

Vital Sign Indicators Program Overview

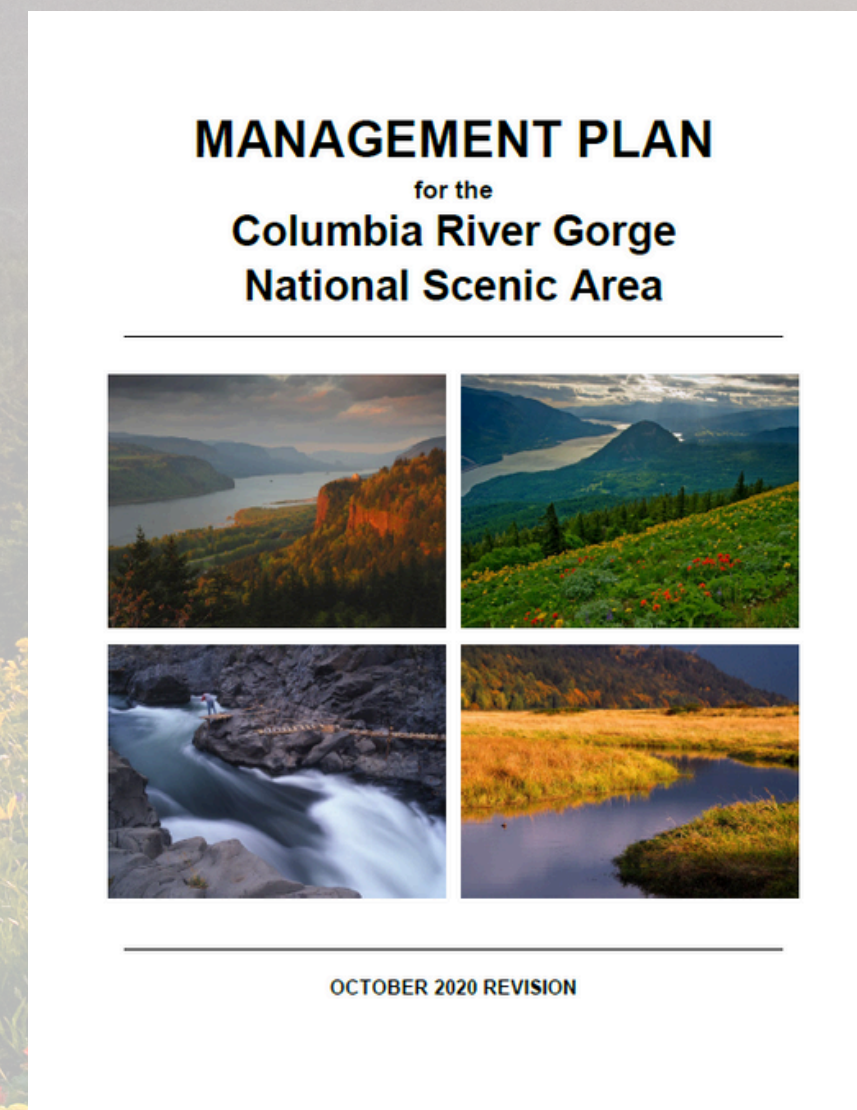
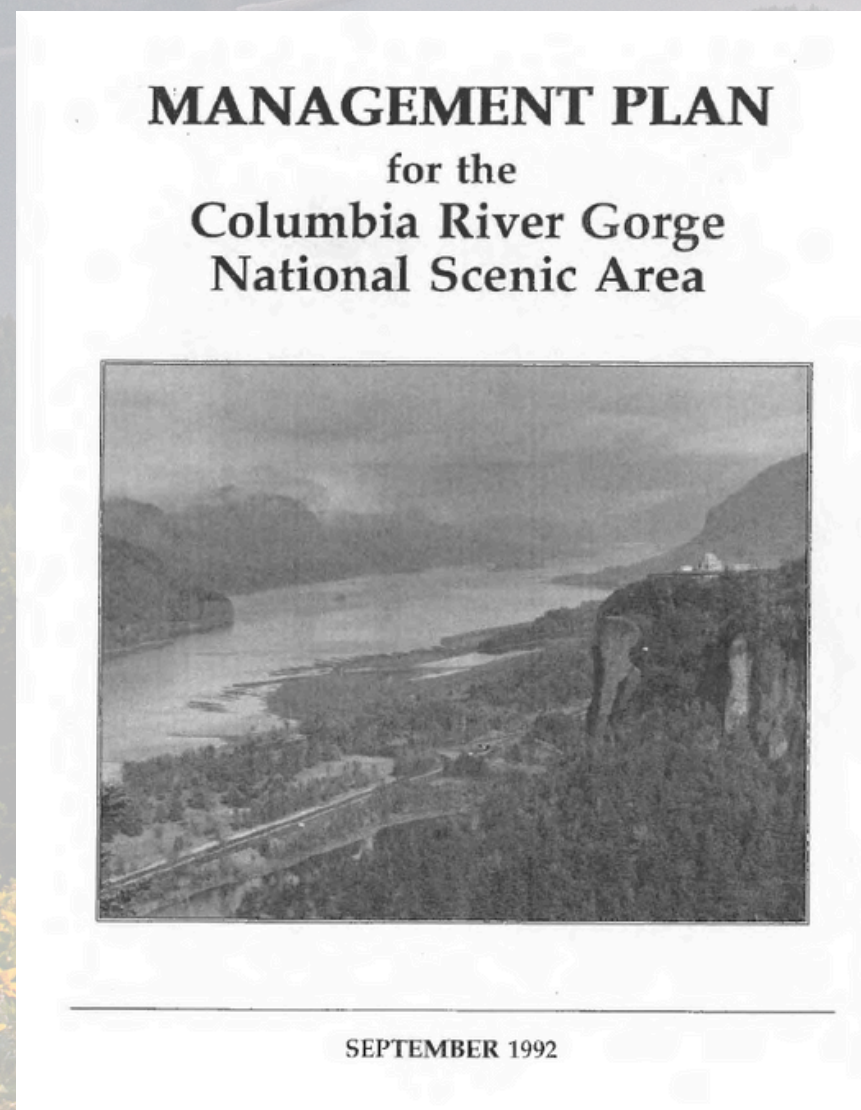
March, 11th 2025



Motivation

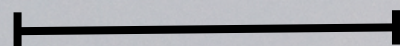
“The Gorge Commission shall work with the Forest Service, the counties, the four Columbia River treaty tribes, local governments, and state and federal agencies to establish a program for monitoring and evaluating the implementation of the National Scenic Area Act and Management Plan”

Part IV, Chapter 1



Timeline

2007 2009



Over 70 people began a community driven planning initiative

Vital Signs Indicators Project State of the Gorge 2009



A report on the conditions of scenic, natural, economic, cultural and recreation resources in the Columbia River Gorge National Scenic Area

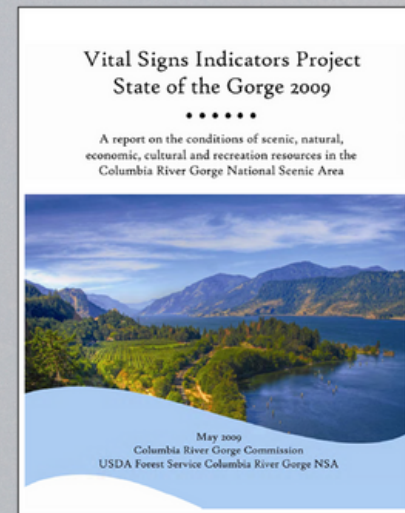


May 2009
Columbia River Gorge Commission
USDA Forest Service Columbia River Gorge NSA

