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# Exogenous, Endogenous, and Peripheral Actors: A Situational Analysis of Stakeholder Inclusion within Transboundary Water Governance

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**Abstract:** Transboundary water governance involves collaborative decision-making across geopolitical boundaries to manage shared water resources sustainably. While this approach integrates public, private, and community efforts, little scrutiny has been directed toward the involvement of non-institutionally affiliated stakeholders. This study critically examines stakeholder participation in Upper Klamath Basin water governance by investigating how deficiencies in stakeholder inclusion impede transboundary water management processes by favoring institutionally affiliated actors. Findings reveal the differential influence of "endogenous" (directly involved), "exogenous" (indirectly involved), and "peripheral" (limited engagement and influence) actors. While endogenous and exogenous actors have formal or informal ties to institutions, peripheral actors lack institutional affiliation(s), making it difficult for them to participate in and ultimately influence water governance decision-making processes. Their limited access to financial, natural, and social capital further restricts their engagement with governance efforts. This imbalance underscores challenges to equity and inclusion in transboundary water governance processes. Addressing the exclusion of peripheral actors from transboundary water governance requires that governance institutions prioritize equity and inclusivity, fostering transparency, incentivizing inclusive practices, and comparing engagement processes to enhance effectiveness and equity in transboundary water management.

**Keywords:** collaborative governance; environmental decision-making; situational analysis; transboundary waters



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## 1. Introduction

It is predicted that by 2050, the number of people living in river basins under severe water stress around the globe will reach 3.9 billion, totaling over 40 percent of the world's population [1]. Projections indicate a fivefold increase in the global land under "extreme drought" compared to 2020 [2], while water demand is expected to surge by 55 percent [3]. Given these projections, it is understandable why water and its governance remain an urgent theme in sustainability science [4–6]. This urgency stems from the need to navigate the complexities of adjudicated water rights [7], heightened competition among stakeholder groups with diverse and often conflicting interests [8], and the necessity of ensuring the human right to safe, clean, and affordable water [9] in an increasingly warming and meteorologically unpredictable planet [10].

Complicating the management of this increasingly fragile resource, water bodies are fluid; they do not follow, or are not easily confined to, artificial political boundaries. Globally, more than 310 river and lake basins are shared between at least two countries [11]. Of the 195 independent sovereign nations on Earth, 145 share at least one of these international bodies of water [11]. Interstate water bodies and irrigation infrastructure further complicate regional water management. For example, more than twenty river basins and nine federal irrigation projects cross state boundaries in the United States alone. Beyond freshwater systems, challenges in transboundary governance and management are also evident in saltwater bodies, such as bays and oceans [12–14], and groundwater reservoirs [15,16], as

well as frozen water sources like glaciers and snow packs [17,18]. Despite their hydrological differences, these diverse water systems share common issues related to transboundary jurisdictional complexities, environmental degradation, and competing resource demands, necessitating integrated approaches for effective management and sustainability. As transboundary entities, each of these systems boasts unique ecological, social, economic, and political challenges, leaving natural resource scholars and practitioners to ask: How do we best manage transboundary waters amid climate variability [4], growing political frustrations about resource allocation [19], and the pressing need to enhance resource resilience and sustainability [20,21]?

Over the last century, regional environmental management has been marked by technocratic decision-making processes wherein costly and extensive government-sponsored projects have been executed with minimal public input [22]. An example of such bureaucratic, "top-down" approaches to environmental management include the establishment and exertion of federally controlled laws and regulations on the extraction and use of regional water resources. Ongoing initiatives helmed by bureaucratic agencies are now making strides to scrutinize and remedy this historical trend, such as incorporating multi-stakeholder partnerships, decentralized governance structures, and community-based resource management. Through these initiatives, roles that government (state) actors previously dominated are increasingly categorized as activities carried out by more local, non-government (non-state) actors [23], including decision-making over natural resource use. This paradigm shift is often characterized as a move from *government* toward *governance*, emphasizing broader participation, collaboration, and shared responsibility among multiple stakeholders, including non-governmental actors and civil society organizations. In the shift, various "hybrid" forms of decision-making have emerged, in which state actors collaborate with non-state actors to manage common pool resources [24], which are natural assets like land, water, and the atmosphere. These common pool resources are shared among multiple users, characterized by rivalry in consumption and difficulty in excluding others from use. Examples include co-management, public–private partnerships, and social–private partnerships, all emphasizing collaboration between actors at different scales [25]. These efforts, ranging from local community forestry initiatives to international climate change mitigation projects, represent a turn toward more inclusive and participatory environmental decision-making approaches.

A growing body of social science literature stresses collaborative water governance as a promising strategy to tackle these issues [26–28]. Through the involvement of a diverse set of actors, collaborative governance has demonstrated its capacity to bring stakeholders together in collective forums to engage in consensus-oriented decision-making [29]. Some of the most well-known case studies investigating the collaborative governance of transboundary waters are highlighted in Wolf's analysis of water management and hydropolitics along the Jordan River [30], Wallis and Ison's investigation of institutional complexity within the management of Australia's Murray–Darling Basin [31], Sullivan et al.'s study of collaborative governance in the Colorado River Basin [32], and Simms et al.'s examination of First Nations' concerns with collaborative watershed management in British Columbia, Canada [33]. Despite the publication of case studies such as these, a notable gap persists in the critical assessment of participant equity and inclusion within stakeholder engagement processes and their resultant outcomes [34].

This article investigates how the limits of natural resource decision-making (e.g., deficient stakeholder inclusion) hinder transboundary water management processes by privileging the participation of actors affiliated with institutions. Section 2 outlines the challenges of transboundary water governance, arguing that collaborative governance can lead to more effective protection of the environment while simultaneously appealing to those seeking just means of resource management. Section 3 describes how the study's qualitative research design incorporates a situational analysis methodology to examine how stakeholders are involved in decision-making processes in transboundary water governance in the Upper Klamath Basin. Section 4 uses the situational analysis methodology's

conceptualizations of "decision-making arenas" and "social worlds" to illustrate the complex dynamics shaping transboundary water management in the Upper Klamath Basin. After identifying the presence of one decision-making arena and three groups of social worlds in this case, Section 4 examines them in four sub-sections: (1) the water governance arena, (2) endogenous social worlds, (3) exogenous social worlds, and (4) peripheral social worlds. These subsections delve into the nuances of power dynamics, stakeholder interactions, and the distribution of decision-making authority. Through this examination, it becomes evident that specific stakeholders wield disproportionate influence due to their affiliations with non-governmental organizations (NGOs) and state and federal institutions, perpetuating existing power differentials and impeding broader participation. Section 5 expands upon these findings to reveal how the collaborative stakeholder engagement process used in Upper Klamath Basin water governance inadvertently perpetuates power imbalances by favoring a select group of stakeholders. Within this structure, engagement processes prioritize groups and individuals associated with government bodies, agencies, service providers, and NGOs, effectively excluding individuals and communities who lack formal affiliation with institutions.

As a result, this selective approach not only marginalizes concerns and perspectives from institutionally unaffiliated parties but also perpetuates the dominance of privileged, institutionally affiliated stakeholders in water governance decision-making. Despite initiatives like the Bureau of Reclamation's Policy CMP 903, which seeks to broaden public involvement systematically, underlying power differentials remain unaddressed, thus reinforcing systemic inequities within the water governance system. These findings significantly contribute to the field by providing empirical insights into the complexities of stakeholder inclusion in water governance, particularly in the Upper Klamath Basin. By examining the challenges various stakeholder groups face and identifying systemic barriers to participation, this article fills a gap in the literature that often lacks data-driven analyses of engagement processes and outcomes in water resource management [35]. Moreover, the findings underscore the need for more comprehensive research on stakeholder engagement dynamics, including the role of power structures, institutional biases, and access to information, thereby enhancing our understanding of how to foster more equitable and inclusive decision-making processes in water governance contexts.

Recognizing the limitations of current stakeholder engagement practices, the sixth section concludes the article by emphasizing the need to reevaluate stakeholder engagement practices within transboundary water governance processes to achieve genuine inclusivity and address systemic barriers. This article contends that future research should critically examine stakeholder legitimacy—including how legitimacy is awarded—and explore strategies for enhancing representation and participation. Comparative studies across transboundary watersheds can identify common patterns, challenges, and best practices, informing more inclusive and effective engagement efforts to address complex water governance challenges. Ultimately, this process can foster accountability and promote sustainable solutions in water governance.

Drawing from environmental decision-making and management literature, environmental and natural resource sociology, and the science of stakeholder engagement, this article delves into the intricate landscape of stakeholder inclusion within collaborative governance processes. By synthesizing insights from these diverse fields, it sheds light on the expanding role of non-governmental actors in decision-making, emphasizing the importance of multi-stakeholder engagement in tackling complex environmental challenges. However, it also acknowledges persistent hurdles such as power disparities, unequal representation, and the risk of perpetuating inequalities within collaborative frameworks. Thus, it advocates for further empirical research to unravel the nuanced dynamics of power and inclusion in collaborative governance, aiming to foster social and environmental equity in decision-making processes.

## 2. Review of Relevant Literature

### *2.1. Stakeholder Engagement in Collaborative Environmental Governance*

Collaborative governance is defined as "the processes and structures of public policy decision-making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private, and civic spheres" [36]. In this process, non-government parties, like environmental groups, private technical service providers and consultants, citizen groups, university affiliates, and residents, claim a more prominent management role in natural resource management, working in tandem with state agencies to oversee the management of natural resources. This form of collaborative resource governance is often characterized by multi-scalar, multi-stakeholder engagement. One can see such examples in the cases of catchment management in New Zealand [37], transboundary river basin management in the European Union [38], and the movement toward sustainable groundwater management in California [39].

