Considering the Case for Diversity in Natural Resources

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Although there is widespread support for diversity in natural resources, diversity is valued for different reasons. It is important to understand and critically examine these reasons, to ensure diversity efforts express clear thinking and appropriate motivations. We compiled recent (2000–2019) diversity literature in fisheries, forestry, range, and wildlife, and used a qualitative coding procedure to identify reasons articulated in support of diversity. We developed a subset of these reasons into formal arguments to assess their underlying beliefs and assumptions. Our analysis reveals a high frequency of instrumental arguments emphasizing the benefits of diversity for natural resources. Drawing on the large body of interdisciplinary diversity scholarship outside natural resources, we discuss the challenges and potential risks of predicating the case for diversity largely on instrumental arguments. We encourage natural resources communities to expand the diversity discourse by engaging with themes developed in interdisciplinary diversity literatures, including equity, social justice, and intersectionality.

Keywords: diversity, diversity management, inclusion, natural resources, social justice

STEM (science, technology, engineering, and mathematics)–related fields have historically been and, in many ways, continue to be visibly homogeneous (NCSES 2019). Academic and professional communities in natural resources, in particular, have primarily been constituted by socially dominant groups (Balcarczyk et al. 2015, Kern et al. 2015)—for example, men, White people, and able-bodied people (Adams et al. 2013). Over the past several decades natural resources scholars have discussed challenges and opportunities associated with expanding their communities to include nondominant groups, focusing especially on women and people (including women) of color (e.g., Didriksen 1975, Fabrizio 1994, Davis et al. 2002, Ganguli and Launchbaugh 2013, Kern et al. 2020).

Overall, the natural resources community has broadly affirmed the importance of diversity, as evidenced by widespread efforts to diversify across various arenas, including higher education, professional societies, and federal agencies (e.g., Brown and Harris 2001, Davis et al. 2002, Ganguli and Launchbaugh 2013, Gervais et al. 2017, Bal and Sharik 2019). However, such efforts do not necessarily rest on shared or even defined notions of what diversity is, why it matters, and what its implications may be. The call to diversify creates both an invitation and a charge for the natural resources community to engage in a process of critical self-reflection (Arismendi and Penaluna 2016). As part of this process, it is important to clarify the normative undertones of diversity, to ensure specific diversity goals and initiatives reflect considered values and robust beliefs about the meaning and significance of diversity.

With these concerns in mind, we set out to understand the reasons why scholars and practitioners of natural resources seek to diversify their communities and to critically evaluate those reasons by developing them into formal arguments. Using qualitative social scientific and philosophical methods, we identified reasons expressed in recent (2000–2019) literature from the fields of fisheries, forestry, range, and wildlife. To build a data set of relevant literature, we designed a search protocol (see the supplemental material) that primarily targeted journals or professional magazines associated with five major professional natural resources societies in the United States—namely, the American Fisheries Society (AFS), the Society of American Foresters (SAF), the Forest Stewards Guild (FSG), the Society for Range Management (SRM), and The Wildlife Society (TWS). We searched for articles that discussed diversity in institutional natural resources settings, such as professional societies, state or federal management agencies, or higher education. We did not search for articles that discussed diversity among external stakeholder groups (such as small woodland owners, ranchers, or recreationists) or articles that addressed diversity in STEM fields overall, because our objective was to evaluate calls for diversity within professional and academic natural resources communities.

By necessity the scope of any research project must be bounded, and we decided to focus on certain communication outlets of certain professional societies. We

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Box 1. Working definitions of diversity, equity, and inclusion.

These definitions informed our coding procedure and analysis. They represent our understandings of diversity, equity, and inclusion, based on a combination of literature review, professional experience, and reflection. We offer these as viable but not singular or definitive interpretations of the three concepts.

Diversity refers to differences among members of a community along one or more dimensions of social identity, including ablebodiedness, age, class, gender, race, religion, or sexual orientation.

Equity is a condition in which all individuals have equal opportunity to access a community and benefit from participation therein. Efforts to achieve equity aim to eradicate implicit and explicit forms of bias, prejudice, and discrimination that unfairly disadvantage some people, but not others.

Inclusion is a condition in which all individuals are welcomed, supported, and valued as integral members of a community. The term may refer to activities or initiatives that aim to cultivate the qualities of an inclusive community, or it may refer to the subjective sense of inclusion as experienced by community members.

acknowledge that a data set including articles appearing in the scholarly publications of other professional societies or in other communication outlets (e.g., member newspapers or newsletters) may have yielded different findings. Our analysis provides insights into the case for diversity as it has recently been advanced within a certain segment of the natural resources community, and we hope these insights will inspire future analyses of the diversity discourse in additional segments of the natural resources community.

Using methods of formal content analysis (Krippendorff 2013), we designed a qualitative coding procedure to identify and catalogue reasons why authors support or oppose diversity in natural resources. Eight common reasons were identified from the natural resources literature, including articles predating 2000. These reasons were developed into coding categories described in a formal codebook (see the supplemental material). The eight original reasons were later compressed into six reasons, including four reasons for diversity and two reasons against it. Each article in the data set was coded for presence or absence of each of these fixed-code reasons. We also created two open codes to capture reasons that emerged from the articles and were not reflected in the fixed-code categories. Each article was coded for presence or absence of these other reasons, and, for articles coded 1, we kept detailed notes characterizing the emergent reason. In addition to reasons, we also coded articles for presence or absence of text mentioning topics related to equity or inclusion (box 1).

