



Finding a Common Language:

Building Science to Match Forest Planning Needs in Southwest Oregon

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Wednesday, September 10, 2014

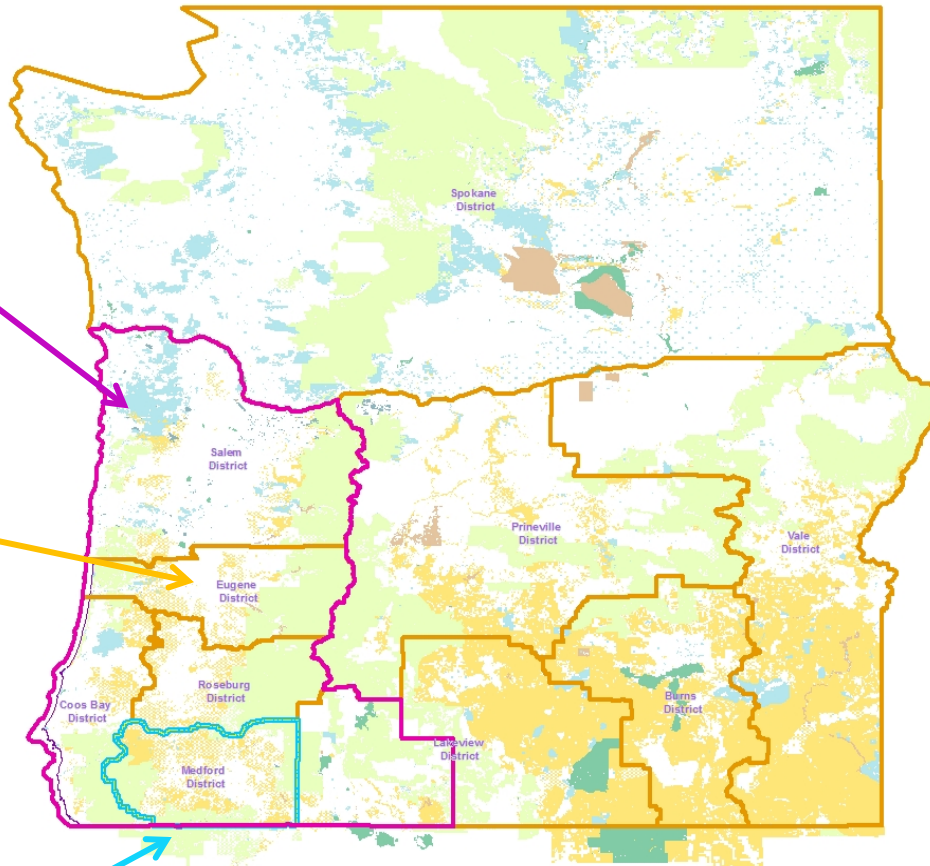
Bureau of Land Management Pacific Northwest

RMP Boundary

BLM Districts

Medford District

2.5 million acres in BLM
Western Oregon Resource
Management Plan (RMP)



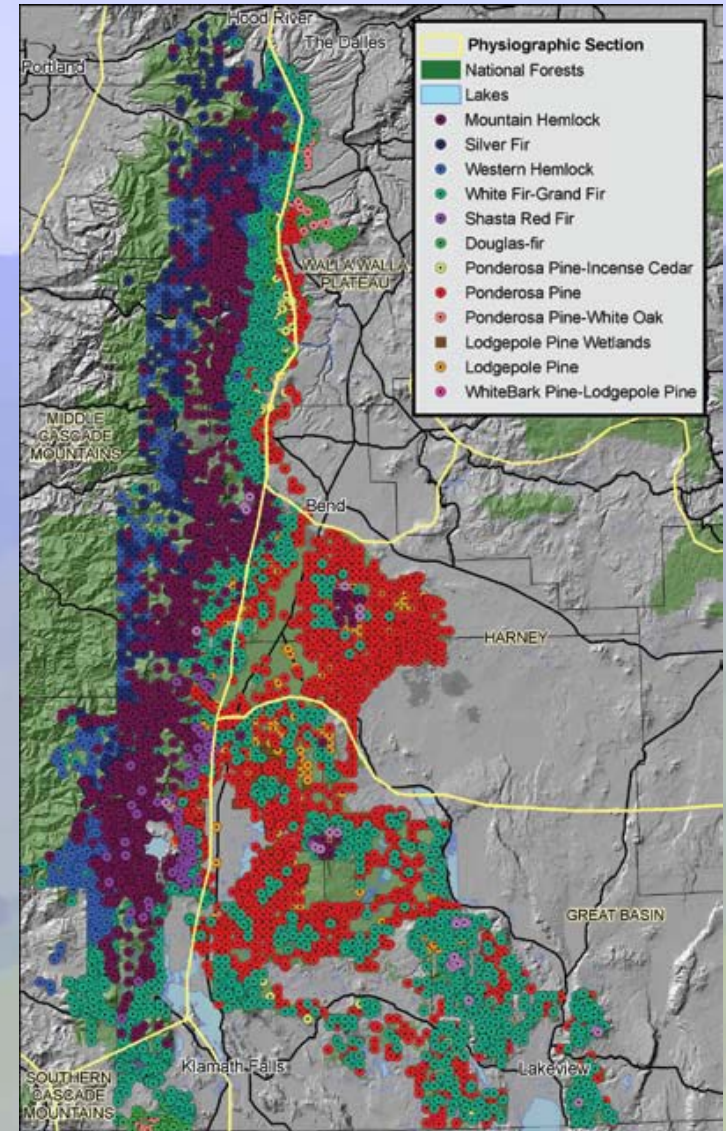


Dry and Moist Forests

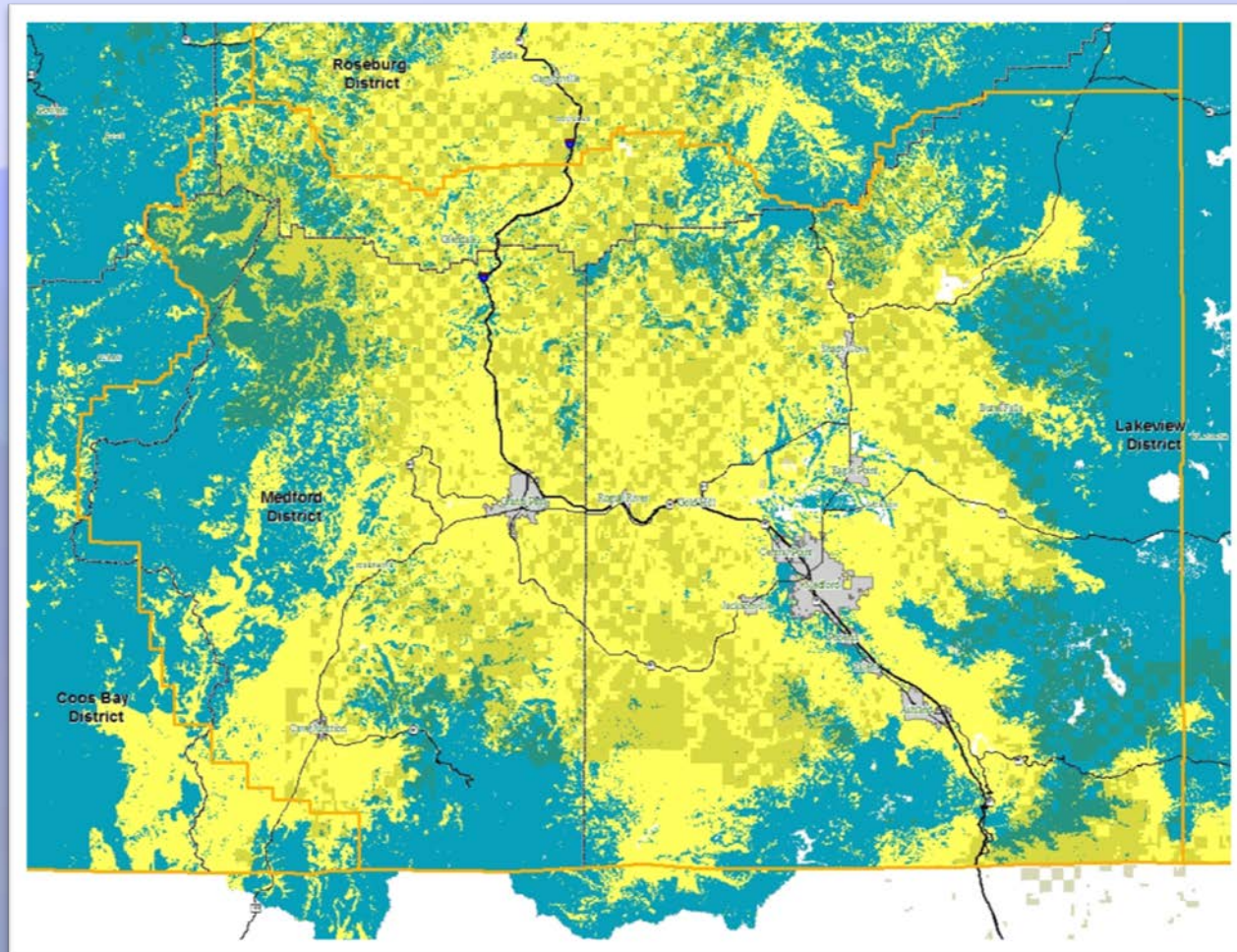
- Need for a continuous vegetation type map that distinguished dry and moist forests
- ILAP (Integrated Landscape Assessment Project) PVT map is chosen (Potential Vegetation Type)
- Worked with Emilie Henderson to revise southwest Oregon map

Climate Change and Vegetation Types

- Important to know how vegetation types will change:
 - Sustainability of forest land and habitats
 - Disturbance patterns
 - Threatened and endangered species