Goal	Indicator	Status
Scenic: Protect and enhance scenic resources		
1.1.a.	Overall Scenic Quality: Percent of public who perceive scenic resources to be in good condition or better according to both: a) residents and b) visitors.	2011
1.1.b.	Development Impacts: Percent of seen area, as viewed from public vantage points, containing development that highly contrasts with its surrounding landscape: a) within 1/4 mile; b) between 1/4 mile and 3 miles; and c) beyond 3 miles.	2011
1.1.c.	Development Impacts: Number of developed areas, as seen from public vantage points, that highly contrast with their surrounding landscape: a) within 1/4 mile; b) between 1/4 mile and 3 miles; and c) beyond 3 miles.	2009
1.1.d.	Vantage Point Quality: Number of scenic observation points with significantly impaired panoramic views due to vegetation.	2009
1.1.e.	Litter and Graffiti Impacts: Percent of highway miles with significant graffiti or litter.	2011
1.1.f.	Night Light: The effect of ambient light on the night sky.	2011
1.1.g.	Visibility: Placeholder for visibility indicator.	Summary in 2009
1.2.a.	Overall Landscape Quality: Percent of each landscape type that is in good condition.	2011
1.2.b.	Development Impacts: Percent of land area with development for each landscape type.	2009
Natural: Protect and enhance natural resources		
2.1.a.	Habitat Quality: Percent of priority habitat types rated as properly functioning.	2009
2.1.b.	Habitat Fragmentation: Percent of priority habitat types that are lost or fragmented by human activity.	2011
2.1.c.	Species Health: Percent of at-risk species whose populations in the gorge are healthy.	2009
2.1.d.	Species Range: Percent of native species (wildlife, plants, invertebrates) with ranges that are declining.	2011
2.2.a.	Surface Water Quality: Percent of streams, including the Columbia River, whose water quality is a) poor, b) fair, c) good, and d) excellent.	2009
2.2.b.	Habitat Quality: Percent of native fish habitat that is properly functioning.	2011
2.2.c.	Surface Water Quantity: Percent of streams with satisfactory in-stream flow.	2011
2.2.d.	Groundwater Quantity: Square miles of groundwater restricted by development.	2009
2.2.e.	Groundwater Quality: To be developed.	2011
2.3.a.	Air Quality: To be developed.	2011
Cultural: Protect and enhance cultural resources		
3.1.a.	Income: Per capita income of NSA urban area residents as a percent of state and non-metro per capita income: a) Oregon side and b) Washington side.	2009
3.1.b.	Job Growth: Net job growth in rural areas: a) total; b) Oregon side; c) Washington side.	2011
3.1.c.	Construction: Building permits issued in rural centers and non-urban areas: a) housing, b) commercial, and c) agricultural.	2009
3.1.d.	Activity: Number of rural and rural center enterprises: a) total; b) Oregon side; c) Washington side.	2011
3.2.a.	Condition: Percent of all monitored archaeological sites in good condition.	2009
3.2.b.	Awareness: Percent of stakeholders understanding the archaeological resource protection process.	2011
3.2.c.	Awareness: Percent of residents of and visitors to the gorge understanding the importance of archaeological resources.	2011
3.2.d.	Inventory: Number of new significant archaeological resources identified each year.	2009
3.2.e.	Condition: Percent of all monitored historic resources in good condition.	2009
3.2.f.	Awareness: Percent of stakeholders with understanding of historic resource protection process.	2011
3.2.g.	Awareness: Percent of residents of and visitors to the gorge understanding the importance of historic resources.	2011
3.2.h.	Inventory: Number of new significant historic resources identified each year.	2009
3.2.i.	Condition: Percent of all monitored traditional cultural properties in good condition.	2011
3.2.j.	Awareness: Percent of stakeholders understanding the traditional cultural properties protection process.	2011
3.2.k.	Awareness: Percent of residents of and visitors to the gorge understanding the importance of traditional cultural properties.	2011
3.2.l.	Inventory: Number of new significant traditional cultural properties identified each year.	2011
Recreation: Protect and enhance recreation resources		
5.1.a.	Recreation Demand: Percent of recreation sites at or above capacity more than X percent of the time on high season days - total and by recreation activity type.	2009
5.1.b.	Environmentally Sustainable Recreation: Percent of recreation sites that are environmentally degraded - total and by recreation activity type and specified as improving or not improving.	2009
5.1.c.	Recreation Availability: Percent of visitors and residents rating the access to recreation activities as good or better - total and by recreation activity type.	2011
5.1.d.	ADA Accessibility: Percent of recreation sites that meet ADA standards - total and by recreation activity type.	2009
5.2.a.	Recreation Quality: Percent of visitors and residents rating the overall recreational qualities of the Gorge as good or better.	2011
5.2.b.	Recreation Site Quality: Percent of site users rating their overall experience as good or better - total and by recreation site.	2009
5.2.c.	Recreation-related Conflicts: Number of reported incidents relating to recreational uses by type of incident.	2011

Timeline

2007 2009 2020

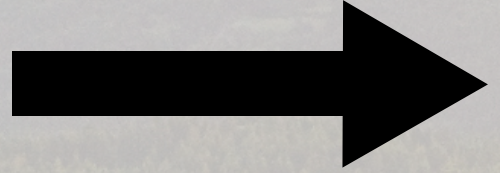
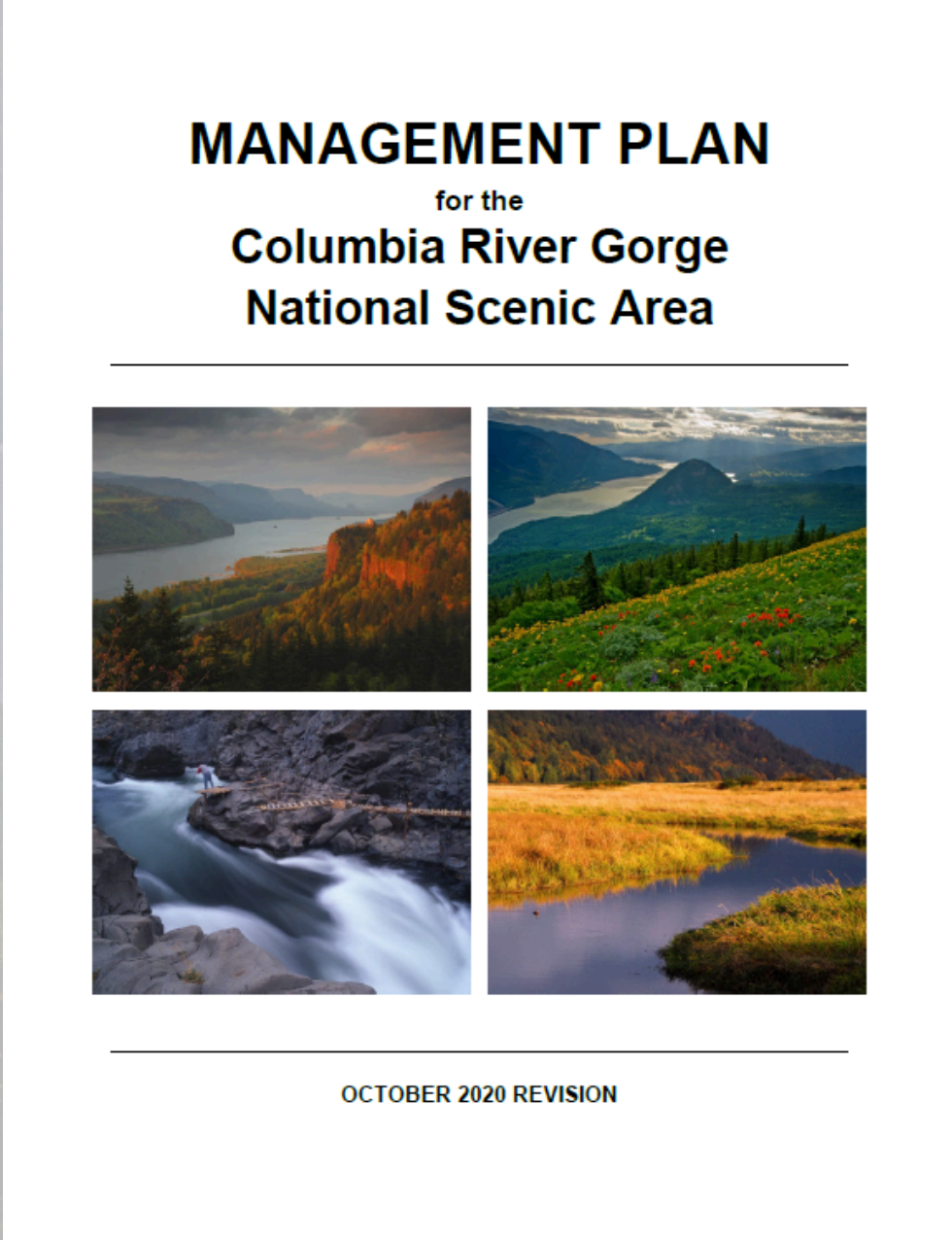
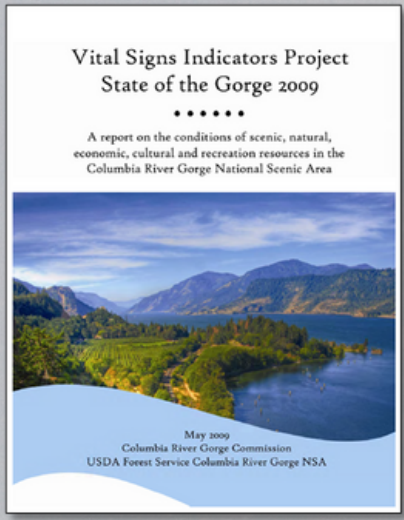


