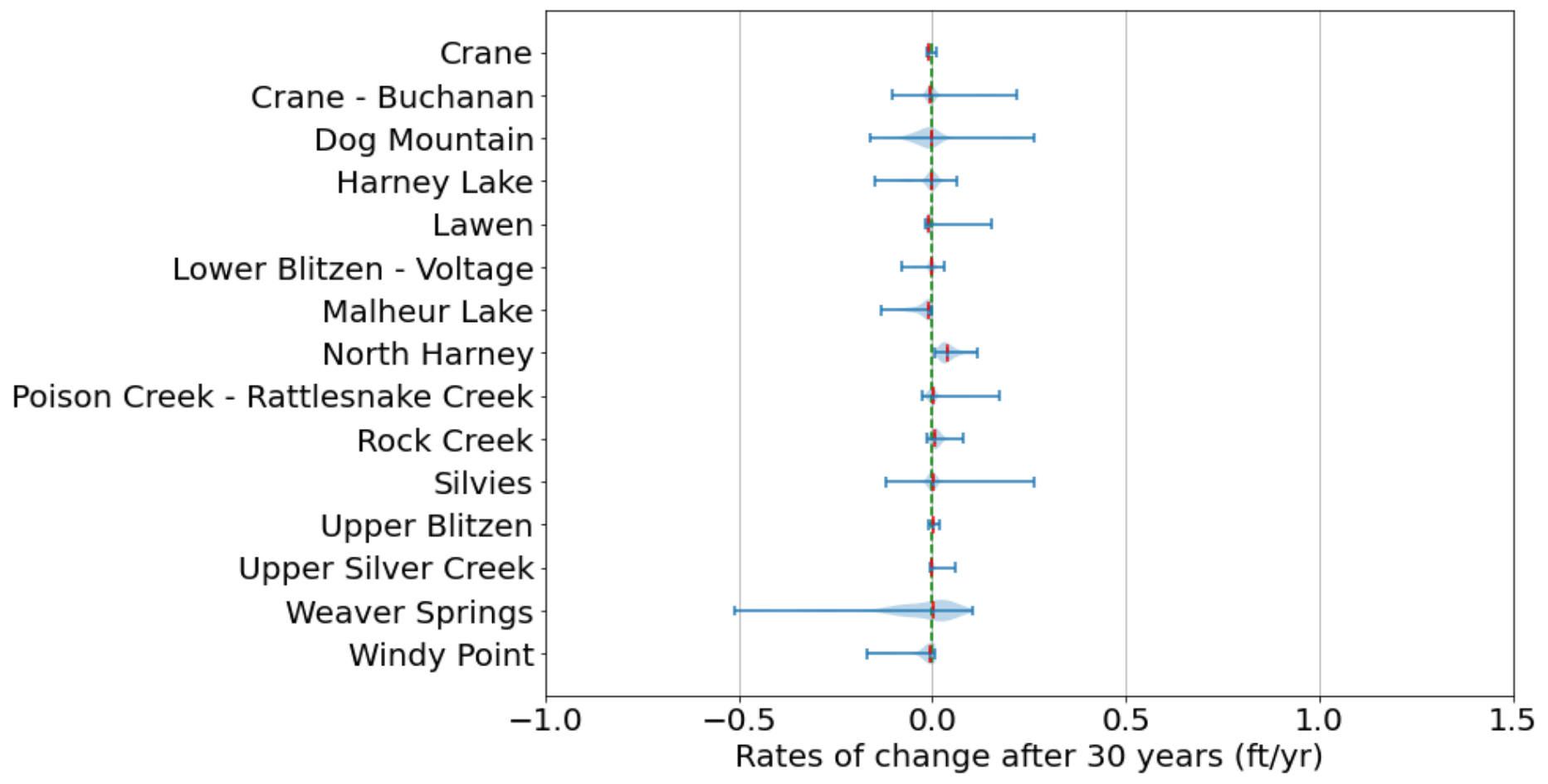
Optimized Spatial Variability: 15 WRD areas



