

Vital Signs

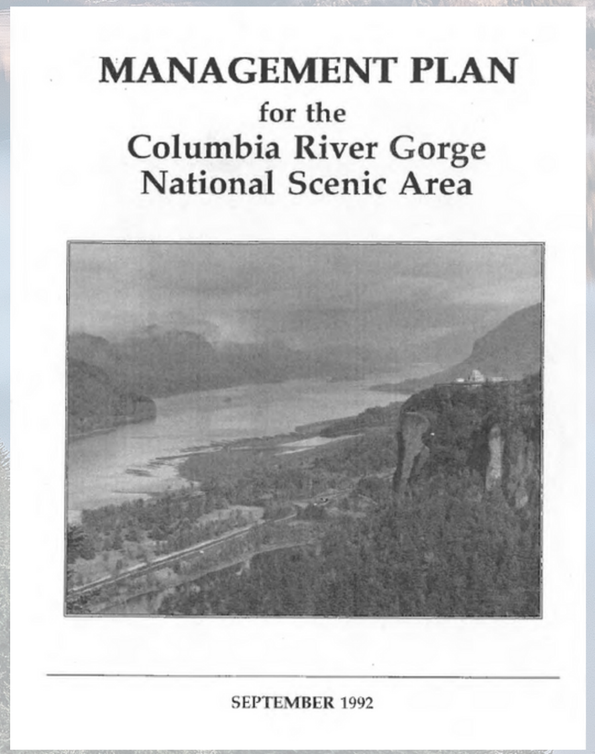
Data Hub

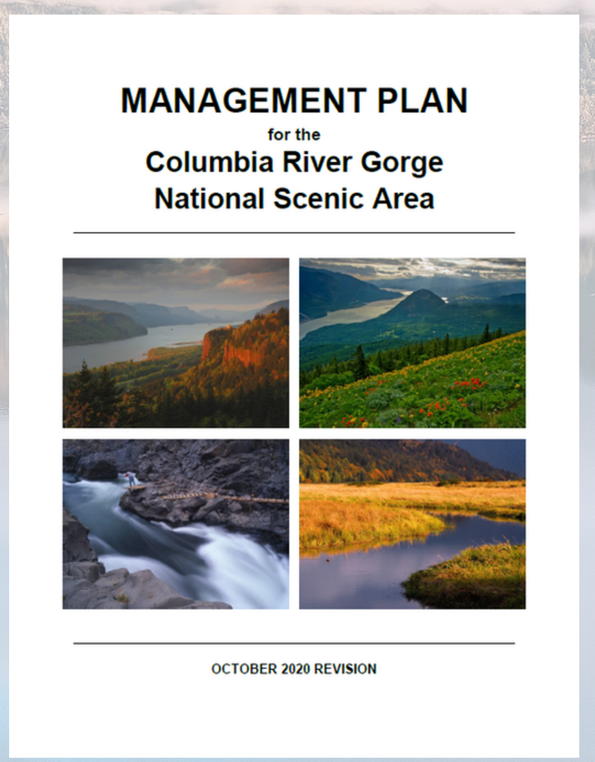
July 8th, 2025

Program Background: 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”

