

***Something in the Way:***  
***Interpreting Historical Frictions on the Upper Klamath River***

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*On the one hand, description is self-reflective—by describing what we see, we have the opportunity to become aware of how we see for ourselves. On the other hand, it is relational—by sharing our own perception and listening, we find out whether others share our reality or not. Perception and description thus are political acts, as they turn out to be in themselves world-making: they don't refer to a world outside but partake in the making of the world. The stories we tell, or don't tell, inform our vision and perception—just as our visual and tactile senses inform the stories we tell.*<sup>1</sup>

-Johan Ziebritzki, "Sensorium of the Earthbound"

## **INTRODUCTION**

On November 17, 2022, the Federal Energy Regulatory Commission (FERC) approved the surrender of licenses to operate four hydroelectric dams on the Upper Klamath River.<sup>2</sup> Their approval, conveyed in a written order and filed alongside millions of documents in FERC's E-Library, had historic implications. The order was the result of decades of negotiations influenced by stakeholders with concerns as large as the regional economy and as small as the view from their kitchen window. The final order conveys this recent history glancingly since most concerns were hashed out in a series of documents in the preceding decade. Its aim and implications were clear, however: The Klamath River Renewal Corporation (KRRC), who inherited the hydroelectric licenses a year earlier, wanted to surrender their right to operate the facilities. Their decision initiated a monumental effort to remove the infrastructure from the river's path and is currently the world's largest dam demolition project to date.

The transfer of licenses from the utility company PacificCorp to the KRRC and their subsequent surrender is only the most recent decision to reshape the portion of the Upper Klamath River extending southwest from Keno, Oregon to the Interstate-5 corridor in Northern California. The river produced hydroelectricity for over a century while its dams came to symbolize the tension between modern infrastructure and the region's environmental health. The decimation of anadromous fish and increased frequency of toxic algae blooms were lightning rods in the debate over the river's future. The dams made visible the negative ecological effects of human intervention, but that visibility did not translate into consensus about what to do next. Indigenous communities had argued for the dams' removal since their construction.<sup>3</sup> The cultural and nutritional significance of

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<sup>1</sup> (Ziebritzki 2020), 263

<sup>2</sup> (Glick et al. 2022)

<sup>3</sup> (Yardley 2006)

the river's salmon for the Yurok, Karuk, Hoopa, Shasta, Modoc, and Klamath people predates Euro-American contact by centuries. Other arguments for dam removal included the river's ecological health, the limitations they placed on activities like fishing or rafting, and the infrastructure's impending obsolescence. Arguments against removal frequently spoke about loss: the deflation of property values, the depletion of groundwater, and draining of reservoirs that help combat wildfires.

In truth, these arguments had little direct influence on the outcome. FERC was prepared to renew PacificCorp's licenses in 2007, but the company concluded the cost of new fish conveyance systems to maintain compliance would force the facilities to operate at a loss.<sup>4</sup> Instead, PacificCorp agreed to operate the dams with an annual license until the company and FERC found an alternate solution. Considering the decades of activism that preceded FERC's decision, the fact that economic viability was the core reason for the dams' removal undermines common media narratives that frame the decision in environmental terms. FERC's fish conveyance requirements can be contextualized as a result of evolving environmental policy, but it still deflates the notion that public opinion effectively forced PacificCorp's hand.<sup>5</sup>

The context of the licenses' surrender underscores the messiness of projects with large geographic consequences and competing groups of stakeholders. Although economics determined the outcome, the cultural factors surrounding FERC's decision are broad and diverse. The context also illustrates the river's capacity to contain multiple and overlapping meanings. These meanings lie on spectra of time and personal connection. To a Shasta tribal member, for example, the river is both an ancestral space and an extension of their personal identity. For a recreational outdoorsperson, the river could be a childhood fishing spot lost to environmental damage. To a lakeside homeowner, the reservoirs might be a weekend getaway or their retirement plan. The varied ways people have perceived and used the land begin to describe the Upper Klamath's cultural memory.

Similarly, historic context is helpful for understanding tensions between the physical landscape and its value to successive groups. Although some media and activist groups allude to the dams' removal as a return to the river's natural state, the Upper Klamath will never be the same place

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<sup>4</sup> (Chatterjee, Glick, and Danly 2020)

<sup>5</sup> (Beam 2023): This article typifies the national understanding of the project in that it conflates or confuses the *effects* of dam removal with the reasons for the project's approval, which can mislead readers to believe that habitat restoration was the driving force behind the license surrender and demolition.

twice.<sup>6</sup> The drained reservoirs have revealed cratered, barren valleys of sediment that require decades of stewardship to revegetate. Likewise, an increase of anadromous fish populations will require close monitoring and habitat restoration. These changes follow a century of ecological damage caused by hydroelectric infrastructure supplied by upstream reservoirs. The river valleys submerged by the reservoirs had previously been fertile, irrigated ranch lands and indigenous settlements. The pre-dammed river had served as a transit mechanism for logging outfits, an indigenous trade route, and a source of sustenance for millennia. As dam removal transforms the landscape once again, it is important to recognize these changes are part of a legacy of overwriting and reconstructing the landscape. The current moment is a new one, not a return to the past. A visual inspection of acres of drying sediment confirms this. While there is hope that salmon will spawn in greater numbers and native vegetation will take root along the banks, the Upper Klamath will largely not be the same river that it was before the dams.

Examining previous constructions also exposes the power structures that have acted on the land. These influences can be measured by their scale and their environmental impact. Pre-contact indigenous uses were the least destructive and the smallest in scale, limited by transport on foot and canoe. Communities were attuned to the limits of natural regeneration, as evidenced by the practice of allowing enough salmon to pass upriver to spawn before trapping the remainder for food.<sup>7</sup> Individual households centered and conscious of seasonal cycles. Since Euro-American contact, increasingly industrial uses have redefined the Upper Klamath. Early pioneers constructed water wheels and canals to irrigate ranches. Many transitioned to large-scale farming within 50 years, augmented by rail connectivity and regional urban development. The power structures of this period shifted away from the household and toward abstract, distant entities. Legislation like the Oregon Land Donation Act (1850) and the Homestead Act (1862) quantified the land and empowered white settlers to claim it as their own. Nascent lumber companies exploited these processes to gain control timber stands, extracting and transporting swaths of the forest to unseen locations. Later, hydroelectric companies altered the character of the river on an

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<sup>6</sup> (Swiftwater Films, n.d.): Swiftwater has been on-site developing a documentary about the removal project and the indigenous communities who advocated for it. Their footage and documentary evidence are extremely valuable to describe the current changes, but their website contains language that does not recognize the complex realities of the landscape, e.g., “We are documenting... how an imperiled river system will respond when restored to its natural state.”

<sup>7</sup> (Klamath River Renewal Corporation 2021)

unprecedented scale and intertwined its productive capacity with thousands of remote customers whose quality of life improved with electricity.

Recognizing how power structures altered the landscape helps identify and relate competing narratives. The layering of physical constructions, each of which has compromised the material integrity of the previous one, presents an interpretive challenge. Additionally, dire ecological conditions and political debates over dam removal make it difficult to advocate for the remembrance of these constructions without advocating for their material presence. Competing narratives can be contextualized and held in focus simultaneously, but the compromised integrity of the landscape limits the toolkit of a preservationist to do so. The interpretation of historic resources that cannot be materially maintained often do not reach the public and instead survive as documents shared among professionals. In other words, the challenge is to honor and interpret the complexities of Upper Klamath for a public audience without on-site material evidence.

An interpretation should not emphasize all narratives equally, however. Emphasizing the dams' environmental damage and the continued injustices against indigenous communities are necessary for contextualizing the current moment for future audiences. Rather, without material evidence to support complex readings, it is important that a reductive narrative of the dams' removal does not become the *only* memory of the Upper Klamath. The multiplicity of historic constructions and individuals' memories should not be wholly eclipsed by media sound bites or political arguments that are insensitive to nuance. It is not difficult to find examples of how material absence can lead to a reductive cultural memory, e.g., the demolition of the Pruitt-Igoe public housing projects in St. Louis, which prioritized a national narrative of failed housing practices over the stories of hope and community of former residents. In the case of the Upper Klamath, the loss of the dams and the transformation of the landscape will once again obscure stories. It is possible to describe them and still advocate for the dams' removal.

How preservationists interpret these competing and layered histories for a public audience is unclear. Regional archives have substantial holdings related to the dams and they have been extensively documented by cultural resource experts. Documentation, like any descriptive process, is an interpretive act. Existing processes often produce documentation only for other professionals, however, and a lack of material integrity creates a translational bottleneck between professional knowledge and public resources. In a place like the Upper Klamath, preservationists

may benefit from interdisciplinary art and architectural practices to convey spatialized messages more fluidly.

This project reviews the Upper Klamath's historical constructions by successive groups to demonstrate its status as a complex and evolving resource. It then critically examines current preservation frameworks to determine which extant tools may be useful when considering a public interpretation. It also discusses how these frameworks fail to fully describe a landscape like the Upper Klamath. Finally, the project reviews a series of interdisciplinary precedents and distills their methodologies to offer potential interpretive "expressions:" spatialized interpretations meant for a public audience. Geographically, this project is bounded by Interstate-5/Klamath River intersection at its southern end and the J.C. Boyle Dam at its north. Although this section of the river is geographically part of the Upper Klamath River, it should not be confused with the section of river north of Upper Klamath Lake commonly referred to as "Upper Klamath," nor should it be confused with the Lower Klamath Project, which refers to the effort to decommission and remove the hydroelectric infrastructure. For the purposes of this project, references to the "Upper Klamath [River]" refer to the section of river within the project area.

## **CONSTRUCTING THE KLAMATH**

### *Geographic Context*

The Klamath River traverses southern Oregon and northern California, extending over 250 miles through the Cascade and Klamath mountain ranges before reaching the Pacific Ocean. The upper portion flows southwest from the Klamath Basin and turns west soon after crossing the state line. Between the border and the Shasta Valley, the river winds through basalt canyons and rolling hills speckled with juniper and oak. The alternation of volcanic outcrops and gentle tributary confluences lends a romantic air to this section of the river. The US General Land Office first described the area in 1856 when it sent a party to survey the topography and resources. Prior to that, few Euro-American visitors had passed through the landscape, let alone documented the Upper Klamath in detail.<sup>8</sup> Fur traders found a scant number of beavers in the decades prior, but the steep terrain and well-trafficked nearby wagon routes made it easy to overlook the section of the Klamath River between Keno, Oregon and Klamathon, California.

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<sup>8</sup> (Beckham 2006), 24

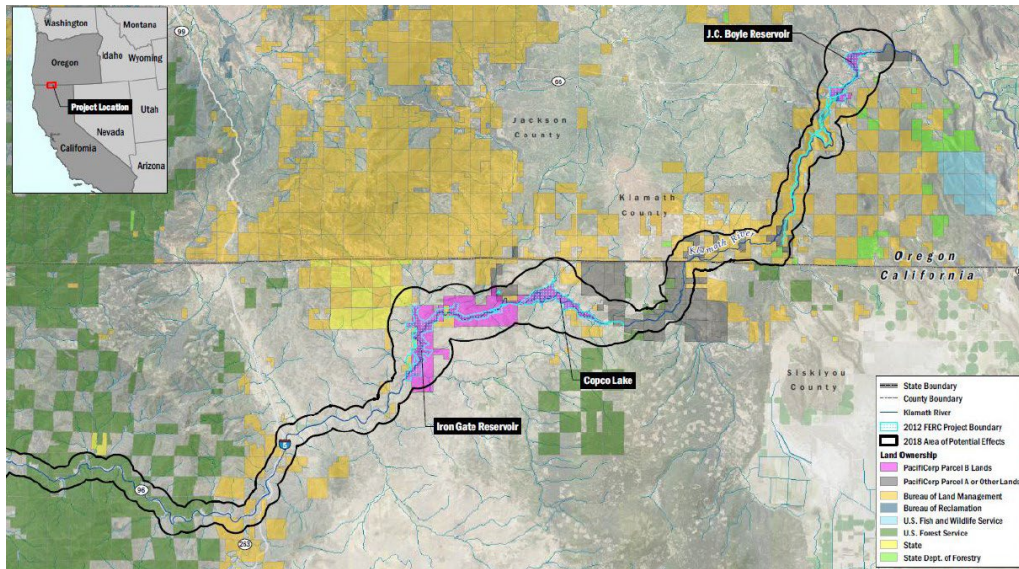


Figure 1: Klamath River Renewal Project area (AECOM)

The few who explored the Upper Klamath realized its value. In 1880, a surveyor documented the terrain in greater detail and described the township where Copco No. 1 dam was later constructed as “generally mountainous. The soil 2<sup>nd</sup> and 3<sup>rd</sup> rate. The timber and undergrowth consists of Oak, Pine, Juniper & Chapparal. It is well watered by Klamath River which flows through it. Some portions of the Township are well adapted to grazing and agriculture. There are quite a number of settlers in this Township.”<sup>9</sup> The soil classifications reference their fitness for agriculture; already, people perceived the landscape in terms of its ability to be manipulated. As the surveyor notes, Euro-American settlers had already begun to claim and develop the fertile bottomlands as farms and ranches. Traffic along the Upper Klamath rapidly increased in the 1850s due to the Gold Rush, which had spurred the initial land surveys and a natural science expedition in 1860. The naturalist John Feilner wrote of the difficulty collecting specimens—another form of describing and quantifying the land—while under threat of attack from Native Americans.<sup>10</sup>

### *Pre-Contact Constructions*

The Upper Klamath’s value was not new to indigenous communities who had inhabited the region for millennia before Euro-American contact. The river served as a trade route between tribes along the Upper and Lower Klamath. Inland tribes traded obsidian and water lily seed for acorn

<sup>9</sup> (Beckham 2006), 28

<sup>10</sup> (Beckham 2006), 49



flour, canoes, and seafood.<sup>11</sup> Several tribes shared resources on the Upper Klamath, although the Shasta held most of the adjacent territory and therefore acted as trade mediators.<sup>12</sup> Upriver from the Shasta, the Modoc and Klamath tribes used the river to define the western edge of their land.

Settlements along the river became more permanent over time. Flatter bottomlands near tributaries had enough space to support large families, trade, and fishing. Families constructed seasonal residences of lightweight mat lodges in the summertime and semi-subterranean earth lodges in the winter.<sup>13</sup> The earthen winter lodges are one of the earliest examples of how groups transformed the land—in this case by physically subtracting from the earth—to accommodate their needs. Another example is their fishing practices, which employed weirs woven from willows and stretched across a stream to trap salmon before spearing or capturing them in a basket.<sup>14</sup> Tribes were not always at peace, but the river was a shared resource, a source of sustenance, and an important transportation route for each of them.<sup>15</sup> This importance extended to nearby canyons and valleys, where members completed ceremonial rites of passage and dream quests that included stacking large rocks.<sup>16</sup> As with many pre-contact indigenous communities, the Klamath River tribes had an immediate and intimate relationship with the landscape.

#### *Early Settlers: Gold Rush, Early Ranches, and Agriculture*

Euro-Americans began to disrupt that relationship in 1846 with the completion of the Applegate Trail. An alternate route to the northern Oregon Trail, the Applegate led settlers north of the Upper Klamath canyon through present-day Klamath Falls. The influx of travelers created conflict with the Modoc and led to a Smallpox outbreak in 1846-1847.<sup>17</sup> The discovery of gold in California expedited the disruption of indigenous life and led to the Modoc Wars in the early 1870s, after which the US Government forcibly removed the tribe to Oklahoma.<sup>18</sup> The government removed many Shasta to the Grand Ronde and Siletz reservations, while others dispersed and became increasingly disenfranchised on their ancestral land.<sup>19</sup> To retain a right to the land in the

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<sup>11</sup> (Beckham 2006), 13

<sup>12</sup> (Beckham 2006), 13

<sup>13</sup> (Beckham 2006), 8, 12, 17

<sup>14</sup> (Hessig 1978), 28

<sup>15</sup> (Beckham 2006), 20

<sup>16</sup> (Beckham 2006), 19

<sup>17</sup> (Beckham 2006), 20

<sup>18</sup> (Beckham 2006), 21

<sup>19</sup> (Beckham 2006), 21

eyes of Euro-Americans, some Shasta women married Anglo men. Several pioneer families who owned ranches in the Upper Klamath canyon had indigenous heritage.

The canyon's earliest settlers came shortly after the Gold Rush. Although most of the valuable mining deposits were downriver from Klamathon, some pioneers saw the same potential that the surveyor described three decades later. Martin Frain was among the first settlers and constructed a ranch in a northern, narrow portion of the Upper Klamath near Shovel Creek. He married a Shasta woman.<sup>20</sup> Soon after, several other families settled in the area. Many of their last names were still listed on property maps 50 years later when hydroelectric interests began purchasing land. Trapping and hunting evolved into larger cattle ranches and agricultural production in the region. The Oregon Land Donation Law and Homestead Act supercharged land claims, and by 1890, "most of the lands surrounding and [later] inundated by Copco Lake and Iron Gate Reservoir had been patented."<sup>21</sup> A winter of brutal blizzards and spring floods in 1890 devastated ranches with insufficient livestock shelter and hay stockpiles. Their failure to master the landscape made survival precarious at times and forced settlers to adopt more extractive attitudes to create surplus.<sup>22</sup> Upriver in the Klamath Basin, dryfarming techniques and legislative efforts by the Bureau of Reclamation allowed farmers to grow potatoes, barley, sugar beets, apples, pears, plums, prunes, cherries, peaches, berries, and grasses at a commercial scale.<sup>23</sup>

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<sup>20</sup> (Beckham 2006), 57

<sup>21</sup> (Beckham 2006), 43

<sup>22</sup> (Hessig 1978), 4

<sup>23</sup> (AECOM Technical Services Inc. 2022), 43



*Figure 2: Klamath Hot Springs (Siskiyou County Museum)*

Settlers' appreciation for the land was not strictly economic. Alice Overton Hessig spent her early life along the Upper Klamath and recalls "the ruggedly beautiful bluffs... and the strips of green meadowland... No sun could shine more brightly in the whole world. No moon could cast its light and mystic shadows on the rugged cliffs and spreading oak trees with more grace."<sup>24</sup> In the 1890s and 1900s, Hessig frequently accompanied her family to Klamath Hot Springs, a burgeoning resort tucked into the canyon and the community's social hub. A regional brass band accompanied dances and picnics set around the hotel building constructed from volcanic rock. Near the shoreline, a series of excavated mineral pools enticed travelers and "those with rheumatic problems."<sup>25</sup> The leisure landscape of Klamath Hot Springs prefigures the river's recreational industry in the 20<sup>th</sup> century and provides a snapshot of the Upper Klamath as industrialization began to take hold. Klamath Hot Springs was a scenographic construction designed to blend the atmosphere of the site with luxurious amenities. The property included 75 guest rooms surrounded by "lush green lawns and tall locus trees... groves of oak trees and white water [were visible] from the hotel porch... A masseur and lady attended [the bath house]. There was also a barber shop."<sup>26</sup> Other exoticisms inflected the experience, such as ice storage, Chinese gardeners, and a proprietary hydroelectric plant to generate electricity.<sup>27</sup> These features are indicative of the world

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<sup>24</sup> (Hessig 1978), 1

<sup>25</sup> (Hessig 1978), 35

<sup>26</sup> (Hessig 1978), 35

<sup>27</sup> (Hessig 1978), 35

creeping into the Upper Klamath. Although not inherently damaging, increased connectivity brought larger industries and more extractive attitudes. For Hessig, an omen of change was the dissipation of deer along the Shovel Creek tributary behind Klamath Hot Springs. As a child, she recalls encountering dozens of herds unintentionally. Later in life, she lamented the difficulty in spotting any.<sup>28</sup>



*Figure 3: Upper Klamath bottomlands with Indian Cave in background--later part of Frain Ranch (SOHS)*

### *The Logging Industry*

Land with abundant resources enticed larger entities. Claim records from June 29 and August 4, 1891, show dozens of claims on the same day for adjacent, 160-acre parcels. Steven Dow Beckham points out the impossibility of so many individuals appearing at the land office within a single business day.<sup>29</sup> He explains that timber industries used “dummy entries” to purchase land under individuals’ names and accrue thousands of acres instantly. Along with the proliferation of cattle ranching and agriculture, the rise of logging in the 1890s marks the first wave of the Upper Klamath’s industrial-scale commodification.