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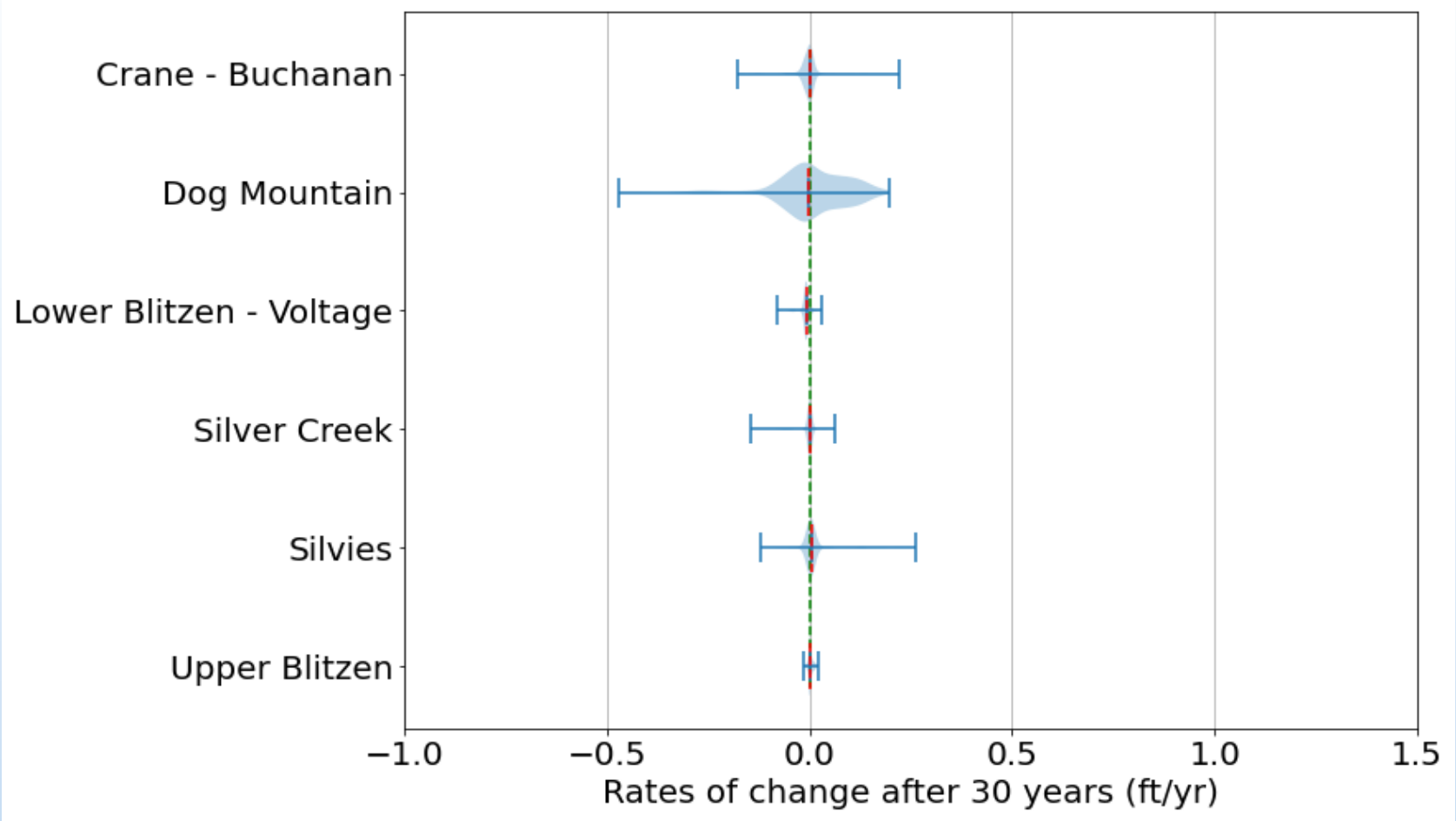
Optimized Spatial Variability: 6 RAC subareas



