

Columbia River Gorge National Scenic Area Visual Policy Impact Study



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June 11, 2021

APPROVAL

A handwritten signature in black ink, appearing to read "Rob Ribe". The signature is fluid and cursive, with the first name "Rob" being more prominent than the last name "Ribe".

Project chair Rob Ribe

Committee Chris Enright

Submitted in partial fulfillment of the
Masters of Landscape Architecture
Department of Landscape Architecture
College of Design
University of Oregon
June 2021

TABLE OF CONTENTS

Acknowledgements

Glossary of terms

List of figures

- 1.1 Visual documentation method
- 1.2 Case law precedent flow
- 1.3 Signs of controversy
- 2.1 Visual characteristics
- 2.2 Slope and visual absorption capacity
- 2.3 Visual Inventory- character type chart
- 2.4 Differentiated landscape
- 2.5 Viewer sensitivity- activity, frequency, access
- 2.6 Visual resource inventory process, Forestry Handbook for Scenery Management
- 4.1 Gorge context, land management areas
- 4.2 Represented site locations in the Gorge
- 4.3 Exported GIS graphics identifying study parcels
- 4.4 Interpreting- Rowena
- 4.5 Interpreting- Cape Horn
- 4.6 Interpreting- Crown Point
- 4.7 General management/ special management areas
- 4.8 Zoning compliments land management
- 4.9 Sites for alternative visual future modeling
- 4.10 Build year influence on visual impact
- 5.1 Resources conserving land character

Corpus

I. Introduction

Scope: what are we looking at?

Methodology: how did we discover this?

Background: why is this an issue?

Research Questions: what are we looking to show?

II. Defining scenic beauty

Evaluation Standards- measurable but not definable

Shepard, Ribe, Zube

Evaluation methodology- Forestry handbook

Naturalistic beauty as precedent

III. Law

The island and the sea

5th amendment takings clause

Significant case law- Lucas v SCCC, et al

Agriculture in not a loss

Upheld

IV. Visual documentation

Process

Interpreting what we see

Land Management- regulation and zoning effects

Built Environment

V. Assessments, conclusion, future study

Do these strategies preserve landscape character?

Document as platform for future work

VI. References

ACKNOWLEDGEMENTS

Sincere thanks to the many students, professors and friends who have been supportive on this long, dusty and beautiful trail to the next chapter of life.

Special thanks to Tom Fiorelli for helping me tackle the GIS monster

And a great deal of gratitude to my advisor Rob Ribe, who provoked my interested in this beautiful project and has been an amazing coach every step of the way.

Once destroyed, nature's beauty cannot be repurchased at any price

- *Ansel Adams*

GLOSSARY OF TERMS

<i>The Gorge:</i>	The Columbia River Gorge, about 75 miles of a culturally and visually significant river canyon east of Portland Oregon flanked by steep terrain
<i>CRGNSA</i>	Columbia River Gorge National Scenic Area. About 225,000 acres of land surrounding the Gorge that were committed to conserving landscape character by President Regan in 1986
<i>NSA:</i>	National Scenic Area
<i>The Act:</i>	The Gorge act of 1986 signed by Regan, that created the CRGNSA, and the rights and responsibilities of the Gorge Commission to carry out the intent of the Act
<i>The Commission:</i>	The Columbia River Gorge Commission. A counsel of citizens and officials balanced from Oregon and Washington created by an interstate compact and given authority by the Act to implement and enforce policies that protect natural and cultural resources
<i>NEPA:</i>	National Environmental Policy Act. A congressional act promoting environmental analysis and impact reviews in development, including visual impact of projects and developments involving a nexus of federal involvement, including scenic impact
<i>KVA:</i>	Key View Area. Any of the views from 13 designated scenic viewpoints in the Gorge primarily accessed by vehicle, and the landscape visible from these sites
<i>Viewshed:</i>	Geographical area visible from a view point included in the line of sight, excluding things obstructed by terrain or other objects
<i>GIS:</i>	Geographic Information System, software that provides the ability to visualize and analyze spatial and geographic data
<i>Taking of land:</i>	The constructive result of a complete economic loss of private land use resulting from municipal, state or federal government enforcement of that loss
<i>Landscape character:</i>	differentiating visual characteristics of larger scale natural landscapes, such as visible landscape patterns, water, distance zones, textures, lines, form, land cover types, and colours
<i>Scenic beauty:</i>	mainly naturalistic visual quality, landscapes with the greatest character, e.g. diversity, typically have the greatest potential for scenic beauty

ABSTRACT

The Columbia River Gorge separates Oregon and Washington along a 75 mile stretch of poignant beauty became a drivable destination in the 1920's [Willis]. There are key view areas on this route of elevated aesthetic quality. The conservation of intact scenic landscape beauty from these key view areas is informed by strata of local and regional land use policy, as well as conservation trust land banking.

The Gorge Commission, given its duties through the Columbia River Gorge National Scenic Area Act in 1986, enforces the landscape conservation policies [gorgecommission]. A brief history of the legal framework and controversy of the Act is offered.

This project looks into identifying land use policy mechanisms in place for preservation of scenic beauty, across public and private properties visible from three exceptional viewpoints in the Columbia River Gorge that represent some of the most scenic and most visited scenic points. Scenic quality in the Gorge is generally preserved through limiting housing development, with the assumption that unnatural objects in scenery detract from scenic beauty.

Representation of spatial data is projected on viewshed scale, and differentiated at a tax parcel basis. Data was extracted from publicly available GIS sources, and projected onto map views and panoramic scenes. Site photography of the represented key view areas is joined for better visual comparison between what is seen and visual stewardship policies.

This project is a visual document intended to represent of some of the most visited and publicly valued places in the Gorge. This document is intended for a general audience to better understand why the landscape looks the way it does in the Columbia River Gorge. Through offering a better understanding of how policy shapes the landscape we see in the Gorge, more informed public discussions about the Gorge's visual future can be held. The document and visuals are also intended to be a platform from which further modeling and public preference surveys, including alternative visual future scenarios, may be developed for Commission and community review.

I. INTRODUCTION

SCOPE AND SIGNIFICANCE

History of beauty

Volcanic magma rising from the deep seated plume that is now below Yellowstone laid down the world's youngest basalt flood group [Cahoon]. This volcanism coupled with cataclysmic erosion and deposition from Missoula floods 10-15,000 years ago composed a scenically diverse and unique surface typology that narrates the story of its tumultuous past. Hydrologic passage through weak points in the basalt created a chasm of exceptional geologic, hydrologic and ecological beauty that was described in detail by Lewis & Clark in 1805 to the Army Corps of Discovery [O'connor]. This terrain of geological and forested scenery is what we identify today as the Columbia River Gorge.

Preservation through Gorge Commission

Preserving this degree of visual quality, determined by congress to be a scenic resource meriting enhanced conservation policy, is a protection created by the federal government and disposed of through a regional bi-state and multi-jurisdiction compact known as the Gorge Commission [Commission]. The Commission writes and oversees enforcement of management plans and rules that give effect to these federal mandates through enforcement of restrictions on building and deforestation within the boundaries of the Columbia River Gorge National Scenic Area. On the Washington side of the Gorge, the county jurisdictions of Clark and Skamania counties have developed compatible laws for site improvement review that are acknowledged by the Commission as well. Klickitat County has not yet done so and land development and change permits there must be directly approved by the Commission.

NEPA, Other Laws and the Gorge Act

Federally mandated scenic resource protection is implemented at different intensity depending on context of preservation. For example, Section 106 of National Historic Places Act, for example, requires federal agencies to consider impacts and alternatives, including visual impacts, of their undertakings on the ability of certain historic properties to convey their historic significance [NPS]. This is typically a relatively modest degree of visual protection requiring a visual impact report for the site and adjacencies. In contrast, the highest level of scenic resource protections is afforded to National Wilderness lands and National Parks. Congress in 1964 created the Wilderness Act in order to preclude economic use, human habitation, vehicle travel, visual impact and ecological degradation from human visitation to the degree enforceable [justice]. During the Nixon administration in 1970, political pressure begat a congressional decision to create NEPA- a procedural law specifically requiring increased community and regional public participation, better environmental planning and designs, and impact review standards [CEQ]. The general methods developed and accepted by courts for compliance with the National Environmental Policy Act provide the technical planning framework that supports the methodological foundation of the planning and permitting procedures used to implement the Gorge Act of 1986. The impact assessment and monitoring requirements of the Act require affirmative regulatory actions based on declarations of impact rather than just an impact report. The Gorge Act identifies the boundaries of the roughly 250,000 acre National Scenic Area (NSA), agencies of participation and

enforcement, and general areas of significant restrictions upon future residential development as a means to promote a balance between environmental, economic and visual resources. It also affirms 13 existing urban nodes within the NSA in which visual impacts of building and clear cutting restrictions are exempted. These urban nodes variably include housing, commercial operations, industrial enterprise, and recreational uses. All National Scenic Areas affirm the pre-existing and inextricable land use patterns within the protected areas. This applies to farms and other pre-existing land uses, and also creating exemptions from heightened restrictions and reviews within these urban nodes [Friends]. These policies are spatially and conceptually specified in the General Plan for the Gorge. This plan document together with the Gorge's administrative rules are periodically reviewed and updated. Prior to 2005 they sought to minimize or prevent the visibility of homes. This created conflicts with property owners who wanted a view but were told to build their house without a view. After 2005 a shift in policy allowed homes with views which must meet several criteria for site selection and blending into the native landscape.

The evolution of policy for visual protections from impact reporting documentation during the Nixon administration to actionable policy in certain places like national scenic areas, e.g. the current context, has been a response to both public pressures and case law determinants. Over time the process of court responses affirming what is not arbitrary, and what methods are acceptable in determining scenic beauty, has changed little. The observable outcome is that natural beauty, without the undue imposition of manmade structures or other disturbances, remains the dominant qualified and adopted best professional practice standard, in determining degrees of protection of scenic resources that plans and impact analyses for conservation.

No Build

The Gorge Act tries to promote land use governance balancing economic, environmental and recreational uses with the over-arching purpose of protecting scenic beauty. The original 1986 Act largely precluded the development of new and visible buildings within the viewshed outside of urban areas. Of particular importance was hiding them from view from the perspective of any designated scenic viewpoint if the structure was within the viewshed of the 12 designated Key View Areas within the Gorge. They were also required to be hidden from view, if possible, from all possible viewpoints, including other people's homes and highways and recreation areas, which were thought impose conditions harmful to the cumulative schema of visual protection.

The legislation's goal of balancing protection of the Gorge's scenic values with the need to continue appropriate development seems to have emphasized the first element. However, in terms of the implementation of the Act and its economic impact, some have argued that the rural counties have exhibited little evidence that the Scenic Area harmed their Gorge overall economies while particular land owners have been financially impinged [Hess].

Revision

20 years after the creation of scenic beauty protections through the Gorge Act, a Commission decision, as part of an update to the General Plan, loosened significant barriers to house development with various cumulative remedies (rule changes) to minimize new homes' visibility but purposefully allow minimally visible but well designed and screened single homes with views. This revision to the rules affirmed the right to a view if one existed, a land use right which did not exist per se in the earlier plan and rules [Ribe]. The 2005 revision elaborated an important set of previously established visual guidelines and tools in carefully expanding homeowner rights while maintaining the intent and meaningful outcome of the scenic resource protections in the

Act. These guidelines included, underlying this study, assessment of structure visibility from Key View Areas (as opposed from any visible point within the NSA); and, depending on the Plan's scenic management designation, a degree of blending with existing landscape or fully screening in accord with the local landscape character type.

Controversy

The final agency of enforcement for reviewing and permitting these individual residential developments (with heightened restrictions within the defined Gorge area) is the Gorge Commission. The body of the Commission represents the counties and native tribes encribed in the Gorge area, as well as the states' forestry departments [Commission]. The Commission has been challenged by property owners about the constitutionality and jurisdiction of actions in the discharge of its duties to protect the scenic resources of the Gorge. State, appellate and federal courts have generally upheld the actions of the Commission as constitutional, within their appointed authority, and properly dispensing the intent of the Act [Friends]. In the United States, the nature of restricting private land use rights and reducing economic potential without economic consideration is generally a controversial subject. The execution of the Act is no exception to the conflict between potential enterprise and public benefit, with impacted land owners expressing displeasure vocally but with forced municipal and county acquiescence to federal requirements and the Act. Consistent with the Lucas Supreme Court decision, all land owners within the Gorge must be accorded a reasonable economic use of their land. For many parcels, this use is one home or the right to farm.

