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Equity in Urban Water Governance Through Participatory, Place-Based Approaches

ABSTRACT

While multiple reasons exist for involving citizens in local water governance, decentralization of decisions is generally thought to result in both effective and equitable governance regimes. To assess these claims, we examined the ability of a watershed council in metropolitan Portland, Oregon, to engage a wide variety of residents in environmental protection and decision-making. Through a survey and interviews, we found that participants in the case study watershed council over-represented urban residents in downstream Portland, as well as those who live near water in flood-prone areas. The council also over-represented newcomers to Oregon and residents with relatively high educational levels, in addition to classic pro-environmental (biocentric) worldviews and liberal political interests. Overall, watershed council participants appear to bring a bureaucratic capacity and liberal ideology to the council that does not reflect the full array of residents in the watershed. Therefore, rather than fostering widespread engagement among diverse stakeholders, the council reproduces the existing power structures in the community by providing another opportunity for citizens with access to professional and political venues to participate in local water resource governance. Residents with less human capital and with "politically incorrect" perspectives are, thus, less likely to be actively engaged in watershed planning and other projects, removing their voices, voluntary actions, and, for the most part, their geographic locales from decentralized, community-based governance. The lack of socio-spatial equity in participation has implications not only for democratic decision-making; it also hinders the effectiveness of community-based efforts aimed at voluntary watershed-wide restoration and enhancement.

I. INTRODUCTION

Due to environmentally friendly practices, sustainable urban design elements, and an engaged citizenry, Portland, Oregon, is known as

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one of the "greenest" and most progressive cities in the United States.[1] Opportunities for participating in policy development are embedded in local and regional governance structures including voluntary, place-based groups such as neighborhood associations and watershed councils.[2] Yet when the regionally elected agency, Metro—which represents an innovative governance approach to coordinating collective activities across the three counties and 25 cities in the Portland metropolitan area—considered enhancing regulations for riverine habitat protection in 2004 and 2005, vocal residents in this progressive and engaged community said, "no way." At the time, regulations in the region already involved mandatory setbacks of varying distances from streams, lakes, and wetlands, which prohibit development and activities such as removing trees in near-water zones. But controversy over increased regulation of riparian and upland areas (under their fish and wildlife habitat, or Goal 5, planning program) more recently led Metro to abandon heightened land-use restrictions in favor of a voluntary "Nature in Neighborhoods" initiative. Similarly, the uproar and rejection of Portland's Healthy Streams Initiative in 2002 was so loaded and immediate that the City pulled the proposed policy for "more review," including site visits with more than 100 landowners to improve the resource maps on which increased regulations would be based to protect vegetated buffers along waterways.[3] Thus, despite progressive planning initiatives and substantial public support for resource protection in general, opposition to specific water governance measures—like the Healthy Stream Initiative—is alive and well in the Portland region.[4]

Partly because of opposition toward environmental regulation, voluntary watershed-based groups have emerged as a favored governance option in recent decades.[5] The ascendance of watershed-wide ap-

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1. Elizabeth Svoboda, additional reporting by Eric Mika and Saba Berhie, *American's 50 Greenest Cities*, POPULAR SCIENCE (2008), *available at* http://www.popsci.com/environment/article/2008-02/americas-50-greenest-cities?page=1.

2. Kelli L. Larson & Denise Lach, *Participants and Non-Participants of Place-Based Groups: An Assessment of Attitudes and Implications for Public Participation in Water Resource Management*, 88 J. ENVTL. MGMT. 817 (2008).

3. BETSY OTTO, KATHLEEN MCCORMICK & MICHAEL LECCESE, AM. PLANNING ASS'N, ECOLOGICAL RIVERFRONT DESIGN: RESTORING RIVERS, CONNECTING COMMUNITIES 518–19 (2004), *available at* http://www.americanrivers.org/library/reports-publications/ecological-riverfront-design.html.

4. John Brinckman, *Fish Protection Plan Spills into City Limits*, THE OREGONIAN, Jan. 28, 2002, at B1, B5; Kelli L. Larson & Mary V. Santelmann, *An Analysis of the Relationship Between Residents' Proximity to Water and Attitudes about Resource Protection*, 59 PROF. GEOGRAPHER 316 (2007).

5. Carol Griffin, *Watershed Councils: An Emerging Form of Public Participation in Natural Resources Management*, 33 J. AM. WATER RESOURCES ASS'N 505 (1999)

proaches is also attributable to the difficulties associated with addressing non-point source pollution and other geographically dispersed human activities that impact water resources. Beyond recent attention to near-water riparian buffers, these place-based approaches recognize the need to consider the whole watershed for achieving water quality improvements and other objectives, which commonly depend on coordinating activities across jurisdictional units in a hydrologic basin while also decentralizing power for local, community-based action.[6] Often times, watershed-based initiatives involve on-the-ground stream enhancement or restoration projects on private land under the free will of landowners. Yet critics question the substantive impacts of such voluntary best management practices, specifically in terms of their measurable improvements in actual resource conditions beyond community involvement in decision-making.[7] Ultimately, then, the extent and structure of participation and organized activities determines their success based on criteria that encompass both substantive improvements in stream health and wildlife habitat as well as procedural outcomes including equitable participation and coordinated governance among diverse stakeholders throughout the watershed.

Democratic participation has become an international principle for environmental governance due to the expectation that engaging citizens in decisions that are likely to affect them or the places they live will lead to locally supported policies that are more effective and equitable than top-down approaches.[8] Existing local, state, and federal regulations as well as civic culture increasingly require citizen involvement in decision processes, following from an underlying belief that community members can best represent local interests. Proponents of decentralized decision-making also claim to empower local actors, but such claims must be scrutinized and critically examined to understand the actual impacts and implications of "bottom up" governance efforts.[9]

In this article, we examine just how effective a local decision venue is for increasing the range of voices involved in developing and implementing water resource protection plans and activities in metropol-

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6. Eran Feitelson & Itay Fischhendler, *Spaces of Water Governance: The Case of Israel and Its Neighbors*, 99 ANNALS ASS'N AM. GEOGRAPHERS 728 (2009).

7. Arun Agrawal & Clark Gibson, *Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation*, 27 WORLD DEV. 629 (1999); Aaron Wolf, *Rural Nonpoint Source Pollution Control in Wisconsin: The Limits of a Voluntary Program?*, 31 J. AM. WATER RESOURCES ASS'N 1009 (1995).