MANAGEMENT PLAN
for the
**Columbia River Gorge
National Scenic Area**

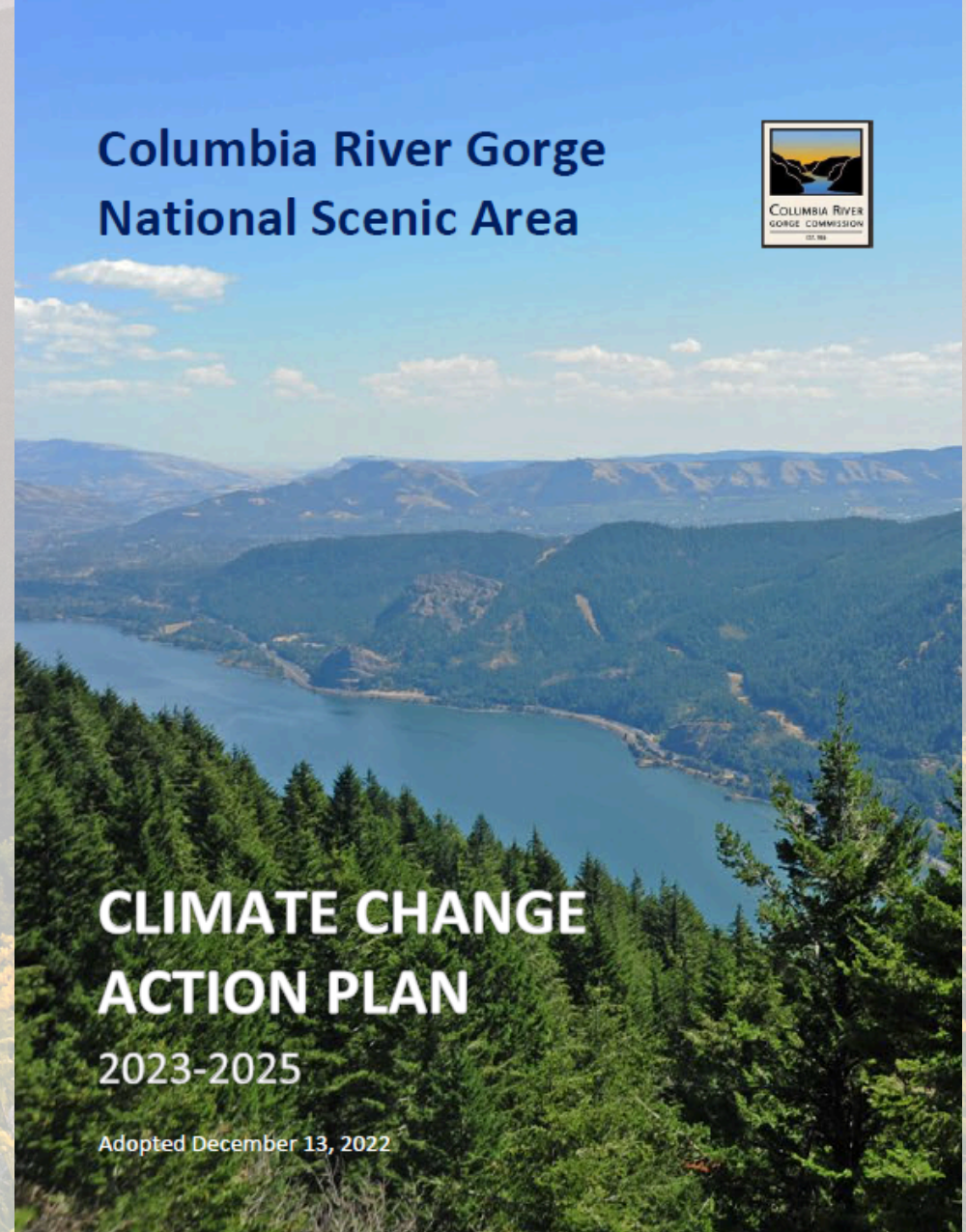
OCTOBER 2020 REVISION

Timeline

2007 2009 2020



Part III, Chapter 1



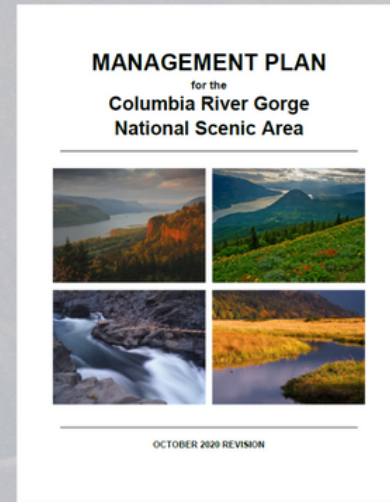
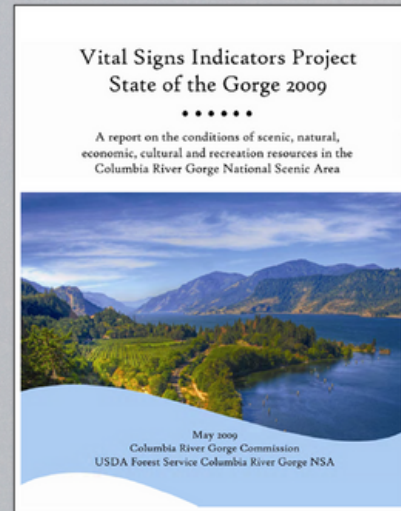
Timeline

2007

2009

2020

2021



Program Revitalization: Objectives

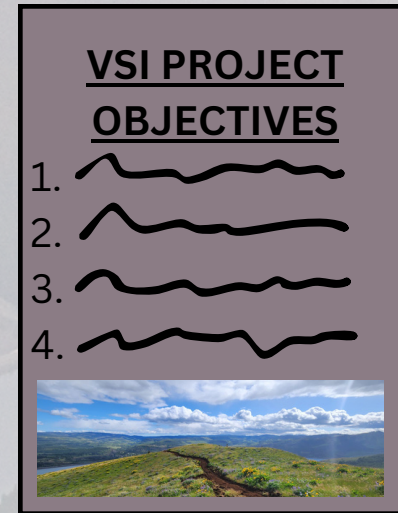
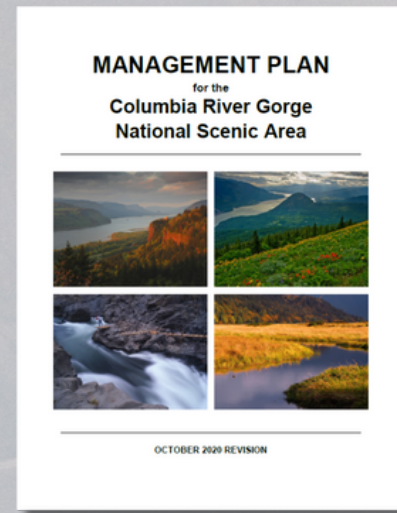
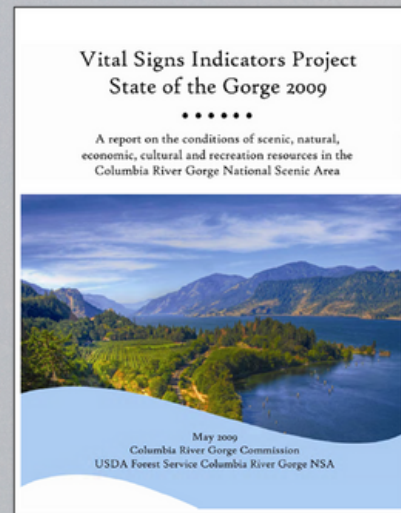
- Track the status and trends of protected resources over time to assess if we are achieving Management Plan goals.
- Use indicator data to guide adaptive management, including ongoing decision-making and future Management Plan review.
- Communicate our findings through accessible, interactive formats to raise awareness of the health of the National Scenic Area.
- Build new and strengthen existing partnerships with the four Columbia River treaty tribes and our partner agencies, counties, and communities to leverage information and capacity toward shared monitoring goals.