Logging quickly became the largest and most impactful industry in the region. In 1888, the Klamath River Improvement Company conducted a test log drive from the Oregon/California state line to the town of Klamathon (near present-day Hornbrook, California). 119 of 135 logs completed the journey.<sup>30</sup> This success began to solve the problem of reliable transportation through the river

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<sup>28</sup> (Hessig 1978), 15

<sup>29</sup> (Beckham 2006), 74

<sup>30</sup> (Beckham 2006), 134



from Copco Lake. Once a holding pen accumulated a substantial volume of logs, log drivers tended them downstream to the Klamathon mill. A splash dam upriver from the chute allowed crews to create a small reservoir and release it periodically to generate a surge and free stuck logs.<sup>34</sup> Even with infrastructural help, log drivers had a demanding and dangerous job. Breaking jams required expert use of dynamite and hooked poles. Drownings were not uncommon.<sup>35</sup> Although logging operations along the river were a smaller scale than the hydroelectric development that followed, it nevertheless required the land to be engineered for progress and efficiency. The increasing scale of physical manipulations of the landscape mirrored the increasing economic ambitions for the region. This attitude largely defined the character of the Upper Klamath throughout the 20<sup>th</sup> century. The growth of the logging industry also marks a shift away from economic, environmental, and social relationships defined by their immediate context and toward relationships defined by commodification, abstraction, and more distant beneficiaries.

The timber industry helped create the need for hydroelectric development. By 1915, logging employed 4,000 Siskiyou County residents and 50 regional sawmills produced 200 million annual boardfeet.<sup>36</sup> The Southern Pacific Railroad connected Sacramento to Portland in 1887, which intercepted an existing stagecoach route along the river from Thrall (now Hornbrook/I-5) to Keno, Oregon north of the canyon. The stage road allowed goods to reach the Klamath Basin from northern California rather than shipping them up the Columbia River to be driven south.<sup>37</sup> The route, named Topsy Road, was difficult to navigate and took four days to complete in 1871. Photographs and stories describe the dramatic terrain over Topsy Grade with thieves waiting to spring from behind the brush.<sup>38</sup> The route supported stage houses and rest stops, including Klamath Hot Springs.<sup>39</sup>

In 1901, the Pokegama Sugar Pine Company began to construct the Klamath Lakes Railroad from Thrall to Pokegama. The route largely followed the Klamath River shoreline and crossed the river at a point later submerged by Iron Gate Reservoir.<sup>40</sup> Several switchbacks enabled the train to climb the plateau near Ward's Canyon and continue to the Pokegama logging camp. Any

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<sup>34</sup> (Beckham 2006), 143

<sup>35</sup> (Beckham 2006), 147

<sup>36</sup> (AECOM Technical Services Inc. 2022), 49

<sup>37</sup> (Beckham 2006), 114

<sup>38</sup> (Beckham 2006), 120

<sup>39</sup> (Beckham 2006), 122

<sup>40</sup> (Boyle 1976), 19

passengers trying to continue to Keno or Klamath Falls had to travel the last interval by stagecoach. The railroad required 200,000 timber ties which were cut locally.<sup>41</sup>

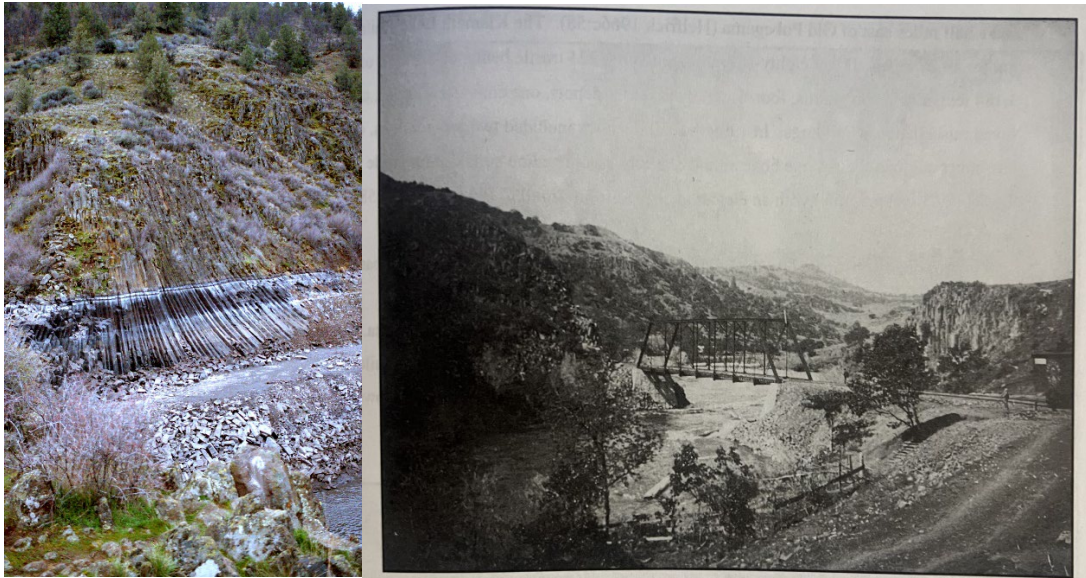


Figure 6: The track bench near the crossing is once again visible after the Iron Gate Dam breach, 2024 (author's image)

Figure 7: KLR bridge crossing the Klamath south of Ward's Canyon (Beckham)

### *Early hydroelectric development*

Although logging along the Upper Klamath declined after the Klamathon mill burned in 1902, the economic boom and population growth demanded a significant volume of power. A group of local businessmen purchased water rights and constructed a hydroelectric dam on Fall Creek near the KLR track in 1903.<sup>42</sup> The generator had a 550 KW capacity and served nearby Yreka, Hornbrook, and Montague.<sup>43</sup> For reference, Copco No. 1 Dam, built ten years later, had a 20,000 KW capacity at 70 per cent.<sup>44</sup> After the completion of the Fall Creek station, the group planned to dam the Klamath River but instead sold their holdings to the Siskiyou Electric Power and Light Company (SEP&L).

Fall Creek and Copco No. 1 are representative of national developments in hydroelectricity at the time of their construction. The production of hydroelectric power nationwide increased 464 per cent between 1902 and 1912 due to improvements in long-distance transmission from remote

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<sup>41</sup> (Beckham 2006), 125

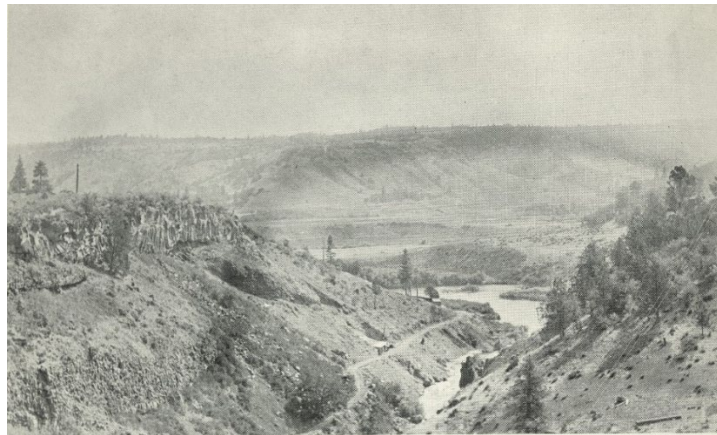
<sup>42</sup> (Boyle 1976)

<sup>43</sup> (Beckham 2006), 129

<sup>44</sup> (Boyle 1976), 14

generation sites.<sup>45</sup> Earlier projects in the Pacific Northwest relied on short distances between generators at naturally-occurring waterfalls and the communities they served, such as the region's first hydroelectric generator in Spokane, WA (1887) and Willamette Falls, OR (1889). Even with the proliferation of hydroelectric developments, however, site conditions and a lack of standardized methods made design and construction idiosyncratic. Copco No. 1, the first large dam on the Upper Klamath, was significant not only for its impact on the landscape but also for its unique design and construction method. Copco No. 1 serves two purposes for this study. The first is to exemplify the damaging and extreme transformations hydroelectricity brought to the Upper Klamath. The second is to recognize the Klamath dams as a significant, divisive historic resources that prompt questions about their interpretive value. This project provides a historic context statement and physical description Copco No. 1 to illustrate the infrastructure's significance as a design object and as an example of a typical interpretative document. The physical description has been moved to an appendix to leave the paper's narrative flow uninterrupted.

#### *Copco No. 1 Development*



*Figure 8: Looking upstream toward Ward's Ranch from the dam site before construction in 1911 (Boyle)*

A 1910 survey by SEP&L, later California-Oregon Power Co. (Copco), created the “layout of a triangulation system, bench marks, level lines and contours sufficient to prepare maps which could be used for the purchase of lands from which the volumes of stored water at different elevations could be computed.”<sup>46</sup> John C. Boyle, a young field surveyor with a civil engineering degree, helped determine these calculations.<sup>47</sup> Boyle would spend his career overseeing the success and

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<sup>45</sup> (Hirt 2012), 54, 27

<sup>46</sup> (Boyle 1976), 8

<sup>47</sup> (Boyle 1976), 58



expansion of Copco's projects, eventually retiring as the Vice President of Pacific Power and Light in 1962. His written reflections published a decade after retirement recall the 1910 survey with a mater-of-fact attitude:

*The river bottomlands were covered with beautiful farms used mostly for cattle raising. The homes and buildings were old but generally well kept.*

*The river meandered throughout the area, slowly following and deep until it reached the canyon, where it became very rapid.*

*The soil was river silt, some subirrigated and some irrigated from numerous springs, dip wheels and inflow creeks.*

*It would be necessary if a dam was built at the head of Ward's Canyon to flood practically all of those good farmlands.*

*The people who lived on their farms were very reluctant to sell even though the prices offered were somewhat high, but they realized that power development was progress and use of electricity was rapidly becoming a public necessity.<sup>48</sup>*

Boyle's description of the landscape's beauty is chilling with hindsight of the environmental destruction the dams brought. He later undermines his own claim that ranch owners understood the need for progress when he describes the acquisition of Ward Ranch, the closest property upriver to the Copco No. 1 site:

*Kitty Ward, a full-blood Indian, lived in a tall log cabin which she and her white husband Tim built for a home. It was beautifully located on the lower end of the proposed reservoir beside flowing springs ample to irrigate some of the lands.*

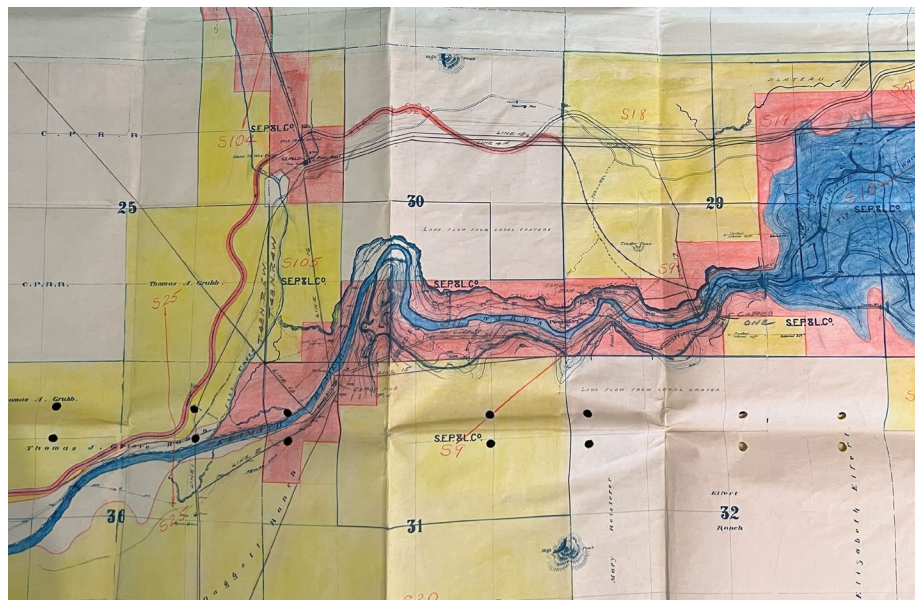
*The cabin was below the flow line so when time came to fill the reservoir, Kitty was told it was necessary for her to move. She certainly knew how to put the white man in his place. Between sobs and tears, she refused again and again to leave her home saying 'I no move, let water come, I die here.' Tim had been dead for several years, but Andy*

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<sup>48</sup> (Boyle 1976), 8

*Marlow, as a ranch foreman and keeper of her wampum cooperated in getting Kitty to visit Hornbrook, a visit from which she never returned.*<sup>49</sup>

The anecdote illustrates the aggression of industrial economic interests and the disenfranchisement of women, indigenous people, and smaller landowners. Kitty Ward's story offers another example of how power structures violently reshaped the land, albeit more rapidly than previous transformations. There is a clear progression of landscape constructions from the early pioneers who overwrote Shasta settlements to the logging interests who commodified the surrounding forests to the hydroelectric companies who altered the river instantaneously with titanic obstructions. The Upper Klamath follows the general trends of westward expansion, but the details describe a particular set of frictions among social, cultural, and economic interests.



*Figure 9: Site map of Ward's Canyon showing the affected area of Copco 1. The location of the dam is penciled in toward the right, just below the reservoir outline (JC Boyle Collection at SOHS)*

The Boyle survey concluded the best initial location for the dam was at the head of Ward's Canyon where the river rapidly narrowed immediately west of the fertile bottomlands Boyle described.<sup>50</sup> Later, engineers moved the dam site further downstream to a narrower portion of the canyon where the basalt walls could support extensive abutments. The canyon walls were not parallel, however, which required the dam to arc along a 356-foot radius so the structure met each

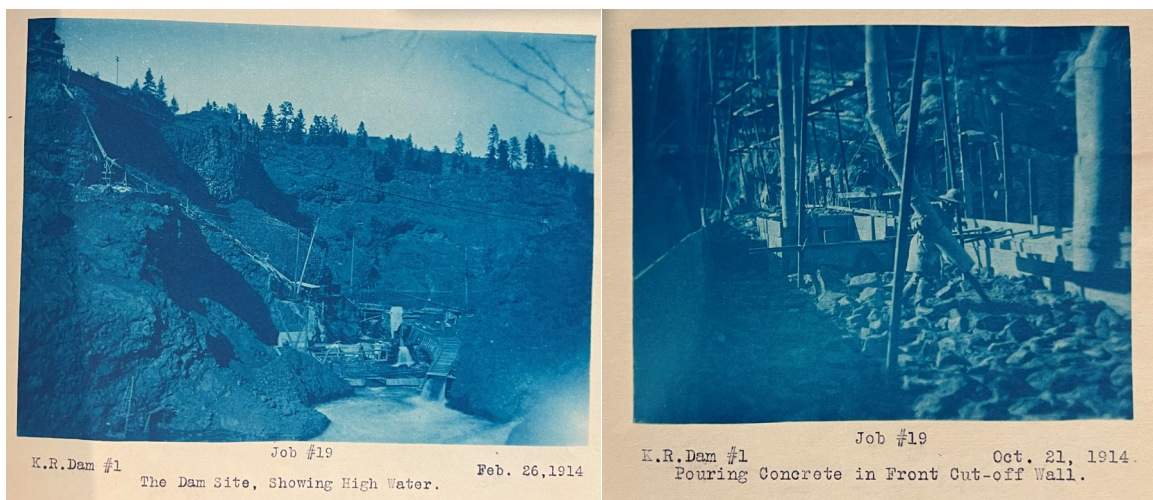
<sup>49</sup> (Boyle 1976), 10

<sup>50</sup> (Boyle 1976), 10

wall at a perpendicular angle.<sup>51</sup> The finished dam would be 130 feet tall, which was still well below the canyon edge. This required the adjacent hillside to be regraded and benched for construction access.<sup>52</sup> Boyle eventually managed the project and prominent engineer Hermann Schussler designed the dam.