8. ANN SCHNEIDER & HELEN INGRAM, POLICY DESIGN FOR DEMOCRACY (1997); Agrawal & Gibson, *supra* note 7.

9. Daniela Raik, Arthur Wilson & Daniel Decker, *Power in Natural Resources Management: An Application of Theory*, 21 SOC'Y & NAT. RESOURCES 729 (2008).

itan Portland, Oregon. Specifically, we ask: Do watershed councils redistribute power from central governments representing the entrenched interests of political elites towards a wider array of citizens and perspectives? To address this question, we re-examined survey data originally collected to assess residents' attitudes about water resource protection among people who do and do not participate in place-based groups. This time, we evaluated who participates in a specific place-based group, the Johnson Creek Watershed Council of metropolitan Portland, Oregon, while discussing the implications for effective water governance. In doing so, we employed a hybrid approach to representation,[10] wherein we assess geographic, demographic, and interest-based representation of the watershed council relative to residents in the area as a whole.

II. BACKGROUND

A. Local Involvement in Decision-Making: Rationales and Participants

Three arguments have been advanced for decentralized environmental decision-making through increased public participation.[11] First, the *democratic* argument emphasizes the need for equity in citizen involvement for any decision-making process that potentially affects the public. Accordingly, the target audience for participation is the widest possible range of interests including disinterested people. Second, the *substantive* rationale is based on the claim that individuals who possess values and technical knowledge relevant to decision-making should be involved because of their ability to assist the process. Third, the *pragmatic* rationale stresses that public involvement can increase support for outcomes and facilitate implementation. For these purposes, opinion leaders and other influential parties should be engaged in planning and related activities. Regardless of the rationale for participatory decision-making, the nature and adequacy of representation in community-based governance significantly influences related activities and their success.[12]

Traditionally, participants in decision-making processes have been members of organized groups with access to financial and other resources. Members of these groups share similar demographic charac-

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10. Caron Chess, Billy Jo Hance & Ginger Gibson, *Adaptive Participation in Watershed Management*, 55 J. SOIL & WATER CONSERVATION 248 (2000).

11. Katrina Korfmacher, *The Politics of Participation in Watershed Modeling*, 27 ENVTL. MGMT. 161 (2001).

12. Richard D. Margerum, *Overcoming Locally Based Collaboration Constraints*, 20 SOC'Y & NAT. RESOURCES 135 (2008).

teristics, and they tend not to represent the public as a whole.[13] In particular, scholars suggest that people involved in organized community groups (such as watershed councils) share certain attributes such as higher income levels.[14] Additionally, age, education, gender, marital status, homeownership, and length of residence influence participation.[15] Martinez and McMullin[16] found that "rich" members of civic organizations tend to be less active than middle- or low-income members, which they explain as a sort of "sweat equity" that allows lower-income participants to use voluntary labor to offset their inability to pay. Meanwhile, Smith[17] suggests that voluntary participation peaks at middle incomes and at middle ages. The values of organizational members also tend to be different from those of non-members.[18] For example, active members of environmental organizations have reported experiencing more personal harm from environmental problems compared to non-active members.[19] Ultimately, who is involved in community groups and decision processes determines whose voices get heard while also potentially influencing the outcomes of participatory governance approaches.

B. Community-Based Approaches: Prospects and Problems

Place-based groups, which are promoted as a way to empower local residents to solve the problems unique to their community, often satisfy demands for public participation.[20] Increased preference for participatory management approaches has caused an increase in the number of watershed councils in the United States.[21] Involving watershed councils and other community groups in natural resource activities helps to overcome distrust and credibility issues that sometimes plague govern-

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13. Chess, Hance & Gibson, *supra* note 10.

14. Lynne Manzo & Neil Weinstein, *Behavioral Commitment to Environmental Protection: A Study of Active and Nonactive Members of the Sierra Club*, 19 ENV'T. & BEHAV. 673 (1987); TIMOTHY BEATLEY, ETHICAL LAND USE: PRINCIPLES OF POLICY AND PLANNING (1994); Teresa Martinez & Steve McMullin, *Factors Affecting Decisions to Volunteer in Non-governmental Organizations*, 36 ENV'T. & BEHAV. 112 (2004).

15. Manzo & Weinstein, *supra* note 14; BEATLEY, *supra* note 14; David Smith, *Determinants of Voluntary Association Participation and Volunteering: A Literature Review*, 23 NONPROFIT & VOLUNTARY SECTOR Q. 243 (1994); Martinez & McMullin, *supra* note 14.

16. *Id.*

17. Smith, *supra* note 15.

18. Manzo & Weinstein, *supra* note 14; Martinez & McMullin, *supra* note 14.

19. Manzo & Weinstein, *supra* note 14.

20. JEFFREY BERRY, KENT PORTNEY & KEN THOMPSON, THE REBIRTH OF URBAN DEMOCRACY (1993).

21. Griffin, *supra* note 5.

ment or other official entities.[22] Watershed groups often focus on process-oriented criteria such as trust and capacity building, information exchange, and diverse participation.[23] These groups also address substantive outcomes including environmental improvements and policy changes as well as increased social capital and changes in attitudes.[24] However, the actual impacts of watershed groups and other locally based governance efforts are largely unknown.[25]

Engaging a "community" to ameliorate some of the inherent inequities in interest-based politics has proven problematic because place-based communities do not necessarily share interests and values.[26] As Matzke[27] suggests, some citizens may be unsatisfied with the outcomes of community-based resource management initiatives because of disparate and conflicting sectors within each community. Moreover, newly empowered and engaged place-based communities compete with the well-developed network communities that represent special interests such as environmental or property rights groups. Given substantial access to resources and existing power structures, these network-based communities are likely to represent only a portion of local perspectives while superseding others. Considering demographic, geographic, and interest-based representation, we therefore critically examine who does and does not participate in a locally based watershed council. In addition, we explore the procedural and substantive implications of our findings relative to the rationales for participatory, watershed-based governance.

C. The Case Study Watershed Council

Our empirical study centers on the Johnson Creek Watershed in the Portland metropolitan region of Oregon, where watershed councils have been integrated into state-wide decision processes to increase involvement of citizens in water resource planning and protection. The councils are supported through the Oregon Watershed Enhancement Board (OWEB), which provides funding for staff, local restoration

22. Mark Costanzo, Dane Archer, Elliot Aronson & Thomas Pettigrew, *Energy Conservation Behavior: The Difficult Path from Information to Action*, 41 AM. PSYCHOLOGIST 521 (1986); Sarah Connick & Judith Innes, *Outcomes of Collaborative Water Policy Making: Applying Complexity Thinking to Evaluation*, 46 J. ENVTL. PLAN. & MGMT. 177 (2003).