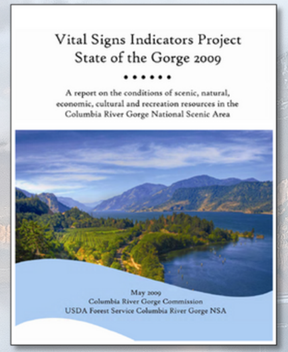
Part IV, Chapter 1

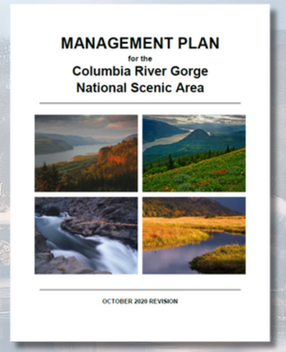


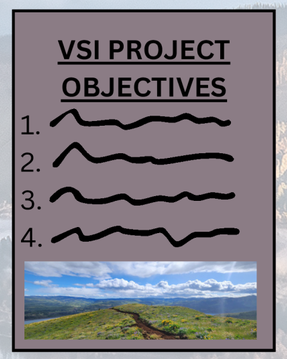


Program Background: Timeline

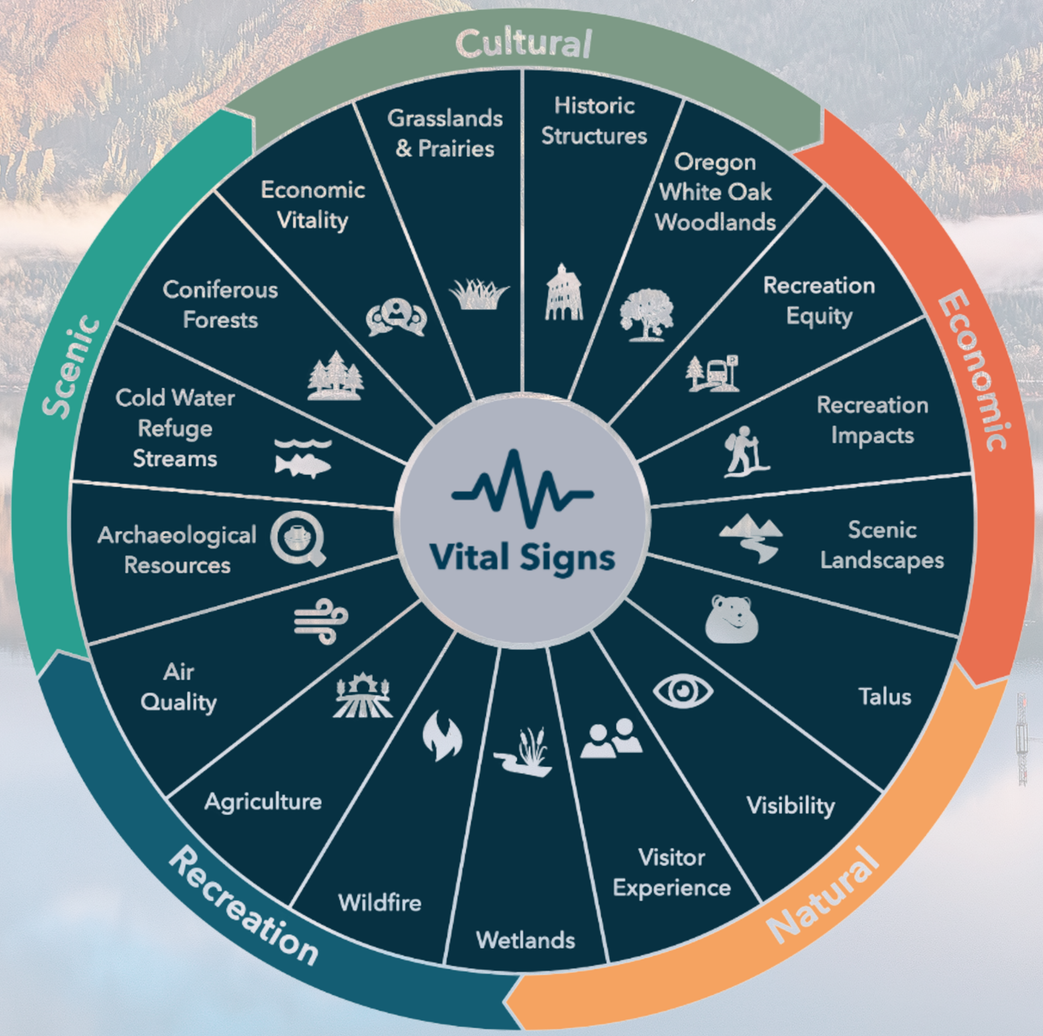
2007 — 2009 — 2020 — 2021 — 2022 — 2023 — 2024