Timeline

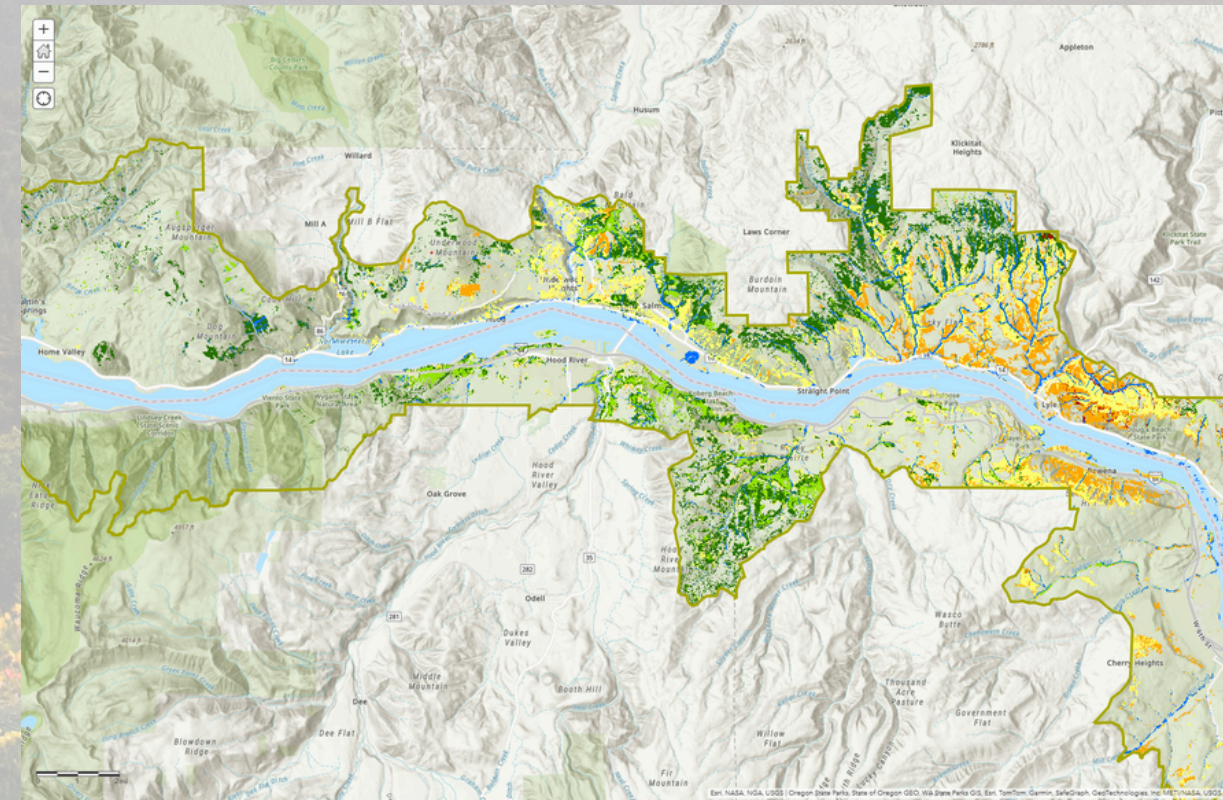
2007 2009 2020 2021 2022 2023

Program Revitalization: Process

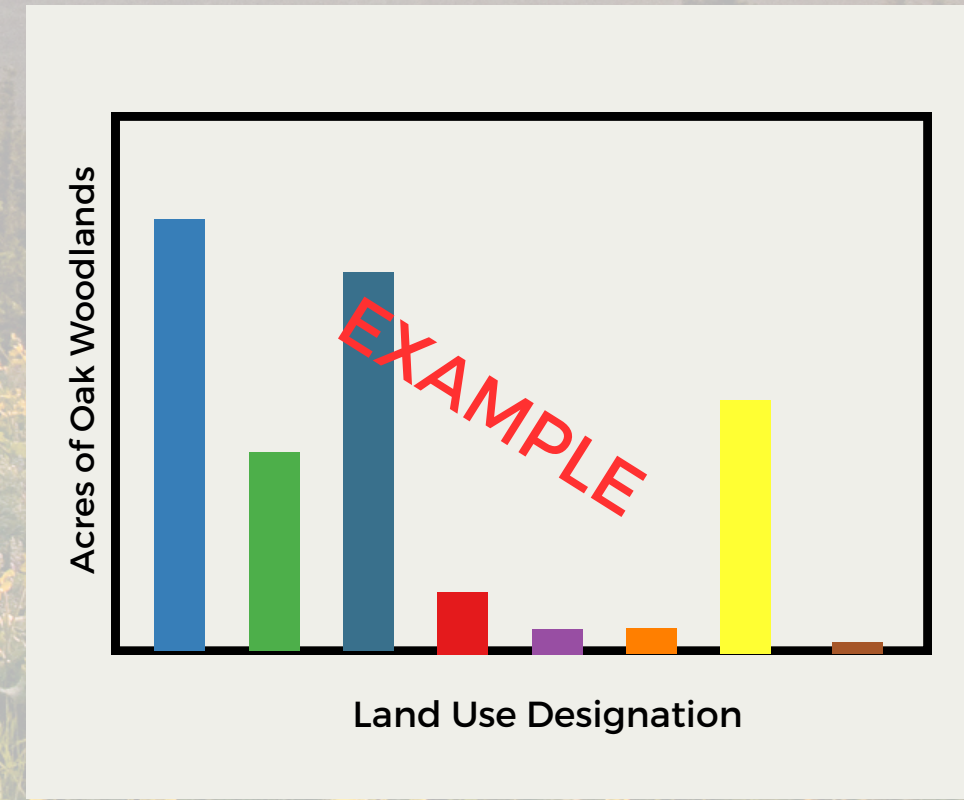
1) Identify Role Of Vital Sign Indicators



Vital Sign: The topic for a high level indicator.
(e.g. Oregon White Oak Woodlands)



Vital Sign Indicator: What is being measured.
(e.g. Extent and Distribution)

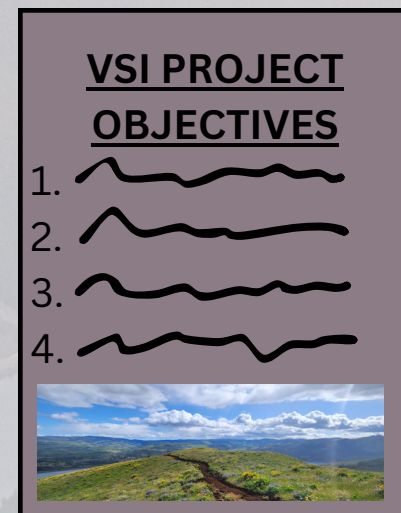
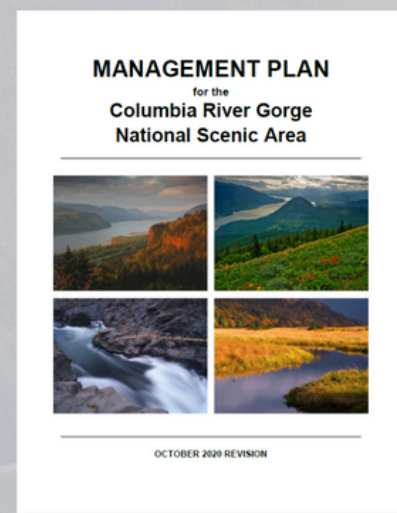
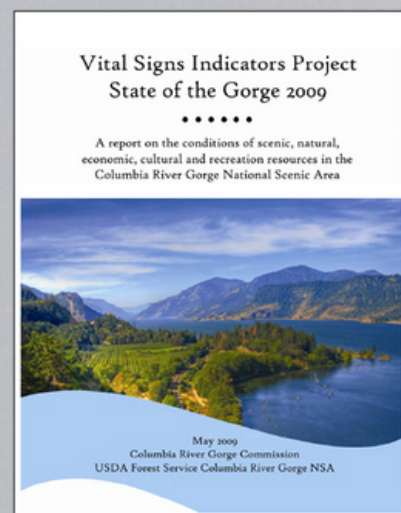


Timeline

2007 2009 2020 2021 2022 2023

Program Revitalization: Process

2) Start with Priority Management Questions



Management Plan Goal

Ensure that new uses do not adversely affect Priority Habitats or sensitive wildlife sites.

Management Question

Which Priority Habitats protected in the MP are at the greatest risk of conversion to development? How does land use affect the condition of protected habitats over time?

Threat

Conversion of Oregon white oak habitat to vineyard and residential development.

7 of 12 Priority Habitats are directly or indirectly measured through the VSI program

Timeline

2007 2009 2020 2021 2022 2023

Program Revitalization: Process

3) Determine Possible Vital Signs

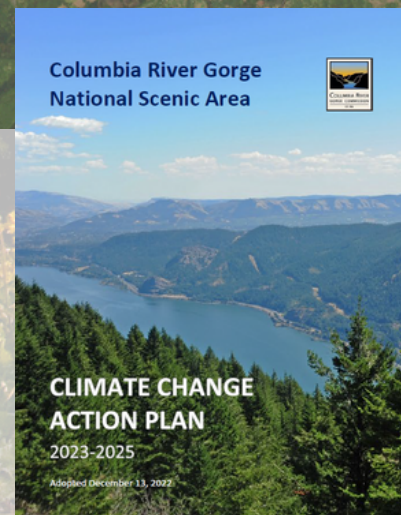
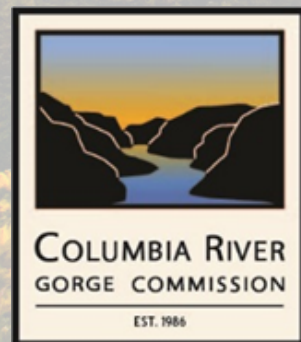
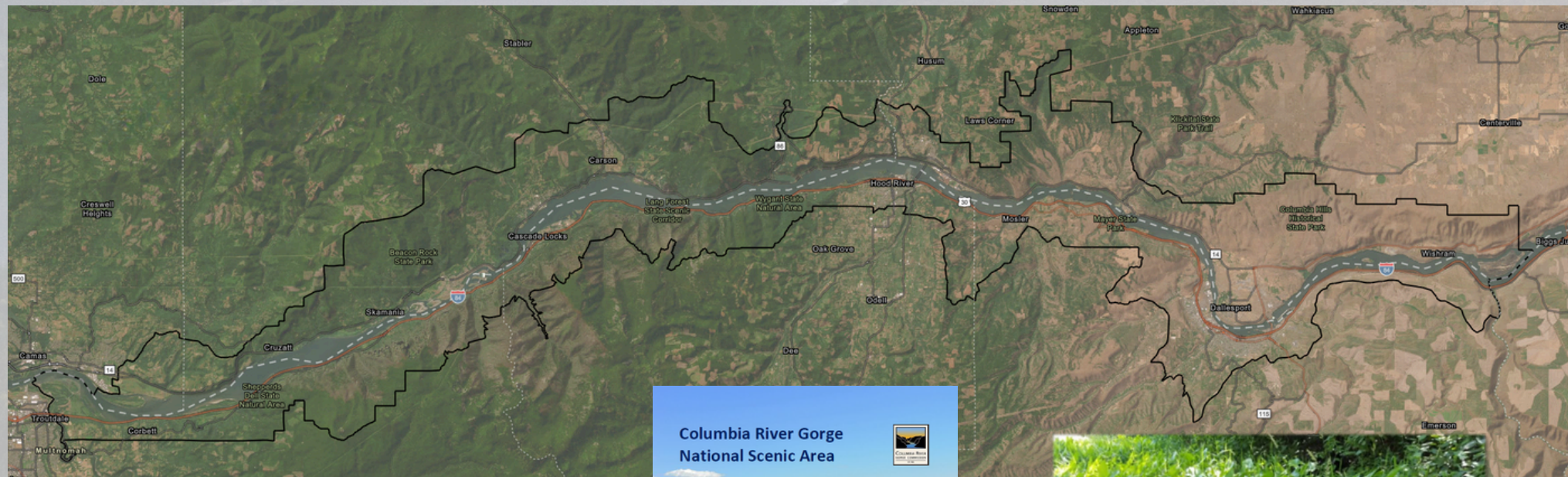
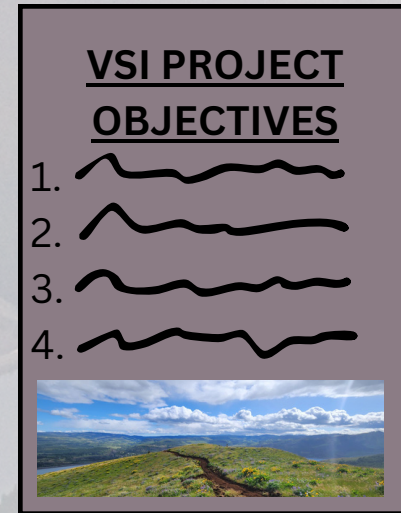
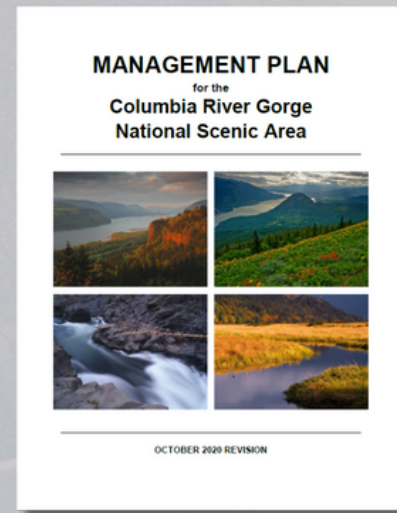
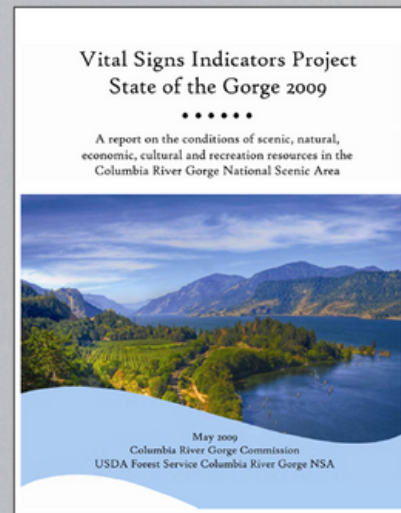