In stakeholder engagement processes, institutions invite individuals or groups deemed "stakeholders" to actively participate in research, planning, and actions that directly impact their lives. However, defining precisely who qualifies as a "stakeholder" presents a complex challenge within environmental governance literature [40]. This debate arises partly from the difficulty in determining what constitutes a legitimate "stake" [40]. Those affected by the outcomes of environmental management decisions inherently possess an interest and, therefore, hold a stake in the process. Reed et al. [40] describe how various stakeholder theories propose differing definitions, ranging from narrower, more instrumental views, such as those that are essential for an organization's survival [41], to broader, more normative perspectives that include any entity affected by organizational performance [42,43]. Additionally, Checkland [44] suggests that individuals or groups who own a problem should also co-own the process to solve it. Coase [45], in his work on environmental pollution, categorized stakeholders as either polluters or victims, with victims encompassing those directly or indirectly impacted. Following the framework proposed by Eaton et al. [34], stakeholders are defined in this article as "those directly or indirectly affected by and potentially able to affect a decision" (p. 284).

Scholars working at the intersection between natural resource management and the science of stakeholder engagement claim that different actors can be classified based on their involvement and influence on a decision-making process. Based on his study of collaborative negotiation efforts in the Klamath Basin during the mid-2000s, McCool [46] argued that watershed stakeholders can be classified into two categories: endogenous and exogenous. Endogenous stakeholders are physically present at the water governance table and are actively involved in management decision-making. Though McCool did not clearly distinguish which stakeholder groups fit into each category, recent ethnographic research has found that endogenous stakeholders include individuals who are on boards of directors or serve as supervisors of drainage and irrigation districts or agricultural and natural resource non-governmental organizations (NGOs), elected officials, staff in state and federal agencies, irrigation managers, and representatives of tribal governments [47]. On the other hand, exogenous stakeholders are not directly involved in natural resource management but have the power to influence or interfere in such processes. These individuals include movers and shakers in the political world, including owners and operators of agricultural businesses, agricultural and environmental non-governmental organizations (NGOs), media reporters and publishers, academic researchers, and informal, non-institutionally affiliated groups.

### *2.2. Challenges and Opportunities for Stakeholder Engagement in Collaborative Environmental Governance*

Advocates of engagement posit that empowering stakeholders to join in decision-making enables learning, builds relationships, strengthens capacities, and fosters the coordination required to address complex environmental problems [48,49]. Approaches aimed at building partnerships and shared understanding among stakeholders have shown

that actors who are actively involved in developing solutions to environmental problems are more inclined to accept and champion the decisions decided by the group, even if those decisions do not directly align with their own interests [29]. When used appropriately, these engagement outcomes reflect a broad range of knowledge and are more likely to be acceptable to all parties, with less potential for contestation compared to outcomes of non-collaborative decision-making [50,51].

Though stakeholder engagement offers advantages—in terms of acceptance and effectiveness in protecting the environment—compared to traditional bureaucratic decision-making [11,52], disadvantages remain. Collaborative approaches are grounded, to varying degrees, in the assumption that all actors can contribute to ultimate outcomes in meaningful ways [51]. In cases where stakeholders have relatively equal social capital, resources, and networks, this assumption may prove valid. However, in environmental governance, the kinds of actors that come together are rarely equal [53]. They can readily differ regarding access to information, financial resources, and decision-making power.

Collaborative environmental governance processes, as highlighted by Eaton et al. [34], encompass a diverse array of stakeholders, ranging from government actors fulfilling bureaucratic functions to political groups advancing specific agendas, lobbyists seeking political gains, non-government organizations (NGOs) pursuing organizational objectives, and citizens addressing personal concerns. Given the inherent differences among these stakeholder groups and their capacities, it becomes crucial to address potential challenges. Common criticisms of stakeholder-based governance efforts highlight that collaborative processes can inadvertently mirror existing power structures, potentially excluding stakeholders not already integrated into formal and informal natural resource management frameworks [54]. This historical distortion jeopardizes the potential of collaborative governance to enhance equality by neglecting individuals, organizations, and positions typically underrepresented in environmental and natural resource governance [55].

Moreover, the "tyrannical potential" of public participation in governance, as coined by Cooke and Kothari [56], underscores the risk of dominant stakeholders manipulating participatory processes to serve their interests. This manipulation can lead to the marginalization or silencing of less powerful groups or individuals, potentially undermining the democratic ideals of collaborative governance. To avoid such pitfalls, it is essential for organizers to critically assess and account for the existing power structures at play [57]. Without this critical awareness, collaborative governance processes may devolve into mere tokenism, where public participation forums become symbolic rather than substantive [58].

Power in collaboration and engagement is also tied to institutional privilege. In many cases, environmental governance is the responsibility of one specific stakeholder, often a government agency. Colvin et al. [59] describe how such a government agency's dual role of "rule adjudicator" and "privileged stakeholder" may perpetuate power imbalances through the alignment of their decision-making power with their participation in collaborative governance processes. It is through this progression that stakeholder engagement in governance processes may, in fact, reproduce inequalities. Specific to collaborative transboundary water governance, the engagement and communication dynamics between state- and institutionally affiliated stakeholders and other actors who are non-state and non-institutionally affiliated remain inadequately understood [60]. This raises concerns about the dynamics of power and control adversely affecting resource management and the fairness and sustainability of existing governance practices [61].

Nevertheless, the dynamics between institutionally affiliated and non-institutionally affiliated actors in collaborative governance processes have so far only received limited attention in empirical studies. More case studies of governance processes from diverse contexts are needed to build a more extensive understanding of how to meaningfully advance environmental outcomes and social equity through collaborative decision-making [62]. Answering this call, this article investigates a specific case of transboundary water governance to identify how stakeholders are involved in such processes. As Brisbois and de Loe [53] note, the empirical study of participant inclusion within environmental governance poses

inherent challenges due to power relations' dynamic and intricate nature. Operating at multiple levels, from local to global, and involving a diverse array of actors, power dynamics demand a nuanced yet circumspect analytical approach. Environmental decision-making, moreover, often features power structures that are not explicit or formalized, encompassing informal networks, cultural norms, and historical legacies [63]. For these reasons, this article sheds light on these complex dynamics to provide insights into navigating them effectively in collaborative environmental governance processes.

## 3. Study Context and Methods

This article is part of a larger project that provides an extensive empirical examination of water governance efforts in the Upper Klamath Basin, a transboundary watershed on the border of Oregon and California located within the broader Klamath Basin. While the broader project aimed to understand various aspects, including governance structures, stakeholder engagement dynamics, power dynamics, and the influence of regional secessionist movements, this article investigates how transboundary water governance processes engage stakeholders with differing power levels and incentives to participate. Specifically, this article aims to determine the following:

1. In what ways do institutional affiliations shape stakeholder participation in transboundary water governance within the Upper Klamath Basin?
2. What strategies can be implemented to promote greater inclusivity and equity in decision-making processes, particularly for stakeholders who are not formally affiliated with an institution?

To provide comprehensive answers to these questions, I employed Clarke's situational analysis methodology [64]. This approach involved in-depth qualitative fieldwork and analysis, including 28 interviews with 32 participants, attendance at 85 public meetings, and over 400 hours of in-person ethnographic fieldwork.

### *3.1. Background: The Upper Klamath Basin*

Primary data for this research were collected in the Upper Klamath Basin (see Figure 1), a sub-watershed of the greater Klamath Basin (see Figure 2), which stretches over ten and a half million acres on the border of Southern Oregon and Northern California (USA). In this region, the debate over individual rights to water, the consequences of climate change and persistent drought, and the role of stakeholders in decision-making processes have played out prominently over three decades. Native American tribes, three endangered species, six federal wildlife refuges, and a federal irrigation project compete for regional water allocation. Conflict between these actors has been well-documented [47,65–67], with researchers often describing the region as a site of an ongoing "water war" characterized by "combat biology" [68], "macho law", and "dirty politics" [69].

Water in the Upper Klamath Basin is governed by a complex system of agencies, organizations, laws, and policies that are being actively litigated. The Klamath Tribes hold the most senior water rights in the Upper Klamath Basin; their priority dates simply reading "time immemorial". The Klamath Tribes' ability to claim any water rights has been complicated by their "irregular" status as a tribe with no reservation. After the Klamath Reservation was "essentially extinguished" by the Klamath Termination Act [67,70], the federal government sought to determine the Tribe's water rights. In United States v. Adair [71], the Ninth Circuit Court held that the Klamath Termination Act preserved pre-existing water rights, including the right to instream flows needed to meet treaty hunting and fishing obligations—those rights, the Court ruled, date to time immemorial. The Court further determined that the federal water rights guaranteed to the Klamath Tribes through Adair need not be registered within the State of Oregon and have, thus, never been quantified.

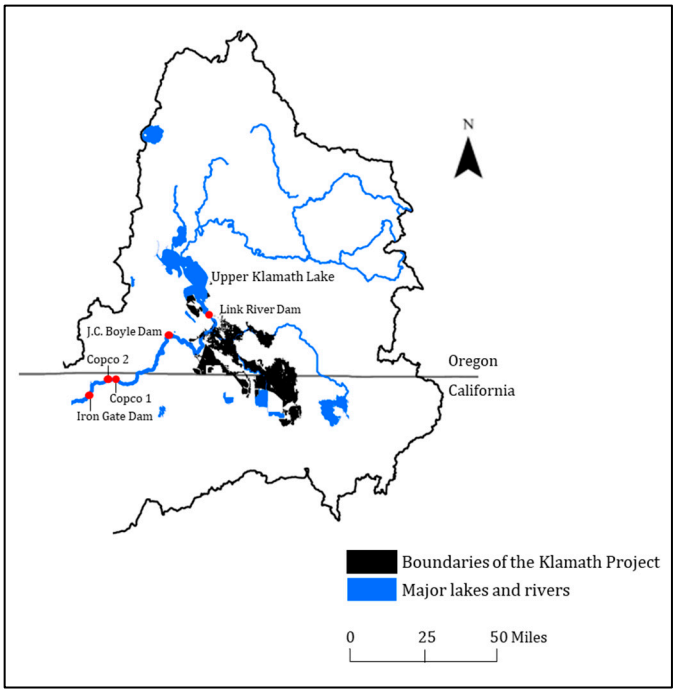


**Figure 1.** Map of the Upper Klamath Basin. Figure created in ArcGIS Pro 2.9.5. Cartography by the author. Data Sources: [72–75].