Once coding was complete, we organized relevant sections of text from each article, by reason, in a master document. This allowed us to synthesize different iterations of reasons and to develop them into formal arguments (Batavia and Nelson 2018). A formal argument involves premises (P) that lead to a conclusion (C). Argument analysis is a philosophical method used to evaluate a proposition (i.e., the conclusion) by examining the chain of inference supporting it (i.e., the premises). By formulating arguments about diversity, we can understand and methodically assess the beliefs and assumptions underlying the proposition that diversity is (or is not) good or important for natural resources (Batavia and Nelson 2018). Given the complexity of human communication, there is variability in how any one reason is expressed by different authors. Consequently, there is some subjectivity in our results, in that other analysts may have formulated the same arguments using different language or with different emphases. The arguments we present may be regarded as viable interpretations of arguments that have appeared in the recent natural resources literature and prompts for further discussion.

Overview of recent natural resources diversity literature

The search initially generated 151 articles, but in the process of analysis, we determined that 54 articles were not relevant to our objectives. Ninety-seven articles were included in the final data set. We saw a pronounced increase in diversity-related articles over the 19-year period we examined, with only 21 articles (22%) published in the first half of our time range (2000–2009), compared with 76 (78%) in the second half (2010–2019; figure 1). Thirty-three of the articles in our data set were from wildlife (34%), and 27 of these appeared in The Wildlife Society's professional magazine, *The Wildlife Professional*. Another 26 articles were from fisheries (27%) and, like wildlife, most of these (n = 25) appeared in the American Fisheries Society's professional magazine, *Fisheries.* Forestry and range each produced 16 articles (16.5%), with the majority appearing in the *Journal of Forestry* (n = 8) and *Rangelands* (n = 15), respectively. Six articles addressed diversity in natural resources generally, published in the *Journal of Forestry* (n = 3), *Wildlife Society Bulletin* (n = 2), and *BioScience* (n = 1).

Few articles (n = 13) expressed reasons to oppose diversity in natural resources (see the supplemental material for more information), and in most of these cases, the authors did not themselves suggest diversity in natural resources is bad or unimportant. Rather, text coded for reasons against