Photo credit: Cover image for Sandy River Delta Plant Inventory Report by Greg Archuleta and Jesse Norton

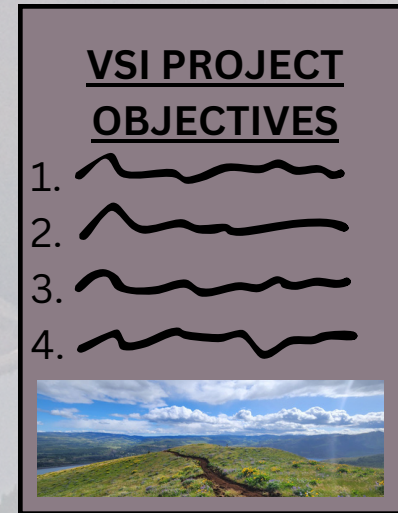
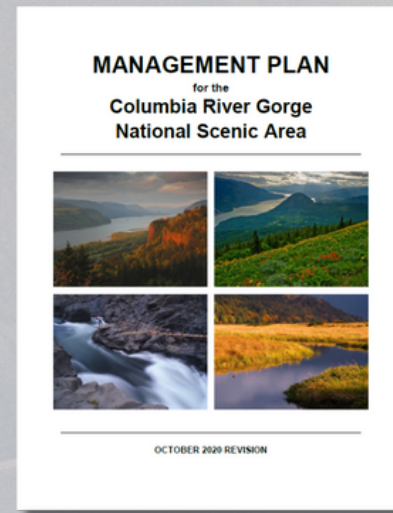
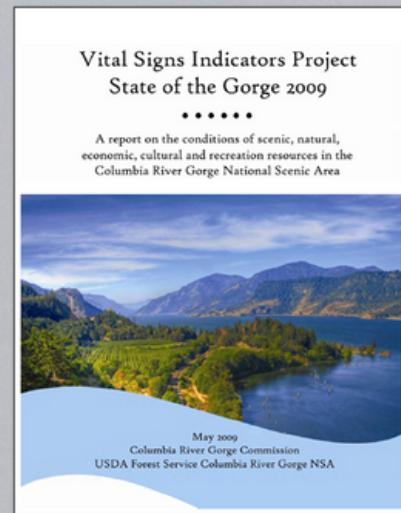
Key Considerations

1. Opportunity to affect condition
2. Scale and stressors
3. Climate change impacts
4. Equity considerations

Timeline

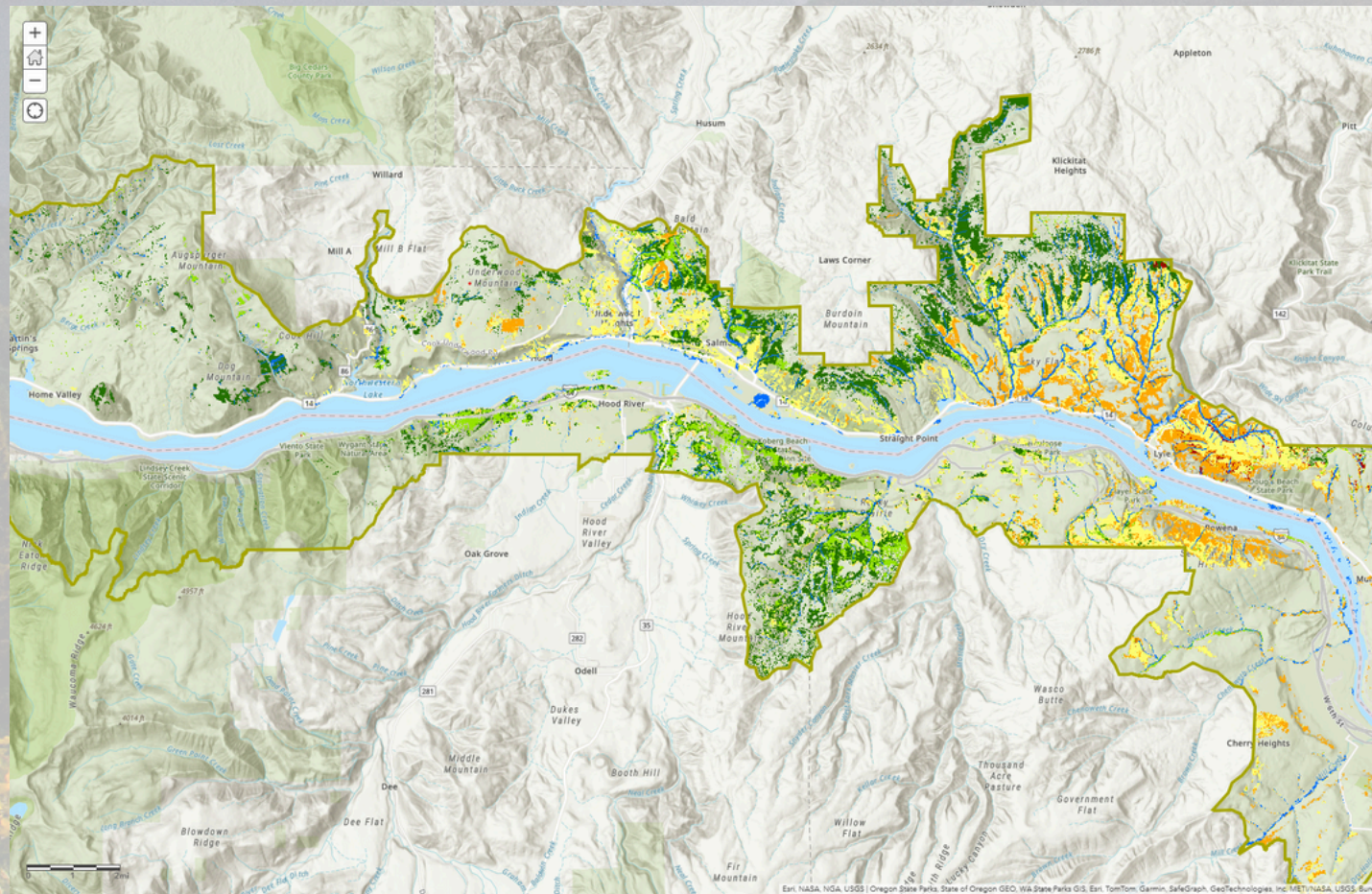
2007 2009 2020 2021 2022 2023

Program Revitalization: Process



4) Develop Indicators & Refine Based on Feasibility Criteria

- ### Indicators Should.....
1. Be Measurable
 2. Be Relevant to Management Actions
 3. Be Clear
 4. Be Consistently Available
 5. Be Cost Effective
 6. Be Obtainable
 7. Tell a Compelling Story