### *Construction and Relationship to Land*

Construction started in the fall of 1911. Boyle wrote detailed progress reports organized by individual site components and by chronological weekly updates. These reports were later compiled into bi-annual volumes. In the report for 1912-1913 under the entry for “Job No. 5: Buildings,” Boyle writes, “About 300,000 board feet of lumber has been used and the total expenditure is has been \$13,037.50.”<sup>53</sup> Under “Job 19A: Diamond Drilling,” Boyle writes about the extensive excavation of the river bottom and abutting canyon walls required to prime the dam construction.<sup>54</sup> The final chronological updates from May 1913 describe progress on diverting the river flow through a bypass tunnel cut through the east canyon wall.<sup>55</sup>



*Figure 10: Pouring concrete for diversion dam (JC Boyle/SOHS)*

*Figure 11: Construction and conveyance system extending up hillside (JC Boyle/SOHS)*

Boyle’s weekly payroll report accounts for this slow progress within a two-year period. An initial 35-person workforce in June 1911 had increased to 118 people by August 1912, but then dropped to

<sup>51</sup> (Boyle 1976), 11

<sup>52</sup> (Boyle 1976), 11

<sup>53</sup> (California-Oregon Power Company and Boyle 1913), 28

<sup>54</sup> (California-Oregon Power Company and Boyle 1913), 171

<sup>55</sup> (California-Oregon Power Company and Boyle 1913), 233

10 names by May 1913.<sup>56</sup> Financial problems primarily caused the rapid and dramatic fluctuation. SEP&L was absorbed into the Copco at the end of 1911 with the intention of consolidating the reach and output of a single electric entity in the region.<sup>57</sup> Initial funding stumbles of Copco resulted in a skeleton crew that maintained the dam project site from 1913 to early 1916, at which point an infusion of cash from San Francisco investors allowed construction to continue with some modifications.<sup>58</sup> A reduced powerhouse contained only two of the original four generating units and two smaller penstocks replaced plans for one larger unit.<sup>59</sup>

Boyle and Schussler's reports include extensive drawings, photographs, and cyanotypes of the construction process. A cyanotype from February 1914 shows the river diverted through a makeshift wooden channel with an elaborate material conveyance system stretching up the hillside.<sup>60</sup> Another image from October of the same year depicts a worker guiding a large hose pouring concrete into a formwork filled with crushed boulders.<sup>61</sup> The images describe the hyperlocal character of Copco No. 1's construction. Although crews transported materials like cement and rebar via the KLRR line, workers harvested many of the raw materials from the site. This included cinder and rock from a hillside immediately west of the dam site. The images explain an interdependent relationship between the dam and the landscape. Whereas later hydroelectric projects might be prefabricated components imported to the site for assembly, Copco No. 1's process appears partially improvised, dependent on the precarious and immediate availability of surrounding resources. In a material sense, the dam is largely integrated with the landscape.

#### *Post-Construction and Immediate Effects*

The dam began producing electricity in the first half of 1918.<sup>62</sup> Boyle describes a toast among company officers at the guest house upriver: "Words of thanks and praise were expressed to the dozens, yes hundreds of men, who for nearly seven years had given...their pride of workmanship in the construction of that beautiful structure."<sup>63</sup> Copco Lake filled in only 20 days, submerging pre-

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<sup>56</sup> (California-Oregon Power Company and Boyle 1913), 200, 234

<sup>57</sup> (Boyle 1976), 13

<sup>58</sup> (Boyle 1976), 15

<sup>59</sup> (Boyle 1976), 15

<sup>60</sup> (California-Oregon Power Company and Boyle 1915), 30

<sup>61</sup> (California-Oregon Power Company and Boyle 1915), 56

<sup>62</sup> (Boyle 1976), 18

<sup>63</sup> (Boyle 1976), 14

contact sites and multi-generational ranches up to three miles upriver.<sup>64</sup> Importantly, the company did not construct a fish conveyance system past the dam. Boyle indicates Copco was amenable to designing one, but the dam's challenging height and topography instead resulted in an agreement to build a hatchery downstream at the request of the California Fish and Game Commission.<sup>65</sup> An article in Klamath Falls's *Evening Herald* from March 1918 describes the solution as a win-win for the affected parties and in particular for sportsmen who would continue to have access to "thousands of fish of different varieties... which will make this section [of the river] an angler's paradise."<sup>66</sup> Prior to hydroelectric development, up to 100,000 springtime Chinook salmon would migrate up the Klamath River. Contemporary studies determine there are now fewer than 1000 annually.<sup>67</sup> Copco continued to expand its presence on the Klamath in the following decades with subsequent hydroelectric projects. The company raised the dam's height between 1918-1922 and increased its production capacity.<sup>68</sup>

#### *Further Hydroelectric Development and Legacy*

During the construction of Copco No. 1, crews surveyed the area immediately downriver and constructed Copco No. 2 dam by 1925.<sup>69</sup> The second dam was modest in size but achieved production power via an extensive wooden penstock that tunneled under the horseshoe bend of Ward's Canyon to the powerhouse near the confluence of Fall Creek. The Copco No. 2 powerhouse is a boardform concrete structure with steel sash windows, giving it a more dignified presence than the metal siding of the Copco No. 1 powerhouse. The newer powerhouse marked the northern edge of Copco Village, which grew as a company town alongside the hydroelectric projects. Copco Village contained a schoolhouse and several residences, most of which are now demolished.

Copco constructed the JC Boyle (originally named Big Bend) and Iron Gate dams between 1958-1962. JC Boyle is a concrete dam that marks the northern boundary of the Upper Klamath Canyon and is the only Oregon dam included as part of the current removal project. Iron Gate lies at the southern border of the Upper Klamath a few miles upriver from the I-5 crossing. Volumetrically, it is the largest of the four dams but the least complex from a design perspective.

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<sup>64</sup> (Boyle 1976), 11

<sup>65</sup> (Boyle 1976), 21

<sup>66</sup> (*Evening Herald* 1918), 1

<sup>67</sup> (Carter and Kirk 2008), 6

<sup>68</sup> (Boyle 1976), 15

<sup>69</sup> (Boyle 1976), 16

Iron Gate Reservoir is larger than Copco Lake and JC Boyle Reservoir and flooded most of the remaining bottomlands downriver from Copco Village. Like Copco Lake, Iron Gate submerged sites of previous habitation and the KLRR track line. Notably, both JC Boyle and Iron Gate dams include fish conveyance systems. The conditions and period of their construction make them less noteworthy from a historic preservation standpoint, but their effect on the landscape is similar to that of Copco No. 1.

## **FRAMING AN INTERPRETATION**

### *Analyzing Current Approaches*

The previous section describes how successive groups constructed the landscape to realize a particular goal. The scale and effect of these manipulations are not equal in their scale or effect on the landscape, but together they serve to illustrate how the landscape was partially unnatural even before hydroelectricity. The successive narratives also outline a pattern of national development: the erasure of indigenous communities, the commoditization of natural resources to support growth, and our post-industrial environmental reckonings. While the details are specific to the Upper Klamath, the overall character exemplifies patterns of economic and geographic expansion in the United States.

To historicize is to recognize significance. Within preservation, historicization has predominantly recognized singular narratives interpreted through material remnants. The Upper Klamath has played a clear and crucial role in sustaining regional development in the past two centuries. Traces of the past constructions are still visible if scattered. Indigenous sites along the river bottomlands still contain tools, shells, and remains. A few historic ranches are relatively intact above the Copco Lake footprint, while submerged artifacts have reappeared during drawdown. The logging infrastructure is removed, but its paths are visible as earthen scars throughout the river canyon. The historicization of these remnants prompts a discussion of their significance and how to construct an appropriate interpretation.

Preservationists have developed methods to evaluate, document, and maintain cultural resources like the Upper Klamath. The analytical frameworks underpinning these workflows allow for a broad consideration of scales and types, including Traditional Cultural Properties (TCPs) and intangible resources. These frameworks are useful for establishing and categorizing resources' significance based on their use or physical characteristics. Applying preservation frameworks to

the Upper Klamath is a worthwhile exercise. Doing so helps determine how the landscape conveys its significance(s), whether resources may be eligible for the National Register of Historic Places (NRHP), how existing frameworks can help make sense of the Upper Klamath's complexity, and how the landscape may be a challenging fit for common preservation outcomes.

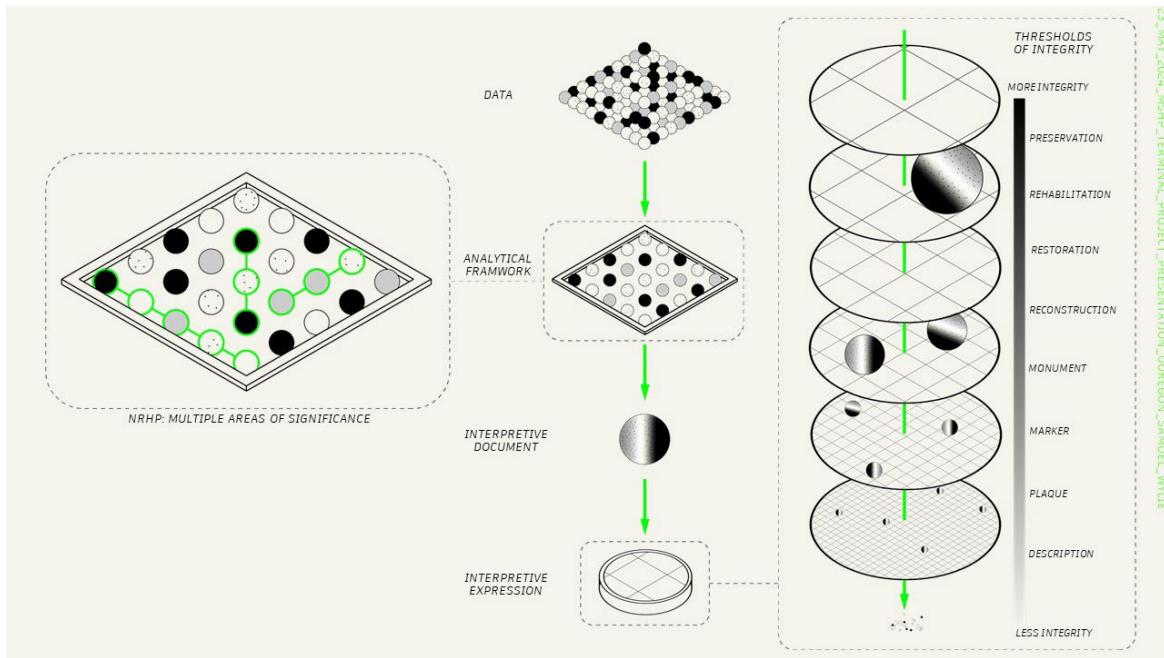


Figure 12: Author's process diagram of a typical preservation workflow in which data is interpreted through an analytical framework to produce a document. The potential outcomes listed to the right of the integrity "filter" are only meant to be descriptive and are not guaranteed outcomes. Rather, they suggest what outcomes might be easier to attain given a resource's retention of a certain amount of integrity.

The NRHP nomination process is an obvious starting point because of its clear evaluation procedure and foundational role in American preservation. The NRHP evaluates eligibility based on a combination of significance and integrity. While the threshold for eligibility is ultimately determined by federal agencies and validated by the State Historic Preservation Office (SHPO), the procedural analysis is standardized and supported by published guidelines.<sup>70</sup> To assess a resource's significance and integrity, preservationists categorize it into one of four "Criteria for Evaluation" and determine how many of seven "Aspects of Integrity" the resource retains. In addition to applying the Criteria for Evaluation, there are approximately 30 Areas of Significance that support the determination. When preservationists write a nomination, the Areas of Significance and Criterion/Criteria they choose becomes the comparative metric against which

<sup>70</sup> (U.S. National Park Service 1995)

federal agencies, the SHPO, and, if necessary, the Keeper of the Register, judges their respective assessment. For example, the narrative of significance for Copco No. 1 nominated under Criterion C (Design/Construction) in the Area of Engineering needs to demonstrate how the dam's design is innovative or singular from an engineering standpoint. One could assess and/or nominate the dam under multiple Criteria and Areas of Significance, but doing so increases their burden to demonstrate the resource's significance for each category. To be listed, the National Register requires the resource to exhibit a satisfactory degree of integrity that supports its narrative of significance.

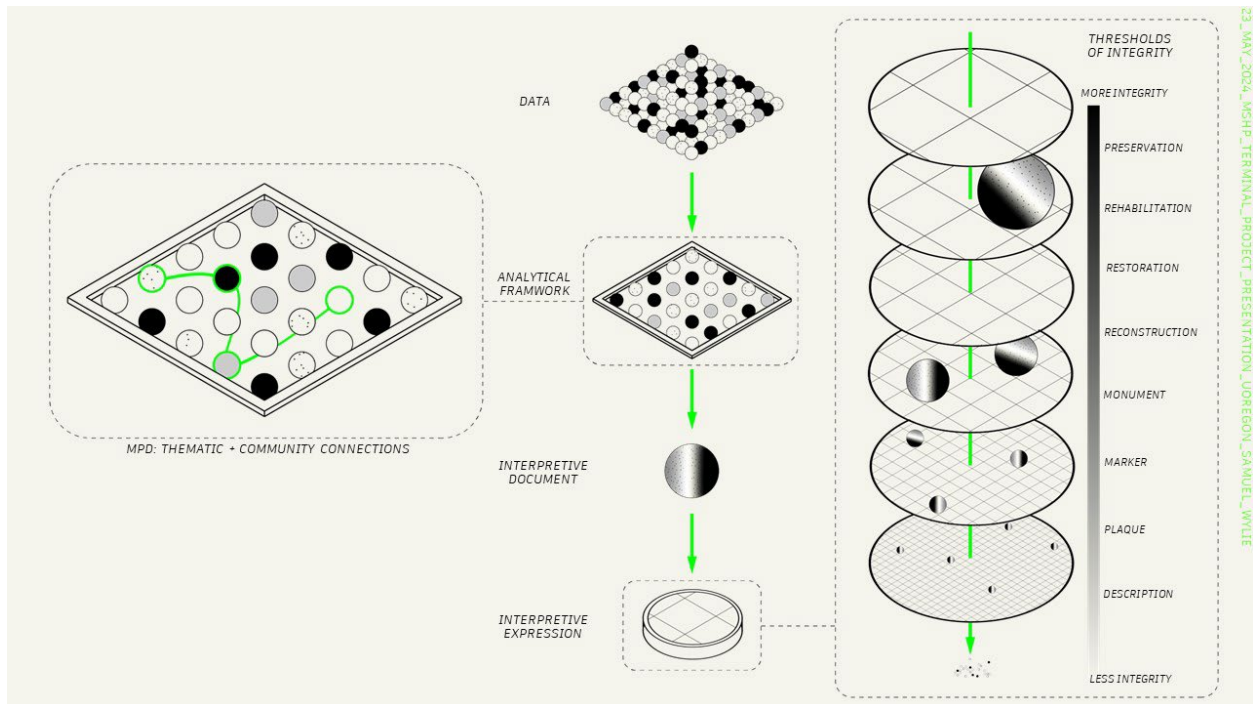


Figure 13: MPD framework illustration. Like the suggested outcomes, the characterizations of frameworks are descriptive, not prescriptive (author's diagram)

An initial question is how to categorize the Upper Klamath based on the scale and dispersion of its historic resources. To capture the overarching character of the landscape, a Multiple Property Document (MPD) nomination would be helpful. An MPD allows resources to be grouped by one or more thematic arguments that represent the confluence of a time period, context, and/or geography. They can also include properties that would not be individually eligible.<sup>71</sup> Like an individual NRHP nomination, MPDs do not guarantee a particular outcome or spatialized interpretive expression. Rather, it is an analytical framework for future determinations and usually

<sup>71</sup> (US National Park Service 1999), 6



includes an inventory of thematically connected properties. Any properties within an MPD which are nominated for the National Register would still need to adhere to the NRHP's "Categories of Historic Properties:" Building, Structure, Object, Site, or District.<sup>72</sup> A district nomination would capture more resources at once, e.g. Copco No. 2 and Copco Village, which includes a historic schoolhouse, powerhouse, substation, and conveyance infrastructure. The overlapping and competing uses of the landscape complicate its categorization as a single entity, however. Preservationists could nominate single resources using a building or structure categorization, but doing so would fail to describe the area's resource networks and relationships. An MPD would provide the historic context necessary to argue for a particular resource's significance, but the National Register categories still prevent a holistic consideration of the landscape.

Since multiple Criteria for Evaluation can be applied to a single National Register nomination, the requirements for establishing significance are relatively inclusive. Hydroelectric and logging infrastructure could qualify under Criterion A (Event/Pattern of Events) in the area of Commerce, and ranches would qualify in the area of Exploration/Settlement. Copco Nos. 1 and 2 could qualify under Criterion C (Design/Construction) in the area of Engineering. Pre-contact settlements qualify under Criterion D (Information Potential) in the area of Historic Archeology—Aboriginal. Although the narrative burden of proving their collective significances in the same nomination would be enormous, the National Register framework could accommodate it.

Integrity requirements bring eligibility discussions to a halt. The National Register furnishes a list of seven Aspects of Integrity to consider: location, design, setting, materials, workmanship, feeling, and association.<sup>73</sup> A resource does not need to contain a critical number of aspects, but the resource's integrity must use the aspects to defend its significance. In other words, integrity must support the characteristics described in the narrative of significance. This devastates the Upper Klamath's eligibility for the National Register. Besides Copco No. 2's powerhouse, little hydroelectric infrastructure will remain after the Klamath River Renewal Project is complete. The logging infrastructure has already been removed and submerged, as have most of the ranches within the reservoirs' footprint. Pre-contact indigenous sites were often disturbed or buried by early pioneer settlements who wanted to occupy the same fertile land close to the river's edge. These areas have been flooded and covered in sediment for up to a century and will again experience

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<sup>72</sup> (U.S. National Park Service 1995, 1), 4

<sup>73</sup> (U.S. National Park Service 1995), 44

disturbance as teams remove hydroelectric material and revegetate the shoreline. The National Register guidance specifically determines that “a site that has been looted or otherwise disturbed to the extent that the remaining cultural materials have lost their important depositional context (horizontal or vertical location of deposits) is not eligible.”<sup>74</sup> The likelihood is low that artifacts subjected to subsequent settlements, flooding, and sediment accumulation would not become displaced. Applying the aspects conservatively, the hydroelectric infrastructure does not maintain its integrity of location, design, materials, workmanship, or association, or feeling. As revegetation takes hold, its setting would also be compromised. The same is potentially true for the logging network and some pre-contact settlements, although indigenous sites more frequently retain sufficient integrity via association and feeling. The conclusion of the assessment is that inclusion on the national register is not a widely applicable solution for the Upper Klamath’s frictional histories, although the NRHP and MDP frameworks still function effectively as documentation processes.