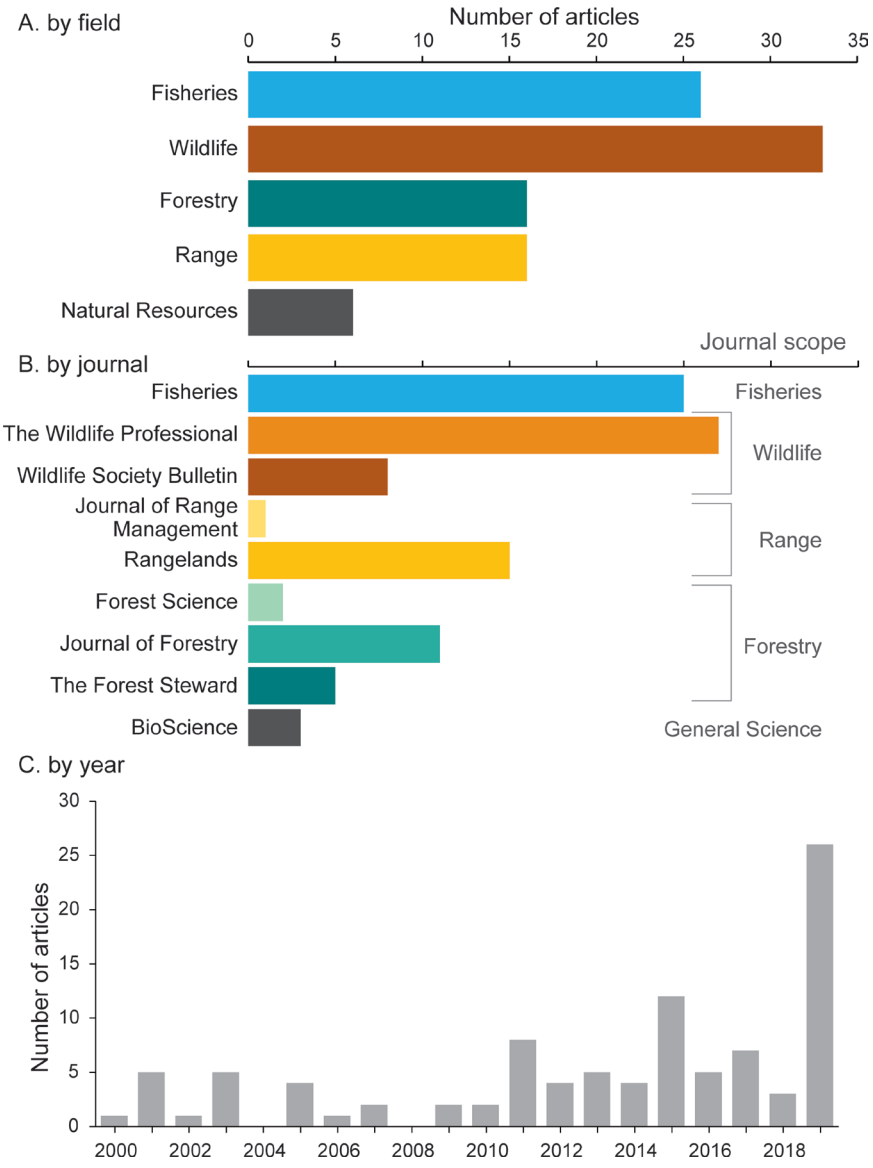

Figure 1. The number of articles included in final data set, by (a) field, (b) journal, and (c) year. Articles were included in the data set if they matched certain search terms (provided in the supplemental materials) and fell within the scope of our research objectives (N = 97).

diversity referred to beliefs held in the past (e.g., that women are incapable of forestry work) or concerns some people may have about diversity (e.g., that diversity efforts create extra work). Because our objective was to understand why diversity in natural resources is valued and because the articles in our data set overwhelmingly expressed support for diversity, below, we discuss only prodiversity arguments.

Thirty-two of the articles in our data set cited only one reason supporting diversity, whereas 26 articles cited two reasons, 21 articles cited three reasons, and 5 articles cited four reasons supporting diversity (see supplemental figure S1). Eleven articles were not coded for any reasons supporting or opposing diversity. Most of these articles conveyed a generally supportive stance toward diversity, but the authors did not state or imply any particular reason why diversity is important.

The idea that diversity is good for the profession, one of the fixed-code reasons formulated below as *the good for the profession* argument, was the reason most frequently cited in support of diversity, appearing in 56 articles (figure 2). This was the only reason cited for diversity in 14 articles, compared with 21 articles in which it was one of two reasons, 16 articles in which it was one of three reasons, and five articles in which it was one of four reasons.

The other three fixed-code reasons appeared less frequently. The idea that natural resources should represent demographics of the larger population, formulated below as the *representation argument*, appeared in 37 articles (figure 2), and usually it was one of several reasons cited in favor of diversity. In only four articles did it appear as the only reason (figure S1). The idea that natural resources should diversify to remain relevant, formulated below as *the relevancy argument*, appeared in 13 articles (figure 2) but never as the only reason cited in support of diversity (figure S1). Finally, the idea that natural resources needs to diversify because the available pool for recruitment is itself increasingly diverse, formulated below as *the availability argument*, appeared in only 12 articles (figure 2)—usually, again, alongside other reasons. In only two articles was availability mentioned as the standalone reason for diversity (figure S1).

Along with these four fixed-code reasons, a large number of additional reasons to support diversity emerged from our analysis, and were categorized as *other* (box 2). These other reasons were the second most frequently cited, after good for the profession, appearing in 49 articles (figure 2). In 12 articles, the only reason cited in support of diversity was an other reason, compared with 15 articles in which an other reason was one of two reasons cited, 17 articles in which an other reason was one of three reasons cited, and five articles in which an other reason was one of four reasons cited (figure S1). Other reasons were highly variegated (see examples in box 2), and at times specific to one field (e.g., wildlife) or underrepresented group (e.g., Native Americans).

It is beyond our scope to offer a full analysis of all prodiversity arguments, so we focus on the fixed-code reasons, which recurred throughout the data set, and also highlight

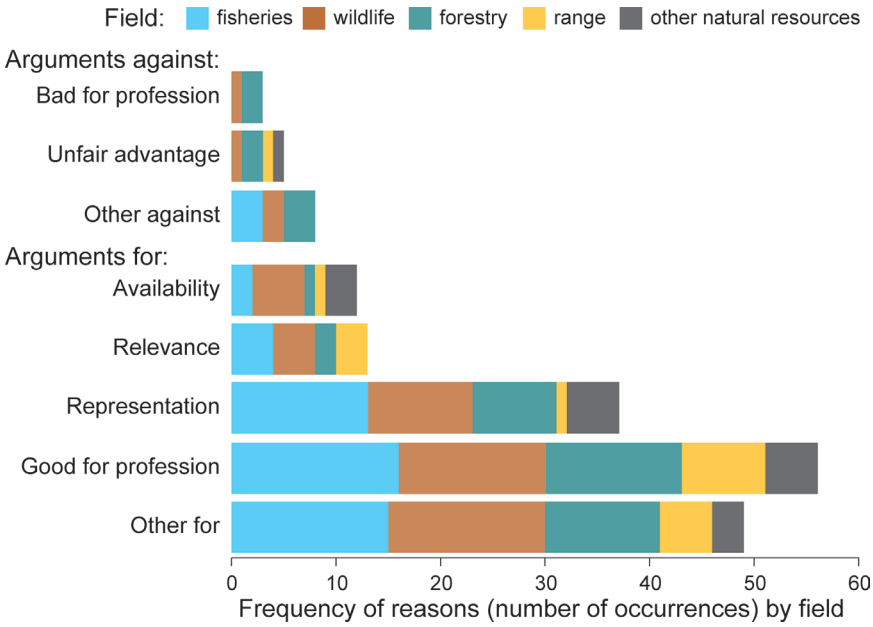

Figure 2. The number of articles expressing reasons for or against diversity in recent (2000–2019) natural resources literature, by field. The counts do not sum to 97 because some articles did not express any reasons for or against diversity, and many articles expressed multiple reasons.

one emergent reason because it surfaces novel and provocative ideas about diversity.