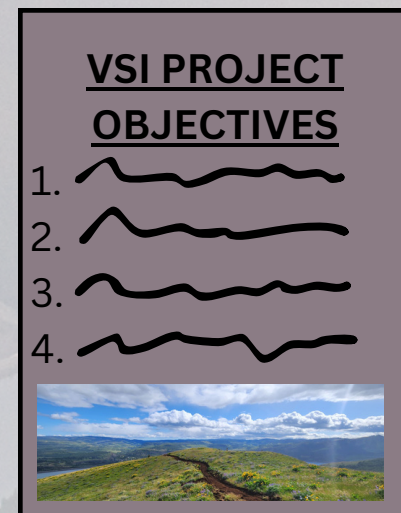
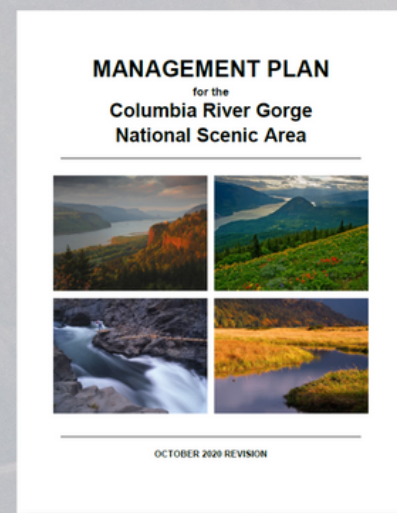
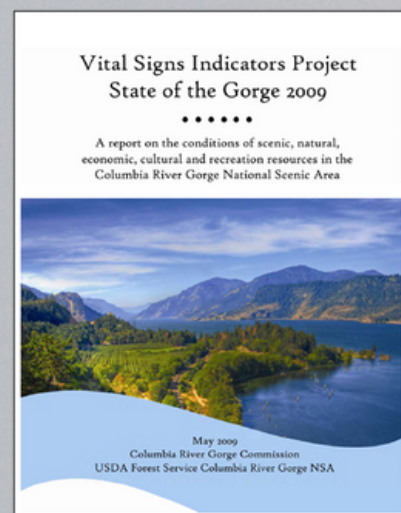


Timeline

2007 2009 2020 2021 2022 2023

Program Revitalization: Process

4) Develop Indicators & Refine Based on Feasibility Criteria



List of Indicators

Feedback from Commission

Feedback from Partners and Experts

Indicators Should.....

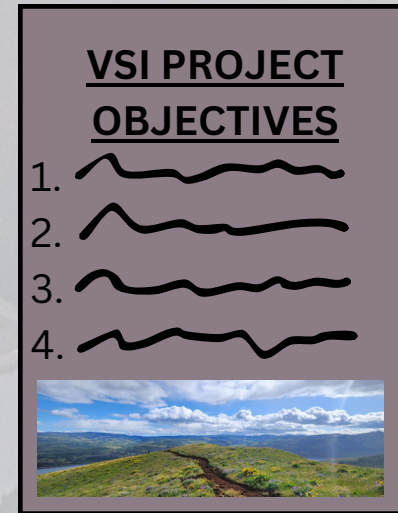
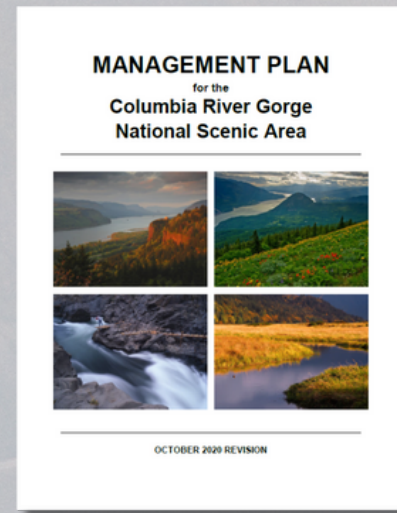
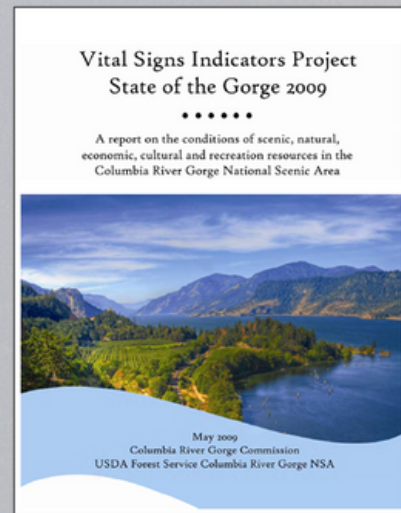
1. **Be Measurable**
2. **Be Relevant to Management Actions**
3. **Be Clear**
4. **Be Consistently Available**
5. **Be Cost Effective**
6. **Be Obtainable**
7. **Tell a Compelling Story**

Timeline

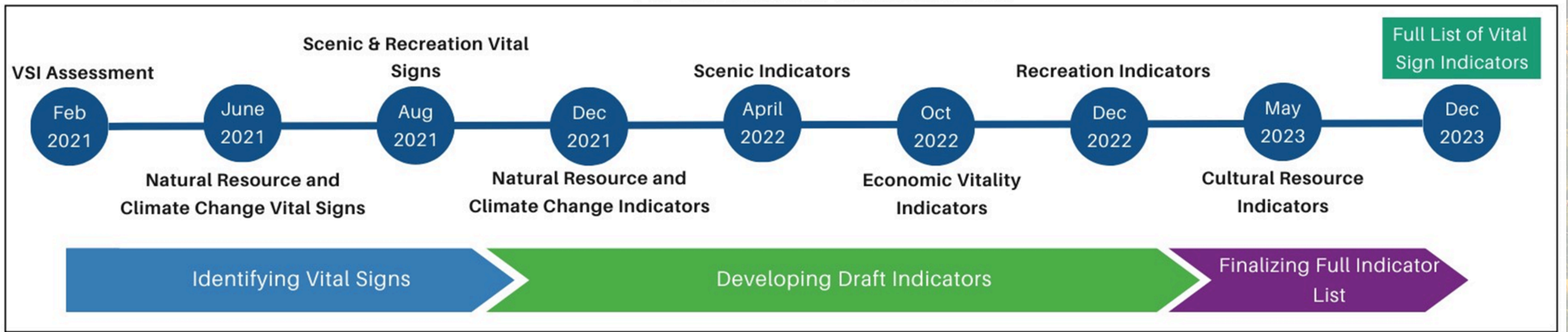
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Program Revitalization: Process

4) Develop Indicators & Refine Based on Feasibility Criteria

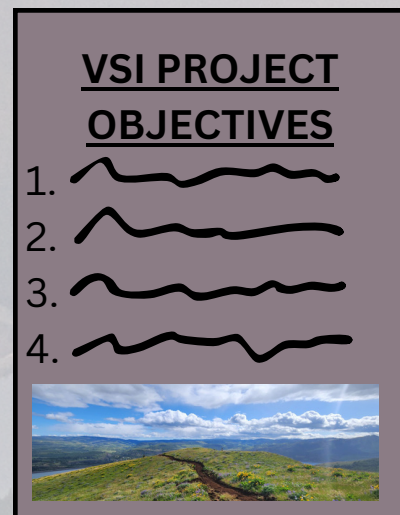
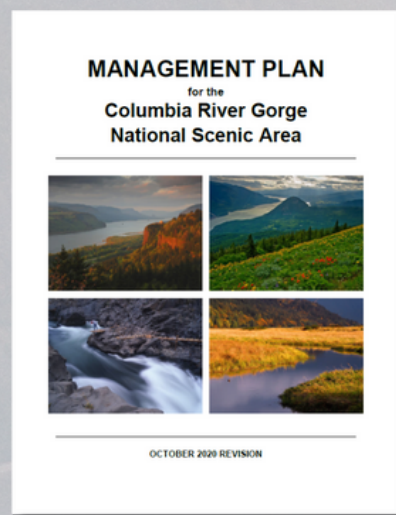
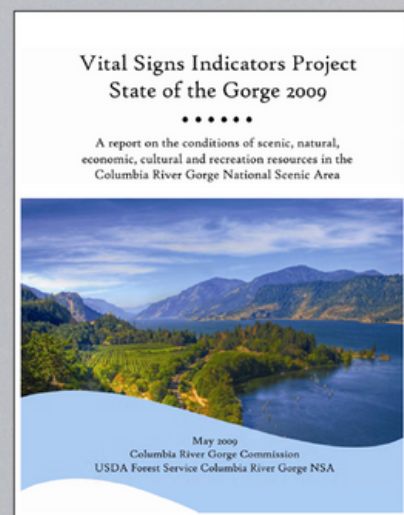