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



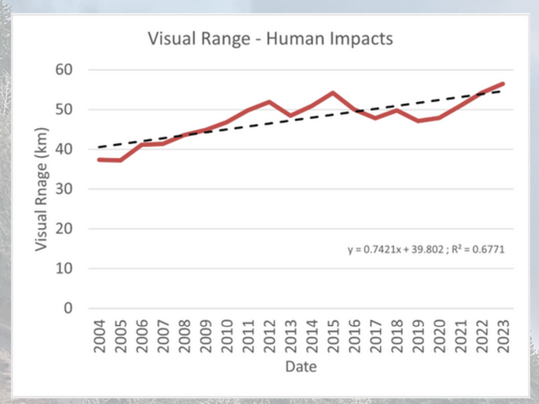
Program Background: Definitions

Vital Sign:
A key topic that reflects the overall health of the Columbia River Gorge.

Vital Sign Indicator:
A specific metric to track changes in a **Vital Sign** over time.







Visibility

Haze

Light Pollution



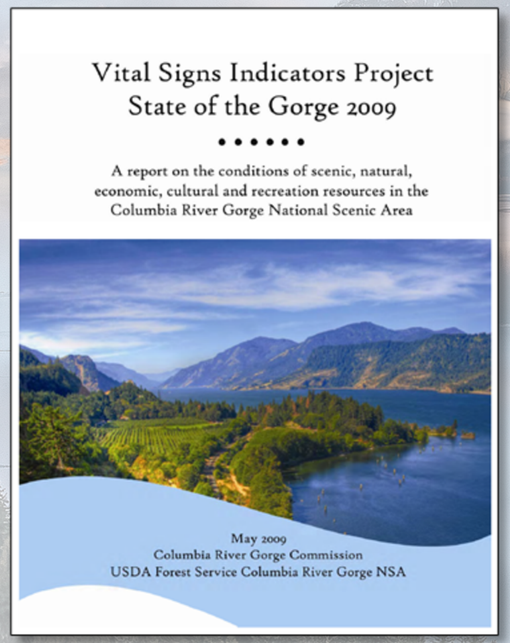
Name	Change of Radiance 2012 to 2024	% Change 2012 to 2024	Where Radiance Came From in 2024 (%)
NSA Total Area	1930.1	48.6	
NSA Non-Incorporated Areas	1090	84.4	40.4
TheDalles	346.2	24.7	29.6
HoodRiver	29	5.6	9.2
Dallesport	169.7	108.2	5.5
WhiteSalmonBingen	103.9	51.1	5.2
NorthBonneville	57	57	2.7

Data Hub: Motivation

- Create a system for storing and organizing large amounts of data and analyses.
- Build a platform that is useful to CRGC staff, commissioners and partners for answering specific management questions.
- Communicate our findings through an accessible, interactive format that is engaging and educational for the public.
- Emphasize the connections and overlaps among the various vital signs in the National Scenic Area.

Data Hub: Limitations

- Not inclusive of everything that we could be monitoring in the National Scenic Area