Arguments for diversity in natural resources

The first two arguments we consider are predicated on the idea that diversity is somehow necessary for natural resources communities to endure. The first statement of this reasoning we call *the availability argument*: (P1) The available pool for future recruitment to natural resources (i.e., the US population) is diverse. (P2) To persist, natural resources professions must recruit from the available pool. (C) Therefore, to persist, natural resources professions must diversify.

The argument hinges on the observation that future recruits to natural resources will primarily be drawn from a population that is itself diverse. P1 is clearly true: Members of the US population differ along numerous demographic dimensions. P2 is also self-evidently true. Together P1 and P2 support the conclusion that natural resources must recruit from a diverse pool. They do not, however, support the conclusion stated above—namely, that natural resources must diversify to persist. This is because it is not numerically necessary for the demographic composition of natural resources to mirror the demographic composition of the pool from which it recruits. At the time of writing, there are nearly 500 members of FSG (Colleen Robinson, FSG, Santa Fe, New Mexico, personal communication, 4 December 2020), and approximately 8,000 members of AFS (Eva Przygodzki, AFS, Bethesda, Maryland, personal communication, 22 January 2020), 10,000 members of SAF (Elaine Cooke, Membership Services, SAF, Bethesda, Maryland, personal communication, 22 January 2020), 2700 members of SRM (Vicky Trujillo, SRM, Littleton, Colorado, personal communication, 4 December 2019), and 11,000 members of TWS (Aniket Gajare, TWS, Bethesda, Maryland, personal communication, 4 December 2019). In comparison, there were an estimated 97,231,587 non-Hispanic White men in the US population in 2017, with at least 20,000,000 under the age of 20 (US Census Bureau 2019). Accordingly, there are more than enough White men available to keep natural resources numbers stable. Put differently, it is not *numerically* necessary to recruit people of nondominant gender or racial or ethnic groups in order to ensure the basic survival of natural resources professions. Perhaps the availability argument seems persuasive because it evokes a sense of urgency, but the inference does not hold up to careful scrutiny. There are, however, still several reasons to consider, which may present a more robust case for the importance of diversity in natural resources.

Some suggest natural resources must diversify not as a matter of sheer numerical necessity, but to remain relevant to larger society (including future recruits and external stakeholders). This idea is expressed in what we call *the relevancy argument*: (P1) Natural resources professions must be relevant to society to remain viable. (P2) Natural resources professions must be diverse to be relevant to society. (C) Therefore, natural resources professions must be diverse to remain viable.

For brevity we accept P1 as a given (e.g., Bengston 1994, Kennedy et al. 1995), and turn our attention to P2. Often this premise is simply asserted or implied, rather than explained. However, several authors suggest a relevant natural resources community is one that represents the diversity of the larger population (e.g., Lopez and Brown 2011): (P1) The demographics of the US population are diverse. (P2) Natural resources must represent the demographics of the population to be relevant to society. (C) Therefore, natural resources must be diverse to be relevant to society.

P1, again, is accurate as a general observation about the US population. But what about P2? Although it is plausible that just visibly representing the diversity of the larger populace could enhance the perceived legitimacy of natural resources or improve attitudes toward natural resources (Riccucci and Van Ryzin 2016) to be relevant seems to require something more. To be socially relevant requires natural resources to demonstrate that it is engaged with and attentive to the values, interests, and concerns of a demographically diverse society. This requires that people from nondominant groups

Box 2. Reasons expressing support for diversity in natural resources.

These are succinct statements of the four fixed-code reasons described in the codebook, as well as a sampling of other reasons that emerged throughout the coding procedure. Reasons that correspond to arguments analyzed in the paper are labeled on the right.

Fixed-code reasons

- The pool for future recruitment to natural resources is diverse. (Availability argument)
- Diversity is essential for natural resources to remain relevant. (Relevancy argument)
- People from nontraditional groups are currently underrepresented in natural resources. (Representation argument)
- Diversity is good for the profession, organization, or field. (GFP argument)