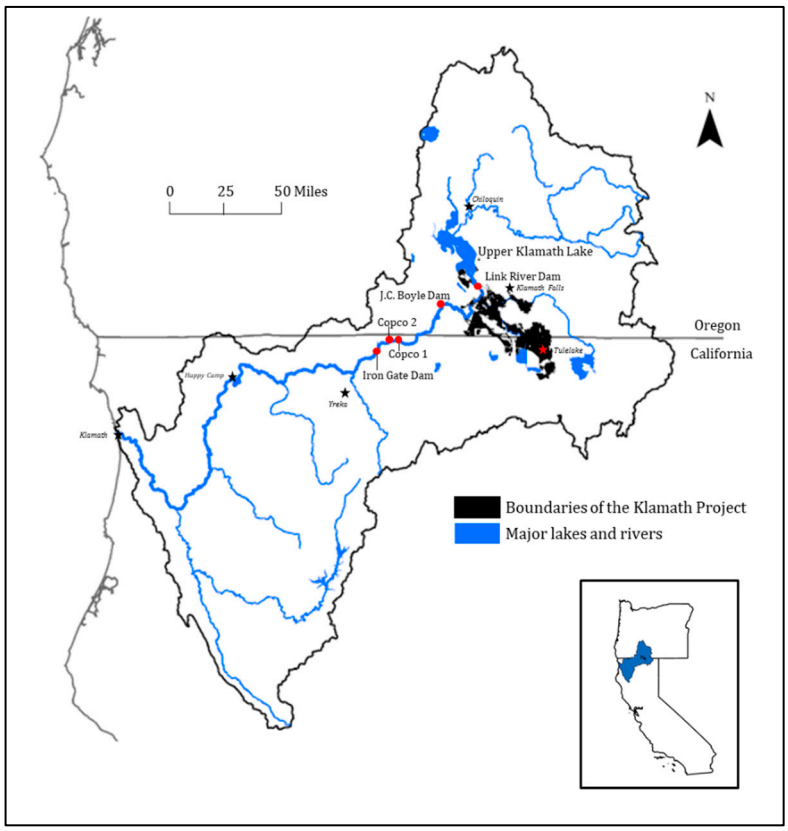


**Figure 2.** Map of the Klamath Basin. Figure created in ArcGIS Pro 2.9.5. Cartography by the author. Data Sources: [72–75].

An important element affected by water governance is irrigation in the Upper Klamath Basin. The Klamath Irrigation Project (henceforth, "the Klamath Project" or "the Project)

was initiated in 1905 as one of the first federal irrigation projects constructed by the U.S. Bureau of Reclamation (BOR) [47]. Today, the Klamath Project irrigation infrastructure serves approximately 230,000 acres and over 1400 agricultural operations. Production is primarily barley, alfalfa hay, and irrigated pasture, with smaller acreages devoted to higher-valued potatoes, onions, mint, and horseradish. In 2023, Klamath Project agricultural outputs were estimated to produce half a billion dollars annually in regional economic activity [76].

#### 3.1.1. Key Agencies, Regulations, and Policies affecting Water Governance in the Upper Klamath Basin

Decision-making about the Klamath Project occurs at various levels, involving federal, regional, state, and local governments and agencies [47]. Currently, final decisions on irrigation management are exclusively made by federal agencies, including the U.S. Department of the Interior, with input and consultation from agencies such as the U.S. Bureau of Reclamation (BOR), the U.S. Environmental Protection Agency (EPA), the National Marine Fisheries Service (NMFS), and the U.S. Fish and Wildlife Service (USFWS).

Officially, the Bureau of Reclamation's Klamath Basin Area Office oversees the day-to-day operation and maintenance of the Klamath Project [47]. To meet oversight demands, the BOR contracts the services of local irrigation districts to carry out the day-to-day operation and maintenance demands (e.g., delivering water to Project patrons, removing debris from irrigation canals, and repairing Project infrastructure). The three largest of these districts are the Klamath Irrigation District (KID), the Klamath Drainage District (KDD), and the Tulelake Irrigation District (TID). All Project irrigation districts, including the smaller separate water user districts, are government entities formed under Oregon and California law. These contracts are carried out under the close eye of the BOR's Klamath Basin Area Office, the BOR's California–Great Basin Regional Office, the Bureau of Reclamation, and the Department of the Interior.

##### The Endangered Species Act (ESA)

In addition to these contracts, the Bureau of Reclamation must adhere to various federal laws, with a prominent focus on the Endangered Species Act (ESA). Originating in response to the environmental movements of the 1960s and 70s, the ESA stands as a cornerstone for protecting endangered and threatened species, encompassing fish, wildlife, and plants. Its impact on water allocation in the Klamath Basin gained prominence in 1988 with the listing of the c'waam (*Deltistes luxatus*) and koptu (*Chasmistes brevirostris*) as endangered species [77,78]. Commonly known as Lost River and shortnose suckers, these species bear immense cultural significance for the Klamath Tribes, supporting tribal fishing families and maintaining integral roles in cultural practices. Nevertheless, their survival is increasingly imperiled by drought, escalating temperatures, declining water levels, and deteriorating water quality [79]. Certain academic researchers and agency scientists contend that irrigation practices in the Upper Klamath Basin directly impact the habitat, migration patterns, and overall well-being of c'waam and koptu [80,81], sparking significant conflicts among the Upper Basin's agricultural, environmental, and tribal stakeholders.

##### Section 7, Biological Opinions (BiOps), and Interim Operations Plans (IOPs)

The ESA's Section 7 Policy [82] mandates collaboration among federal agencies to safeguard endangered and threatened species. As the agencies responsible for administering Section 7 in the Klamath Basin, NMFS and USFWS are tasked with undertaking assessments of water management practices to understand the potential effects on endangered species in the watershed. Following data collection and analysis, the agencies engage in a "meet and confer" process, where they discuss their findings and recommendations with "relevant stakeholders" [83], including representatives from local communities, environmental organizations, and government agencies. This dialogue encourages a broad exploration of the potential impacts and the development of tailored conservation measures. Subsequently,

the Bureau of Reclamation utilizes these recommendations to craft Interim Operations Plans (IOPs) for the Klamath Irrigation Project. These plans serve as guiding documents for federal water allocation decisions, ensuring that they align with the conservation goals outlined in the BiOps while also considering projected hydrological conditions and the needs of various stakeholders within the basin.

Implications of the Current IOP and Water Management Process

The current IOP regulating Klamath Project water allocation [83] has exacerbated contemporary tensions between stakeholder groups in the Upper Klamath Basin. Under its guidance, the Klamath Project served less than 15 percent of water demand in 2020 and 2022. It was shut down entirely in 2021, as allocation to irrigation interests was theorized to negatively impact endangered species during those years.

In early April 2022, the Bureau of Reclamation released its 2022 Operations Plan [84], which projected water allocation to the Klamath Project based on "current and projected hydrologic conditions." In this Plan, the BOR argued that "ongoing extreme drought conditions for the third consecutive year" were "preventing [. . .] Reclamation from operating the Project consistent with the conditions anticipated to occur for species listed as threatened or endangered under the Endangered Species Act" [84] as specified in the National Marine Fisheries Service 2019 BiOp [85] and the U.S. Fish and Wildlife Service 2020 BiOp [86]. Under conditions of the NMFS and USFWS BiOps, the BOR is required to "meet and confer" with both agencies "in the event that hydrologic conditions in Upper Klamath Lake and in the Klamath River are anticipated to fall outside the scope of certain 'boundary conditions' analyzed by the [agencies] in their respective BiOps" [86]. Coinciding with their "meet and confer" process with NMFS and USFWS, the Bureau of Reclamation simultaneously initiated a collaborative "public involvement" process concerning the 2022 Klamath Project Operations Plan (see Section 4.1.1). In other words, if rainfall and snow accumulation had been more consistent and of greater volume, the water needs of endangered species and the agricultural industry might have been satisfied. However, the water resources were insufficient, exacerbating debates over natural resource allocation and management priorities.

#### 3.1.2. Significance of Investigating Power and Inclusion in Water Governance in the Klamath Basin

The Klamath Basin's complex set of contemporary water management and governance issues make this "situation" well-suited for investigating power and inclusion in multi-jurisdictional decision-making processes about the environment. Along with county, state, federal, tribal governments, and individual landowners, more than 60 formal parties are interested in the Basin's water governance decisions [47]. Published academic literature has examined the watershed in the context of relationships between agriculture and endangered species [87], environmental law and irrigation diversion [69], social-ecological restoration and large dam removal [67], and the economic effects of water conflict [65]. Scholars and decision-makers can benefit from examining the Klamath Basin "situation" to identify how collaborative governance processes either effectively or ineffectively engage stakeholders and the associated power- and equity-based implications and implications for environmental outcomes.