23. BERRY, PORTNEY & THOMPSON, *supra* note 20; Griffin, *supra* note 5.

24. Chess, Hance & Gibson, *supra* note 10; Connick & Innes, *supra* note 22.

25. Lois Morton, *The Role of Civic Structure in Achieving Performance-based Watershed Management*, 21 SOC'Y & NAT. RESOURCES 751 (2008).

26. Agrawal & Gibson, *supra* note 7.

27. Gordon Matzke, *The Community Role in Emerging Ecological Policy*, 4 HUM. ECOLOGY REV. 47 (1997).

projects, and long-term monitoring of resource conditions. To receive grants and support for local activities, OWEB mandates a process wherein councils must undertake a watershed assessment on which subsequent activities are based. OWEB guidelines further state that "councils must represent a balance of interested and affected persons within the watershed."[28] The councils, made up of local landowners, residents, and other interests, tend to focus on voluntary measures to improve stream habitat and watershed health. They may, for example, undertake watershed-wide planning and monitoring, tree planning and culvert removal, and community education.

In the Johnson Creek Watershed Council (JCWC), citizen committees meet monthly to address land-use issues, restoration efforts, and outreach endeavors in the area. The stated mission of JCWC, as a nonprofit organization, is: "To inspire and facilitate community investment in the Johnson Creek Watershed for the protection and enhancement of its natural resources."[29] In achieving this mission, participants in the JCWC engage in on-the-ground projects, community events, and other voluntary activities sponsored by the watershed council.

The majority of the Johnson Creek watershed is located within the Urban Growth Boundary (UGB) of Portland, which protects farms and forests from urban sprawl and promotes the efficient use of land, public facilities, and services inside the boundary. The watershed encompasses several large municipalities including portions of Portland and the cities of Gresham and Milwaukie. The Portland portions of the watershed include middle- and upper-class neighborhoods, as well as a predominantly working class, flood-prone community with a history of animosity towards the local government. This area, known as Lents, was annexed by the City of Portland in 1912 and forced to pay for a sewer system despite community opposition. A few decades later, a major interstate bisected the neighborhood and the process of acquiring and condemning land for highway construction left residual hostility among long-time residents. Meanwhile, recent land-buyout programs have aimed to develop wetlands for flood mitigation in this downstream region of the watershed, while the latest controversial expansion of the UGB engulfed the rural headwaters of the watershed, which are now slated for future urban development. Within this complex mix of socioeconomic, political, ecological, and historical contexts, we explore how issues of equity play out in decentralized water resources governance in the Portland, Oregon, metro area.

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28. Margerum, *supra* note 12.

29. JOHNSON CREEK WATERSHED COUNCIL WEBSITE, http://www.jcwc.org/ (last visited Nov. 15, 2009).

III. RESEARCH METHODS

We used both qualitative and quantitative methods to capture the personal attributes, attitudes, and activities of residents and watershed council participants in the study region. After conducting semi-structured interviews with watershed council staff, regional planners, and outreach specialists, we designed a mail-out survey for watershed residents.[30] The survey was delivered to JCWC participants and residential homeowners throughout the watershed according to a stratified random sampling scheme. Due to multiple objectives for the broader research project, the sampling list included the watershed council's mailing database and tax assessor databases (sorted to reach residential property owners who occupy single-family households, both in general and within 200 feet of waterways), along with contact lists for leaders of all neighborhood associations in the study area. After three contacts (an initial invitation to participate, a follow-up reminder, and a final reminder), we achieved a 44 percent response rate (n=816). Of those respondents, 58 percent (n=475) provided written comments explaining their views on water resource protection in their own words. The survey data were entered for analysis in SPSS (Statistical Package for the Social Sciences).

In the survey, we asked respondents closed-ended questions about the nature and frequency of their participation in the JCWC and other community groups and activities (see Table 1, Part IV.A). We also used standard measures for demographic variables including gender, age, race/ethnicity, education, income, and length of residence (see Table 2, Part IV.B.2, for details on the survey measures and response options). To capture geographic representation, we identified residence in urban (City of Portland), suburban (other, non-Portland municipalities), and rural (unincorporated) areas. Proximity to water resources was also characterized in terms of whether residents have water on or adjacent to their properties and whether they live "very," "somewhat," or "not" close to water. Finally, geo-coding of survey respondents in a Geographic Information System (GIS) allowed us to examine whether participants of the watershed council are more likely to be located within the 100-year floodplain or near surface water, as compared to non-participants, with a continuous variable measuring distance (in feet) to the nearest stream.

For value-based ideological interests, we adapted the New Ecological Paradigm (NEP) scale to measure environmental orientations. We also assessed political orientation with a seven-point ordinal scale ranging from liberal to conservative with moderate as the middle option (Ta-

30. DONALD DILLMAN, MAIL AND INTERNET SURVEYS: THE TAILORED DESIGN METHOD (2000).

ble 2). In addition, environmental attitudes toward 34 aspects of "protecting water resources such as streams, rivers, lakes and wetlands in the greater Portland metropolitan area" were evaluated, mostly with six-point ordinal response scales. The exception was economic attitudes toward resource protection, which were measured as "oppose" or "support" for current or higher levels of funding through different mechanisms (e.g., property taxes, income taxes, fines, etc.). Factor analysis and statistical tests for internal consistency (i.e., Cronbach's alpha) resulted in four indices that represent distinctive dimensions of attitudes: (1) the importance attached to general resource protection goals (alpha = 0.78); (2) support for government efforts (alpha = 0.92); (3) support for regulations (alpha = 0.87); and (4) support for economic strategies (alpha = 0.82). We calculated these four reliable composite variables as the average response to the associated individual judgments, which we analyzed in relation to the extent of participation in JCWC.

In the analysis that follows, we conducted Analysis of Variance (ANOVA) with Tukey's pair-wise comparisons to ascertain geographic, demographic, and interest-based representation across three levels of participation in the JCWC (as explained in Part IV). For categorical variables, we employed chi-squared tests to examine the relationships between participation and factors such as gender and adjacency to water. All quotes presented in the results are verbatim comments written by residents on the mail survey. We present the findings briefly below and then discuss their implications for equitable and effective watershed governance aimed at protecting, restoring, and enhancing resources in the study region and beyond.