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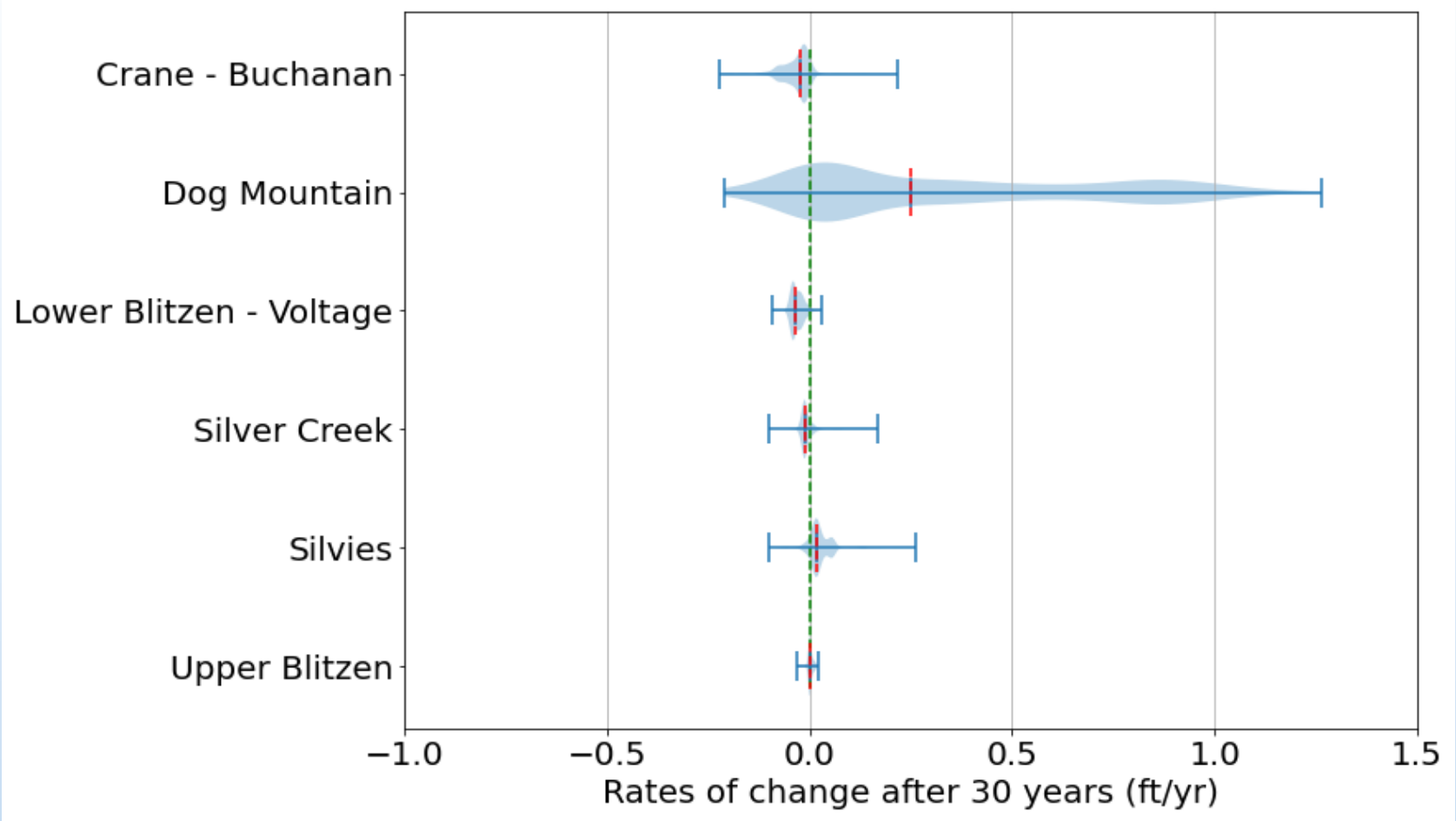
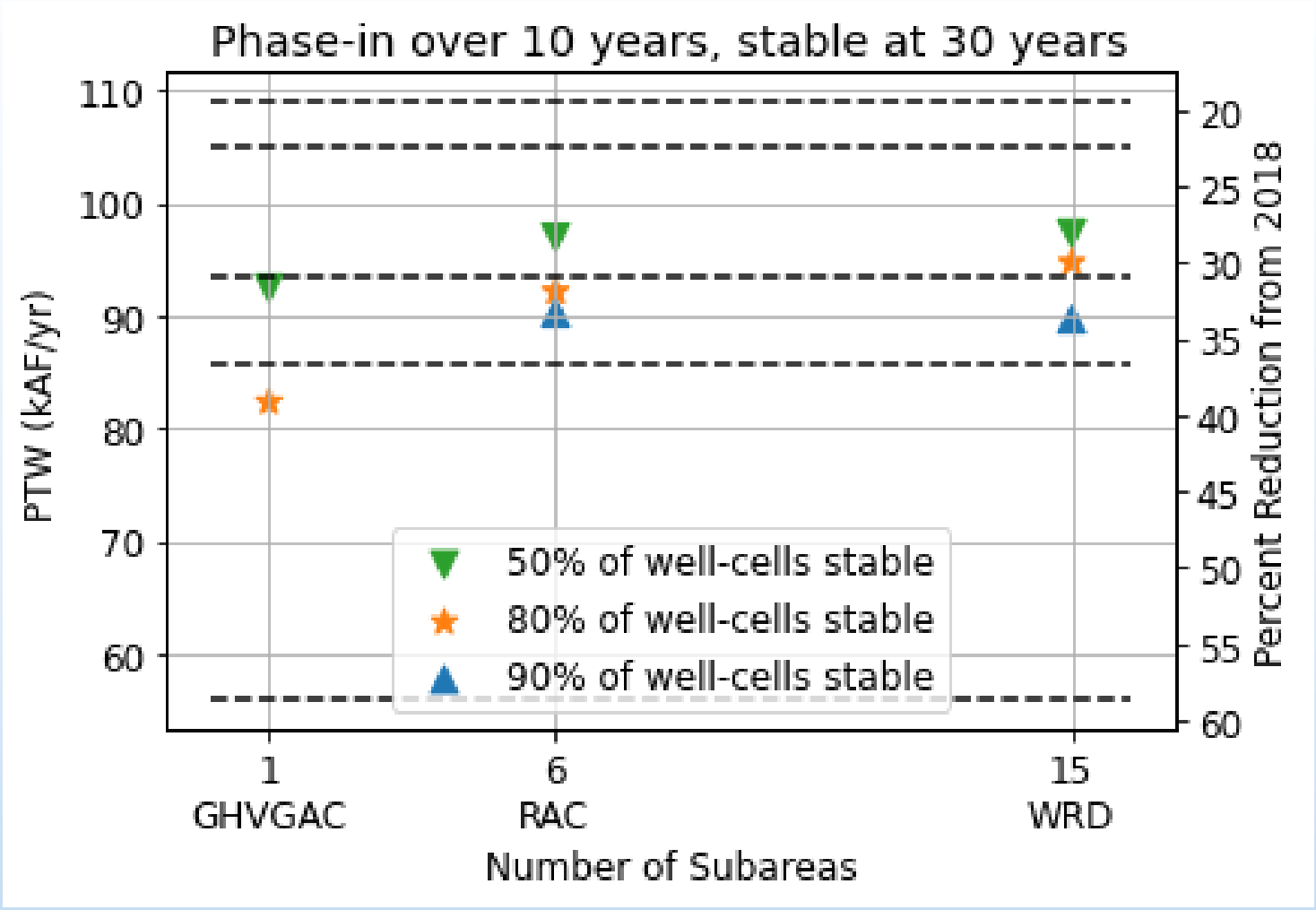
Optimized Spatial Variability: GHVGAC-wide