### *3.2. Research Methodology*

Qualitative research methods are best suited for studies that aim to provide an in-depth understanding of the lived experiences of research participants [88]. The kinds of social problems best handled by such methods are ill-defined or poorly understood, deeply rooted, delicate or intangible, and sensitive to individual perspectives, cultural contexts, and subjective interpretations [89]. For example, in a multi-site case study examining the effectiveness of local blue economy practices in addressing the intertwined challenges of poverty and environmental degradation in coastal communities [90], qualitative methods

allowed researchers to explore the diverse perspectives of residents on the impacts of poverty, overfishing, pollution, and climate change on their livelihoods and well-being. Similarly, in research on Indigenous resource conservation in Colombia [91], qualitative approaches enabled researchers to uncover the cultural values, traditional knowledge, and social dynamics influencing ancestral practices for water and land management. These examples illustrate how qualitative research provides rich insights into the multifaceted challenges facing sustainable development and environmental management, offering nuanced understandings that quantitative methods alone may overlook.

The strengths of qualitative research also lie in the in-depth data analysis allowed by its methods. Researchers can delve into issues in detail and examine how phenomena are perceived, understood, and related to the individuals engaged in the data collection process [89]. This approach suitably complements more quantitative studies, which can ascertain prevalence, correlations, and statistical significance but not reveal underlying motivations or contextual nuances [89]. While quantitative methods provide valuable numerical data and statistical generalizability, qualitative research adds depth and richness to our understanding by exploring the intricacies of human behavior, perceptions, and experiences.

Given qualitative methods' capacity to delve into research participants' lived experiences and explore deeply rooted, delicate, and sensitive issues, their utilization in this study is apt for addressing the research questions outlined in Section 3. Qualitative methods offer a nuanced understanding of stakeholder engagement dynamics and provide valuable insights into strategies for improving inclusivity and equity in decision-making processes. Moreover, qualitative methods allow for thoroughly examining implicit power structures, necessitating empirical methods to uncover overt and covert social dynamics within a specific context [53].

Situational analysis, a qualitative analysis method established by Clarke [92] and further developed by Clarke [93] and Clarke, Washburn, and Friese [94], offers a robust framework for examining how affiliations and relationships shape processes and outcomes [95]. Researchers use visualization techniques to create unique visual representations akin to "systems maps" in other disciplines to convey complex situations and illustrate the interplay between various elements and actors (see [96] for examples of how systems maps have been applied in sustainability research). These visual representations offer insights into the interplay between multiple elements and actors within the context under study, aiding in comprehending diverse relationships and dynamics within the "situation". In this context, the term "situation" encompasses many elements and their varied relationships rather than being limited to a singular object or event [94].

Like other situational analyses (e.g., [97]), the larger research project that informed this article is rooted in the ontological assumption that human nature operates in a world where outcomes are strongly influenced by the struggle for and exercise of power. Aligning with this assumption, the situational analysis methodology provides a robust framework for exploring the complex interplay of power relations within social systems. By employing techniques such as social worlds/arenas mapping, researchers can systematically uncover and analyze power distribution, the negotiation of interests, and the exercise of control within specific contexts. Dudley et al. [97] first argued for situational analysis as a critical qualitative methodology to examine power and control in systems sustainability. This article builds upon their work by investigating how water governance processes engage stakeholders with differing power levels and incentives to participate.

### Situational Analysis's Conceptualization of "Social Worlds" and "Arenas"

Within the situational analysis methodology, the process of mapping social worlds or arenas encourages researchers to define and describe the various groups of people involved and the places, whether physical or representational, where these groups interact. This methodology conceptualizes groups of actors as "social worlds" and identifies the spaces, whether tangible or abstract, as "arenas".

In the situational analysis methodology, "social worlds" refer to distinct groups of actors with varying sizes, each characterized by a collective identity and unique dynamics [94]. Within these social worlds, individual actors contribute to shared perspectives that shape both individual and collective identities. To identify social worlds within a "situation", a researcher must qualitatively code their data to distinguish what social worlds come together in a particular arena and why. During data analysis, the researcher asks themselves: "What are [individuals/organizations'] perspectives? What do they hope to achieve through collective action? What are their properties? What constraints, opportunities, and resources do they provide in that world?" [64]. Ultimately, the social worlds/arenas map visualizes how different actors engage with each other [64]. These perceptions undergird the commitments of the social world to collective action in the arenas in which they are involved.

Similarly, "arenas" bring together actors from diverse social worlds who unite to address a particular issue and are prepared to act within that framework. Within these arenas, representatives from various social worlds engage in debates, negotiations, and other interactions [64]. This mapping process aims to identify the organizational and institutional actors involved in the situation, examining which social worlds are concerned about specific issues and their intended actions. By unraveling the complexities of social worlds and their interconnections within arenas, this process sheds light on the unique roles of actor groups in shaping and influencing decision-making processes.

This article uses the social worlds/arenas mapping process to illustrate the complexities of stakeholder engagement within the Upper Klamath Basin's water governance arena. The social worlds/arenas mapping process directly addresses the research goals outlined in Section 3. Specifically, this methodology helps illuminate how institutional affiliations shape stakeholder participation in transboundary water governance within the Upper Klamath Basin. By categorizing actors into distinct social worlds and arenas, the mapping process provides a visual framework to analyze the complexities of stakeholder engagement and interactions within the water governance arena. Additionally, it facilitates a deeper understanding of how different stakeholder groups with varying power levels and incentives participate in decision-making processes. The social worlds/arenas mapping process serves as a valuable tool for achieving the objectives of this study by shedding light on the dynamics of stakeholder engagement and identifying strategies to promote greater inclusivity and equity in decision-making processes, thereby offering practical insights for policymakers and researchers interested in transboundary water governance within the Upper Klamath Basin.

Still, it is important to acknowledge the limitations of the situational analysis methodology, despite its valuable insights into institutional affiliations and organizational landscapes. In the context of environmental and natural resource social science, these limitations can significantly impact a study's findings. For instance, the reductionist representation of complex situations by SA may hinder the comprehensive understanding of environmental dynamics, potentially overlooking critical factors or interactions between actors. This could lead to incomplete insights into the intricate relationships between stakeholders and their impacts on decision-making processes. Additionally, SA's limited applicability in capturing temporal changes may restrict the study's ability to assess the evolving nature of environmental issues over time, potentially missing important trends or shifts in dynamics between human and non-human actors. Furthermore, the challenge of attributing specific discursive positions within SA may limit the depth of analysis regarding stakeholders' perspectives and interests, potentially resulting in oversimplified interpretations of complex environmental debates. While situational analysis methods may be more suitable for less complex environmental issues, this article demonstrates its utility in examining transboundary water governance processes, particularly in identifying less powerful actors, as suggested by Clarke [64].

### *3.3. Data Collection and Analysis*

The findings presented in this specific article are based on data from observations of public meetings and events and semi-structured interviews conducted within the broader research project. Details regarding this data and their collection process can be found in Table 1.

**Table 1.** Sources of primary qualitative data used in this study.

| Data Source | Total N | Timeframe Collected | Category of Event, Meeting, or Interview Participant | | Remarks |
|---|---|---|---|---|---|
| | | | Event, Meeting, or Participant Type | Category N | |
| Observation of Public Meetings and Events | 85 | September 2021 to December 2022 | Klamath Basin Improvement District Board of Directors Meeting | 4 | Over 400 hours spent observing 85 separate meetings and events with natural resource stakeholders representing more than 100 organizations, government agencies, businesses, tribal groups or families across the Klamath Basin |
| | | | Klamath Drainage District Board of Supervisors Meeting | 12 | |
| | | | Klamath Irrigation District Event or Board of Directors Meeting | 15 | |
| | | | Klamath Project Drought Response Agency Board of Directors Meeting | 7 | Observations conducted at online and in-person meetings and events; handwritten notes taken throughout the observation |
| | | | Klamath Water Users Association Event or Board of Directors Meeting | 11 | |
| | | | Tulelake Irrigation District Board of Directors Meeting | 5 | |
| | | | Local political group meeting or event | 13 | |
| | | | Other | 18 | |
| In-depth, Semi-structured interviews | 32 | March 2022 to December 2022 | Elected county official | 2 | 28 interviews conducted with 32 people involved in the Upper Klamath Basin's agricultural and natural resource governance |
| | | | Employee of a Klamath Project drainage or irrigation district | 3 | |
| | | | Employee of an agricultural or natural resource NGO | 4 | Participants had to be interested in Klamath Basin agricultural and natural resource governance and be aged 18 or older |
| | | | Employee of a county, state, or federal resource agency or service provider | 10 | |
| | | | Local news reporter | 1 | Participants recruited using a combination of purposive, convenience, and snowball sampling [98] |
| | | | Klamath Project patron who held an elected leadership position | 5 | Used a semi-structured instrument consisting of 27 open-ended questions organized into five categories: introduction, perceptions of and adaptations to water scarcity; participation in water governance organizations or processes; perspectives on water scarcity during the summer of 2021; and closing interviews ranged from 25 min to five hours, with an average length of one hour and six minutes |
| | | | Klamath Project patron who did not hold an elected leadership position | 7 | |

Human subjects protection approval for this study was granted by the Pennsylvania State University Institutional Review Board (IRB) (Study IDs 00018640 and 00019030). Before observations of public meetings and events began, an observation protocol was developed, framed by the broader study's questions and objectives [47]. Before observational data collection, approval was requested from Pennsylvania State University's Institutional Review Board. Penn State IRB determined that data collection at public meetings did not "meet the definition of human subject research". As such, attendees at the public events and meetings observed in this study were not required to obtain verbal consent. Following the conclusion of each observation, all handwritten notes were digitized, participant identifiers were removed from the digitized file, and all interviewees were assigned gender-neutral pronouns and pseudonyms. For each interview participant, informed, verbal consent was obtained from all subjects using an IRB-approved verbal consent form as the consent guide. Before each interview, participants were provided with a detailed information sheet explaining the study's purpose, procedures, and potential implications. Following this, they had the opportunity to ask questions about the research and their participation in it. Verbal consent was obtained from each participant before their interview began. With a participant's verbal consent secured, their interview was audio recorded and transcribed verbatim using a transcription service. All personally identifiable information was redacted from each transcript before data analysis began. At the end of each interview, participants were given a paper copy of the lead author's contact information and contact information for Pennsylvania State University's Office for Research Protections should they have any questions or concerns about the study, their participation, and their data.

