CENTERING EQUITY IN OREGON'S 100 YEAR WATER VISION

A student-led policy paper prepared by the Oregon Water Stories team at Portland State University

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Executive Summary

The purpose of this report is to provide evidence for the need to further intentionally incorporate equity into Oregon's 100 Year Water Vision. Four case studies contextualize this need and highlight the variety of water issues throughout the state, supported by linguistic analyses of local newspapers. As Oregon policy-makers are responsible for ensuring working water systems for all Oregonians, we also suggest implementable criteria for the evaluation of equity in water issues and decision-making. This student-led and interdisciplinary report comes from the Haeffner-Cowal Oregon Water Stories research lab at Portland State University.

Problem Statement

We all acknowledge the necessity of thoughtfully reimagining Oregon's water future. We also know that Oregon is varied by geography, hydrology, climate, and sociodemographics. This policy paper is intended to put forth water justice language that can promote equity for diverse stakeholders in Oregon's 100 Year Water Vision. See Appendix A for a preliminary inventory of the top water issues across the state by region.

The draft of the Water Vision has already begun framing a new approach to Oregon's water that is focused on stewardship, resilient natural and built water systems, and that centers goals around health, safety, economy, and environment. These goals are far-reaching and forward-looking. Our research team has been examining the social and environmental justice aspects of water in Oregon, and has come to believe that equity should be added as a fifth goal. The ultimate aim is for equity to be incorporated into the foundations of any Oregon water policy. However, it is hard to conduct this fundamental transition in policy, so making it a separate fifth goal would put equity in dialogue with the other four goals and at the forefront of the Water Vision. This water policy for the future needs to explicitly recognize and name historical and systemic reasons for the current inequities in water resource management and access. Using language like "for all" and "for future generations of Oregonians" is inclusive, but not explicit enough to undo harms from racism, sexism, and other types of exclusion based on language, ability, ethnicity, and class. For authentic transformation in policy, we must center restorative language.

We define equity as treating people justly according to their circumstances, and environmental justice (EJ) as working for an equitable distribution of environmental burdens, benefits, and responsibilities. Distributive, procedural, recognition, and representational justice are principles of EJ identified by scholars. Case studies will frame and define each of these principles, and each case study will conclude with example questions Oregon policy-makers could ask to evaluate how that justice principle could be more fully supported. Centering and being explicit about water equity in this Water Vision would be an important first step to (re)building trust and engagement with Oregon publics, and specifically with groups who are often marginalized in decision-making contexts.

Representational Justice

Ontario

Ontario, located in Malheur County and on the border of Oregon and Idaho, is majority White, with a significant (almost 43%) Hispanic or Latinx community and an increasing population of immigrants and refugees. Ontario's commuter population during the day is almost six times larger than its nighttime population of 11,080. In our research, we found that the dominant water issues in this area appear to be irrigation, snowpack and drought, and water contaminants such as arsenic and cyanobacteria.

Representational justice asks, "Who is at the table?" And, "Are the socio-demographics of the area equitably represented here?"

Given the racial, ethnic, and class diversity of the population, it is essential to examine the makeup of water decision-making entities in Ontario to see if they reflect this diversity. This is a case for representational justice, which calls for the sociodemographic range of an area's citizens to be equitably represented by the sociodemographics of the area's decision-makers. One example of this equity in action could be determining if Latinx farm workers in Ontario are represented by the area's agricultural and irrigation decision-making boards.

Ensuring representational justice in any water decision-making context is vital to an equitable Water Vision for the future. Oregon's diverse people, environments, and economies deserve accurate representation in water policy, and if some relevant viewpoints are not represented, water policies lose out on critical perspectives. In order to make effective, resilient water decisions, all groups who have a stake in that water must be present at the table.

Example questions to evaluate if representational justice criteria are being met:

1. Who is and is not involved in this decision-making, and what are their sociodemographics (gender, ability, language, race, ethnicity, immigration status, etc…)?

2. Does the sociodemographic makeup of the decision-making body adequately represent that of the population that has a stake in this decision?

3. To what extent are representatives of different sociodemographic groups able to participate in and influence the policy in this decision-making context?