Medford District Dry and Moist PVT

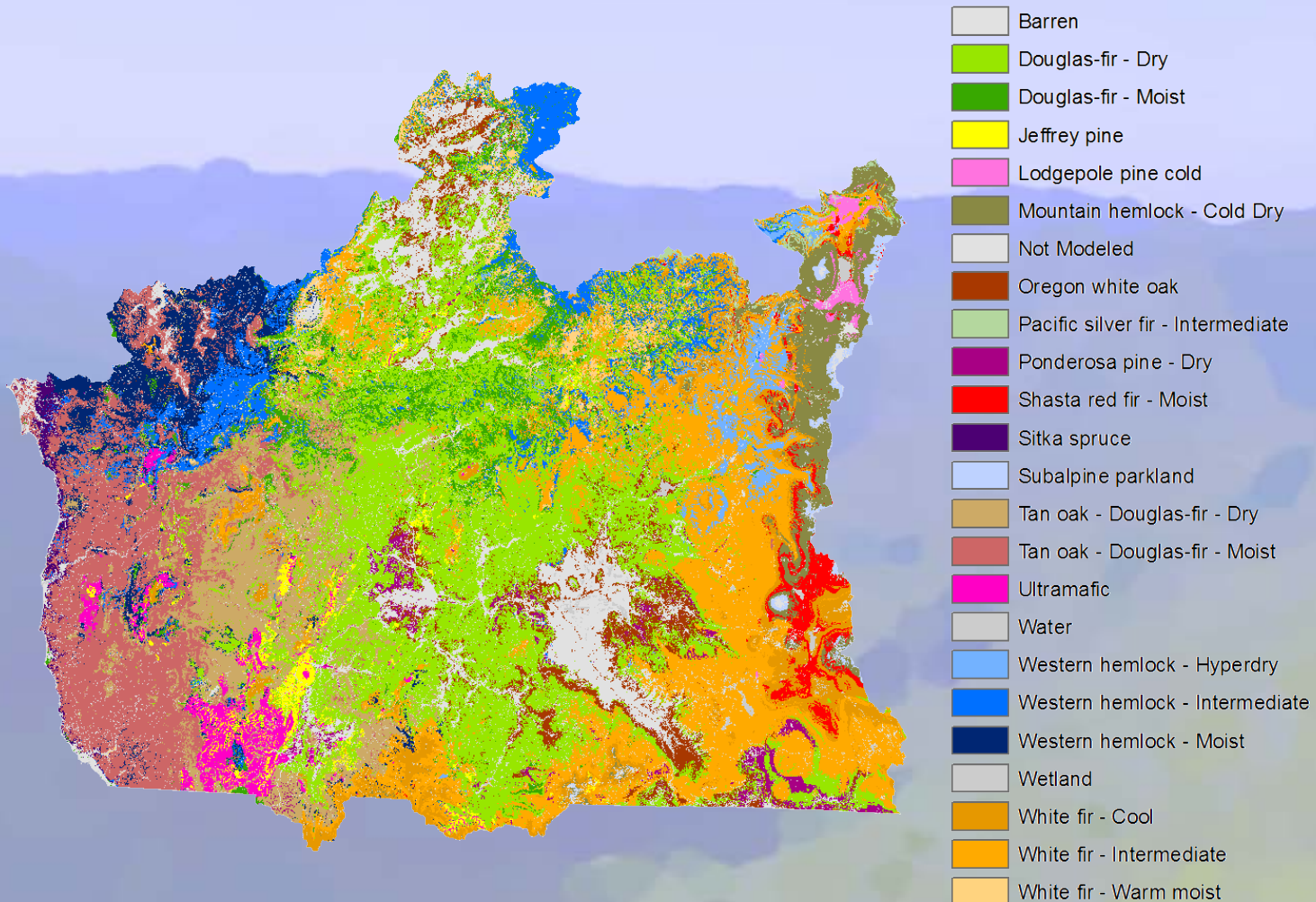


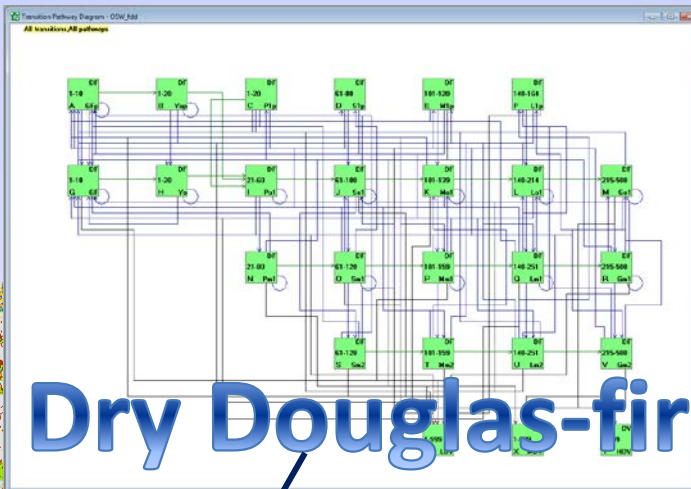
Restoration Potential and Climate Change

- Dry forests are at risk for uncharacteristic catastrophic fire
- Restoration through active management – fuels treatment and thinning
- Need to know how forests will change as climate changes
- Will restoration treatments reduce severe fire?

Potential Vegetation Types

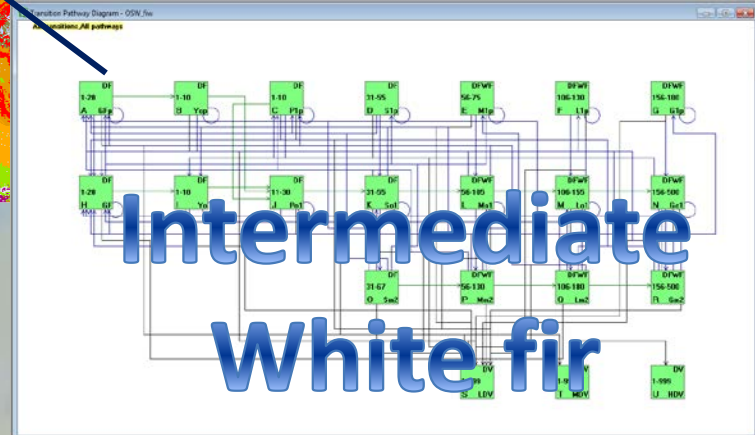
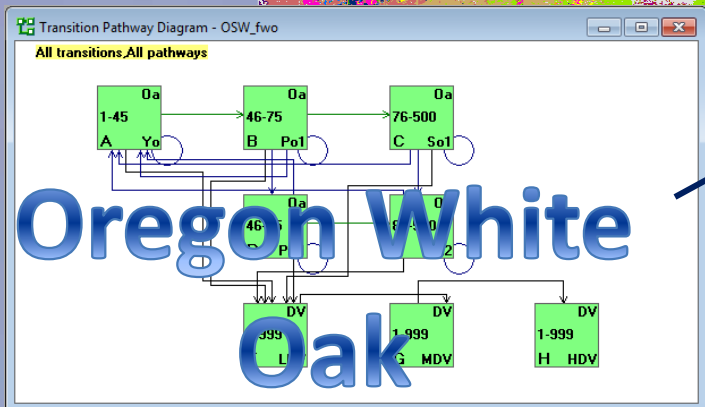
A common language



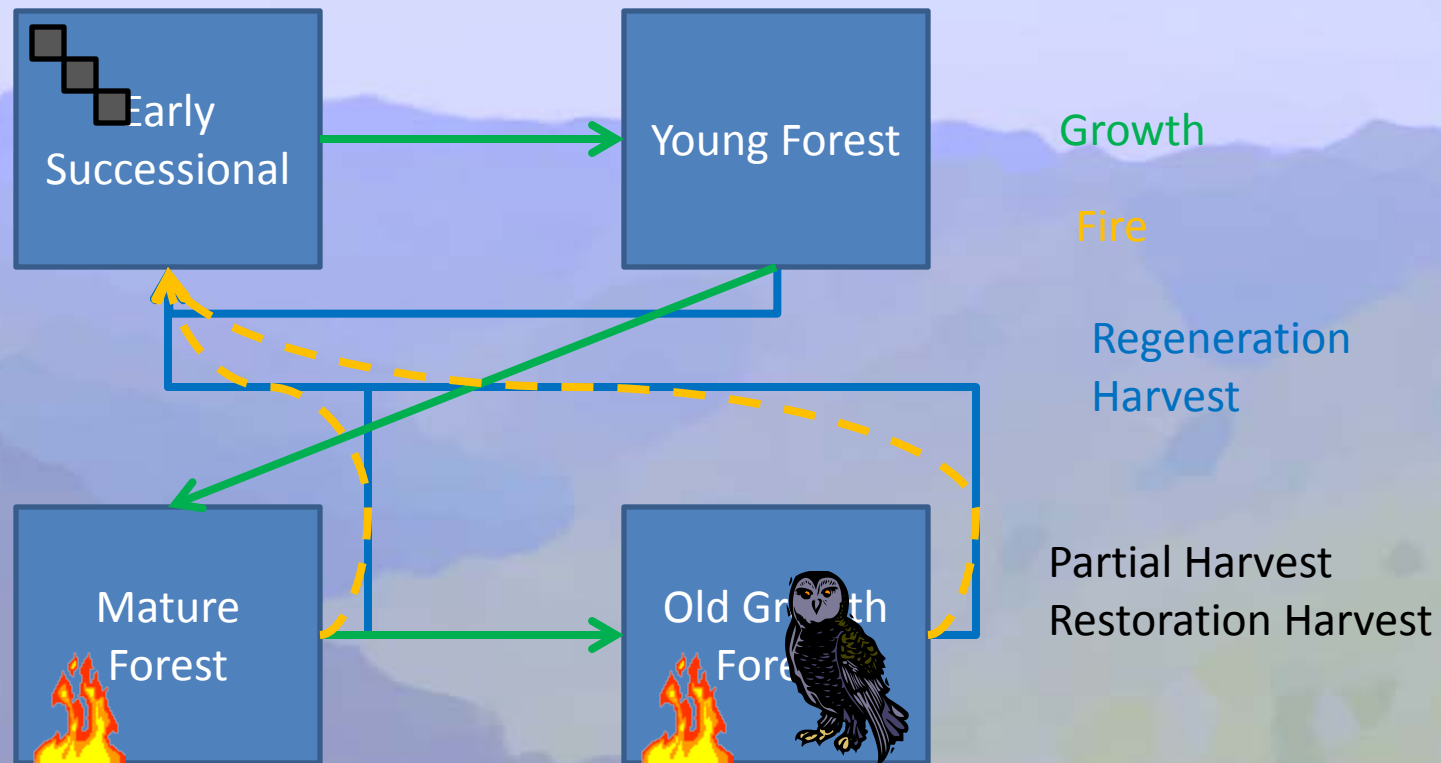


on
las-fir - Dry
las-fir - Moist
y pine
epole pine cold
tain hemlock - Cold Dry
Modeled

-  Oregon white oak
-  Pacific silver fir - Intermediate
-  Ponderosa pine - Dry
-  Shasta red fir - Moist
-  Sitka spruce
-  Subalpine parkland
-  Tan oak - Douglas-fir - Dry
-  Tan oak - Douglas-fir - Moist
-  Ultramafic
-  Water