Data analysis followed the principles of situational analysis [64], involving initial coding of words, phrases, and sentences. Interviews underwent comprehensive review and coding, while observation notes were selectively coded for emergent themes. The NVivo 12 qualitative coding software facilitated code elaboration and categorization, while constant comparative analysis refined codes and categories [99]. The social worlds/arenas mapping process, a situational analysis tool described in Section "Situational Analysis's Conceptualization of 'Social Worlds' and 'Arenas' above, was employed for further data examination. To create the social worlds/arenas map, I condensed and synthesized the extensive interview notes into key themes and categories, identifying recurring patterns

and relationships among them [94]. These themes were visually represented and interconnected in the social worlds/arenas map, providing a comprehensive overview of the interconnected social systems and dynamics within the research context.

Creswell [100] describes many methods scholars can employ to promote the validity of qualitative studies and suggests that researchers utilize at least two. I engaged in peer review, debriefing, and member checking in this study. Member checking, a technique to enhance study accuracy, credibility, and validity, involved one-on-one clarification with participants post-formal interviews and sending verbatim transcripts for review and edits using Microsoft Word's "Track Changes" feature. While some scholars critique this method [101,102], it proved effective in verifying and enhancing data accuracy, confirming redactions, and allowing participants to provide additional insights to their initial statements. I also used methods articulated by Harvey [103] to check preliminarily analyzed data. Seven interview participants were recruited to partake in unrecorded one-on-one meetings held in December 2022 in the final weeks of my fieldwork. These meetings ranged from thirty minutes to two and a half hours and took place at the individuals' home or place of work. During this time, I shared a preliminary draft of Figure 3 and additional findings from the broader study of which this article is a part. Participants were asked if they recognized their own experiences within these themes and findings, and they were encouraged to raise any information that should be added or problematized in the preliminary findings. These member-checking processes were imperative for validating this study's findings.

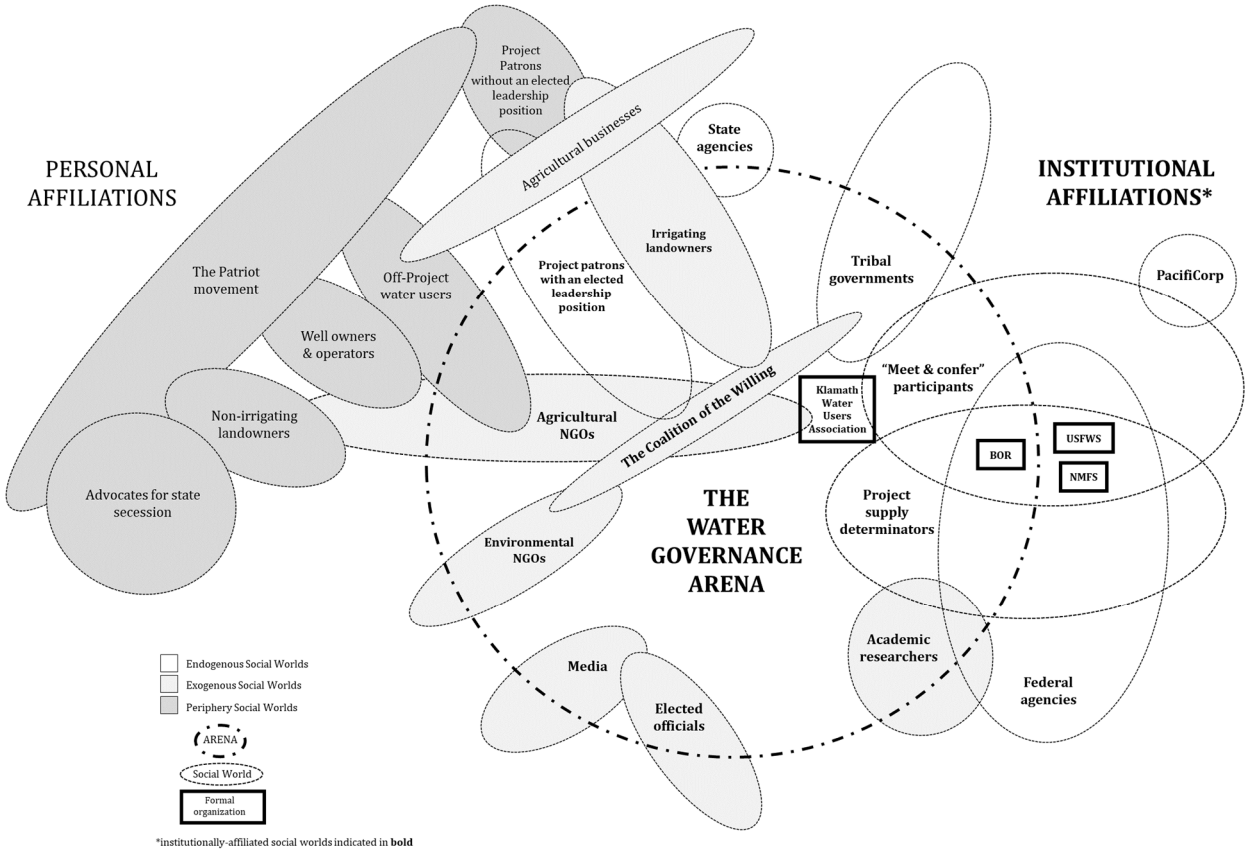


**Figure 3.** Social Worlds/Arenas Map of the Upper Klamath Basin Decision-Making Domain.

## 4. Findings

The findings outlined in this section offer insights into the involvement of stakeholders in the decision-making processes related to water governance in the Upper Klamath

Basin. These insights are derived from extensive field observations and semi-structured interviews described in Section 3.3. The social worlds/arenas map presented in Figure 3 serves as an interpretive tool, visually representing the complex dynamics of stakeholder participation in transboundary watershed governance, directly addressing the research questions outlined in Section 3. To create Figure 3, qualitative data from field observations and interviews were analyzed using coding techniques outlined in Section 3.3 to identify and differentiate social worlds based on their perspectives and interactions within specific arenas. This visualization illustrates how actors engage with each other and their roles in decision-making processes. By categorizing actors into distinct social worlds and arenas, this figure visually represents stakeholder interactions and power dynamics within the water governance arena, deepening our understanding of how institutional affiliations shape stakeholder participation. While acknowledging the inherent limitations of situational analysis methodology described in Section 3.1.2, it is essential to view Figure 3 as an interpretive visualization, offering a specific illustration of stakeholder dynamics within the Upper Klamath Basin decision-making domain. Despite its limitations, Figure 3 serves as a valuable tool for visualizing the complexities of stakeholder engagement within water governance processes in the Upper Klamath Basin, ultimately informing collaborative efforts toward sustainable management practices.

### *4.1. The Water Governance Arena*

Following Clarke [64], the social worlds/arenas map presented in Figure 3 lays out "the arena" of participant actors within the Upper Klamath Basin decision-making domain. This domain has been interpreted for this study as comprising a singular decision-making center: "the water governance arena". Within this arena, different actors are grouped into "social worlds". These "social worlds" differ in their concern about how—and to whom—the Upper Klamath Basin's water is allocated. Within this domain are two broad classifications of actors: those with "institutional affiliations" and those with "personal affiliations". Here, I use the term "institutional affiliations" (bolded social worlds in Figure 3) to signal the administrative relationship(s) of the social worlds formally affiliated with a government, organization(s), company(ies), or state-sponsored agency(ies). Data from observations and interviews found that these social worlds are directly involved with or able to influence water governance decision-making in the Upper Klamath Basin. As revealed in Figure 3, the actors possessing the most institutional affiliations are located directly within the water governance arena circle.

"Personal affiliations", on the other hand (unbolded in Figure 3), are composed of non-institutionally affiliated social worlds. These worlds comprise actors who are not direct participants in government-led stakeholder engagement activities, nor are they privy to all information used to inform water governance decision-making processes. Examples of such actors include non-irrigating landowners, off-Project irrigators, and affiliates of political movements. Despite their non-institutional status, these actors significantly shape water governance dynamics. These non-institutionally affiliated social worlds typically operate independently from formal governance structures and may not directly engage with other stakeholders in the water governance arena. However, as detailed in Section 4.1.2, there are instances where certain social worlds straddle the personal–institutional boundary. For instance, "Agricultural NGOs", "Off-Project water users", and "Project patrons with an elected leadership position" maintain connections to institutionally affiliated stakeholders. These interactions challenge the status quo of water governance processes and outcomes in the Upper Klamath Basin. By leveraging their connections and strategic alliances with institutionally affiliated actors, some non-institutionally affiliated stakeholders can assert their interests and preferences, influencing water governance decisions despite their lack of formal institutional ties. This strategic maneuvering enables them to articulate their needs effectively and exert considerable influence over water governance processes, even within an institutional framework from which they are formally detached.