Examples of other reasons

- Diversity is part of what makes people who they are. (Inclusion-for-diversity argument)
- Diversity has transformative potential.
- Law, policy, or organizational commitment requires diversity.
- Natural resources requires diversity for political or economic success.
- Diversity demonstrates agency commitment to inclusion of minorities in participatory processes.
- To build cultural competency or inclusive culture in natural resources.
- Diversity is good for the actual resources.
- To ensure the vitality of the North American Model of Wildlife Conservation.
- Diversity is good for general society or sustainable human development.
- To create employment in underserved communities.
- To integrate traditional ecological knowledge with Western science.
- Diversifying natural resources will enhance opportunities for collaborative science.
- People from nondominant groups have made great contributions to natural resources or science.
- People from nondominant groups are capable or have requisite qualities to be in the field.
- People from nondominant groups want to be in the profession.
- People in nondominant groups help recruit other people in non-dominant groups.
- Diversifying natural resources honors the efforts of people in the past who fought for opportunities.
- Diversity is good or right.
- Diversity promotes equality or equity.
- Diversity reflects egalitarian social values.
- Diversity is as natural as biodiversity.

be represented not just in a passive or symbolic sense but in a capacity that allows them to actively address the interests of diverse stakeholders (Riccucci and Van Ryzin 2016). Although this point may seem obvious, it merits explicit articulation: If relevance is a primary goal of demographic representation (and diversity efforts overall), then people of nondominant groups must be empowered to shape the actions, policies, and cultures of natural resources communities.

Representativeness is not always linked to relevance, however, and often appears as its own justification for diversity in what we call *the representation argument*: (P1) The demographics of society are ____. (P2) Natural resources ought to represent the demographics of society. (C) Therefore, natural resources ought to represent ____.

In plain language, this argument conveys an aspiration for natural resources communities to mirror the demographic composition of the larger US public. Usually the blank is supplied with US census data, citing current or projected percentages of the American public who are women or people of color. Although P1 looks like a simple statement

of fact, it is important to recognize that the demographics of society can be described in many ways (Kennedy 2014). Recent literature has focused heavily on race or ethnicity and gender, perhaps because long-term national and subnational data are more readily available for race or ethnicity and gender in comparison to other dimensions of diversity, such as sexual orientation, economic class, and ability status. However, although perhaps limited in comparison to racial or ethnic and gender data, demographic information about other social identity groups is available (e.g., Pew Research Center 2018, National Center on Birth Defects and Developmental Disabilities 2019, The Williams Institute 2019). It is certainly not our purpose to belittle the importance of gender or race or ethnicity. Rather, our goal is to prompt wider discussion around whether, which, and why additional dimensions of diversity should (not) also be represented in natural resources and also to consider what practical strategies might be effective for achieving other forms of representation.

Assessing P2 requires us to understand the motivations or concerns behind it, but these are difficult to infer from the published literature. The representation argument is usually expressed as a descriptive observation—for example, "women and minorities are currently underrepresented in natural resources." This sort of statement provides important context, particularly when accompanied by demographic data. Rhetorically it may also serve to validate diversity efforts. However, normatively, these sorts of statements do little to clarify or justify the importance of representation. Given this ambiguity, it is plausible that different authors are making different arguments cloaked in similar language. For example, some authors who cite representation as a reason for diversity may be making a moral claim that natural resources communities have a duty to promote fairness or social equity or a political claim that natural resources should uphold principles of democracy (Riccucci and Van Ryzin 2016). Others may in fact be concerned with relevancy, as was discussed above, even if they do not clearly link relevancy to representativeness. However, these are merely speculations. Given its prominence in recent natural resources literature (figure 2), we suggest the representation argument and its underlying motivations merit more explicit discussion among natural resources communities.

In the arguments above, the impetus for diversity is largely reactive, responding to the perceived need to diversify to meet pressures or demands of a broader societal context. Next, we consider an argument that recognizes diversity as a positive good to be proactively pursued. This argument, which we call *good for the profession* (GFP), is formulated from the reason expressed most frequently in recent natural resources literature (figure 2). In generic form, the GFP argument can be stated as follows: (P1) Whatever strengthens or benefits the natural resources profession (or field, organization) is good. (P2) Diversity in natural resources strengthens or benefits the natural resources profession (or field, organization). (C) Therefore, diversity in natural resources is good.

We expect P1 to be generally accepted and noncontroversial among natural resources communities, so we will focus on P2. In recent literature, P2 has been expressed in many ways, but the authors commonly refer to the benefits of bringing together diverse ideas, backgrounds, values, perspectives, and experiences: (P1) Whatever enriches environmental thinking strengthens or benefits natural resources. (P2) An exchange of diverse perspectives enriches environmental thinking. (P3) Diversity in natural resources creates an exchange of diverse perspectives. (C) Therefore, diversity in natural resources strengthens or benefits natural resources.

We will take P1 as a given and focus instead on P2 and P3. Conceptually, P2 makes sense; indeed, the same basic claim appears frequently in discourses around the value of interdisciplinary and collaborative work (e.g., Cheruvelil et al. 2014, Enquist et al. 2017). But, empirically, research suggests further scrutiny may be warranted. There is evidence to suggest P2 is true under certain conditions (e.g., McLeod et al. 1996, Østergaard et al. 2011). However, particularly when (as posited in P3) diverse perspectives are represented by people who also represent visible forms of diversity, such as race or gender, processes related to social categorization can foment conflict in ways that ultimately preclude knowledge sharing, creativity, and productivity (van Knippenberg et al. 2004). Therefore, P2 is only conditionally true and would more accurately be expressed as "an exchange of diverse perspectives *can enrich* environmental thinking." However, logically, this revision requires that a similar qualification be placed on the conclusion—that is, "diversity in natural resources *can strengthen or benefit* natural resources"—that is weaker than the original formulation.