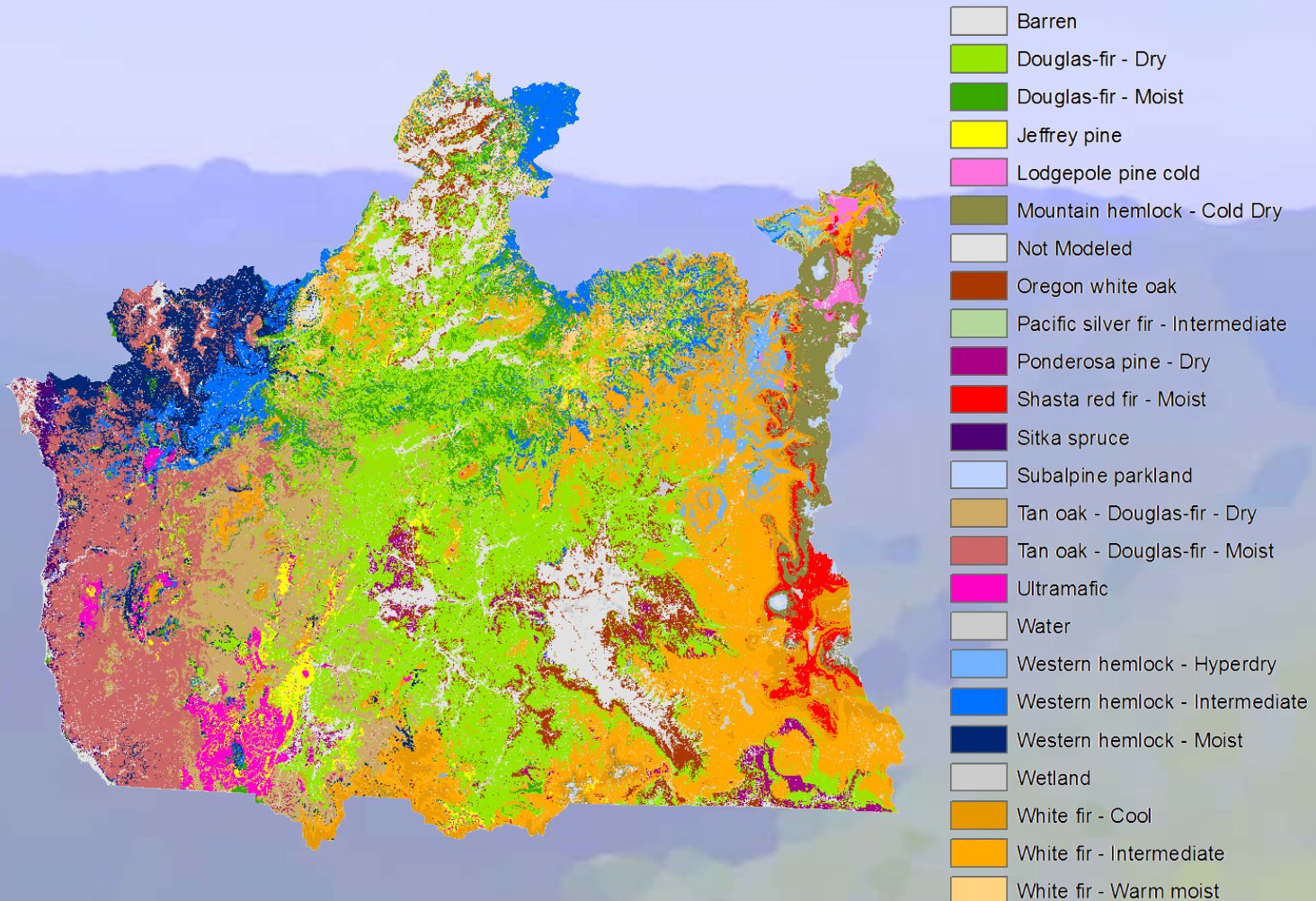
State and Transition Modeling



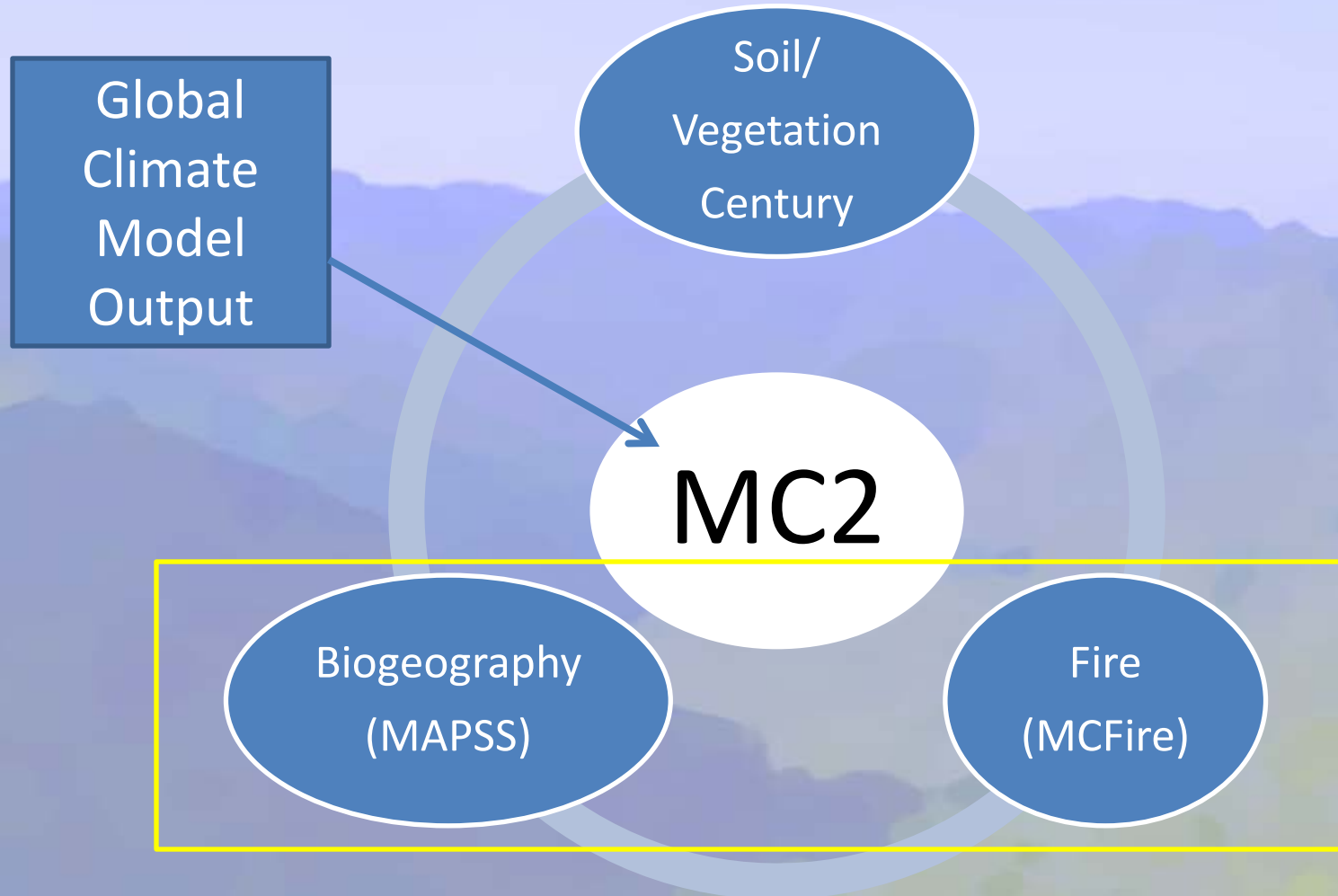
What might 'restoration' look like in Southwest Oregon?

- Dry forests:
 - Partial harvests to reduce fuel loads
 - Prescribed fire used as fuel conditions improve
- Moist forests:
 - Regeneration harvests with un-touched patches
 - Use of partial harvests to encourage vertical heterogeneity
- Can these strategies work in a changing climate?

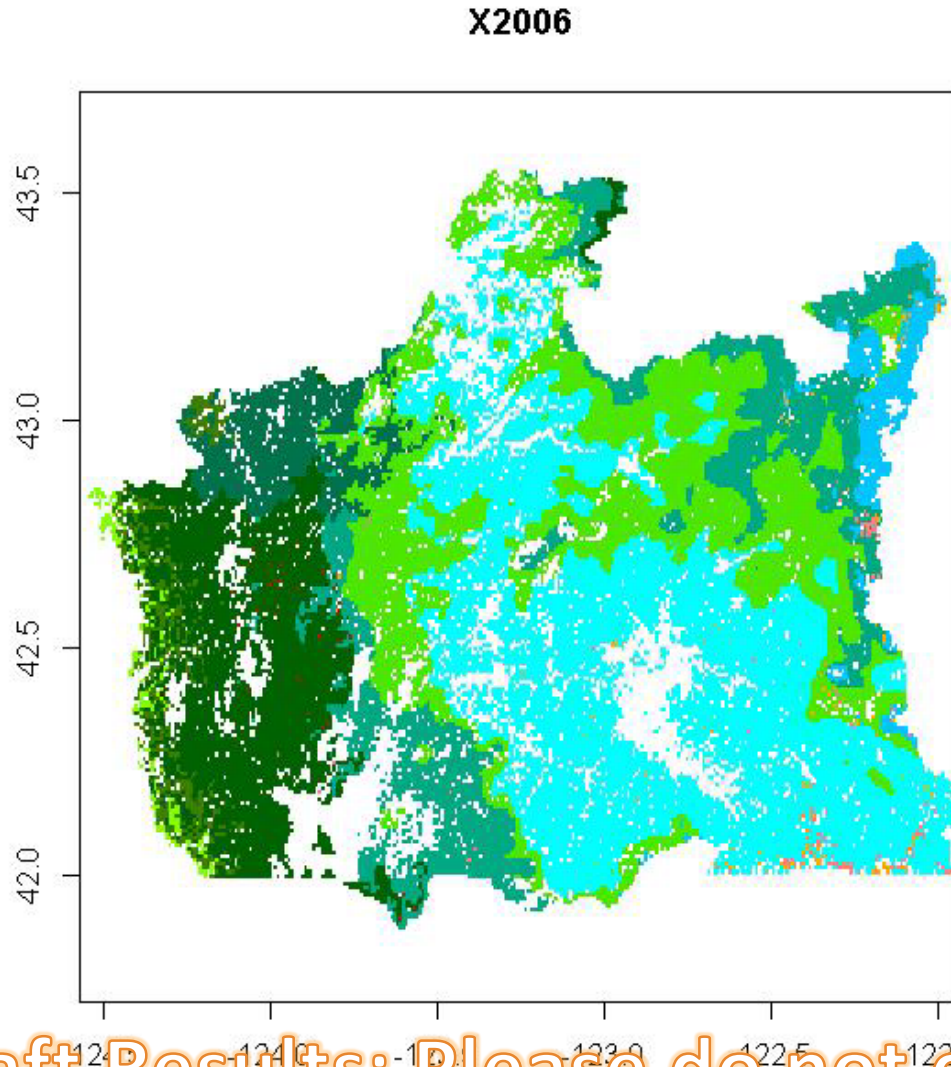
How will this map change?



