

### washington state university Energy Program

## Least-Conflict Solar Siting on Washington's Columbia Plateau

Gathering 3

April 12, 2023

## Welcome and a few reminders...

- The meeting is being recorded.
- Mute your microphone while others are speaking.
- Raise your virtual hand to contribute to the conversation.
- During presentations, feel free to chat questions to be answered during Q&A time.
- Please be respectful of this process. Allow everyone the chance to speak and listen actively to understand others' views.
- Chat directly to Angela Cruz or Tess Wendel if you need technical assistance.



### washington state university Energy Program

## Least-Conflict Solar Siting on Washington's Columbia Plateau

Gathering 3

April 12, 2023

## WSU Energy Program

- Self-supporting department within WSU
- Based in Olympia, with remote locations
- Energy efficiency program management, on-site assessments, energy analysis, training, knowledge transfer
- Community solar program, Washington state energy codes (residential) support, efficiency systems training, workforce development, green transportation education and outreach, resource conservation manager support

### https://www.energy.wsu.edu

Least-Conflict Solar Siting

## **Project Team**



washington state university
Energy Program



**STRATEGIC** 

## **Gathering 3 Objectives**

- Understand the draft least-conflict maps and how to interpret them
- Learn how to review and give feedback on the draft maps after the gathering
- Discuss observations and insights about the draft maps with colleagues and peers
- Consider potential uses for the least-conflict maps
- Learn about other efforts and their connections to this least-conflict mapping work

Least-Conflict Solar Siting

## **Agenda Overview**

- 9:30 10:00 AM Welcome and Project Overview/Updates
- 10:00 11:30 AM Draft Least-conflict Maps
- 11:30 11:35 AM **5-minute Break**
- 11:35 12:25 PM Small Group Discussions: Observations and Insights
- 12:25 12:30 PM **Preview of the Afternoon**
- 12:30 1:00 PM **30-minute Lunch Break**
- 1:00 1:15 PM **Reflections on the Morning and Impromptu Networking**
- 1:15 1:50 PM How the Least-conflict Maps May Be Used
- 1:50 2:40 PM Small Group Discussions: Participant Use Cases
- 2:40 3:00 PM Meeting Wrap Up and Next Steps

3:00 PM Adjourn

#### Least-Conflict Solar Siting

## Impromptu Networking

Introduce yourself to a few other people here by sharing:

- 1. Your name
- 2. Your affiliation
- 3. What brings you to today's meeting?



Zoom will automatically move you into a breakout room with three or four other attendees.

There will be two rounds.

## Project Updates: Least-Conflict Solar Siting on the Columbia Plateau

**Karen Janowitz** Washington State University Energy Program

Painting of Columbia Plateau by Sarah Gilman

# Least-Conflict Solar Siting Least-Conflict Solar Siting

Aims to answer the question:

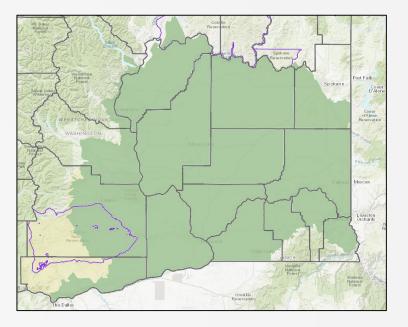
Where can large-scale solar be developed in the Columbia Plateau region while also ensuring that important habitat, productive farmlands and ranchlands, and Tribal rights and cultural resources are protected?



Spiva Butte Chelan-Douglas Land Trust property in Douglas County photo credit: Ferdi Businger

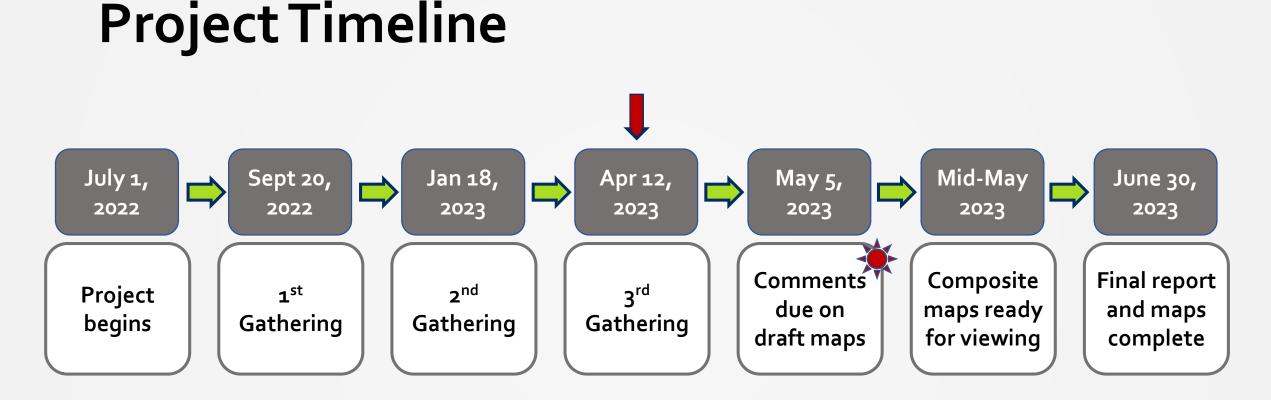
## **Least-Conflict Process**

- Landscape-based (pixels are 500 meters to a side)
- Map-based
- Not site-specific
- Non-regulatory
- People-oriented collaborative process
- A tool to be used by planners, developers, agencies, and others
- Developers must continue to do due diligence with Tribes and with all site assessments



## Washington State Legislative Directive

- Identify areas where there is the least amount of potential conflict in the siting of utility scale PV solar in the Columbia Basin
- Develop a map highlighting these areas
- Summarize process and findings into a report
- Compile information on opportunities for dual-use and colocation of PV solar with other land values
- July 1, 2022 June 30, 2023
- Budget Proviso ESSB 5092, Sec. 607 (19), p. 460. 2021 session <u>https://lawfilesext.leg.wa.gov/biennium/2021-22/Pdf/Bills/Senate%20Passed%20Legislature/5092-S.PL.pdf</u>



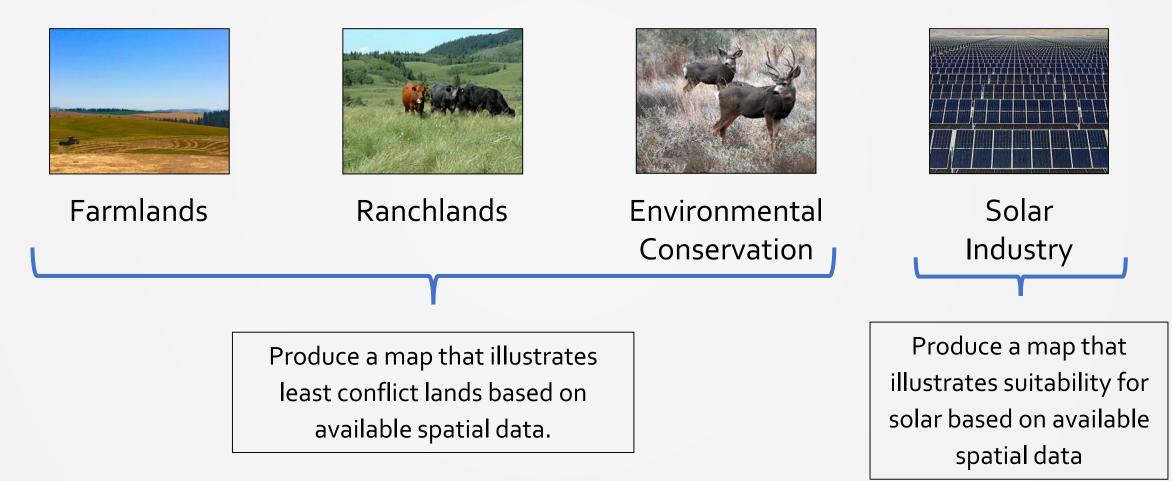
Mapping groups met early Oct 2022 to early spring 2023, with one more meeting in May

Meetings with Tribes April through May 2023



Least-Conflict Solar Siting

## **Mapping Groups**



#### Least-Conflict Solar Siting

## **Mapping Process**

- Identify and collect existing data
- Determine criteria that creates the highest value and other relative values with available data
- Create tree-based logic model based on criteria and input spatial data
- Create intermediate and apex maps from logic model

Models are transparent

Highest relative values on map = highest potential conflict (not solar industry map) Lowest relative values on map = lowest potential conflict (least conflict)

### Washington Columbia Plateau Gateway

#### https://wsuenergy.databasin.org/





## Least-Conflict Solar Siting Gateway

- All project info is situated here
  - Maps
  - Final report
  - Gathering summaries and slides
- Uses Data Basin Technology
- A living tool!
  - Update, revise, grow
- Free

### https://wsuenergy.databasin.org/





#### WSU Energy Program

#### Renewable Energy

New Community Energy Efficiency Program Projects

Community Solar Program

Least-Conflict Solar Siting

Green Transportation Program

Energy Code

Home Energy Raters

Energy Questions?

Home

About Us

Information Centers

Publications and Tools

Newsbriefs

Events & Trainings

I'm Looking For...?

Renewable Energy

Community Solar

#### **Least-Conflict Solar Siting**

#### Gateway

The Least-Conflict Solar Siting Gateway is a unique customized space that contains geospatial information and collaboration tools to assist mapping group participants in defining least-conflict utility scale solar siting in the Columbia Plateau region of eastern Washington.

Access the Gateway here

The Gateway is located within Data Basin, a science-based mapping and analysis platform that supports learning, research, and sustainable environmental stewardship.

To work in a mapping group, participants must join Data Basin by signing up on the Gateway. Once signed up, send your user name and group/s you wish to participate in to Karen at janowitzk@energy.wsu.edu.

Tutorials on how to use Data Basin were given by Conservation Biology Institute, the project's GIS and mapping consultant, in September 2022. If new to Data Basin or needing a refresher, please view the <u>recordings of these tutorials</u> which have been separated into short clips by topic.

#### Least-Conflict Solar Siting

**Gatherings** 

Mapping Groups

<u>Least-Conflict Solar Siting</u> <u>Gateway</u>

News Blog

### https://www.energy.wsu.edu/RenewableEnergy/LeastConflictSolarSiting.aspx

# Least-Conflict Solar Siting Next Steps

- Review and comment by May 5, 2023
- Keep track of progress of E2SHB1216
- View the final report with maps on June 30, 2023
- Use the Gateway!



Sinlahekin Wildlife Area WA Dept of Fish & Wildlife

# Draft Least-conflict Maps

**Conservation Biology Institute** 

Jim Strittholt

Emily Griffith Solar Development Mapping Group Representative

Jesse Ingels Ranchland Mapping Group Representative Jay Kehne Farmland Mapping Group Representative

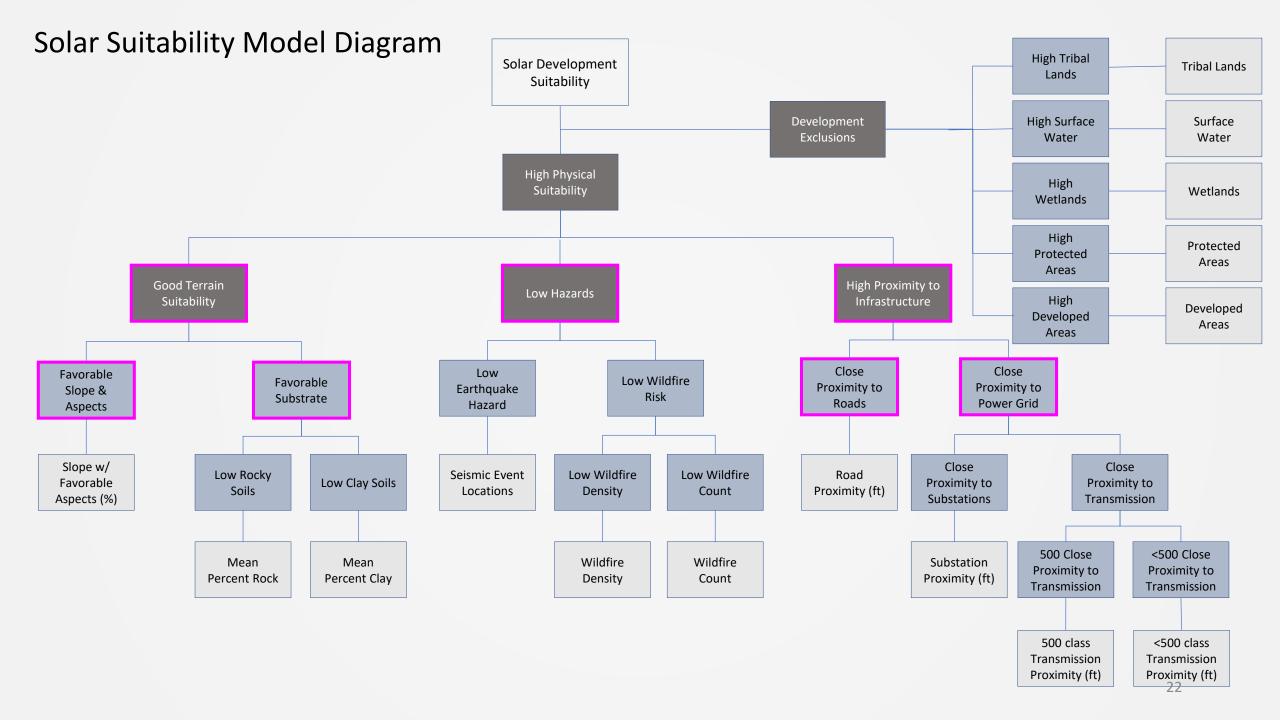
Michael Ritter Environmental Conservation Mapping Group Representative

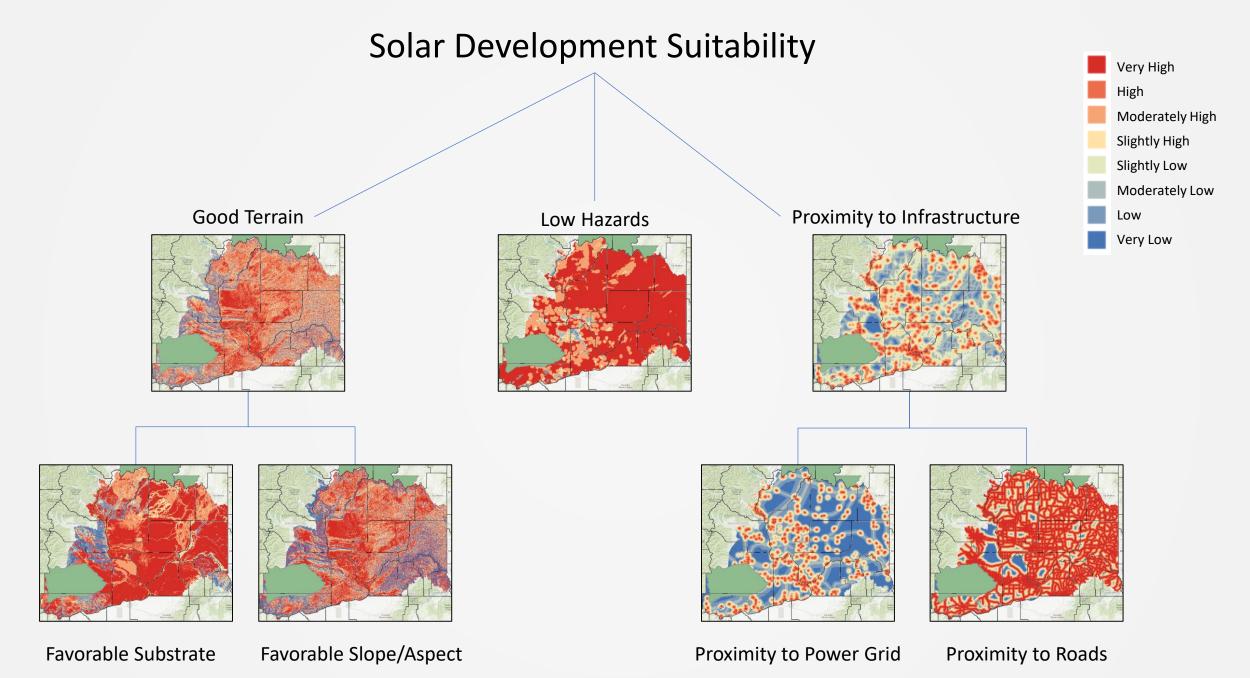
## Solar Development Mapping Group Update

Presented by Emily Griffith, Strategic Engagement Manager, Renewable Northwest

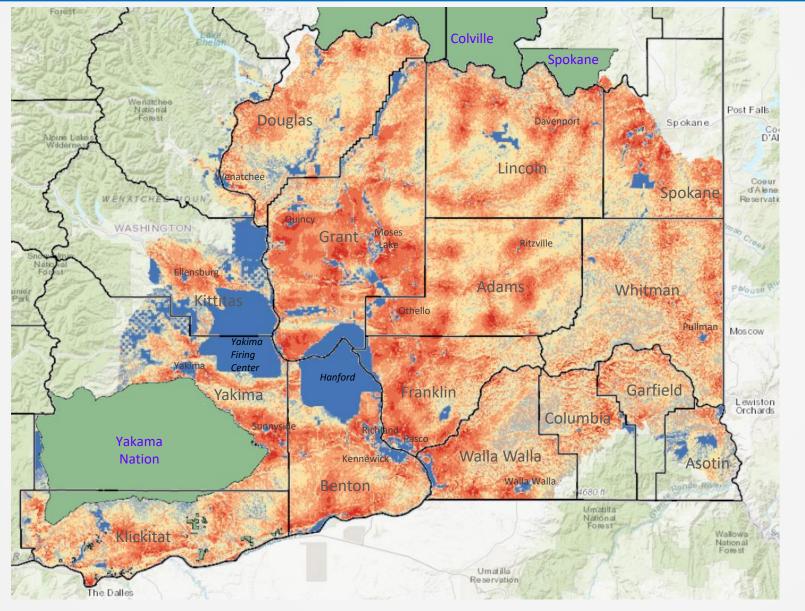
<u>Goal</u>: Produce a map that illustrates the <u>relative suitability</u> of lands for utility scale solar development based on general, mappable criteria.







