CHAPTER 13

Fish and Wildlife Agency Transformation to Adapt to a Changing World

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> Change is the law of life. And, those who look only to the past or present are certain to miss the future. [John F. Kennedy]

13.1 INTRODUCTION

Over the past century, U.S. fish and wildlife agencies have worked to conserve the nation's natural resources. And while these activities have produced many successes (see Chapter 1), it is now recognized that novel societal and ecological changes require new ways of thinking and broader coalitions. There is evidence that agencies are pursuing unprecedented reform (Jacobson et al. 2007). Change to agency form and function may be in response to increased demand for the expansion of state fish and wildlife agency services (Lauricella et al. 2017); the rise in the number of endangered species and habitat loss; challenges to traditional or status quo management philosophies; organizational and policy legitimacy gaps; and declining interest in foundational aspects of the traditional fish and wildlife institution (i.e., "all customs, practices, organizations and agencies, policies, and laws with respect to wildlife" [Decker et al. 2016:290]), specifically, fishing and hunting (Jacobson et al. 2007; USFWS 2018). There has also been an increase in the popularity and political power of organizations that represent the interests of so-called "nontraditional" fish and wildlife constituencies (e.g., wildlife watchers [Manfredo et al. 2003], animal rights advocates). Additionally, stakeholders have found utility of political projects (e.g., referendum) to alter or circumvent traditional authority over state trust of fish and wildlife resources (Williamson 1998; Nie 2004). These novel societal and organizational dynamics led Ed Carter, former president of the Association of Fish and Wildlife Agencies (AFWA), to pose the question and rejoinder to his colleagues: "Are we still relevant to the people we serve? If the answer to that question is 'no' or 'maybe' then we may need to seriously evaluate what we are doing, how we are doing it and for whom we are doing it" (AFWA 2019).

One part of organizational introspection has resulted in U.S. fish and wildlife agencies, both state and federal, defining relevancy in terms of expanding their service boundaries. For instance, in the realm of fishing, agencies can stock more fish, provide greater access to places to fish, offer workshops to teach people how to fish, or engage social marketing to persuade people that fishing is a wonderful leisure activity. They can also attempt to find ways to engage some degree of organizational transformation by including hikers, kayakers, canoers, and fish and wildlife watchers into their programming while awaiting changes to state fish and wildlife management funding mechanisms that move the general public into a reliable and robust con-

servation funding model. However, a recreational or leisure service approach is unlikely, by itself, to maintain or substantially improve the future standing of the agency given our current crises. Instead, we must recognize that the traditional fish and wildlife management paradigm was designed to address the threats, needs, and desires of natural resource users, in particular hunters, trappers and anglers, and past challenges (e.g., overharvest, emerging leisure pursuits). Merely expanding service boundaries will not address macro issues affecting everyone, such as climate change, biodiversity loss, and pursuit of unsustainable economic growth. Indeed, appropriately modifying the institution of fish and wildlife management developed in the 19th and 20th centuries to tackle one set of problems is a much heavier political, social, and cultural lift, but the benefits to human-natural systems are incalculable.

Our current crises do not fit neatly into our old precepts of how to govern wildlife. Hence, societies need to probe how fish and wildlife agencies can embrace social learning (Campbell 1991) to help retool the institution to govern wildlife in our modern age. True social learning institutions develop and test the practical application of operational models that "lead to higher levels of effective implementation and alleviate the implementation crisis" (Knight et al. 2006:408). This process requires that fish and wildlife agencies pursue transformational change. To do this, agencies need to recognize, consider, and integrate worldviews and experiences of citizens beyond current license buyers. Agencies can then work to create shared problem definitions (Lundmark et al. 2014). Angling recruitment efforts assume that society can be conformed to meet the existing wildlife governance paradigm, but agencies will not serve the diversity of society by simply expanding to recruit more hunters and anglers or trying slight modifications to satisfy the casual fish or wildlife enthusiast to save nature. We believe that developing a social learning mindset (e.g., listening to all) will help prepare agencies to embrace, adapt, and resolve social and ecological uncertainty and risk for at least the next 100 years.