P3 is also not necessarily true because, in some communities, people who represent visible or invisible dimensions of diversity may face subtle or explicit pressures to assimilate to dominant norms, values, and epistemologies (Marvasti and McKinney 2011). Under these circumstances, any potential benefit of "diverse" perspectives would be lost. Therefore, a qualification similar to the one placed on P2 would need to be placed on P3 (i.e., "diversity in natural resources *can create* an exchange of diverse perspectives"), with similar repercussions for the conclusion.

Overall, although it is tempting to think diversity is an unconditional asset to natural resources, this is not necessarily a sound assumption to make. The GFP argument raises important questions about how people of nondominant groups, and the perspectives they bring, should be integrated into current natural resources communities. If diversity efforts are undertaken with the hope of receiving certain benefits, it is essential to consider how natural resources communities can be arranged to support productive, enriching interactions. At the same time, however, this argument challenges us to ask why (or perhaps whether) we remain committed to diversity if or when it does not yield beneficial

outcomes for the current community, institution, or organization (e.g., Mannix and Neale 2005).

Finally, in a handful of articles appearing in the August 2019 issue of *Fisheries* (Brix 2019, Fiske 2019, Lee 2019), several authors expressed ideas that seem to redefine the meaning and ultimate goal of diversity efforts. We coded these ideas as *other* reasons for diversity, and formulated them in what we call the *inclusion-for-diversity argument*: (P1) People have unique perspectives, identities, and values. (P2) A diverse community expresses and affirms the unique perspectives, identities, and values of its people. (P3) The natural resources community should be diverse. (C) Therefore, the natural resources community should express, affirm, and include the unique perspectives, identities, and values of its people.

Rather than defending diversity, per se, as in the previous arguments, these authors take the importance of diversity as a given (P3), but advance a particular understanding of what diversity means (P2). Their characterization of diversity pushes against the tendency to siphon people into static (e.g., racial or ethnic or gender) categories, instead recognizing people for the unique combination of backgrounds, beliefs, and experiences each of them brings. The conclusion, then, expresses the goal for all people to inhabit and express their complex identities, as part of an inclusive community. The argument is striking when juxtaposed against the others we have examined, because it promotes an understanding of diversity that points to its potential to radically transform not just the appearance but the very character of natural resources communities. To be clear, this is a not prominent argument in the recent literature. We highlight it as a fresh perspective and a catalyst for continued reflection and critical engagement around issues related to diversity in natural resources.

Expanding the diversity discourse

Parallel to the internal dialogue in natural resources is a large literature on diversity spread across numerous branches of the sciences and the humanities, including but not limited to education, critical race theory, feminist and LGBTQ studies, sociology, social psychology, and organizational studies (Adams et al. 2013, Roberson 2019). Diversity, in other words, is a topic of widespread and longstanding scholarly interest, which is ideally suited for critical interdisciplinary examination. In the discussion that follows we draw on some of this broader diversity scholarship, because it offers valuable insights to enhance and enrich the diversity discourse in natural resources.

Diversity management and inclusion. A variety of factors may influence what an author writes (or not) in a peer-reviewed publication, so we cannot necessarily conclude that certain reasons express primary or subsidiary motivations for diversity, only on the basis of the number of times they appear in the literature. Nonetheless, the frequency of the GFP argument in recent natural resources literature is notable, and seems to call for commentary.

GFP shares with the availability and relevancy arguments an emphasis on the instrumental value of diversity—that is, value to the extent that diversity somehow benefits or supports natural resources. This family of instrumental arguments echoes the reasoning behind diversity management, the prevailing paradigm for organizational diversity efforts in the Untied States since the late twentieth century (Holvino and Kamp 2009, Köllen 2019, Roberson 2019). Diversity management emerged as an offshoot of programs focused on equity and equal opportunity, exemplified in initiatives such as affirmative action that framed increasing institutional diversity (e.g., in professional or educational organizations) as a moral and legal imperative (Köllen 2019). Partially in response to social backlash against these programs, in the 1990s the legal impetus for diversity largely gave way to voluntary programs, incentivized by the claim that diversity is an asset that can be managed to an organization's benefit (Thomas and Ely 1996, Hirschman and Berrey 2016).

Situating the natural resources discourse in a diversity management paradigm highlights the need for natural resources communities to discuss more concretely how diversity is envisioned, and how it will be managed on the ground. A large body of research demonstrates that diversity, per se, does not consistently produce organizational benefits (Van Knippenberg et al. 2004, Mannix and Neale 2005, Roberge and van Dick 2010). Diversity also presents real institutional challenges, because it can encourage segregation, generate unproductive conflict, and undermine community cohesion (van Knippenberg et al. 2004, Bendick et al. 2010). The relationship between diversity and workplace performance is complex (Mannix and Neale 2005), but researchers have found that the initiatives and strategies used to actually manage people in a diverse workplace often act as key moderating variables (Choi and Rainey 2010, Yang and Konrad 2011). Practices that promote equality by emphasizing sameness, or blindness (e.g., color-blindness, gender blindness), although they are perhaps well intentioned, often end up assimilating diversity to the dominant culture (Markus et al. 2000, Marvasti and McKinney 2011), and so have not generally been associated with positive workplace outcomes (Ely and Thomas 2001, Meeussen et al. 2014). Similar performance outcomes are reported of approaches that segment the community, relying on people of non-dominant groups to access external stakeholders (customers, constituents) of "their type". This approach also tends to perpetuate stereotypes and promote workplace discrimination (Ely and Thomas 2001, Bendick et al. 2010).