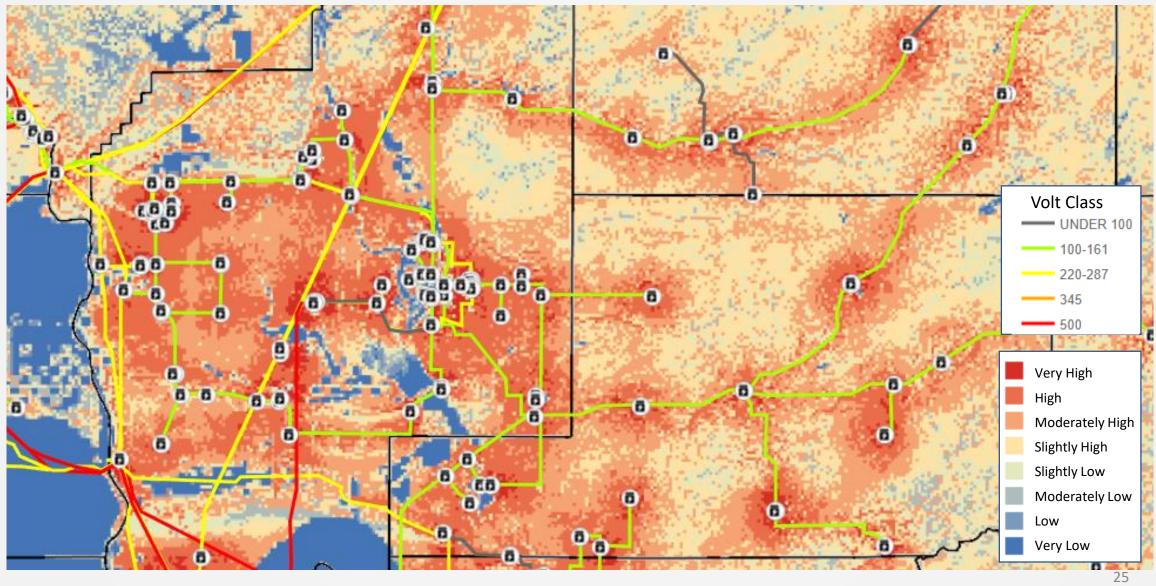
### Solar Development Suitability Review Draft





Dev Suitability	Acres	Percent
Very High	429,098	3.01%
High	2,519,544	17.69%
Moderately High	3,854,282	27.06%
Slightly High	3,207,238	22.52%
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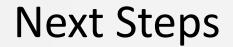
### Solar Suitability Review Draft



### **Other Considerations**

- Environmental Constraints/Concerns
- Department of Defense Concerns
- Tribal Considerations Outside of Reservations
- Socioeconomic Considerations





- Share with colleagues and others for review and comment
- Make final model refinements



# Questions

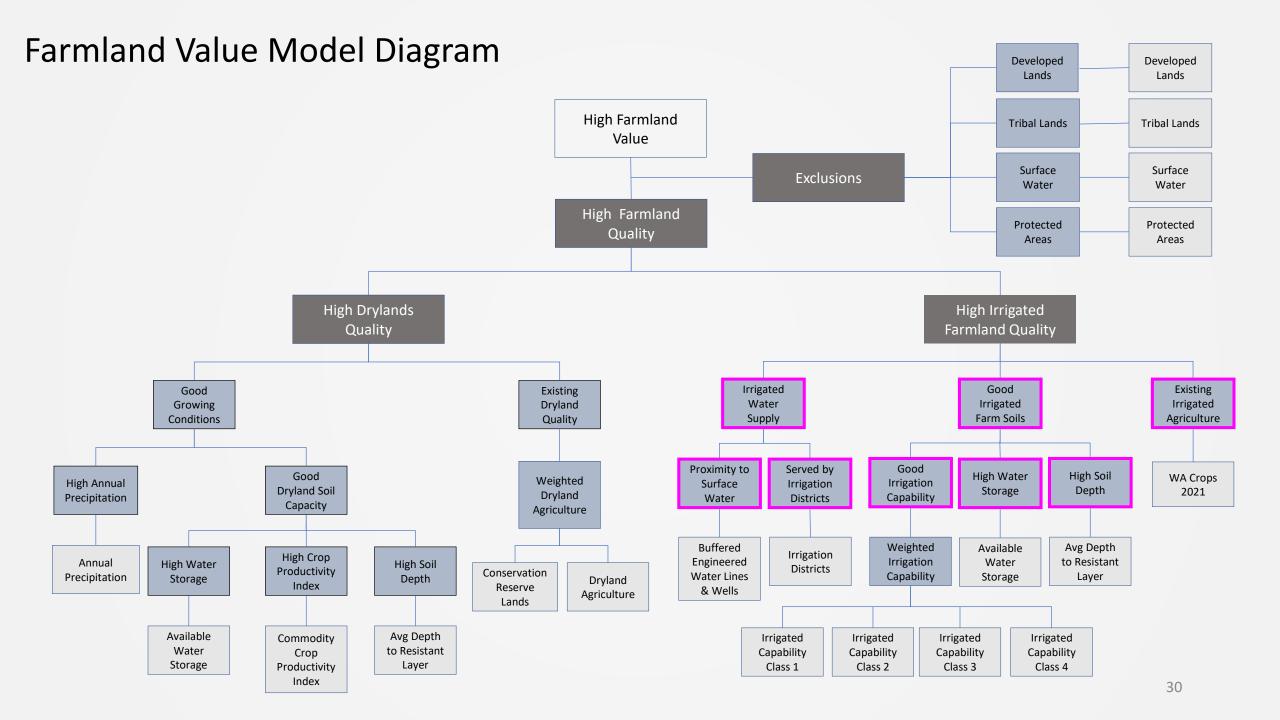


### Farming Mapping Group Update

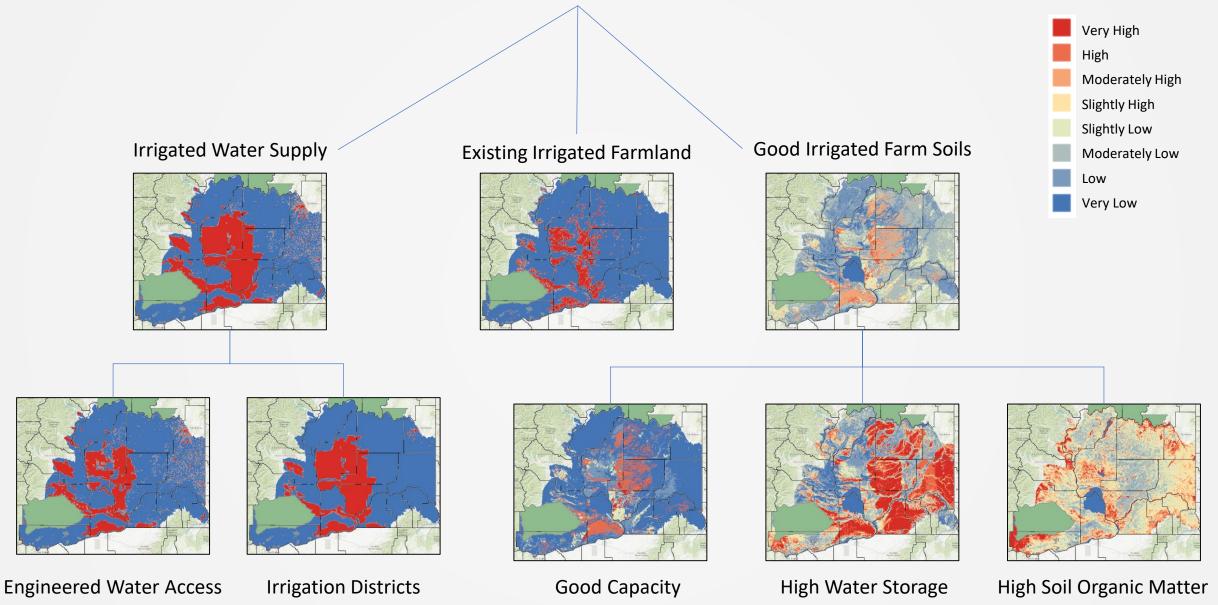
Presented by Jay Kehne, Sagelands Heritage Program Lead, Conservation Northwest

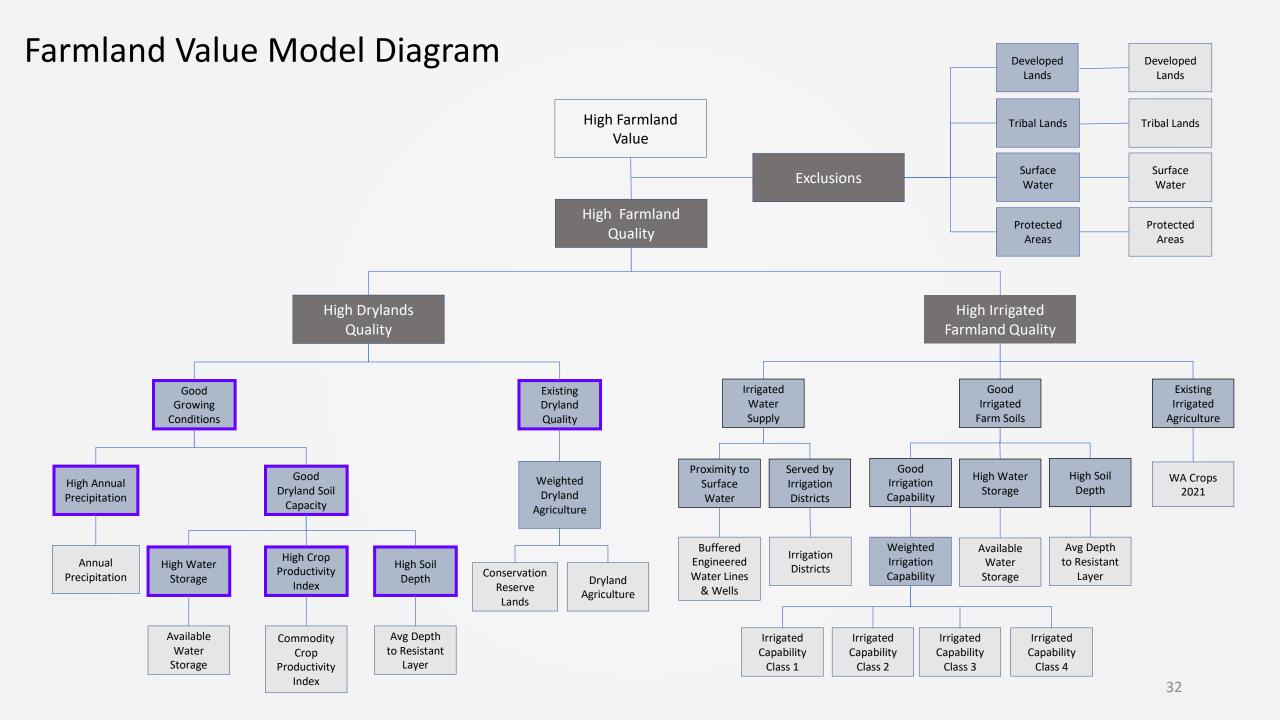
# <u>Goal</u>: Produce a map that illustrates the <u>relative value</u> of irrigated and dryland farming lands based on available spatial data.