Audience

Members of the Commission, their staff and planning consultants and advisors, county officials, land trusts, and environmental advocacy groups are most likely to have a direct interest in the results of this study and potential further research suggested by this visual impact study. The presentation of visual information is meant to be broadly accessible to a general public audience. A separate non-government organization, Friends of the Gorge, which further promotes landscape preservation within the GRGNSA, will also be interested in the conclusions presented for discussion and further inquiry.

Significance

This document is a visual study and analysis of how policy, as well as influence from land trust acquisitions, conserves and shapes the landscape that visitors experience. The significance of this document is to provide visual information that has not been presented in such a clear way before. It aims to provide a platform for enhanced stakeholder understanding and discussion of the scope of visual impact that is possible in the future under different policies, plans, rules, social changes, climate changes, and economic conditions

METHODOLOGY

Visual inventory

Robustly interpreting the value of preserving scenic beauty in the Gorge would arguable be challenging without having visitors personally engage with the Key View Points along with the researcher. The landscape character defining scenic quality from key viewpoint areas was documented through photography during visits by the researcher. Targeting human vision simulation (35-50mm SLR camera lens equivalent) for general representational accuracy, panoramic photo sets were taken from various stand points at the KVAs, and then these were stitched together into a single wide panorama that captured the full extent of views over the river. This may be a useful resource to be viewed by stakeholders informing decision making in land use and scenery protection. The subsequent 3-D GIS-projected view overlays, described later, matched these panorama photos as well as possible

Choice of Key View Areas

Of the 13 KVA's identified in the Gorge General Plan, three were identified for study in making a separate visual analysis of each. Only three were possible due to time and funding limits. The intent of this document was to include a diverse range of visual and cultural character. Three popular viewpoints were chosen that represent a variety of physiographic areas, plant community types, and extents of view.

Rowena Crest KVA looks directly across at a small urban area (Lyle, Washington) which is exempt from visual impact review by the Commission, and this community is surrounded by topographically diverse and mostly open rural landscape. This key view area also represents the xeric landscape side of the Gorge, with greater unforested exposure of geologic scenic interest, Indian lands, and other large private parcels

Cape Horn KVA was chosen because it is on the Washington side of the Columbia River, looking east along the river across mostly privately owned forest and field land on the Washington side. This has historically been an area where land use changes have been proposed so studies here can inform policy, permitting and land management decisions by the Commission.

Crown Point KVA is included for several reasons. This site is the 2nd most visited destination in Oregon after Multnomah Falls, so including the visual representation of this view area is important from a cultural perspective as well as tourism economy. The visual field from this KVA also represents a substantially similar visible area as seen from the nearby Rooster Rock KVA, another popular destination. This KVA is arguable the most important of any in the Gorge and has been the subject of the most controversial home development proposals and efforts to protect scenery by protective land acquisitions.

Initially there was intent to study visual representations of Mark O Hatfield KVA, however there were challenges that made this site impractical to provide visual analysis within time constraints. These challenges include unclear scenic vantage point for the KVA and a complex interspersing of ownership in the viewshed that did not provide a clear descriptive context of how policy informs the landscape we see in the CGRNSA. This site has other applications for modeling and visual preference survey afforded by its mixed land use discussed later.

GIS data assembly

Assembling publicly available GIS datasets with geolocated tax lot, building, and topography information provided the foundation of the visual mapping and projection of maps onto panoramic photos. Geolocated

data is digitized information about an object’s location and dimension based on global projections (such as WGS 1984 Web Mercator). This includes latitude, longitude, elevation, and parameters of objects based on input records.

Limitations in visual representation include whether the data has been input (usually by a government agency) into a GIS database, the granularity needed for visual representation. Some degree of interpretation is also needed based on multiple projection systems used and the GIS software and user doing their best to adjust for complex and significant variances between data sets.

After gathering data for the study area, some data sets for a visual area are segmented, often based on USGS quadrangles. One of the sites selected for representation, Crown Point, occupies an area where 4 such segments are joined, so data sets for these topographies needed be stitched together in the GIS software so that the whole viewshed’s cumulative space is represented without gaps.

After creating a contiguous visual model, reducing the scope of the data (“clipping”) to the CGRNSA boundary and viewshed provided a visual edge to the seen components, as well as reduced unmanageably large files to a processable scale.

Creating a manageable and searchable data set allows for categorizing and researching the visual and statistical information needed to create a narrative of land ownership types and developed land for 3D projection onto photographs. Additional GIS data from the Commission was brought in because it seems to reflect a conscious decision by planning staff to inform opportunities for blending new visible houses into the landscape in some areas to provide some regulatory relief for potential development, while retaining elevated visual impact review standards in visually prominent areas, as discussed later.



Figure 1.1 methodology process diagram

Orthographic Mapping

When thinking about a place's relative position in a view, a natural representation is to look at a map. Maps are typically presented in an orthographic projection, as opposed to a bird's eye view (using a 'tilted' orthogonal or isometric projection). Representations of landscape as layers of ownership, zoning, jurisdiction, building placement, and civic planning are generally best facilitated through orthographic map projections, so we can visually navigate boundaries, adjacencies and proximities easier. The data visualization process began with these types of map views. There, the definition of the CRGNSA boundary and outlining the viewsheds were explored to understand their extent and spatial context within the Gorge. After defining areas of interest, map views were helpful for layering the data, particularly the foundational information; tax lots, building footprints, and land management areas from the Gorge General Plan. Additionally in map view, parcel scale symbology was used as way to communicate different types of information.

Map view translation to panoramic scene

Interpreting the map view into panoramic scenes that simulate what is seen from the key viewpoints requires GIS and some visual interpolation of data. These interpolations mainly referenced building footprints and object proximities to tax lot boundaries to understand how tax lots fell within map and 3-D terrain projections, as represented digitally with the projection functions provided by ArcGIS Pro software.

It should be noted that ArcGIS is powerful and costly software to license. Part of the value this visual documentation project offers is that, while the data used is publicly accessible and free, visualizing the data in close relation to view photographs requires a significant learning curve with the software and the software is prohibitively expensive for personal purchase (The researcher employed ArcGIS Pro software licensed to the University of Oregon).

After assessing where tax lots are geolocated in a panoramic scene, the correspondingly projected hillshade visual layer was draped with ownership types to provide an interpretive understanding of possible future scenic changes. The aim was to reveal what parts of the landscape can be assumed to remain unbuilt due to steep topography, public ownership or land trust ownership. The draping and colourization of parcels was done through exporting the scene as PDF's from ArcGIS Pro and creating polygons in Photoshop that represented the parcels and their classification.

Finally for better ease of translation between map view and the panoramic scene, a numeric sequence of registration points was used at each key view area that identified an area of the map with a representative area in the panoramic scene

Case Law

Documenting policy impacts on landscape views suggests an enlightened discussion about the genesis of the policy itself and its goals in relation to the scenery achieved. Looking at an abridged history of land use case law, a general schema of balancing rights is contemplated between public (scenic) wellbeing and the private rights that a jurisdiction might seek to preserve. These bundles of rights convey with property ownership as effected by government regulations. The research here related to I constitutional provisions and controversies, and localized complaints and grievances that might provide provenance for compensatory or regulatory relief.

The literature sketch offered below provides a look at the context surrounding the creation of the Gorge Act in 1986, a congressional act that responded to increasing public demand for health and environmental protections in the 1960's. Providing a framework for the public and private rights that surround the creation of a National Scenic Area contemporaneously gives an insight into the controversy of the landscape conservation policies that it enables.

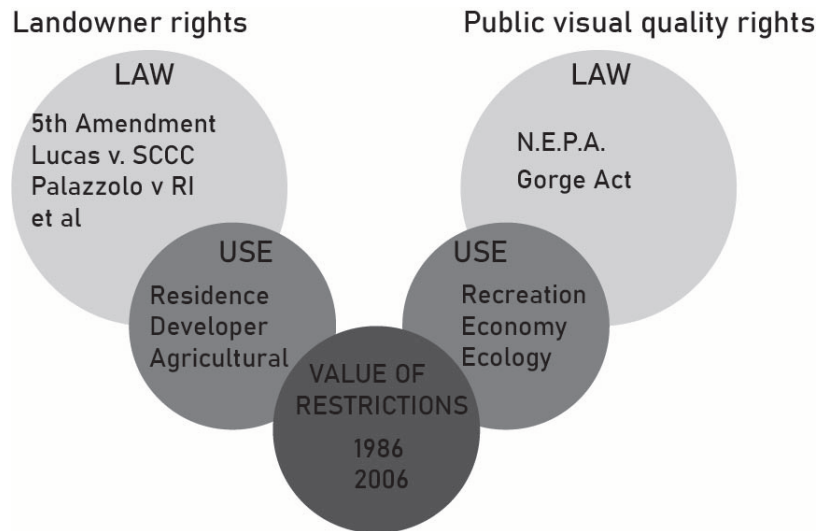


Figure 1.2 Case law precedent method diagram

Literature review of documents on differentiating people's personal aesthetic from publicly-measurable scenic beauty methods is included to substantiate how the Gorge's decisions for scenic conservation are found to be not arbitrary and capricious. The popularity and assumed sensitivity of viewers at different KVA opportunities is a major measure of scenic quality. It helps underscore why the key view areas were adopted through the legislative process and process of public participation in writing and adopting the Gorge's General Plan. The scenic value of the KVAs have been ratified by the Commission in that land management plan and in rules regulating the development within the scene areas (and other parts of the Gorge). Last is a review of the US Forest Service methods of scenery management that the Gorge Commission, its regulatory staff, its planners, and technical planning assistants from the Forest Service use as an underlying basis for legally defensible decisions. This review contains an admixture of items from the old Forest Service Visual Resource management manual (not the similar current Scenery Management System manual), the literature that supports this manual, and examples from British Columbia Ministry of Forests use of the same methods as well as private visual impact consultants' products. They illustrate accepted professional methods by which landscape architects evaluate scenery to understand how views are captured and evaluated for priority conservation or acceptable modification, as they do in the Gorge.

The review below walks through the historical process, legal framework and scenic beauty definitions as a valuable and evaluative process. It concludes with a series of graphics that illustrate some of the ways in which the landscape of the Gorge may change or be conserved due to policy in conjunction with other means.

BACKGROUND: HOW DID THIS HAPPEN

Ongoing public pressure in the United States starting in the 1960's to promote human and environmental health created a number of agencies, laws and shift in perceptions about America's role in promoting public wellbeing. The consequences of these shifts in civic and individual responsibility were not uniformly accepted, unsurprisingly. Individuals and businesses with resources impacted by regulation felt that changes were tantamount to government takings, or that they bore a disproportionate burden individually for public benefit. The crafting of public regulations in America is rarely without controversy or litigation. The creation of the Columbia River Gorge national Scenic Area is decidedly not an exception.



Figure 1.3 A sign posted for more than 30 years prominently outside Skamania Lodge in Washington (an attraction subsidized by the Gorge Act). A visible trace of deeply felt objections embedded in the process of conserving landscapes

The former republican president Ronald Regan signed the Gorge Act giving effect to the ecological, visual and cultural protections and economic development subsidies applied to the Gorge, a bill sponsored by Oregon's republican senator Mark Hatfield. All 4 senators from Washington and Oregon supported the Gorge Act.

In November 1986, when President Regan signed the law, new developments in political climate were significant, trending towards favoring economic expansion, individual rights and a precipitous reduction of what he considered confiscatory government policies. His statement on the purpose of the Act was "This legislation is designed to protect and enhance the scenic, cultural, recreational, and natural resources of the Columbia River Gorge." Contemporaneously with penning the Act, he released a statement that his understanding that the governance by states or the Commission of the Gorge could not bind the federal government to action, and that using federal condemnation was not in their jurisdictional powers. Nonetheless, the Act created the

boundaries, impetus for public input, local collaborative governance, and enhanced review standards limiting urban area growth and as significantly limited structural development outside of designated urban areas.

RESEARCH QUESTIONS

Alternative visual futures and policy considerations are contemplated through this document. These research goals are meant to provide new visual information based on the visual representations of how policies affect selected scenic areas. These considerations may be a basis for future community discussions.

- How important is the regulation of houses in effectively conserving Gorge scenic quality?
- Have policy changes allowing houses with views to be built since 2005 adversely impacted the landscape scenery to a significant extent?
- How effective have land use regulations (zoning, subdivision prohibitions, special management areas) been at protecting scenic quality compared to home site construction specific regulations?
- If new policies were to allow construction of more housing, how and where could it be done with minimum reduction to scenic beauty?
- If designated urban areas were allowed to grow, where should it be done that would be the least impactful on scenic beauty?
- What have we learned about where new houses can be built?
- If forest wildfires persist with climate change- what will likely happens to built homes' visibility reliant on timber screening?
- What are areas that are most sensitive to deterioration of visual quality that would be problematic if houses were built?