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.	
	1.1.f: Night Light: The effect of ambient light on the night sky.	
	1.1.g: Visibility: Placeholder for visibility indicator.	
	1.2.a: Overall Landscape Quality: Percent of each landscape type that is in good condition.	
	1.2.b: Development Impacts: Percent of land area with development for each landscape type.	
Natural: Protect and enhance natural resources		
	2.1.a: Habitat Quality: Percent of priority habitat types rated as properly functioning.	
	2.1.b: Habitat Fragmentation: Percent of priority habitat types that are lost or fragmented by hu activity.	
	2.1.c: Species Health: Percent of at-risk species whose populations in the gorge are healthy.	
	2.1.d: Species Range: Percent of native species (wildlife, plants, invertebrates) with ranges that declining.	
	2.2.a: Surface Water Quality: Percent of streams, including the Columbia River, whose water qu poor, b) fair, c) good, and d) excellent.	
	2.2.b: Habitat Quality: Percent of native fish habitat that is properly functioning.	
	2.2.c: Surface Water Quantity: Percent of streams with satisfactory in-stream flows.	
	2.2.d: Groundwater Quantity: Square miles of groundwater restricted areas.	
	2.2.e: Groundwater Quality: To be developed.	
	2.3.a: Air Quality: To be developed.	
Economic: Protect and support the economy		
	3.1.a: Income: Per capita income of NSA urban area residents as a percent of state and non-met capita income: a) Oregon side and b) Washington side.	
	3.1.b: Job Growth: Net job growth: a) Oregon side and b) Washington side.	
	3.1.c: Construction: Building permits issued by urban area: a) housing, b) commercial, and c) ind	
	3.1.d: Vacancy Rate: Commercial vacancy rate by urban area.	
	3.1.e: Housing Affordability : Percent of households that can afford the median priced house.	
	3.2.a: Activity: Total number of a) agriculture and b) forestry enterprises.	
	3.2.b: Revenue: Total revenue of a) agriculture and b) forestry enterprises.	
	3.2.c: Payroll: Total payroll of a) agriculture and b) forestry enterprises.	
	3.2.d: Land Base: Total acreage in a) agriculture uses and b) forest uses.	
	3.3.a: Income: Per capita income of NSA non-urban area residents as a percent of state and non-metro per capita income: a) Oregon side and b) Washington side.	2009
	3.3.b: Job Growth: Net job growth in rural areas: a) total; b) Oregon side; c) Washington side.	2011
	3.3.c: Construction: Building permits issued in rural centers and non-urban areas: a) housing, b) commercial, and c) agricultural.	2009
	3.3.d: Activity: Number of rural and rural center enterprises: a) total; b) Oregon side; c) Washington side.	2011
Cultural: Protect and enhance cultural resources		
	4.1.a: Condition: Percent of all monitored archaeological sites in good condition.	2009
	4.1.b: Awareness: Percent of stakeholders understanding the archaeological resource protection process.	2011
	4.1.c: Awareness: Percent of residents of and visitors to the gorge understanding the importance of archaeological resources.	2011
	4.1.d: Inventory: Number of new significant archaeological resources identified each year.	2009
	4.2.a: Condition: Percent of all monitored historic resources in good condition.	2009
	4.2.b: Awareness: Percent of stakeholders with understanding of historic resource protection process.	2011
	4.2.c: Awareness: Percent of residents of and visitors to the gorge understanding the importance of historic resources.	2011
	4.2.d: Inventory: Number of new significant historic resources identified each year.	2009
	4.3.a: Condition: Percent of all monitored traditional cultural properties in good condition.	2011
	4.3.b: Awareness: Percent of stakeholders understanding the traditional cultural properties protection process.	2011
	4.3.c: Awareness: Percent of residents of and visitors to the gorge understanding the importance of traditional cultural properties.	2011
	4.3.d: 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

List of Indicators

Feedback from Commission

Feedback from Partners and Experts

Data Hub: Limitations

- Direct connection to the management plan



Management Plan Goal

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

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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?