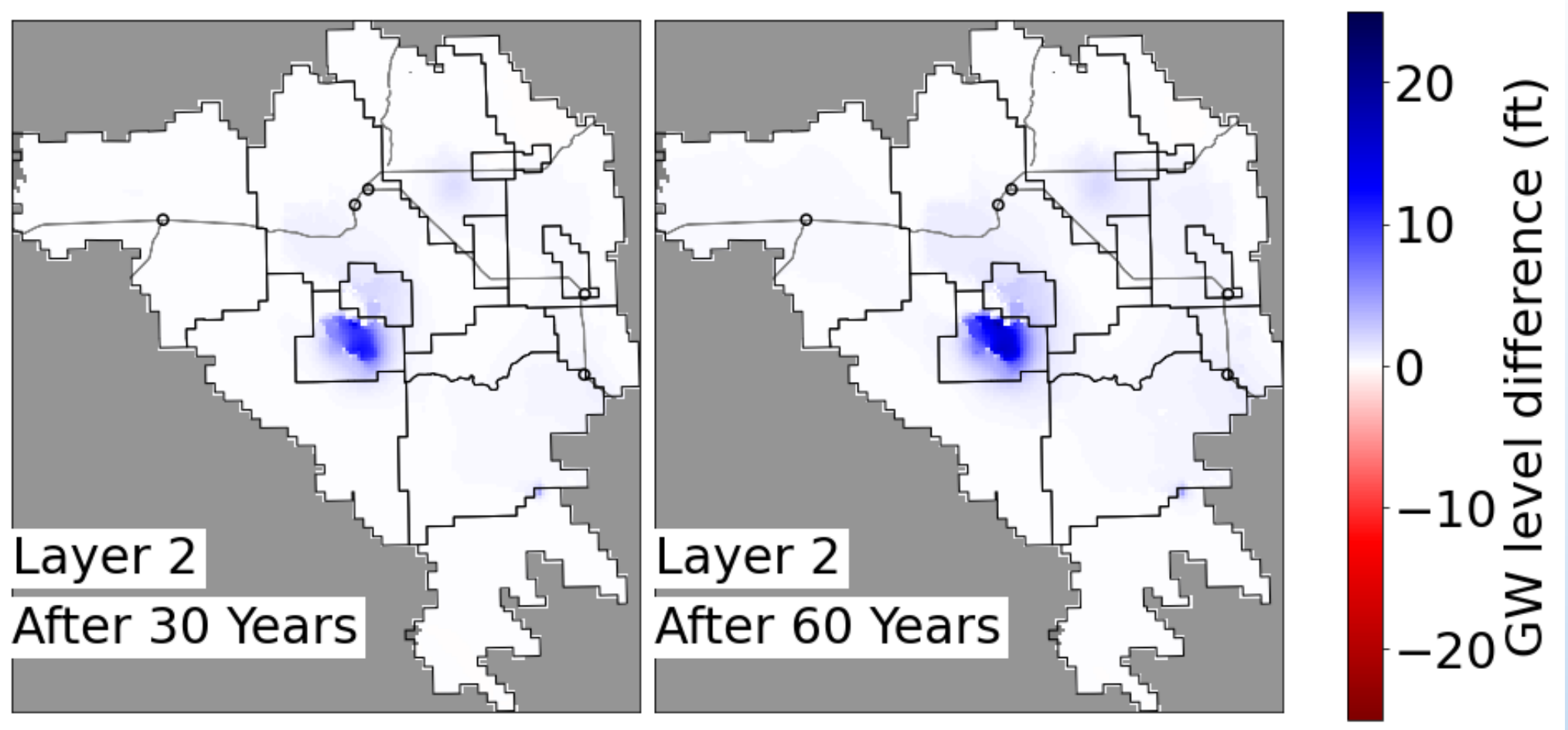
Results – Optimization

- Optimization reduces overall curtailment
- Considering a larger percent of wells increases curtailment
- Using more subareas can reduce overall curtailment