These questions are speculative, and not intended to have decisive or measured answers here. These questions are answered by interpretations and conjecture in the conclusions sections after the visualizations are presented.

II. DEFINING SCENIC BEAUTY

Evaluation standards

The requirements set forth to evaluate scenic beauty, and the impact those decisions have on private and public land use patterns, were developed in the 1970's by the US Forest Service and other agencies after previous ad-hoc impact assessments were deemed arbitrary and capricious in case law.

The Commission's goals of preserving and enhancing scenic beauty must be implemented objectively and fairly based on evaluation standards as required by the Gorge Act. The Act prioritizes preserving scenic beauty primarily through limiting deforestation and construction of new homes throughout the scenic area. The question arises, what is scenic beauty, and isn't beauty subjective? This document analyzes potential key view areas and current and future impacts of development on scenic beauty there. Identifying how policies produce the landscapes we see and how the results might be meaningful to visitors' experience is valuable to communicate and understand

Public perceptions of landscape scenery can be assessed by both objectively measurable empirical values and expert interpretive qualities ascribed to evaluating scenic beauty. Procedures for managing these landscape values with a visual resource management method have generally taken form under the British Columbia Ministry of Forests Forestry Management Handbook, which took many ideas from Burton Litton's *Forest Landscape Description and Inventory* report published by the University of California Berkley Department of Landscape Architecture.

Visual management begins with a visual analysis of the local landscape, which is important for several reasons in performing good landscape management and conservation. In the *Visual Analysis of Forest Landscapes* manual being discussed here, Stephen Sheppard writes that visual analysis can add rationalization with clear definitions of landscape evaluation criteria. This makes a process that would otherwise be subjective. He goes on to describe visual analysis as a mechanism for visual resource management in some of the following ways

- + support for rational visual resource management and broader forest management decision making
- + provides systematic support for planning and design where aesthetic values are important
- + can be used to measure visual qualities and visual resource management performance
- + can provide an indicator or predictor of public perceptions about certain visual management issues
- + can provide visual documentary evidence for monitoring over time

The passage of NEPA in 1970 under the Nixon administration, explicitly recognized the need for the government to protect the public rights of aesthetic enjoyment, leading to a major implementation of a visual resource management program in the forest service, according to Sheppard.

Sheppard goes on to acknowledge the work of Litton in creating comprehensive principles for inventorying and analyzing the visual characteristics of larger scale natural landscapes, including chroma (colour), texture, scale,

edges position and movement. These elements can be used to describe the visual character of the landscape components of landform, vegetation, water, atmosphere and human land use structures.

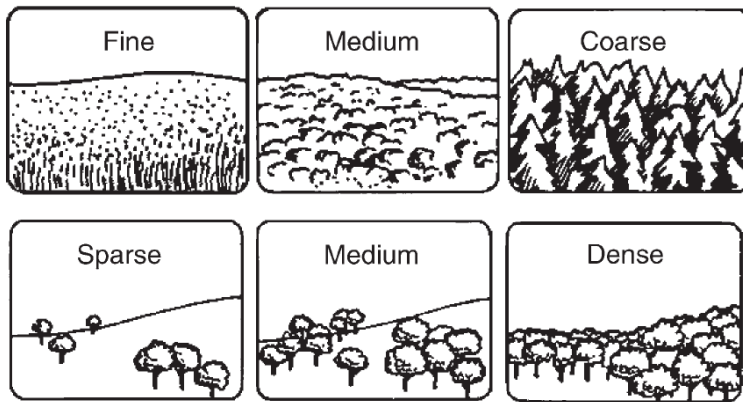


Figure 2.1 Landscape visual characteristics inventory include descriptive qualities of elements such as vegetation [Sheppard]

When identifying what is being inventoried and analyzed, landscape architects use visual hierarchies of what to prioritize when assessing visual character. There are strata of visual data that we perceive when experiencing a landscape that inform our experience. To begin with, particular to this visual documentation project, a visual landscape is defined by the totality of what is seen, not just what consists in any one place, as Sheppard notes. As visitors look across any of the scenic panoramas from our key view areas, there is not just a momentary focal point of wonder (such as may hold true for the experience of Multnomah Falls). Landscape visibility is another useful assessment, measuring the visibility of a specific place or point from a viewing location or scene area- this is called a viewshed. This is fundamental to this document as we see what parcels and structures are visible from key view areas.

Sheppard notes visual landscape assessment goes beyond objective inventory of conditions to evaluate and assess landscapes for certain characteristics or qualities important for visual resource stewardship. These methodologies are an important framework for legally acceptable visual resource management decisions assessing aesthetic values for modeling future management outcomes. These methods usually address major aspects of visual landscape, such as visual quality, viewer sensitivity, distance zones and visual absorption capacity.

Visual absorption capacity is a landscape's ability to absorb alteration and maintain its desired visual character. It is a metric of how noticeable change will be and therefore a predictor of visual impact. Slope, aspect, vegetation pattern, screening, soil colour, surface variation, man-made feature and urban cluster influence visual absorption capacity.

Visual quality is also identified as another name for scenic beauty, and references landscape as a source of aesthetic enjoyment. This quality recognizes that landscapes with the greatest naturalistic diversity and contrasts often have the greatest potential for scenic beauty.

The last major assessment factor Sheppard identifies is viewer sensitivity, based on a set of assumptions about what people desire in wildland landscape. Some quantifiable factors in viewer sensitivity include viewing conditions, viewing duration, viewing activities, proximity (foreground and middle ground are most sensitive), number of viewers, and the type of viewer such as resident or visitor.

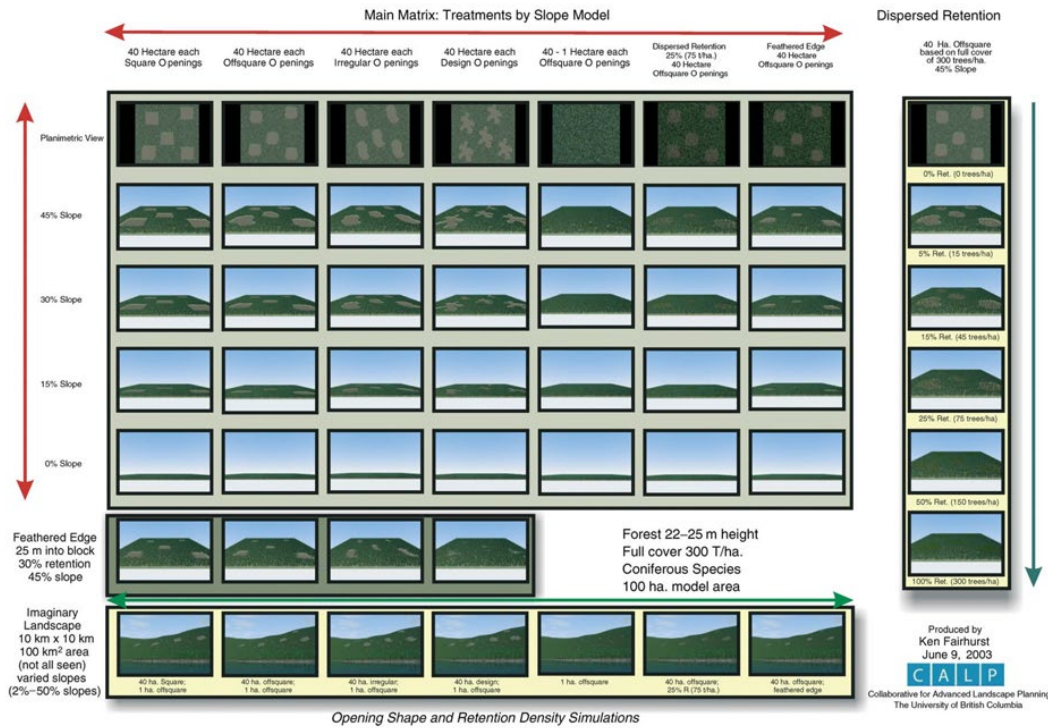


Figure 2.2 Slope as a factor impacting visual absorption capacity [Sheppard]

When considering the evaluation of landscape character in the National Scenic Area, these evaluation methods represent an approach to interpret what is there, and anticipate what changes in the future might disrupt or extirpate the scenic beauty of Gorge landscapes. And as Ansel Adams is quoted, *~Once destroyed, nature's beauty cannot be repurchased at any price.*

Defining scenic beauty is challenging, like all aesthetic concepts, and not possible without debate. The validity of scenic beauty assessments are not compromised by a waiver of definition, but are validated through quantitative measurability or reliable, well-explained expert judgement that affects face validity in the eyes of a judge or permitting official. Defining scenic diversity and uniqueness evaluation of a landscape can be a complex cognitive process between observer and subject. People can have biases of perception that create

object-based perceptions rather than just heuristic psychological responses. In his 1986 article on objectively measures uniqueness and diversity as potential and largely failed metrics of scenic beauty, Ribe posed “The particular quality (within a scene) is not measured independently of the scenic assessments it is meant to determine, but rather is biased by the general quality (i.e. scenic beauty) being assessed. Measuring them specifically and independently of general scenic quality judgments ... with distinctive (objective) definitions ... might enable (landscape assessors) to judge each (objective) quality originally and for its own characteristics (but not necessarily predictively of synthetic aesthetic perceptions)”. The influence of the overall landscape quality in an observed scene makes assessments of its various components that are more, or less, successful at supporting the overall visual quality a partial and only descriptive approach to understanding what impacts landscape changes will have upon public perceptions.

Uniqueness and diversity of visual character are often cited as deterministic qualities of a landscaped the public values for its aesthetics, particularly within the foundational BLM Visual Management Handbook document used to manage large scaled landscapes. Ribe also points to a caveat in relying on uniqueness as a metric, because assessment of this quality in BLM variety classes “follows a strong correlation between uniqueness and scenic preference ratings” (in the riverscapes in his study). This does not suggest that landscape diversity is always invalid as a factor in professional scenic assessments. It proposes that there are inherent human influences on providing independent visual assessments not captured by highly objective measures of landscapes’ uniqueness and diversity. Perceived uniqueness is a cognitive processing quality difficult to correlate to spatially measurable landscape attributes.

In a study written by Ervin Zube looking at human psychology of interaction with landscape, in *Landscape Perception; Research Application and Theory*, Zube considers a framework of observation where landscape perception is a function of the interaction between humans and landscapes. The interaction results in an outcome which affects both the human and landscape components. While humans are intrinsically part of landscapes, we shape places both through action and inaction. The impact of landscape experience can carry a value to human experience that will generate a reciprocal measure of participation and care. Burton Litton also added, in his *Most Important Questions* article, “The conservation of regional landscape provides an integrative fabric that we need so that all places are not reduced to some woefully deficient common denominator-deficient in identity, aesthetic quality, and rational responses to environmental influences”.

As we think about the benefit to public health produced through constraining housing development in the Gorge, and the role of measuring and defining scenic beauty plays a large role in providing such public benefit. There is also value in considering the value of ‘reciprocal measure of participation and care’ with being in and of a place versus visitorship there.

Evaluation methodology

The US Forestry Service issued A Handbook for Scenery Management in 1972 that has generally remained intact as a major source of methodology in evaluating scenic beauty, even as new versions of this manual have been adopted. It offers tools for expert, e.g. landscape architect, qualitative analysis, and provides tools for prescriptive action and management of public areas to assess potential visual impacts and to maintain and enhance scenic beauty. This manual coalesces with NEPA's legally mandated definition of visual quality in identifying naturalistic scenery as the most valid basic and essential interpretation of scenic beauty as seen by the general public, which has held up in court challenges, perhaps for lack of any affordable and rapidly producible alternative definitions or methods.

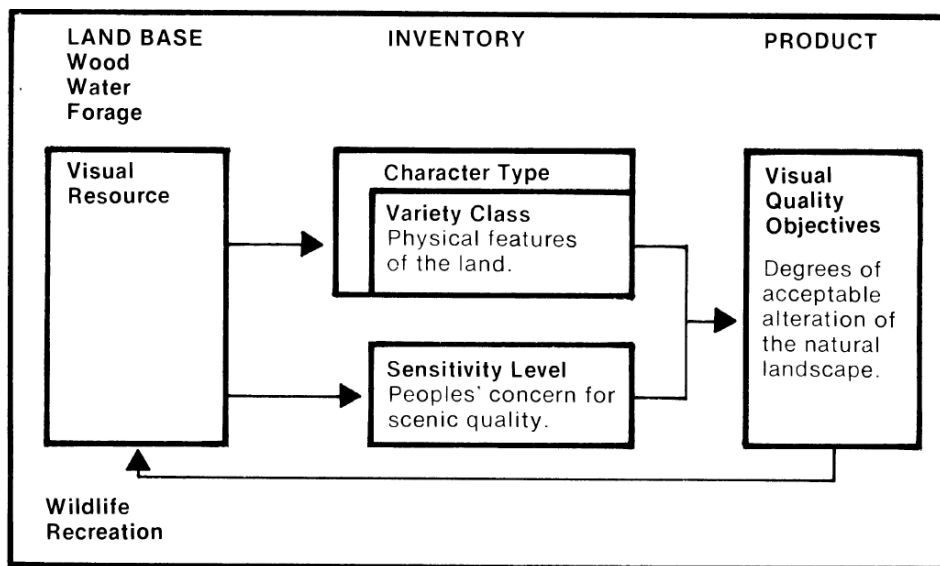


Figure 2.3 Excerpt from Visual Resource Management Handbook- interpreting responses to visual quality into actionable planning resources

3. Rate features for variety

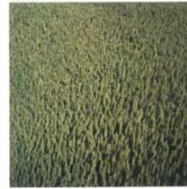
This oblique photo illustrates the broad variety class breakdown defined in the preceding chart for the sample area on the Mt. Hood National Forest. The photos below show both broad and detailed examples of the variety class breakdown within the study area.