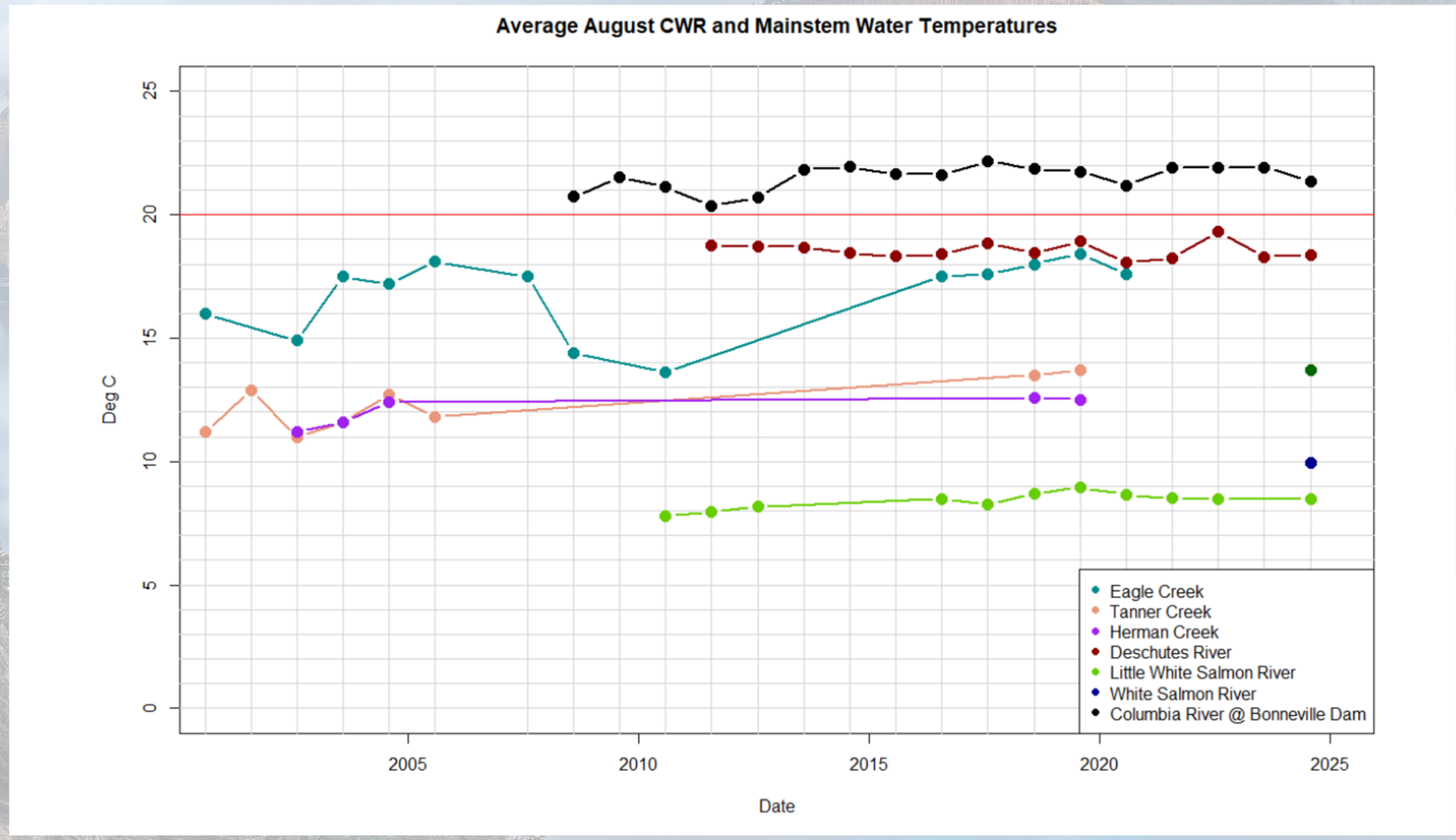
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Threat