VSI Commission Work Sessions



Timeline

2007 2009 2020 2021 2022 2023 2024

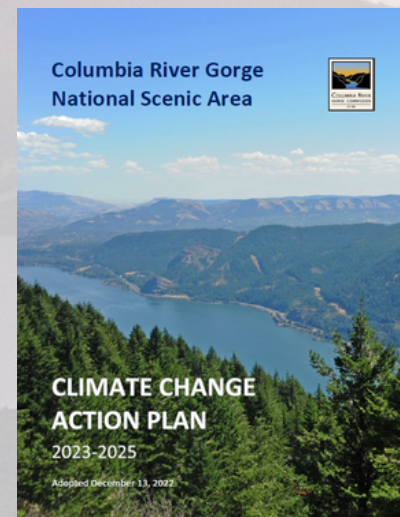
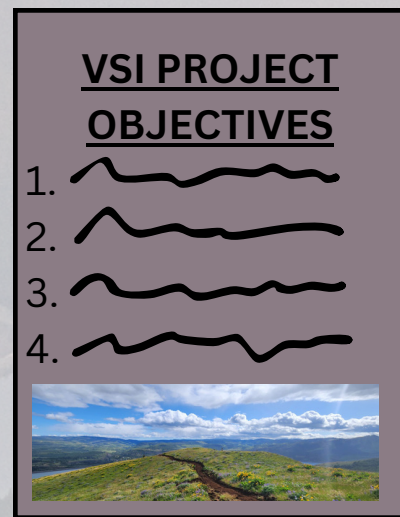
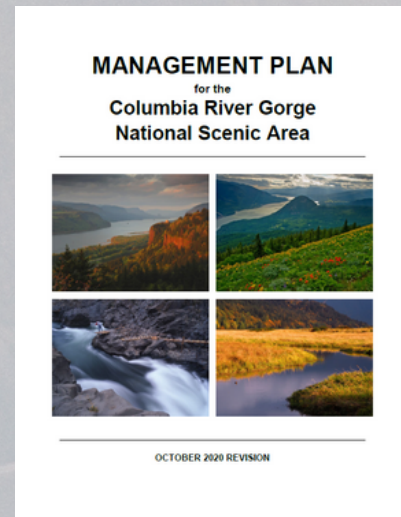
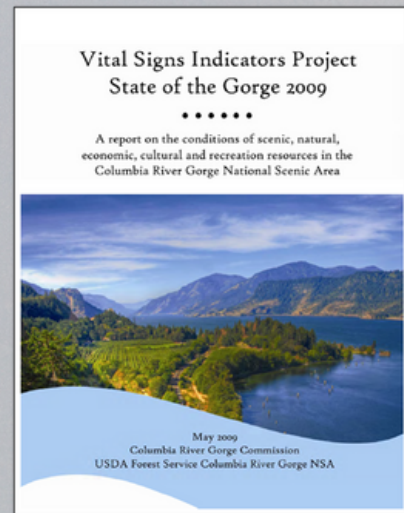


**Final List:
17 Vital Signs and 32
Indicators Adopted by
Commission in
December of 2023**



Timeline

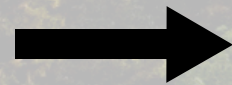
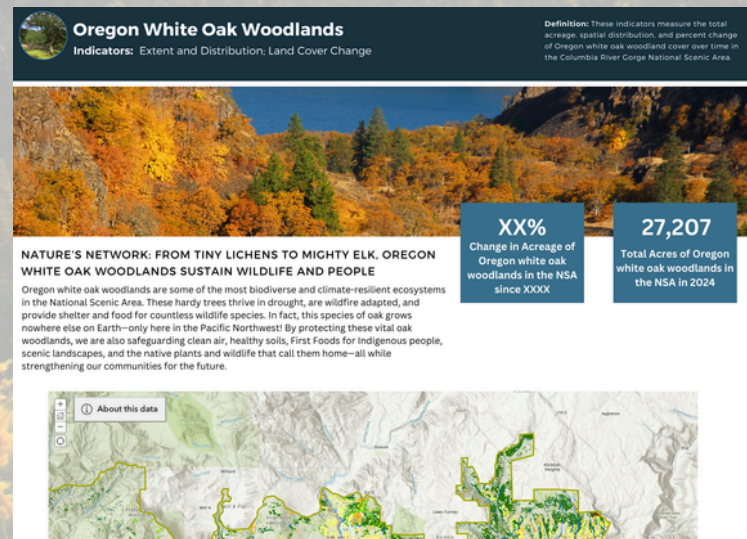
2007 2009 2020 2021 2022 2023 2024 2025



What's Next?


CONTINUED SUPPORT AND COLLABORATION WITH OUR PARTNERS

ONLINE REPORTING PLATFORM




What's Next?

Online Data Reporting Platform



Oregon White Oak Woodlands
Indicators: Extent and Distribution; Land Cover Change

Definition: These indicators measure the total acreage, spatial distribution, and percent change of Oregon white oak woodland cover over time in the Columbia River Gorge National Scenic Area.

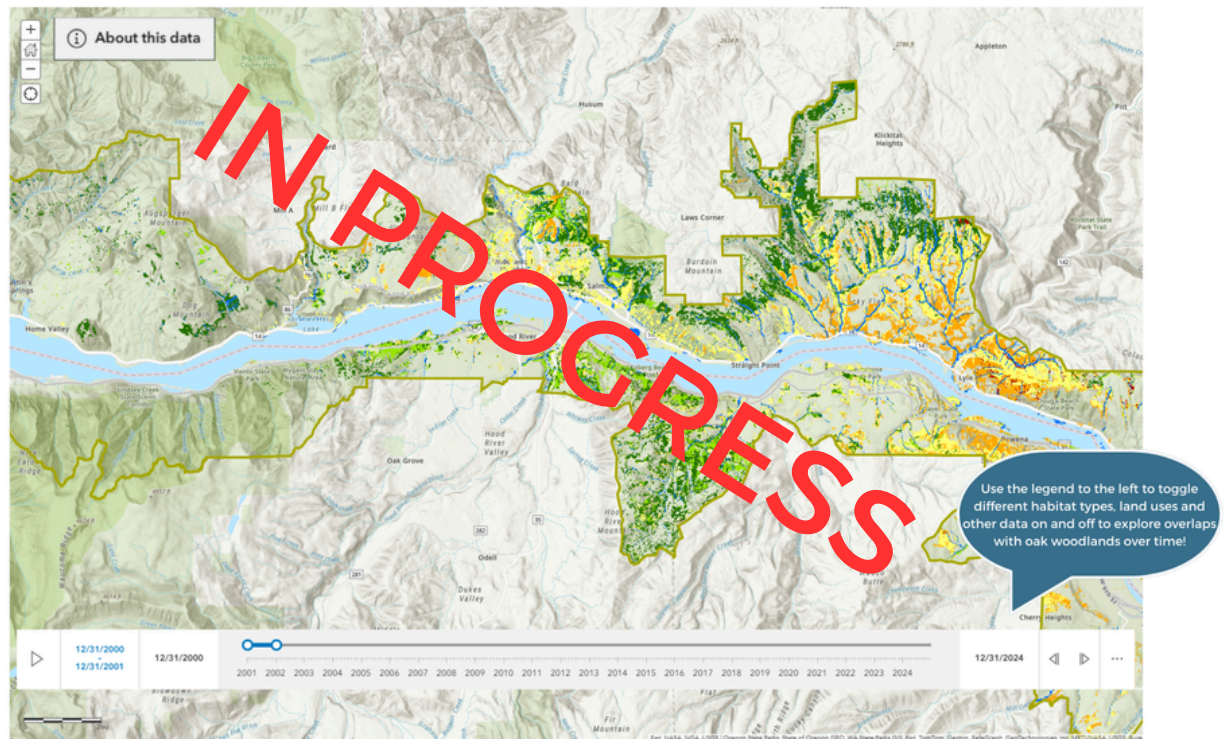


XX%
Change in Acreage of Oregon white oak woodlands in the NSA since XXXX

27,207
Total Acres of Oregon white oak woodlands in the NSA in 2024

NATURE'S NETWORK: FROM TINY LICHENS TO MIGHTY ELK, OREGON WHITE OAK WOODLANDS SUSTAIN WILDLIFE AND PEOPLE

Oregon white oak woodlands are some of the most biodiverse and climate-resilient ecosystems in the National Scenic Area. These hardy trees thrive in drought, are wildfire adapted, and provide shelter and food for countless wildlife species. In fact, this species of oak grows nowhere else on Earth—only here in the Pacific Northwest! By protecting these vital oak woodlands, we are also safeguarding clean air, healthy soils, First Foods for Indigenous people, scenic landscapes, and the native plants and wildlife that call them home—all while strengthening our communities for the future.



Use the legend to the left to toggle different habitat types, land uses and other data on and off to explore overlaps with oak woodlands over time!

Acres of Oregon White Oak Woodlands by Land Use Designation




Figure caption that explains what the user should learn from the plot-

Oak Woodland Distribution Over Time




Figure caption that explains what the user should learn from the plot-trend of the indicator over time

- Clearly Tells the Data Story
- Publicly Accessible & Educational
- Organized for Exploring Management Questions
- Living

WHY MONITOR OAKS IN THE NSA?

Once widespread, Oregon white oaks have declined significantly from their historic range due to land conversion, fire suppression, and competition from other trees. Today, the remaining oak habitats are more important than ever. Conserving these important oaks means providing important habitat for more than 400 species, spaces for recreation, and preserving the iconic beauty of the Columbia River Gorge.

Unlike pine and fir trees, Oregon white oaks are less likely to fuel wildfires. They grow alongside other fire-resistant plants like bluebunch wheatgrass, Idaho fescue, lomatium, and balsamroot, creating a landscape built to endure. These oak habitats support many of the animals you know and love—elk, mule deer, Lewis's woodpecker, wild turkeys, and western gray squirrels, to name a few. As the climate changes, wildlife depend on a network of oak patches, moving between open oak savannas, dense oak woodlands, and mixed forests to find food, shelter, and safe passage.

MANAGEMENT PLAN CONNECTION AND OUR ROLE

The Columbia River Gorge Commission is committed to our policy to protect priority habitats, including Oregon white oak woodlands, from the negative impacts of new land uses (Management Plan, Natural Resources Chapter). Understanding the changes to Oregon white oak habitat in the National Scenic Area over time will help us determine how well our current policies protect these vital habitats.

Oregon white oaks are also a priority in the Climate Change Action Plan. Protecting critical wildlife corridors and connected oak habitats is essential to meet the goals. We will rely on accurate data from these indicators—as well as input from our planners, partners, and communities—to guide future policy decisions.