In this chapter, we propose that "serving and engaging broader constituencies in a way that is easily integrated into an actionable, adaptive approach" (AFWA 2019:19) requires fish and wildlife agencies to transform into social learning institutions (Campbell 1991). Section 13.2 details why an organizational focus should be considered now, and section 13.3 details the steps involved, the types of organizational transformation needed, the linkages between change and governance, and how to build, honor, or let go of the past, as necessary, and move forward with requisite cultural change. Section 13.4 considers the challenges associated with organizational transformation in the context of historic fisheries and wildlife management, in particular discussing how attending to design can inform a legitimate fish and wildlife governance in the challenging decades ahead. We summarize the need for agencies to become social learning institutions in section 13.5. Throughout the chapter, we draw from research on organizational transformation, institutional analysis, and design principles, with the goal to explore agency transformation as a means to increase agency relevancy and affect positive change through statutes, rules, and policy. Further, this chapter is situated within new or even radical conservation visions and movements that problematize our "traditional" ways of conserving biodiversity in order to create a more sustainable and just world (hopefully, before the clock runs out). Hence, we argue that serious consideration be given to altering the current paradigm to define *relevancy* in a way that meet these ends. The ideas presented herein are intended to guide, invigorate, and mobilize change agents; stimulate discussion and debate; and clarify a range of options available not just to achieve bureaucratic efficiency or enhanced constituent satisfaction, but to build organizations better equipped to meet the pressing challenges of the world.

13.1.1 Background

The traditional fish and wildlife management institution has been instrumental to our past conservation successes (see Chapter 1), but also some of our current crises. Agencies are changing and realizing their commitment and obligations to equitable fish and wildlife trusteeship for all rightful species and beneficiaries and pursuing "good" governance (Decker et al. 2015, 2016; AFWA 2019; Fuller et al. 2020). Actions to alleviate tensions between competing values and interests have not yet led to calls for major change to the wildlife management institution itself. A desire to stick with the current version likely comes from deep-rooted partialities, including but not limited to endowment bias (an overvaluation of what one has), status quo bias (a preference for keeping what one has), or loss aversion (the tendency to attribute much more weight to potential losses than potential gains). Organizational predispositions guide decisions to preserve the paradigm that has brought about previous successes rather than deviate to address changing societal values.

The inherently political (i.e., nexus of social relations and authority) nature of fish and wildlife conservation exacerbates biases and tensions within society and inhibits transformation to meet change (Jacobson et al. 2010). For instance, funding allocated by state and federal governments for fish and wildlife conservation was intended to address the threats of the era, such as overharvest, habitat and access loss, and gross commodification. The long-standing funding model has required that conservation and restoration be funded by those that directly benefit (e.g., Federal Aid in Wildlife Restoration [Pittman–Robertson] Act of 1937, hunting/trapping/fishing license revenue). Correspondingly, the historic relationship between agencies, hunters, trappers, and anglers and their allying interests has been politically prioritized for nearly a century (Nie 2004; Artelle et al. 2018; Mahoney and Geist 2019). The chief funding mechanism that was derived from that era, the U.S. Fish and Wildlife Service Wildlife and Sport Fish Restoration Program (Dingell–Johnson Act of 1950), continues to support the current system. Access to these funds has been paramount to ensure agency survival and, thus, are a powerful incentive for many agencies to find ways to increase the number of license holders. It is understandable that when many agencies operationalize the terms "diversification" or "relevancy," they typically do so with the chief goal of selling more licenses or creating new sportspersons. However, adherence to these outdated funding models hampers the ability to tackle the problems that are important to today's society. Societal values are changing, and although current fish and wildlife management agencies are moored to the consumptive funding paradigm, many recognize a need for change (e.g., the recently proposed Recovering America's Wildlife Act [RAWA; H.R. 3742]).

An updated vision for the fish and wildlife management paradigm should be one that earns the support, respect, and contribution of all citizens because we are all connected to nature and, therefore, fish and wildlife. These connections extend beyond harvest or recreation; all humans directly or indirectly receive benefits from fish and wildlife and their habitats. Moreover, citizens are motivated to vote in favor of environmental protection (for the United States, see Leiserowitz et al. 2018). Society is facing novel and immense social and ecological challenges, resulting in land degradation, biodiversity loss, pollution, emergent zoonotic diseases, a warming climate, and rural decline. We propose that state and federal wildlife agency leaders should be positioning their organizations to help address the challenges facing humans and our planet. Uniting ideas from human dimensions of wildlife, policy studies, and critical environmental research (e.g., Jacobson et al. 2007; Büscher and Fletcher 2019), thus shifting from

a harvest/recreation resource management focus to maintaining healthy ecosystems, agencies may increase the likelihood that they will at least enhance social or political legitimacy.