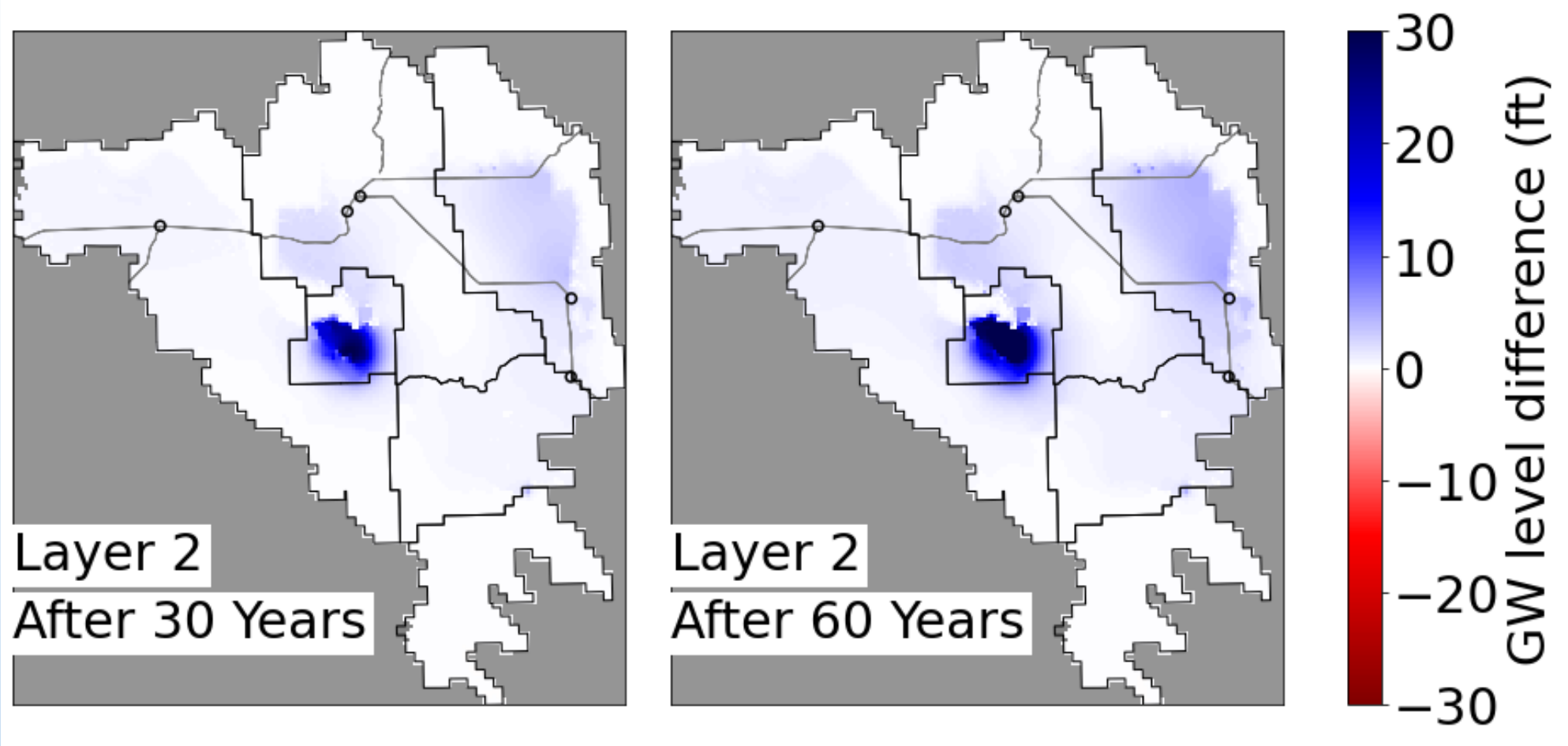
OREGON WATER RESOURCES DEPARTMENT

Compare 50% vs 80% stability: 15 WRD areas



OREGON WATER RESOURCES DEPARTMENT

Compare 50% vs 80% stability: 6 RAC areas



Optimization Key Take-Aways

- Optimization maximizes PTW while stabilizing declines
- Requiring a larger percent of wells to be stable:
  - Decreases PTW
  - Raises water levels
- Using more subareas focused on declines:
  - Increases PTW in some cases
  - May increase conflicts of priority date

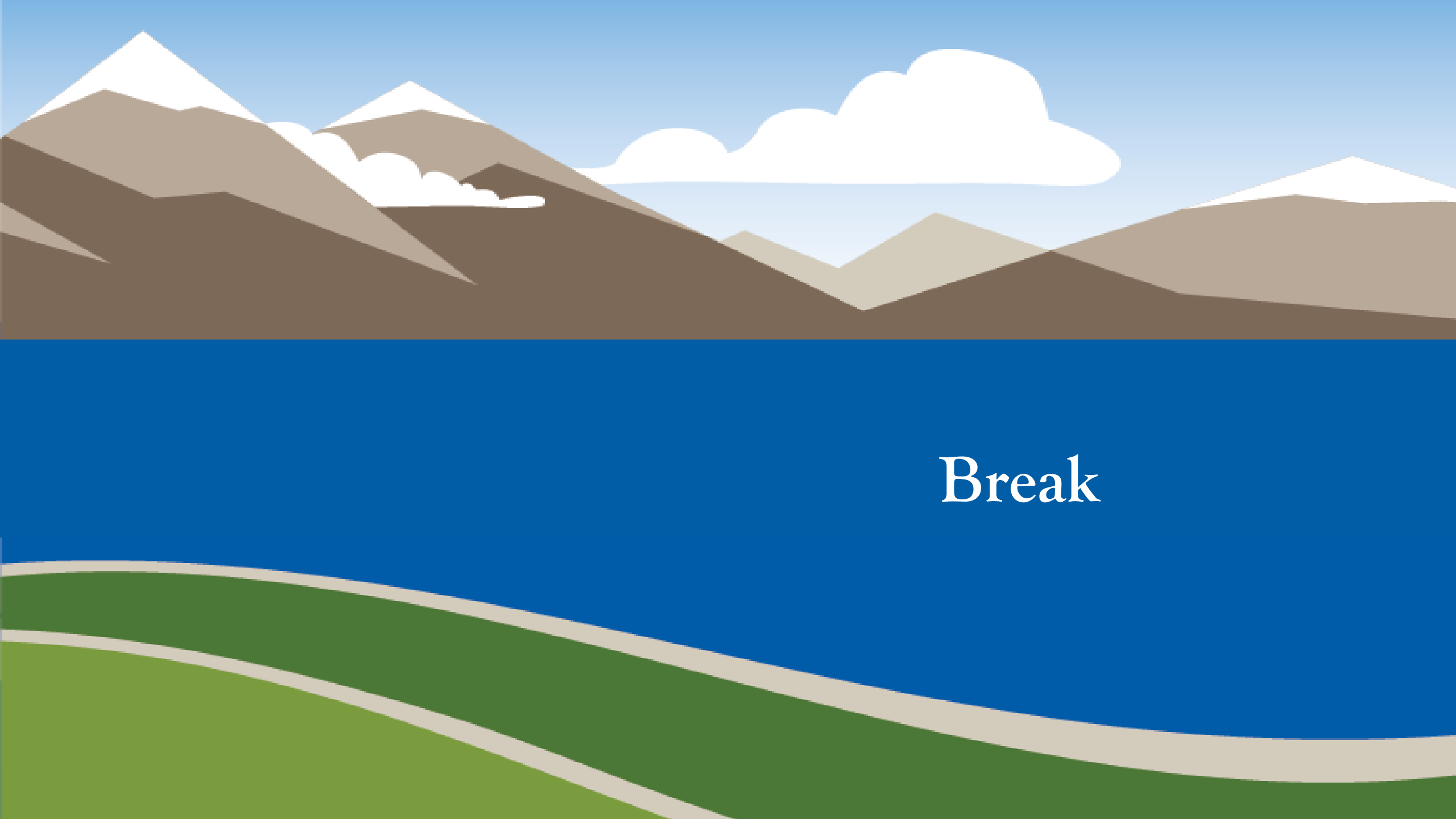
Criteria Weighting

Criteria Weighting

Criteria

- Impact to domestic wells
- Impact to groundwater discharge
- Impact to small businesses and the economy
- Timelines to achieving groundwater level trends
- Strictly following prior appropriation

Criteria Weighting Excercise


Break

Discussion: Serious Water Management Problem Area

Serious Water Management Problem Area

Goals of Conversation

- OWRD receives RAC input that will inform SWMPA decisions

Level of Participation

Consult

Serious Water Management Problem Area

Question:

What should SWMPA boundary be?