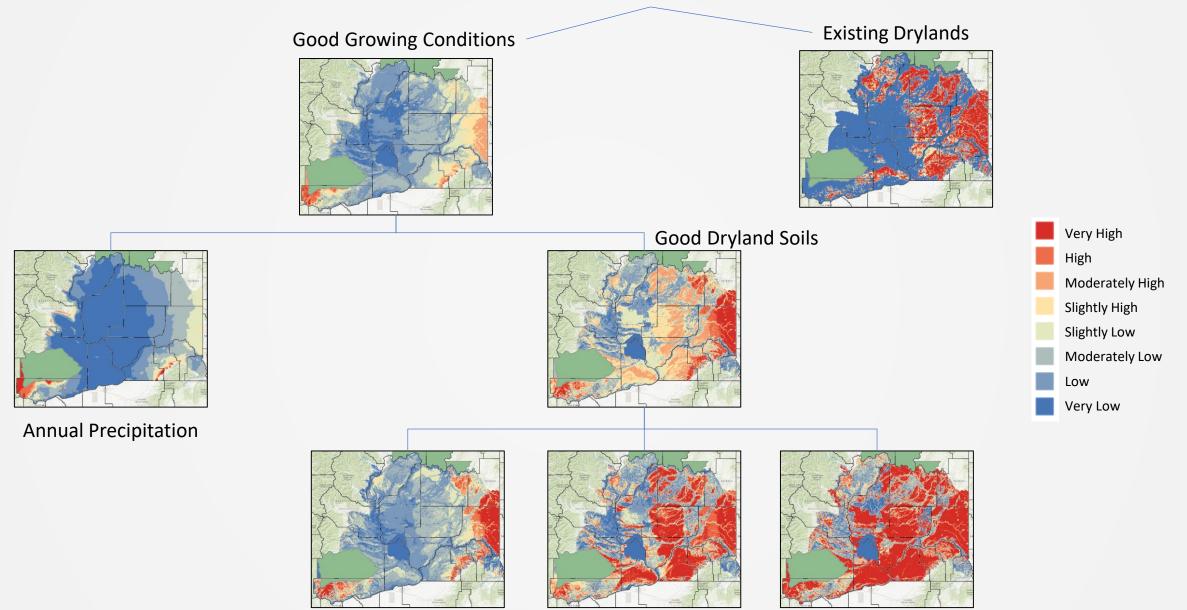


### High Irrigated Farmland Quality



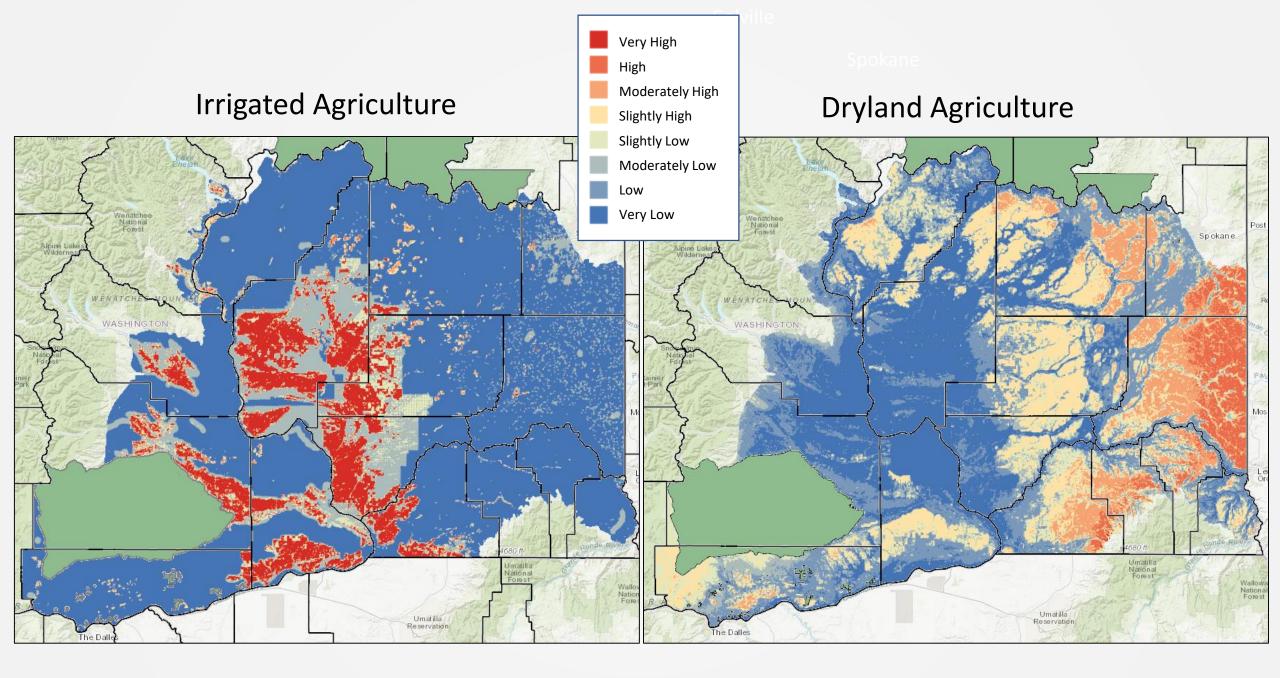


### **High Drylands Quality**

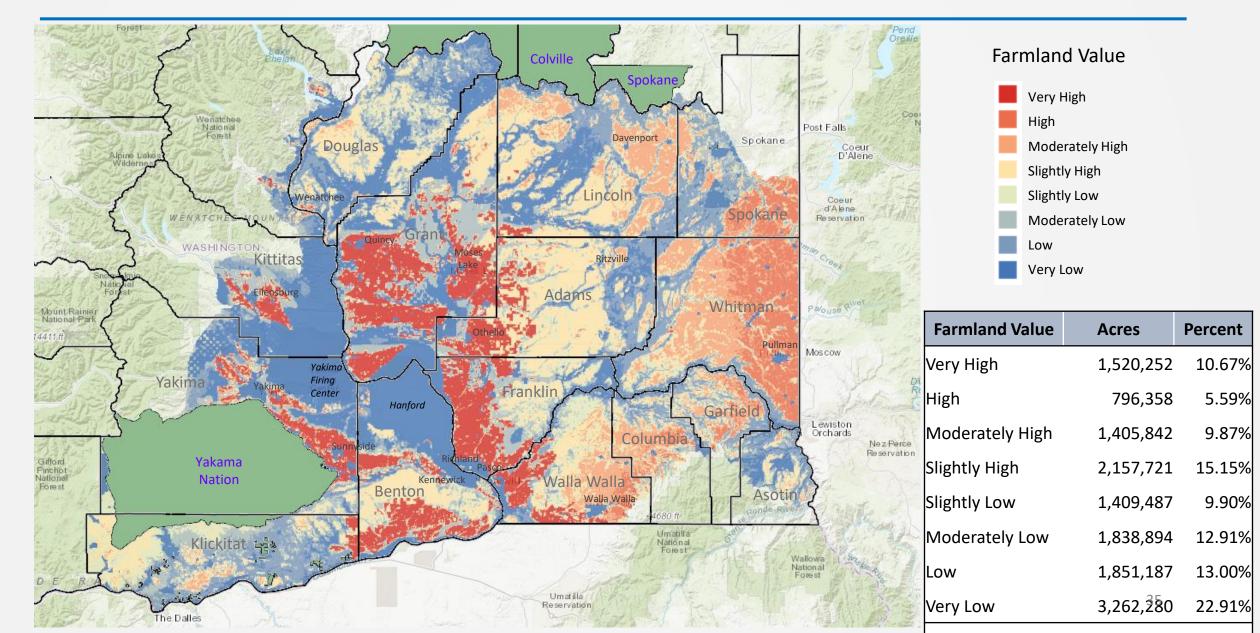


High Crop Productivity

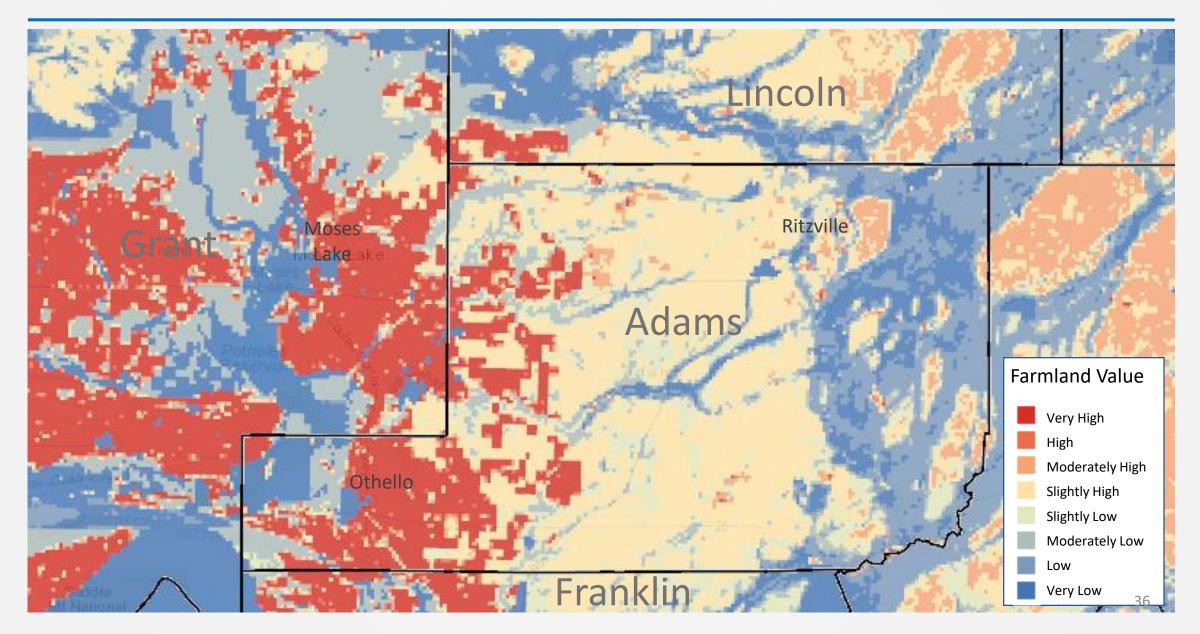
High Water Storage

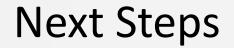


### Farmland Value Review Draft



### Farmland Value Review Draft





- Share with colleagues and others for review and comment
- Update Washington Department of Agriculture CROP dataset
- Make final model refinements



# Questions

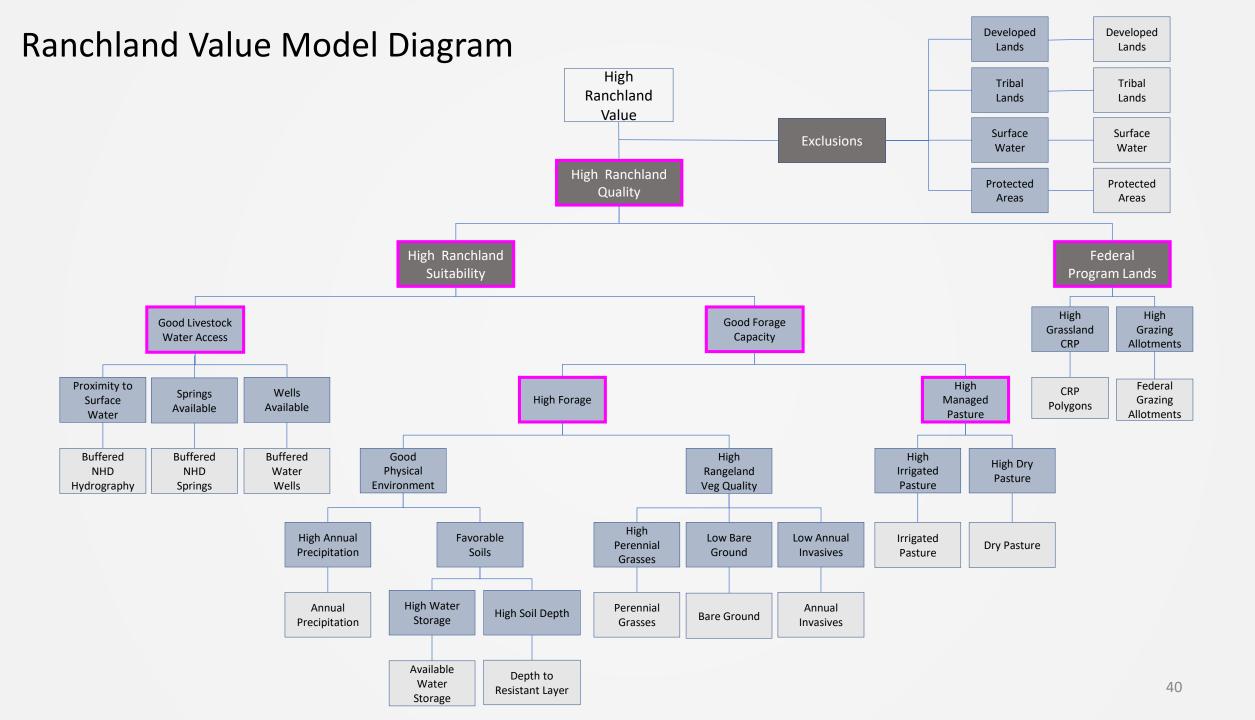


## **Ranchlands Mapping Group Update**

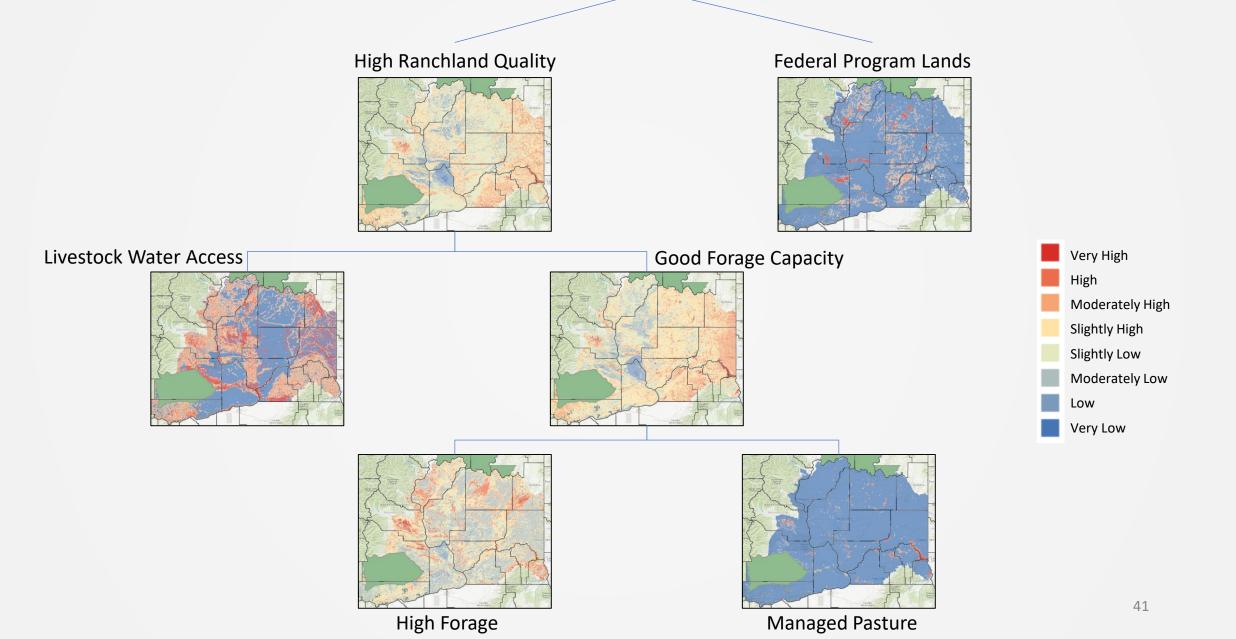
Presented by Jesse Ingels, Land Broker

<u>Goal</u>: Produce a map that illustrates the <u>relative value</u> of ranchlands based on available spatial data.

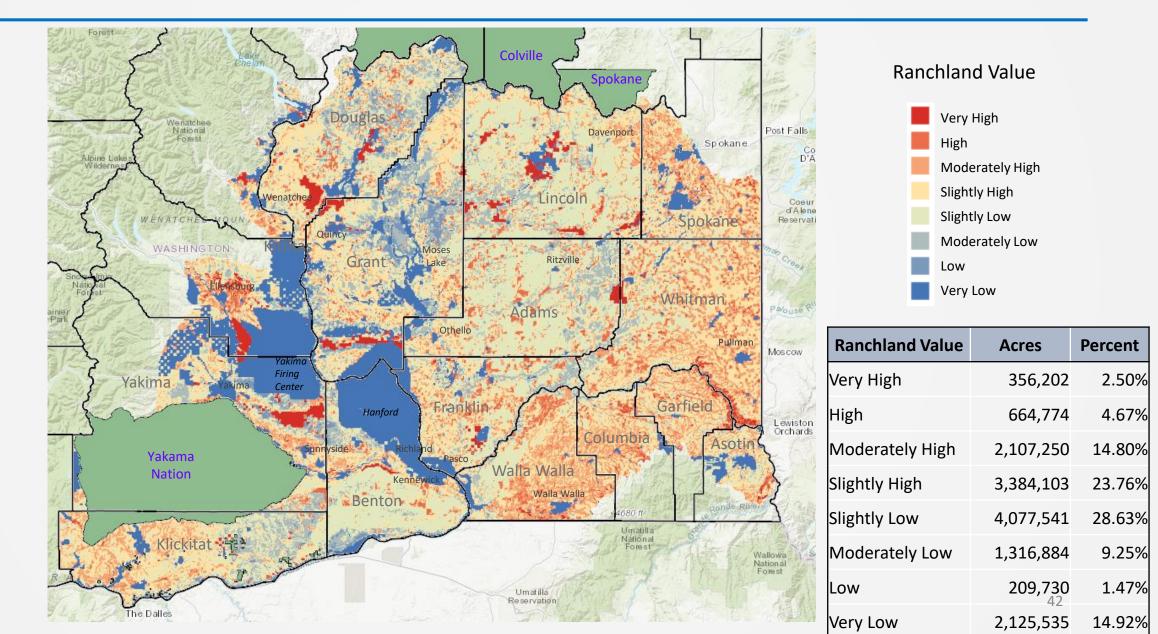




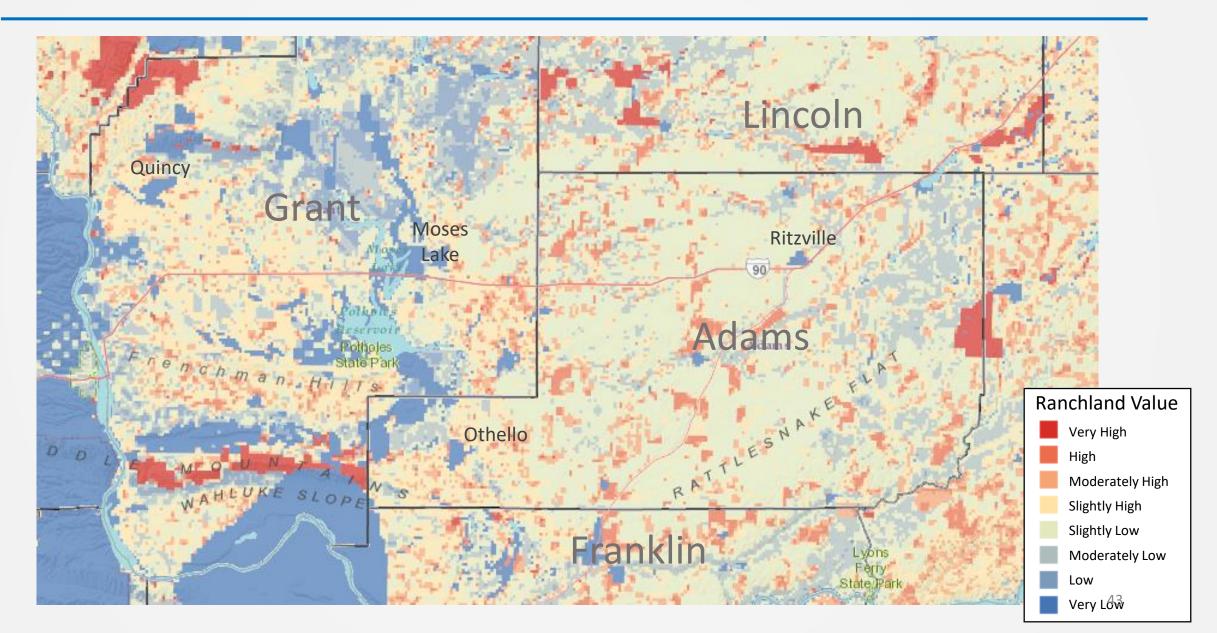
### High Ranchland Value



## Ranchland Value Review Draft



## **Ranchland Value Review Draft**



- Share with colleagues and others for review and comment
- Make final model refinements