IV. EMPIRICAL FINDINGS

A. Involvement in JCWC and Other Community Activities

Table 1: Extent of Involvement in the Watershed Council and Other Types of Organizations

Type of Organization	Not Involved	Donate Money	Participate in Activities	Serve on Board/Staff
Professional	60.9%	17.2%	28.8%	8.1%
Environmental	63.3%	27.4%	16.1%	2.1%
Neighborhood	65.4%	8.4%	25.4%	13.5%
Political	70.0%	22.8%	14.1%	2.1%
Watershed council (JCWC)	84.9%	4.7%	12.0%	1.8%
Property rights	90.3%	2.4%	7.4%	0.5%

Nearly two-thirds (62 percent) of respondents initially contacted through the JCWC mailing list indicated they were not involved with the watershed council. These residents likely comprise people who signed up to receive information from the watershed council while attending a community event or another JCWC activity. Since these survey respondents represent people nominally involved in the watershed council, we distinguish among three levels of participation in the JCWC: (1) those who were not on the council's mailing list and who also did not report participating in activities (*not involved*, n=547), (2) those who were on the JCWC mailing list but did not report involvement in the council (*nominally involved*, n=116), and (3) those who indicated involvement in watershed council activities of one sort or another (*reportedly involved*, n=116). This distinction may be especially important if the nominally involved group serves a watchdog-type role or if they offer the potential for expanding involvement in the watershed council and related activities. Among those nominally involved, 40 percent reportedly attend JCWC meetings at least occasionally despite their reported lack of involvement with the council.

Among the entire survey sample, 15 percent reported some type of involvement with the watershed council (Table 1, above). Specifically, 12 percent reported that they participate in watershed council activities, 5 percent donate money, and only 2 percent serve as board or staff members. Excluding respondents who were initially contacted through the JCWC mailing list, only a small portion (5 percent) indicated involvement with the council, although almost one-fifth indicated that they "rarely" or "sometimes" attend watershed council meetings. Overall, the vast majority of survey respondents (90 percent) either never or rarely attend council meetings, where plans and priorities are commonly established for the watershed. This suggests that a very small number of individuals actually make decisions on a regular basis for the larger basin.

Interviews reiterated that relatively few members actually participate in council meetings, which typically include staff and designated representatives throughout the watershed. Specifically, the Board of Directors is comprised of geographical (stream reach) representatives as well as jurisdiction- and interest-based representatives. A JCWC staff member suggested, however, that the council has difficulties engaging commercial business interests and rural representatives in the headwater portions of the watershed. Informants also indicated that the council has been more focused on urbanized portions of the watershed, in part because the group emerged from the Portland-based organization, Friends of Johnson Creek. City-initiated efforts, particularly those by the Bureau of Environmental Services, also explain geographical attention to Port-

land, as does the typical urban and suburban locations of regular planning meetings.

Beyond participation in watershed council meetings, over half (58 percent) of survey respondents indicated that they participate in outdoor activities such as tree plantings, while the majority (87 percent) reportedly attend community festivals or similar events that may or may not be hosted by JCWC. Regarding involvement in other types of organizations (Table 1, above), residents noted that they are most commonly involved in professional groups and neighborhood associations (about one-quarter participate in related activities), followed by environmental and political organizations (around 15 percent for each group). Finally, about 7 percent reported involvement in property rights groups.

B. Representation in the Watershed Council

1. Demographic Characteristics of JCWC Participants and Non-Participants

With respect to demographic representation, we found that the JCWC over-represents residents with higher levels of formal education and those who have lived in Oregon for relatively short periods of time (Table 2, below). In particular, JCWC participants hold at least a bachelor's degree, whereas those residents who are nominally or not at all involved had achieved only some college, on average. Participants reportedly involved in JCWC have also resided in Oregon for fewer years (mean of 33) compared to those who are not at all involved (mean of 39 years). Despite these differences, watershed council participants were similar to others in terms of gender, age, ethnicity, income levels, and years of residence in the Portland region specifically.

2. Geographic Representation and Socio-Spatial Inequities

Participation in the watershed council was skewed toward City of Portland residents as well as areas near streams, lakes, or wetlands and those prone to flooding risks. More nominally and reportedly involved respondents lived in the City of Portland (62–63 percent) compared to those not at all involved (38 percent), who tended to live in suburban and rural (unincorporated) areas. JCWC participants also perceived themselves as living closer to water resources, and they more commonly lived in the 100-year floodplain relative to other residents (Table 2, below). At the 0.10 significance level, adjacency to water was linked to greater involvement in the watershed council, regardless of the nature of participation (around 31 percent for both the nominally and reportedly involved groups). By comparison, only 23 percent of residents who were not at all involved have water on or bordering their property. In terms of

Table 2: Demographic, Geographic, and Interest-Based Representation in the Johnson Creek Watershed Council—Differences by Level of Participation

Socio-Spatial Variables: Differences by Participation	Mean (St. Dev.)* by Participation Level			Statistical Results: ANOVA & Chi-Square
	Reportedly Involved	Nominally Involved	Not Involved	
Socioeconomic Status & Demographics				
Gender (Male)*	54.9%	44.7%	49.3%	χ^2=2.35, p=0.309
Ethnicity (White)*	91.0%	95.5%	92.2%	χ^2=1.92, p=0.383
Age (Years)	53.4 (13.08)	53.9 (15.54)	53.5 (14.37)	F=0.04, p=0.959
Educational Level[1]	2.95 (0.84)[a]	2.58 (0.95)[b]	2.42 (0.92)[b]	F=16.24, p=0.000
Household Income[2]	5.07 (1.69)	4.80 (1.64)	4.75 (1.65)	F=1.73, p=0.179
Years in Portland Region	29.7 (18.70)	33.5 (21.38)	34.2 (19.39)	F=2.34, p=0.097
Years in Oregon	33.2 (19.73)[a]	37.5 (21.91)	38.9 (19.54)[b]	F=3.56, p=0.029
Geographic Location & Proximity to Water				
Urban-Portland Residence[3]*	62.1%	62.9%	38.1%	χ^2=41.35, p=0.000
Within 100-year Floodplain*	15.5%	18.1%	5.4%	χ^2=26.56, p=0.000
Water On/Bordering Property*	31.6%	30.1%	22.6%	χ^2=5.80, p=0.056
Perceived Proximity to Water[4]	2.87 (0.91)[a]	2.72 (1.01)[b]	2.5(1.04)[c]	F=7.42, p=0.001
Distance to Nearest Stream (feet)	1,724.43 (2,357.19)	1,511.98 (1,770.30)	1,795.68 (2,474.79)	F=0.69, p=0.502
Ideological Interests & Group Involvement				
Ideological Orientation				
Pro-Ecological Worldview[5]	5.26 (0.74)[a]	5.27 (0.77)[a]	4.97 (0.92)[b]	F=9.08, p=0.000
Conservative Political Orientation[6]	3.27 (1.49)[a]	3.38 (1.74)[a]	4.12 (1.59)[b]	F=18.72, p=0.000
Organizational Involvement[7]				
Political groups	0.66 (0.75)[a]	0.40 (0.66)[b]	0.33 (0.62)[b]	F=12.41, p=0.000
Property rights groups	0.15 (0.41)	0.07 (0.25)	0.10 (0.32)	F=1.96, p=0.141
Environmental groups	1.02 (0.77)[a]	0.65 (0.80)[b]	0.30 (0.54)[c]	F=68.59, p=0.000
Neighborhood association	0.92 (0.94)[a]	0.47 (0.68)[b]	0.27 (0.69)[c]	F=27.24, p=0.000
Professional organizations	0.86 (0.82)[a]	0.50 (0.83)[b]	0.48 (0.75)[c]	F=11.52, p=0.000