This conclusion questions the outcomes of NRHP eligibility and the goals of preservationists seeking to interpret historic resources. The National Register is an honorific program that itself does not offer protection, but state and municipal governments or federal regulations like Section 106 and 110 can enforce regulatory protections for listed resources. The compromised integrity of much of the Upper Klamath may exclude it from Register eligibility. As an interpretive process, however, the National Register offers an opportunity for preservationists to translate material conditions into a cohesive story. The implied goal of the framework is to physically maintain those conditions in perpetuity, thereby allowing the resource to embody its own narrative, or “speak for itself.” Of course, many nominated and listed buildings are altered or demolished. When that happens, the conversation usually focuses on the lack of legal protection granted to resources by the NRHP, but it also highlights the lack of alternative interpretive expressions when integrity is severely compromised. Expressions in this case are defined by the spatialized outcome of an interpretation—how the public interacts with the resource once it is documented and interpreted using a preservation framework. There are myriad reasons to remove the dams on the Upper Klamath, but the National Register is unable to bridge the divide between a documentary interpretation meant for professionals and a spatial expression meant for the public.

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<sup>74</sup> (U.S. National Park Service 1995), 23

National Register nominations are generally written by professionals for their peers and rarely circulate in the public consciousness.

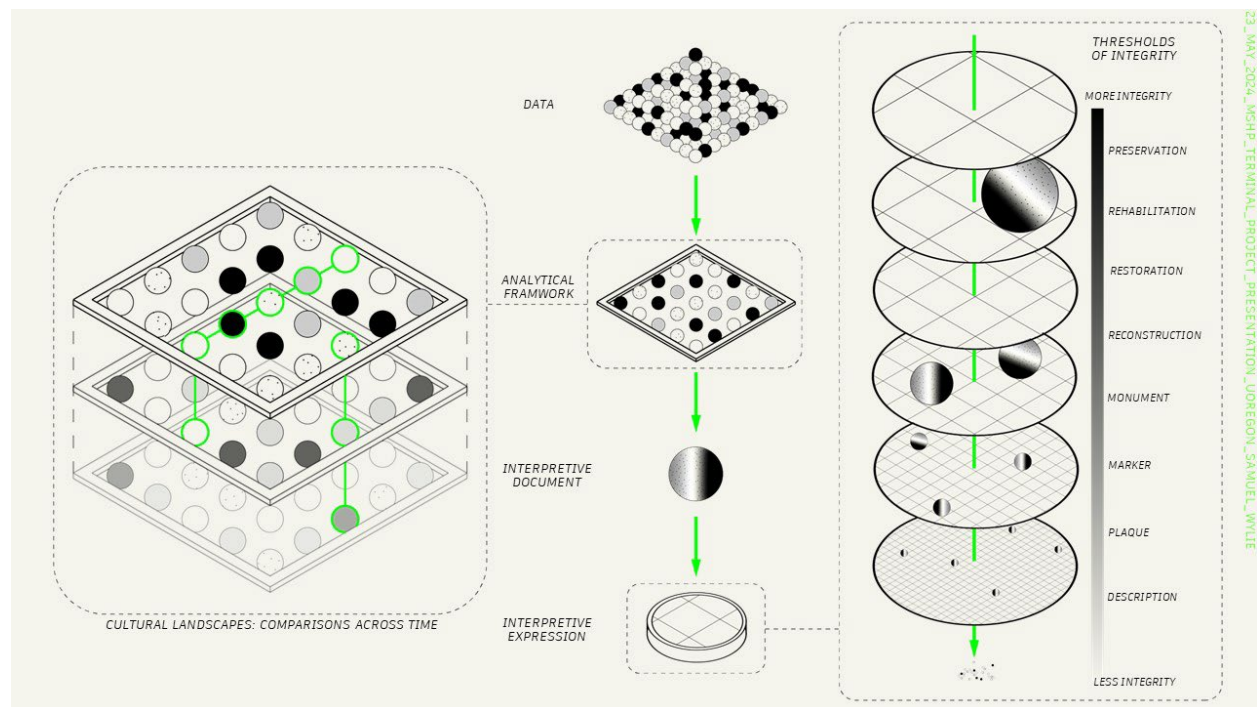


Figure 14: Cultural landscape framework (author's drawing)

Even so, the categorization and narrative framework of the National Register is valuable to begin making sense of the Upper Klamath. The National Park Service (NPS) has developed additional analytical frameworks that can articulate the scale and relationships of resources. Like the NRHP, these frameworks effectively describe the landscape but fail to translate a written interpretation into a spatialized expression where aspects of integrity are lacking. This is particularly true for aspects like materials, workmanship, and design that embody physical characteristics. For example, the NPS's Brief on Cultural Landscapes describes how preservationists can evaluate changes to the land by overlaying periodic plans atop current conditions to discover discrepancies.<sup>75</sup> The framework recognizes landscape as an evolving entity that might be best described through a multidisciplinary analysis, e.g., mapping, oral history, and geologic documentation. The Cultural Landscape framework is helpful to describe the successive and overlapping uses of the Upper Klamath, but its post-documentation interpretive strategy still suggests the maintenance of a material condition from a particular moment in time.

<sup>75</sup> (Birnbaum 1994), 10

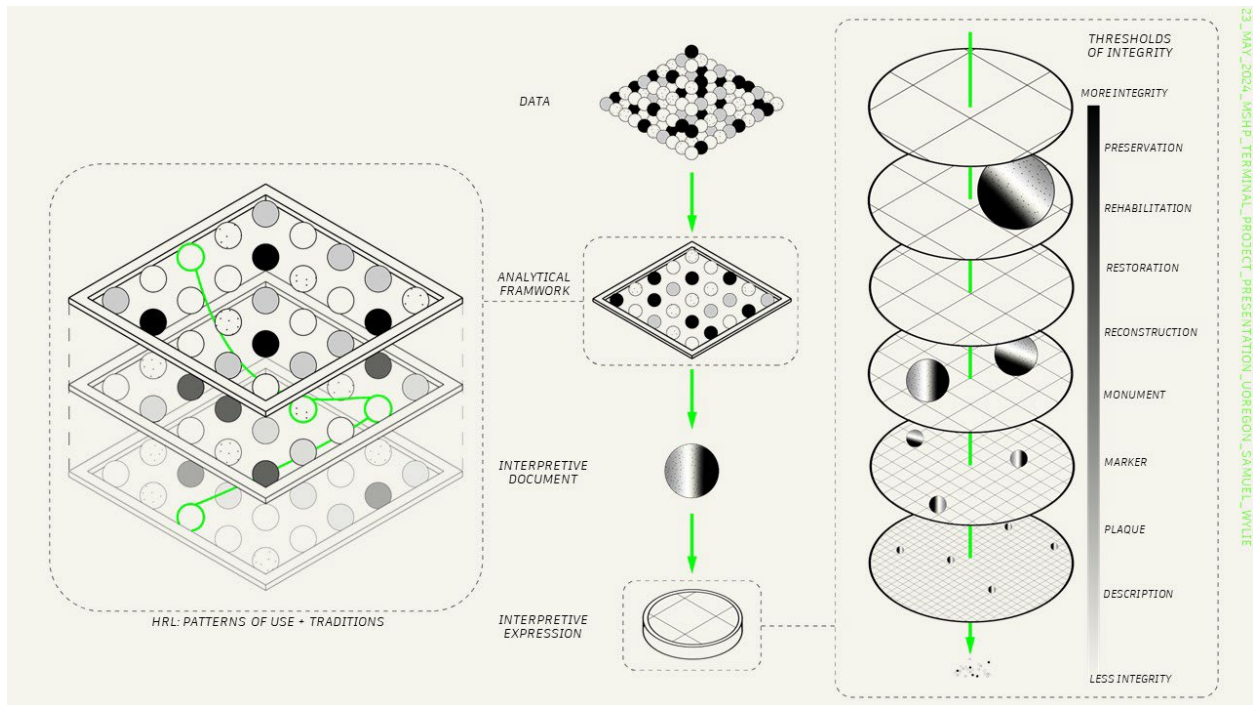


Figure 15: Historic Rural Landscape framework (author's diagram)

The Historic Rural Landscapes Bulletin similarly recognizes resource networks that generate a cohesive cultural narrative. The framework defines a Historic Rural Landscape as “a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features.”<sup>76</sup> It later qualifies its landscape features as needing to have experienced “little modification.” The Bulletin proposes classification based on 11 landscape characteristics that include four processes: land use and activities, patterns of spatial organization, response to the natural environment, and cultural traditions. The remaining characteristics are physical: circulation networks, boundary demarcations, vegetation related to land use, buildings/structures/objects, clusters, archeological sites, small-scale interpretations. The framework also states the importance of social data like oral histories to provide insight into use and changes over time.<sup>77</sup> This type of analysis allows for a holistic description of the Upper Klamath as a single entity containing overlaid and intersecting features. Like the Cultural Landscapes framework, however,

<sup>76</sup> (US National Park Service and United States National Park Service Interagency Resources Division 1999), 2

<sup>77</sup> (US National Park Service and United States National Park Service Interagency Resources Division 1999), 9

the Historic Rural Landscapes framework assumes resources will qualify for the National Register or preservation planning.

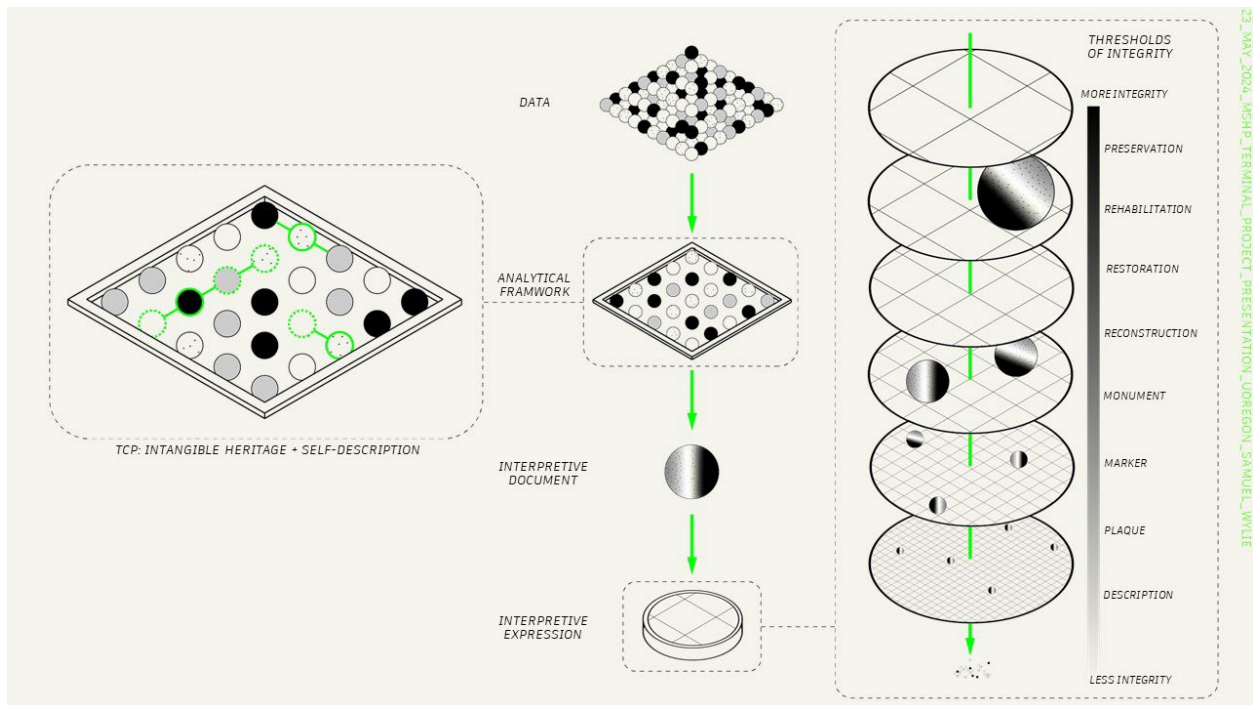


Figure 16: Traditional Cultural Properties framework (author's drawing)

Traditional Cultural Properties (TCP) offer perhaps the most flexible toolkit. Although it still supports eligibility determinations for the National Register, the TCP framework recognizes “properties and their intangible attributes of significance must be considered together.”<sup>78</sup> TCPs thus allow for the inclusion of intangible resources and give special attention to sites that have been disturbed but still retain cultural significance. Typically, this framework is applied to indigenous sites with ceremonial or archeological value. Even more than previous frameworks, TCP guidance makes clear that oral and social history is central to understanding the “history and culture of such groups as groups understand themselves.”<sup>79</sup> Like HRLs, social input is critical.

In summary, pieces of these frameworks offer holistic narrative approaches for describing places like the Upper Klamath that reflect its complex history. Their recognition of intangible resources, networks, and thematic collections is crucial for conveying the overwritten and temporal character of the river’s successive uses. Furthermore, recent uses of MPD and TCP frameworks

<sup>78</sup> (Parker and King 1992), 3

<sup>79</sup> (Parker and King 1992), 7

have loosened the definition of integrity, particularly aspects like feeling and association, to include resources with social significance even when little material evidence remains. These types of approaches could be affective for interpreting indigenous settlements and lost resources that have been buried under sediment for the last century. Even so, the frameworks do not offer clear solutions for spatializing narratives when change is imminent or when integrity is severely compromised. As a result, the Upper Klamath's historic resources are at risk of surviving only as a written report circulated among professionals.

### *The Need for a Public Interpretation*

The need for interpretation is a matter of public good. The National Historic Preservation Act of 1966 (NHPA) advocated for the protection of historic buildings as a critical method for understanding our national heritage. It recognized that the built environment is often the most accessible evidence for connecting with our collective past. The tools created by the NHPA are limited and imperfect, however, and it is not difficult to find examples of its failure to protect resources. The framework has also often been employed historically to create a conforming, singular understanding of national heritage that misses an opportunity for more pluralistic expressions. Examining some of these failures offers insight into which types of evidence might inform a public interpretation for the Upper Klamath.



*Figure 17: Log flume descending Larch Mountain near Bridal Veil (Oregon State Parks)*

Bridal Veil, Oregon has economic and social parallels to the communities on the Upper Klamath. Bridal Veil was a logging town on the Columbia River approximately 30 miles east of Portland. Lumber interests developed it as a company town in the 1880s when the gorge was only accessible by boat and soon after by rail.<sup>80</sup> Bridal Veil's logging infrastructure extended from Larch Mountain above the gorge to a mill on the river's edge with flumes and conveyance tracks extending up the cliffside. The industry's relationship to the landscape was strained from the beginning, with several equipment-caused fires and overharvested stands leading to periodic economic busts and changes in ownership. The town began its final decline once road infrastructure made its riverside location less critical for transit and timber stands suffered from depletion. The Kraft company purchased the mill used the remaining stands to manufacture cardboard boxes until 1988, by which time the town was largely vacant.<sup>81</sup>

David Benac describes the social and political battle following the collapse of the town's industry. Monied conservation groups sought to demolish the blighted town, thereby "restoring" the natural landscape of the gorge. Families and descendants of Bridal Veil residents insisted the town had personal and cultural meaning that extended beyond the material condition of its buildings.<sup>82</sup> The parties attempted to lodge their arguments within preservation frameworks by conducting a survey and inventory of remaining resources. As Benac explains, the resulting determination of significance relied on architectural merit rather than other cultural factors, thereby forcing the conversation into an evaluation of architectural integrity while ignoring the social significance of Bridal Veil.<sup>83</sup> All remaining buildings except for the post office were demolished, although one former resident salvaged floorboards from their childhood home for reuse.<sup>84</sup> The reliance on architectural and material integrity to convey significance failed to recognize the real cultural value of the town. Benac concludes:

*Industrial heritage and its attendant landscapes often unearth uncomfortable events and fail the test of aesthetics, and so remain difficult to commemorate. The failure to recognize the complexities of human interactions with landscapes produces an impoverished record left adrift from historical reality. The rarity of*

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<sup>80</sup> (Benac 2015), 450

<sup>81</sup> (Benac 2015), 457

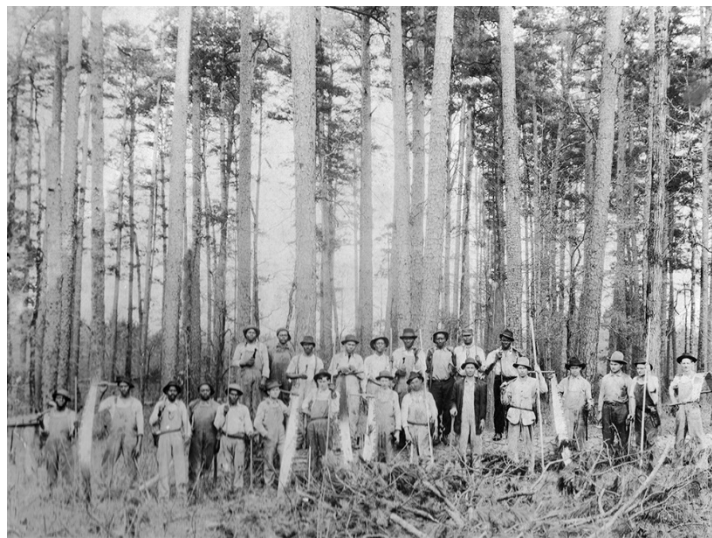
<sup>82</sup> (Benac 2015), 465

<sup>83</sup> (Benac 2015), 471

<sup>84</sup> (Benac 2015), 470

*sites engaging such a nuanced interpretation speaks loudly about cultural attitudes toward heritage, while rendering workers voiceless and the historical landscape incomplete.*<sup>85</sup>

The socio-economic position of Bridal Veil's remaining residents and the political momentum of conservation issues certainly influenced the outcome. In fact, power structures have always influenced the interpretation of cultural resources. The cultural memory of the NHPA's inception usually highlights the loss of New York's Penn Station and Jane Jacob's grassroots fight against the Lower Manhattan Expressway. In the same period, similar urban renewal projects displaced urban Black and Latino communities nationwide. Little if any documentation exists for those lost resources, although recent efforts have attempted to establish community archives and master plans to recognize the historic injustice.<sup>86</sup> Likewise, historic sites with predominantly colonial or white-centric associations have made efforts to reinterpret resources from historically-marginalized perspectives.<sup>87</sup>



*Figure 18: Maxville Loggers (Maxville Heritage Interpretive Center)*

There are opportunities to create public interpretations even when historic resources lack material integrity. Maxville, a logging town in northeast Oregon, boomed in the 1920s and was notable for its cohabitation of black and white laborers. Although discriminatory practices forced black residents to use segregated facilities in town, timber production was integrated. The town

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<sup>85</sup> (Benac 2015), 472

<sup>86</sup> (Albina Vision Trust, n.d.)