# Questions



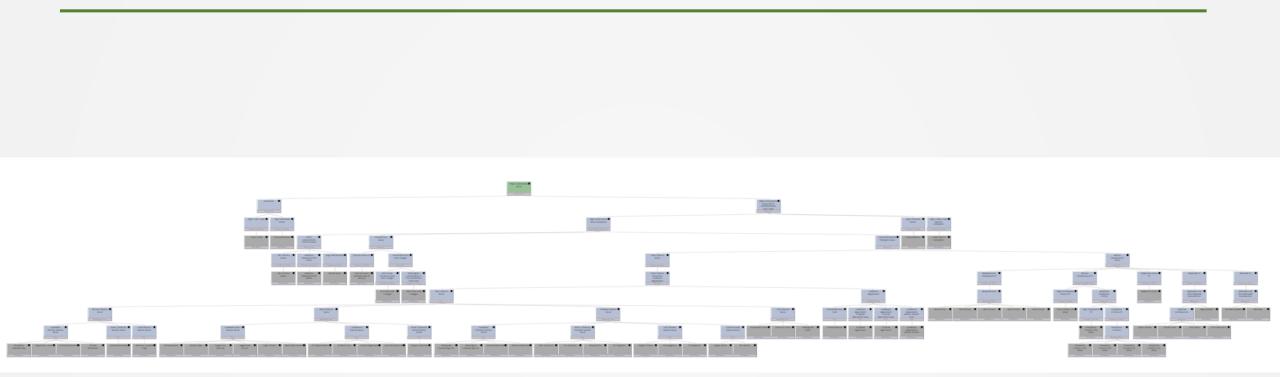
## **Conservation Mapping Group Update**

Presented by Michael Ritter, Washington Department of Fish and Wildlife

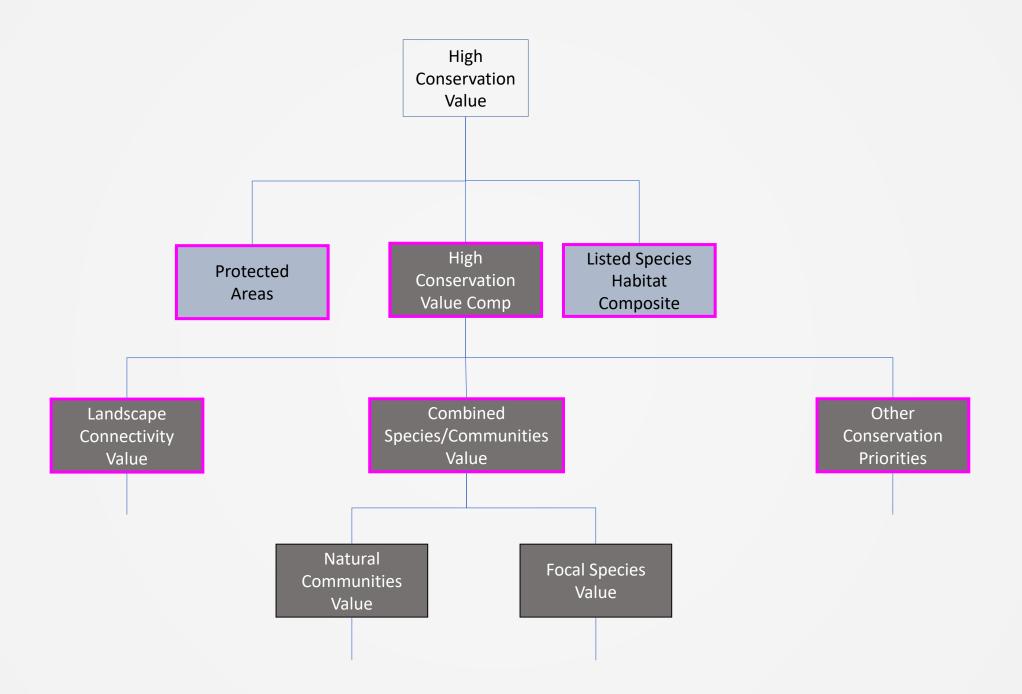
<u>Goal</u>: Produce a map that illustrates the <u>relative value</u> of conservation lands based on available spatial data.



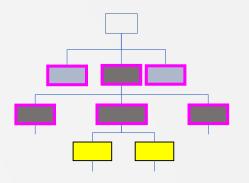
## **Conservation Value Model Overview**



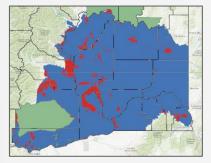
- 66 data inputs (some made by combining multiple data sources) (gray boxes)
- 54 intermediate maps (light blue boxes)



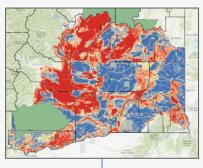
### High Conservation Value



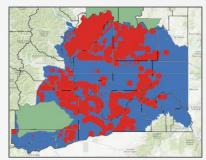
High Protected Areas

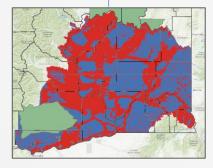


High Conservation Value Composite

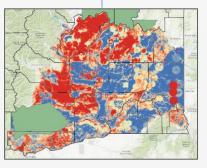


#### Listed Species Composite

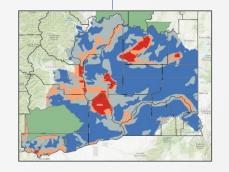




Connectivity Value



Combined Species/ Ecosystems Value

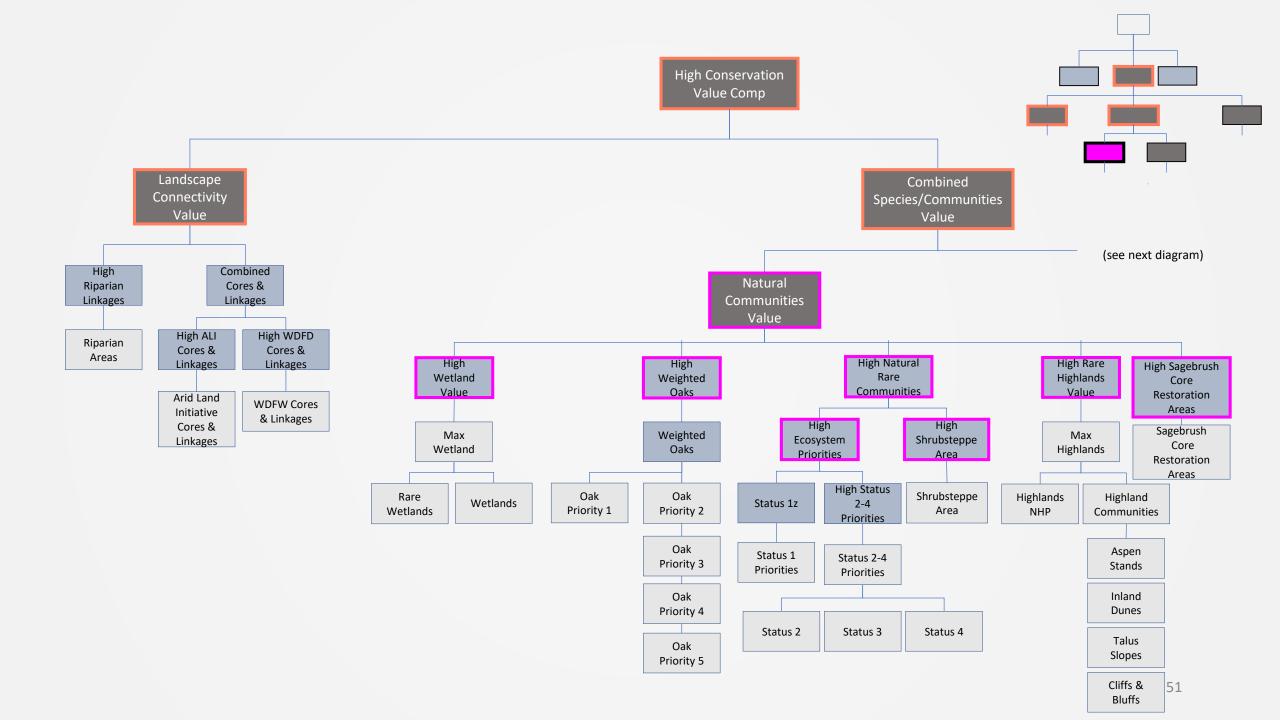


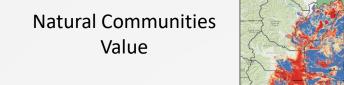
**Other Conservation Priorities** 

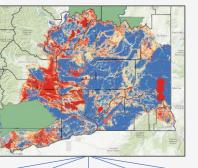
Very High
High
Moderately High
Slightly High
Slightly Low
Moderately Low
Low
Very Low

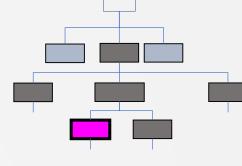
## **Natural Communities**



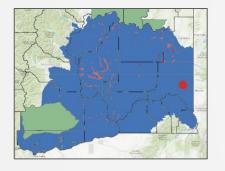




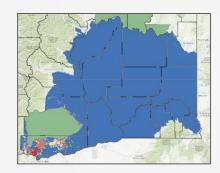




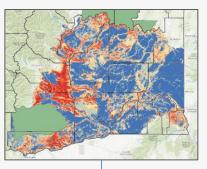
#### High Wetland Value



#### High Weighted Oaks

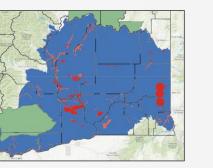


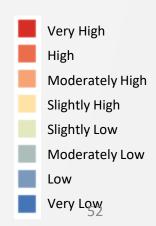
#### Natural Rare Communities

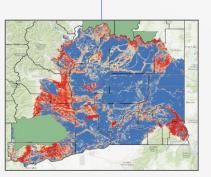


#### High Rare Highlands

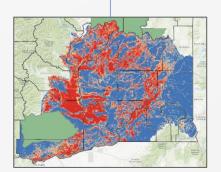
#### High Sagebrush Cores







#### High Ecosystem Priorities

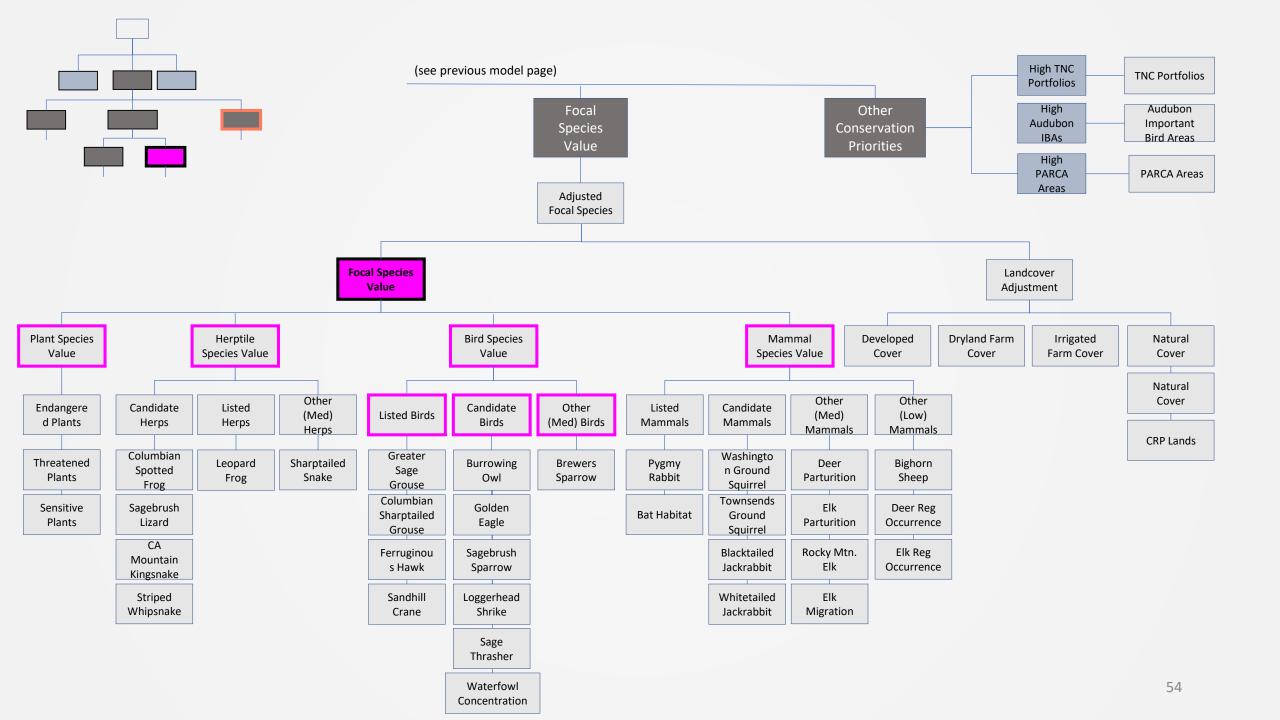


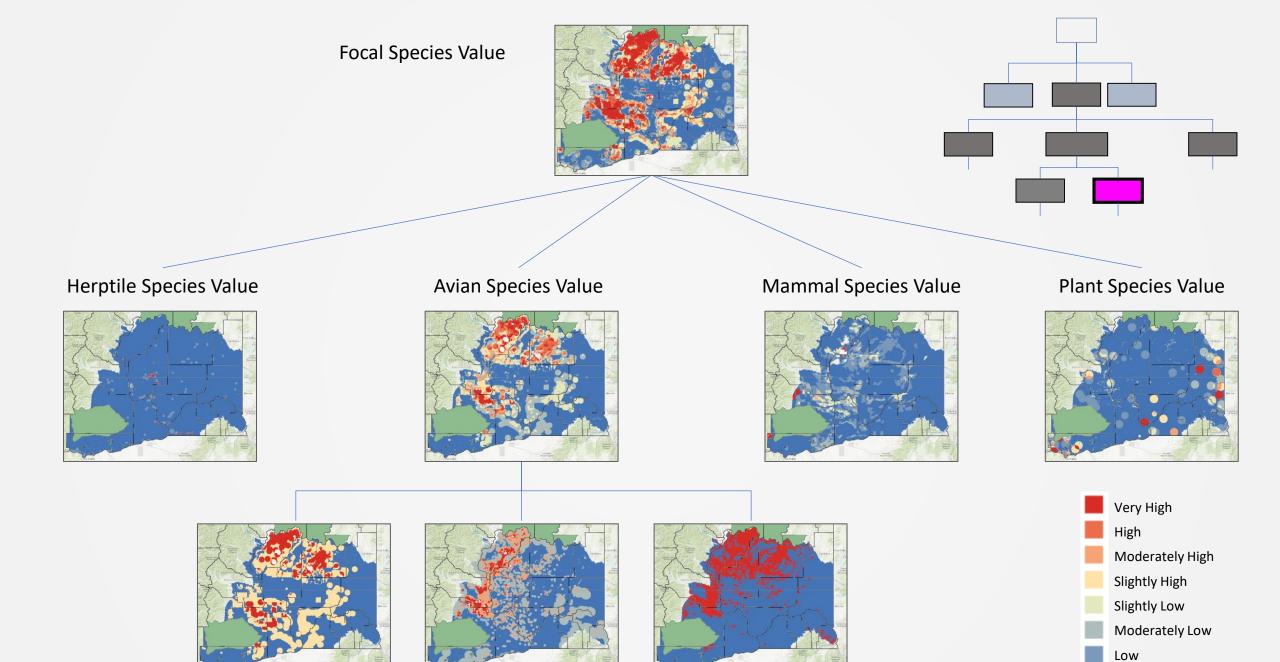
#### High Shrubsteppe Area



## Vertebrate Focal Species

	Listed Species	Candidate Species	Other Species of Interest (Med)	Other Species of Interest (Low)
	Mammals			
	Pygmy Rabbit	Washington Ground Squirrel	Deer Parturition	Bighorn Sheep
1	Bat Habitat	Townsends Ground Squirrel	Elk Parturition	Deer Regular Occurrence
		Blacktailed Jackrabbit	Rocky Mountain Elk	Elk Regular Occurrence
14		Whitetailed Jackrabbit	Elk Migration	
	Birds			
	Greater Sage Grouse	Burrowing Owl	Brewers Sparrow	
	Columbian Sharptailed Grou	Golden Eagle		
	Ferruginous Hawk	Sagebrush Sparrow		
Ę.	Sandhill Crane	Loggerhead Shrike		
20		Sage Thrasher		
Ē.		Waterfowl Concentrations		
	Herptiles			
	Nothern Leopard Frog	Columbian Spotted Frog	Sharp-tailed Snake	
		Sagebrush Lizard		
		California Mountain Kingsnake		
		Striped Whipsnake		