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

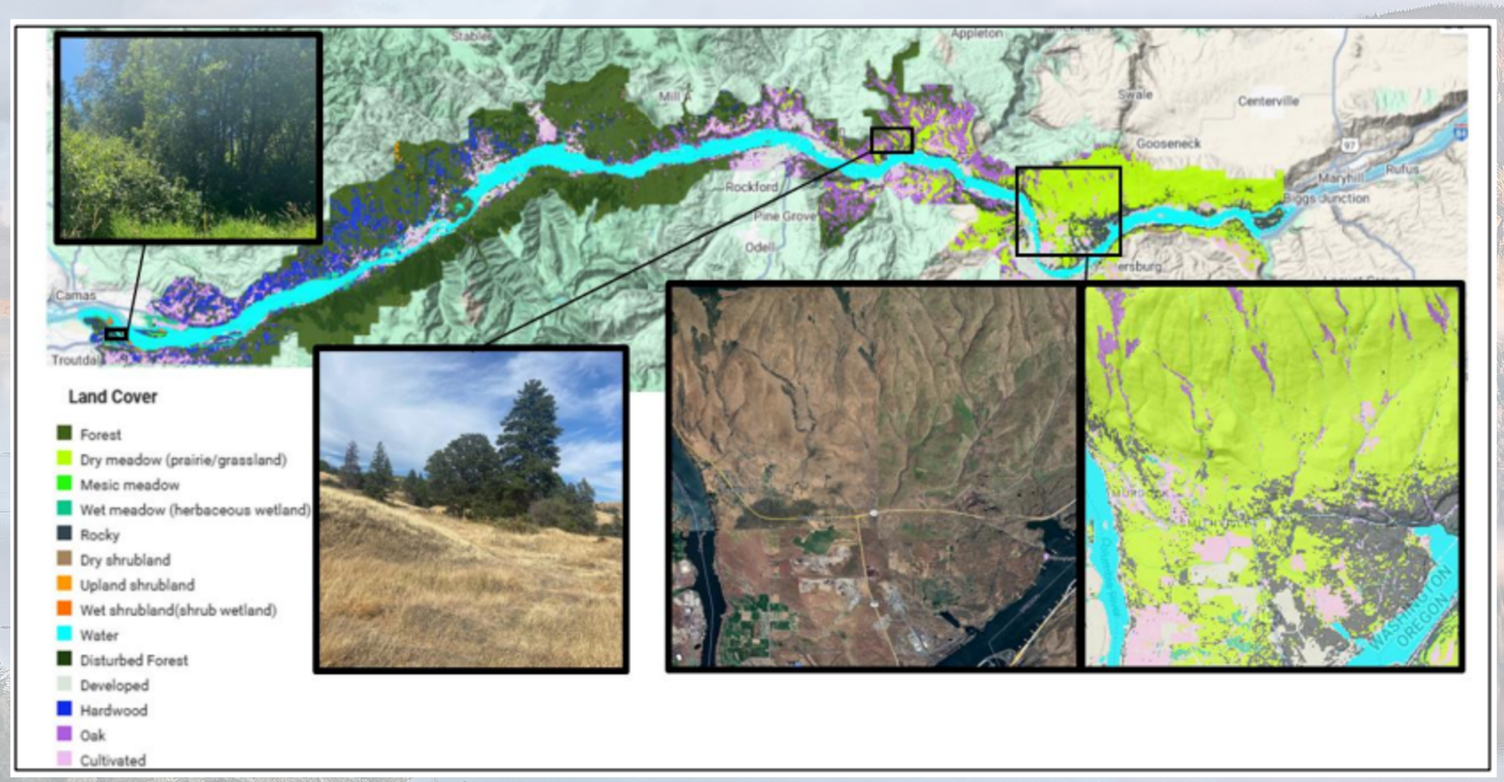
Data Hub: Limitations

- Data availability, partner and staff time



Data Hub: Limitations

- Data Error (known and unknown)



Special Habitat Map MetaData



National Trend Network Precip Chemistry

Spatial Data Example:
10m Resolution ; Avg 87% accuracy

Instrument Error

Data Hub: Status

Vital Sign	Indicator	Status & Next Steps
Agriculture	Extent & Distribution	Waiting on refinements to Special Habitats map "Cultivated" category from USDA Forest Service.
	Crop Type	Complete for 2024
Air Quality	Precipitation Chemistry	Complete for 2024
	Terrestrial Effects of Pollution and Climate Change	Data has been obtained, waiting on analyses
Archeological Resources	Significant Archeological Resources Identified Annually	Data is incomplete - Plan to report on this indicator by the end of the calendar
Cold Water Refuge Streams	Stream Temperature	Data obtained from 7 of 10 streams. Working with USDA Forest Service to install additional temperature monitors.
	Stream Flow	Data available from 7 of 10 streams. Working with partners to improve and expand monitoring.
Coniferous Forests	Extent & Distribution	Data obtained for current condition.
	Land Cover Change	Waiting on additional years of the Special Habitats Map from USDA Forest Service for time series analysis.
Economic Vitality	Distribution and Type of OIB and WIB Loans	Complete for 2024
	Economic Impact of Loans on Local Businesses	Complete for 2024
Grasslands/Prairies	Extent & Distribution	Data obtained for current condition.
	Land Cover Change	Waiting on additional years of the Special Habitats Map from USDA Forest Service for time series analysis.
Historic Structures	Significant Historic Structures Identified Annually	Data is incomplete - Plan to report on this indicator by the end of the calendar
Oregon White Oak Woodlands	Extent & Distribution	Data obtained for current condition.
	Land Cover Change	Waiting on additional years of the Special Habitats Map from USDA Forest Service for time series analysis.