A Dynamic Global Vegetation Model

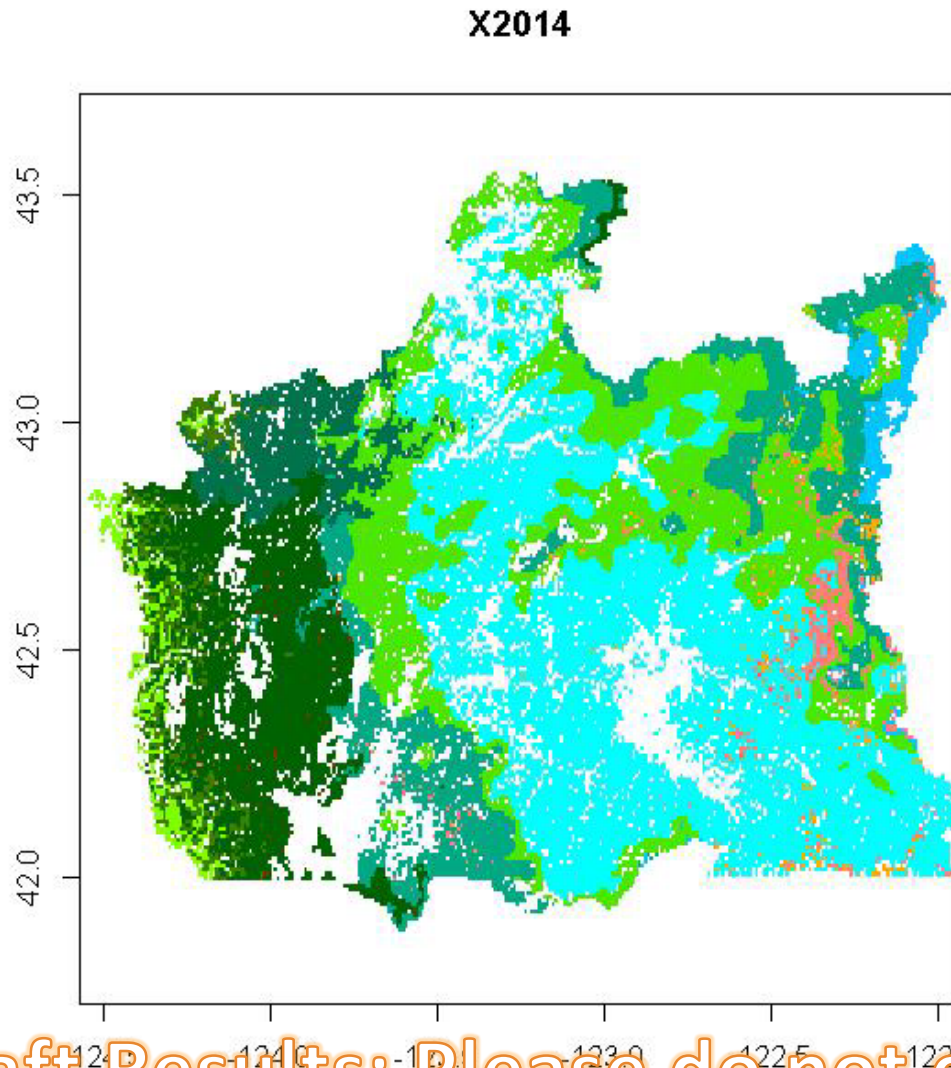


MC2 Output, Hadley (RCP 8.5) Biogeography



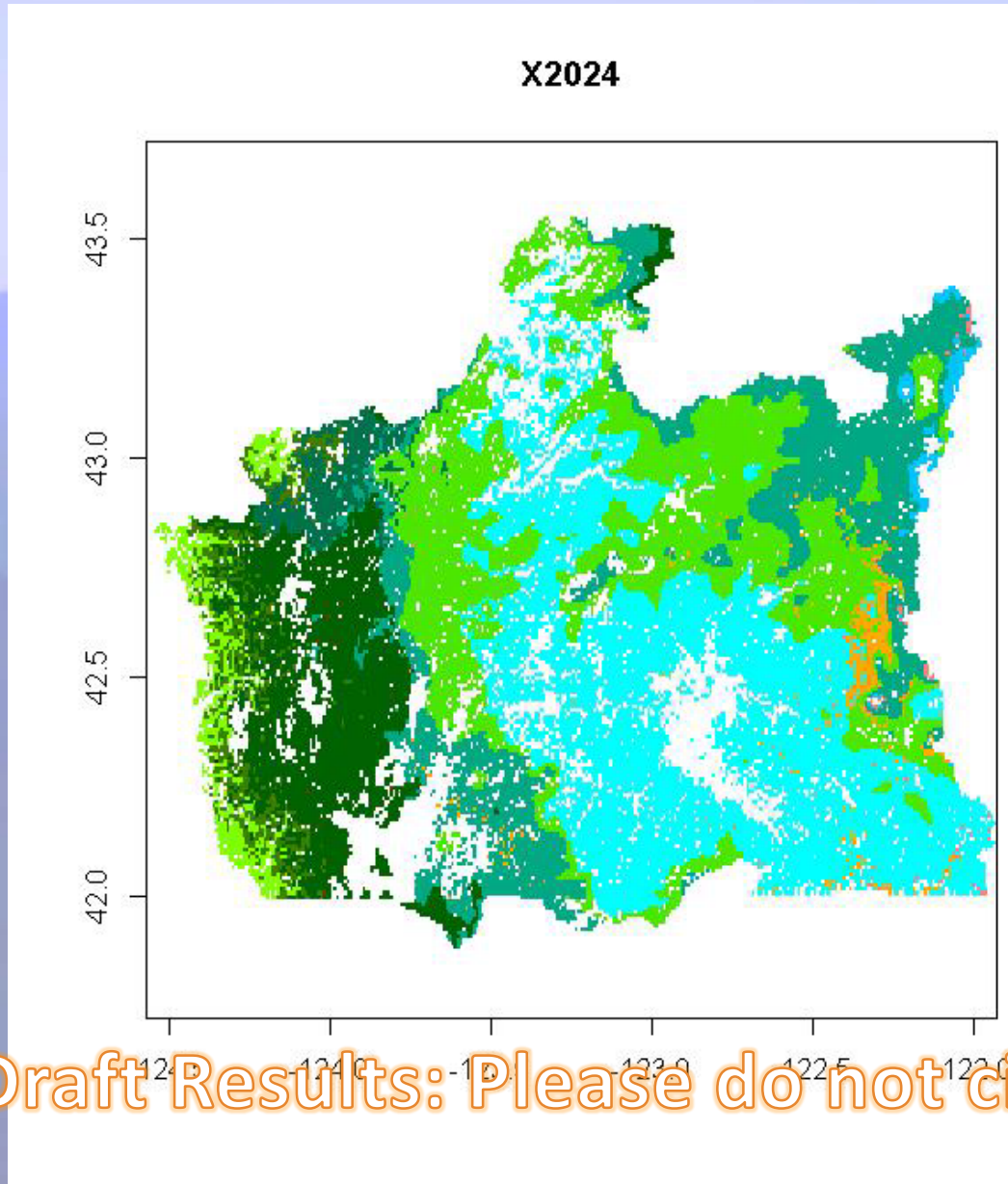
Draft Results: Please do not cite

MC2 Output, Hadley (RCP 8.5) Biogeography



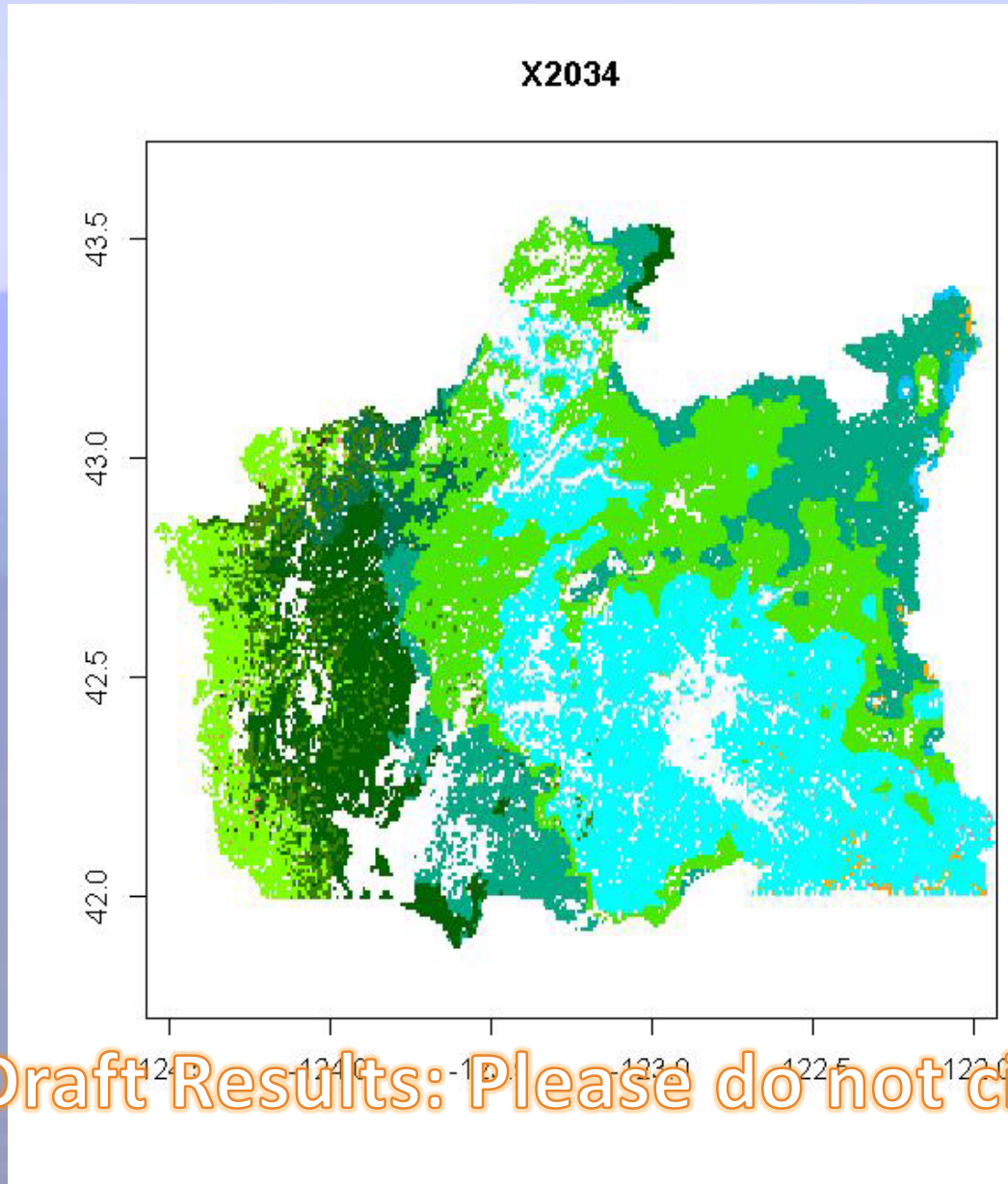
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MC2 Output, Hadley (RCP 8.5) Biogeography