13.2 DESIRED ENDS: THE IMPORTANCE OF TRANSFORMATION AND HOW TO ANALYZE IT

Responding to contemporary social-ecological challenges will require a leap of consciousness, a broad vision, the setting of long-term goals, courage, and taking small, practical, and ethical steps toward each goal. Public organizations can change, striving for optimal adaptive fit within the social, political, and ecological conditions in which they reside (Lengnick-Hall and Beck 2005). Fish and wildlife agency leadership will need to be motivated to determine which fit is best for achieving their goals within the state or region where their agency exists and the appropriate ways to evaluate fit.

Chakravarthy (1982) proposed three states, which can be framed here as an optimal or desired end (Figure 13.1). An organization embracing an *unstable fit* is defined as one not willing to change and adapt, preferring to make minor to no adjustments and to defend existing form and function. These organizations are most susceptible to contextual changes and, hence, have a higher likelihood of organizational death due to perceived irrelevancy, diminished legitimacy, and disrepute among society. Public sector organizations are manifestations of the political importance to society (MacCarthaigh et al. 2012). They are generally stable, but they are not immortal (Kaufman 1976). Mortality of a government organization is rare, involving dissolution, splitting, merger, or consolidation, and differs from metamorphoses in this way (Peters and Hogwood 1988; MacCarthaigh et al. 2012). Examples of mortality in natural resource management include the dissolution of the Kenya Wildlife Department, Northern Ireland Department of the Environment, U.S. Natural Resources Planning Board, Ministry of Land and Resources of the People's Republic of China, Texas Department of Water Resources, and Iowa Bureau of Forestry. Regardless of whether the agency was disbanded, split up, or absorbed, when organizations are forcefully changed from the outside, there will be disruptions of personnel, focus, and service. An organization that can direct its own path through
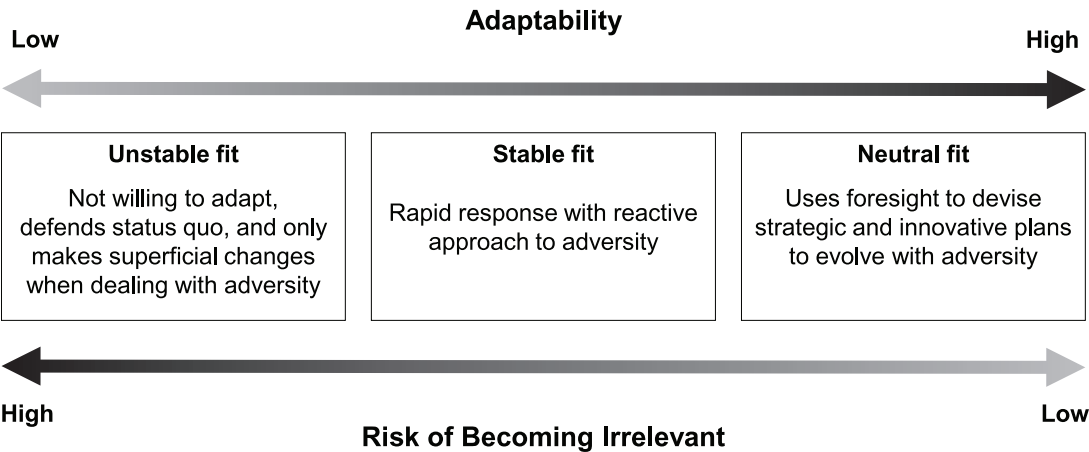

Figure 13.1 The balance between adaptability of an organization and that organization's risk of becoming irrelevant. Adapted from Chakravarthy (1982).

change has an advantage compared to agencies that either refuse to change or are compulsorily restructured by other governing entities.

A *stable fit* describes a reactive approach where an organization responds quickly to changes. Historically, most government organizations are engaged in constant metamorphoses (Peters and Hogwood 1988). For instance, it is becoming more common to transform noninnovative government structures in the bureaucratic reform and digital ages (Mea et al. 2000; Tan and Pan 2003). The process usually encompasses a new mission, objectives, and personnel (Van de Walle 2009). For example, the U.S. Forest Service and U.S. Fish and Wildlife Service have embraced transformation of agency values, policies, structures, and process to meet postindustrial societal change and implement ecosystem management on behalf of the public (Kennedy and Quigley 1998; Danter et al. 2000).