NOTES: *ANOVA with Tukey's post-hoc tests were conducted for ordinal and continuous independent variables, for which the mean and standard deviations are presented along with lowercase superscripts indicating pair-wise differences at the p<0.10 significance level. For categorical variables, Chi-square tests are reported along with the percent of respondents at each level of participation. [1]Education was measured on a 7-point ordinal scale on which 2=Some College and 3=Bachelor's Degree. [2]Income was measured on a 7-point scale on which 4=$35,000–$49,999 and 5=$50,000–$74,999. [3]Urban residence was defined as living within the City of Portland jurisdictional limits, as opposed to suburban municipalities or unincorporated rural areas. [4]Perceived proximity was measured on a 4-point scale with a question asking residents to indicate how close they live to a water body, with 1=not close, 2=somewhat close, 3=very close, and 4=water on or bordering the residents' property. [5]Pro-ecological worldviews were measured on a 6-point "agree to disagree" scale with three belief statements from the New Ecological Paradigm (NEP) of thought (e.g., concerning limits to growth and the rights of people and nature), plus one about whether nature should be protected in cities specifically. For the four items, the Cronbach's alpha test produced a reliability of 0.70. [6]Political orientations were measured on a standard 7-point scale—1=Liberal, 4=Moderate, and 7=Conservative—wherein respondents were asked to classify their views on domestic policy issues. [7]The organizational involvement variables represent the total number of activities in which residents are involved, ranging from 0 (meaning no involvement) to 3 (for donating money, participating in activities, and serving on the board/staff) for each type of group.

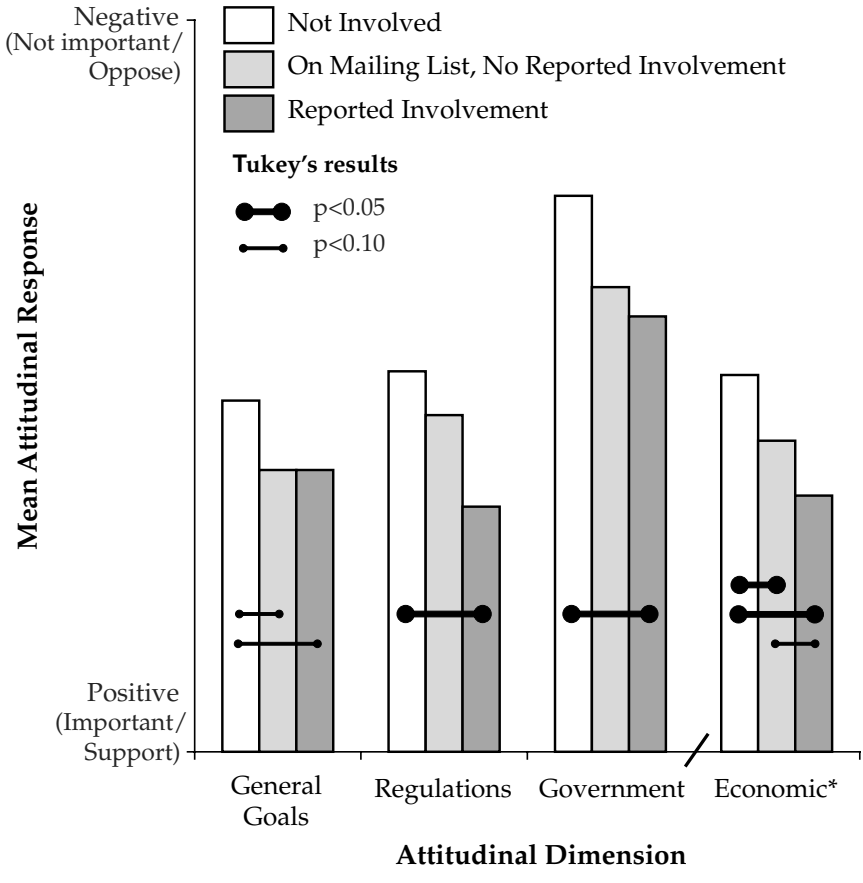
measured distance to the nearest water body, however, no differences were found across participants and non-participants of the JCWC.

Beyond the statistical results, we found that JCWC participants were geographically clustered around water features, especially in the Crystal Springs area of inner southeast Portland, around the 100-year floodplain in the working-class Lents neighborhood, and along an upstream reach in suburban Gresham. The most dominant regions of reported involvement were in the central Portland area, and secondarily, along the Johnson Creek bend in upstream, suburban Gresham. The nominally involved respondents (on the mailing list but reportedly not involved in JCWC) were primarily located in east Portland, covering the relatively low-income, flood-prone neighborhood of Lents as well as areas farther away from streams. Residents not at all involved in the watershed council were similarly prevalent in areas of east Portland, away from streams and in rural, headwater regions of the watershed. A couple of small clusters of participants also appeared in localized sections of rural, upstream reaches of Johnson Creek. As a whole, the council overrepresents some geographic areas relative to others, slanting the costs and benefits of resource protection and participation toward downstream, urbanized areas where people are most directly impacted by flooding and living near resources. This geographic focus is explained at least partly by water resource protection and planning activities initiated and supported by the City of Portland, which has partnered with JCWC as municipal and watershed council resources have been funneled primarily toward riparian areas and flood zones within their jurisdiction.