Procedural Justice

Pendleton

Located just to the west of the Umatilla Indian Reservation, Pendleton is a medium-sized city with a majority White population and a significant community (11.3%) of people who identify as Hispanic or Latinx. According to our research, the main water issues in Pendleton seem to be water and sewer rate increases, drought and flooding, and water contamination.

Procedural justice asks, "How equitably can people access, participate in, and contribute meaningfully to policy procedures?"

The demographics of Pendleton combined with the water issues it is experiencing warrant a review for procedural justice, which can be defined as how equitably people can access, participate in, and contribute meaningfully to policy procedures. One question that could be asked in this case is how much are people in the Hispanic and Latinx community, as well as members of the Confederated Tribes of the Umatilla Indian Reservation, able to influence relevant policy? For example, are materials and meetings in both English and Spanish, and are relevant meetings held both on and off the Umatilla Indian Reservation?

Making procedural justice a reality is another step towards equity and is connected to evaluating for representational justice. For instance, having a sociodemographically representative committee on water rights would be important, but a step further is making sure that this committee has the political or legal clout to truly influence decisions around water rights. Embedding procedural justice in water policy will ensure that the diverse perspectives of Oregon water users are not only represented in decision-making contexts, but also that these perspectives have the ability to actually access and impact decision-making processes.

Example questions to evaluate if procedural justice criteria are being met:

1. Who has access to active participation in this decision-making process? Who does not?

2. Can people attend this process, given its time(s), date(s), duration, location(s), and services available, such as food, childcare, and language interpretation for Spanish, ASL, and others?

3. Do the avenues for participation actually give people the power and information needed to create meaningful change?

Distributive Justice

Roseburg

Roseburg, the seat of Douglas County, has a majority White population, more citizens living below the poverty line than the Oregon average, a substantial retired population, and a daytime commuter population that is nearly triple that of its nighttime population. In our research, we found that the main water issues in Roseburg appear to be drought, flooding, water quality and contamination, and water infrastructure.

Distributive justice asks, "Who is most impacted by this issue, and are these groups already vulnerable or marginalized?"

When issues of water access and quantity, such as boil water notices or drought, are detected in an area, the situation should be evaluated for distributive justice. This means assessing the sociodemographics of the people most impacted, to make sure that those who are already vulnerable or marginalized are not disproportionately burdened. In Roseburg, for example, it would be important to find out if any neighborhoods that received multiple boil water notices are home to a disproportionate percentage of one race, age, or class of residents.

Evaluating for distributive justice is a central tenet of water equity and should be at the forefront of governmental priorities in any situation related to water issues. It is critical that those already experiencing vulnerability or marginalization are not the recipients of a disproportionate amount of environmental impacts, and that these burdens, as well as any environmental benefits, are distributed equitably between all groups.

Example questions to evaluate if distributive justice criteria are being met:

1. Who is vulnerable or already marginalized in this area, and why?

2. How are these communities being affected by environmental issues? Are they disproportionately bearing the weight of environmental burdens?

3. What would an equitable distribution of environmental burdens and benefits look like?

Recognition Justice

Warm Springs

Warm Springs is located in Jefferson County on the Warm Springs Indian Reservation, which was created in 1855 when over 10 million acres of land were ceded by treaty to the U.S. The population on average is young, more than a third of the population lives below the poverty line (38.3%), and most people identify as Native American (93%). Our research identified the main water issues in Warm Springs as drought and water shortages, contaminated water, and the effects of these problems on fish populations.

Recognition justice asks, "Is the past and its influence on the present being appropriately recognized?" And, "Who can 'set the table' for this policy?"

Warm Springs is an example for recognition justice, which can be understood as appropriately recognizing the past and its influence on the present, combined with thinking critically about who has the power to set policy agendas. In this case, the state could consider the history of inequitable treatment of tribes and tribal lands, and how this dynamic might decrease the ability of tribal members to influence water policy relevant to Warm Springs at the state level. The financial and physical resources accessible to the Warm Springs tribes for completing water projects could also be a measure of the community's ability to set the agenda and act on water issues. In sum, recognition justice can be approached by asking, "Who gets to set the table for this decision-making?" And next, by exploring how the past might affect the ability of various stakeholders to have more or less power to influence the agenda of this decision-making.