In Figure 3, I applied McCool's stakeholder involvement classification [46] to the actor groups in the Upper Klamath Basin context, aligning with the social worlds/arenas map analysis discussed in Section 3. McCool identifies two key stakeholder groups. Endogenous stakeholders are individuals, companies, governments, and organizations physically present at a governance table and actively involved in decision-making. On the other hand, exogenous stakeholders are not directly involved in this aspect of decision-making but have the power to influence or interfere in such decision-making processes. My analysis introduces a third group of stakeholders with neither endogenous nor exogenous status in the Upper Klamath Basin decision-making domain: peripheral stakeholders. As peripheral stakeholders, individuals and organizations may be interested in or affected by basin water governance processes and outcomes. However, they are neither physically present at the decision-making table nor have the requisite capacity to influence or interfere with such processes. Categorizing social worlds as endogenous, exogenous, or peripheral illuminates the spatial dynamics between actors and unveils the varying degrees of influence and involvement in decision-making processes. This delineation underscores the stark division in participation and influence among different social worlds within the water governance arena. Examining these power dynamics is crucial for recognizing how institutional affiliations may shape access to decision-making processes and how non-institutional actors strategically navigate their influence within the governance framework.

The analysis of social worlds and their affiliations, as depicted in Figure 3, provides a comprehensive overview of stakeholder dynamics within the Upper Klamath Basin water governance arena. By delineating actors into institutional and personal affiliations, the article highlights the varying degrees of involvement and influence among different stakeholder groups. These affiliations, aligned with McCool's stakeholder involvement classification [46], underscore the spatial dynamics of participation and power within the governance landscape. Understanding these power dynamics is essential for comprehending how decision-making processes are shaped and influenced by different actors within the water governance arena. Moving forward, the subsequent subsections will delve into the specific roles and interactions of endogenous, exogenous, and peripheral stakeholders, further elucidating the complexities of stakeholder involvement and influence in the Upper Klamath Basin context.

#### 4.1.1. Endogenous Social Worlds

Data analysis revealed a direct correlation between a social world's classification as "endogenous" and the outcomes of a newly implemented "public involvement" policy by the Bureau of Reclamation in the spring of 2022. The Bureau of Reclamation's Policy CMP P03 Public Involvement in Reclamation Activities [104] authorizes, though does not mandate, "the systematic [provision of] opportunities for affected publics to be informed about the issues; as appropriate, participate in the definition of the problem, objectives, and possible solutions, and have their views documented and considered in Reclamation's decision-making processes" [104]. In determining the Klamath Project's 2022 Operation Plan, the Bureau of Reclamation followed Policy CMP P03 by

> *collaborat[ing] with stakeholders including the Klamath Basin Tribes (Yurok, Hoopa Valley, Karuk, Klamath, Quartz Valley tribes, and Resighini Rancheria), the Klamath Water Users Association, Project irrigation and drainage districts, the Services [NMFS and USFWS], Oregon Water Resources Department, the Bureau of Indian Affairs, PacifiCorp, and leadership from the Department of the Interior and the Department of Commerce* [84].

As highlighted in the quote, the list of participants in the "public involvement" process was made public by the Bureau of Reclamation. However, since these engagement efforts were not open to public participation or observation, the agendas and contents of these meetings remained undisclosed, as did their ultimate impact on transboundary water governance outcomes. The implementation of policies like the Bureau of Reclamation's Policy CMP P03 ostensibly aimed to foster increased inclusivity and transparency.

However, the efficacy of such measures remains uncertain, particularly when crucial discussions occur behind closed doors. This ambiguity underscores the importance of transparency and public access to decision-making processes, especially in matters as vital as water governance.

#### 4.1.2. Exogenous Social Worlds

Distinguishing themselves from their endogenous counterparts, the actors included within exogenous social worlds remained outside the direct sphere of decision-making processes. While their absence from official documentation of state-mandated policies or public involvement in decision-making was notable, their latent influence on these processes was significant. This influence, however, operated covertly, demanding observation to discern how these social worlds subtly shaped outcomes without formal engagement. Figure 3 outlines exogenous social worlds, depicted in the second-lightest shade of gray, which exhibit varying degrees of influence on the water governance arena of the Upper Klamath Basin. These entities assert considerable sway over decision-making processes through overt and covert means.

The overt influence of exogenous social worlds on the water governance arena is exemplified by interactions involving "Irrigating landowners", "Project patrons without an elected leadership position", "Project patrons with an elected position", "Agricultural businesses", and "Agricultural NGOs". Despite their non-inclusion in formal decision-making circles, these actors, endowed with significant financial, natural, and social capital, wielded influence over outcomes through their connections and interactions with institutionally affiliated endogenous social worlds. As articulated by numerous interviewees, a prevalent form of overt influence was the perceived dominance exerted by a few landowners. These influential families, deeply entrenched in various boards and committees, were perceived to wield disproportionate power, effectively steering the direction of the Klamath Project. This sentiment underscored broader frustrations regarding the concentration of influence among a privileged few, perpetuating perceptions of exclusion and inequality within the community.

Furthermore, divisions between large and small agricultural operations underscored disparities in lobbying power and political access. A select few exogenous actors, comprising agricultural businesses, NGOs, and Project patrons with elected leadership positions, leveraged their financial and political clout to sway decision-makers at high levels of government, thereby shaping policy outcomes to their advantage. The division between large and small agricultural operations was also observed in the ability of a select few exogenous social worlds ("Agricultural businesses", "Agricultural NGOs", and "Irrigating landowners") with financial capital and political connections to lobby influential decision-makers like high-ranking cabinet members in the Department of the Interior, members of Congress, and agricultural support services. Through this process, some members of social worlds could use financial capital and political connections to individuals within the water governance arena to affect decision-making processes and outcomes in the Upper Klamath Basin decision-making domain.

At the same time, the exclusion of specific social worlds from the water governance arena was also discussed in the context of the intentional exclusion of political actors from the water governance arena (i.e., those affiliated with "The Patriot movement" and "Advocates for state secession"). This deliberate exclusion reflected broader tensions within the community regarding the appropriate boundaries of participation and the perceived legitimacy of certain voices in decision-making processes. The resistance to including these groups suggested a more profound struggle over representation, power dynamics, and the perceived alignment of interests with broader community goals. Such exclusions risked further polarization and alienation within the community, potentially undermining efforts to foster inclusive and collaborative governance structures.

While examples of overt influence were easily identified through observations of public meetings, examples of exogenous social worlds' covert influence arose from in-depth

interview data. One specific form of exogenous social worlds' covert influence on the Upper Klamath Basin decision-making domain was the potential impact of informal "clandestine stakeholder meetings" on Upper Klamath Basin water governance. These "clandestine meetings" were described by multiple interviewees, all of whom explained how meetings were held in non-public settings and typically involved stakeholders from agricultural and natural resource NGOs, drainage and irrigation districts, county resource agencies, Tribal governments, and others holding formal leadership positions within the Klamath Basin. Some participants in Upper Klamath Basin water governance expressed frustration with these forms of "clandestine stakeholder engagement", with some fearing that the conversations that occurred may "favor particular landowners" and "incite increased frustration with other community members who think that decisions are made behind their backs" (fieldnotes, 9/14/22). These private gatherings raised concerns regarding transparency and accountability, heightening apprehensions among community members regarding decision-making processes conducted behind closed doors.

#### 4.1.3. Peripherial Social Worlds

Unlike endogenous and exogenous, peripheral actors are typically not institutionally affiliated and, thus, have limited financial, technical, and social resources, making it difficult for them to exert any noticeable influence or force on decision-making. Their relationships relied on personal connections to gain information on happenings within the Upper Klamath Basin decision-making domain. This limitation was not because peripheral stakeholders were quiescent, but because of their restricted access to financial, natural, and social capital. In essence, peripheral stakeholders were not "in the arena", so they could not effectively engage or impact the decision-making processes.

Peripherial stakeholders' lack of land, time, money, and information directly correlated with their inability to actively participate in decision-making processes or exert measurable influence over other stakeholders involved in the Upper Klamath Basin decision-making arena. One clear example is visible in the comparison between the capacity of Klamath Project patrons without an elected leadership position (a peripheral social world) and Klamath Project patrons with an elected leadership position (an endogenous social world).

As outlined in Section 3.1.1, the Klamath Project irrigation allocation decision-making process is under the control of the federal government. The Bureau of Reclamation contends that it fosters engagement between itself and various stakeholder groups in the Klamath Basin. However, during the spring of 2022, the BOR only extended invitations for participation in the "public involvement" process to formally recognized group members. To be involved, a member of the agricultural community within the Klamath Project must hold an elected leadership position on one of its boards of directors or supervisors. Such positions can be obtained within drainage and irrigation district boards, the Klamath Project Drought Response Agency board, or the Klamath Water Users Association board. Individuals may also hold leadership roles in other agricultural or environmental non-governmental organizations (NGOs). Holding these leadership positions enhances access to information, enables the expansion of social and political networks, and amplifies the capacity for one's voice to be influential in decision-making processes. This is exemplified by the common occurrence of individuals holding multiple leadership roles, and by families with extensive land holdings having a more significant presence in Klamath Project agricultural leadership compared to those with smaller land holdings. For example, one family who operated on roughly 15,000 acres in the Upper Klamath Basin was represented in leadership positions in the Klamath Basin Improvement District, the Klamath Drainage District, the Klamath Drought Response Agency, the Klamath Water Users Association (KWUA), the KWUA public relations committee, and the Tulelake Irrigation District board of directors. Here, we see how land ownership correlated with opportunities for leadership roles and increased influence in decision-making processes within the Klamath Project.

Likewise, even if an actor held an elected leadership position, they often struggled to participate given the status of their agricultural operation. Compared to large operators,

Klamath Project patrons with small operations saw themselves as possessing less time to attend water governance meetings—an issue of unequal capacity. Because they could not be present in these conversations, they believed they had less access to information than other colleagues in the "Irrigating landowners" social world.