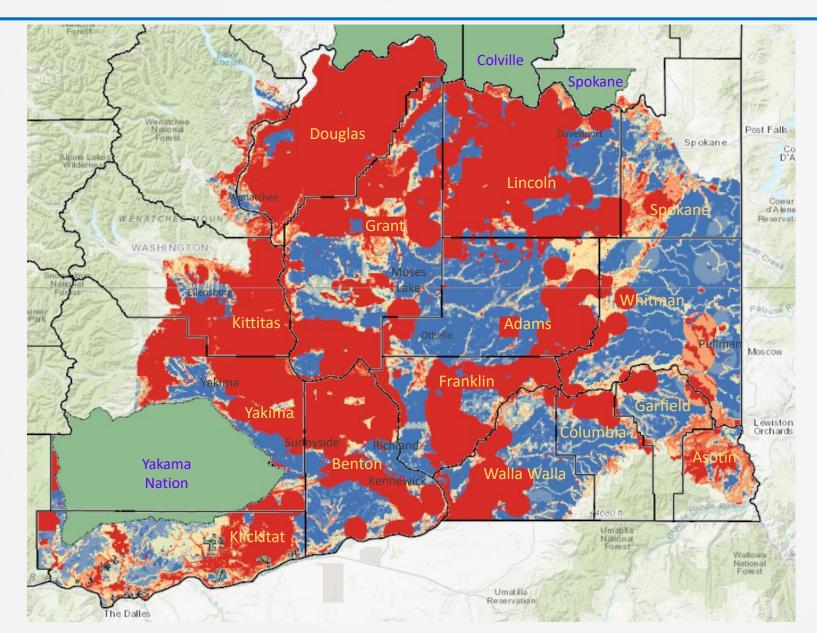
Avian Listed Species

Avian Candidate Species

Avian Other Species

Very Low 55

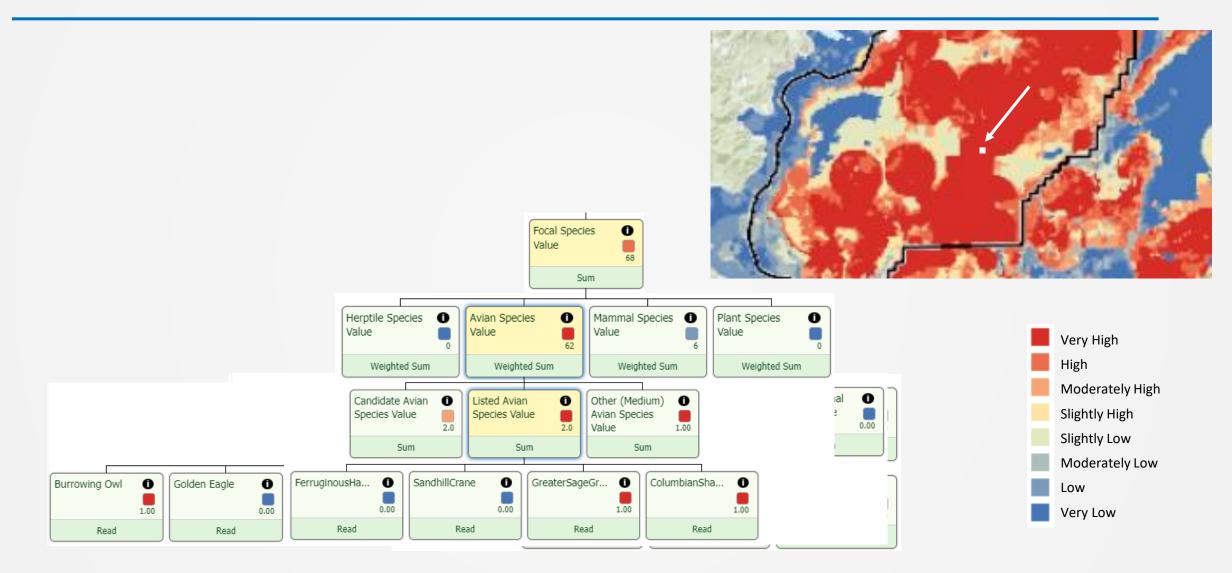
## **Conservation Value Review Draft**





<b>Conservation Value</b>	Acres	Percent
Very High	6,988,191	49.07%
High	418,102	2.94%
Moderately High	641,176	4.50%
Slightly High	645,500	4.53%
Slightly Low	692,388	4.86%
Moderately Low	535,662	3.76%
Low	805,253	5.65%
Very Low	3,515,748	24.69%
Totals	14,242,020	100.00%

## **Conservation Model Transparency**



- Share with colleagues and others for review and comment
- Add a few more species
- Make final model refinements



# Questions



## Draft Composite Map Results

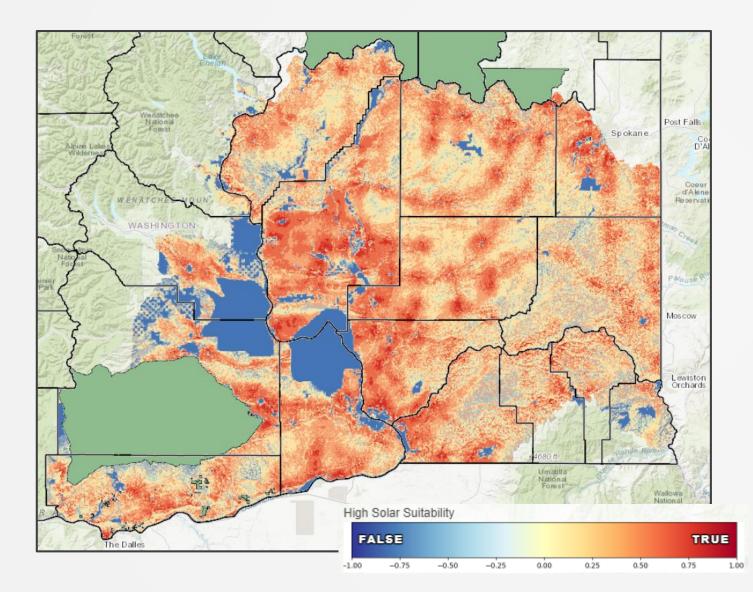
## Jim Strittholt Conservation Biology Institute

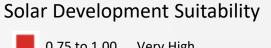
Painting of Columbia Plateau by Sarah Gilman

<u>Goal</u>: Produce a map-based product that allows for easy access and high level of transparency with the focus on reducing solar energy development conflicts in the Washington Columbia Plateau.



### Solar Development Suitability



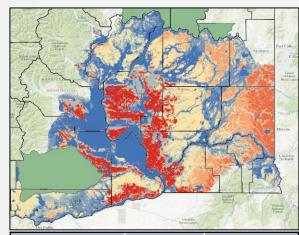




Solar Suitability	Acres	Percent
Very High	429,098	3.01%
High	2,519,544	17.69%
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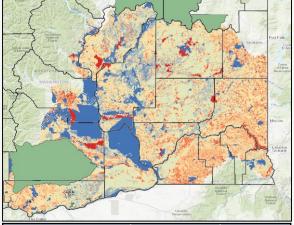
### Resource Value/Conflict Models

#### Farmland Value/Conflict



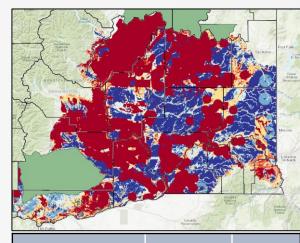
Farmland Value	Acres	Percent
Very High	1,520,252	10.67%
High	796,358	5.59%
Moderately High	1,405,842	9.87%
Slightly High	2,157,721	15.15%
Slightly Low	1,409,487	9.90%
Moderately Low	1,838,894	12.91%
Low	1,851,187	13.00%
Very Low	3,262,280	22.91%
Totals	14,242,020	100.00%

#### Ranchland Value/Conflict



Ranchland Value	Acres	Percent
Very High	356,202	2.50%
High	664,774	4.67%
Moderately High	2,107,250	14.80%
Slightly High	3,384,103	23.76%
Slightly Low	4,077,541	28.63%
Moderately Low	1,316,884	9.25%
Low	209,730	1.47%
Very Low	2,125,535	14.92%
Totals	14,242,020	100.00%

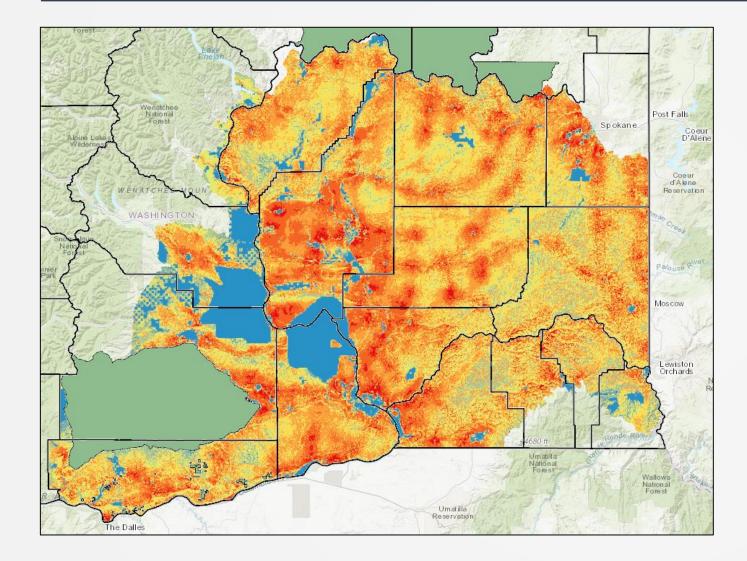
#### Conservation Value/Conflict



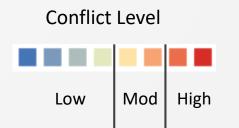
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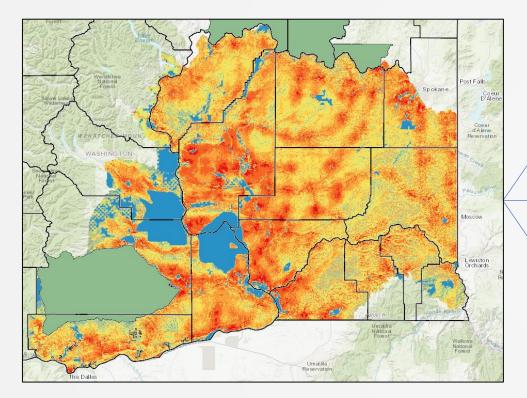
## Solar Development Suitability Composite



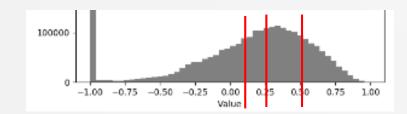
- Solar Development Suitability Score
- Solar Development Suitability Rank
- Conservation Value Score
- Conservation Value Rank
- Conservation Value Conflict Level
- Farmland Value Score
- Farmland Value Rank
- Farmland Value Conflict Level
- Ranchland Value Score
- Ranchland Value Rank
- Ranchland Value Conflict Level