Overall, inclusive diversity management practices that acknowledge, support, and integrate difference within the community, promoting full and equitable participation of all members, tend to yield the greatest organizational benefits (Ely and Thomas 2001, Derks et al. 2007, Mor Barak et al. 2016). For this reason perhaps, among others, the scholarly discourse around inclusion has greatly increased over the past decade (Shore et al. 2018). Indeed, we saw a

marked increase in mentions of inclusion over the range of time included in our data set, and particularly in 2019 (see supplemental figure S2). However, in the articles we read, mentions of inclusion were usually brief and tangential to the main discussion. Related to inclusion, of the 97 articles we analyzed only 42 articles were coded for a mention of equity or inequity, which included any text discussing bias, discrimination, or equal opportunity (figure S2). Where mentioned, these topics were usually addressed descriptively, such as by identifying various forms of inequities diverse groups may face, rather than normatively, by arguing inequity is an issue that must be addressed. If the natural resources community seeks to benefit from diversity, more concerted attention to developing and sharing best practices that cultivate diverse *and* inclusive and equitable communities is warranted. Put differently, it is questionable whether diversity goals can be achieved in isolation from efforts to cultivate an equitable and inclusive culture in natural resources (Davis 2002, Muñoz et al. 2017).

However, the instrumental orientation toward diversity in itself also warrants critical scrutiny. Under a diversity management approach, diversity is regarded as a strategic investment, such that its value is contingent, at least in part, on the benefits it provides (Gilbert et al. 1999, Köllen 2019). Critics have raised concerns that, if it were discovered that diversity does not benefit or is even antithetical to organizational objectives, the incentive for diversity would disappear and, potentially, diversity efforts would be de-prioritized (Noon 2007). In light of this critique, natural resources communities are well advised to discuss whether or the extent to which current support for diversity hinges on its usefulness, and critically assess social and ethical implications of these discussions.

A second critique is that instrumental views of diversity presuppose an understanding of natural resources that is resistant to fundamental change. For example, Lopez and Brown (2011) suggested diversity is important to maintain the viability of the North American Model of Wildlife Conservation, the sustainable use philosophy that has traditionally underpinned wildlife management in the United States. In this way Lopez and Brown (2011) suggested diversity is desired to promote and perpetuate the values of the dominant value system in wildlife—itself the product of a history of oppression, which has been (and still is) used to promote and perpetuate White male privilege in the United States (Peterson and Nelson 2016, Yarbrough 2018). It is deeply problematic to recruit people from non-dominant groups into natural resources, when the goals they are summoned to serve have been defined within a value paradigm that was designed to systematically exclude them (Lorbiecki and Jack 2000, Holvino and Kamp 2009). First and foremost, this is exploitative, and in that regard unethical. But even setting ethical concerns aside, diversity efforts that remain tethered to pre-defined goals and values seem to preclude the realization of a fully inclusive community and, potentially, any benefits that may result thereof.

Although inclusive practices may be implemented under a diversity management umbrella, in order to facilitate productive community interactions, the inclusion-for-diversity argument alludes to a more transformational notion of inclusion that echoes themes developed at length in broader interdisciplinary literatures. On this understanding, an inclusive community is a dynamic community, which allows for the possibility of re-configuration from within (Rodríguez-García 2010, Kwon and Nicolaides 2017). When the emphasis is on inclusion, diversity is not considered an asset to be managed to benefit some pre-defined notion of the community, but an essential attribute of a community that is constantly defining itself. Although it is still possible to argue diversity, thus conceived, would be "good for natural resources," this argument would require a more flexible notion of what counts as "good." Of course, achieving full inclusion does require management of sorts, but in a supporting role that serves to facilitate rather than direct dialogue and engagement, thus enabling change to occur from the ground up. To be sure, this is a radical and in some ways frightening notion, because cultivating an inclusive community, thus understood, would require current leadership to invite change, embrace uncertainty, and ultimately relinquish control. For these reasons, cultivating inclusion "requires a large dose of maturity" (Rodríguez-García 2010:262). A call for inclusion, broadly conceived, is a call for transformative change, but is natural resources ready for transformative change? This is a question our communities need to actively discuss.