A *neutral fit* describes a state where the organization has planned well in advance to secure resources and design strategies necessary to innovate rather than react. Organizations within the latter two classifications are in strong positions to forecast, absorb, and adapt to shocks without compromising their position or goals. As evidenced by private and public sectors, adaptability leads to organizational agility. Much like buildings constructed to withstand earthquakes, these organizations are designed to flex, sway, and adjust to shifts within their institutional environment and no longer need to rely on strategic alignment undertakings (e.g., accommodating special interests) to survive (Paauwe and Boon 2018).

13.3 STEPS OF ORGANIZATIONAL TRANSFORMATION

13.3.1 Setting Change in Motion

Organizational transformation (Table 13.1) has common elements with and parallels between the public and private sectors. Organizational change often occurs when needs, problems, emergencies, opportunities, or challenges to power and bias are identified (Levy and Merry 1986). Transition from one state to another is an effort to create a cultural shift within an organization and begins with transformational leaders who can set a vision for the future and enact the steps of transformation. In state fish and wildlife agencies, organizational transformation needs to be coordinated so that both internal (i.e., employees) and external (i.e., elected representatives, the public, cooperators, and collaborators) audiences are engaged. Focusing only on one audience is likely to result in internal or external pushback as well as active and passive resistance from those who do not understand or agree with the new vision (Fielder 2010).

In short, a fish and wildlife agency must organize and manage in a manner that responds to societal and ecological trends and challenges if it intends to remain viable or thrive (Danter et al. 2000; Lynn et al. 2000). When an entity's (e.g., country, city, company) adaptive fit is compromised, short- or long-term change may be triggered. An entity may go as far as redefining its identity and structure to emerge transformed to some degree (e.g., post-World War II Germany, post-account-fraud Wells Fargo, U.S. Forest Service wildfire response).

13.3.2 Types of Organizational Change

To understand how organizational change happens, we require a way to classify the processes inducing change. The first-, second-, and third-order change concepts help us organize these processes (Figure 13.2; Pimbert 2004). Accommodation or first-order change involves making

Table 13.1 The steps in organizational transformation (adapted from Danter et al. 2000; Kotter 1995).

1. Establish and articulate need, sense of urgency, and propose a new identity.
2. Form a powerful coalition to promote transformation.
3. Create a vision for the future.
4. Communicate the vision.
5. Secure resources to empower others to enact the vision.
6. Design and achieve short-term wins.
7. Build upon wins to produce bigger change.
8. Institutionalize new ideas, structures, and processes to achieve cultural change.

things look different to outsiders while maintaining the status quo internally (Pimbert 2004). The primary motivation herein is to maintain the structure and function of the past and present organization while appearing different. This action should not be confused with an organization whose underlying motivation is to engage in higher order change but is using a similar strategy to be deliberate while it forms the vision and political alliances it will need for higher-order change. First-order change is incremental and convergent and helps maintain institu-

Adaptability
Fit
Wisdom
Uncertainty and Risk

Low   High

Accommodation *First Order Change*	Reformation *Second Order Change*	Transformation *Third & Fourth Order Change*
• Incremental and convergent • Maintain institutional consistency • Philosophy, values, norms, or identity do not change • Systems, processes, or structures modified over time • New needs met or efficiency or satisfaction levels improved	• Strategic maneuver • Alters organizational DNA • Transforms form and function • Difficult to initiate and execute • Improves fit within a context	• System redesign • Iterative shift in consciousness and vision • Cumulative level of awareness or understanding • Broader political projects led by change agents • Sector-wide impact

High   Low

Risk of Becoming Irrelevant

Figure 13.2 Levels of transformation. Adapted from Pimbert (2004) and other sources.