Recognition justice is crucial to an equitable Water Vision for Oregonians because it requires policy to acknowledge the past and understand how it is shaping the present. Recognizing past inequities in policy paves the way to avoid reproducing these same inequities in current policy content and process. Further, recognition justice necessitates a thorough evaluation of the power dynamics at play in policy-making, which can open the door to new possibilities for addressing water inequity.

Example questions to evaluate if recognition justice criteria are being met:

1. Who can "set the table" for this policy, i.e. who has the power to set the agenda at each level of government for this issue? Who does not have this power?

2. How might the history of this location, relationship, or issue be affecting who can and cannot set the agenda? Is this history being recognized appropriately?

3. In what ways can the process and content of the discussion of this issue be made more equitable, given this new understanding of historical inequities and current power dynamics?

Recommendations

Drawing on these four case studies as examples of integrating environmental justice into water policy, we have developed a list of recommendations to promote equity in Oregon's 100 Year Water Vision.

➢ Equity could be a fifth goal, and could have a definition such as: "Building from an understanding of historical and systemic reasons for current water inequities in Oregon, provide fair access to water and equitable inclusion in water management processes."

➢ The specific aim of striving for distributive, recognition, representation, and procedural water justice, the four principles of environmental justice, could be incorporated into the "Vision" section of the document.

➢ With recognition justice in mind, the broad reasons for past and systemic water inequities that exist in Oregon today could be stated in the "Problem Statement" section or an appendix. For example: "Without acknowledging Oregon's history of racism and oppression of people of color, policy-making will not be able to fully address the water issues created by this history."

➢ With representational justice in mind, another round of Community Conversations aimed at hearing from groups we know were missed in the last round could be held. For example, Latinx seasonal farmworker communities, people experiencing homelessness, and refugee communities could be particularly invited and could help design the Conversations. These Conversations could be made accessible to the specific group they are aiming to recruit from in a variety of ways. For example, the events could be held in the evening, have childcare and food available, or have Spanish and other language materials and interpretation available.

➢ With procedural justice in mind, the Water Vision document and web page could be made accessible in Spanish, Chinese, Vietnamese, Russian, and other languages.

➢ With distributive and procedural justice in mind, the Water Vision draft could be published in newspapers and with a solicitation for comments, either online or through Letters to the Editor sections. Our research team's database of Oregon newspapers could be a resource for this step.

Conclusion

The key element of equity needs to be more intentionally emphasized in the Water Vision, and protocols need to be put in place to codify equity evaluations. As the case studies and linguistic analyses of local newspapers throughout the state (Appendix A) indicate, Oregon contains an incredible diversity of water contexts and issues. Because of this diversity, this paper's ultimate recommendation is for Oregon public officials to create and ask evaluative questions to address the four principles of environmental justice around water systems and policies in Oregon.

Example questions to evaluate equity in Oregon water policy and issues

Justice Principle	Evaluative Questions		
Representational	Who is and is not involved in this decision-making, and what are their sociodemographics (gender, ability, language, race, ethnicity, immigration status, etc…)?	Does the sociodemographic makeup of the decision-making body adequately represent that of the population that has a stake in this decision?	To what extent are representatives of different sociodemographic groups able to participate in and influence the policy in this decision-making context?
Procedural	Who has access to active participation in this decision-making process? Who does not?	Can people attend this process, given its time(s), date(s), duration, location(s), and services available, such as food, childcare, and language interpretation for Spanish, ASL, and others?	Do the avenues for participation actually give people the power and information needed to create meaningful change?
Distributive	Who is vulnerable or already marginalized in this area, and why?	How are these communities being affected by environmental issues? Are they disproportionately bearing the weight of environmental burdens?	What would an equitable distribution of environmental burdens and benefits look like?
Recognition	Who can "set the table" for this policy, i.e. who has the power to set the agenda at each level of government for this issue? Who does not have this power?	How might the history of this location, relationship, or issue be affecting who can and cannot set the agenda? Is this history being recognized appropriately?	In what ways can the process and content of the discussion of this issue be made more equitable, given this new understanding of historical inequities and current power dynamics?

The Oregon Water Stories Team

The Oregon Water Stories team, who researched and created this policy paper, is an interdisciplinary group of students, research affiliates, and faculty from Portland State University.