Social justice. The diversity management paradigm has also been challenged for neglecting the political aspects of diversity, and thereby potentially circumventing or even counteracting efforts to promote social justice (Lorbiecki and Jack 2000, Noon 2007, Trawalter et al. 2016). From a diversity management perspective, diversity, per se, is an asset, irrespective of the particular kinds of diversity it involves. For example, a working group might be composed of people with different travel experiences and outdoor recreational hobbies or people from different ethnic and religious backgrounds. If both groups are able to produce novel insights and creatively solve problems, both would be of equal value to the organization. The risk, then, is that the structural and institutional biases inhibiting certain people's access to or influence within the professional sphere (Adams et al. 2013) will not be addressed under a diversity management approach, if all forms of diversity are considered equally significant (Lorbiecki and Jack, Wrench 2003, Syed and Kramar 2009, Tomlinson and Schwabenland 2010). In this way, social inequities and the systems supporting them are allowed to continue, rather than intentionally disrupted.

This critique and the risks it highlights also warrant careful consideration from the natural resources community. On one hand, the recent natural resources literature evinces a pronounced focus on racial or ethnicity or gender diversity, suggesting the community is overall highly attuned to some

of the overtly politicized dimensions of diversity. At the same time, however, explicit discussion about issues of social justice is sparse in the natural resources discourse. Although the representation argument may be grounded in concern for justice or equity, that link has not been clearly established or developed at length in recent literature. We realize these are contentious and highly politicized issues, which researchers in natural resources may not feel equipped or empowered to address. They may even be actively discouraged from engaging with moral–political issues by institutional or disciplinary norms seeking to uphold an ideal of value-neutrality in scientific research.

Our concern, nonetheless, is that the paucity of discussion reflects a substantive lack of attention to issues of equity and social justice in natural resources. Not only is this problematic from a moral standpoint, because social justice is an ethical imperative across all sectors of society (Adams et al. 2013), but it is also practically problematic. The social and structural barriers that were historically erected to prevent certain people from entering many arenas of society, including natural resources, will not dismantle themselves (Schelhas 2002). Failure to directly and systematically address imbalances in access, power, and privilege to or within natural resources communities potentially compromises the success of diversity recruitment efforts. There are also problematic implications for people from non-dominant groups, who often experience isolation, marginalization, or discrimination in professional settings (e.g., Greenhaus et al. 1990, Smith and Calasanti 2005). If the goal is not only to attract but also retain and successfully integrate diversity in natural resources communities, the unique risks, challenges, and threats people face must be openly acknowledged as problems to be proactively addressed (Markus et al. 2000).

Additional dimensions and intersections. As was discussed above, articles in our data set focused primarily on only two dimensions of diversity: gender and race or ethnicity. Natural resources are not unique in this regard (Köllen 2019). However, in focusing almost exclusively on these categories, we neglect other dimensions of diversity, such as sexual orientation, able-bodiedness, religion, and class, which, like gender and race or ethnicity, are used to confer or deny social access, power, or legitimacy (Adams et al. 2013). If or to the extent that equity is an enduring goal for natural resources (and our larger society), it is imperative that the unique experiences and struggles of all non-dominant groups be acknowledged and proactively addressed.

We also encourage natural resources communities to engage with broader scholarship on intersecting identities, or intersectionality (Grillo 1995, Cole 2009, Atewologun et al. 2016). These concepts emerged with the recognition that people cannot (and should not) be defined along any one dimension of diversity. Every person represents a confluence, or intersection, of social identities, and it is this confluence that meaningfully shapes one's sense of self and social experiences. For instance, it would be mistaken to assume two people have similar opportunities or (dis)advantages just because they are both women (Nelson and Piatak 2019). Their access to and experiences within various arenas of society, including natural resources, will also be affected by factors such as race, physical and mental (dis)ability, and socioeconomic background, among other things. In compiling our data set, we were struck to find our search produced no matches for the search term *intersectionality*, and almost none of the articles in our data set substantively addressed the topic. Embracing a more pluralistic, fluid, and dynamic concept of human identity may open up new understandings that support diversity in natural resources, and also may reveal tensions that merit critical and strategic attention (Köllen 2019, Roberson 2019, Miriti 2020).

Conclusions

The recent natural resources literature reveals an overwhelmingly positive stance toward diversity. On one hand this is encouraging, because it signifies what appears to be a genuine and enduring commitment to diversity in natural resources communities. At the same time, however, as was observed by Marvasti and McKinney (2011:632), "support for 'diversity' cannot be judged as uniformly progressive and benign." It is our sense that diversity efforts in natural resources will be strengthened through critical engagement and dialogue and that such dialogue will be enriched by reaching beyond disciplinary boundaries. Actively engaging with diversity scholarship in other fields can yield fresh and perhaps provocative insights, which may not otherwise find their way into the core natural resources discourse. In conducting our analysis and preparing this article our own thinking on diversity has been greatly expanded by interdisciplinary diversity scholarship. By and large, however, the recent natural resources discourse has been detached from the themes and critiques explored in these other literatures. We encourage those with an interest in diversity to look outside natural resources, whether by collaborating or even just reading in the broader diversity literatures. Our hope is that this will spark increasingly reflective, nuanced, and critical discussions around diversity, with constructive outcomes for practical diversity efforts in natural resources.

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Supplemental material

Supplemental data are available at *BIOSCI* online.

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