tional consistency within an organization during periods of shock, pressure, or uncertainty (Bartunek and Moch 1987). The bedrock of an organization, such as its philosophy, values, norms, or identity, does not change. Systems, processes, or structures may be modified over extended periods of time to adapt to new needs or improve efficiency or increase constituent satisfaction, but otherwise, it is business as usual. Creating an education and outreach division to expand a fish and wildlife agency's boundaries (i.e., limits of existing social influence, networks, or resources that constitute an organization [Santos and Eisenhardt 2005]) through a diversification strategy is one example. Persuading people to fish recreationally through tailored marketing strategies, such as offering free fishing days, is also an example of this type of first-order change (Aldrich 2008). A motivation to pursue first-order change may also be to distance an organization from making drastic change (Decker et al. 2011). One example would be a reorganization when faced with funding shortages that does little to address underlying issues. Subtle or tacit rejections of change may occur as well. Inaction and delay are features associated with trying to maintain rather than adapt. Another subtle tactic is characterizing individuals or groups who do not contribute to wildlife conservation or consent to certain viewpoints as naive or undeserving of having a voice in how natural resource decisions are made. We recognize that there are some practical realities to how specific funding models allow natural resource agencies to operate. Agencies can either acquiesce or repudiate these constraints. Finally, taking the stance that current ideology is morally undebatable (e.g., the North American Model of Wildlife Conservation [NAM] and current funding paradigms are flawed but the best available) may indicate an unwillingness to alter beliefs or governance.

Reformation is second-order change (Pimbert 2004) and penetrates the core of an organization. This level of change transforms form and function to improve organizational fit within the context in which it is operating (Smith 1982). It is a strategic maneuver to innovate by fundamentally altering an organization's DNA through a paradigm shift in the pursuit of becoming a social learning institution. Organizations become social learning institutions when they question their existing coalitions, constituents, practices, rules, procedures, and policies (Meyer et al. 1993; Pimbert 2004) and open their organization to more inclusive participation. The most common triggers for organizations undergoing reformation are changes in leadership and performance declines (Burke and Litwin 1992; Romanelli and Tushman 1994). Second-order change may be difficult for public organizations to initiate and execute because it is risky and breeds uncertainty (Newman 2000). Further, some leaders may have come into their positions because their views align with the existing fish and wildlife agency vision and, therefore, see value in conforming with existing institutional norms (Kondra and Hinings 1998). A major difference between first-order and second-order change is a deliberate attempt in the latter to incorporate previously omitted elements into decision-making processes. Creating hiring practices that allow a broader diversity (not just demographics, but in terms of social and political values as well) of staff is an example of second-order change. Broadening the diversity of perspectives in decision making by expanding who is invited to participate is another way of introducing second-order change. For example, fish and wildlife agencies began incorporating conservation social science into their decisions in the 1970s and 1980s (Bartunek and Moch 1987; Manfredo et al. 2019). Additionally, they have embraced the "deliberative turn"—seeking short-term public participation in deliberative exercises (e.g., public meeting, formation of endangered species

stakeholder working group) to adapt their values to society (AFWA 2019). These efforts in diversification are steps in the direction of becoming a learning institution.

Third-order and fourth-order changes are less common, more difficult to observe and achieve, involve redesigning an entire system (e.g., fish and wildlife management paradigm), and affect an entire sector (e.g., all fish and wildlife agencies) (Bartunek and Moch 1987; Schultz et al. 2016). An iterative shift in consciousness and vision over time is required to produce an organizational transformation that yields optimal outcomes (Pimbert 2004). Change is characterized by a cumulative level of awareness or understanding that builds upon and supersedes second-order change by making changes of the second order repeatedly. Organizations engaged in third-order change track progress or evolution over time. This order of change often includes broader sociopolitical projects to deliberately modernize institutions (Tsoukas and Papoulias 2005) by engaging the perpetual evolution of organizational culture. Change agents (internal or external) build the capacity to transcend existing ideas, interpretations, or practices to design change strategies that extend beyond normal conceptual limits (Bartunek and Moch 1987). In third-order change, existing structures, processes, values, and norms are evaluated to test whether they are good enough to exist in the future, and "the best we can do" is frequently contested. Organizations that wish to engage in third-order change would be well advised to look to other entities that have successfully engaged in such changes.