Class A - Distinctive



Class B - Common



Class C - Minimal

Figure 2.4 Differentiated landscape features are described as having greater scenic beauty potential

Sensitivity Levels

Sensitivity Levels are a measure of people's concern for the scenic quality of the National Forests.

Sensitivity levels are determined for land areas viewed by those who: are traveling through the Forest on developed roads and trails; are using areas such as campgrounds and visitor centers; or are recreating at lakes, streams, and other water bodies. It is recognized that all National Forest land is seen at least by aircraft users. Therefore, some degree of visitor sensitivity will be established for the entire land base.

Three sensitivity levels are employed, each identifying a different level of user concern for the visual environment.

- Level 1 — Highest Sensitivity
- Level 2 — Average Sensitivity
- Level 3 — Lowest Sensitivity

The degree of visitor sensitivity to his visual environment is extremely difficult to quantify. Additional research into the sociological aspects of man's perception of his environment is essential. Various research scientists are investigating this concept in depth and changes will be made in the process as findings are published.

Process

Two steps are involved in establishing sensitivity levels. Both must be coordinated between the Forests involved if the route or area in question crosses Forest boundaries.

Step One—All travel routes, use areas, and water bodies are identified as being of either primary or secondary importance within the area of consideration. The following list provides a general method for determining into which category each facility belongs. Determinants such as national or local importance may not apply to all routes and areas, and additional items may be required for a complete evaluation.

Step Two—The major and minor concern of users for the scenic qualities of the Forest is identified in this step. Major concern for aesthetics is usually expressed by people who are driving for pleasure, hiking scenic trails, camping at primary use areas, using lakes and streams along with other forms of recreational activities. Minor concern for aesthetics is usually expressed by those people involved with daily commuter driving, hauling forest products, employed in the woods and other commercial uses of the Forest.

Identifying users and the major or minor concerns they express for aesthetics will indicate the long range function of each specific travel route, use area, and water body. The combined information will establish sensitivity levels for the total Forest land base.

	primary importance	secondary importance
Travel Route	National importance High use volume Long use duration Forest land access roads	Local importance Low use volume Short use duration Project roads
Use Areas	National importance High use volume Long use duration Large size	Local importance Low use volume Short use duration Small size
Water Bodies	National importance High fishing use High boating use High swimming use	Local importance Low fishing use Low boating use Low swimming use

Figure 2.5 From the 1978 US Forestry Service Handbook on Visual Resource Management. Excerpt of process for identifying viewer sensitivity in the modality of evaluating scenic beauty- here, considering user types, frequency of viewpoint visitation and user access

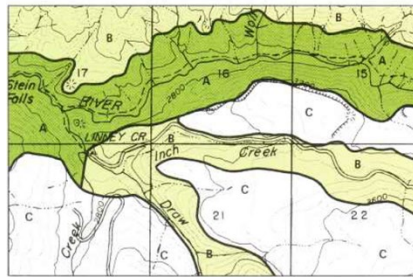
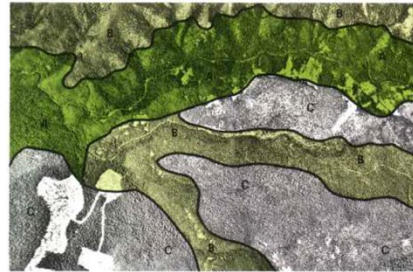
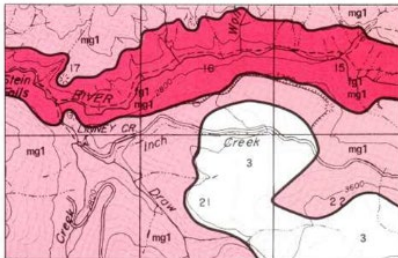
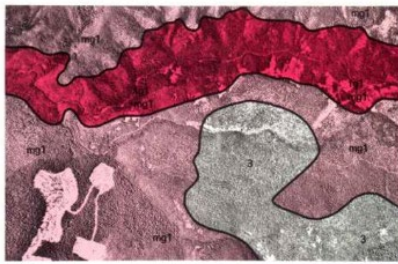
Map Preparation for Sensitivity Levels

Preceding pages have identified sensitivity levels and discussed examples of each. The levels must now be mapped in order to provide the data base for development of visual quality objectives. The following process is recommended:

1. Utilize the same base map used for variety class determination.
2. Identify all travel routes, specific use areas, and water bodies which meet the preceding Level 1, 2, or 3 determinants.
3. Prepare an overlay of all seen areas from level 1 travel routes, use areas, and water bodies. Vertical photos provide one possible tool for determining seen areas. All plotting should be verified on the ground. Several computer programs for determining seen area are available. (See appendix.)
4. Identify distance zones of foreground, mid-ground, and background for seen areas established in step 3. Label all distance zones with appropriate symbol and sensitivity level number.

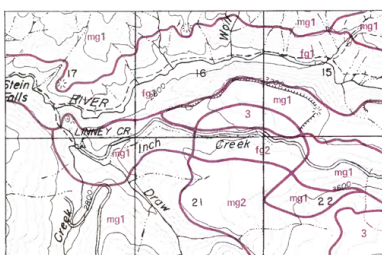
fg 1 - Foreground Level 1
mg 1 - Mid-ground Level 1
bg 1 - Background Level 1

See page 7 for definition and discussion of distance zones.



	fg1	mg1	bg1	fg2	mg2	bg2
bg2	fg1	mg1	bg1	fg2	mg2	bg2
mg2	fg1	mg1	mg2	fg2	mg2	
fg2	fg1	mg1	fg2	fg2		
bg1	fg1	mg1	bg1			
mg1	fg1	mg1				
fg1	fg1					

The most restrictive sensitivity level can be easily determined by use of this chart. If an area has been identified as both mg2 and fg2, these can be compared (mg2 in the left column versus fg2 in the top row) to determine that fg2 is the proper (or most restrictive) term for that area.

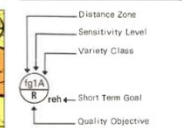
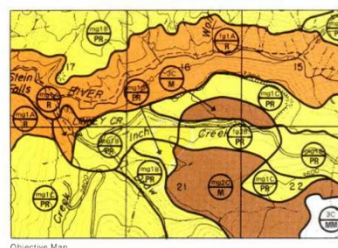


9. Adjust final seen area boundaries after conflicts involving sensitivity levels and distance zones have been resolved. The final overlay will show the seen area in terms of distance zones with the sensitivity level number accompanying it.

		Sensitivity Level						
		fg1	mg1	bg1	fg2	mg2	bg2	3
Variety Class	class A	R	R	R	PR	PR	PR	PR
	class B	R	PR	PR	PR	M	M	M
	class C	PR	PR	M	M	M	MM	MM

2. On the combined overlay indicate the appropriate visual quality objectives. These are determined by comparing, on the chart, the variety class (A, B, or C) with the sensitivity level (fg1, mg1, etc.). By using a split-circle symbol and color coding, an appropriate objective (and the information from which it was determined) can be shown on each area of the map.

If a 3B area is adjacent to a RETENTION or PARTIAL RETENTION visual quality objective, select the MODIFICATION visual quality objective. If adjacent to MODIFICATION or MAXIMUM MODIFICATION objective areas, select MAXIMUM MODIFICATION.



Note those areas in need of either rehabilitation or enhancement by the appropriate symbol beside the quality objective. A for Enhancement and reh for Rehabilitation. Rehabilitation should be noted when management activities in a particular area do not conform to an agreed upon quality objective. Enhancement notation should come from a detailed landscape management plan for a particular area.

Symbol	Objective	Color Code
R	RETENTION	Light Green
PR	PARTIAL RETENTION	Yellow
M	MODIFICATION	Orange
MM	MAXIMUM MODIFICATION	Dark Orange

Preservation does not appear on the chart but is indicated by:

Figure 2.6 Series of graphics from the 1976 US Forest Service Handbook on Visual Resource Management. This series of graphics conveys the process of inventorying available data for visual priorities in viewer sensitivity- here proximity, evaluation of quality of scenic components, and visibility- and potential use of GIS software (which did not exist in 1976) to overlay them to make an assessment of what should be prioritized for conservation, and what areas are available for some scenic modification

Naturalistic beauty as precedent

The Commission has made definitional assumptions based on affirmative precedents in court cases, adopted Federal visual assessment methods, and the language of the Gorge Act. Those uphold scenic beauty as the 'naturalistic' and attractively rural beauty that is already there- things that don't look natural or bucolically rural are not adequately beautiful. That is the basic presumption in prescribing and constraining house development design and location limitations in the National Scenic Area. A question that arises from this regulation is: How is natural beauty defined for regulatory measurement to determine what home building proposals are acceptable? The Commission staff assesses natural beauty in relation to mapped landscape character types within the scenic area so that natural scenery or rural scenery standards an acceptable landscape changes differ from place to place.

Measuring scenic beauty in a way that courts tend to accept *prima facie*, from adopted visual resource management methods and NEPA established definitions, is the Commission's adopted stance in having their planners produce court acceptable evidence to support permitting decisions. Landowner appeals of development restrictions based on professional evaluations of impact upon scenic beauty at federal and state levels are challenging because courts tend to apply agencies' adopted methodologies and practices in assessing scenic beauty mainly as naturalistic beauty. Congress included visual impact assessment in the Act, which is why the law contains specific language about aesthetics and "scenic quality" [Ribe]. NEPA identifies preserving scenic beauty is important for public psychological health.

Measuring scenic beauty presents an operational challenge because it can't be fully defined (despite numerous attempts to do so across diverse academic writings), but it can be expertly measured by descriptive methods in ways that gain acceptance as valid evidence in planning and legal contests. While exact definitions may be elusive, scenic beauty can be objectively measured and evaluated in ways that satisfy legal rules of evidence- and the resulting methods give legal validity to standardized, professional best practices and agencies' adopted methods and measures.

III. Law of the Land

The island and the sea

The creation of the Act in 1986 created land use restrictions on private land parcels, particularly regulating home building as the major effective premise for visual protection. At the inception of the Act, roughly 70% of the land was not owned by the government, which provided significant challenges to management and planning according to Jurgen Hess in his “CRGNSA- political social, environmental and legal challenges” writing on the state of the Gorge after the passage of the Act [Hess]. The restrictions on development to areas confined to urban nodes within the 270,000 acres, and provisions that allowed for continued economic, recreation and some population growth have met congressional goals set forth under the Act ... but have engendered a range of administrative hearings. Litigation tends to inform what landscapes look like, and, as this document proffers, through policy and enforcement which have survived scrutiny by courts.

As Hess writes, complexities of balancing expectations of ecological health, recreational enjoyment, and homeowner property rights largely domicile in the proverbial sea that are potential lawsuits surrounding the island of landscape conservation policy- especially when conservation is done to the letter or the law. Frustrations with restrictions that adversely impact homeowner ability to subdivide or put more than one dwelling per parcel irrespective of lot size have played out in courts many times with a spectrum of legitimacy found for such claims. Other administrative hearings have precipitated challenges to land use rights and adjudicated the jurisdictional authority of the Commission, a list of which is made available with case abstracts for public review produced by Friends of the Columbia Gorge on their CGRNSA Case Law website [Friends].