<sup>87</sup> (Whitney Plantation, n.d.)



declined during The Depression and most structures had collapsed by mid-century. Little built evidence of the community remains.<sup>88</sup> In 2008, Maxville descendants began an interpretive center in the nearby town of Joseph and collected archival materials, personal possessions, and family histories. The center now sponsors community events and advocates for further study of the Maxville site. Although most of the interpretation occurs away from the referent landscape, its story offers a potential model for sites like Copco Village.

A chorus of voices have recently argued the dearth of documented resources in marginalized communities is reason enough to retool preservation's interpretive methods. In her essay "The Need for Interpretation," Donna Graves advocates for interpretation as a "fourth leg" of a stool that currently "rel[ies] on... identification, documentation, and registration."<sup>89</sup> Graves references resources with uncannily similar characteristics to the Upper Klamath when she later argues:

*Interpretation can acknowledge the multiple layers of history embedded in most sites, articulate multiple claims to space, and allow us to better understand and confront difficult aspects of the past that still shape our social landscape. Multilayered interpretation is important... for supporting a more engaged relationship with the nation's increasingly diverse population. Interpretation can provide a route to the holy grail of 'relevance.'*<sup>90</sup>

Graves ties the success of preservation frameworks to their impact on the public consciousness ("relevance") and suggests multimedia representations are an underutilized tool to convey our messier and erased histories. Like Graves, Jamie Kalven and Steven Lubar call for changes to interpretive approaches to highlight lost resources and buried stories. Kalven explains, "If... preservation can be understood as historical inquiry by way of the built environment, then such inquiry also needs to attend to the ways places are informed by absences—by that which has been rendered invisible yet continues to exert a strong gravitational field."<sup>91</sup> Lubar focuses on latent narratives of demolished resources, declaring, "the built environment is an archive, shaped like all archives by time and power... Indeed, it may be even more important to tell stories of those

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<sup>88</sup> (Maxville Heritage Interpretive Center, n.d.)

<sup>89</sup> (Graves 2016), 94

<sup>90</sup> (Graves 2016), 95

<sup>91</sup> (Lubar 2016), 155

buildings that, demolished because they were no longer of value, speak directly to the change over time.”<sup>92</sup> Both Lubar and Kalven advocate for collecting oral history and social data to re-establish this type of archival value.

Preservationists have responded to such calls for change by adopting more flexible definitions for eligibility. Recent uses of the MPD framework describe collections of community resources with an invitation to nominate included properties in the future. A notable example is the *African American resources in Portland, Oregon, from 1851 to 1973* prepared by a coalition of city employees, preservationists, and community members. The MPD included several properties with compromised integrity that may not have been individually eligible but received a renewed sense of public importance considering their connection to the development of Portland’s black communities. The community then nominated and listed one of these properties in tandem with the MPD, using the building’s role within the larger narrative of development as justification for its significance.<sup>93</sup> This open-ended use of existing tools is a departure from prescriptive or reductive narratives found in many older National Register nominations. As previously mentioned, recent TCP analyses have taken a liberal approach to integrity, particularly “feeling” and “association,” as a way to recognize the social significance of sites that retain little material evidence. These changes are important and necessary for preservation to remain relevant as a profession, but they place pressure on the front end of the interpretation process (documentation) without addressing other potential creative solutions (spatial expressions).

Collectively, these essays and precedents underscore the crucial role of oral histories and community input for generating more inclusive interpretations. Considering these perspectives in relation to the Upper Klamath, the memories of those familiar with the landscape are critical data for capturing its lost and disappearing features. Furthermore, allowing a variety of memories to shape an interpretation is compatible with the nature of the Upper Klamath itself; its stories should reflect the frictions and competing uses that define its geographic character.

## **BLOWING UP THE COMMENT SECTION**

Time and access constraints prevented this project from conducting interviews with community members. The memories of those who live, play, and work along the Upper Klamath are

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<sup>92</sup> (Lubar 2016), 155

<sup>93</sup> (Galbraith et al. 2020)

invaluable for a comprehensive interpretation. Acknowledging this deficit, this project instead analyzes public commentary submitted to FERC during its decommissioning process. The comments represent an atypical data source for preservation documentation but one that still provides access to perspectives missing from archival research and observational fieldwork. The project considers the comments in terms of how they might spatialize memory, reveal attitudes toward the landscape, and describe the Upper Klamath at a moment just before its radical transformation. In the same way inclusion can illuminate overlooked histories, holding a variety of opinions in focus can make cultural memory resistant to reductive or hegemonic narratives.

As part of PacifiCorp's decision to surrender their operating licenses, FERC required a 45-day public commentary period prior to approval. Any member of the public or organization could submit a comment via an online portal. FERC processed the comments and made them publicly available on their online E-Library. This public feedback is helpful to understand individual and collective arguments for or against the dams' removal. The data has three obvious biases. The first is toward those who have financial, cultural, or material incentives to want a particular outcome. These types of comments are useful for identifying personal narratives, small-scale effects (e.g., the view from a window), or large-scale economic interests (e.g., the tourism industry). The second bias is toward parties with extreme views who feel compelled to submit a comment. These comments underscore the divisive nature of infrastructure projects with environmental and cultural implications at both local and national levels. The third type of bias is toward those who co-opted form letters written by another individual or organization. Form letters constituted the majority of all submitted comments, which is reflective of the digital capacity to exchange copied-and-pasted ideas. The volume of template comments fueled tension between individuals personally affected by the dams' removal and those who experienced it at a distance through media.

### *Methodology*

The comment period took place between February 25<sup>th</sup> and April 18<sup>th</sup>, 2022. Several comments mention technical difficulties and barriers to submission, including a letter from an Oregon congressman requesting an extension due to constituents' inability to submit successfully.<sup>94</sup> To account for any delays in FERC's processing, all comments through the end of April 2022 were included as part of this project's analysis. The project attempts to capture three

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<sup>94</sup> (LaMalfa 2022)

categories of data. The first is basic demographic information: the author's name, their state of residence, and their city/town of residence. The second is the author's general affiliation: individual or organizational representative, whether they are for or against the surrender of PacificCorp's licenses, and any personal connection they may have to the dams. The final data category is the author's specific reasoning for their position.

To extract this data, each comment was reviewed and parsed out into a spreadsheet. The first two categories of data could be objectively recorded, but the third category required a degree of inference. The spreadsheet included three fields for "primary reason," "secondary reason," and "tertiary reason" for the author's position. In general, comment authors explicitly expressed their reasons for supporting or opposing the dam's removal and each was recorded in the order the author wrote them. If the author's reasoning was implied or written in an order inconsistent with the emphasis of their comment, the hierarchy was determined at the researcher's discretion. For example, a comment supporting the dams' removal that describes humans' general ethical duty to care for the environment would have the primary reason recorded as "environment." A comment that begins by lamenting the loss of recreational sites along the reservoirs but spends most of its length emphasizing regional wildfire risks was recorded with "wildfire" as the primary reason and "recreation" as a secondary reason. Only the three initial or most emphasized reasons were recorded; additional reasons were omitted.

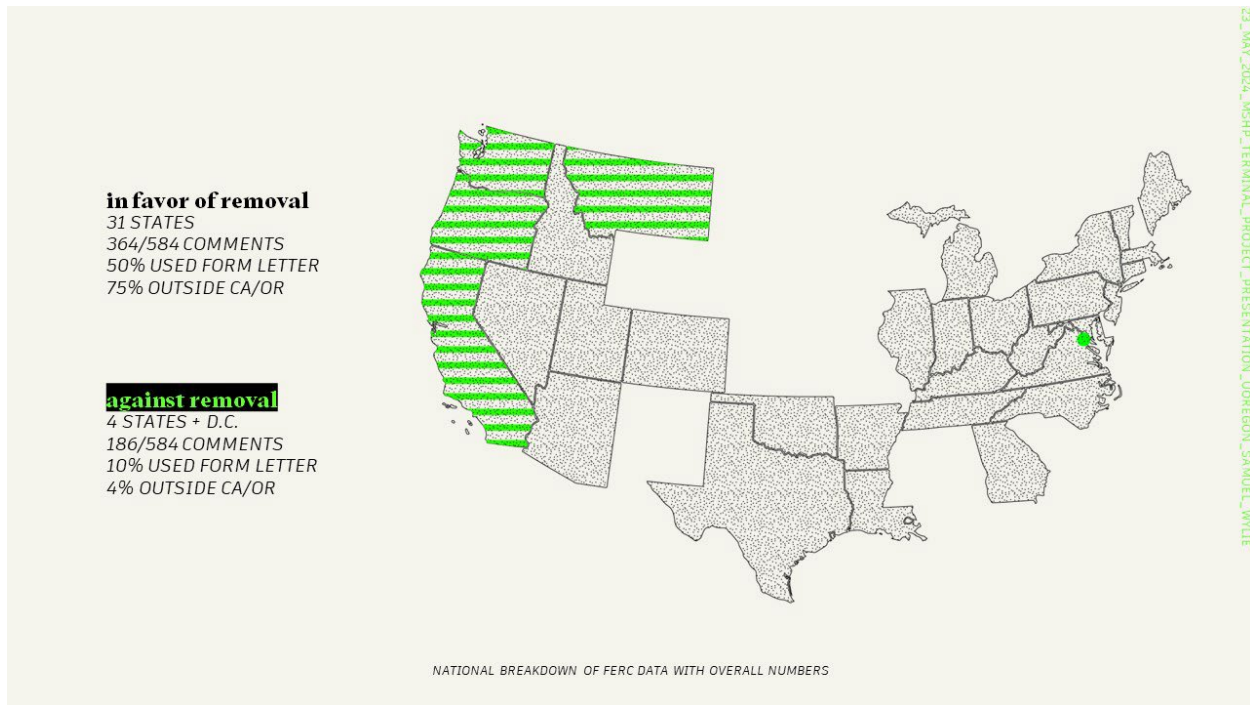


Figure 19: National distribution of FERC comment states of origin (author's diagram)

### General Analysis

The project recorded 584 comments with processing dates ranging from February 25, 2022 to April 27, 2022. 62 per cent (364) of comments expressed support for the surrender of the licenses and 31 per cent (186) opposed the surrender. 5 per cent (31) did not express a position. Governmental organizations generally submitted neutral comments to critique data presented in FERC's draft environmental analysis report. Individuals submitted an overwhelming majority of comments (519, or 89 per cent). The volume of individual comments is misleading considering the volume of form letter submissions. 201 submissions were flagged as form letters with another 20 flagged as modifications to form letters, for a combined 38 per cent of total comment submissions. The most widely-used form letter supported the surrender and argued that dam removal would restore salmon migration, improve the health of the river, and improve human health by extension. The letter appears to have originated on a webpage hosted by Reconnect Klamath, a consortium of environmental advocates, sport fishing groups, commercial fishing associations, and indigenous tribes. The letter was then advertised on partnered and sympathetic websites like Trout Unlimited.<sup>95</sup>

<sup>95</sup> ("A Watershed Moment for The Klamath - Trout Unlimited" 2022)

The volume of form letters begins to explain some of the overall demographic data. Although residents in California and Oregon submitted most comments (159 and 213, respectively), comments originated from dozens of states. There is a large discrepancy between the number of states with comments that supported the surrender (31) versus the number of states with comments opposing surrender (5). Excluding comments from California and Oregon, form letters constitute 141 of 187 pro-surrender comments, or 75 per cent. By contrast, only one form letter opposing surrender was identified from outside of Oregon or California (of 7 total comments, or 14 per cent).

This comparison is relevant for what it implies about the relationship between comment authors and the Upper Klamath as a physical place. By separating California and Oregon residents who may live on the river or within its watershed, the debate over the river's future has different implications. This is explicitly evident in many comments from Southern Oregon residents who view the decommissioning process as a bad-faith political scheme. A Medford, Oregon resident describes the FERC commentary on April 18, 2022 as:

*More out of state responses than local... Abhorrent! [Southern Oregon and Northern California residents] are the only residents whose lives and livelihoods will be impacted... Of those out-of-state submissions, most were copies of a template, including word-for-word copies from Wisconsin, Michigan, and New York. Really? What would they know?... They should be culled and discarded.<sup>96</sup>*

Regardless of their position on the license surrender, the resident correctly assesses the character of out-of-state submissions. This sentiment is echoed by other regional residents, most of whom reside in the Medford area:

*The powerful forces from Washington, D.C., Sacramento, California, Salem, Oregon, and from some Indian tribes appear to have the clout to overcome any opposition that the local residents, who are most deeply affected, can supply. The majority of us who actually live here in the Oregon and California counties where the dams are located do not want the removal of the dams.<sup>97</sup>*

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<sup>96</sup> (Lee 2022)

<sup>97</sup> (Shrader 2022)

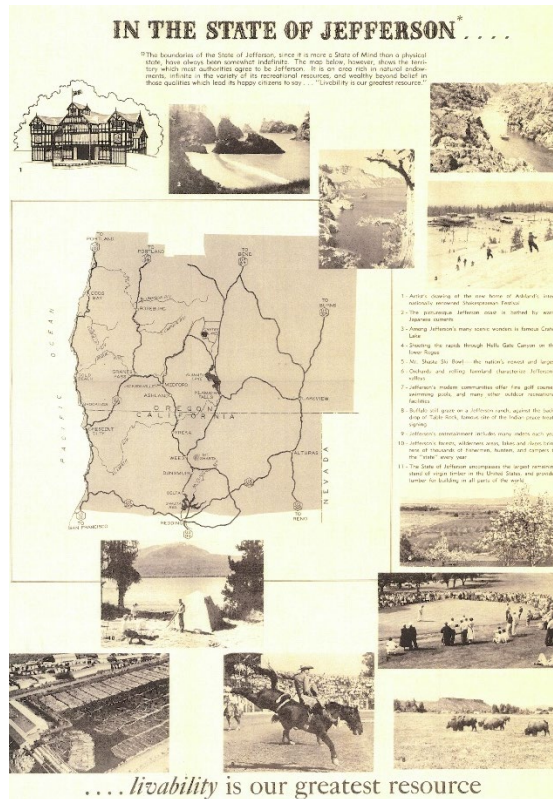


Figure 20 Copco-published booster pamphlet advertising the benefits of the landscape to tourists and potential residents, c. 1960(?) (via SOHS)

Racist and conspiratorial undertones aside, these types of comments suggest how authors' proximity and personal relationships to the Upper Klamath might alter its perceived significance. The landscape has retained a place in American culture since the mid-19<sup>th</sup> century. Visitors to Klamath Hot Springs included the novelist Zane Grey and pilot Amelia Earhart.<sup>98</sup> The spectacle of the Pokegama log flume attracted tourists, and early Copco publications allude to the hydroelectric infrastructure as the region's beating heart, at times referring to it as The State of Jefferson or even "Copcoland."<sup>99</sup> Even so, it is remote. Its corner position between the Siskiyou Trail to the west (later the O&CRR, then I-5) and the Applegate Trail to the north (now OR-66) meant that no one passed through unintentionally. Although the landscape exists in the cultural consciousness of the nation and now the world, there is a relatively small and insular number of people who are affected by its geographic condition. The justifications of pro-surrender form letters and impassioned pleas from local residents alike are difficult to sort without complete context: "I care deeply about the Klamath River, it's fisheries, and all the communities that depend on it" (form letter); "When I look

<sup>98</sup> (Hessig 1978), 36

<sup>99</sup> (California-Oregon Power Company 1920)

out onto the lake my view is the most spectacular example of natural beauty” (resident letter).<sup>100</sup> These opposing views introduce a type of friction into the current storytelling about the Upper Klamath. Are the dams’ demolition a long-deferred act of environmental justice? Are they the destruction of place with deep personal meaning? When writing this chapter of history, should the volume of voices who have never seen the landscape take priority over the few who have spent their lives alongside it?

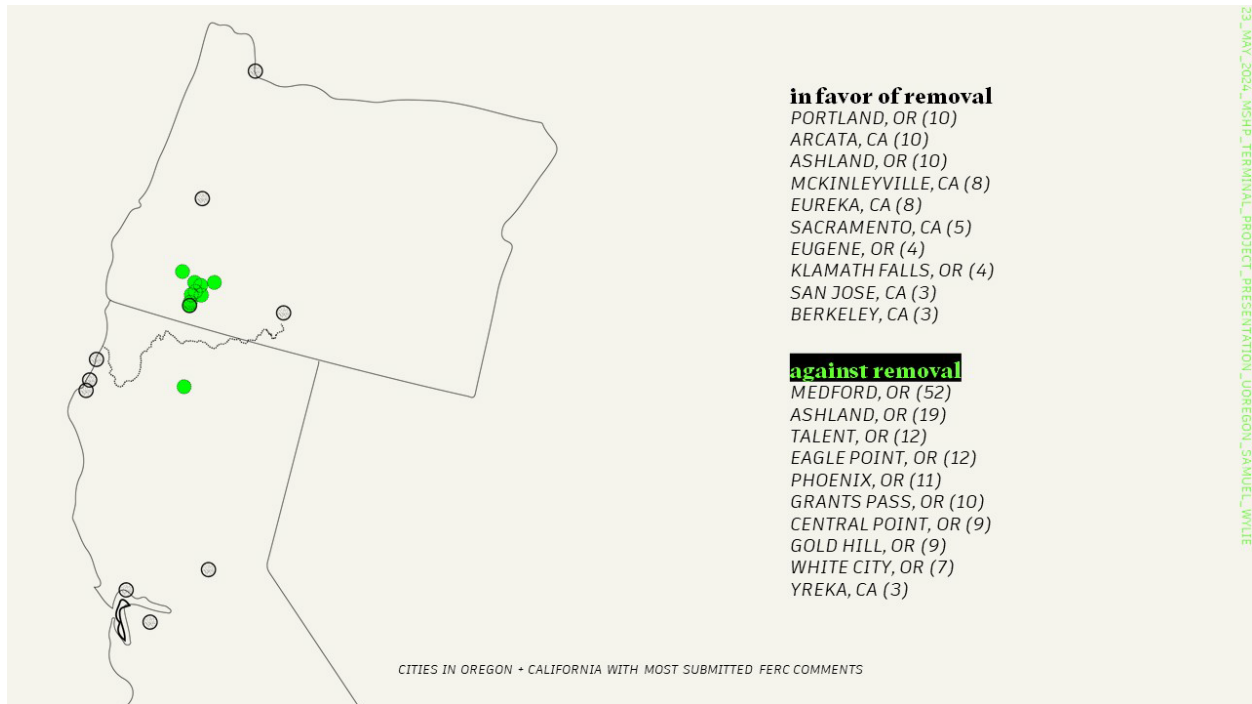


Figure 21: Top 10 cities within CA and OR with the most FERC comments supporting and opposing dam removal (author's diagram)

### Inclusive Narratives

It is possible to hold multiple perspectives in focus without losing sight of the facts that led to this moment. Rather than establishing significance based on a majority opinion or a hierarchy of personal experience, an interpretation can acknowledge the political tension between these views, their environmental implications, and the helpfulness of their descriptions. This does not require neutrality or equality, however. A meaningful interpretation of the Upper Klamath should not omit the destructive past to comfort those who oppose change borne of needed political and environmental shifts. Namely, the forced removal of indigenous communities and the near-

<sup>100</sup> (Thombre 2022; Reynolds 2022)



absolute destruction of salmon migration cannot be ignored when assessing the current motivations to transform the landscape. It is important to emphasize voices whose calls for holistic environmental stewardship were ignored until recent generations, not only as a gesture to recognize colonial violence but also because their attitudes appear prophetic for our post-industrial survival. These perspectives can anchor an interpretation and create motifs to prevent the historic context from drifting too far from the truth. Voices of opposition, like those within the FERC commentary, are also necessary to include. An honest description of the current situation recognizes the complex, multi-scalar tensions of dam removal.