Though examples of third- and fourth-order change are less common, it does not diminish the world-altering potential of their ability to make constitutive change. Two of the best examples of third-order change are Amazon.com, which challenged the idea that brick and mortar bookstores are compulsory, and Patagonia, Inc., an innovator in corporate social responsibility. Both questioned the current order and found it deficient, thereby creating progressive retail paradigms. Examples of third-order change in U.S. fish and wildlife conservation include the formation of the first federal U.S. fish and wildlife conservation agency (the U.S. Commission on Fish and Fisheries in 1871), followed shortly by the passage of a series of important laws (e.g., the Migratory Bird Treaty Act of 1918, the Migratory Bird Hunting and Conservation Stamp Act of 1934, the Federal Aid in Wildlife Restoration Act of 1937, and the Federal Aid in Sport Fish Restoration Act of 1950). These laws influenced development of the NAM (Geist 1995; Geist et al. 2001; Organ et al. 2012), the privatization of wildlife movement (Geist 1988; Robbins and Lunginbuhl 2005), and the closure of the commons to public hunting and fishing (e.g., Serenari and Peterson 2016).

13.3.3 Governance and Organizational Transformation

Pursuit of organizational transformation will yield changes in and be catalyzed by organizational governance. Governance refers to structures or "regimes of laws, administrative rules, judicial rulings, and practices that constrain, prescribe, and enable government activity" and is evaluated in terms of performance (Lynn et al. 2000:3). Fish and wildlife conservation governance is broadly determined by organizational culture (comprising myriad internal and external factors and forces), and organizational culture produces organizational behavior, decision making, performance, and effectiveness (Ott 1989). Unfortunately, under the current governance model, despite some prominent successes in charismatic or economically important species (e.g., bald eagles *Haliaeetus leucocephalus*, white-tailed deer *Odocoileus virginianus*, Striped Bass *Morone saxatilis*, scallops [family Pectinindae]), the predominant trends reflect declines in species and

abundance for many of the nation's nongame species, biodiversity, and habitat (Moyle and Leidy 1992; Davies et al. 2006; Jelks et al. 2008; Decker et al. 2016). These declines could be better addressed if conservation organizations consider adopting a new governance model, such as that provided by but not limited to Decker et al.'s (2016) good governance approach.

Public organization researchers assert that transformation often fails to materialize because resources are spent assessing prevailing governance core structure and processes instead of questioning them (Mea et al. 2000). Resultantly, their validity or efficacy can go unquestioned. Transformation of fish and wildlife governance requires an introspective look at retooling the existing funding mechanisms as well as the structural and functional components of the fish and wildlife management institution, both of which have been critiqued for their inability to change and meet the needs of present-day society. Despite the good work of staff, critics of the institution characterize and scrutinize organizational components, processes, and outputs as a hierarchical structure with a centralized mode of operation. Such an organizational structure sustains or constrains philosophies, authority, or behaviors to ensure survival of the current structure (Jacobson and Decker 2006). Decision-making structures (e.g., commission meetings), state constitutional and statutory requirements and authority, processes (e.g., selling licenses, propagation of new and enforcement of existing laws), political brokerage (e.g., clientelism, political appointment), networks, and partnerships dictate fish and wildlife conservation outcomes (Nie 2004; Jacobson et al. 2010).

It is helpful to highlight influential domains that shape governance so that we understand which levers can be pulled to initiate transformation. One domain is function, which attends to leadership, communication, work motivation, decision making, group dynamics, organizational development and learning, and organizational culture (Allison 1999; Danter et al. 2000). A second area of importance is critical reflection (Biber 2009), which probes the fabric of public organizations. Specific research concepts (levers to pull) include epistemology (how we know what we know is true), logic, ideology, power, consciousness, temperament, strategy, and outcomes (Cavanaugh 1997; Allison 1999; Newman 2000).

Functionalist and critical introspection can be used to the benefit of fisheries and wildlife leaders who seek to enhance agency legitimacy among society through relevancy. Legitimacy is defined here as "a generalized perception or assumption that the actions" of fish and wildlife agencies "are desirable, proper, or appropriate" within the existing fisheries and wildlife institution (Suchman 1995:574). Public organizations seek enhanced legitimacy because they require validation that they are indeed doing the work of the people. Fish and wildlife agencies have a vested interest in controlling for outcomes associated with their agency that may threaten or bolster perceptions of current or future legitimacy among the public (e.g., opposition/support for particular policy). Moreover, they are often motivated to abide by existing societal or political norms to ensure their legitimacy (Kondra and Hinings 1998); shifts in these norms can create barriers to and opportunities for change.