5th Amendment

Considering the controversy of the Act, it may help to first look at the genesis for the above noted claims in these United States. The constitutional basis in American case law for claims and disputes arising from government infringement of land development issue from the 5th Amendment. Courts broadly interpret the Fifth Amendment to allow the government to seize property if doing so will increase the general public welfare [Cornell]. One of the principal purposes of the Takings Clause is “to bar government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole.” However it has also been adjudicated that a land use regulation does not effect a taking if it substantially advances legitimate state interests and does not deny an owner economically viable use of his land [umkc]

Significant case law

Regulation and zoning impositions on land are not takings, and total economic loss is the trigger for a takings claim. One case law precedent, the 1915 case *Hadacheck v Sebastian*, recognized that where there is no physical occupation of the property by the government, landowner had to suffer near total economic impact to sustain a takings claim; 87.5% diminution was insufficient [DOJ]. A similar 2001 case, *Palazzolo v Rhode Island* found similarly that a 94% diminution of value with a portion remaining for residential construction, did not meet the standards for a total taking compensation.

Agriculture land use is not a loss

As interpreted from the outcome of *Lucas v SCCC* in 1992, if land is made completely valueless through occupation or through regulatory action, “a regulation prohibits all economically beneficial use of land and the proscribed use could not have been prohibited under a given state’s nuisance law, the regulation is a “taking” which requires “just compensation” to be paid to the landowner” [Sax]. A local case, *Dolan v Tigard* also identified a substantial nexus between a publicly beneficial need to encumber other substantial ownership rights and the degree of taking [umkc].

Case precedents outline the argument that agricultural land use allowance is not a deprivation of economic use of the land, which constitutes a significant amount of the privately owned visible acreage in the CRGNSA. These precedents also confer that there is a relationship of public need and benefit and the regulatory policies limiting home construction. The permitting to build a single residence on a parcel (of 40 acres or more in special management areas, discussed later [Commission]), is also deemed not a total economic taking and therefore not entitled to inverse condemnation proceeds.

Upheld

Taking this scope of legal context within the Gorge, hearings have regularly arisen [Friends] that contest the constitutionality of the Act, and the Commission’s administration of regulations. By and large courts have found in favour of the federal government’s right to create a Scenic Area, to restrict building accordingly, and to maintain enforcement protocols consistent with goals. Of the exceptions, notably, have been courts’ ruling that the Commission has inadequately performed monitoring and addressing of cumulative impacts on resources rather than individual discretionary allowances [Friends].

The law of the land, is case law supporting and interpreting congressional acts and the lawful exercise of authority by the commission to exercise its responsibilities. Case law has implicitly written its role in shaping the landscape we see and preserving scenic beauty in the Gorge.

IV. Visual Documentation

The essential output of this document are descriptive visuals that help explain the role of policy in landscape conservation in the Gorge. These graphics look to explore both consistency of landscapes with policy intentions and opportunities for future balanced future expansion of housing.

The series of graphics below look to provide the following outcomes:

- Contextualize the CRGNSA, and where the selected key view areas are located;
- Provide an understanding to a general audience the process of identifying existing and potential house locations from selected key view areas through the use of GIS;
- Creating visual representations of those findings in a clear and understandable graphic output;
- How policies have shaped the landscape we are looking at;
- What insight these graphics give us in terms of considering possible future visual impacts;
- Visual reference to some key questions previously set out in this document relating to potential future house development, and the capacity of design vs. policy to allow growth while mitigating disruption of scenic beauty

[4A] CRGNSA context map

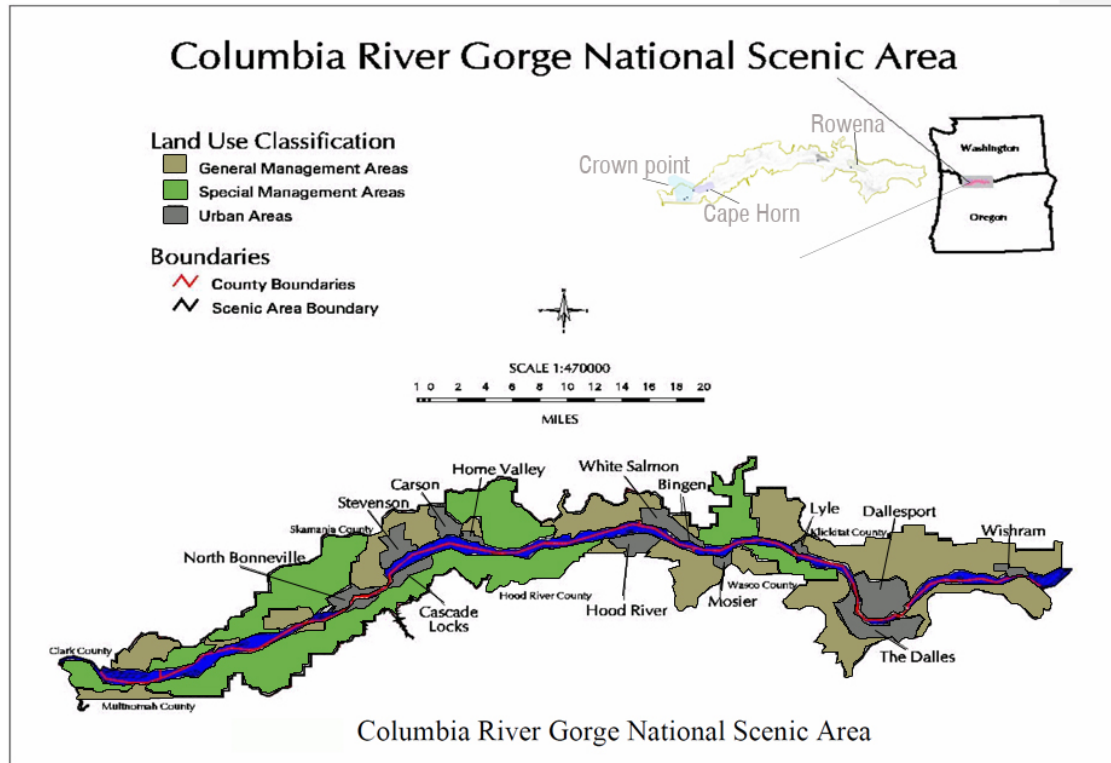


Figure 4.1 Gorge with urban nodes and GMA / SMA areas as mapped in the CGRNSA general plan

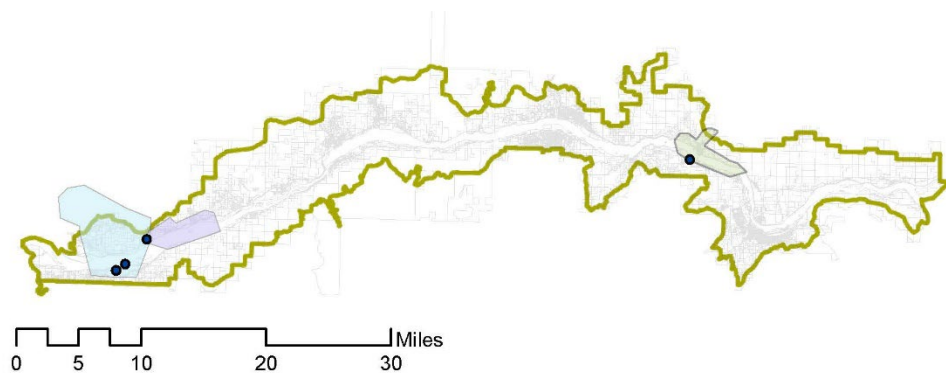


Figure 4.2 CRGNSA key view areas studied in this document- Crown Point, Cape Horn and Rowena Crest

[4B] Interpreting what you see

Interpreting what you see: visible tax lots and land ownership type

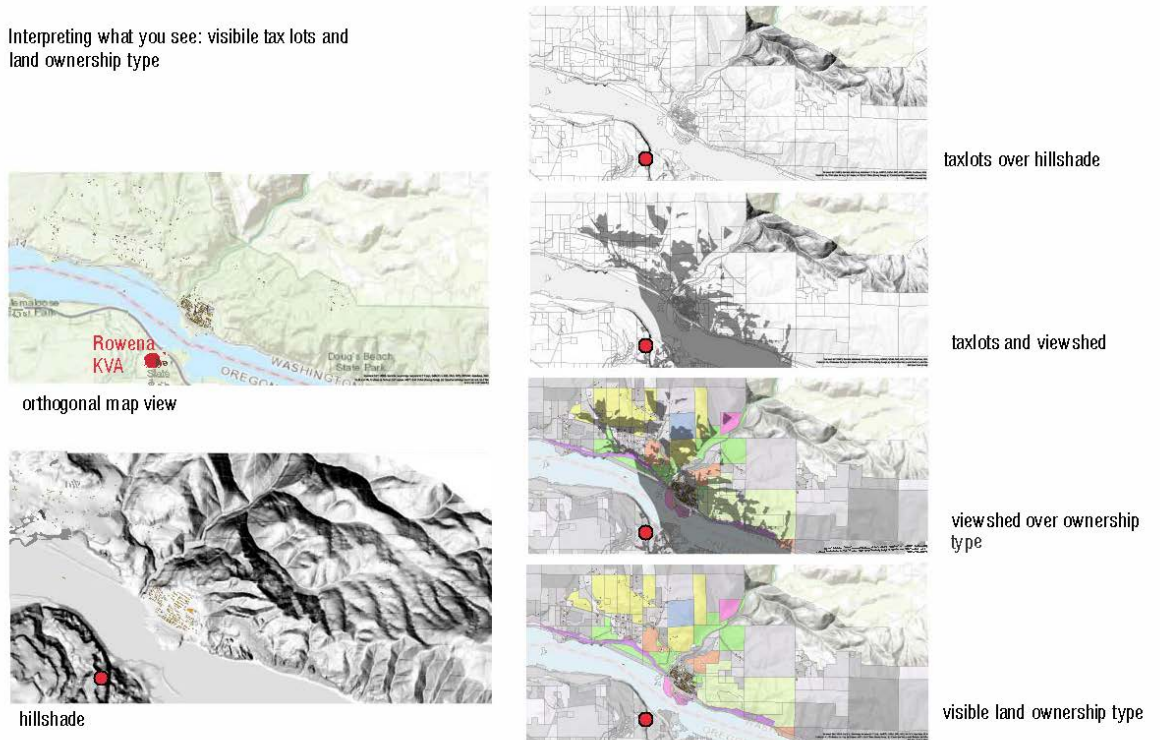
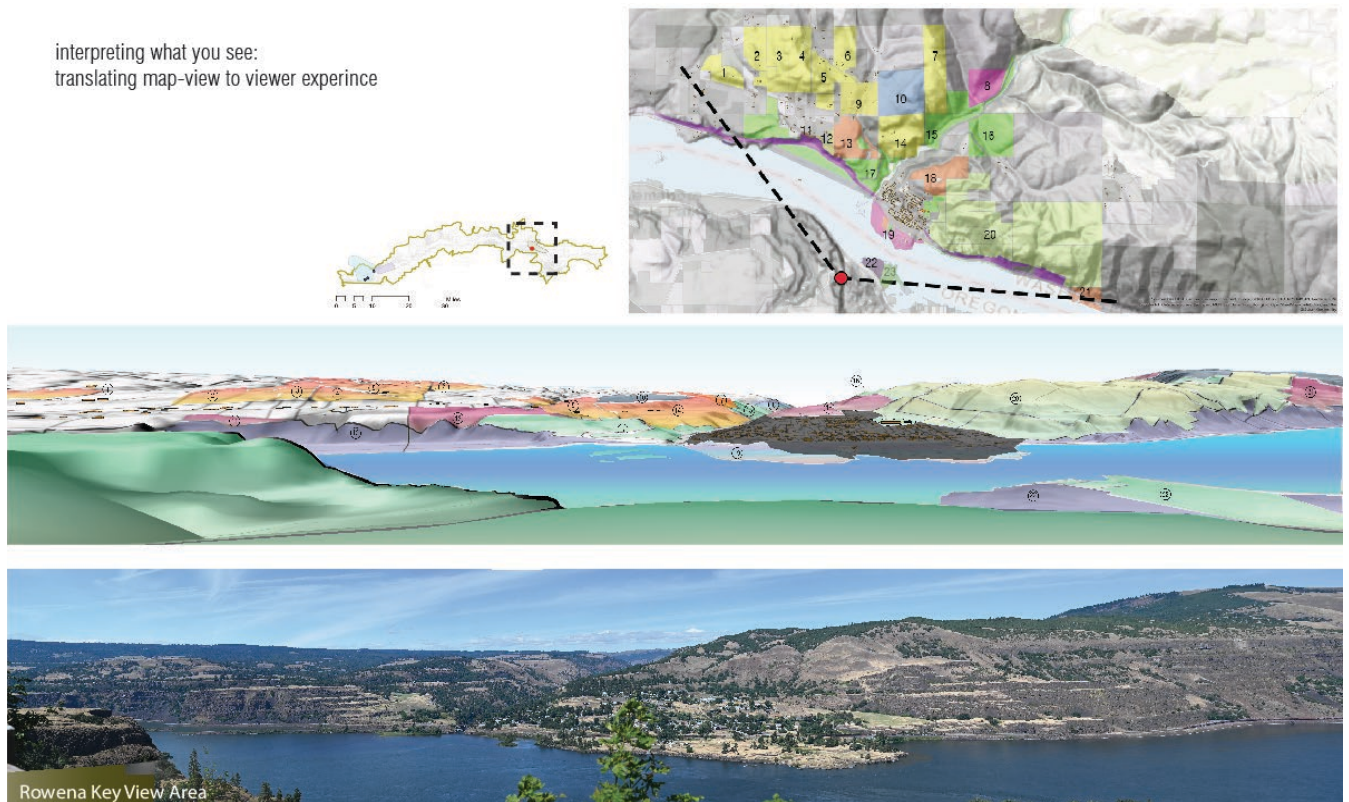


Figure 4.3 exported GIS graphics show how we get to visualize data

This graphic shows how visually layering map data can construct a better understanding of how landscape attributes related to policies inform viewsheds within this study. Here we move from a basic orthographic “map view” to a topographic representation through hillshade shadows. Parcels that are visible from key view areas based on modeling software within GIS are mapped. Finally, those parcels of interest are associated with ownership types. Ownership types related to policies fall under 3 broad categories; private, land trust, and public (state, county, federal and highway or rail transportation). There is one land trust, Friends of the Gorge, which has influenced the conservation of scenic beauty in these areas on a significant scale as well.