Interviews and survey comments hint at the spatial inequities of water resource governance by highlighting, for example, the unfair distributional impacts of Portland initiatives to buy up land and displace people in low-lying communities in which the creation of wetlands is intended to mitigate flooding. A survey respondent shared an anecdote describing his perceptions of these practices: "The City of Portland stole property from a family on Foster Road and turned it into a special water collection area. It turned out to be a big mess. They planted native plants and the area is an eyesore." Still others indicated that attention to near-water areas is unfair, especially given the benefits to the community at large and activities in other areas of the watershed. In particular, while these programs target established, downstream areas around the Lents neighborhood, the City has simultaneously permitted high-income residential developments upland that threaten to exacerbate the quantity and intensity of storm water runoff.

3. Interests and Organizational Connections in the Watershed

Figure 1: Comparison of Attitudes by Level of Involvement in the Watershed Council



* Economic attitudes were measured on a 3-point scale, while a 6-point scale was used for the others.

Both reportedly and nominally involved JCWC participants exhibited stronger pro-ecological worldviews and liberal political leanings relative to non-participants (Table 2, above). Residents involved in the watershed council were also significantly more supportive of water resource protection on all four of the attitudinal dimensions examined—that is, regarding general resource protection goals, government efforts, regulatory mechanisms, and economic measures (Figure 1, above). Yet the patterns of pair-wise differences varied depending on the level of

participation. For attitudes toward funding mechanisms, active participants were more supportive than those nominally involved, who were in turn more supportive than those not involved. The same broad pattern applied to attitudes about government and regulations, although the nominally involved residents were not significantly different from the other groups. Regardless of the level of involvement, respondents engaged in the watershed council attached greater importance to resource protection goals compared to non-participants, especially for biocentric objectives aimed at improving wildlife habitat and water quality in streams.

Participants and non-participants of the JCWC had similar attitudes about anthropocentric goals (such as flood mitigation and recreational enjoyment) as well as broader levels of government (e.g., federal vs. local) and efforts by businesses to protect resources. Written survey comments suggested that judgments about the federal government were based on general attitudes by some and specific attitudes toward the current administration (at the time, under President George W. Bush) by others. Attitudes about businesses also reflect mistrust and the view that they are the "main polluters" of water, in addition to related sentiments about water resource protection efforts unfairly targeting residents, as opposed to polluting industries or "big businesses." One survey respondent wrote, for instance:

> [The] City of Portland has some "stupid" policies re: development of land on one's private property. We have watched new business be built across from our property over the years, causing our neighborhood to flood since the buildings were built. The City of Portland allowed the business to be built, but still restrict the homeowners on developing their land. This is very unfair and it seems as the city does not care about the wetlands that surround our property. After all, what is in the runoff from these businesses? Why has flooding never been an issue on our property until these new buildings were built? Standards should be kept across the board, not to those who can afford to "buy the city out" . . .

Non-participating residents expressed less economic support to the watershed council than both those who were nominally and explicitly involved. The exceptions were judgments about monetary fines or fees on new development, land uses, or water services, which only differed between non-participants and participants who reported involvement in the watershed council. Similarly, the mailing-list members (only marginally involved with JCWC) did not significantly differ in their judgments about regulations compared to either engaged participants or non-participants. Thus, although this intermediate group of tangentially

involved residents is more supportive of biocentric environmental goals, voluntary strategies, and some funding mechanisms compared to non-participants, these individuals represent a relatively moderate, indistinct group in their attitudes about stringent regulations on private property and restrictive fines for water users and polluters.

Watershed council participants were more extensively involved than non-participants in four of the five types of interest-based organizations examined in the survey (Table 1, above). Although involvement in property groups was similar across JCWC participants and other residents, people who reported involvement in the council were more politically engaged relative to both residents who were nominally or not at all involved. Meanwhile, involvement in environmental, professional, and neighborhood organizations substantially increased across the three levels of participation. In sum, the quantitative analyses clearly reveal a pattern of participation wherein particular ideological, organizational, and geographic interests—with significant knowledge, environmental interests, social connections, and bureaucratic capabilities—are privileged in the local watershed governance structure for the Johnson Creek area.

Across the written survey comments, we were especially taken by the number of respondents who stressed the value of undertaking local, voluntary efforts such as hands-on restoration projects (e.g., planting trees, removing invasive species). One resident articulated this proactive tendency while also raising another concern regarding the bureaucratic tendency of watershed governance:

> I'm for hands on approaches, shovels, boots, community work parties with local families and businesses supporting our neighborhoods [sic] vast natural beauty. As I see it current law promotes political careers through board meetings and glossy pamphlets and parties with clowns and brownies. While more beer bottles accumulate and more chemical spills go on unchecked. It's completely outrageous. Water is life. How dare we!

Several other respondents commented that there is too much studying and planning, and not enough action. As one noted, "[g]overnment bodies that study a problem to death at great expense . . . are useless." Another resident, who was previously engaged in a number of watershed activities, expressed frustration with inaction on problems identified through past studies:

> Some of very same issues I dealt with in the early to mid 1990s are still the same with no change even though the need for change was identified as critical for success. Look at the devel-

> opments on Mt. Scott & Gresham as examples. Upslope development and runoff impacts acknowledged but ignored in favor of tax revenue. Smiling faces telling big fat lies! Total waste of volunteer time and energy. . . .

As illustrated above and confirmed by additional survey comments and interview informants, one critical distinction that watershed groups have to manage is differing orientations and preferences among participants, some of whom focus on planning and assessment efforts while others want to participate in on-the-ground activities to enhance water resources in the region.

In sum, the study watershed council does not appear to represent the socioeconomic characteristics or perspectives of the general population of the watershed; instead, JCWC participants share backgrounds, interests, and connections that are more common to liberals, environmental ideologues, and the professional elite in the area. Only a small percentage of residents seem to participate in the JCWC, and of those who do, only a handful regularly attend meetings at which decisions are made about watershed plans and projects. Moreover, JCWC participants appear more urban, educated, and relatively new to the region, while they also commonly live in the 100-year floodplain or in areas adjacent to water. Watershed council participants are also significantly more supportive of water resource protection efforts through authoritative government actions, stringent regulatory policies, and unpopular economic measures such as taxes. Last but not least, council participants seem well-connected and networked with respect to other organizational affiliations, which likely enhance their capacity, resources, and potential influence on decision-making processes.