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Appendix A: Water Issues Inventory

This inventory (and the above information for the case studies) is derived from the Oregon Water Stories team's research on water issues in Oregon as reported in newspaper articles from local publications. We compiled a statewide database of newspaper articles related to human-water interactions in Oregon, organized by newspaper and that newspaper's location within Oregon's five Water Regions. Part of the team used corpus linguistics, a linguistic analysis method, to determine which words were most common and unique to each of Oregon's five Water Regions in these articles, as a proxy for defining each Region's key water issues. The results point to a preliminary, but still limited and in progress, inventory of water issues as organized by Oregon Water Region. Even these early-stage results indicate a large array of water issues statewide, as well as significant differences and similarities between regions and possible emerging Regional water issue patterns. A more detailed description of the data collection and analysis methods can be found at the end of this Appendix.

Publications used for analysis in each Oregon Water Region

North West	South West	South Central	North Central	East
Daily Astorian	Curry Coastal Pilot (Brookings)	Bend Bulletin	The Dalles Chronicle	Argus Observer (Ontario)
Newport News	Medford Mail Tribune	Herald and News (Klamath Falls)	East Oregonian (Pendleton)	Burns Times-Herald
Statesman Journal (Salem)	Roseburg News Review	Nugget News (Sisters)	Hood River News	La Grande Observer
Street Roots (Portland)		Spilyay Tymoo (Warm Springs)		Malheur Enterprise (Vale)
Tillamook Headlight Herald		Warm Springs News		
Willamette Weekly (Portland)				

Table 1: This table shows the publications that were used in the linguistic analysis for each of Oregon's five Water Regions. Each Region was represented by 30 newspaper articles drawn from the publications shown in this table, and for each Region, at least three different counties are represented.

- The following tables (Table 2-6) present the most common water-related words found through linguistic analysis for each of the five Water Regions. The frequencies reported are the raw number of total occurrences of each word in the group of articles from publications in that Region.

Most common water-related words in the North West Water Region

Word	Frequency
River	41
Fish	31
Oil	21
Timber	21
Drilling	20
Lake	20
Ocean	20
Quality	20
Samples	18
Beach	17
Crab	17

Table 2: This table shows the most common water-related words pulled by linguistic analysis from articles from publications in Oregon's North West Water Region.

Most common water-related words in the South West Water Region

Word	Frequency
River	71
Salmon	48
Fish	47
Chinook	41
Creek	34
Port	34
Fire	31
Basin	27
Rivers	24
Rain	23
Anglers	18

Table 3: This table shows the most common water-related words pulled by linguistic analysis from articles from publications in Oregon's South West Water Region.

Most common water-related words in the South Central Water Region

Word	Frequency
River	87
Fish	84
Salmon	46
Basin	42
Reservoir	33
Dam	30
Hatchery	28
Rivers	23
Irrigation	19
Trout	17
Redband (Trout)	16
Lake	16

Table 4: This table shows the most common water-related words pulled by linguistic analysis from articles from publications in Oregon's South Central Water Region.

Most common water-related words in the North Central Water Region

Word	Frequency
River	60
Fish	37
Irrigation	32
Wells	30
Drought	21
Sewer	20
Salmon	16
Reservoir	13
Snow	13
Temperatures	13

Table 5: This table shows the most common water-related words pulled by linguistic analysis from articles from publications in Oregon's North Central Water Region.

Most common water-related words in the East Water Region

Word	Frequency
Arsenic	53
Drought	47
Irrigation	42
Watershed	37
Fish	29
Snowpack	29
Treatment	29
Basin	26
Drinking	26
Reservoir	21

Table 6: This table shows the most common water-related words pulled by linguistic analysis from articles from publications in Oregon's East Water Region.

➢ The following tables (Table 7-11) present the keywords identified for each Region as sorted by "keyness," which is a statistical measure of the frequency of a keyword within a smaller group of texts (all articles from that Region) as compared to a larger group of texts (all articles from all five Regions). Keyness can indicate the uniqueness of the importance of that word to that water Region relative to the other four Regions.

North West Water Region Keywords

Word	Keyness	Frequency
Crab	+51.76	17
Permit	+49.23	35
Seafood	+48.72	16
Offshore	+45.67	15
Timber	+43.93	21
Drilling	+41.24	20
Oil	+38.29	21
Processors	+33.49	11
Chloride	+27.4	9
Dungeness	+24.36	8
Magnesium	+24.36	8
Estuaries	+21.31	7
Lumber	+21.31	7
Acidification	+20.62	10

Table 7: This table shows the keywords pulled by linguistic analysis for Oregon's North West Water Region, as organized by each word's keyness.