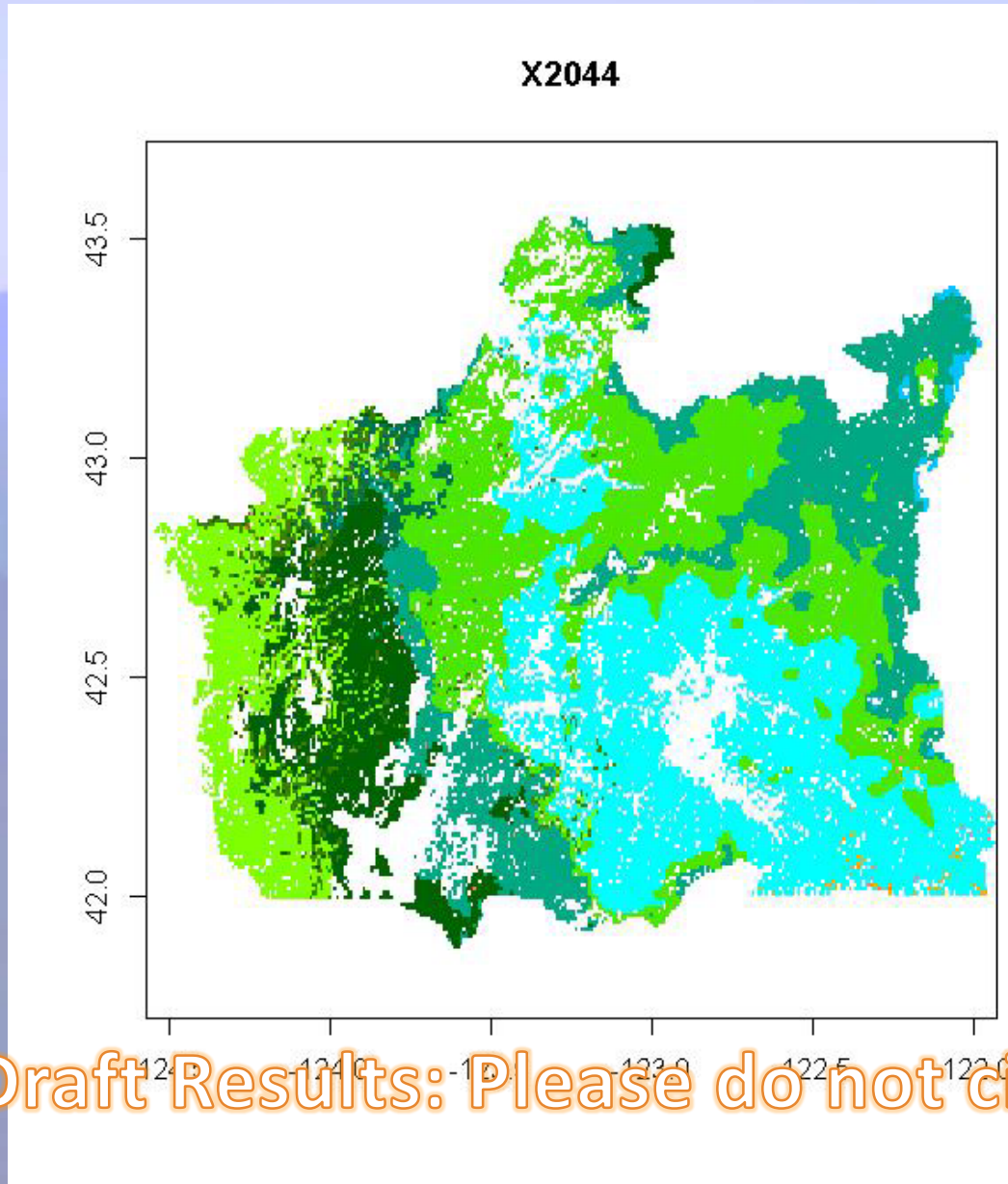
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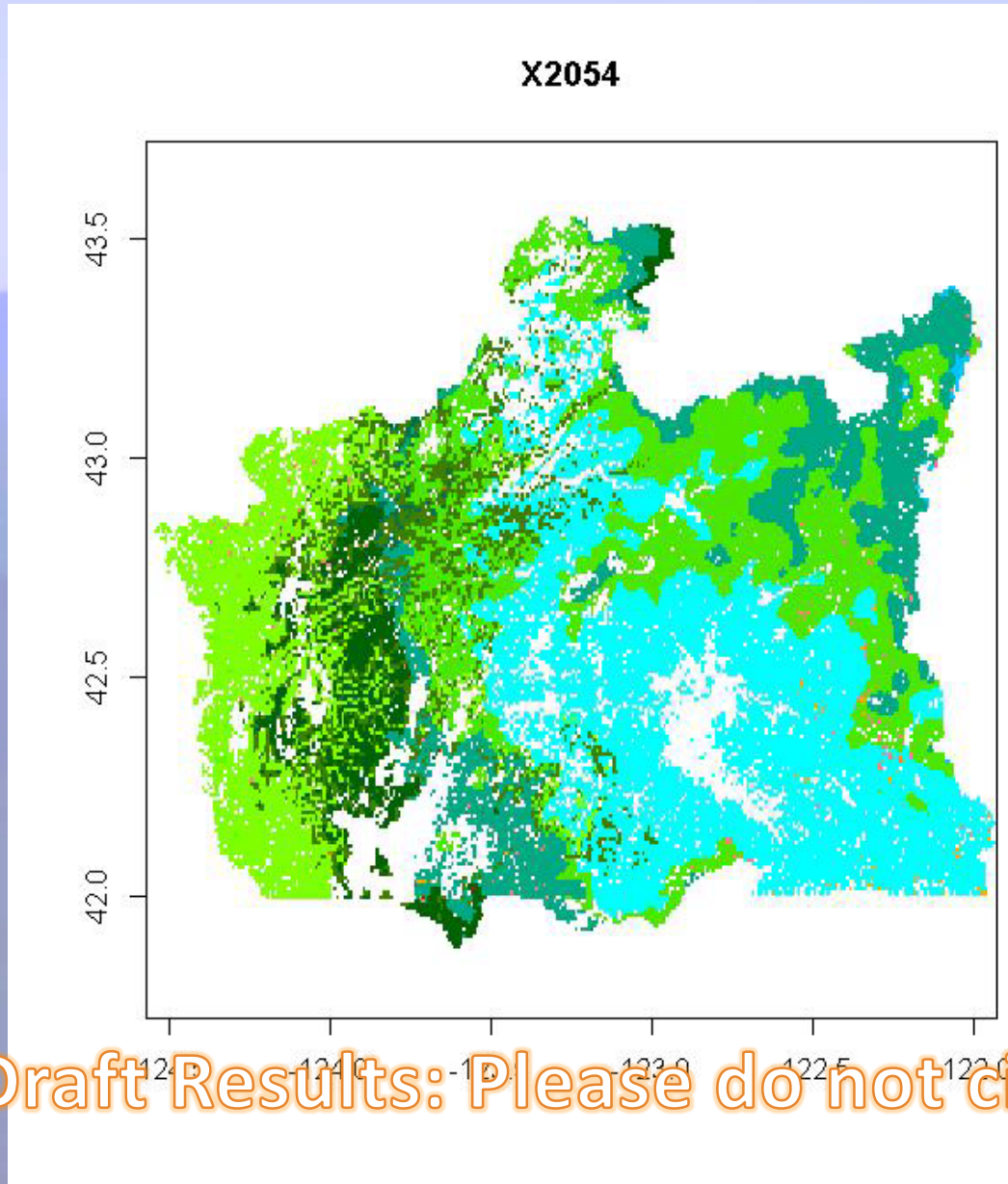
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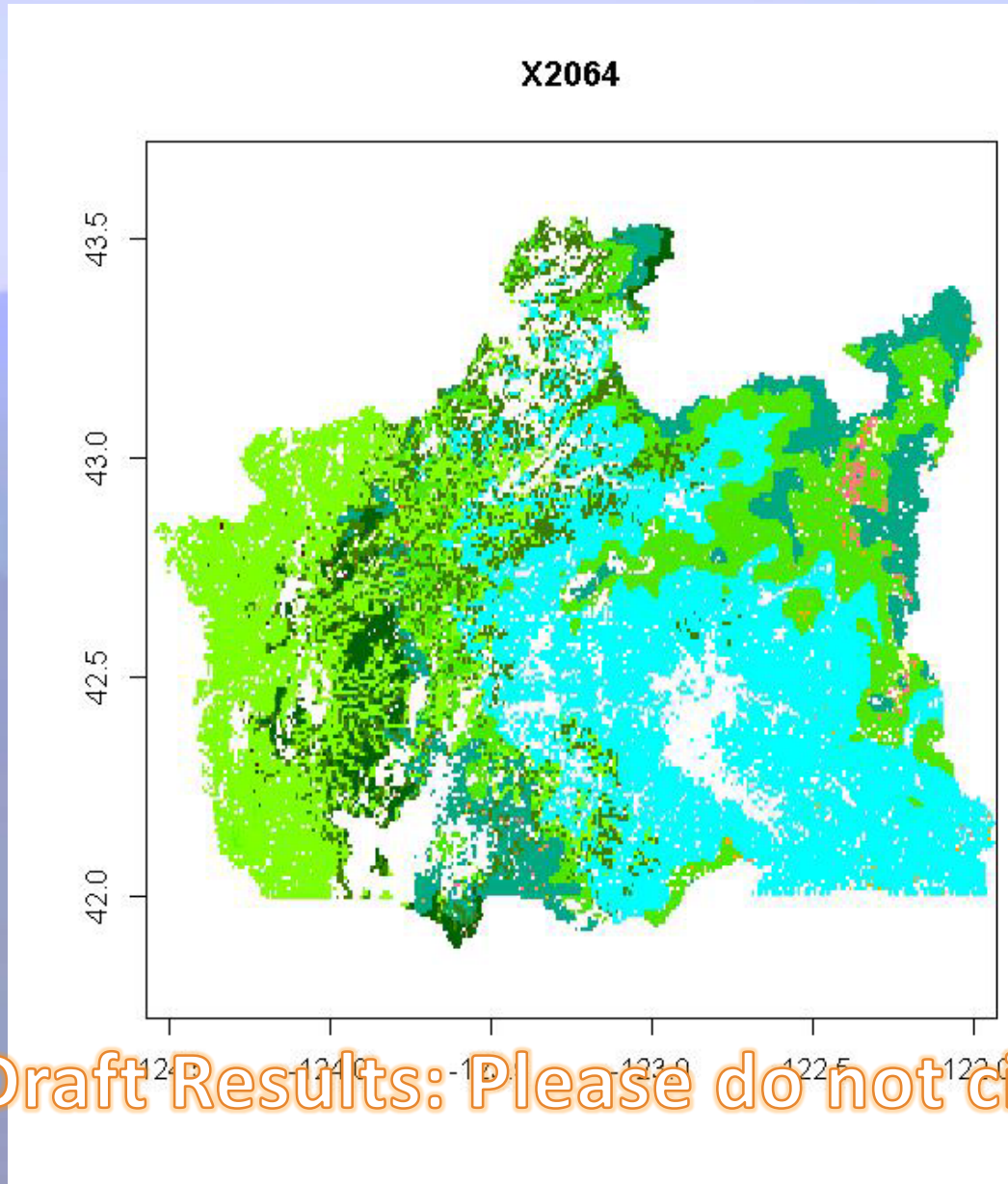
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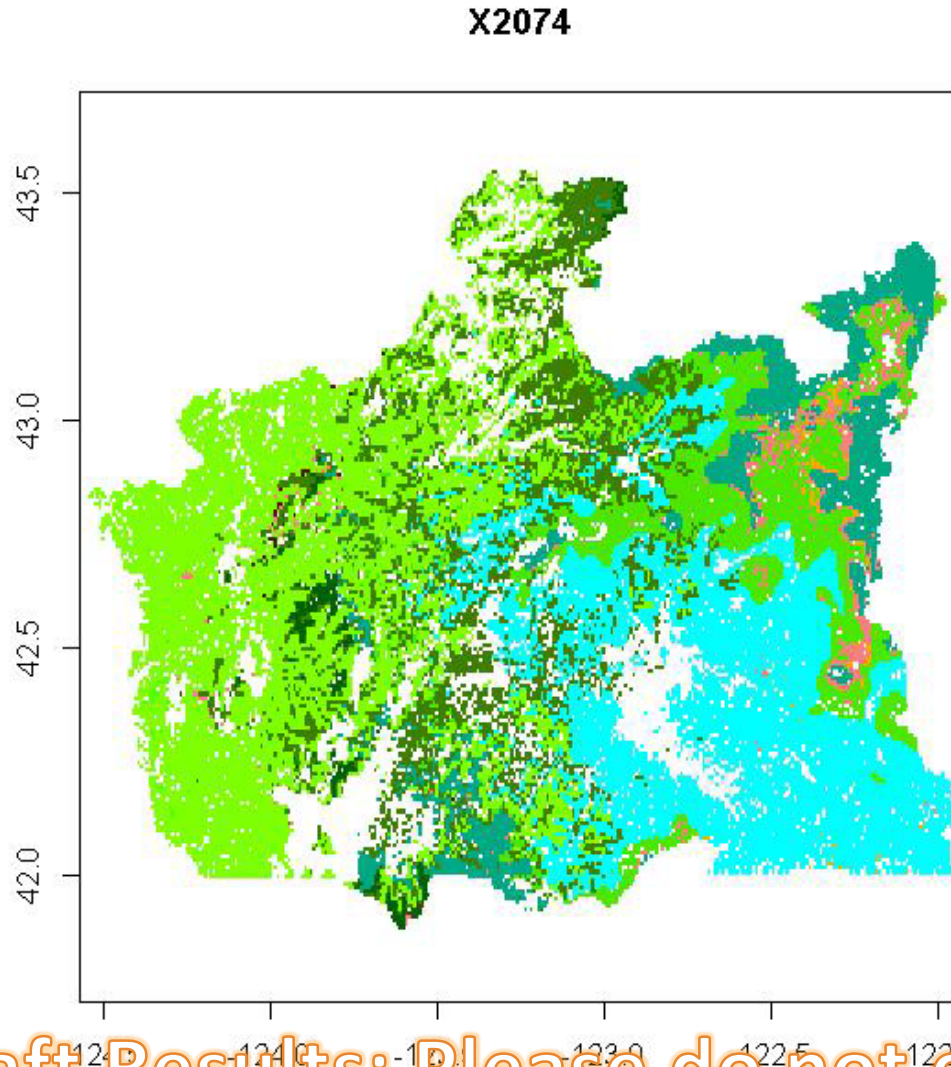
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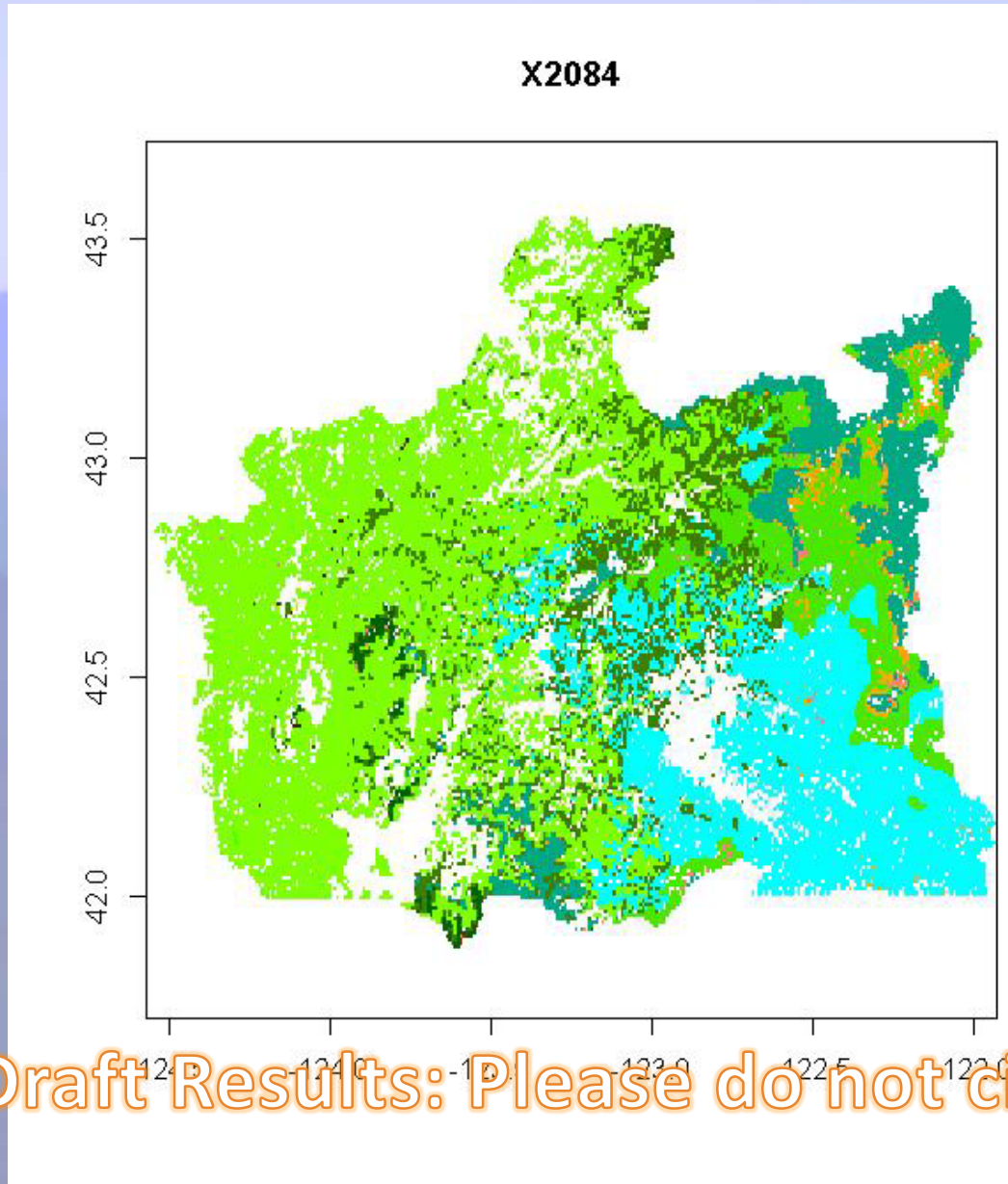
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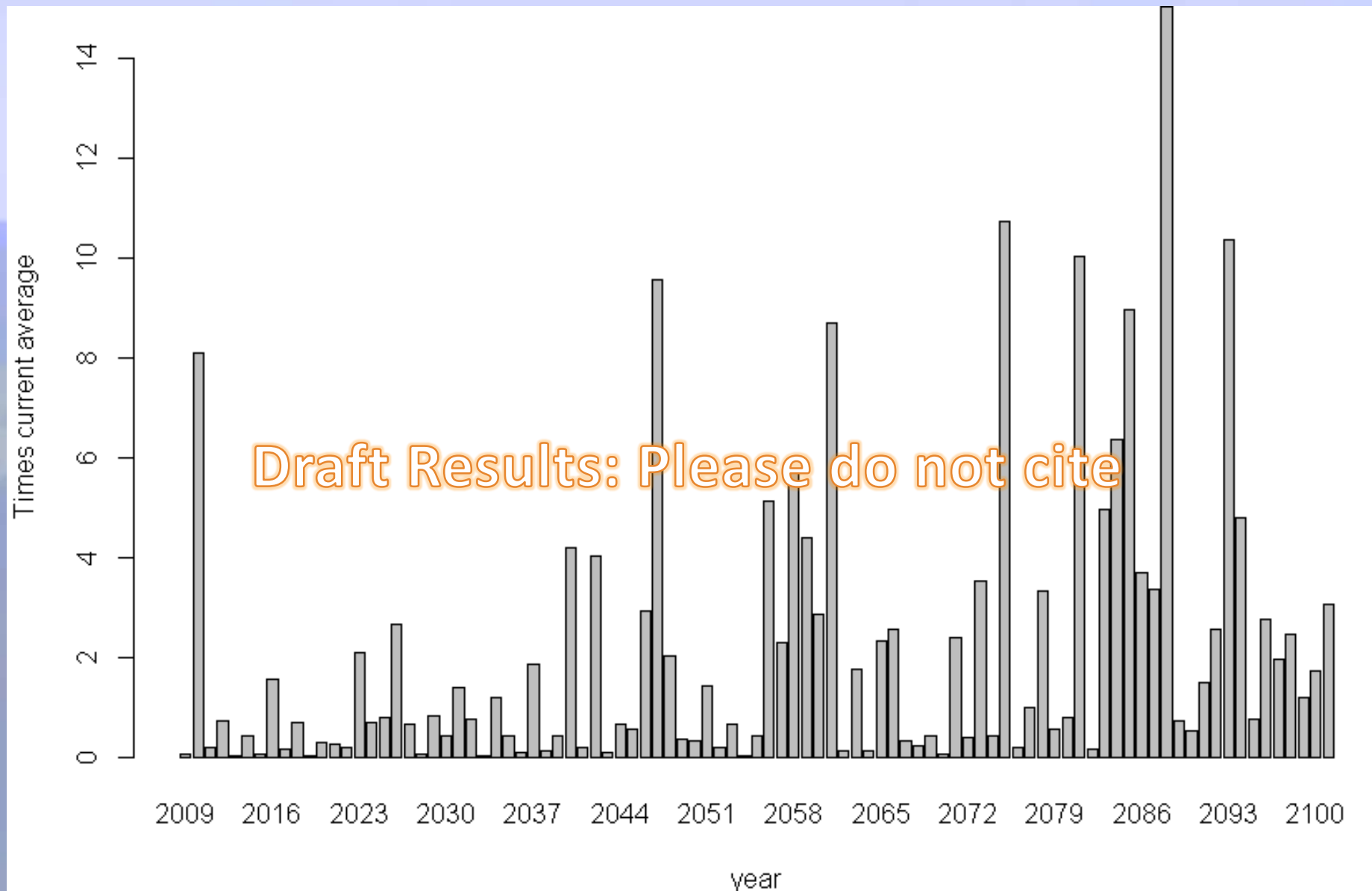