As a survey participant noted, "Metro regional government is elected by, and serves the interests of, urban elites and amounts to only a mechanism whereby the Portland urban political activists can usurp local control on a regional basis." Similarly, although a primary intent of watershed councils is to decentralize decision-making for greater responsiveness to community interests, these and other participatory governance structures may actually result in a redistribution of power that disproportionately serves political elites and special interests at the local scale.

V. DISCUSSION OF RESULTS AND THEIR IMPLICATIONS

The case study watershed council fails to achieve truly *democratic* forms of governance, as do similar organizations that over-represent some interests while neglecting others. With respect to *substantive* reasons for involving people in decision-making, watershed groups such as

in Johnson Creek appear to favor particular ideological interests and ways of knowing. In our study, participants' formal educations, professional ties, and bureaucratic views advance traditional, technocratic decision-making while hindering actions and decisions based on approaches such as on-the-ground restoration or participatory action research, which we highlight herein as an illustrative alternative to typical planning processes. Such community-based alternatives could more effectively engage broader social networks and people with local, experiential knowledge of resources while fostering voluntary activities among a wide array of stakeholders and locations throughout the entire watershed.

Although participation in the JCWC and similar watershed councils entails certain *pragmatic* benefits for resource protection, the lack of involvement among relatively conservative rural residents and landowners in upland and headwater regions has negative repercussions for procedural criteria (e.g., diverse, equitable involvement) as well as the substantive impacts (e.g., fish passage, water quality, or flood mitigation) of participatory, watershed-based governance. Despite the practical benefits of focusing on flood-prone, downstream areas in our case study, inequitable engagement in the council may thwart improvements in watershed conditions while potentially impeding support for resource protection among people who are unfairly targeted or ignored in local environmental governance.

A. Broader Significance of Socio-Spatial Inequities

Throughout watersheds, property values tend to be depressed in low-lying, flood-prone areas, whereas upland areas commonly offer desirable views for residents who can afford to pay premiums for hillside land. This situation results in socio-spatial inequities in the distribution of costs and benefits across residents with varying demographic characteristics and locations of residences, potentially leading to negative substantive outcomes for local, watershed-based resource governance. In the study area, for example, lower income, working class residents bear the costs of riparian protection and flood mitigation efforts through recent buyout programs and land-use regulations, even though higher income residents and society as a whole benefit from these initiatives to enhance stream quality and watershed health. Meanwhile, residents living some distance from surface water also impact resources, perhaps less so than those living adjacent to water. Regardless of their exact impacts, upland areas with steep slopes and great views—which constitute high-value property in most communities—contribute greatly to runoff, erosion, and sedimentation, all of which degrade water quality and exacerbate storm water management downhill and downstream. Local governance activities focused only on specific portions of the watershed, such as ri-

parian zones or downstream floodplains, are therefore susceptible to both inequitable and ineffective outcomes that limit current and future efforts aimed at protecting, enhancing, and sustaining water resources.

Since upstream development diminishes downstream water quality and the impact of flood mitigation, at least to some degree, the concurrent permitting of upland development while prohibiting downstream development can be considered both ineffective and unfair. The result is that while governance activities, such as land acquisition and floodplain restoration, protect and restore resources in certain areas, activities elsewhere, like tree removal and hillside development, degrade the same resources at which restoration efforts are aimed. The net effect is some gains and some losses in watershed health, along with a mix of winners and losers, both of which must be considered together to fully understand the substantive and procedural outcomes of environmental governance.

Although our empirical study focused on equitable representation (demographically, geographically, and ideologically) in a local watershed council, we are only able to infer the substantive implications of our results based on general knowledge of hydrology and the rationales for decentralized participation through watershed governance. Given this limitation, further research is needed to link procedural outcomes (and participatory justice) to substantive impacts (and distributional equity) for a variety of governance structures, especially since their actual environmental impacts are largely unknown.[31] By making such connections, we may come to understand why equity matters and create more just and effective forms of water resource governance and environmental decision-making.

B. Implications of Inequitable Governance

Contradictory decisions and activities with inequitable impacts partly result from a lack of coordination across government divisions responsible for permitting development and those responsible for water resource planning. In our case study watershed, new developments upland favor wealthy suburban newcomers over established, downstream communities in the floodplain, where residents bear the bulk of the burden for water resource protection. The neighborhood of Lents, in particular, exemplifies the potential consequences of such governance activities, given a long legacy of decision-making that has left this local community embittered and distrustful of government ever since it was contentiously annexed into the City of Portland. Such experiences, and inequitable rep-

31. Morton, *supra* note 25.

resentation in local governance structures broadly, hinder environmental protection and enhancement, including the expansion of watershed involvement and voluntary best management practices in critical areas such as rural headwater regions or dense urban neighborhoods with high levels of impervious surfaces.

Because of their voluntary nature and non-government status, local non-governmental organizations and watershed council have the potential to engage residents who exhibit a strong animosity toward government. But in order to do so, voluntary groups must involve a wider array of people and places in resource protection. Based on our findings, the case study watershed council does not appear to benefit from these advantages given the exclusion of political conservatives and rural landowners from their activities. Although government agencies might benefit from partnering with locally based, non-governmental groups, such partnerships may actually co-opt local watershed-based groups in ways that focus their attention on particular actions or locations that fundamentally limit their effectiveness. These collaborations may also be counterproductive to the goals of watershed-based governance if they perpetuate a lack of coordination across jurisdictional boundaries or if they fail to facilitate voluntary actions grounded in community interests throughout the area.

In attempts to engage a wide array of stakeholders in watershed governance, community-based organizations must make special efforts to overcome the trust and credibility issues that government and other entities often face.[32] Low levels of involvement in watershed or other groups among educationally and organizationally disadvantaged people especially raises concerns about participatory justice and the degree to which these underprivileged individuals and their views are absent in representative forms of decision-making. If the goal of watershed councils or other entities is to democratically engage diverse interests and stakeholders in water resource protection and governance, innovative efforts are needed to recruit atypical participants and expand involvement among underrepresented stakeholders. Yet the planning orientation of the JCWC and similar groups privileges involvement by professionals with college degrees and organizational contacts. Although such individuals may represent the majority of active watershed council participants, they only represent a small portion of residents in the broader community.

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32. Costanzo, Archer, Aronson & Pettigrew, *supra* note 22; Connick & Innes, *supra* note 22.