Allowing varied perspectives to generate friction within an interpretation serves two purposes. First, it creates a space for critical thought that can hold power structures accountable. For example, the historic context in the first section of this project describes forces that shaped the landscape, which implies there are similar forces controlling the current transformation on the Upper Klamath. An examination of individuals' opinions helps elucidate their influences. A candid discussion of these power structures enables the public to recognize them elsewhere in the future. Put more plainly: some of the FERC comments say more about the cultural influences of their authors than about the authors' identities or memories. By including a variety of perspectives, it is easier to identify the motives behind these influences and resist reductive interpretations that suit a particular entity. For example, the cost of fish conveyance systems caused PacifiCorp to surrender their licenses and transfer property to the Klamath River Renewal Corporation. Although the fish conveyance requirement is a legacy of environmental advocacy, the dams' demolition is a direct response to economics more than the environment. Had PacifiCorp been able to cheaply install fish ladders, the dams would still be operational. Within this context, comments that respond to ecological issues as though they motivated the license surrender feel misguided and increase the likelihood that future activists will draw inaccurate conclusions about effective strategies for change. As media churns out photographs of the dams' demolition with articles that gloss over PacifiCorp's reasoning, the public begins to misremember history in real time.<sup>101</sup> PacifiCorp stands to benefit from the reductive narratives, as they can co-opt the image of progressive stewards who instigated positive change. An interpretation that accurately recalls

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<sup>101</sup> (James 2024): This is another article illustrative of this reduction. Its language claims the river is quickly returning to a "natural state" and the article's focus on indigenous activism alludes to PacifiCorp's decision as a response to social pressure.

events and examines the motivations behind conflicting opinions can prime the public to recognize those motivations in the future.

Curating frictional narratives also makes an interpretation more resilient to exploitation or irrelevance. An acknowledgement of minority opinions provides a richer description of current cultural conditions and increases the longevity of the interpretation's relatability. Historic sites that have been less critical of dominant narratives—e.g., colonial properties that glossed over the experiences of enslaved people—may struggle to reframe their interpretation in more inclusive terms, particularly if material evidence was not preserved. To be clear: the stories of enslaved Americans carry a gravitas that those of homeowners on Upper Klamath never will. Rather, the reference is meant to correlate the breadth of a resource's initial interpretation with its durability. A robust set of inputs may help future-proof the interpretation and make it more resistant to being co-opted as a symbol of grievance or a hateful rallying cry. Accepting that frictional narratives improve an interpretation, the focus shifts to the best method for contextualizing and presenting them.

### *Finding the Personal*

Returning to the FERC data, a comment from a longtime Copco Lake resident describes her late husband's relationship to fishing in the reservoir as his motor skills deteriorated from Parkinson's Disease. The resident goes on to list several negative impacts of the dams' demolition, including the loss of fowl habitat, the undermining of nearby building foundations, and even criticizes the documentation of historic resources as a poor substitute for their preservation.<sup>102</sup> The comment offers a personal, thoughtful perspective from someone affected by the demolition, despite their ultimate position on the license surrender. Other comments provide insights into the relationships between residents and the hydroelectric infrastructure. Another Copco Lake resident describes her husband's role and personal pride in creating a salmon viewing station for the Red Bluff Dam in northern California, only to be heartbroken by its demolition years later. The comment then lists a series of wildlife encounters while living on Copco Lake.<sup>103</sup> In a rare comment that acknowledges both sides of the argument, an Eagle Point, Oregon resident and retired hydroelectric employee questions whether the draft EIS has considered all the effects of losing the dams: "There is a balancing act amongst the needs of all and the drought adds additional stress in the management of it all. A decision to remove a dam is serious... Please seriously consider the

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<sup>102</sup> (Ebert 2022)

<sup>103</sup> (Dana 2022)

domino effect.”<sup>104</sup> To interpret the landscape based only on the winning, ethical, or moral argument, then, is to ignore a robust chorus of voices who have insights into the character and meaning of the physical place. Although the political and environmental arguments opposing demolition tend to rely on scientific falsehoods, the lived experiences of their authors and their memories of the Upper Klamath canyon are valuable for interpretation.

Comments supporting the license surrender also provide compelling narratives that are often spliced into the opening or closing of the form letter. Many have a moral tone and describe a sense of duty to restore the salmon population, the river ecosystem, or rights of the indigenous tribes. One comment overlaps a personal experience with morality:

*The last time I fished on the Klamath was two weeks before the fish kill in 2002. I had pulled a fine King Salmon from the mouth that year. But after the die-off every bite of that fish felt like murder. I still ate every bit, because I knew it would be the last time I would taste salmon from the river until something was done. Bring down those dams!!!! I want to taste Klamath salmon again before I die.*<sup>105</sup>

Another comment from a tribal member similarly relies on a connection between personal experience and a duty to the environment: “I have lived a[nd] fished this river my entire childhood... I want those same memories with my children. This is a step people need to take to bring a balance back to the world.”<sup>106</sup> The comments in favor of the surrender have shorter and fewer personal anecdotes overall. This could be due to a feeling of inevitability that the project would prevail or their greater average geographic distance from the Upper Klamath. A memorable counterexample from a displaced Modoc member living in Oklahoma states, “If I ever return to my homeland it’d be nice to eat and swim out of it. But I’ll die here in Tulsa and haunt you all.”<sup>107</sup> It is difficult to argue against these statements and the environmental benefits of the dams’ removal without relying on the pathos of personal memory.

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<sup>104</sup> (Gomes 2022)

<sup>105</sup> (Spain 2022)

<sup>106</sup> (Ames 2022)

<sup>107</sup> (Ball 2022)



FERC COMMENTS SUBMITTED BY WILD TENDERS AFTER-SCHOOL PROGRAM\_APR 2022

Figure 22: Selection of FERC comments submitted by Wildtenders afterschool program (FERC)

### Recognizing Power Structures

An outlying submission literally illustrates the public’s perception of the Upper Klamath and exemplifies the cultural forces influencing comments. A series of drawings submitted by the Wild Tenders, an afterschool program in Sonoma, California, includes sketches and zippy statements in support of the dams’ removal. The quality of the drawings suggests their creators are capable of independent thought but are too young to fully engage in political debate. Rather, the drawings offer two valuable insights. The first is their ability to reduce the pro-surrender argument to its broadest components (fish, environmental justice), which mirrors the reasoning of form letter. Their secondary value is to visualize how those who are distant or unconnected to the Upper Klamath perceive it. The drawings and messages are clearly biased toward the issue of fish habitat and migration, but some drawings suggest a more complicated view. In one, an explosion removes a dam from the river’s path with captions “SAVE THE SALMON // Dam blowing up // happy salmon.”<sup>108</sup> In another, the silhouette of a wrecking ball swings toward a mass while fish wait

<sup>108</sup> (Wild Tenders 2022), 8

patiently in the river below with the message “Kimberly! In your concrete building // the salmon need your help pls Kimberly! Pls.”<sup>109</sup> The message references Kimberly Bose, Secretary of FERC.



Figure 23: FERC comment 20220214-0010-31\_APR 2022



Figure 24: FERC comment 20220214-0010-10\_APR 2022

The drawings' familiarity with dam removal procedure reveals blatant influences from the children's mentors: that the dams and the salmon cannot coexist, and that FERC will decide the river's fate. They understand dam removal as a destructive process that requires large equipment and explosives, which suggests that the artists have seen media coverage of previous dam removals and recognize dams as something foreign to the landscape. While it is natural for children to be influenced by those around them, the drawings reveal more about the attitudes and

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<sup>109</sup> (Wild Tenders 2022), 10

political opinions of their teachers and families than they do about the artists. This does not render the drawings irrelevant to an interpretation, however. The drawings successfully describe a high-level and dislocated understanding of the Upper Klamath, but it is important to recognize the power structures behind them.

Another Wild Tender submission makes this relationship more evident. The drawing shows a diptych of the same landscape. The left half depicts a languid river snaking through an evergreen forest with purple mountain peaks behind it. The right half shows a dammed river with a meager current, surrounded by brown hills, stumps, toxic fumes, and dense clusters of skyscraper outlines. A question above the drawings asks, “Which do you prefer?”<sup>110</sup> In this comment, the dam is either the symptom or the cause of urbanism, transcending a specific instance of ecological damage and instead taking part in a global system of degradation. The proposed solution is a non-industrial society. The implications are especially interesting considering most pro-surrender comments originated from urban areas. The purpose of this analysis is not to overdetermine children’s drawings, but rather to assess how the Upper Klamath is abstracted by high-level political and cultural arguments. Data like the Wild Tender drawings capture the zeitgeist of dam removal politics but fail to describe the Upper Klamath as a real place.



Figure 25: FERC comment 20220214-0010-36\_APR 2022

<sup>110</sup> (Wild Tenders 2022), 13

## *Contextualizing Unpopular Opinions*

Considering the political and economic influences of commenters, it is tempting to classify their opinions based on demographic binaries such as urban/rural or liberal/conservative. Such classifications assume motivations that may not be central to the author's concerns. With the available data, it is also impossible to discern the political, socioeconomic, or racial identities of the commenters without making clumsy presumptions. Doing so would be unhelpful because an author's affiliations are not always clear and political identities do not describe their relationship to the land. A different lens is necessary to contextualize the FERC comments in terms of their position to the Upper Klamath.

In his essay "New Climate, New Class Struggles," Nicolaj Schultz pinpoints an inability to describe current economic struggles in the face of climate issues. He explains how Marxist classifications and political identifiers were harmful to France's 2018 Yellow Vest protests because they failed to articulate the common anxiety of disparate subgroups who protested. Using Bruno Latour's "process of engendering," Schultz proposes a new classification framework based on relationships "defined by their access to the *means of reproduction* or the *means of survival*... habitable land, soil, territory and chances of survival define the geo-social class struggle of the twenty-first century and shapes the direction of 'geo-story.'"<sup>111</sup>

Applying a geo-social classification to the FERC comment data is helpful for several reasons. Foremost, it helps describe the common anxieties and motivations of a group without assuming demographic information. For example, a Santa Barbara-based vacation homeowner on Copco Lake and a retiree in Phoenix, Oregon may not share demographic information but both fear losing water reserves to combat wildfires. Secondly, geo-social classification provides a way to consider cross-geographic solidarity in terms of broad socio-environmental issues while keeping a critical eye on the "local" as having a privileged perspective worth acknowledgement. A Modoc descendent living in Oklahoma is motivated to support the dams' removal not only to dismantle colonial legacies but also because they belong to a geo-social group historically dispossessed of their means of survival. Thirdly, geo-social classification can elucidate the alliances or distrust

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<sup>111</sup> (Schultz 2020), 310

between groups. The conspiracy-laced anger directed at form letters might be motivated more by a perceived detachment from the landscape than by a political stance.

Examining the most frequent cities of origin illustrates the first point. The highest volume of pro-surrender commenters wrote from Portland, OR (10); Seattle, WA (10); Arcata, CA (10); Ashland, OR (10); McKinleyville, CA (8); Eureka, CA (8); Sacramento, CA (5); Eugene, OR (4); Klamath Falls, OR (4); and San Jose, CA (3). 73 pro-surrender comments did not list a place of origin, the vast majority of which were unmodified form letters. Of these cities, four are within the Klamath watershed (Arcata, McKinleyville, Eureka, Klamath Falls) and Ashland is within a 50-mile radius of the project site. The other five cities are not only more distant but significantly more urban, with populations between 118,000 (Eugene) and 971,000 (San Jose).

Compare this to the most frequent cities with commenters opposed to the license surrender: Medford, OR (52); Ashland, OR (19); Talent, OR (12); Eagle Point, OR (12); Phoenix, OR (11); Grants Pass, OR (10); Central Point, OR (9); Gold Hill, OR (9); White City, OR (7); and Yreka, CA (3). Nine cities are within a 50-mile radius of the project site and all 10 are within 75 miles. Medford is the most populous city with 86,000 residents. Although Yreka is the only city within the Klamath watershed, all except Grants Pass have recently benefited from the Klamath reservoirs' water to combat severe wildfires. Many authors state this last fact explicitly in anti-surrender comments, which helps define a geo-social grouping. Looking at the geographic distribution, it is clear people who opposed the dams' demolition are more local and more concentrated than those who were in favor.

Analyzing full census data would help identify the commenters' demographic information and political positions, but it would not describe the nuances of their anxieties. For example, a comment from a Central Point resident adds an addendum to a form letter argument about wildfire risk and water for irrigation:

*Even if we agree that the river should never have been dammed off in the first place, two wrongs would not make a right. If we humans indeed caused more harm than good to the river, it is our responsibility to evolve, grow and learn from our mistakes and to arrive at win-win solutions that will help to mend our planet and nurture its*



*inhabitants. We simply must work with nature. Nature is not our gymnasium nor our child. She is our mother. Without her, we have no life.*<sup>112</sup>

The author does not deny the dams' damaging effects and suggests humans need to acknowledge the environment's agency, yet she concludes FERC should take no action. The argument to find "win-win" solutions for both the land and those occupying it reveals a nuance that the binaries of urban/rural or liberal/conservative fail to acknowledge. Rather, the author's concern is for her personal relationship to a changing landscape, or her "means of survival" to use Schultz's terms. The concerns expressed in the opposition form letter also express a fear of a shifting relationship between people and the land: one that does not hold enough water to extinguish fires or grow food. Geo-social classification can describe the connections between allied comments without the need to reduce their identity to a shared political or demographic affiliation.

Geo-social classification provides additional context for comments which center the author's identity or personal relationship to the Klamath River. A commercial fisherman of 30 years explains his position in financial terms: "An entire industry, a way of life has been held hostage to these dams. My life would have been quite different had they been removed long ago. The damage to me has been mainly, but not completely, economic."<sup>113</sup> In another comment, a Hillsboro, OR resident in support of removal asks that just compensation is provided to "water rights holder and farmers negatively impacted."<sup>114</sup> Although no water rights are affected by the dams' demolition, the author is clearly conscious of how communities' livelihoods are intertwined with the Klamath's natural resources. These comments articulate the relationship between the authors' geographic and economic positionality and geo-social classification helps to sort them. Their value can be decoupled from their political position, although a comprehensive interpretation should acknowledge and condemn hateful speech.

## **FINDING A FORM**

The conclusions of the previous sections provide the contextual basis for exploring potential interpretive expressions. This project defines an expression as a material or experiential deliverable that is accessible to the public. It is also defined in opposition to the shortcomings of current preservation frameworks; expressions are interpretations informed by diverse data inputs

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<sup>112</sup> (Michelangelo 2022)

<sup>113</sup> (Carroll 2022)

<sup>114</sup> (Howard 2022)

and delivery methods to make cultural heritage public without depending on material integrity. Plaques, markers, and other signifiers of historic events are already commonplace. While they can be appropriate and informative, they also frequently miss an opportunity to engage sensory and environmental phenomena to generate richer messages. Considering the historical remnants scattered throughout the Upper Klamath, a comprehensive expression should engage the spatial and temporal aspects of place.

Art and architectural precedents offer vehicles for interpretive expressions. Their representational and conceptual attributes are flexible enough to contain the nuances of the Upper Klamath (specificity) while their communicative nature is designed to engage an audience (relatability). The project categorizes precedents into three themes: coexistent frictions, hidden conditions, and quantified effects. The project briefly describes each precedent and then proposes a design solution for each theme as an interpretive expression for the Upper Klamath. The primary goal is to explore how interdisciplinary methods can supplement preservation frameworks to create meaningful, public interpretations. The expressions are intended to be descriptive of the research conclusions and are not comprehensive or prescriptive.