[4C] Orthographic & Panoramic view Rowena

interpreting what you see:
translating map-view to viewer experience



-  existing building footprint
-  DOT easement
-  1-house buildable parcel
-  2 house split possible currently; subdividable with Gorge consent
-  county subdividable with Gorge consent
-  urban area
-  not practicably subdividable
-  indian lands
-  land trust ownership
-  government land ownership

Figure 4.4 starting with context, numbered parcels in the map view are colorized by ownership type and building potential. This visualized data is translated to numbered parcels in a panoramic scene through GIS as seen in the middle panel. That panorama is a digital representation closely approximating spatial reference to the photographic panorama digitally stitched together at the bottom. This panorama is derived from 35mm photography capturing the scenic view from the Rowena key view area.

Rowena Crest has scenic geology in addition to captivating long views of the Columbia River. This viewshed includes key view areas and an Urban Node, unlike the Cape Horn and Crown Point viewsheds. Parcels within Urban Nodes are exempt from scenic beauty impact review by the Commission.

Interpreting colours

The red colored parcels can add one screened house according to GMA standards requiring that they be blended into the landscape. It may be possible that some of the larger red parcels could be subdivided with policy change or Commission adoption of such provisions in a future agreement between the Commission and Klickitat County.

The orange colored parcels could possibly construct additional screened homes without subdivision because county zoning allows that but Gorge rules now prevent them because these large parcels likely already have a reasonable economic use in farming.

The long chartreuse swath on the right is several parcels purchased by the Friends of the Gorge Land Trust. This trust looks at opportunities to purchase private land for the purposes of scenic beauty conservation and often the land may eventually be transferred to a government agency who can maintain that land conservation. These parcels were likely purchased by the trust because they might be annexed by the town of Lyle, or because the owners threatened to aggressively pursue subdivision permits through the courts, or because the owners do not have reasonable incomes from farming or livestock and would have had the right to build one house on open ground on each parcel.

The uniform area of dark grey in the center of the scene is the urban node of Lyle, where growth is encouraged and is exempt from visual impact reporting. There are existing parcels within the growth boundary that are undeveloped and suitable for expansion of housing, likely a necessary infill before the Commission considers adjusting the urban growth boundary.

The iridescent pink colours adjacent to the urban area on the riverfront are parcels owned by the Yakima Indian tribe, identified in plans as Indian land. These parcels are highly unlikely to be developed, since they are a critical resource functioning to connect people with native ancestry to biocultural resources.

Land covered in greyscale colours in the scene have limited opportunities in the future to add houses, since they already have the economic use of the land for a house and parcel sizes are not adequate for subdividing. There is less likelihood for alternative visual futures here.

Last, the purple colouring on the steep slopes approaching the river are transportation owned parcels, including road and rail. These would be impracticable to build on in many areas due to slope, and necessary setbacks from railways.

This colour scheme is applied through the other two study sites. Rowena includes some ownership types that don't exist at the other sites, such as Indian land and urban boundaries.

The enumerated circles in the scene correspond to the numbers on the orthographic map, identifying parcels or parcel areas within the viewshed of each scenic area. The numbers are provided for reference in visually translating parcels on the map view to the scene, and run top left to bottom right.

[4D] Orthographic & Panoramic view Cape Horn

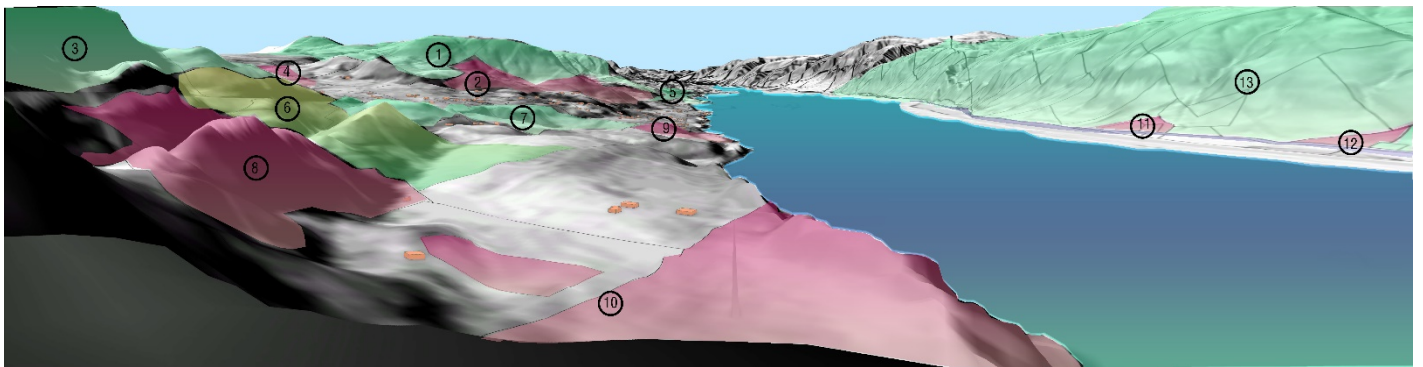
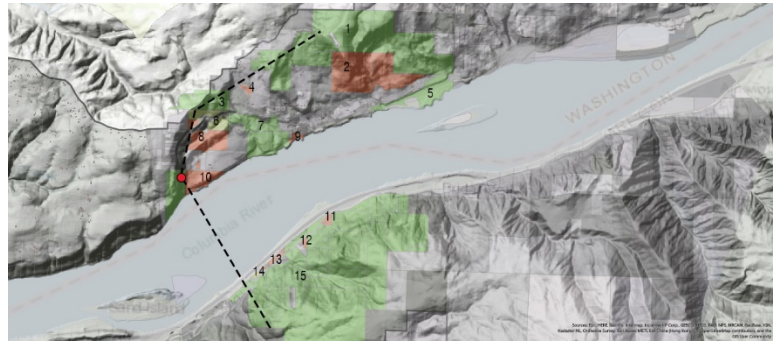
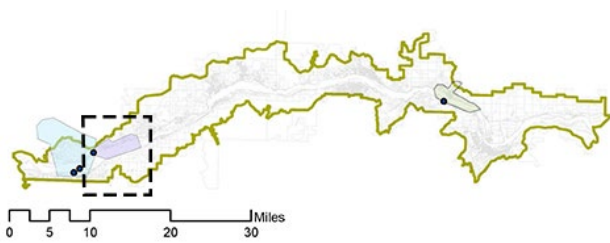
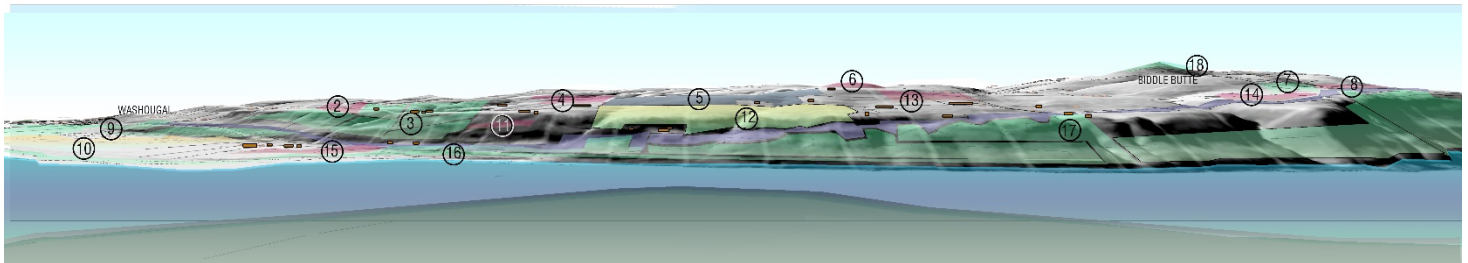
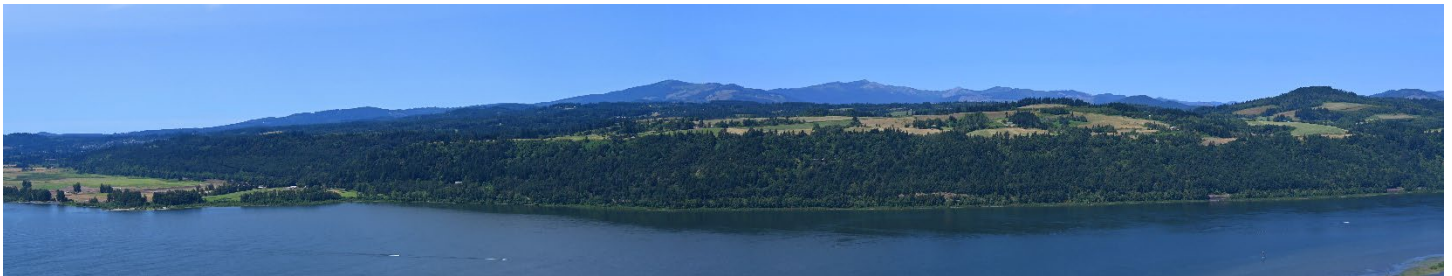
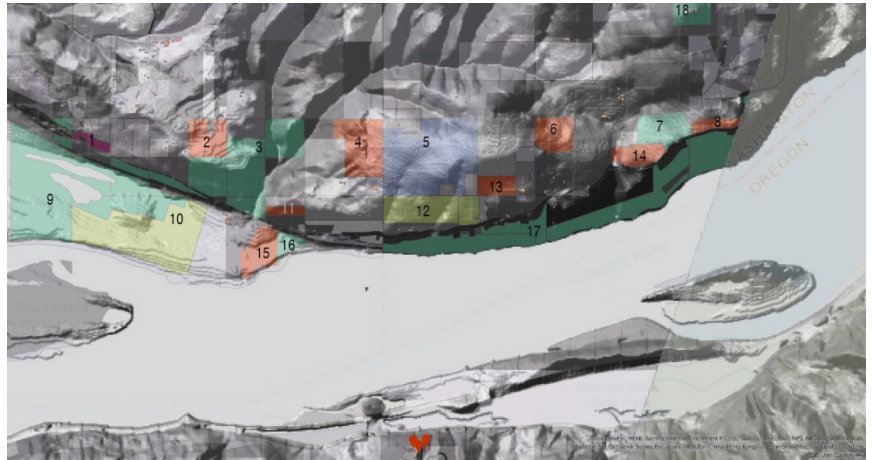


Figure 4.5 Interpreting the primary scenic view from Cape Horn through photography and GIS

Cape Horn is largely protected from changes to the visible landscape by the Special Management Area land management designation by the Commission. This designation could be modified in future updates to the Gorge's General Plan. There are several houses in the midground of the photo near the Columbia River, however they are generally well screened and do not impact the landscape character or scenic beauty from this key view area. There are two new houses near the ridge top in the background that were approved, over objections, since 2005. These have views and are visible but well blended into the landscape by placement just below the ridge tops, as well as though earth coloured walls and roofs, non-reflective windows, and shrubs along the base of the walls.

There are no visual impact exempt urban nodes in the Cape Horn viewshed. The same colour scheme representing land ownership types is used for Cape Horn as was seen in Rowena.