13.3.4 Altering Governance Institutions to Adapt to Change

Transformation of the fisheries and wildlife management institution will require a redesign of governance to improve adaptability (step 1 of organizational transformation) and promote transformation. Not to be confused with wildlife management as an institution or paradigm, institutions refer to formal and informal rules, philosophies, values, norms, agreements, programs, decision-making procedures, and behaviors. Institutions are formed by the interactions

of actors and networks over time, and they structure and regulate human activities, including governance of wildlife (Young 1999; Jacobson and Decker 2006). Institutions provide stability, predictability, meaning, and legitimacy over time. They assist in organizational learning and innovation, particularly in unpredictable times (Gupta et al. 2010), as well as provide evaluative criteria (Kondra and Hinings 1998). Institutions that support decision-making competences are valued for their meaning, form, and function (Lowndes 1997). According to Klijn and Koppenjan (2006:143),

> Institutions actually form the social infrastructure of our behavior and, without them, virtually every form of collective behavior and collective action would be impossible due to the considerable transaction costs, and collective action problems could hardly be solved.

Institutions codify power relations, perspectives, what is thinkable and sayable, and behavior (Scharpf 1997; A. van Buuren and E. H. Klijn, Erasmus University Rotterdam, unpublished data). They are created through hard-earned social and intellectual capital emerging from conflict that is not easily replaced by transformative change (Klijn and Koppenjan 2006). Their embeddedness is expressed through the process of institutionalization (step 8 of organizational transformation), which gives institutions their stabilizing and difficult-to-change attributes (Gupta 2010). Institutional redesign can be achieved by methodically moving through all steps of organizational transformation over time. Institutions tend to change when internal or external forces drive planned change, alternative interpretations arise, or noncompliances occur (Beckert 1999; Klijn and Koppenjan 2006). When adaptation behavior becomes embedded within a fish and wildlife agency, the table is set for institutional transformation.

13.4 OVERCOMING CHALLENGES TO TRANSFORMATION THROUGH DESIGN

13.4.1 Challenges to Organizational Transformation

To address the criticism that core structures and processes are often unquestioned in the public sector, we call attention to at least five challenges personifying the difficult choice to transform governance or resist change by doubling down on the status quo. These five challenges dovetail with five barriers described in the AFWA Fish and Wildlife Relevancy Roadmap ("a practical guide that state and provincial fish and wildlife conservation agencies can use to overcome barriers to broader relevance, public engagement and support"), which are agency culture, agency capacity, constituent culture, constituent capacity, and political and legal constraints (AFWA 2019). We observe that these challenges are not mutually exclusive.

The first challenge, attributed to mindset (i.e., epistemic ideology), is the penchant to justify the need for change within the parameters of the NAM and the public trust doctrine (PTD). Despite the merits and achievements of these creeds to create a widely supported sustainable-use system thus far, Decker et al. (2016), Peterson and Nelson (2017), Mahoney and Geist (2019), and others have suggested that the NAM is linked to biased and inequitable fish and wildlife conservation principles (Mattson 2016; Eichler and Baumeister 2018). The NAM's tenets also do not at all address the macro- or micropolitical factors that can threaten or promote sustainable transformation (e.g., social aspects of conservation-reliant [i.e., human-dependent] species [Serenari 2021], curbing household consumption, throw-away societies). The PTD establishes that the state holds fish, wildlife, and water resources in trust for public

benefit. This power is derived from Roman law from Emperor Justinian and was written into the Magna Carta (Horner 2000). In the 19th century, the U.S. Supreme Court upheld the notion of the PTD, and this continued in large part until recently as court rulings suggest that the PTD's legal strength is unsettled (Organ and Mahoney 2007; Batcheller et al. 2010; Frank 2012; Anderson 2020).