Discussed in:

- RAC Number 8 and 9

RAC Input:

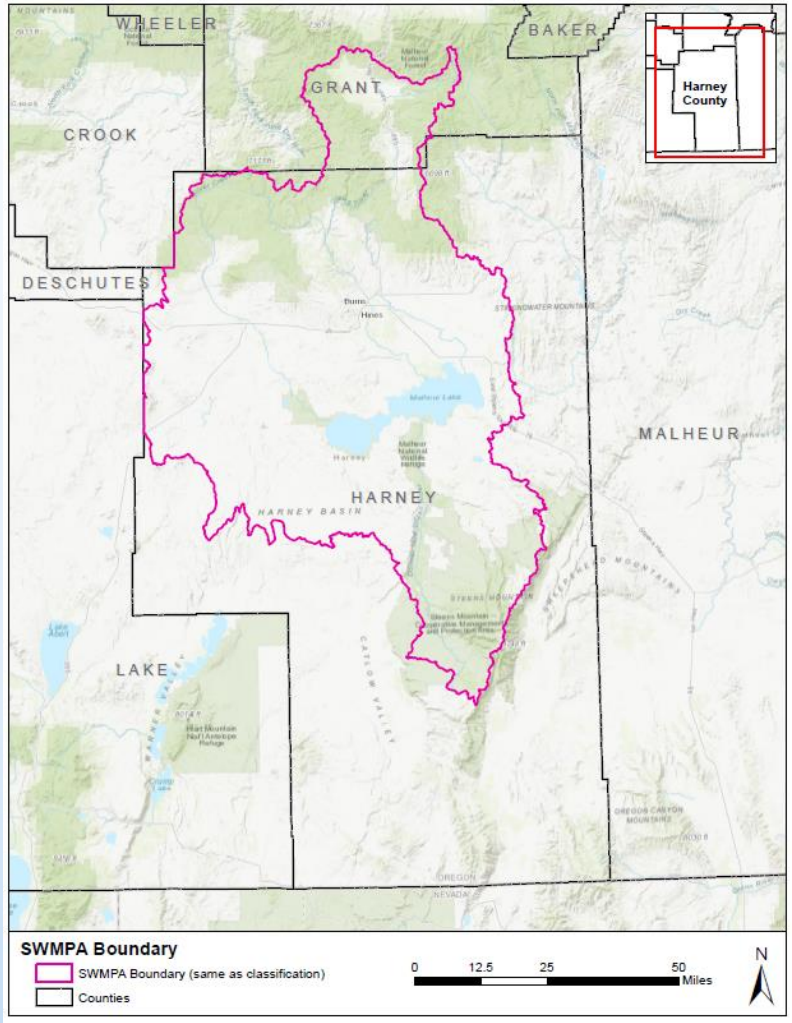
Input. Set boundary as Greater Harney Valley Area of Concern (GHVGAC).

Input. Set boundary as the RAC-recommended Classification boundary.

Input. Set boundary as Harney Basin Groundwater Study Area boundary.

OREGON WATER RESOURCES DEPARTMENT

Serious Water Management Problem Area



SWMPA Boundary

Set boundary as the RAC recommended Classification boundary

Serious Water Management Problem Area

Question(s)

1. Where geographically should the flowmeters be required to be installed?
2. Should only a portion of the basin geography be required to be installed and reported?

Options from the Discussion Group

Option 1. All subareas are required to measure and report groundwater pumping.

Option 2. Only some subareas should be required to measure and report groundwater pumping.

Option 3. Other options?

Serious Water Management Problem Area

Question(s):

1. When should the measurement devices be required?
2. Should there be a rollout for requiring the installation of flowmeters?

Options from the Discussion Group

Option 1. Required users have 1 year to implement

Option 2. Timeline to implement varies by subarea.

Option 3. Measurement and reporting of groundwater pumping varies by subarea and may be required depending on the value and necessity of data compared to other currently available data (date not set in rule and determination made at set intervals after making the best use of available data).

Option 4. Some variation of 2 and 3.

Serious Water Management Problem Area

RAC Roundtable:

What other options should OWRD consider when the flowmeters should be required?