ABOUT THE DATA

In 20XX, a team of data scientists led by Doug Glavich, Ecologist with the Region 6 USDA Forest Service office, took on a project to create a special habitats map of (insert spatial range). This map is built using google earth engine and machine learning and utilizes satellite imagery collected by (insert list of satellites used). By analyzing how Oregon White Oak Woodlands appear in satellite images today, we can look back in time to map their extent and distribution as far as quality satellite imagery allows.

TO LEARN MORE

East Cascades Oak Partnership is the leader in oak science and conservation in the NSA. <https://www.columbialandtrust.org/our-work/east-cascades-east-cascades-oak-partnership/>

Forage and Forbs Brochure Oaks Overview Brochure Oaks and Residents Brochure

ACKNOWLEDGEMENTS





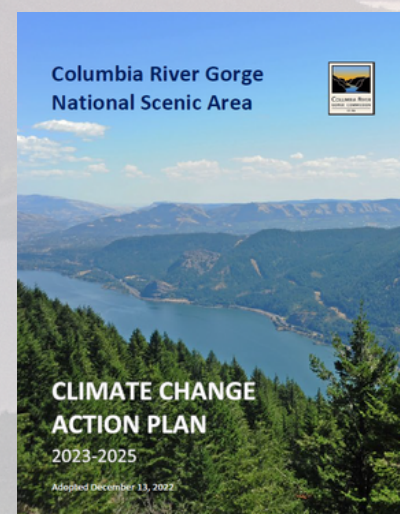
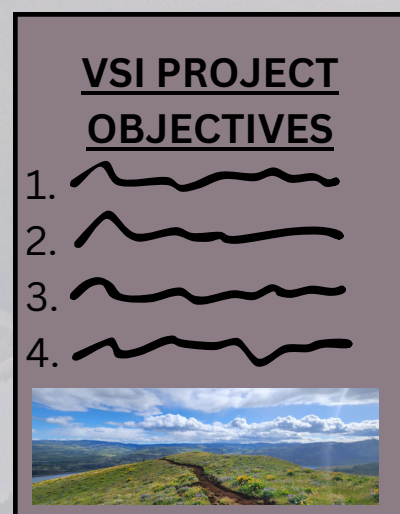
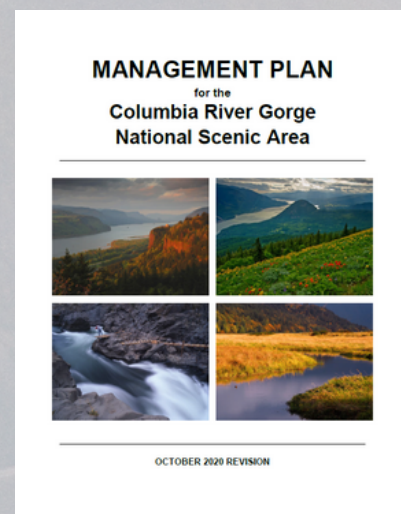
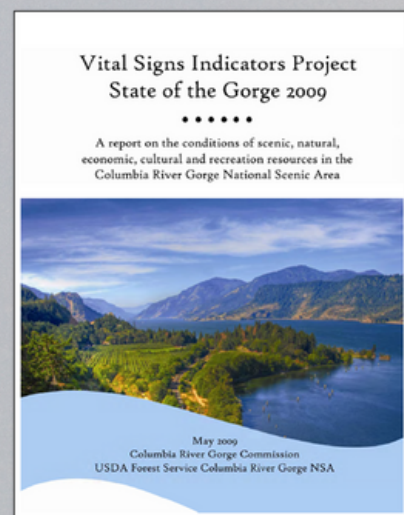
Western Gray squirrels call oak woodlands their home.



Balsam root is one example of a fire adapted plant that thrives in the understory of oak trees. Photo by Doug Gorsline

Timeline

2007 2009 2020 2021 2022 2023 2024 2025



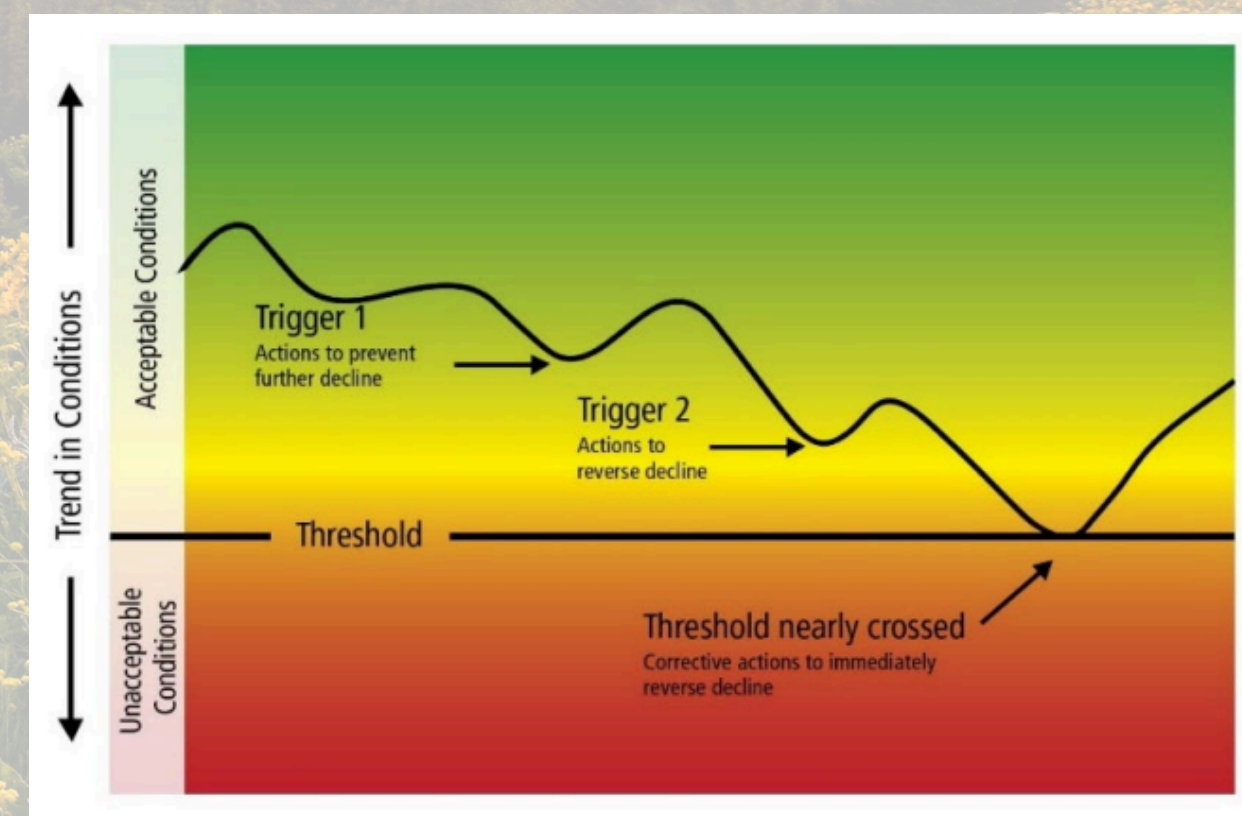
What's Next?

ONLINE REPORTING PLATFORM



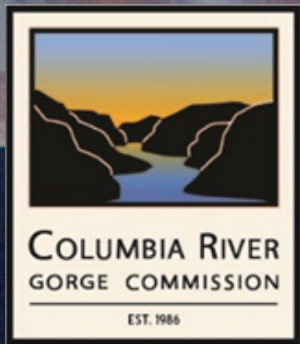
Trigger: A condition of concern for an indicator that is enough to prompt a management response to ensure that desired conditions continue to be maintained before the threshold is crossed.

Threshold: A minimally acceptable condition associated with each indicator, typically based on physical, biological, or social conditions



Thank you to all of our Partners

- Cascade Pika Watch Program, Oregon Zoo
- Columbia Land Trust/East Cascades Oak Partnership
- Columbia River Inter-Tribal Fish Commission
- Columbia Gorge Tourism Alliance
- Confederated Tribes of the Umatilla Indian
- Confederated Tribes of Warm
- Gorge Grown Food Network
- Gorge Stewardship Network
- International Dark-Sky Association of Oregon
- Mid-Columbia Economic Development District
- National Ecological Observatory Network Program
- Orchard View Farms
- Oregon and Washington Investment Boards
- Oregon Department of Ecology
- Oregon Department of Forestry
- Oregon Employment Department
- Oregon Governor's Office, Regional Solutions
- Oregon Parks and Recreation Department
- Oregon State University Extension Service, Tree Fruit Horticulture
- Oregon Wheat Commission
- Skamania County Economic Development Council
- Skamania County Planning Department
- Thrive Hood River
- Trailkeepers of Oregon
- Underwood Conservation District
- USDA Forest Service, Columbia River Gorge National Scenic Area USDA Forest Service, National Air Resource Management and Lichen Monitoring Programs USDA Forest Service, Northwest Oregon Area Ecology Program
- USDA Forest Service, Pacific Northwest Research Station
- USDA Forest Service, Region 6 Air Quality Program
- USDA National Agriculture Statistics Service
- US Environmental Protection Agency
- US Geological Survey
- Washington Department of Natural Resources
- Washington Department of Ecology
- Washington Employment Security Department
- Washington Natural Heritage Program
- Washington State Parks
- Washington Trails Association
- West Virginia University
- Yakama Nation



Questions?