Draft Results: Please do not cite

MC2 Vegetation Types

	subalpine forest		C3 shrubland
	maritime needleleaf forest		C3 grassland
	temperate needleleaf forest		subtropical deciduous broadleaf forest
	cool mixed forest		warm evergreen broadleaf forest
	temperate warm mixed forest		subtropical mixed forest
	temperate needleleaf woodland		subtropical evergreen broadleaf woodland
	temperate cool mixed woodland		moist temperate needleleaf forest
	temperate warm mixed woodland		dry temperate needleleaf forest

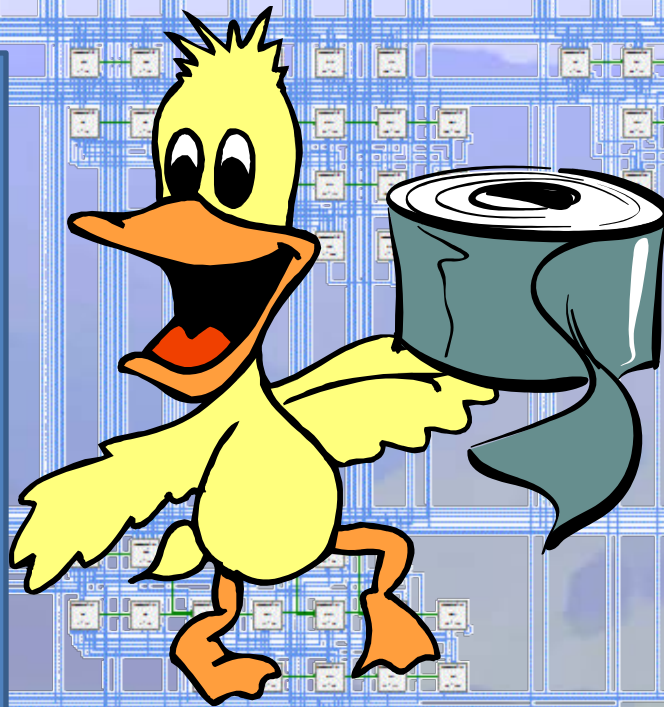
MC2, HADGEM RCP 8.5, Fire years in Dry Forests



MC2:

Potential
Vegetation
Changes

Fire Weather
Changes



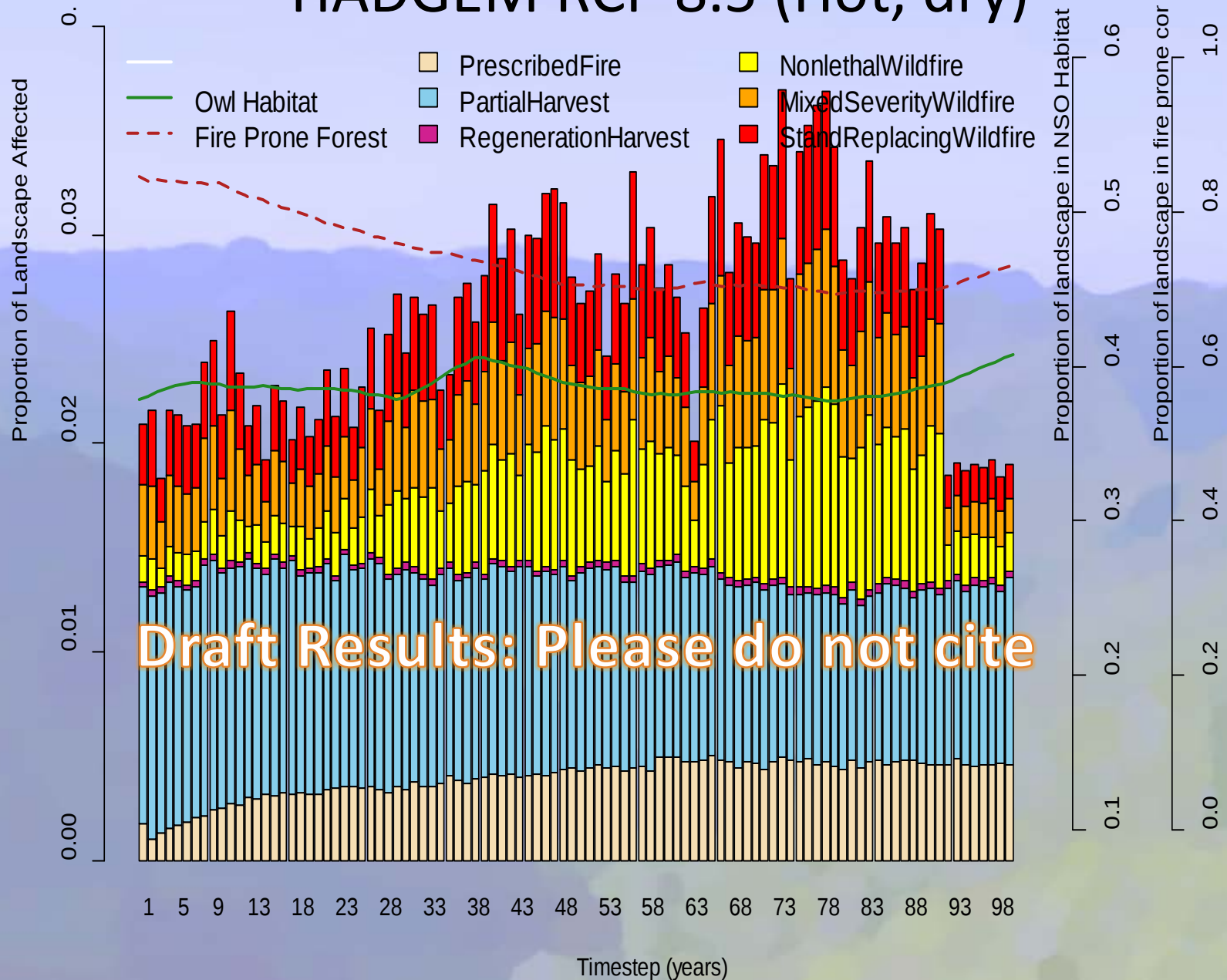
STMs:

Forest Growth
Insects/pathogens
Wind
Silviculture

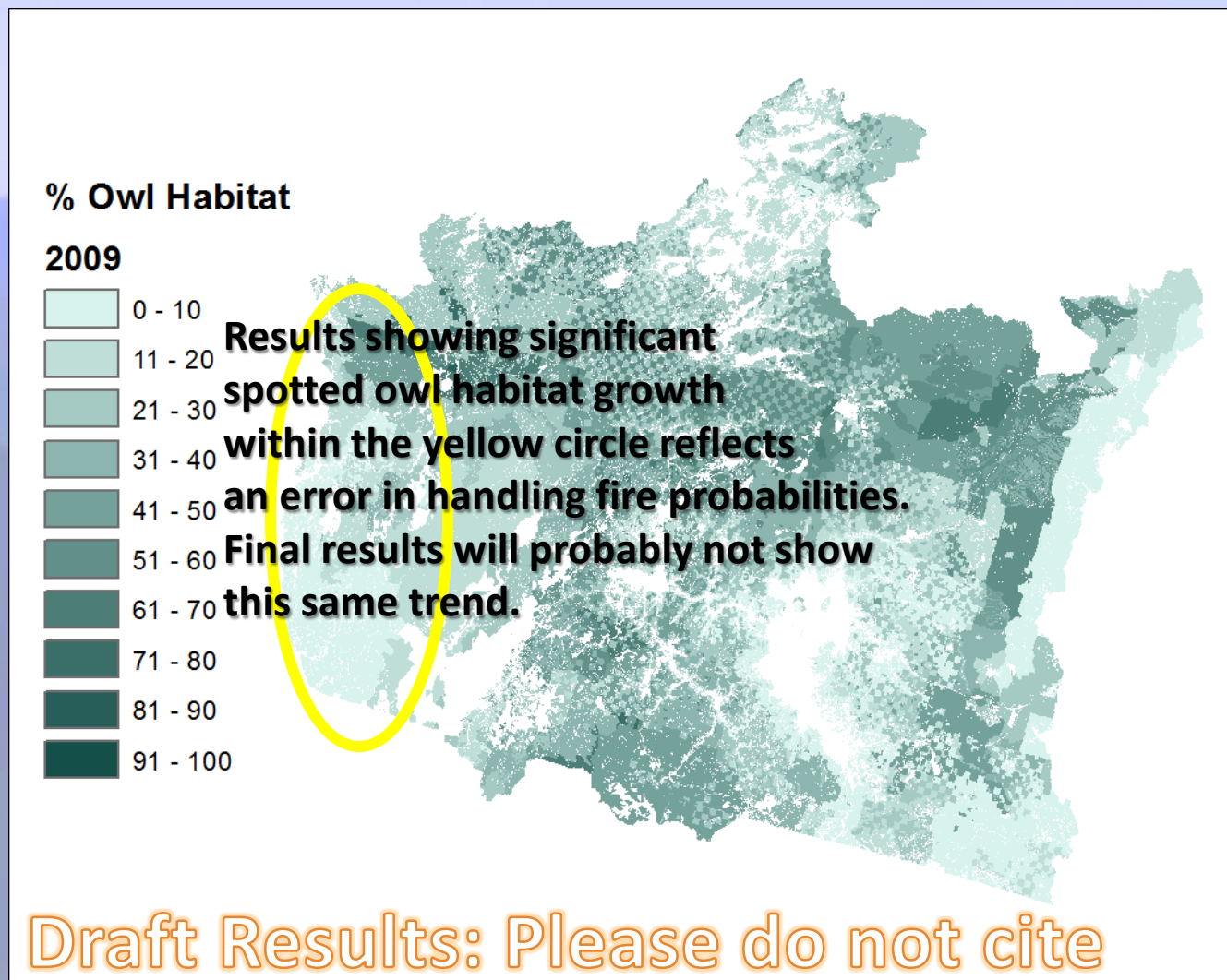
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BLM, General Forests, Restoration Scenario

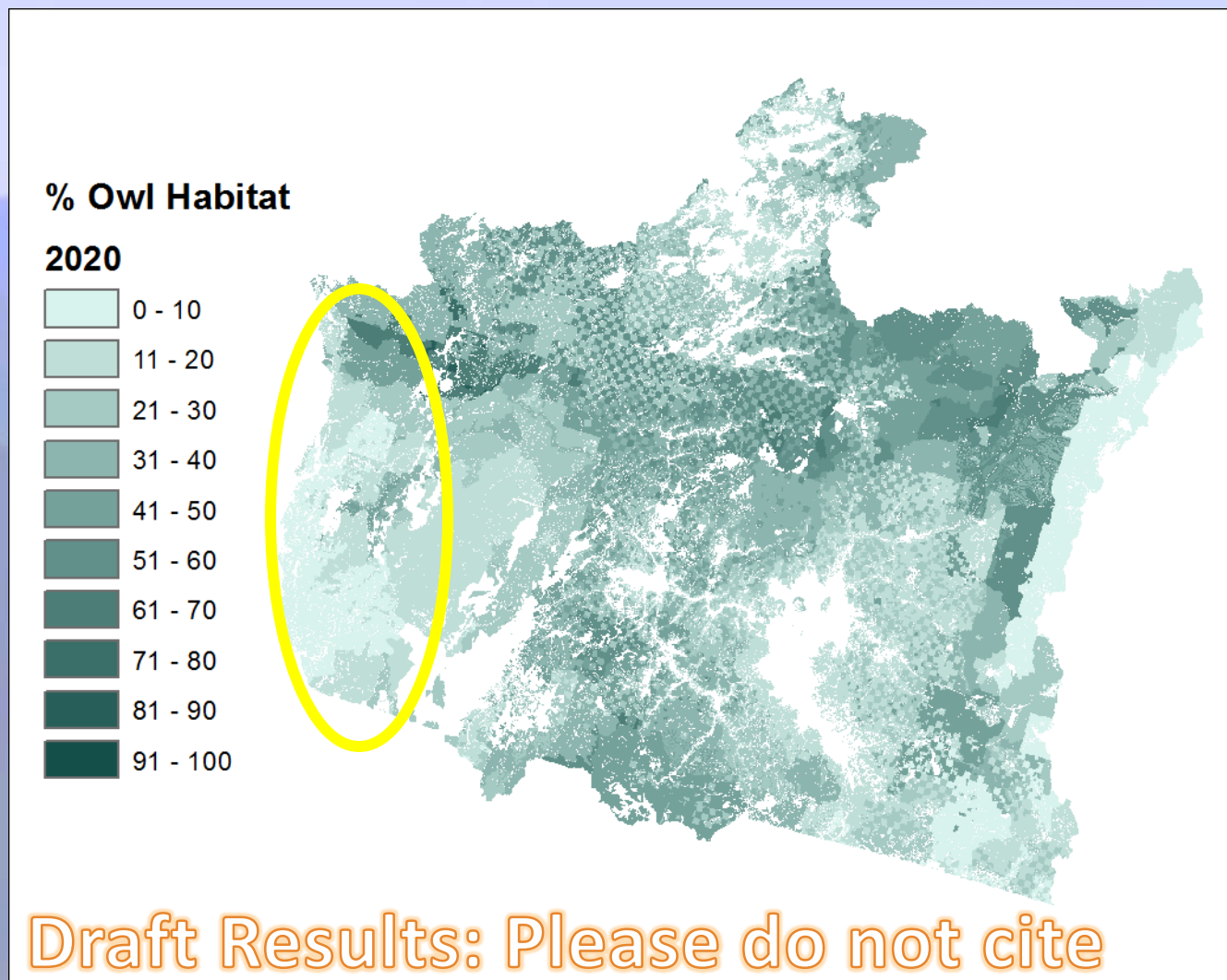
HADGEM RCP 8.5 (Hot, dry)