Which option would you prefer?

Serious Water Management Problem Area

Question(s):

1. How should water use be tracked?

Options from the Discussion Group

Option 1. Groundwater use is measured by a flowmeter only.

Option 2. Groundwater use is estimated by OpenET only.

Option 3. Groundwater use is estimated by power consumption.

Option 4. Some combination of ET and flow measurement devices.

Option 5. Other options?

Serious Water Management Problem Area

RAC Roundtable:

What other options should OWRD consider around how water use should be tracked?

Which option would you prefer?

Serious Water Management Problem Area

Question(s)

1. How often should reporting be required?

OWRD Note

Authorized for annual reporting only

Options from the Discussion Group

Option 1. Annual reporting with monthly measurement

Serious Water Management Problem Area

Question(s)

1. What groundwater users should be included in the SWMPA requirement?

Notes from OWRD

Option 1 is currently not possible for OWRD. Authorities are for measurement for all water rights users.

Options from the Discussion Group

Option 1. All groundwater users must measure and report groundwater use, including exempt groundwater users.

Option 2. All permitted groundwater users must measure and report groundwater use, excluding exempt groundwater users.

Option 3. Who is required to measure and report groundwater use varies by subarea depending on the severity of declines.

Option 4. Other options?

Serious Water Management Problem Area

RAC Roundtable:

What other options should OWRD consider?

Which option would you prefer?

Serious Water Management Problem Area

Question:

What should OWRD consider for measurement devices?

Notes from OWRD:

OWRD doesn't have a preference for the measurement device as long as it's a totalizing flowmeter that meets industry standards

Input from the Discussion Group

Input. Is it possible to incentivize the use of uniform meters? (same meters for all users)
Input. Pulse meters generally perform better than other measurement devices and should be encouraged/incentivized.
Input. If Non-intrusive flow meters need to be regularly calibrated .
Input. Flow meters can pose challenges, especially with the sand in some areas of the Harney Basin.
Input. Installing flowmeters often requires larger system changes to incorporate a flowmeter. It is tough to justify that type of expense in the face of uncertainty.

Serious Water Management Problem Area

RAC Roundtable:

Is there a any other input you wish to share?

Question(s)

1. Does measurement happen at the well level or the field level?

Notes from OWRD:

OWRD prefers measuring by well, rather than at the field level.

Input from the Discussion Group

Input. Monitoring at the well can help identify what is being extracted from different depths, whereas monitoring at the field determines what water is being applied. There is a preference for understanding what is being extracted, especially if it can be correlated to different depths.

Input. The same well/same meter may simultaneously serve junior and senior water rights. These complications need to be taken into consideration. For some wells, there may be fractional reductions in use.

Serious Water Management Problem Area

RAC Roundtable:

Is there a any other input you wish to share

Serious Water Management Problem Area

RAC Roundtable

Is there anything else OWRD should be considering around SWMPA?

Update of Fiscal Impact

Update on Fiscal Impact

Goals of Conversation

- Provide an update on the Fiscal Impact analysis

Level of Participation

Inform

Update on Fiscal Impact

Econorthwest Update:

Voluntary Agreements

Voluntary Agreements

Goals of Conversation

- Answer any questions around the draft guidance document

Level of Participation

- Inform

Purpose

- Commission approval/rejection of Voluntary Agreements authorized by ORS 537.745
- General guidance needed to ensure VAs comply with intent, purposes, and requirements of Ground Water Act of 1955
- More info
  - August 17, 2023, Info Session available on Div. 512 Rulemaking website

Process to Date

- Harney Basin Groundwater User Focus Group
- Guidance drafted by Department
  - Inform future statewide rules; advise current Harney Basin groundwater users
- Iterations
  - 2 meetings with Focus Group to date – July 8th prior to draft guidance, and October 1st to go over feedback from first draft
  - Draft document revised in response to Focus Group input

Next Steps

Division 512 RAC

- Third draft VA guidance shared via email October 25 and November 4, 2024
- Please provide input on third draft VA guidance document by December 4 (email jason.d.spriet@water.oregon.gov)
- Staff to discuss input and answer questions during December 18 RAC meeting

Any Questions/Comments at this time?

Public Comment

Meeting Wrap Up

Meeting Wrap Up

Next Meeting RAC Number 12: December 18, 2024

Topics:

1. Framework for CGWA draft rules
2. Rules for Classification/SWMPA
3. Criteria results
4. Results of additional management scenario optimization
5. Adaptive management
6. Fiscal Impact

Meeting Wrap Up

Discussion Groups

- What do you want to talk about?

Meeting Wrap Up

Reminder:

Commission Meeting December 12, 2024