### Coexistent Frictions

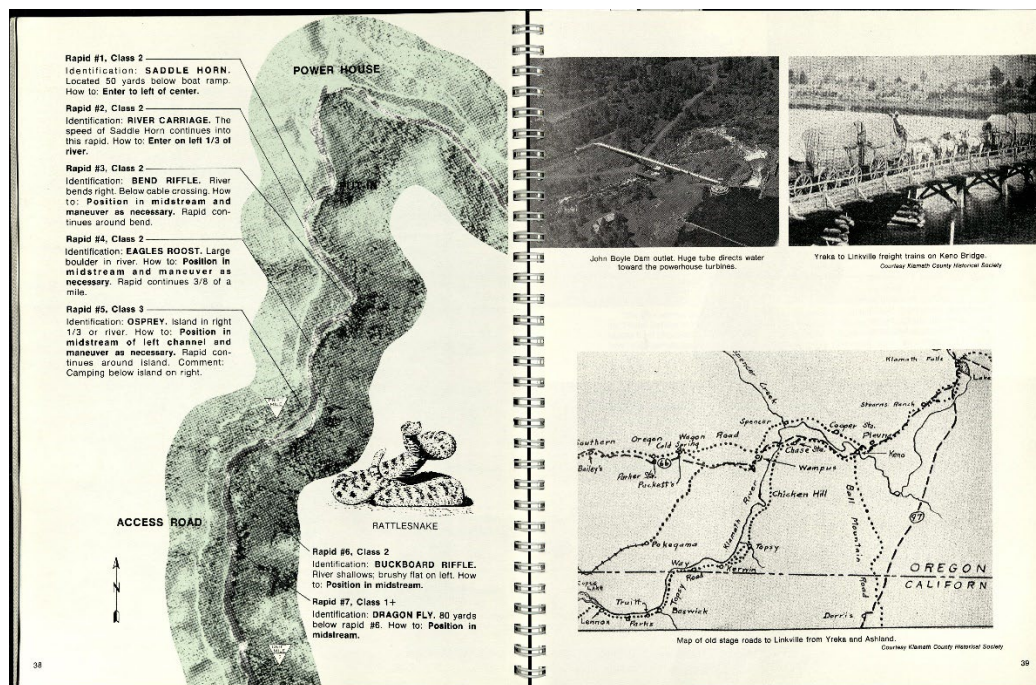


Figure 26: Spread juxtaposing rafting information with historic context (Quinn, Handbook to the Klamath River Canyon)

The first category curates multiple narratives within the same space and juxtaposes conflicting perspectives without prescribing a resolution. The most notable is James Quinn's *Handbook to the Klamath River Canyon*, a river rafting guide published in 1983. The book is an outlier among precedents because it is neither an art nor architectural work, but its relevance and (unintentional) sympathy with the spirit of this project make it worth inclusion. The spiral-bound guidebook and accompanying map illustrate the stretch of the river between J.C. Boyle Dam and the head of Copco Lake, referred to by Quinn as "Hell's Corner Gorge." Within the book, each map segment is populated with callouts describing the rapids and the best path to navigate them. Additional text provides environmental information, such as how to identify Poison Oak or the nesting habits of rattlesnakes. The mix of navigation and ecological information is ordinary for a nature guide, but Quinn's book also includes a substantial overview of the river canyon's history and features. Historic sites are prominently labeled on the river maps, even when little material evidence remains; for example, Quinn gives Klamath Hot Springs the same visual attention as tributaries like Shovel Creek, even though the only the creek would be a helpful visual marker.<sup>115</sup> Interstitial spreads contain archival photos and stories of the river's history and ecology that far exceed navigational knowledge. The supplementary map's smaller dimensions and distilled layout appear designed for efficient reference, yet Quinn still includes blurbs about the flora, fauna, and history of the river alongside rapid descriptions. In sum, Quinn's guide spatializes and overlays environmental, recreational, and historical narratives in a format that is accessible and deployable.

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<sup>115</sup> (Quinn 1983), 56



Figure 27: "Ruins, Zarya," part of the *Promzona* project (Otdelnov)

In contrast, artist Pavel Otdelnov's *Promzona* project curates memories and visual impressions from Soviet factories and presents them as a museum exhibition. Although the institutional setting makes the interpretation less accessible than Quinn's guide, *Promzona*'s narratives are richer and more complex. Otdelnov began by interviewing relatives and their friends about their experience as laborers in large industrial plants during the Soviet era. In the exhibit, the artist pairs oral histories with photographs, archival materials, and other contextual information. Many of the plants lay abandoned after the collapse of the Soviet Union in remote areas of Russia. Otdelnov visited the sites and captured them through photographs, drone footage, and painting. He presents these contemporary visual reminders alongside the fading memories of those who worked inside the spaces. The artist neither appears to draw conclusions about the meaning of these places nor challenge the veracity of memory against archival/visual evidence. Instead, the exhibit centers voices who knew the spaces intimately and loosely illustrates their memories through a collection of multimedia interpretations. *Promzona* is illustrative of the type of interpretations that Graves, Kalven, and Lubar imagine. It pulls focus on particular narratives while acknowledging the larger and complex context of a place.

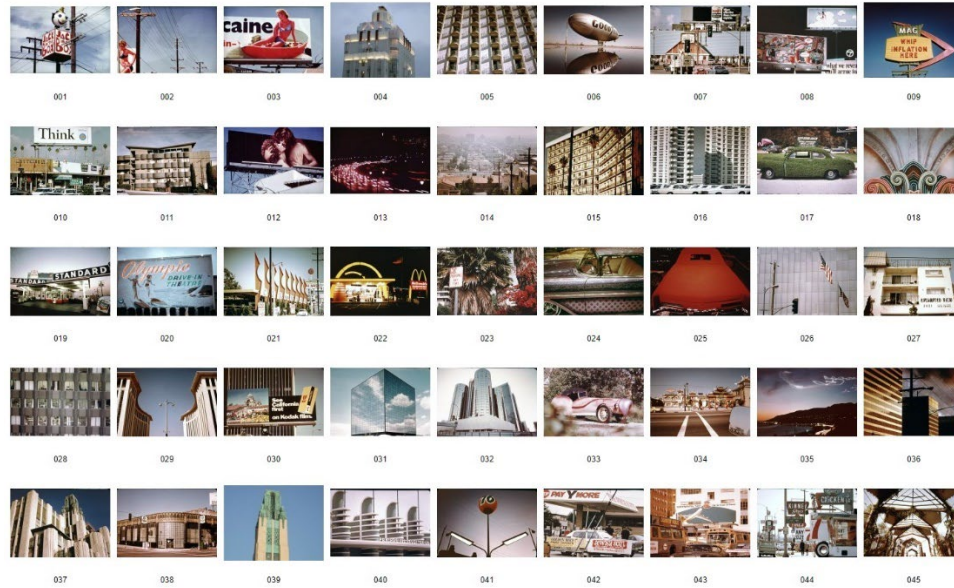


Figure 28: Detail from slide deck (*Environmental Communications*)

The third precedent is more ambiguous in its aim. The collective *Environmental Communications* compiled slide decks of everyday urban life and distributed them in architecture schools. The decks had themes, but the images did not include descriptions. *Environmental Communications* intended for students to view “the succession of images... to cultivate in viewers an awareness of invisible patterns... that structure our world.”<sup>116</sup> Although revealing invisible patterns is more compatible of the second category of precedents, the juxtaposition of images and ability for the same material to be read multiple ways is similar to *Promzona* and Quinn’s guide.

Drawing from these ideas, the first expression proposal compiles ecological, social, and historical data into spatialized narratives that constitute a guidebook for hikers or drivers passing through the Upper Klamath. Instead of a linear progression, however, each copy of the guide is collated with slight differences. The narratives would begin to slip, overlap, or become juxtaposed in new ways. Certain narratives would remain intact as anchors to underscore a particularly important point (e.g., that indigenous people were violently removed from their land, that the dams damaged the river ecology), but the remaining interpretations would shuffle. The intent is to represent the history of the Upper Klamath in a way that reflects its many uses and frictions.

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<sup>116</sup> (Chan 2023), 65

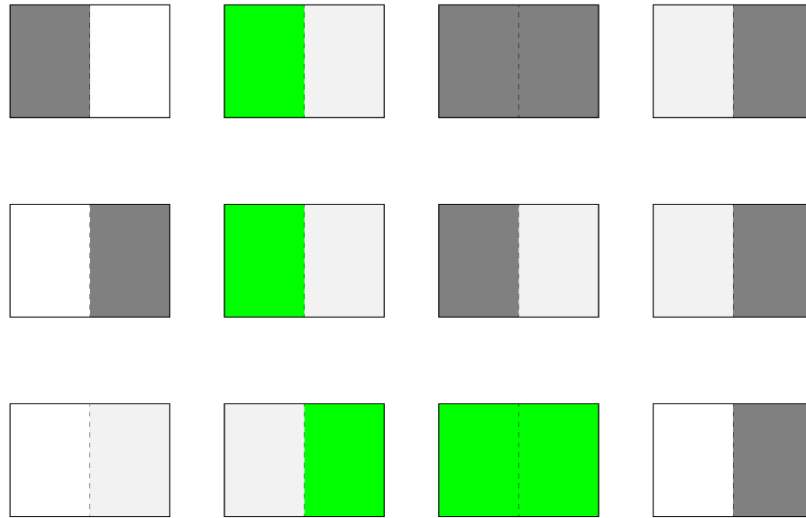


Figure 29: Diagram of guidebook randomly collated to juxtapose narratives (author's diagram)

### Hidden Conditions

The second category leverages representation to reveal invisible or latent environmental realities. These realities are sometimes intangible or operate at temporal frequencies that are difficult to visualize. This category provides tools for describing the environmental history of the Upper Klamath to the public even as the landscape continues to change.

Two precedents come from architect Neyran Turan's NEMESTudio. Turan proposes a series of hypothetical projects that are meant to remain representational but speak to a real and immediate environmental anxiety. In *The Museum of Los Volumes*, a series of drawings and accompanying text describe a future monument to the terminal extraction of rare earth minerals used in electric batteries. The monument visualizes the physical footprint of a zero-carbon society and presents it as an enormous void beneath visitors' feet. The drawings are fantastical but implicate our current behavior, specifically: the geographic and geologic cost of our means to achieve sustainability. Turan's work implies current geopolitical issues, such as exploitative mining processes of minerals like cobalt in Africa or the outsourcing of pollution to distant and poor areas of the globe. The relevance of *The Museum of Lost Volumes* to the Upper Klamath is clear. The dams had a dramatic visual impact on the landscape, but what is the impact of their loss? What infrastructure needs to produce additional power now that the river's hydroelectric capacity is diminished?



Figure 30: The Museum of Lost Volumes (NEMESstudio)



Figure 31: Middle Earth (NEMESstudio)

The second NEMEs precedent offers an interpretative expression at a more feasible scale. *Middle Earth* imagines a post-natural history museum where dioramas are perpetually under construction. The dioramas playfully layer ideas of the natural and the artificial to question our perception of each in the world at-large. As Turan describes:

*Comprehending nature and its staging both as and in construction opens up an alternative imagination of the diorama in a post-natural moment of the Anthropocene... If the development of natural history museums goes hand-in-hand with the cultural imagination and philosophy of nature, what kind of stories would the dioramas of a post-natural history museum [tell]?<sup>117</sup>*

This work also speaks directly the character of the Upper Klamath. An interpretive expression might embody or reference the idea of the landscape's construction not only through its content but also through its form and relationship to the viewer.



*Figure 32: Nymphaeas Transplant 14-18 (Pierre Huyghe)*

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<sup>117</sup> (Turan 2019), 142



The final precedent in the category is a conceptual artwork *Nympheas Transplant 14-18* by Pierre Huyghe. The work consists of a glass aquarium on a stone pedestal with a rectangular, white light box hovering just above the rim of the tank. Water lilies and other small plants float within the murky water while small fish dart between them. The light above flickers at seemingly random intervals over the course of the day. Although the title subtly references the artwork's meaning, more context is necessary to fully appreciate it. Huyghe syphoned the water and flora from the pond at Claude Monet's Giverny estate. The light intervals correspond to the sped-up weather data at the estate during the years 1914-1918 when the artist painted one of his famed water lily series. As Johanna Ziebriski describes in their essay, "Sensorium of the Earthbound," the work makes dual comments. First, it examines Monet's work habits compared to how his paintings mask his labor. The loose, fluid atmosphere of Impressionism connotes the momentary and ephemeral. The character of Monet's paintings suggests the artist captured their contents in a single day. In reality, Monet often worked for months on the same painting, studying the weather conditions until they provided the intended light and texture.<sup>118</sup> Huyghe's second comment compares the interior world of Monet's garden to the one outside its walls. Millions of men died in trenches and battlefields across France and Europe while Monet painted. As Ziebriski points out, battles occasionally took place only a few dozen miles from Giverny. Chlorine gas clouds traveled across the landscape, settled into the soil, and leached into the ground water. Monet's pond may have been affected. Without context, Huyghe's work remains cryptic but engaging. Knowing the history it references forces the viewer to confront their perception of Monet's work—the dominant narrative—within the realities of its creation. Huyghe leverages the same elements—light and water lilies—to reveal the tense and violent context lying just beyond Monet's dreamy canvases.

Drawing from these precedents, the second expression proposal also uses representation to convey particular and real environmental conditions. The proposal imagines a series of hollow monoliths along a stretch of the Upper Klamath. The monoliths are identical and just larger than human scale. A viewing window is cut into the side of each monolith, through which an individual can see a holographic diorama display on the interior. The dioramas depict historical conditions of the landscape, environmental information, and recreate pieces of the landscape based on oral histories. The holographic technology uses a simple Pepper's Ghost mechanism that requires electricity to operate. Unseen to viewers, cables run from the monolith to a small hydroelectric

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<sup>118</sup> (Ziebritzki 2020), 263

motor in the riverbed. The system is incapable of storing power, so the dioramas only operate when the river flow is strong enough to generate power. The expression reduces hydroelectric infrastructure to a folly dependent on the immediate conditions of the river rather than engineering the environment to generate consistent output. Like the precedents, the expression's content conveys narrative information while its form and representation reveal the invisible structures that produce it.

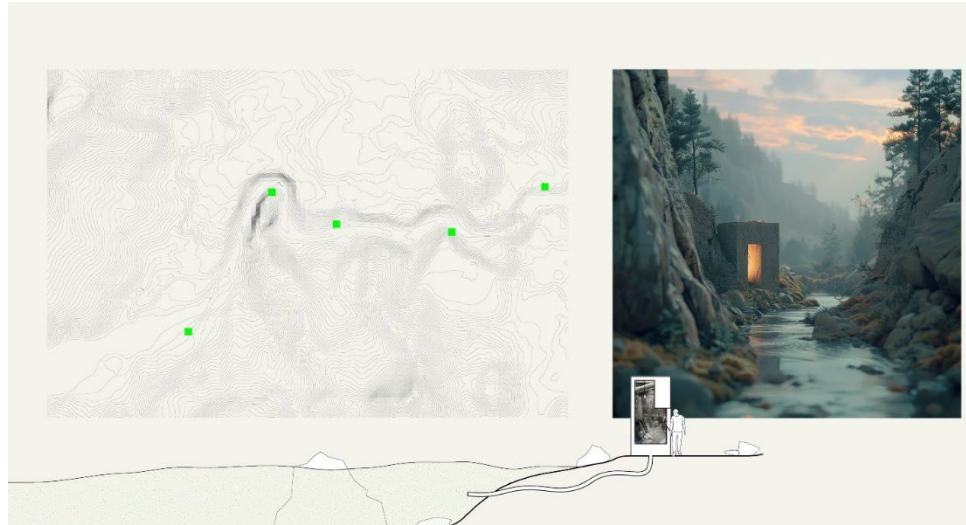


Figure 33: Shoreline monoliths containing historical dioramas (author's drawing; image by Midjourney)

### Quantified Effects

The final set of precedents visualizes phenomena across place and time. These examples serve as measurements, although they do not have exact quantities. Rather, their goal is to realize the spatial and temporal consequences of human behavior. These examples are diagrammatic but can still be applied to an in-situ expression.

Lawrence Halprin's Ecoscore drawing for Sea Ranch compares the health and disturbances of geological, natural, and cultural timelines at a particular location. Halprin assumes prehistoric natural and geologic history, but the most revealing interval occurs during the past two centuries. Two nearly-coincident moments in the 19<sup>th</sup> century—the Gold Rush and the industrialization of the economy—send the flora, fauna, and climate timelines into violent spasms. The suggested consequences of rapid westward expansion and industrial pollution may not elicit as strong of a response as it did in 1968, but the Ecoscore drawing still succeeds in diagramming the interconnected fates of humanity and the natural world within a specific geography.

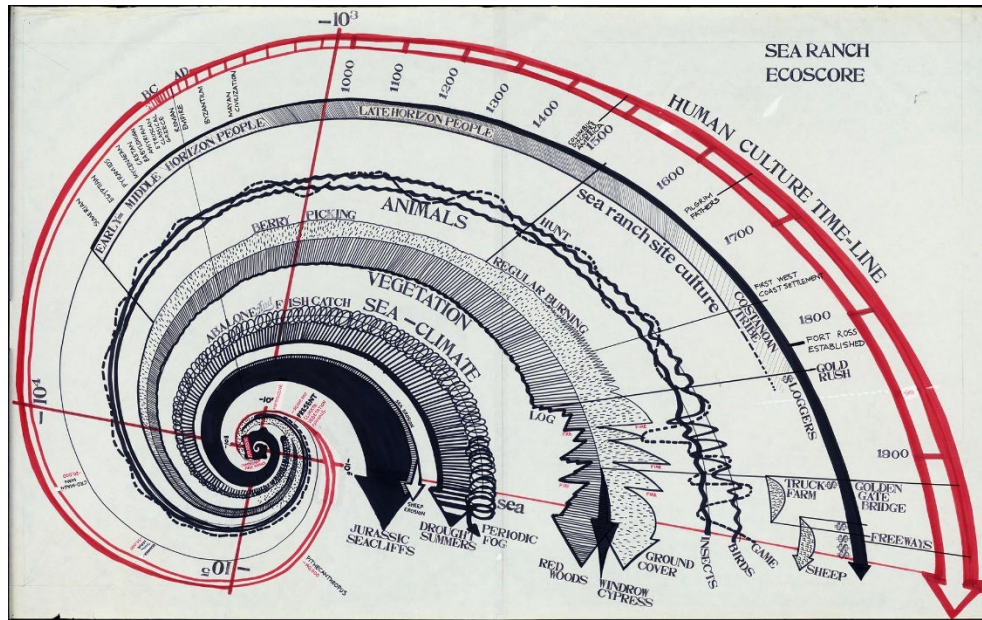


Figure 34: Ecoscore drawing for Sea Ranch (Halprin)

Mathur/Da Cunha's *Soak* project is similarly interested in the tense intersection of geography and human intervention. Their study of Mumbai describes the ways in which British colonial forces ignored the environmental realities of the city by refusing to conduct cartographic surveys during the wet season when lowlands became estuaries. Instead, the colonizers circumscribed the city with a sea wall, creating an artificial and binary relationship between ocean and land. The failure of this relationship is evident during extreme weather, such as the 2005 monsoon floods which caused approximately 1,000 fatalities.<sup>119</sup> Mathur/Da Cunha posit that a new way of viewing the city is necessary to inform safer development and a healthier relationship with the land. Instead of a line drawn in plan to differentiate between land and sea, they argue Mumbai must be considered sectionally. They propose a mapping exercise which measures a particular point from the water table below it. This system better informs the architectural and ecological constraints of a site.