[4E] Orthographic & Panoramic view Crown Point



- | | |
|---|--|
| existing building footprint | county subdividable with Gorge consent |
| DOT easement | urban area |
| 1-house buildable parcel | not practicably subdividable |
| 2 house split possible currently; subdividable with Gorge consent | indian lands |
| | land trust ownership |
| | government land ownership |

Figure 4.6 Interpreting the view at Crown Point. This KVA has the highest volume of any in the Gorge, hosting travelers and local Portland visitors alike, and is mostly accessed by vehicle for the view and photography as the primary activity. This view is substantially shared with Rooster Rock KVA an isthmus just below, where the view is a part of other beach and park activities. What activities people are primarily engaged in at a scenic area matters in the measurement of scenic beauty.

Crown Point is an especially sensitive key view area. The famous Vista House, a well-designed 1930's public museum is located there. Around 2 million visitors a year to the Columbia River Gorge [State Parks], including Vista House, make viewer volume an element in viewer sensitivity, particularly at Crown Point. This scenic view point also shares much of its viewshed with that from Rooster Rock key view area just below, a mostly flat recreational island below also popular with local visitors. Much of the land in sight on the Washington side of the Columbia River is either government owned land or impracticably steep to build on. There are a few visible homes on the nose slope near the right hand edge of the panorama photo, and around the open land at river level to the left. All these homes were built well before the 1986 Act and are grandfathered. There are no visual-impact exempt urban nodes in the Crown Point viewshed.

Because of the Special Management Area (SMA) planning designation, the parcels seen in the above graphic with red overlay could be permitted to build one home, and the parcel in blue can build 2 homes because it is 170 acres with 80-acre minimum zoning [Commission GIS]. Those permitted homes would need to meet the elevated screening criteria for building within this SMA designated overlay. The green areas are government owned and would not be built, and the chartreuse color is land trust owned with the intent to preserve its current land cover in perpetuity. The future visual alternative to landscape character visible from this scenic area site is fairly limited by topographic, regulatory, and land tenure causes which we presume would not be built upon by conservation land trusts or the government. This situation reflects the priority that the Commission and land trusts have places upon conserving this view

[4F] GMA- SMA different impacts comparison

Gorge Commission land management: tax parcel divisibility and cumulative visual impact



Figure 4.7 Management of private land for scenic value entails regulation. These maps suggest patterns in the amount of flexibility that might be possible in review of home building proposals (see figure 4.1). This regulatory authority was affirmed by public participation when the KVAs were proposed and accepted in public hearings soon after the Act was passed. The Gorge plan’s SMA/ GMA management areas were similarly enabled through the Act and ratified by public participation. These maps explore how a review of policies in special management areas within a KVA might be worthwhile if expectations of public perceptions of scenic quality were to change in favour of more homes in the landscape. That is, construction of some limited number of additional visible homes in the landscape.

Compare the 3 mapped sites in light of the breadth of scenic conservation that land management policy now carries. There may be different future impacts of the scenic management policy in loosening future house construction limits in key view areas.

Looking at previously presented graphics, land ownership types such as land trusts and government ownership have substantially protected scenic quality in the Gorge. This may now provide scope for some more home construction- particularly in current limitations on subdivisions of parcels remain in place.

[4G] Zoning

County zoning compliant with the Act and the Commission’s rules and land policies implement land use principles consistent with Act’s scenic goals. Seen here, Clark County’s zoning defers to the Gorge General Plan and its zoning ordinances acknowledged by the commission.

Areas in green in the following diagrams are more protected by restrictive policy and are presumably more visually sensitive to landscape changes as seen from the KVA. These have greater restrictions on subdivision and new home construction, and visual impact mitigation requirements for proposed buildings

ZONING IN LAND CONSERVATION STRATEGY

Example:
local zoning tied to Gorge Act
landscape conservation goals

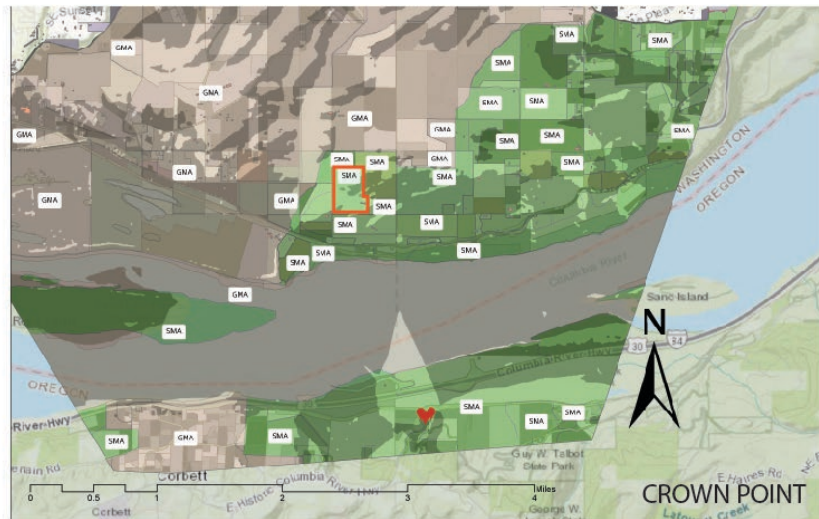
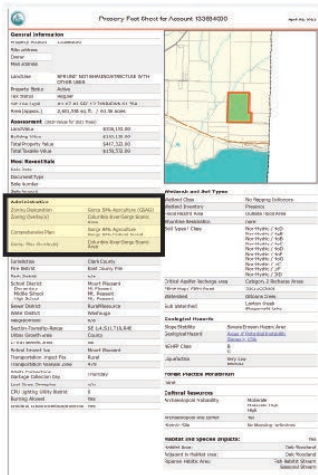


Figure 4.8 Left: a county parcel summary describes the zoning for the parcel as Gorge Scenic Agriculture with an overlay of CRGNSA, and reference how the parcel’s zoning districts fit into compliance with the comprehensive plan for the Gorge. Right: scenic management overlay on parcels, and visible parcel viewshed, with the example parcel outlined in red.

ZONING IN LAND CONSERVATION STRATEGY

In some key view areas, discretionary landscape conservation decisions are the primary strategy.

The yellow areas have fewer visual impact restrictions for new buildings

5 acre underlying zoning makes subdivision is possible with Commission consent

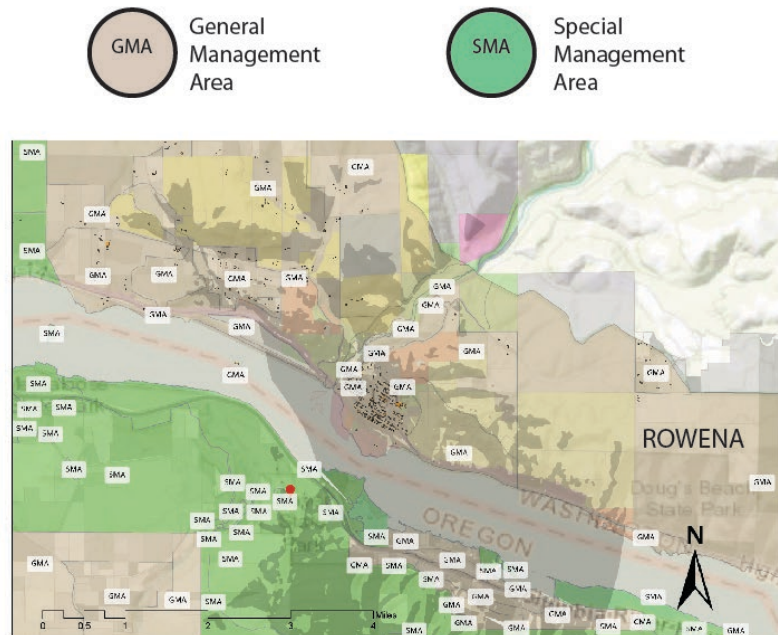


Figure 4.9 In contrast, Klickitat county has not gotten its own zoning ordinances acknowledged by the Commission, so county zoning likely will differ from Gorge General Plan designations. In such cases, a landowner must get a development permit from both the County and the Commission. Resolving discrepancies in designations between these agencies may provide an opportunity to change both the Gorge General Plan and the County's comprehensive land use plan. Such changes would only apply to the corresponding Gorge landscape character type. The agencies might find common ground in the definition of scenic quality. New scenic quality modeling and resident and visitor perception surveys in this area might define and enable an alternative visual future and resolve the conflict between Klickitat County and the Commission.

Congruous land planning in the other two Washington counties of Clark and Skamania is visible from chosen key view areas in the CRGNSA is studied here. These two counties have adopted zoning consistent with the goals of landscape preservation set by the Act, and the Commission has adopted these ordinances so that landowners need only get development permits from the county. The Special Management Areas ("SMA"), green in the above diagram to the north of the river, may require additional Commission reviews of scenic beauty impacts if someone raises objections and appeals a permit to the Commission. These areas are not subdividable under these adopted county zoning ordinances or they may not be practicably subdivided due to topographic constraints. These areas tend to fall in close proximity and are more prominent in the view from the Key View point.

In the Rowena viewshed, fully within Klickitat County, the General Management Areas ("GMA") also fall under individual and cumulative impact reviews primarily by the Commission. Parcels are possibly subdividable with Commission consent to the extent identified in both the Commission's General Plan or the County's zoning.

The county zoning elsewhere in the Gorge Scenic Area (in the other two counties, Skamania and Clark) supports the intent of the Act to retain landscape character, of forestry, agriculture and visual patterns in relation to the characteristic terrain. Large parcel acreage minimums, often 40 or 80 acre minimum parcels, are enforced for land prominently visible from key view areas that are otherwise in General Management Areas. This leaves few parcels in the Crown Point and Cape Horn viewsheds that have the ability to be subdivided with new homes, either based on Special Management Area designation or minimum size zoning preclusions in county Commission-adopted zoning districts.

The Rowena KVA has a significantly broader area of General Management Area designation that is coupled with 5-acre minimum agriculture zoning. Here, there are more opportunities to lawfully divide and develop parcels subject to Commission approval. The county and Gorge Commission could negotiate an agreement to allow houses on 5 acre parcels if they were screened. Building in the immediate foreground with existing grasses and agricultural grain vegetation type with moderate slopes would prove difficult for screening or blending; that notwithstanding, the opportunities to negotiate permitting subdivision. While local zoning generally works in concert with the intent of the Act, negotiations could enable there is both latitude for growth of housing with views, and more landowner discretion to offer individual parcel-level decisions to reduce scenic impacts.

[4H] Built environment

After considering potential future changes in scenic quality in relation to policies, it may be helpful to also simply see existing land uses in relation to KVA viewsheds. These graphics indicate three periods germane to the representation of policy influence.

- Homes built in 1986 and earlier are grandfathered and not subject to blending and screening mitigation unless they undergo major modification. Significant expansion to homes and structures are not permitted in special management area [friends].
- Homes built between 1987 and 2005. This development period had the greatest regulation on home construction. Houses were not permitted if they could be seen from a key view point. Complete hiding or screening was typically required for permitting, unless these were not possible, and a right to a view was not considered. If homes could not be hidden, their visual impact still had to be minimized.
- Homes newly built or with major remodeling after 2005 were subject to a bit of regulatory relief. After public discussions and hearings that informed the General Plan update in 2005, home construction permit application adjudications could apply considerations of right to a view to the construction plan and the least visible site with a view were selected to the site house. This offers the questions; Can you see these particular homes and, if you can, do they impact the scenic quality significantly? Would they do so if they were even more visible with high-contrast construction?