South West Water Region Keywords

Word	Keyness	Frequency
Chinook	+76.5	41
Mining	+45.06	17
Creek	+36.91	34
Anglers	+33.62	18
Sewage	+32.65	13
Fire	+31.85	31
Solar	+26.83	8
Rise	+26.7	13
Drains	+26.56	11
Wetlands	+26.56	11
Pipe	+24.71	16
Suction	+23.47	7
Rivers	+18.72	27

Table 8: This table shows the keywords pulled by linguistic analysis for Oregon's South West Water Region, as organized by each word's keyness.

South Central Water Region Keywords

Word	Keyness	Frequency
Tribes	+100.55	48
Tribal	+67.23	31
Hatchery	+60.8	28
Fish	+49.83	84
Landfill	+45.7	13
Utilities	+37.91	14
Basin	+30.19	42
Dam	+28.15	30
Trout	+27.95	17
Trash	+27.05	14
Redband (Trout)	+25.38	16
River	+22.59	87
Reservoir	+22.15	33
Spill	+20.4	13
Rivers	+18.92	23

Table 9: This table shows the keywords pulled by linguistic analysis for Oregon's South Central Water Region, as organized by each word's keyness.

North Central Water Region Keywords

Word	Keyness	Frequency
Wells	+51.26	30
Rate	+48.32	21
Rates	+45.5	18
Usage	+37.6	11
Treaty	+35.32	19
Residential	+33.45	13
Users	+32.21	23
Aquifers	+30.76	9
Commingling	+27.34	8
Plaintiffs	+24.25	11
Patrons	+23.92	7
Employers	+20.51	6

Table 10: This table shows the keywords pulled by linguistic analysis for Oregon's North Central Water Region, as organized by each word's keyness.

East Water Region Keywords

Word	Keyness	Frequency
Arsenic	+141.5	53
Juniper	+48.38	17
Cyanotoxins	+45.54	16
Streamflow	+42.69	15
Watershed	+42.48	37
Drought	+33.85	47
Algae	+32.57	18
Snowpack	+31.31	29
Bentgrass	+31.3	11
Water	+29.06	293
Carp	+27.65	12
Refuge	+27.65	12

Table 11: This table shows the keywords pulled by linguistic analysis for Oregon's East Water Region, as organized by each word's keyness.

Purpose of study

The purpose of this study was to discover, compile, and analyze salient words from periodicals in each of Oregon's five water regions, using methods of corpus linguistics. Corpus linguistics is the study of language through a collection of texts, or corpus.

By determining which words were most common in each region, in both comparative and non-comparative analyses, the intent was to determine which water issues are most important to the people of each region, and which issues are most unique to that region, compared to the rest of the state.

Procedure

This corpus was compiled from 30 newspaper articles from each of the five Oregon water regions (150 total). Articles were found and selected based on the sole criteria that they included the word "water." Periodicals from at least three different counties within each region were used, and similar numbers of articles were used from each town, locality, or city.

All corpus analyses were conducted using the concordance program AntConc.

For each region, a word list was generated, and salient water-related and environmental terms were culled, and ordered by frequency (in this case, the raw number of total occurrences). Tables 1-5 show the results of this investigation.

Additionally, a keyword search was conducted, specifically the variety associated with corpus linguistics, in which a smaller "target corpus" is compared to a larger body of texts, or "reference corpus," to determine which words are more likely to occur in (or are more "key" to) the smaller body of text than the whole. A target corpus, comprised of the files from one region, was compared to the combined remaining four corpora. This process was repeated for each region.

Results were culled for relevance, and ordered by keyness (see tables 6-10). Keyness is the statistical measure of the frequency of a keyword in a corpus relative to the reference corpus (WordSmith Tools); AntConc calculates keywords through a loglinear statistical test by comparing word frequencies of the target text to those the of the reference corpus. "The threshold for significance is conventionally at LL=6.63. So tokens [keywords] with keyness values above that threshold would be considered significant" (AntConc Walkthrough).

References for Appendix A

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