<sup>119</sup> (Mathur and da Cunha 2010), 196

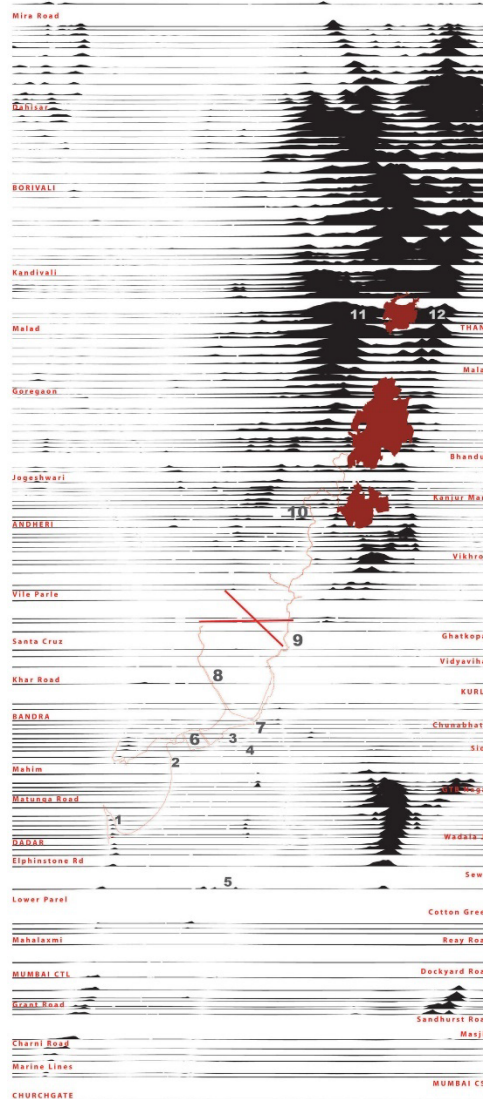
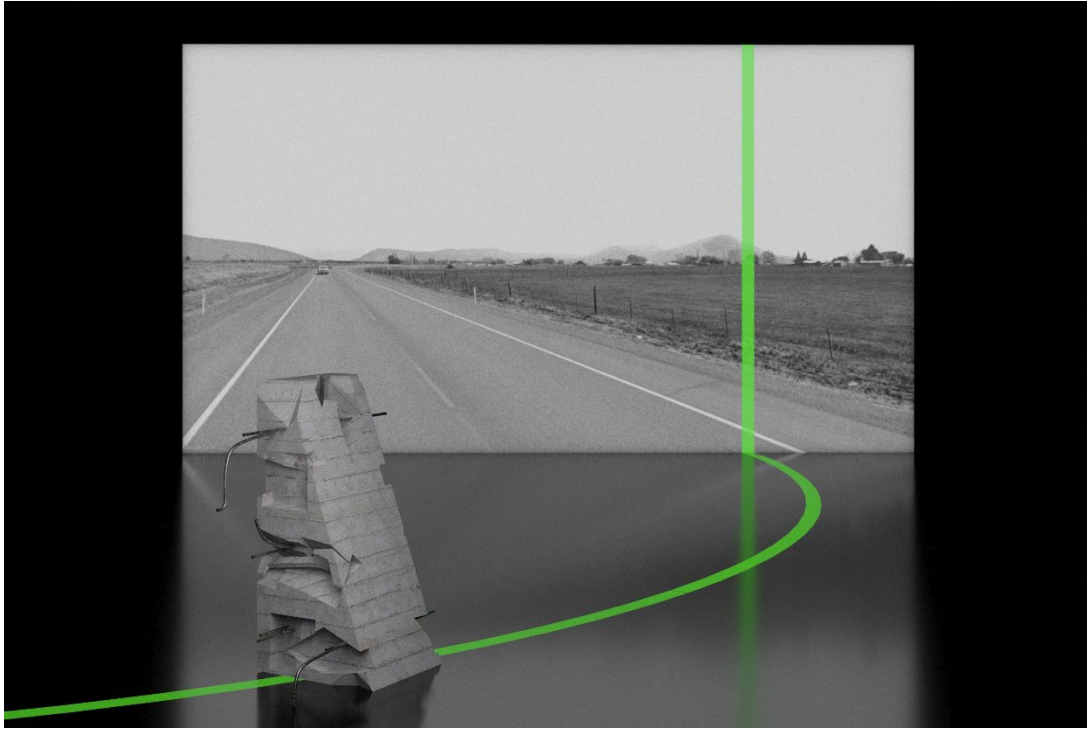


Figure 35: Sectional description of Mumbai according to water table depth (Mathur / Da Cunha)

The third interpretive expression proposal is also the most distant from the river. It imagines the physical boundaries of the dams' influence, playing off the preservation terminology "Area of Potential Effect," to visualize the extent of the infrastructure's reach. The measurement might pertain to the dams' service area, their transmission paths, or the watershed that supplied their generators. The boundaries appear as traces in the ground that extend through any other edge conditions or barriers. They could occur dozens of miles from the site and be accompanied by expository plaques or chunks of the removed dams. They could serve as cryptic reminders of the physical distance between the spaces we inhabit and the unseen infrastructure that supports our reality.



*Figure 36: imagined boundary of hydroelectric influence (author's illustration)*

## **CONCLUSION**

The interpretive challenges on the Upper Klamath are at once singular and universal. The constraints of its access, such as its relative isolation from transit routes and steep topography, generated a particular set of social and geographic conditions. For example, the scenic beauty of the canyon may have attracted more residential and economic development had the topography not been so difficult to traverse. Likewise, the sparse development made it easy for Copco to exploit ranch owners' limited power and accrue the land needed for inundation. The landscape's natural features also contributed to its cultural identity. Gentle winters and fertile bottomlands allowed settlements to develop and sustain themselves, while bountiful game and natural hot springs enticed those seeking nourishment and sport. Alice Hessig's description that "no moon could cast its light and mystic shadows on the rugged cliffs and spreading oak trees with more grace" feels true even today as a driver circumnavigating the edge of the sediment moonscape. The singularity of the landscape is evident to all parties, even as they negotiate its future.

The Upper Klamath is also a bellwether. As the effects of climate change become more severe, communities will face difficult questions about how to maintain or abandon cultural resources. The demolition of four dams on the river is not the first project of its kind, it is only the

biggest—for now. The growing momentum to remove harmful infrastructure and adapt buildings to new conditions means preservationists need to think critically about their goals and the spirit of the profession. Historic resources will necessarily be demolished; not every existing building can be the greenest one. The purpose of this project is to contribute to a conversation about how to embrace difficult changes without losing stories from the past. Moreover, it tries to imagine a future where our interpretations are as messy as our built environment.

Already, many preservationists are reimagining the interpretive capacities of frameworks like MPDs and TCPs. Their efforts are necessary and important if the profession is to remain relevant. This project's interpretive proposals are meant as a complement to these intraprofessional conversations and as a starting point for incorporating interdisciplinary strategies. A lack of material evidence does not preclude public interpretations that engage the third and fourth dimensions. A desire for nuance and access motivates the proposals, which are meant to be descriptive but open-ended. Like all interpretations, the proposals are biased. The imagined public are curious outsiders passing through the landscape, not necessarily locals. This is partly to avoid any proposals becoming monuments to grievance, but also to acknowledge that local populations—particularly indigenous communities—may not need help expressing their history. The proposals' ambiguous presentations attempt to spark curiosity and relatability for current and future audiences alike. Without trying to feign neutrality, they convey narratives that can flex under the weight of future conclusions. Their goal is to serve both the public and the profession as examples of how preservation can adapt to changing attitudes toward the built environment.

There is plenty left to say about the Upper Klamath. At a minimum, an extension of this project would develop interpretive expressions and collect detailed oral histories from community members. The history described here represents only the largest and deepest footprints on the land; there are undoubtedly many fainter ones. The tension within this project has come from an attempt to adopt more inclusive interpretation strategies without cosigning violent aspects of the past and present. Many others have already promoted strategies to include voices who have historically been neglected. What does it mean to hold the door open for voices who are currently at risk of erasure, even when they carry unpleasant baggage? Do inclusive narratives have limitations, or is it a matter of framing their concerns in a way that disarms their bigotry? This project has tried to take a stance of discerning acceptance; we are capable of holding frictions in focus, but we must be wise enough to weigh them according to their context. The impact of these

ideas speaks to an increasingly socially, environmentally, and politically engaged conversation among preservationists.

## APPENDIX: PHYSICAL DESCRIPTION OF COPCO NO. 1



*Figure 37: Looking north at dam and powerhouse construction c. 1916 (Boyle/SOHS)*

Copco No. 1 transverses a narrow portion of Ward's Canyon on the Upper Klamath River. The dam is approximately two miles south of the California-Oregon border and approximately 50 miles southwest of Klamath Falls, Oregon. Initially constructed in 1918, Copco No. 1 is the fourth-most northern dam on the Klamath River and the most historic. Copco Road on the north and west shoreline provides sole access by land to the dam, although the dam was visible and accessible via boat from Copco Reservoir prior to its breach in 2024. Copco Road begins 25 miles southwest of the dam from the Interstate 5 exit in Hornbrook to the town of Copco at the northern end of Copco Reservoir 7 miles east of the dam. The road follows the shoreline of Iron Gate and Copco Reservoirs with occasional spur roads connecting recreational areas and the surrounding landscape. The road made the Klamath Lakes Railroad (KLRR) obsolete, which had served the northern shoreline of the river prior. A spur rail route from the KLRR used to construct Copco No. 1 is still visible in aerial maps and circumscribes the west and southern edges of a volcanic cinder cone immediately northwest of Copco No. 1.

An unpaved spur road approaches the dam site from the eastern side of the cinder cone. The road is relatively flat and surrounded by thick vegetation, making the dam invisible until the plateau drops sharply toward the river. The southern edge of the cinder pit and a construction staging area mark the plateau's edge, beyond which a service road switches back from the cinder pit to the Copco No. 1 powerhouse immediately downriver of the dam. The plateau edge provides dramatic vistas of Ward's Canyon, Copco No. 1 dam, and the upriver valley (formerly Copco Reservoir). A path leading south from the construction staging site to the plateau edge runs parallel to the



remains of a stone wall approximately three feet in height, likely constructed at around the time of the dam when the plateau served as both a residential camp and construction zone. The path's terminus is in line with the dam's arced crest, which is visible below. Looking north along the plateau edge, a brick chimney and foundation remnants from the Copco guest house are visible approximately 250' east. The ruins sit atop a promontory that marks a bend in the river from east-west upriver of the point to southwest-northeast below it. The change in direction provides an unobstructed view of the basalt cliffs on the northern shoreline but only oblique glimpses of the southern shore and Copco Reservoir valley beyond the canyon.



*Figure 38: Looking east from plateau edge above dam. Ruins of guest house chimney are visible to left, 2024 (author's image)*

Downriver from the same vantage point, the river gently arcs northward before disappearing around a sharp bend. The canyon's curve provides views of the southern cliffs and hillside behind. A large stack of timber—maybe railroad ties—is visible against one cliff edge, presumably leftover from an infrastructural project but appear younger than the age of the dam. Below the cliffs, the roof of the Copco No.1 powerhouse is visible on a flat grade along the river's north bank. Uphill between the powerhouse and the vantage point on the northern slope are the primary hydroelectric conveyance systems. Two gatehouses sit atop a wide concrete platform that house the intake channels. Two steel penstocks exit the gateway and descend the hillside to the powerhouse, turning 90 degrees in the process. From the cliff's edge, the downhill slope blocks most of the penstocks' descent to the powerhouse from view.

Much of the north bank slope immediately downriver of the gatehouses has been graded to accommodate road access to the powerhouse. Construction crews recently regraded it to enable larger equipment to transport pieces of demolished infrastructure. Between the road's switchbacks, large piles of volcanic rock and timber are left over from historic operations.

Turning back from the cliff's edge and looking north, the cinder cone is prominent in the landscape. Its southern slope has collapsed and is scarred by a century of extraction. The land around the cone's base is level, sparsely vegetated, and dotted with construction paraphernalia. Beside the stone wall along the eastern edge of the clearing, there is little evidence that the area housed dozens of workers during the dam's construction. One of the other few pieces of evidence is a "can dump," or discarded pile of rusted tin cans, along a secondary spur road near the main Copco Road turn-off. That spur road descends sharply toward the shoreline at Copco Cove, a closed recreation site at the southern end of the former reservoir.



*Figure 39: Penstocks descending from gatehouses to powerhouse, 2024 (author's image)*

*Figure 40: South face of cinder cone, 2024 (author's image)*

Only the topmost elements of the dam, such as the spillway and gatehouses, are visible from the plateau's edge. A full view requires descending the powerhouse access road to a switchback parallel in elevation to the gatehouses. A small path wedged between the basalt cliffs and penstocks leads to the bulkhead platform and gatehouses. The columnar basalt along the path edge is highly textured, almost pixelated, with surface faces of approximately equal areas to those adjacent. Although not uniform, the faces' regularity may have been created by chipping and removing rock with hand tools during site excavation. A hole is set in the cliff, roughly four feet wide

and six feet tall. The void is visible in historic construction photographs and may have been a test drill site or discard shaft for material. Walking toward the gatehouses, a small cart track is embedded into the top of the intake structure. The track curves gracefully between the cliff wall and gatehouse as the path narrows and turns toward the dam's crest.

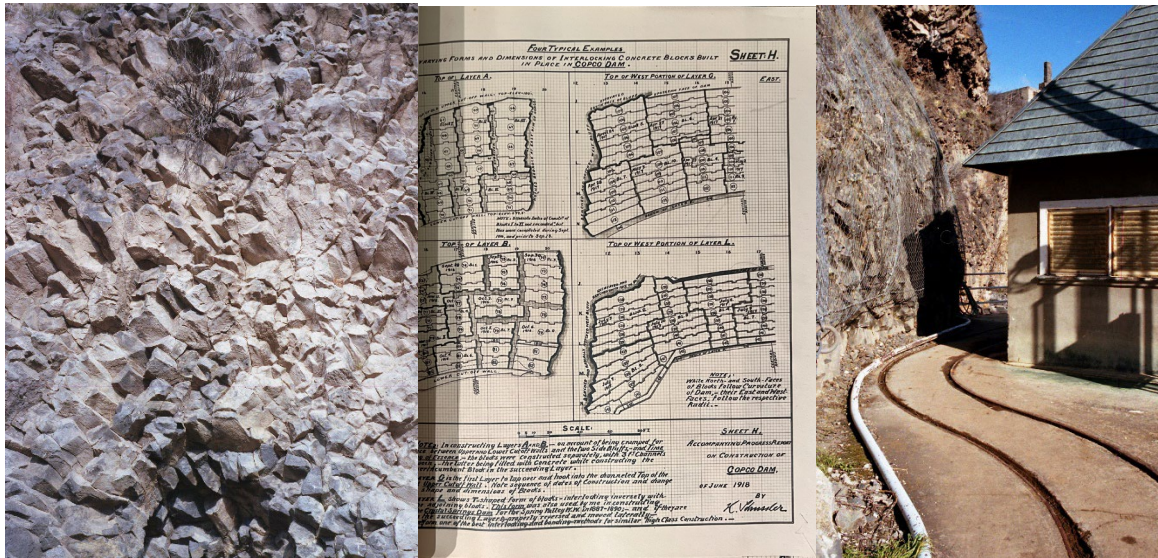


Figure 41: Basalt wall near gatehouses, 2024 (author's image)

Figure 42: Typical patterns for interlocking dam blocks in plan (JC Boyle/SOHS)

Figure 43: Path and cart tracks leading between basalt wall and gatehouses to approach dam crest, 2024 (author's image)

Views from the path to the gatehouses capture the broad downstream face of the dam. Copco No. 1 is an arch-gravity dam stretching in a canted position across the Klamath River so that the apex of the arch points slightly northeast. A difference between the angle of the canyon walls and the riverbed at this point created the need to reposition the dam at a cant so that the abutments met the rock cliffs at perpendicular angles.<sup>120</sup> The dam has a total height of 130' above the riverbed, although a century worth of sediment now obscures its true height from upriver. Early construction records provide basic specifications, including a crest 400 feet in length and 13 feet wide with the center 200 foot-stretch supporting a spillway above a riprap apron. The upper toe has a cut-off wall ten feet thick and extending ten feet below the dam's foundation. To further reinforce the 90-foot-thick base, the engineers specified that 30-pound railroad rails should be embedded in a lattice

<sup>120</sup> (California-Oregon Power Company and Boyle 1913): 171

pattern four feet on center.<sup>121</sup> It is unclear if internal steel reinforcement is present in the upper portion of the dam.



*Figure 44: Remains of diversion dam, 2024 (author's image)*

*Figure 45: breached dam pipe and powerhouse, 2024 (author's image)*

The dam's construction method largely defines its form. Plans and sections show the structure's internal logic as an array of interlocking concrete blocks with wide mortises and tenons on all six faces. A note from engineer Hermann Schussler on a drawing sheet with typical interlocking details explains that, in plan, "North and South-Faces of Blocks Follow Curvature of Dam – their East and West Faces, Follow the respective Radii."<sup>122</sup> This alludes to the dam's overall curvature based on a 356-foot radius.<sup>123</sup> Outwardly, this knitwork of blocks appears as a stepped, curving wall. The joints between blocks are not readily visible, likely due to a sheathing or spray coat atop the structural components. The blocks gouge into the abutments on each side of the canyon and create a visual unity with the rectilinear basalt forms nearby. The skyward-facing portion of each step supports vegetative growth that is denser toward the dam's spillway where moisture is more frequent.

Standing on the dam's crest and looking toward the powerhouse, the two, 10-foot steel penstocks are in full view, following the steep slope of the hillside and turning around the edge of the west abutment wall toward the powerhouse. A large pile of boulders sits at the dam's toe, from which a

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<sup>121</sup> (California-Oregon Power Company and Boyle 1913), 171

<sup>122</sup> (Schussler 1918), Sheet H

<sup>123</sup> (California-Oregon Power Company and Boyle 1913), 171

pipe extends and allows the reservoir to slowly drain and restores the river's continuity. The dam spillway is a series of portals that curve gently at the base toward the stepped blocks below. The crest pathway is approximately eight feet wide with wobbly steel handrails on either side. Looking at the bottom of the canyon on the upriver side, wood remnants from the diversion dam created during Copco No. 1's construction are visible. Just upriver, the skeleton of a formerly-submerged tree projects from the inside corner of the river's dogleg between the southern end of the reservoir and the canyon.

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