C. Recommendations for Participatory Decision-Making

A traditional approach to increasing the diversity of participation entails building the skills, capacities, and interests needed by local residents to participate in water resource planning. But heightened attention to local, on-the-ground protection, restoration, and enhancement of natural resources, as opposed to perpetual learning, planning, and studying in watershed initiatives, is more appropriate for engaging the capabilities and interests of a broad range of stakeholders. Groups such as the study watershed council may be able to expand involvement by using existing resources and networks, like the JCWC mailing list, since the majority of those people appear minimally involved in watershed activities. But the ideological and bureaucratic orientations of existing council members may present a barrier to engaging stakeholders who have lower educational levels, are less biocentric (or more anthropocentric) in their environmental orientations, and exhibit relatively weak support for hierarchical approaches through government entities and regulatory policies.

A less traditional approach to decentralized, participatory decision-making would be for the JCWC to engage watershed residents in a deliberative process for developing locally appropriate policies. One successful model in many development projects is participatory action research that intentionally seeks out different perspectives on and dimensions of a particular issue.[33] This process helps frame the "problem" as one grounded in the context and experience of the local population. For example, what if the City had done site visits with landowners prior to issuing the Healthy Portland Streams initiative? They could have worked with landowners and other citizens to map the quantity and quality of riparian areas in the watershed in order to develop a shared knowledge about the current state of the streams in the area. Given such a process, the community would work together to characterize "healthy" streams in ways that make sense in the local context; in some places this might mean cleaning trash out of the creek before considering protective setbacks. In other locations, setbacks might be supplemented with new riparian vegetation or other practices that increase property values locally. In this model, engaging the community in framing and evaluating the problem is highly iterative and nonlinear, where questions and an-

33. Hilary Bradbury, *Learning with the Natural Step: Action Research to Promote Conversations for Sustainable Development*, *in* HANDBOOK OF SOCIAL ACTION (Peter Reason & Hilary Bradbury eds., 2006).

swers emerge when people share what they know, reflect on the whole of it, and begin synthesizing the information into a new picture.[34]

This experiential and contextual approach integrates multiple ways of knowing such that a fuller range of information and evidence is sought out and incorporated in decision-making. In doing so, it is not enough to measure the biophysical "health" of the stream; social perceptions including the full range of attitudes toward water resource protection, local knowledge of creeks, and other data will be needed to develop a fully rounded and socially accepted analytical approach. This "thick description"[35] of local communities helps to create effective policy actions because it focuses on how the situation actually is in all its complexity.[36] Rather than finding a single, elegant solution that can be applied everywhere, participatory decision-making builds strategies to address a range of context-specific actions that can be applied by citizens with the expectation that their actions will protect and restore streams and watersheds.[37] Thus, the process of contextualization relies on social meanings and interactions for collective, egalitarian governance, rather than bureaucratic or hierarchical chains of authority.[38]

This type of approach is likely foreign to most traditionally trained policy analysts and decision-makers. It is also more labor intensive and produces much more data than traditional policy-development and decision-making approaches. Community analysts must have the skills and resources to engage with local residents in ways that respect their knowledge and experience. This entails effectively communicating complicated results from multiple sources to an audience that is used to seeing a "bottom line" cost-benefit analysis. But if we are serious about finding ways to create policies and programs that are equitable in both their development and implementation, as well as effective in its deployment, we will need to extend engagement past traditional methods, including an unquestioned reliance on place-based groups.

In short, standard approaches simply do not capture the diversity of community perspectives, which may cause public resistance to local water resource protection and planning initiatives, as demonstrated in the Portland region. Alternatively, genuinely engaging with diverse

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34. RAUL LEJANO, FRAMEWORKS FOR POLICY ANALYSIS: MERGING TEXT AND CONTEXT (2004).

35. CLIFFORD GEERTZ, THE INTERPRETATION OF CULTURES (1973).

36. LEJANO, *supra* note 34.

37. Denise Lach, Helen Ingram & Steve Rayner, *You Never Miss the Water 'till the Well Runs Dry*, *in* CLUMSY SOLUTIONS FOR A COMPLEX WORLD: GOVERNANCE, POLITICS, AND PLURAL PERSPECTIVES (Marco Verweij & Michael Thompson eds., 2006).

38. Raul Lejano et al., *The Importance of Context: Integrating Resource Conservation with Local Institutions*, 29 SOC'Y & NAT. RESOURCES 177 (2007).

community members may reveal the full range of possibilities for effective and equitable governance, thus enhancing social acceptability and environmental improvements in watersheds and for other natural resources.

VI. SUMMARY AND CONCLUSION

Understanding who does and does not participate in local, participatory governance structures challenges the often misguided assumptions about the fairness and effectiveness of decentralization through community-based governance. Participants in our study watershed council were not representative of watershed residents in general. Instead, they appear more highly educated than other residents while representing the interests of newcomers to the region, as opposed to long-time residents. Their connections to organized social and professional networks, moreover, underscore bureaucratic modes of planning and decision-making, potentially at the expense of on-the-ground best management practices and novel voluntary activities.

The relatively "green" environmental views and liberal political orientations of watershed council members may discourage participation of residents or businesses with moderate or diverging perspectives, thereby reinforcing similar views among watershed participants.[39] In particular, strong biocentric value orientations and negative attitudes toward businesses present a challenge to engaging under-represented stakeholders, such as relatively conservative rural residents and commercial or industrial business interests. With these stakeholders absent from the council, efforts aimed at protecting and restoring resources will be impeded to the extent that upstream residential activities and non-residential land uses are critical to the health of the watershed. Similarly, the lack of involvement among residents in upland and headwater areas, as well as those farther away from streams, potentially negates efforts undertaken elsewhere and is counter to the rationale for watershed-wide governance.

Not only does unequal representation and influence in the watershed council threaten procedural outcomes concerning fair and equitable participation, but the reallocation of power and decision-making authority through such local governance structures may also hinder the substantive outcomes of community-based activities. The socio-spatial distribution of involvement has the potential to impact the environmental outcomes of participatory governance regimes, especially considering arguments for watershed-delineated approaches, which promote volun-

39. Griffin, *supra* note 5.

tary best management practices throughout entire hydrologic basins as critical for water quality and stream health. As geographical units defined by physical processes rather than political territories, the logic of watershed-based governance regimes necessitates coordinated activities across entities in upstream to downstream regions. Thus, the failure of watershed groups to achieve widespread involvement—based on geographic as well as demographic and interest-based representation—is counter to their intent and, potentially, their effectiveness. As a result, decentralized decision-making regimes must be critically scrutinized in relation to expectations and assumptions about local empowerment, equitable representation, and substantive environmental outcomes, among other factors affecting their ultimate successes and failures.