Moreover, because peripheral stakeholders lacked institutional affiliations, their social worlds did not have access to the same information and knowledge as institutionally affiliated endogenous and exogenous groups. Endogenous groups could access inside information because they were directly involved in the water governance process. Those in the exogenous social world typically gained access to inside information through informal networks, personal connections, and by actively seeking out information from various sources outside of formal institutions. Since they lacked institutional affiliations, they were not bound by the restrictions or protocols that may limit access to information within formal organizations. Instead, they relied on personal relationships, informal channels of communication, and their own initiative to gather insights and knowledge. This flexibility allowed them to access a broader range of perspectives and information sources, although it may also have meant they had to work harder to establish credibility within formal governance structures. Peripheral actors, on the other hand, often relied on more indirect or limited channels to obtain information. Without direct involvement in formal governance processes or established networks, they may have relied on public reports, media coverage, or information disseminated by more central actors. Additionally, they might have gathered insights through interactions with individuals who have closer ties to formal institutions or through participation in public forums and meetings. However, their access to inside information was typically less direct and comprehensive compared to endogenous and exogenous groups. This limited access could further reinforce their status as peripheral stakeholders and may have contributed to their perceived lack of legitimacy within the water governance arena.

This analysis found that the water governance arena disproportionately favored more powerful and "legitimate" endogenous and exogenous groups, reinforcing their dominance in decision-making. Consequent to their location on the figurative margins of the water governance arena, peripheral stakeholders were notably absent from the "public involvement" process exercised by the Bureau of Reclamation in the spring of 2022. This reality underscored the exclusionary nature of ostensibly "collaborative" and "publicly-involved" decision-making efforts. The question of whether characteristics defined peripheral stakeholders, leading to their exclusion from decision-making, or whether exclusion from decision-making rendered them peripheral, is complex. While characteristics such as lack of institutional affiliations and limited access to inside information contributed to their peripheral status, it was also the exclusion from decision-making processes that further solidified their marginalization within the water governance framework. This exclusionary dynamic perpetuated the dominance of more powerful groups and reinforced the marginalization of peripheral stakeholders, creating a self-reinforcing cycle of exclusion and marginalization within the water governance system.

## 5. Discussion

In cases of transboundary natural resource governance, such as in the Upper Klamath Basin, decision-making processes typically include a diverse array of actors, including governments fulfilling bureaucratic obligations, political groups advancing their agendas, lobbyists seeking political advantages, NGOs pursuing organizational goals, and concerned citizens addressing political issues. However, multiple actors involved in decision-making processes rarely possess equal opportunities to influence governance outcomes [54]. In the context of collaborative water governance, this inequity is problematic because it can perpetuate already existing disparities in resource access, exacerbate environmental degradation, and undermine the legitimacy of governance structures. A common criticism of engagement-based governance efforts is that they can mirror existing power structures in society and exclude potential stakeholders who were not already part of the existing

structure [54]. This exclusionary trend can further exacerbate inequities within collaborative governance efforts by sidelining individuals, organizations, and perspectives typically underrepresented in environmental and natural resource governance [55]. Studies on transboundary water governance consistently attribute influence and power dynamics to the governance processes' institutional organization, stakeholder interactions, resource distribution mechanisms, and the socio-political contexts of specific natural resource governance settings [105–108]. This study expands our understanding of transboundary water governance by demonstrating how an actor's ability to shape water governance processes and outcomes is also intertwined with their institutional affiliations, their perceived legitimacy, and their capacity to participate in collaborative decision-making processes.

### *5.1. Privilege Associated with Institutional Affiliation(s)*

In the Upper Klamath Basin's decision-making arena, clear examples of privilege emerged. As highlighted in Section 4.1.1, the water governance process there heavily favored institutionally affiliated stakeholders, reinforcing existing power dynamics and excluding those not already part of the established framework. This bias was evident in the prioritization of endogenous government entities, agencies, service providers, and specifically chosen NGOs, effectively sidelining individuals and groups without formal affiliations. This selective approach perpetuated inequalities by granting exclusive decision-making access to a limited group of actors. As discussed in Section 2.2, scholars like Colvin et al. [59] have noted how actors with dual roles, like rule adjudicators and privileged stakeholders, can deepen power imbalances by leveraging their institutional ties within collaborative processes. Therefore, the analysis of the Upper Klamath Basin's water governance reveals a replication of inequities, deviating from inclusive practices and aligning with criticisms of mirrored power structures and exclusionary tendencies.

The Bureau of Reclamation's application of Policy CMP 903 [104] within the Upper Klamath Basin decision-making domain was one attempt toward more inclusive and participatory approaches to transboundary water governance. However, despite CMP 903's embrace of increased collaboration and "public involvement", the situational analysis presented above found that the policy in execution only elevated the perspectives of state- and institutionally affiliated endogenous social worlds within the Upper Klamath Basin's decision-making domain. Under Policy CMP 903 [104], the BOR is authorized to "systematically provide opportunities for affected publics to be informed about the issues; as appropriate, participate in the definition of the problem, objectives, and possible solutions, and have their views documented and considered in Reclamation's decision-making processes" [104]. This systematic engagement is a methodical effort that differs from public relations, information sharing, educational campaigns, and shared decision-making between collaborators on an equal playing field.

Because the BOR is not required to engage the whole public in their decision-making processes, they can methodically invite specific government representatives, agencies, service providers, and non-governmental organizations to the decision-making table. By involving an intentionally selected, small number of government representatives, state and federal agencies, and a select few non-governmental representatives to participate in the water governance arena, Reclamation gave the appearance that collaborative decision-making was occurring. However, this "public involvement" was only a symbolic effort toward participant inclusion, as significant divides (visible in Figure 3) remained between the types of social worlds directly located within the water governance arena. Ultimately, actors affiliated with formal institutions like the DOI and the Bureau of Reclamation had more influence.

In addition to the limitations of stakeholder inclusion posed by Policy CMP 903, differences in the capacity of stakeholder groups within social worlds also restricted stakeholders' ability to participate in and ultimately exert influence upon the Upper Klamath Basin's decision-making domain. As demonstrated in Figure 3, non-institutionally affiliated worlds typically did not operate within the water governance arena. Nevertheless, a select few

social worlds—those possessing increased financial, natural, and social capacity straddled the personal–institutional divide. This ability to access the water governance arena was the most significant difference between exogenous and peripheral social worlds.

Stakeholders' unequal capacities to participate in collaborative decision-making processes was directly related to the resources (visible or invisible) that they possessed [53]; social, cultural, financial, built, and natural capital were all elements that influenced an individual's ability (i.e., capacity) to engage in environmental governance. As discussed in Section 4.1.3, differences in available capital and personal capacity were the main factors distinguishing exogenous, endogenous, and peripheral social worlds and ultimately influencing an individual's ability to participate in transboundary water governance processes.

### *5.2. Potential Effects of Perceived Legitimacy*

This study's findings underscore the complexities surrounding the perceived legitimacy of stakeholder groups and their participation in engagement processes. As discussed in Section 2.1, the environmental governance literature grapples with defining stakeholders, reflecting a fundamental challenge in determining who should be involved in decision-making processes. While those affected by environmental management decisions inherently hold a "stake" in the outcomes, access to governance arenas often requires institutional affiliation, as evidenced in this situational analysis. The study reveals that merely holding a stake in decision outcomes is insufficient; stakeholders must also possess the interest, power, and capacity to actively participate in water governance processes.

Section 4.1 underscores the hierarchical nature of participation within these social worlds, where actors with perceived legitimacy, typically institutionally affiliated stakeholders, wielded significant influence. This dominance often marginalized less recognized groups, exacerbating power imbalances and compromising the inclusivity of governance processes. The complications arising from perceived legitimacy underscored the importance of addressing biases and ensuring fair representation within social worlds. Without clear criteria for legitimacy, decision-making outcomes may reflect the interests of a select few rather than the broader community. As such, efforts to promote transparency and inclusivity in governance structures must include robust mechanisms for evaluating and addressing perceptions of legitimacy among stakeholder groups. Through these measures, water governance processes can better reflect the diverse interests and needs of all stakeholders involved.

Friedman and Miles [109] maintain that the literature often assumes stakeholder legitimacy without clearly defining the criteria distinguishing legitimate from illegitimate stakeholders. Similarly, Friedman and Miles [110] emphasize the importance of legitimacy as a basis for influence, highlighting the ongoing need for clarity on what constitutes legitimate stakeholder involvement. The subjective nature of identifying legitimate stakeholders, often done ad hoc, poses challenges as it can marginalize certain groups, bias process outcomes, and undermine long-term support for collaborative efforts. Nevertheless, it is important to acknowledge differing perspectives on the relationship between perceived legitimacy and stakeholder involvement. Some scholars argue that overly stringent criteria for legitimacy may inadvertently exclude certain voices and perspectives from decision-making processes, hindering inclusivity [111–113]. Others maintain that the dynamic nature of "legitimacy" means that stakeholders' perceived legitimacy may evolve [114]. These perspectives highlight the need for flexibility and ongoing dialogue to ensure that governance structures remain responsive to all stakeholders' diverse needs and interests. Thus, while addressing biases and ensuring fair representation are crucial, it is also essential to recognize the nuances and complexities inherent in defining and evaluating stakeholder legitimacy. Future studies on power, equity, and inclusion in water governance must further explore the legitimacy of stakeholder groups within decision-making processes. A comprehensive evaluation of endogenous, exogenous, and peripheral stakeholders offers a promising avenue to delve deeper into the underlying dynamics of representation and participation. Through such analyses, researchers and practitioners can enhance our under-

standing of stakeholder dynamics and inform strategies for fostering more inclusive and effective governance structures.