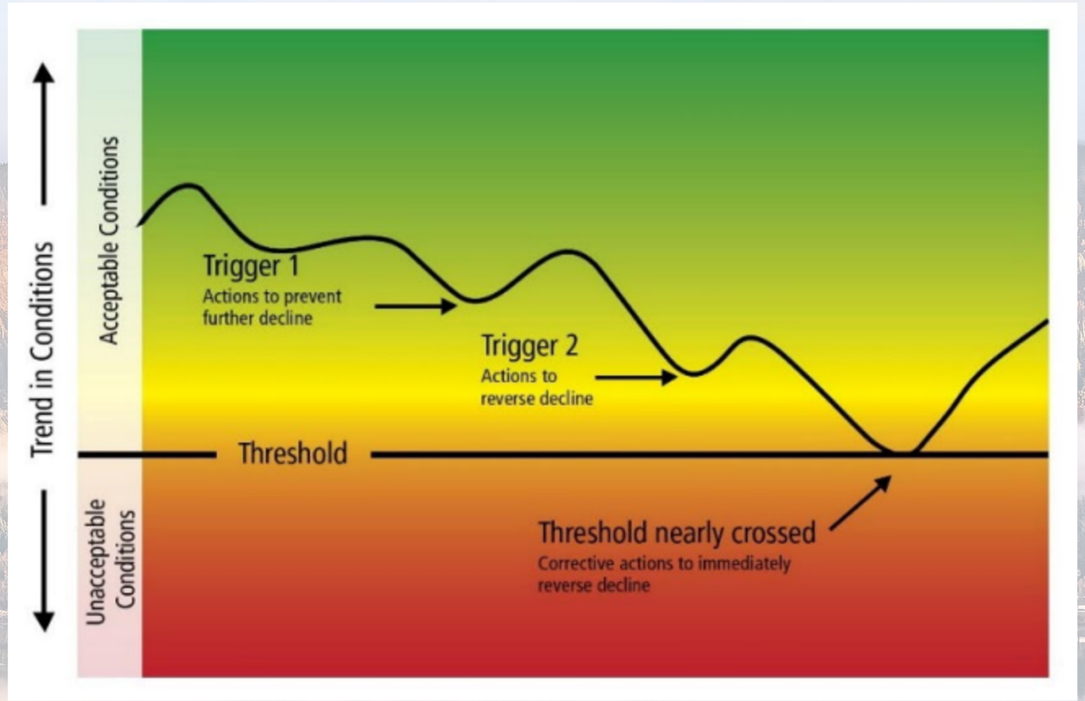
Data Hub: Status

Vital Sign	Indicator	Status & Next Steps
Recreation Equity	% of Recreation Sites Accessible via Public Transport	Complete for 2024
	% of Recreation Sites that Require a Fee	Complete for 2024
Recreation Impacts on Other Protected Resources	Extent and Distribution of Official Trails	Complete for 2024
	Extent and Distribution of Unofficial Trails	Complete for 2024
Scenic Landscapes	Intactness of Landscape Setting as Seen From Key Viewing Areas	Waiting on analyses of seen area and scenic integrity map products.
	Intactness of Landscape Setting	Complete for 2024
Talus	Pika presence	Complete for 2024
Visibility	Haze	Complete for 2024
	Light Pollution	Sky Quality Monitors installed and collecting data at all 10 locations across the NSA. Modeled data obtained and analyzed.
Visitor Experience	Visitation	Complete for 2024
	Visitor Satisfaction	Complete for 2024
Wetlands	Extent & Distribution	Data obtained for current condition.
	Land Cover Change	Waiting on additional years of the Special Habitats Map from USDA Forest Service for time series analysis.
Wildfire	Extent and Distribution	Complete through 2023
	Fuels Reduction on NFS lands	Waiting on confirmation of spatial accuracy from USDA Forest Service.

What’s Next

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



Research

Collaboration

Creativity



Vital Signs

Data Hub