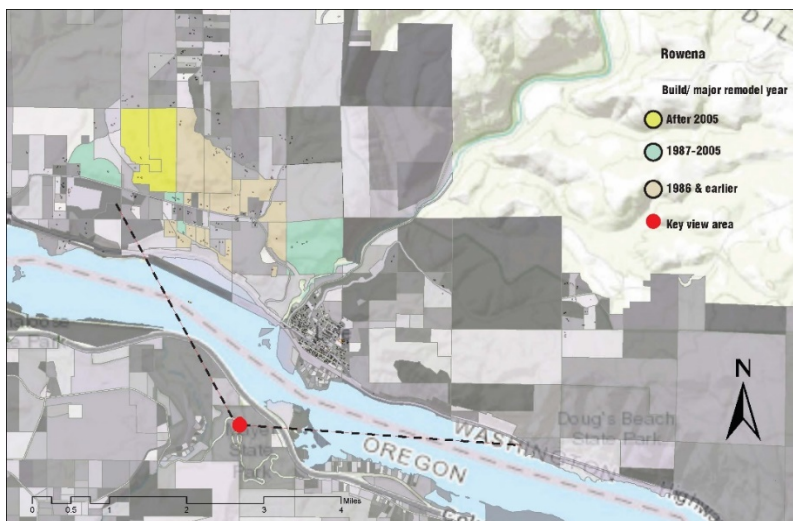
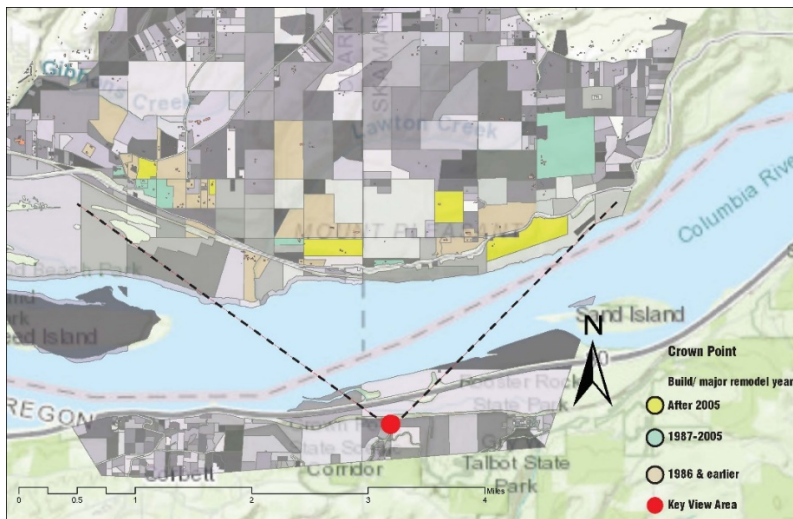
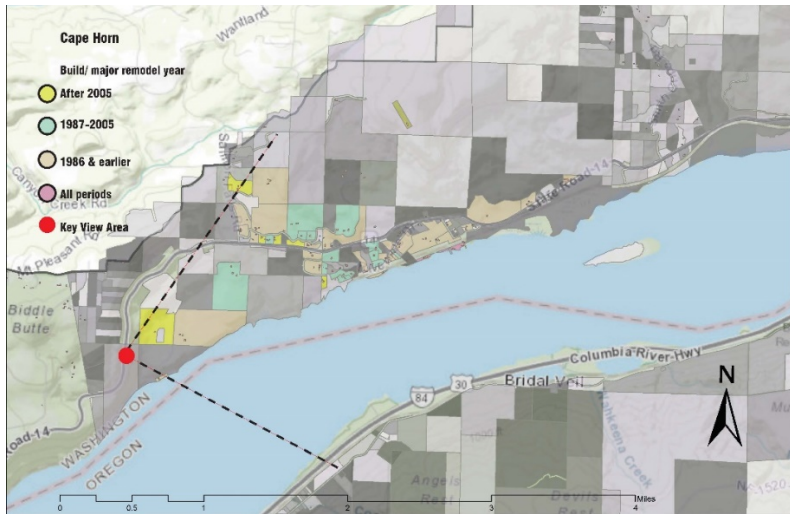


Figure 4.10 Build year influence on visual impact. Is there visual capacity for more homes that blend with the landscape- would future amendments to regulations be reasonable if modeling and visual preference surveys showed a minimal impact on scenic quality with the addition of homes. Where can they go? What is their landscape absorption capacity? What areas are more visually pliable in landscape conservation?

V. Assessments, conclusions, future studies

ASSESSMENTS

The quality of scenic beauty experienced from the key view areas is impacted by existing homes, and would be further impacted with the development of new homes. The degree of visual impact created by more new homes would be reduced by screening mitigation required by the Commission, depending on the land management designation and landscape character type of a parcel. The mitigatory value of vegetative screening would also be impacted by the proximity to a KVA and the relative vegetative matter and topography around the site.

County zoning appears to generally support the Commission land use plan, however certain view areas hold appreciable opportunity for development, subject to Commission approval either through rule changes or plan changes. Development opportunities would still be reviewed by the Commission and/ or counties as an individual visual impact, balancing economy ecology and recreation, as well as cumulative visual and environmental impacts.

Understanding where these development opportunities are situated is a first step in a productive community and Commission discussions about planning growth and landscape conservation. This visual analysis, in the form of view projections combined with mapped policy factors, has not been completed before. It adds to the public and local understanding of the Columbia River Gorge National Scenic Area landscape changes. Possible adjustments to the policies addressing urban growth, subdivision and home construction permits are a possible outcome of discussions informed by this document.

The policies for zoning and land management work together to conserve this landscape. Friends of the Gorge Land Trust has been able to further the landscape's character preservation through its ongoing private land purchases of key parcels within the KVA viewsheds. Publicly owned lands in especially viewer sensitive areas also factors into preserving scenic character. As a whole, these landscape conservation measures work to preserve and enhance scenic beauty, and it is likely that the scenic quality would not be satisfactorily conserved if these components were not in place. All three landscape conservation strategies shown in the figure below are vital in conserving scenic quality.

As public perceptions and priorities change, as development pressures change, and as climate change and other disruptive forces impact the Gorge, public, visual representations of how the Gorge's scenery relates to all of these components should enable future progress in adaptively sustaining this National Scenic Area

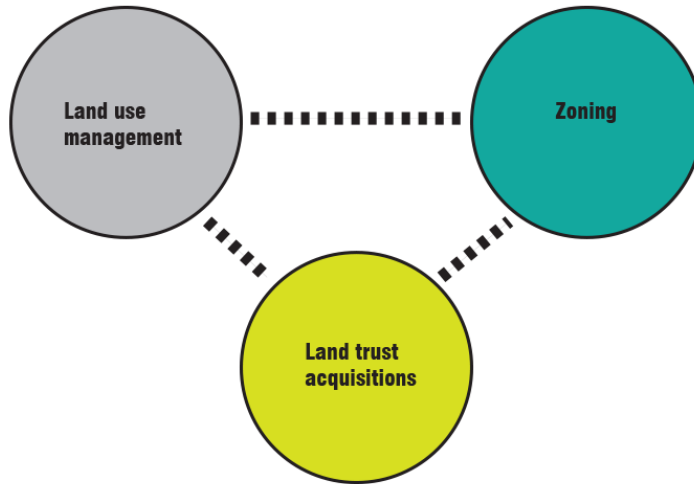


Diagram 5.1 Resources of policy, planning and land banking contribute to conserving landscape character

CONCLUSIONS, FUTURE STUDY

This visual documentation was created as a foundation for expanded future studies. Alternative future scenario modeling and public perception surveys, including visuals of homes developed on the potential parcels identified here, should be performed. The scenic quality of this landscape could be modeled as if the Act had not been passed and land use zoning prior to the Gorge Act was maintained. Another scenario that could be studied might be visual outcomes if no lands had been purchased by land trusts. Such studies could be valuable tools to continue to help the community visualize the context of its future. I would have enjoyed undertaking these expansions of this study but there are constraints on time and resources that influenced this terminus of the project.

As posited at the introduction to this document, there are questions about alternative visual futures that can frame a community discussion.

- How important is the regulation of new houses in conserving Gorge scenic quality?
 - Regulation both in subdivision capabilities, as well as site construction standards when homes are built, have shown that regulation does not cease new home construction and creates and both types of restriction have played a measurable and valuable goal in scenic preservation. Additional visual modeling showing impact would be informative
- Have policy changes allowing houses with views to be built since 2005 impacted the landscape adversely?
 - Based on personal observations at key view points and from the presented photography and visualizations, the homes built after this shift in policy do blend into the landscape adequately well with materiality, vegetative screening and not breaching visual ridgelines to not appreciably impact the scenic quality.
- How effective have land use regulations (zoning, special management areas) been compared to site construction specific regulation on scenic beauty conservation?
 - These two regulatory devices work together. Separating their contribution to conservation presents a difficult evaluation. Revisiting urban boundaries for clustered growth is a tool to promote balance in growth and conservation as well. Zoning and land management areas have conserved broad-stroke landscape character, such as forestry and large scale grain farming, yielding success in preserving a Gorge that visitors cherish. Construction regulation outside of urban nodes since 2005 has captured the value of scenic beauty for both visitors and homeowners.
- If you were to build more housing with Gorge views in the CRGNSA, how and where could it be done with minimum change to scenic beauty?
 - There are opportunities to grow within some urban nodes as a preferred first measure. The ability to develop without visibly diminishing landscape quality is parcel specific and key view area specific. It depends on design schemes that are responsive to site conditions capturing the value of a view home, as well as viewer sensitivity, landscape blending options, and capacity to develop a product that a homeowner wants and the Commission will affirm. Generally, mesic landscapes on the western side of the Gorge with greater forest density offer easier opportunities to obscure homes, particularly on moderate slopes that offer superior views. Drier climates (on the east side) do not afford such easy impact reductions. Climate change and forest wildfires could reduce the ability to rely on forest as a mode of screening.

- If the urban nodes city were to grow, where should it be done that would be the least impactful on scenic beauty?
 - There are 13 urban nodes, with varying complexities in solutions for managing future growth impacts on scenic beauty. In the town of Lyle represented in the Rowena viewshed visuals here, there is unbuild land on the hillside within the urban growth boundary, however this might not be optimal given the advanced slope. There are opportunities to advance design of clusters of homes that may be screened and otherwise well-designed on the plateaus and gentle slope areas above the town that still offer views. In other areas, such as Mount Hood and White Salmon, the urban areas take up a good deal of the waterfront and ridgetops in the viewshed from the Mark Hatfield KVA. Solutions there may involve careful design and screening of new development or specifying a reframing of the observation point rather than redirecting housing growth.
- What have we learned about where new houses can go?
 - We have learned that new houses can be successfully integrated into some landscapes in the Gorge and many or some of these homes can have spectacular or adequate views. Visual environment design sensitivity and community and visitor feedback yield better outcome for possible visual future impacts. Some tax lots are impracticable to build a house on to meet design or construction requirements. But other houses facing such challenges might be successfully built if the owner can afford the cost of overcoming both technical and scenic mitigation requirements. We have also learned that there is more than one layer to land improvements, in both administrative and physical construction, and there are areas with greater overall opportunity to build afforded by zoning and scenic management policy.
- If forest fires persist with climate change- what happens to home visibility reliant on timber screening?
 - There have been a number of fires, including the extensive Beaver Creek fire within recent years that reduced forest cover by about 20% in the Columbia River Gorge. As forests retreat and are possibly replaced by different plant communities, the timber screening much of the new or old housing to meet construction visual impact standards may not be available to the degree needed to meet current standards. Given the unknowns of time, extent, cohesion and resilience of emerging Gorge land cover types, it may not be possible to adequately plan for future scenarios where vegetative loss is ongoing, severe, widespread and unpredictable. If blending into the landscape is a requisite part of construction impact management, this will become problematic to both land owners and the Commission. I would proffer, given that the value of framing views and screening homes will continue to be a priority, that trying to cluster new development and policies sustain or restore patches of forest such as hemlock-fir species (on the west side) could still be viable if adequate irrigation resources continue to be available
- If someone postulated that the key views throughout the Gorge are up high looking down and there is always expansive Columbia River water in such views, will this landscape always be perceived as positively beautiful no matter what? Perhaps in all such views from viewer-superior positions, houses don't matter? Is implementation of the Gorge Act misguided in its effective emphasis on mitigating the visual impact of homes? Wouldn't people would still love the Gorge if there were many more houses? If the appearance of other unnatural elements were minimized, but with more houses, would good design of those houses be good enough?
 - The views in the Gorge are exceptional and worth protecting- and the underlying question here is *how* to protect them and meet other cultural needs. It is possible that further visual impact studies, modeling and surveying public impressions of visual variables (density & dispersion of homes, proximity to water, proximity to edge & ridge, and other factors that cognitively impact viewer perceptions of beauty) could help better understand where design mitigation reaches its capacity and regulatory patterns are needed. Or a possible outcome of the same

studies could be that houses visible in the viewshed don't matter as much because the water and geology are the dominant scenic narrative; visitors are going to experience the health qualities inured with the National Scenic Area irrespective of homes' visibility. A possible starting point for this metric would be to include the Mark Hatfield key view area in studies like this one, a site which enjoys dramatic views of the Columbia River, bridges, and a tapestry of forest, along with prominent industrial and residential development in its viewshed. The scenic beauty at the Mark Hatfield key view area is likely inferior to the sites selected for this visual document, but it was identified and adopted through public approval as a KVA in the first place, and changes within it are challenging and controversial, so it is worth exploring.

- What are areas that are most threatened by deterioration of visual quality, that would be problematic if many more houses were built?
 - Qualities of threat include prominent slope directed towards viewers, proximity to viewpoints, difficulty screening or blending into landscape, and factors that promote disruption to the unique character of this landscape. Generally, the eastern part of the Gorge has fewer opportunities to use the tools of forest screening, and some of the unique qualities of geologic typology could foreseeable be impaired by the difficult and slow creation of additional forest screening. Additional modeling would be helpful in resolving details at this level of granularity. Changes to the Gorge's scenic landscape due to extensive wildfires and other climate-change-induced plant community changes need also to be studied.

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