### *5.3. Influence of Available Capital and Personal Capacity*

This study has also found that disparities in available capital and personal capacity are the primary factors distinguishing exogenous, endogenous, and peripheral social worlds, thereby influencing participation in transboundary water governance processes. This finding underscores the urgent need for proactive measures to address the marginalization experienced by those in peripheral social worlds. The situational analysis methodology employed in this study offers a potent tool for identifying and visualizing the relationships and dynamics of marginalization within stakeholder groups. Through an appreciative inquiry lens, it becomes evident that government agencies or their engagement consultants should embark on comprehensive stakeholder mapping initiatives. These processes pinpoint potentially marginalized groups and unravel the intricate dynamics perpetuating their exclusion. In light of critiques offered by scholars like Alexander et al. [115], Forrester et al. [116], and Mercer-Mapstone et al. [117] on typical stakeholder mapping practices, there is an opportunity to refine these methodologies. By adopting more nuanced approaches that consider the socio-cultural, financial, and environmental dimensions of capital, stakeholders' capacities and their potential for marginalization can be more accurately assessed. This refined stakeholder mapping can serve as a crucial tool for recognizing and addressing the root causes of marginalization, contributing to more inclusive and effective transboundary water governance processes.

## 6. Conclusions

This article's examination of stakeholder inclusion in Upper Klamath Basin water governance revealed multiple challenges for equitable and inclusive engagement processes. Despite collaborative decision-making's professed goal of inclusiveness, prevailing power structures often perpetuated exclusionary practices, sidelining specific stakeholder groups. These findings significantly contribute to the field by providing empirical insights into the complexities of stakeholder inclusion in water governance, particularly in the Upper Klamath Basin. By examining the challenges various stakeholder groups faced and identifying systemic barriers to participation, this article fills a gap in the literature that often lacks data-driven analyses of engagement processes and outcomes in water resource management [35].

As described in Section 4.1.1, the Upper Klamath Basin's water governance process prioritized the involvement and opinions of institutionally affiliated stakeholders, selectively involving government representatives, agencies, service providers, and NGOs over people not affiliated with a formally organized and recognized group. While initiatives like the Bureau of Reclamation's Policy CMP 903 take essential steps to increase public involvement in natural resource decision-making by providing "systematic opportunities" for public participation, the selective invitation of stakeholders to be involved in these systematic processes failed to address underlying issues related to power imbalances, institutional biases, and historical marginalization. This oversight can ultimately reinforce inequities in the water governance process, perpetuating the dominance of privileged stakeholders and sidelining the perspectives of marginalized communities. Consequently, rather than genuinely addressing power differentials, implementing policies like CMP 903 tended to perpetuate existing inequities, maintaining the status quo of decision-making authority. This approach created the illusion of comprehensive collaboration while failing to bridge the significant divides between different social worlds within the basin, emphasizing the superficial nature of inclusion efforts that must address the root causes of exclusion and marginalization.

Moreover, the findings underscored the need for more comprehensive research on stakeholder engagement dynamics, including the role of power structures, institutional biases, and access to information, thereby enhancing our understanding of how to foster

more equitable and inclusive decision-making processes in water governance contexts. As detailed in Sections 4.1.2 and 4.1.3, differences in stakeholder capacity played a significant role in exacerbating disparities in stakeholder engagement, with some groups having greater resources and influence over the Upper Klamath Basin's water governance process. This disparity, evident through the presence of endogenous, exogenous, and peripheral social worlds, highlighted systemic barriers to participation in engagement processes. Stakeholders with greater resources and institutional ties—like those from exogenous and endogenous social worlds—wielded disproportionate influence, while peripheral groups remained marginalized and largely removed from engagement processes.

The complications related to the perceived legitimacy of stakeholder groups significantly exacerbated these challenges. Findings in Section 4.1.3 highlight how a key challenge to peripheral actors' ability to be involved in governance decision-making processes was their perceived legitimacy by the institutions responsible for coordinating the collaboration effort. Suppose a specific group or individual is not deemed "legitimate" by the actor(s) or organization(s) leading the engagement effort. In that case, they may face exclusion from critical discussions and decision-making processes, further perpetuating their marginalization. Because stakeholders are often identified and selected to participate in engagement processes on an ad hoc basis, determining which stakeholders are "legitimate" remains subjective, leaving room for bias and overlooking the voices of those who may hold valuable perspectives. This subjectivity can marginalize groups, bias process outcomes, and jeopardize long-term viability and support for future collaborative processes. Ultimately, stakeholders' affiliation with institutions often determines their access to the decision-making arena, marginalizing those without institutional ties and undermining the legitimacy of collaborative processes.

Finally, findings presented in Section 4.1.3 also highlighted the critical role of access to reliable information and avenues for participation in shaping stakeholders' perceptions and involvement in engagement processes like those outlined in Policy CMP 903. Peripheral stakeholders, lacking institutional affiliations, faced significant barriers to accessing comprehensive information compared to endogenous and exogenous groups. While endogenous stakeholders benefitted from direct involvement in water governance and access to inside information, exogenous groups relied on informal networks. In contrast, peripheral actors often resorted to indirect channels, such as public reports and media coverage, reinforcing their peripheral status and perceived lack of legitimacy within the water governance arena.

Addressing this cycle of peripheral group exclusion from stakeholder engagement efforts requires that water governance institutions critically evaluate participant equity in stakeholder engagement processes and maintain a genuine commitment to inclusivity. There are several specific strategies practitioners can take to meet these requirements. First, all water governance decision-making authorities (including federal decision-makers like the Bureau of Reclamation) should engage in proactive, transparent bureaucracy [118] and make publicly available information about how their agencies and organizations make decisions and what policies and regulations undergird these decision-making processes. Increased transparency, though not an avenue for all groups to have a ticket into a decision-making arena, may allow peripheral stakeholders to peer through the stands and catch a glimpse of who is involved in the decision-making process.

Second, engagement processes should be incentivized within transboundary water governance structures. In the case of the Upper Klamath Basin, engagement processes employed by the Bureau of Reclamation encouraged the intentional exclusion of non-institutionally affiliated parties. This hierarchical, bureaucratic system is problematic because it hinders the development of holistic, sustainable solutions that adequately address the diverse needs and concerns of all stakeholders. To foster genuine collaboration and inclusivity, local, state, regional, and federal government authorities are encouraged to create a system of voluntary engagement that promotes the participation of peripheral stakeholder groups traditionally excluded from governance processes. Though these groups may not have formal control over water allocation, regional residents—no matter

how peripheral—are still "affected publics" and should have the opportunity to know, at a minimum, who is making decisions, what information is being used to make those decisions, and have a chance to ask questions, raise concerns, and give praise. By incentivizing and prioritizing inclusive engagement, transboundary water governance structures can better address the complex challenges facing transboundary watersheds like the Upper Klamath Basin and ensure the long-term sustainability of water resources for all stakeholders involved.

Moreover, creating opportunities for meaningful dialogue and shared decision-making among diverse stakeholders is essential for building trust and fostering inclusive governance practices. Therefore, efforts should facilitate inclusive forums where all voices are heard, valued, and considered in decision-making. This may involve implementing structured consultation, consensus-building, and conflict resolution processes and providing resources and support to ensure meaningful participation from all stakeholders, regardless of their level of influence or representation. Ultimately, by embracing transparency, trust-building, and inclusive decision-making, water governance authorities can work towards dismantling barriers to engagement and creating more equitable and sustainable outcomes for all stakeholders involved.

Future research in stakeholder engagement and water governance would benefit from continued empirical investigation into the processes and outcomes of stakeholder engagement in water resource management. For instance, a recent systematic review of peer-reviewed publications on stakeholder engagement in water resource management [35] found that the peer-reviewed literature has limited data-driven studies of engagement processes and outcomes. More than half of the articles included in the systematic review's sample were case studies where community or stakeholder engagement played some role in an examination of stakeholder engagement in water resource management, but engagement processes or outcomes were not meaningful objects of inquiry within the publication [35]. For scholars to improve the practice, effectiveness, and outcomes of engagement, detailed empirical data such as stakeholder demographics, engagement methods, and outcomes must be included in the evaluation process.

In the specific case study of water governance in the Upper Klamath Basin, there is a pressing need for more comprehensive research. By delving deeper into motivations for stakeholder engagement and exploring the factors influencing agency decisions regarding inclusion, we can potentially transform the current state of water governance. Specifically, understanding how agencies like the Bureau of Reclamation determine whom to include in engagement processes, define and identify "affected publics," and justify their decisions regarding stakeholder participation can lead to significant improvements. Through empirical studies and data gathering on these aspects, we can better understand the underlying dynamics of stakeholder engagement in water governance contexts and identify opportunities for improving stakeholder engagement's inclusivity, transparency, and effectiveness. Understanding and documenting these decision-making processes are essential for fostering accountability and improving inclusivity in water governance.

Additionally, future research should compare engagement processes in the Upper Klamath Basin to those in similar transboundary watersheds in the western United States like the Colorado [119] and Columbia River Basins [120]. Researchers can identify common patterns, challenges, and best practices related to engagement, inclusion, and stakeholder participation by comparing practices across different cases of transboundary water governance. Examining the presence and dynamics of endogenous, exogenous, and peripheral stakeholder groups in these various contexts can provide valuable insights into the effectiveness and equity of engagement efforts. Overall, future research endeavors should shed light on the decision-making behind stakeholder inclusion, comparing engagement processes across regions and assessing the inclusivity and effectiveness of these processes in addressing complex water governance challenges. Through such efforts, sustainable solutions reflecting diverse perspectives can be achieved in a truly equitable and inclusive decision-making environment.

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