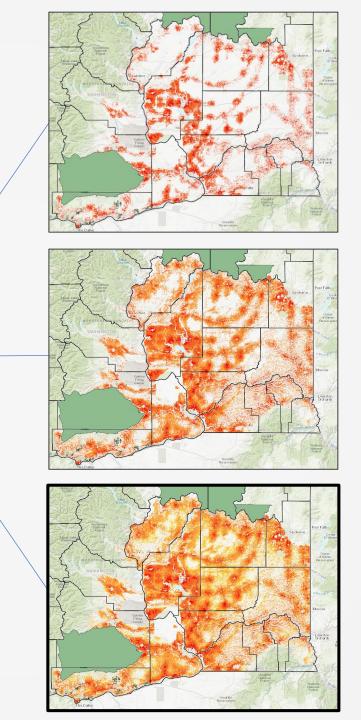


#### Solar Development Suitability Composite



#### 14,242,020 acres





very high & high solar rank

2.95 M acres

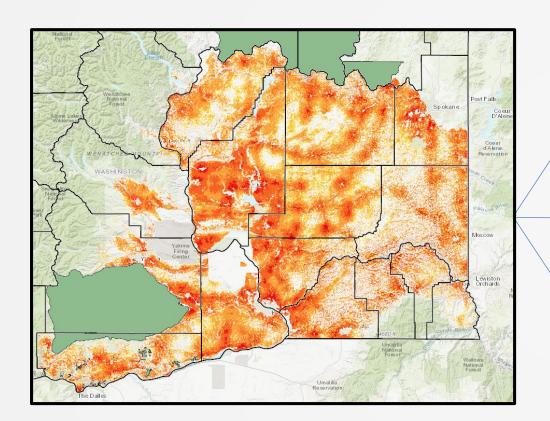
~21%

very high to moderately high solar rank

6.80 M acres

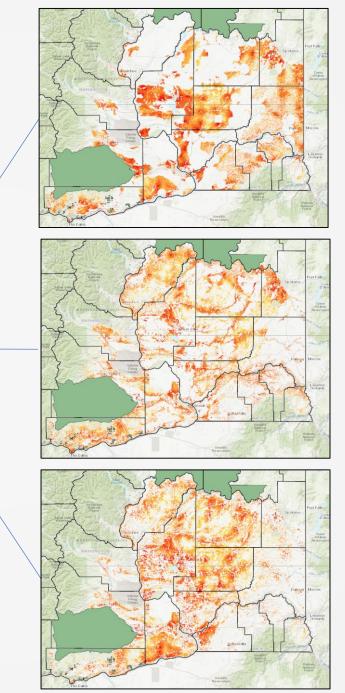
~48%

Suitability Score GT 0.1000 8.90 M acres ~62%



Very high to slightly high suitability

8.90 M acres



Conservation Low Conflict

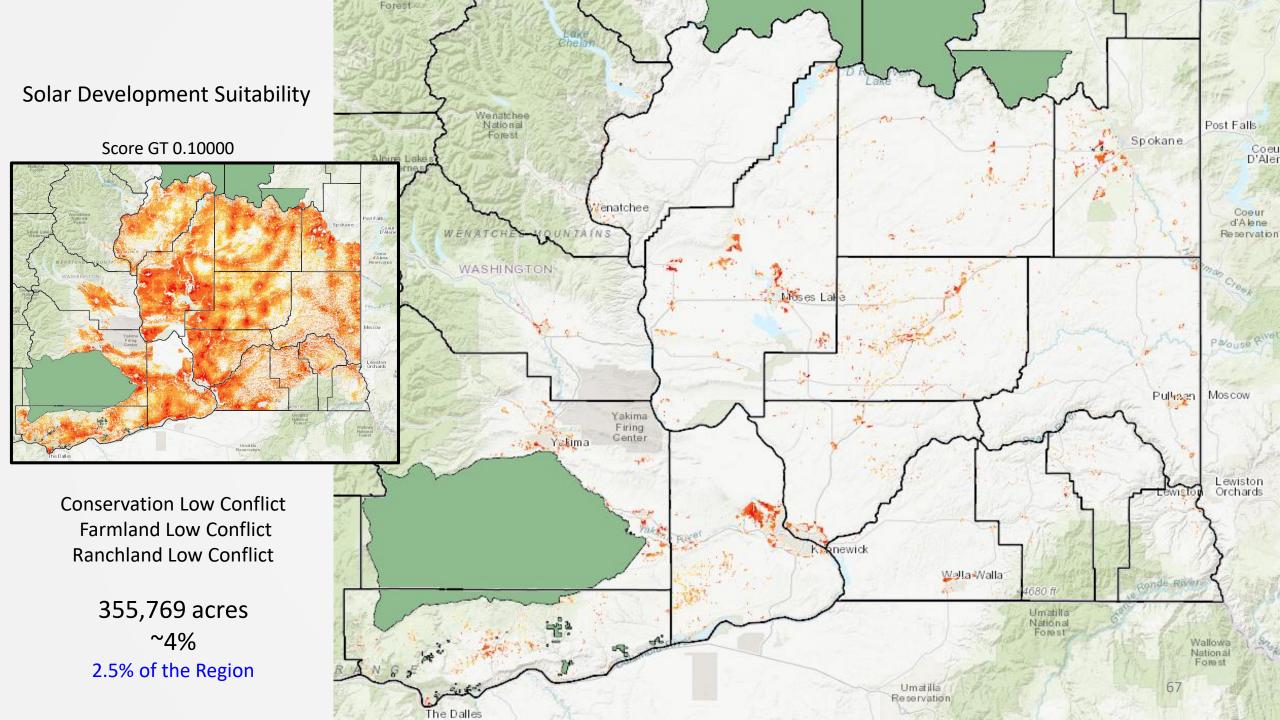
4.09 M acres ~46%

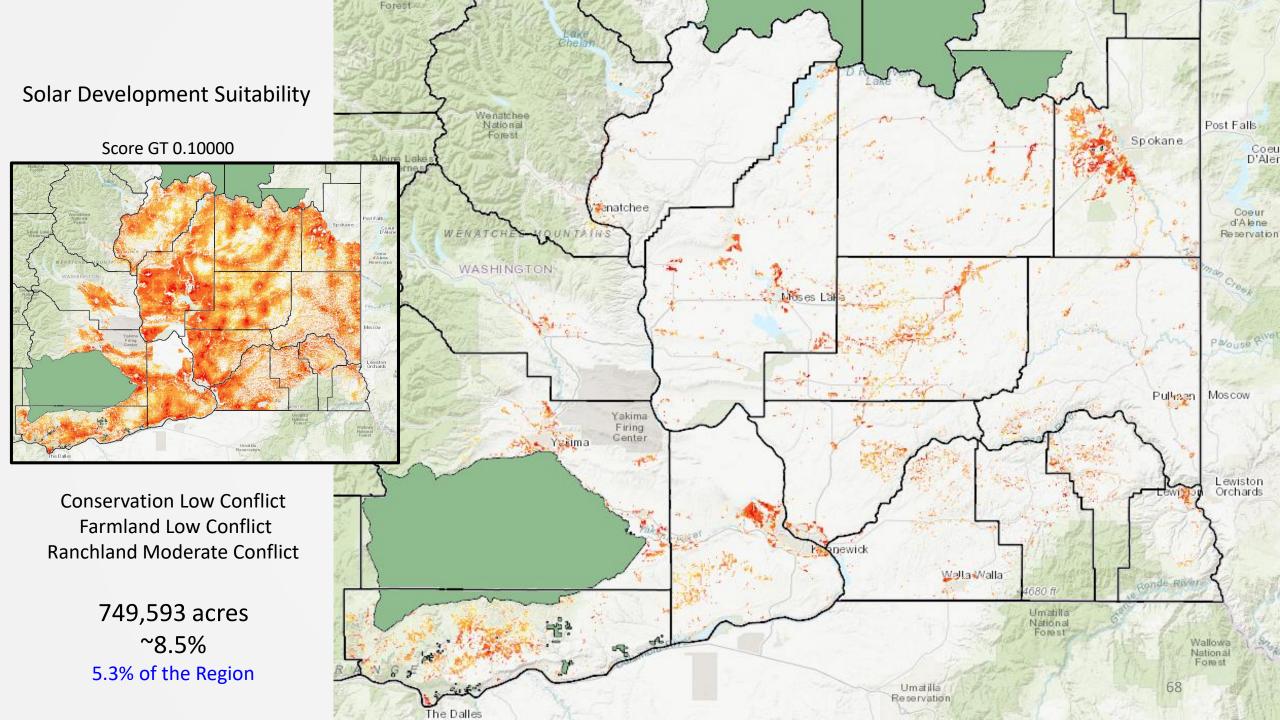
Farmland Low Conflict

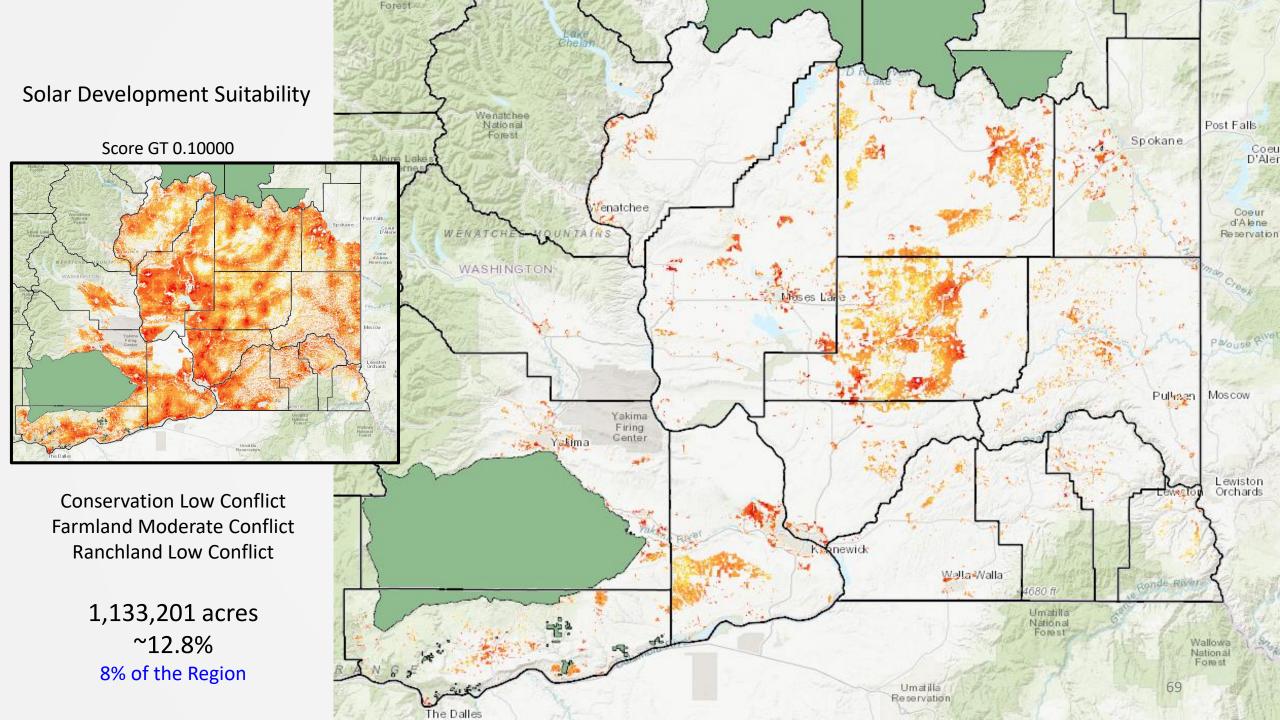
4.15 M acres ~47%

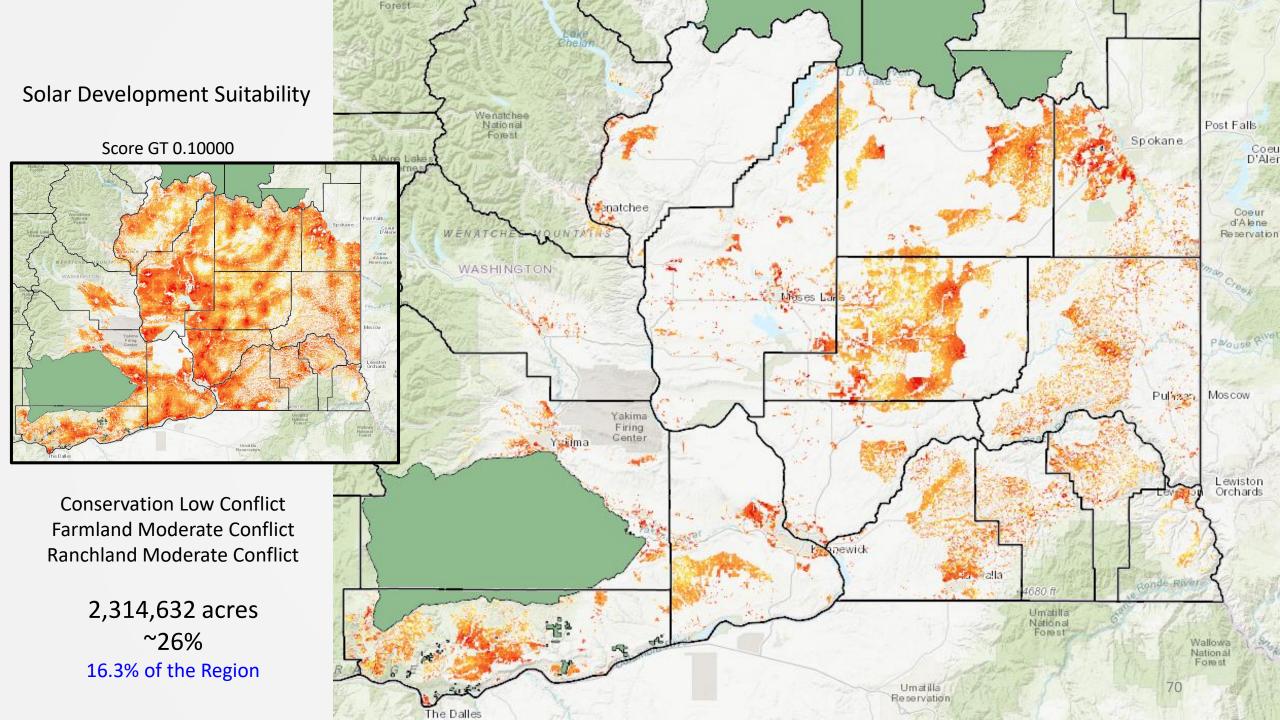
Ranchland Low Conflict

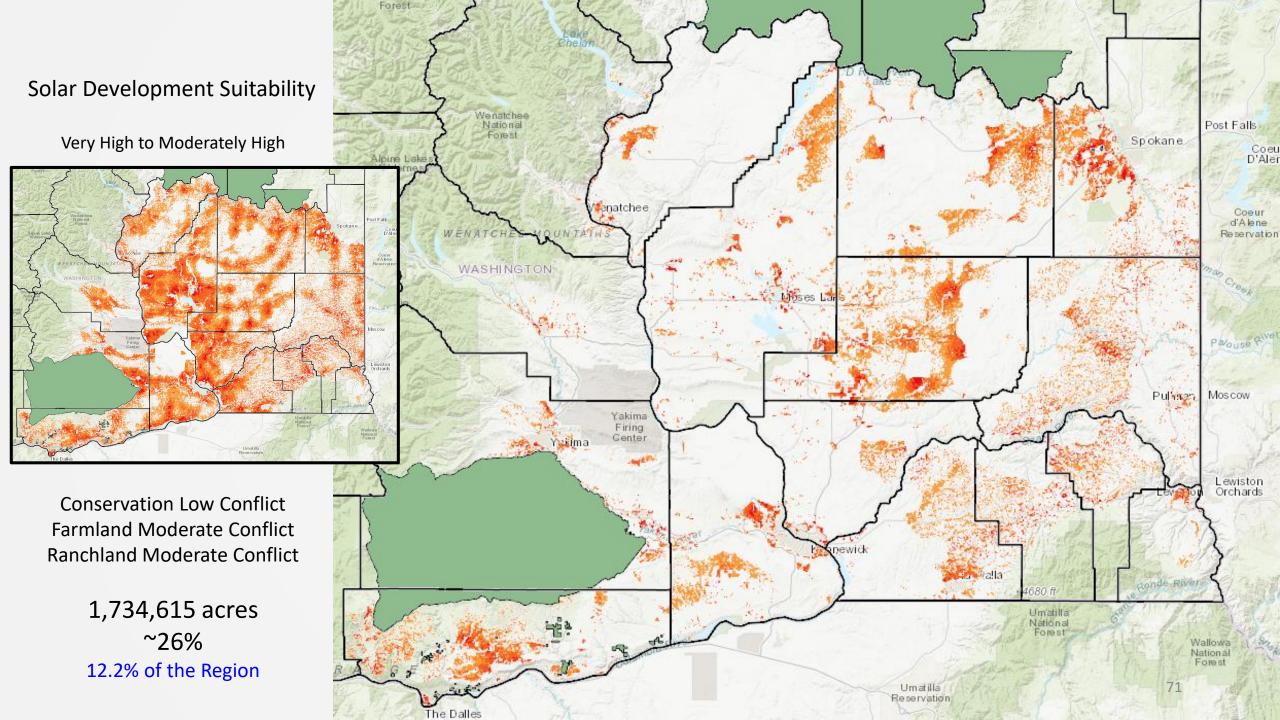
4.36 M acres ~49%

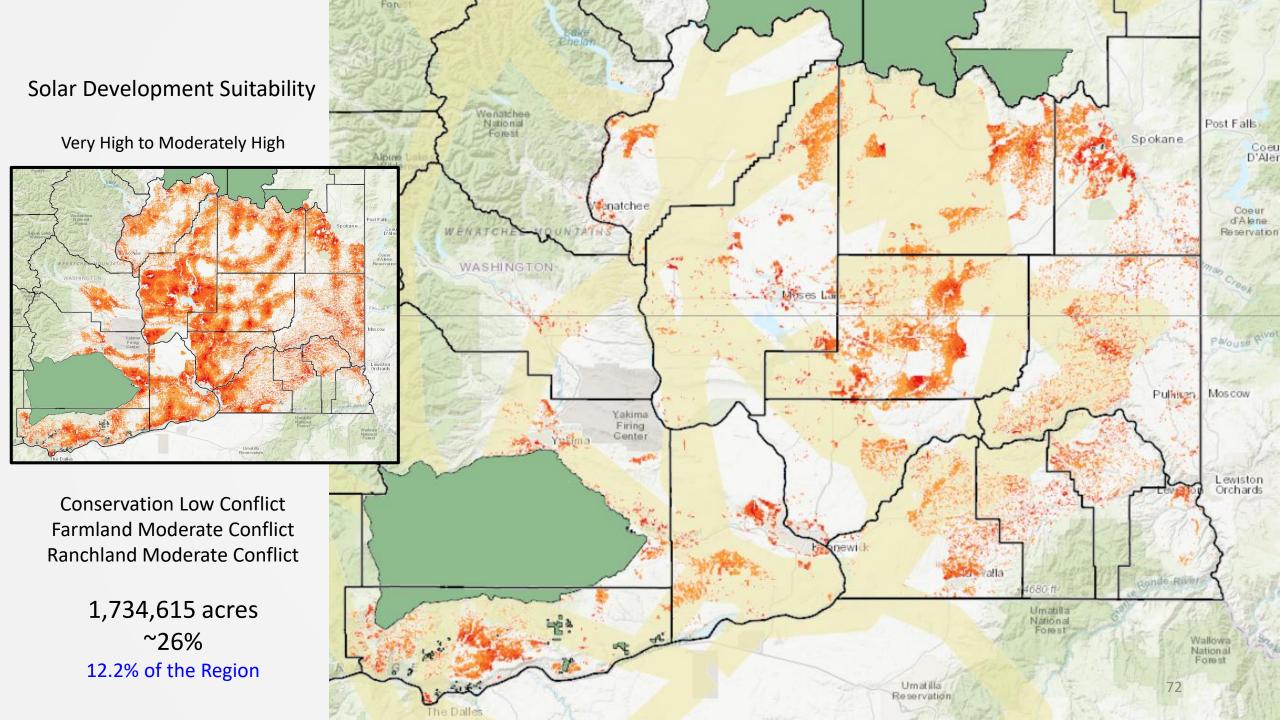


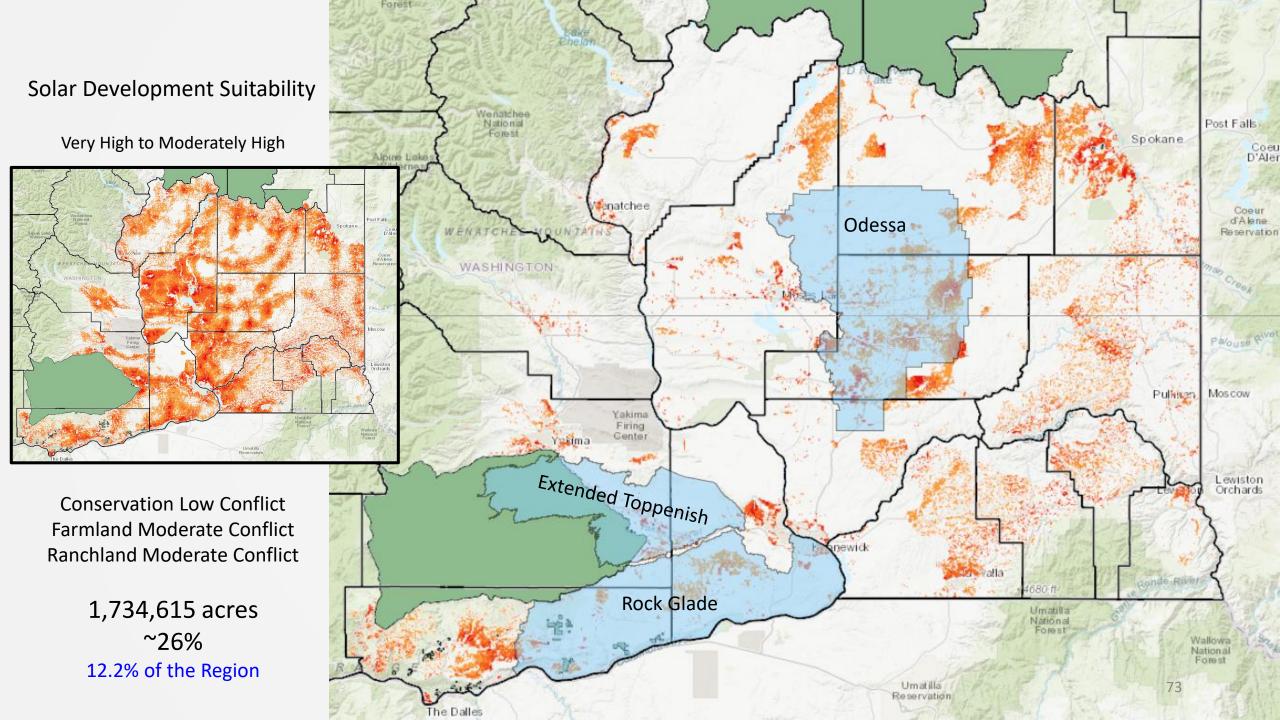


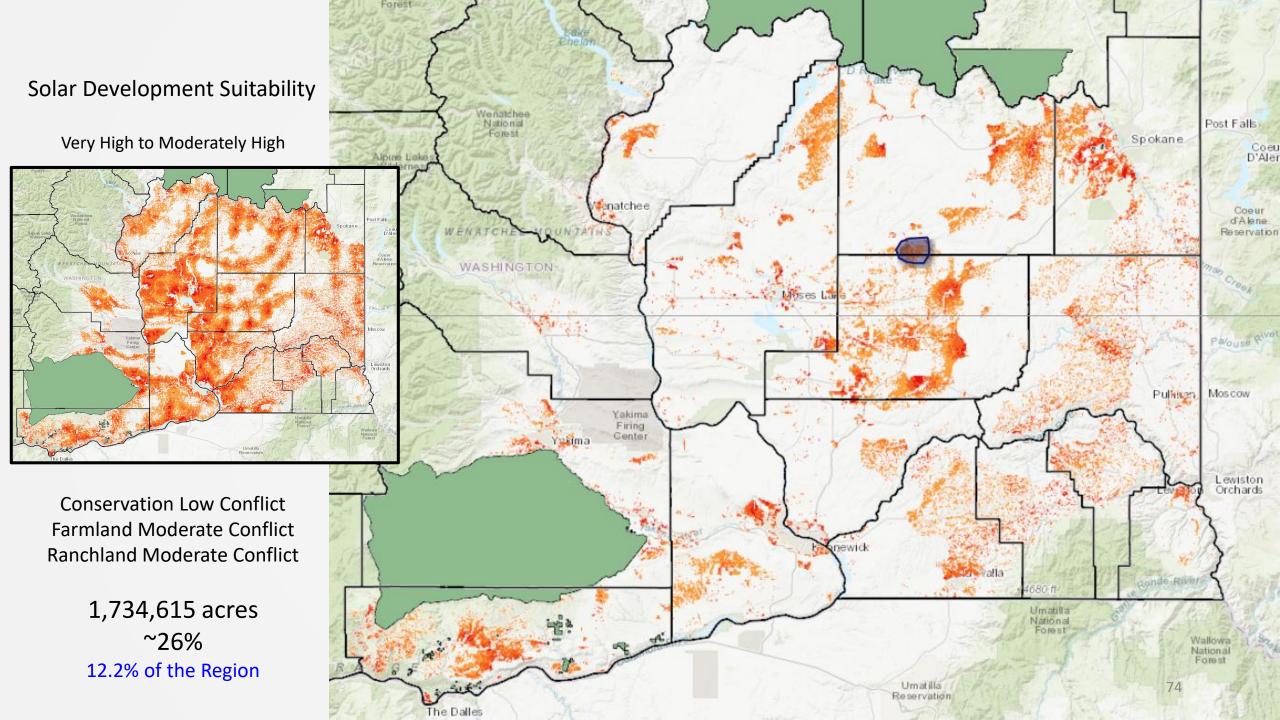












## <u>Go Live</u>



## Reviewing the Draft Maps

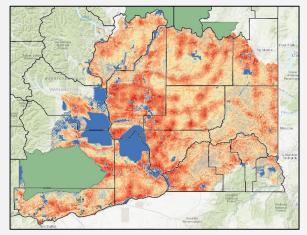
#### Jim Strittholt Conservation Biology Institute

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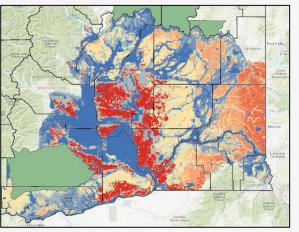
Painting of Columbia Plateau by Sarah Gilman

#### How to Review the Models and Maps

#### Solar Development Suitability

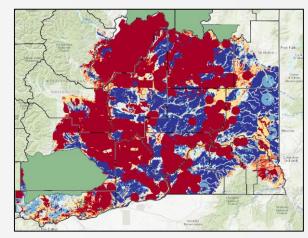


#### Farmland Value



# Ranchland Value

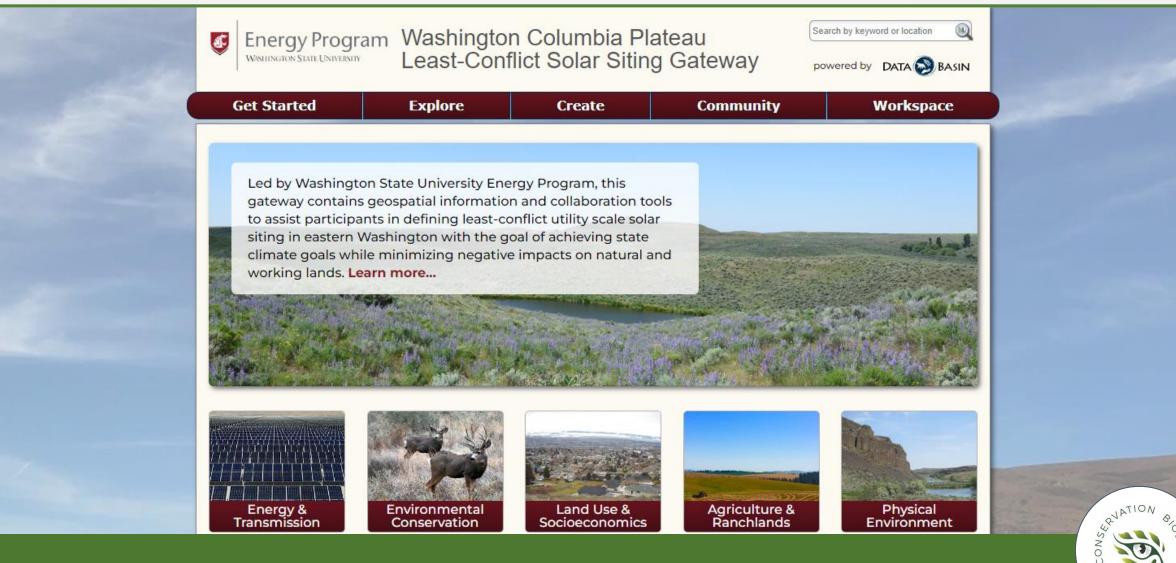
#### **Conservation Value**



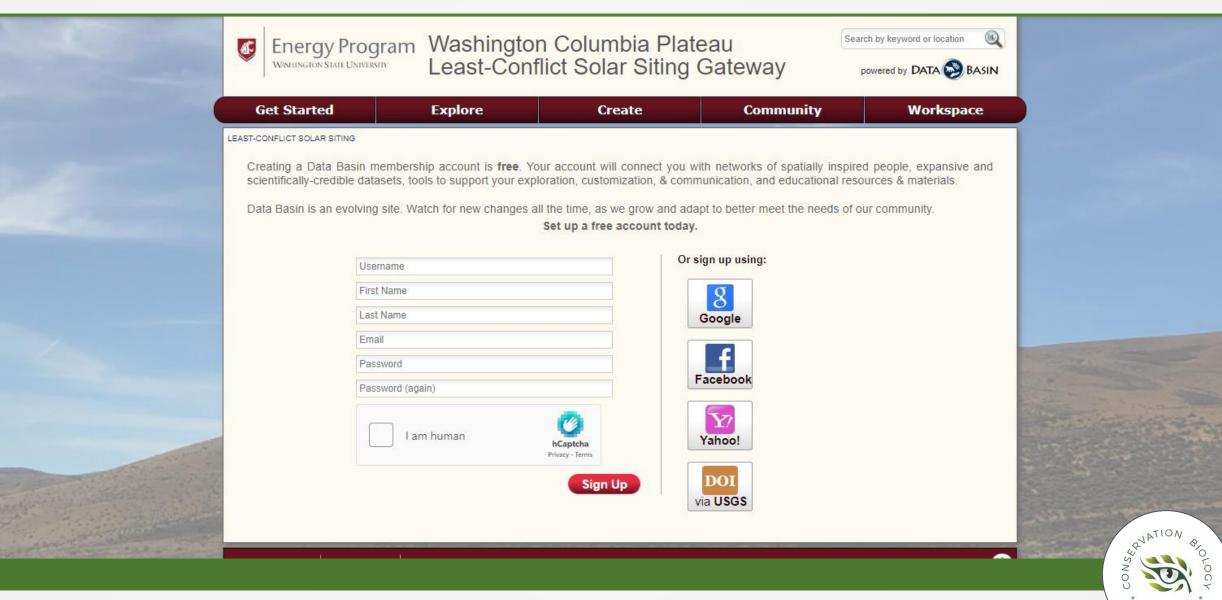


#### Washington Columbia Plateau Least-Conflict Solar Siting Gateway

https://wsuenergy.databasin.org/



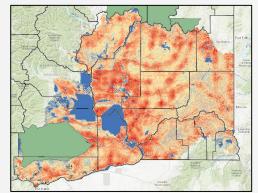