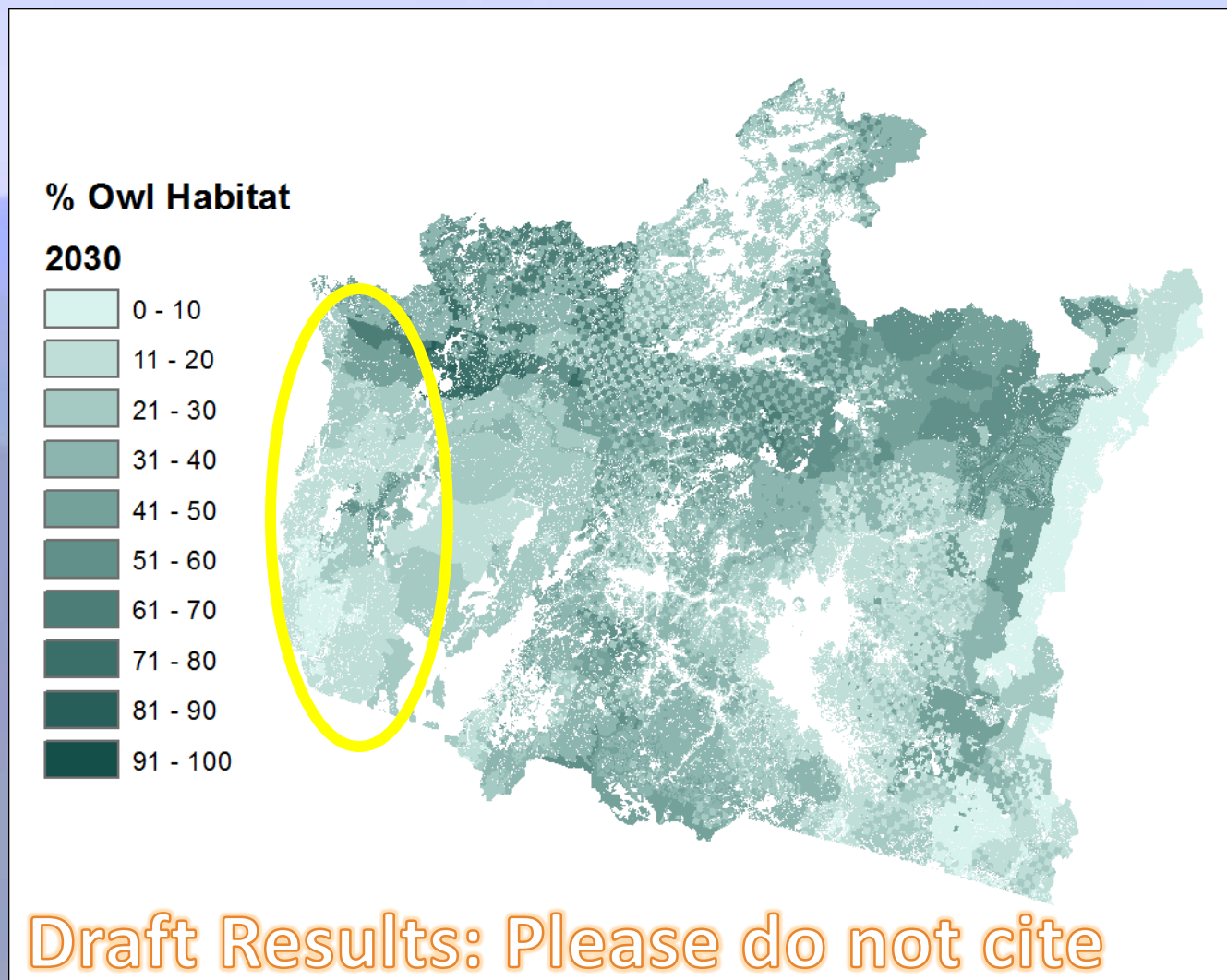
Northern Spotted Owl Habitat, Restoration Scenario, HADGEM RCP8.5



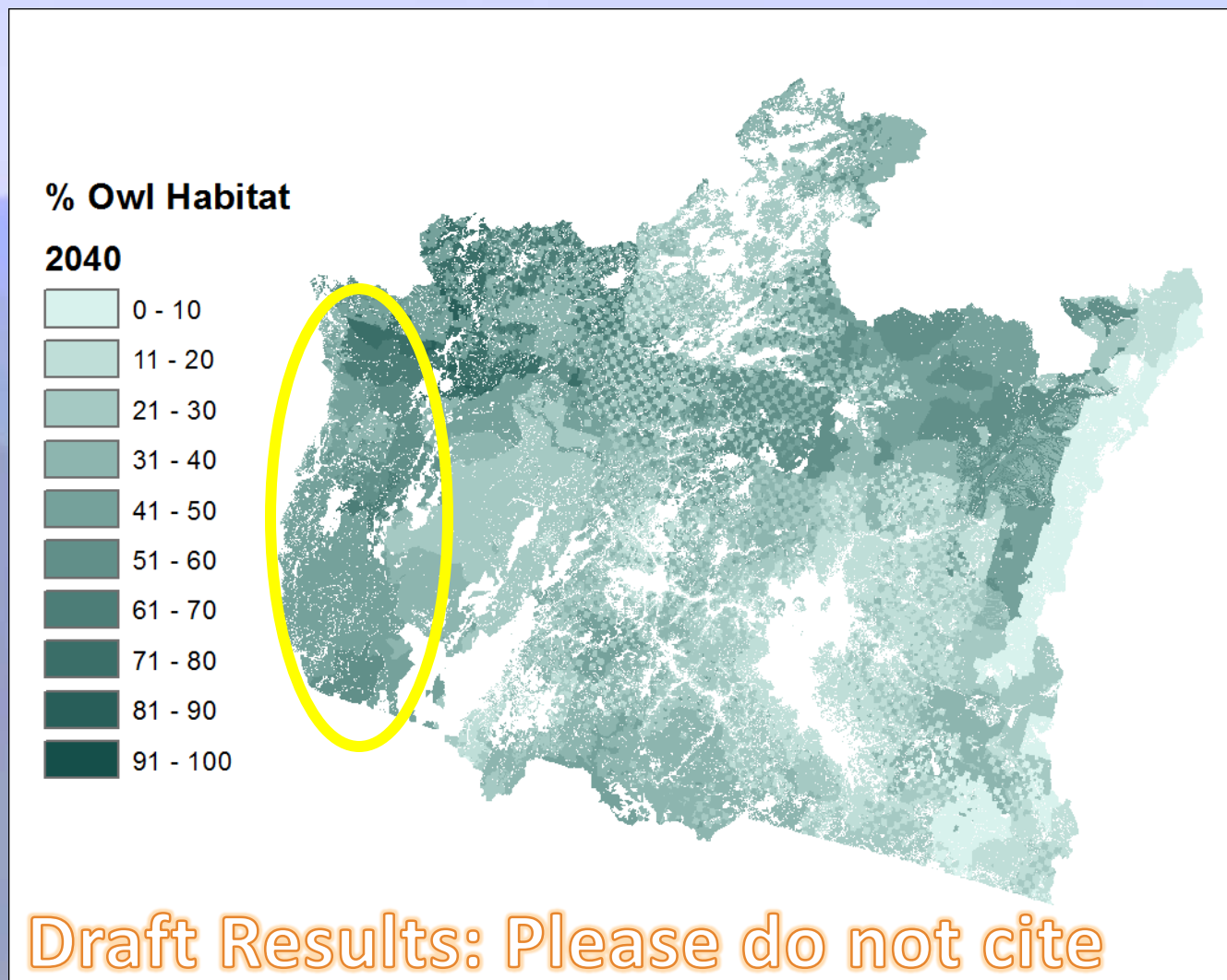
Northern Spotted Owl Habitat, Restoration Scenario, HADGEM RCP8.5



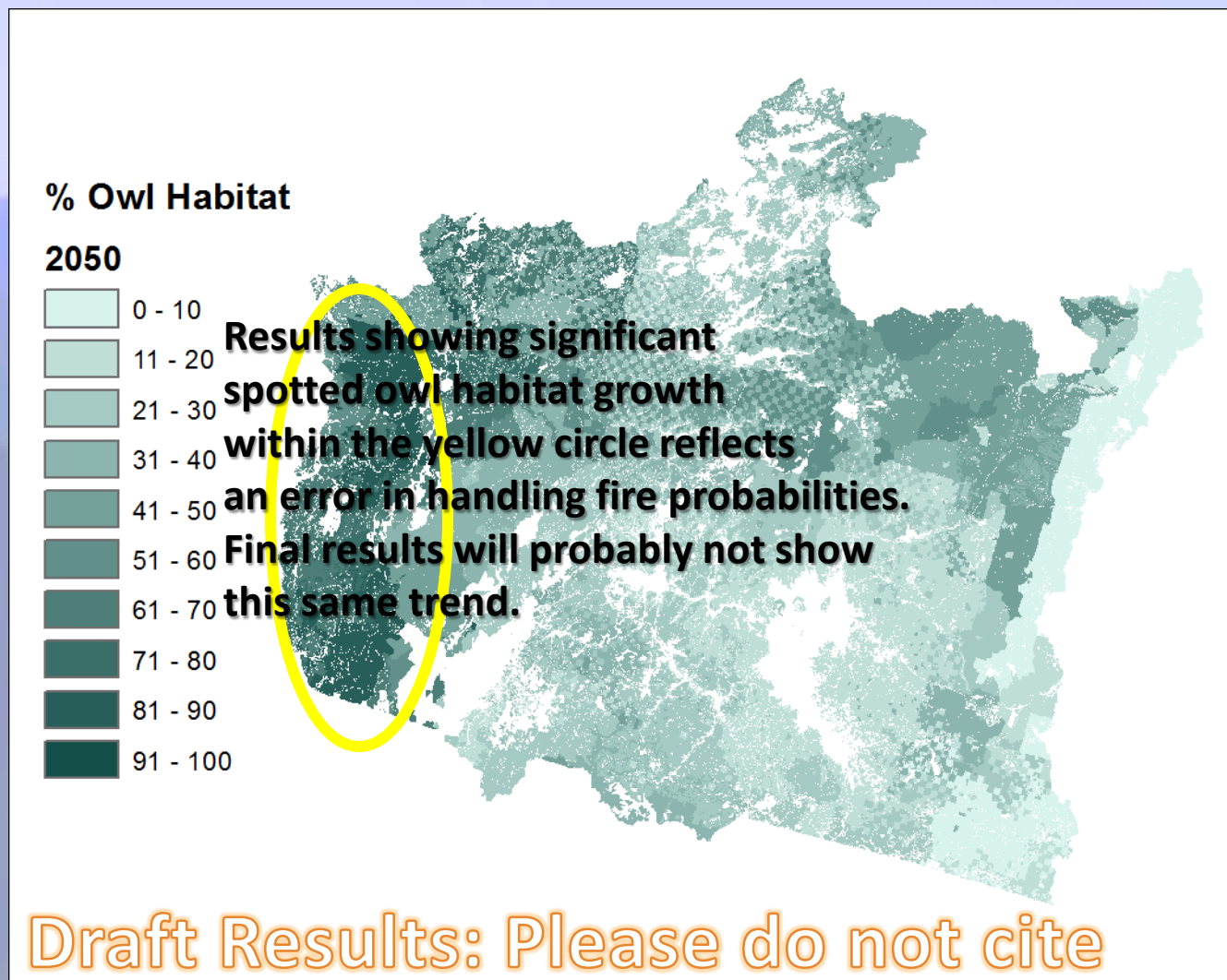
Northern Spotted Owl Habitat, Restoration Scenario, HADGEM RCP8.5



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Northern Spotted Owl Habitat, Restoration Scenario, HADGEM RCP8.5



Future Steps

- **Science – management partnerships**
 - Policy
 - Strategic planning
- **Collaboration**
 - Interactive dialogue
 - Reciprocal learning
 - Relevance—bridging language, models
- **Adaptive management**
 - Incorporating risk and uncertainty
 - Quantitative and qualitative models

Acknowledgments

- Funding: Northwest Climate Science Center (modeling)
BLM (Potential vegetation mapping)
- Collaborators for Climate, Management and Habitat Project:
 - Megan Creutzburg (PSU), Jessical Halofsky(USFS), Anita Morzillo(U-Conn), Dave Conklin (Common Futures), Janine Salwasser(INR)
- Integrated Scenarios Project: vital information about GCMs
- Integrated Landscape Assessment Project:
 - Methods development: esp. Dominique Bachelet, Conservation Biology Institute
- Review of links to owl habitat: Ray Davis, USFS
- Collaborators for Potential Vegetation Mapping: Pat Hocchalter, USFS
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- Kerry Metlen, The Nature Conservancy
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- Abe Wheeler, Richard Hardt, Mark Brown, BLM
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