#### Step 1: Create Your Private Data Basin Account



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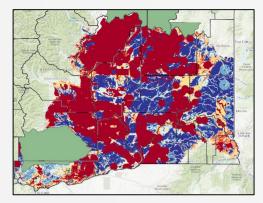
#### Step 2: Select the Map You Wish to Review

#### Solar Development Suitability



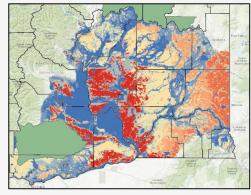
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**Conservation Value** 



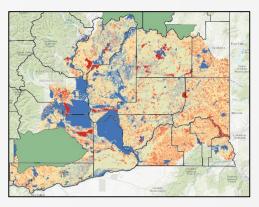
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#### Farmland Value



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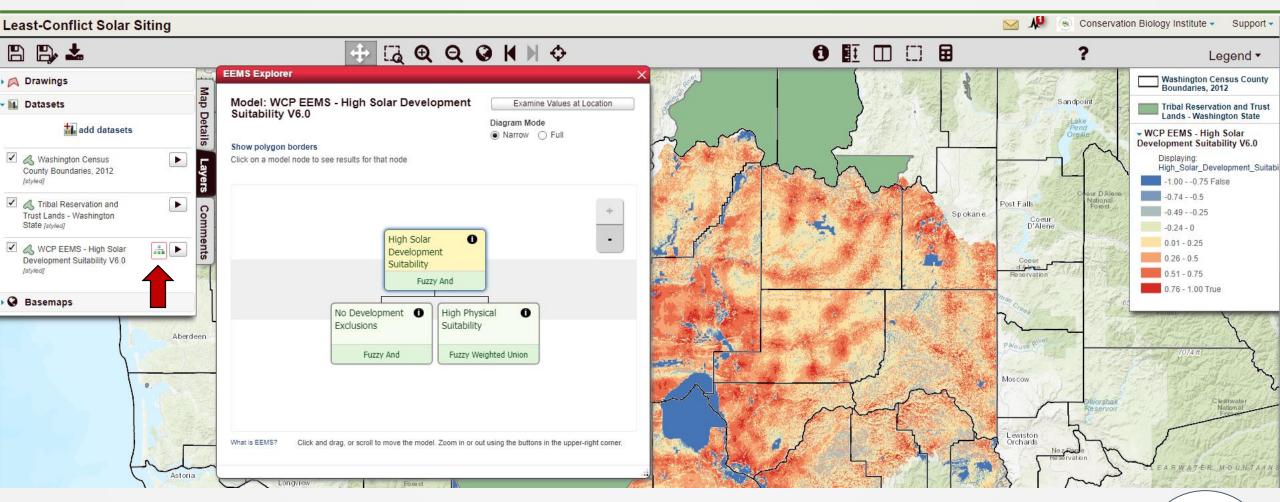
Ranchland Value



https://wsuenergy.databasin.org/maps/7df95c3bb97749e9bdd63fb81d524fdc/active/

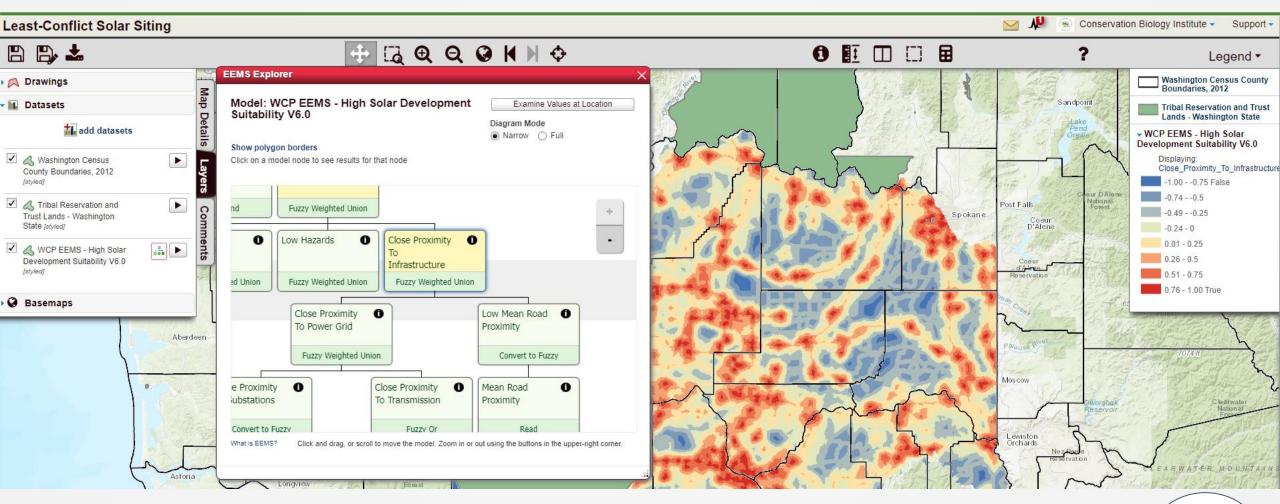


#### Step 3: Open EEMS Explorer Window



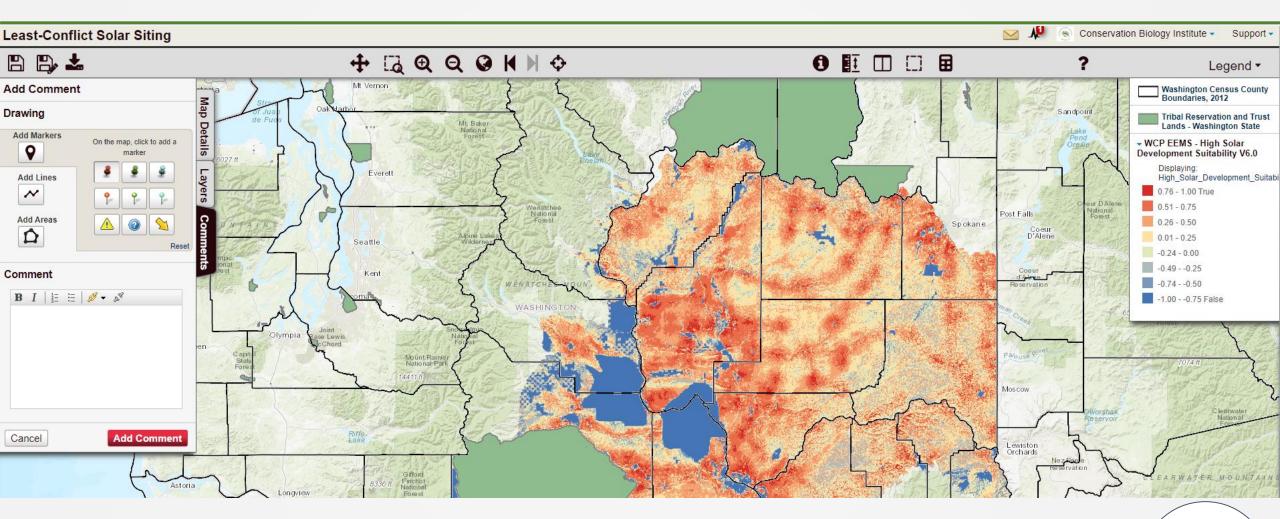


#### Step 4: Review the Components that Make Up the Map





#### Step 5: Make General or Spatially Specific Comments





- 1) Based on your first impression, does the map seem to generally reflect reality?
- 2) Reviewing the model components, does it include the most important considerations? Is anything missing?
- 3) Based on your knowledge of the region, are there specific locations on the map that you feel are overvalued or undervalued according to the model results? Please explain.

#### COMPLETE COMMENTS BY FRIDAY, MAY 5th



## 5-minute Break

## Please return at 11:35 am



Yakima Canyon Photo credit: Victoria Ditovsky

## Small Group Discussions: Observations and Insights

Painting of Columbia Plateau by Sarah Gilman

## **Small Group Discussion Prompts**

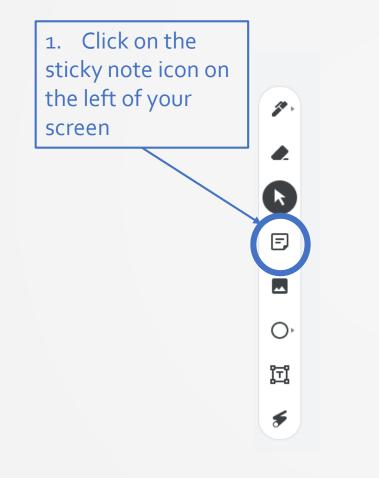
- 1. What are your observations of the draft maps?
- 2. What issues or questions about solar siting do the maps suggest?

Your small group will address these prompts using Jamboard (a virtual whiteboard).

## Bird's-eye View of Jamboard

-	Observations and Insights - Glad	dwin   Gathering 3 - April 12, 2023	< <u>1/2</u> )	🛔 🛔 Share
5	Arr Set background	Clear frame		
		WSU Least-conflict Solar Siting Project   Ga Participant Observations and Insi of the Draft Least Conflict Map	ghts	
		Use sticky notes to document your observations of the draft composite m		
*				

### **Adding Notes in Jamboard**



2. Type your thoughts into the field, select your sticky color (optional), and click 'Save' ideal siting criteria needed to det tim men Sticky note Cancel Save eria

## Using Jamboard

A few things to keep in mind:

- Your small group facilitator will provide your group with its own Jamboard link.
- When you click the link, a browser window will open that's separate from your Zoom screen.
- If you experience technical difficulties, you can type your thoughts into the Zoom chat instead of using Jamboard.

## **Discussion Norms**

- You are all experts—all ideas are welcome
- Allow everyone the chance to speak; listen actively to understand others' views
- Please honor the process and other participants with respectful language and interactions
- Please don't attribute statements to individuals or organizations outside these discussions

## Afternoon Preview

Tom Beierle Ross Strategic

Painting of Columbia Plateau by Sarah Gilman

## Afternoon Agenda

## 1:00 - 1:15 PMReflections on the Morning and Impromptu Networking1:15 - 1:50 PMHow the Least-conflict Maps May Be Used1:50 - 2:40 PMSmall Group Discussions: Participant Use Cases2:40 - 3:00 PMMeeting Wrap Up and Next Steps

## 30-minute Lunch Break

Please return at 1:00 pm



Photo: Tri-City Herald

## Reflections on the Morning

Tom Beierle Ross Strategic

Painting of Columbia Plateau by Sarah Gilman

## **Afternoon Agenda**

#### **Reflections on the Morning and Impromptu Networking** 1:00 – 1:15 PM 1:15 – 1:50 PM

- Least-conflict Mapping Use Cases
- **Small Group Discussions: Participant Use Cases** 1:50 - 2:40 PM
- 2:40 3:00 PM **Meeting Wrap Up and Next Steps**

## How the Least-conflict Maps May Be Used

Moderated by Tom Beierle Ross Strategic

Painting of Columbia Plateau by Sarah Gilman

## In your position, how do you think the maps can be used?

Speakers:

- 1. Adam Maxwell, Audubon Washington
- 2. Diane Butorac, Washington Department of Ecology
- 3. Maddy Sym, Cypress Creek Renewables
- 4. Jay Kehne, Conservation Northwest
- 5. Dani Madrone, American Farmland Trust
- 6. Mark Nielson, Franklin County Conservation District
- 7. Mike Ritter, Washington Department of Fish and Wildlife
- 8. Christine Golightly, Columbia River Inter-Tribal Fish Commission
- 9. Nora Hawkins/Aaron Peterson, Washington Department of Commerce

## Small Group Discussions: Participant Use Cases

Painting of Columbia Plateau by Sarah Gilman

## How can the least-conflict maps be used in your work?

Choose one of six breakout rooms for small group discussions:

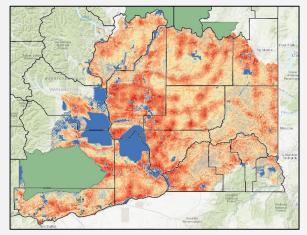
- 1. Agriculture
- 2. Environmental Conservation
- 3. Tribal Considerations
- 4. Local Government and Communities
- 5. State and Federal Policies and Issues
- 6. Solar Industry

## Reviewing the Draft Maps

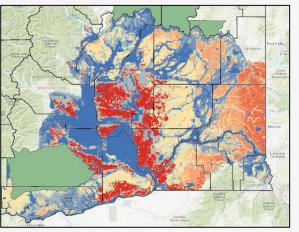
Jim Strittholt Conservation Biology Institute

#### How to Review the Models and Maps

#### Solar Development Suitability

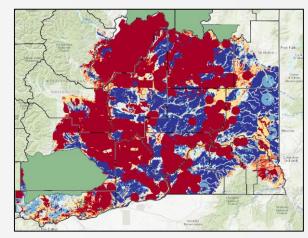


#### Farmland Value



# Ranchland Value

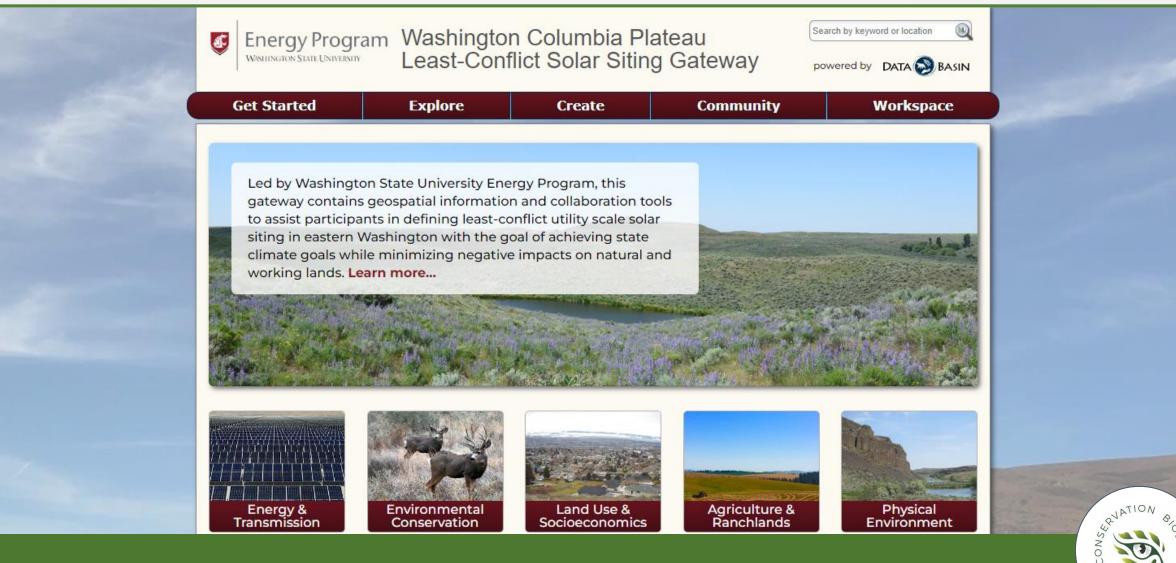
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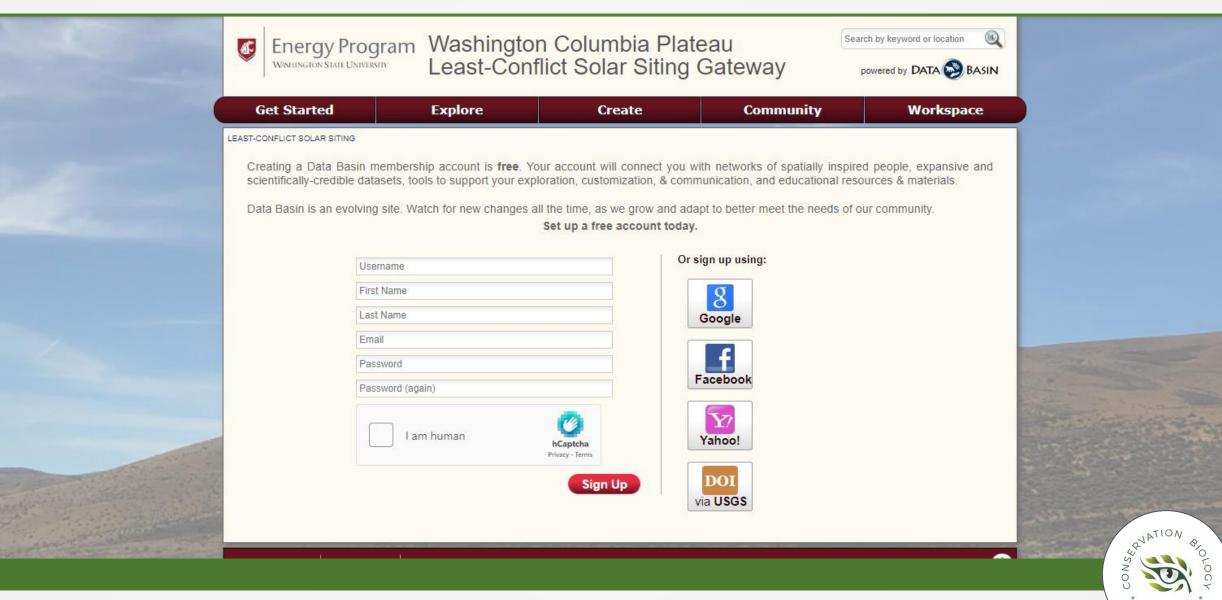


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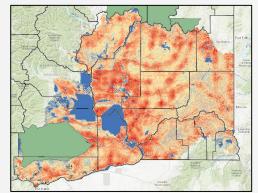
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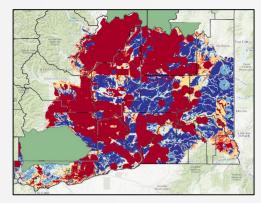
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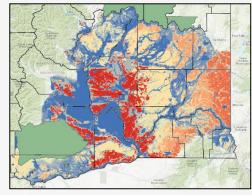
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**Conservation Value** 



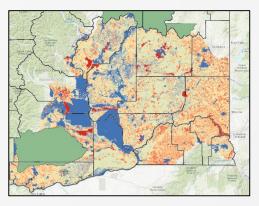
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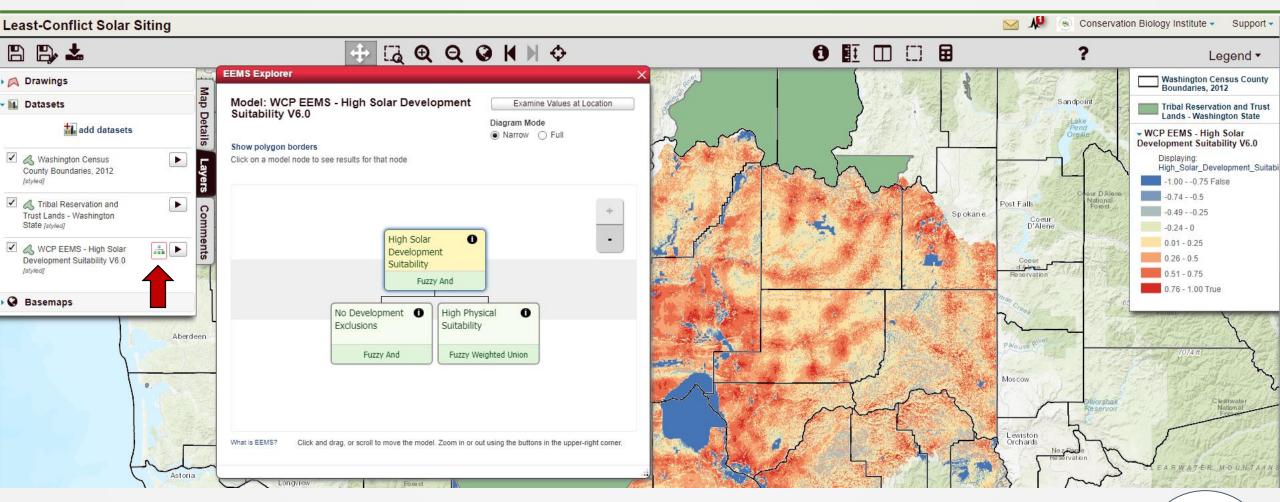
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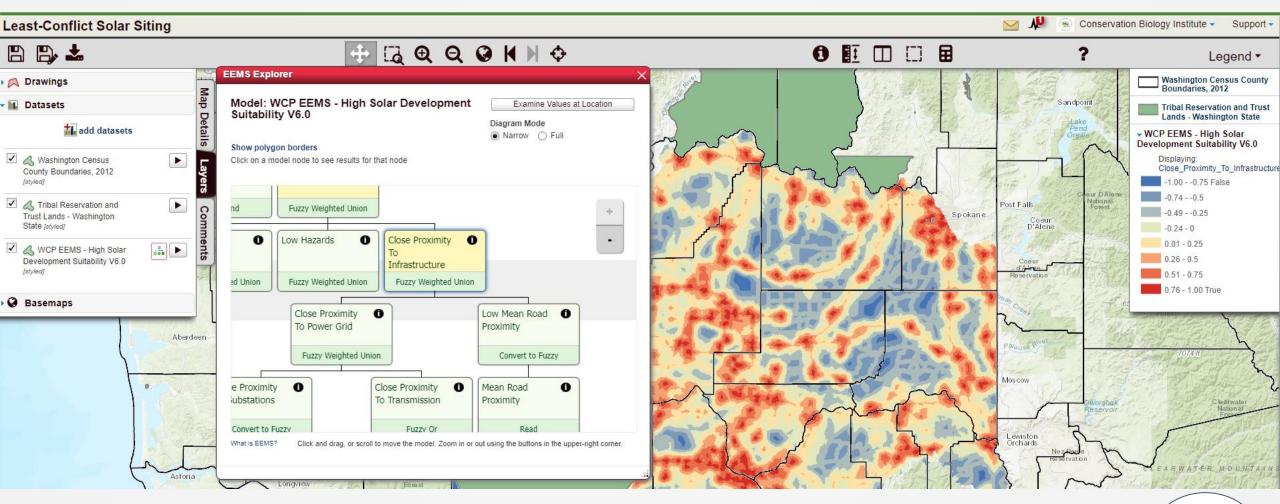


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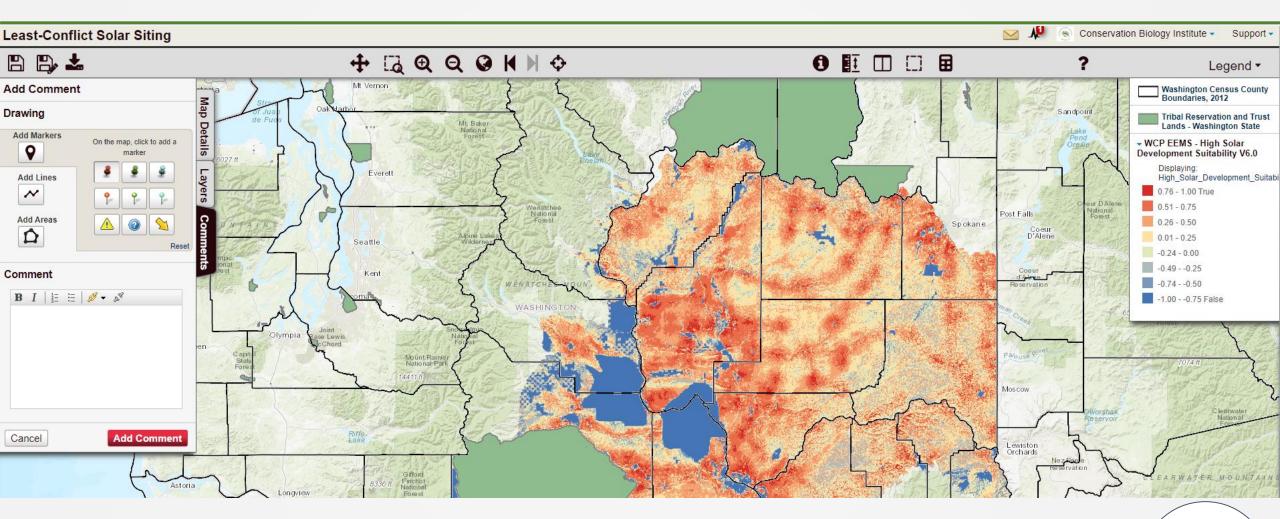


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#### COMPLETE COMMENTS BY FRIDAY, MAY 5th



## Meeting Wrap Up

#### Karen Janowitz Washington State University Energy Program

Painting of Columbia Plateau by Sarah Gilman

### **Next Steps**

- Review and comment by May 5, 2023
- Keep track of progress of E2SHB1216
- View the final report with maps on June 30, 2023
- Use the Gateway!



Sinlahekin Wildlife Area WA Dept of Fish & Wildlife

## Thank you!

https://www.energy.wsu.edu/LeastConflictSolar

https://wsuenergy.databasin.org

Karen Janowitz

JanowitzK@energy.wsu.edu

Washington State University Energy Program



washington state university Energy Program



Yakima Canyon Photo credit: Victoria Ditovsky



washington state university
Energy Program

## Least-Conflict Solar Siting on Washington's Columbia Plateau

Thank you for joining us today!

Lupines in bloom at Rattlesnake Ridge Photo credit: John Thorpe