Taking these shortcomings in aggregate, faithful adherence to the NAM and PTD demonstrates that the more entrenched fish and wildlife agencies are in their current operating environment, the more difficult it is for them to pursue and achieve core change (Greenwood et al. 2015; Serfass et al. 2018). Echoed by the AFWA Fish and Wildlife Relevancy Roadmap "agency culture barrier," organizations can become moored to particular logics (i.e., ways of thinking or rationalizations), strategies (e.g., diversification), constraints (e.g., agency capture), power structures, or models and approaches (e.g., recruitment, retention and reactivation [R3]) and then appoint leaders who serve these ends (Nie 2004). Further, if an agency's problem-solving model is constrained by habitual or uncritical ways of thinking and acting (i.e., institutionalization), agency adaptive capacities for solving problems can be inhibited. Resting on the achievements produced by the NAM and PTD arguably stymies the philosophical or ideological nimbleness needed to tackle present challenges to human–wildlife relations, such as food security, zoonotic disease, urbanization, deforestation, a warming climate, unbridled capitalism, and poverty. Therefore, pinning the future of wildlife conservation upon past ideology at the risk of losing support among the public seems riskier than pursuing meaningful change. At least three remedies appear viable options to modernize the dominant ideological paradigm: (1) amend the NAM so that it better reflects shifting social values, confronts and opportunities to address our ecological crises, and includes broad range human interests and experiences; (2) replace the NAM with a manifesto or philosophy that inspires broad collective action on these fronts and redefines human-wildlife relations with a biocentric or ecocentric rather than anthropocentric or humanism (i.e., serve human needs) moral framing; or (3) develop a legally robust PTD that confronts a range of human–nature relations.

A second challenge is that public organizations are designed to overcome barriers to service excellence. A narrow focus on improving existing services could prevent organizations from adapting to new demands or thinking entrepreneurially, adaptively, or in a visionary manner. Accordingly, there is a functional overemphasis on defining relevancy in terms of simply expanding agency service boundaries, which does not promote long-term, meaningful transformation. For instance, basing organizational performance solely on the agency's ability to recruit more hunters and anglers (e.g., Turner 2017) fails to deal with root causes behind today's pressing issues (see Fish and Wildlife Relevancy Roadmap "constituent culture barrier" [AFWA 2019]).

A perceived need to diversify agency services or opportunities arises from at least three organizational logics. The first logic conveys a need to become relevant to underserved publics with an interest in wildlife. For instance, creating more opportunities to enjoy fish in different ways (e.g., snorkeling, microfishing) abides by the PTD and is anticipated to build support for fish conservation. As noted earlier, the motivation behind such a strategy could be to prioritize stable fit and first-order change. A second logic is that consensus building and involving more stakeholders or beneficiaries in decision making will help mitigate or eliminate conflict among stakeholders or policy contestants (i.e., those actively seeking a particular policy outcome; Peterson et al. 2005; Biber 2009; Decker et al. 2019). Contemporary approaches to consen-

sus building in natural resource management include engaging constituencies through power sharing, enhanced responsiveness or accountability, and education and outreach activities. This logic also prioritizes first-order change but suggests recognition of an unstable fit. It also suggests that second-order change is necessary and can occur via modification to existing decision-making processes, though there is little evidence that this strategy spurs civic involvement and democratic legitimacy at large scales (Saward 2000; Ryfe 2005). Recognition that service boundaries are not wide enough is a net positive in that there is internal recognition that agencies need to evolve. However, prioritizing expanding service boundaries discounts the transformative change many agencies need to appeal to segments of society whose interests, for example, are morally rather than service oriented (e.g., opposition to lethal control methods, prioritizing environmental justice issues, dedication to an industry-wide adherence to sustainable catch within the commercial fisheries industry). A final logic is moored to doing wildlife conservation within a free-market system. The logic is that increased demand for services will yield more consumers and, resultantly, more revenue to carry out operations. However, the prevailing economic system that embraces a service-oriented approach offers few ways for those who do not hunt, fish, or boat to help offset the high costs of wildlife management or implement personal/moral agendas outside of paying income tax or vocal dissent, respectively.

A third challenge is a general reliance on the same governance tools that were used to address 20th century issues that differ considerably from 21st century challenges. Elements of this can be found within the "agency capacity barrier" identified within the Fish and Wildlife Relevancy Roadmap. Currently, agencies are confronting external pressures by seeking to connect with audiences who (may) have similar core values, interests, and beliefs as the organization. This approach may not produce sustainable outcomes if, for example, those values, interests, and beliefs are in fact declining and no longer reflect societal norms. Misalignment persists as existing problem definitions, frames, narrative hooks, and alternatives render organizations less receptive and responsive to interests with unshared institutional logics (Nie 2004; Jacobson et al. 2010). For example, calls to preserve hunting and fishing "heritage" may alienate citizens for whom these activities are not part of their heritage (Serenari and Peterson 2022).

State wildlife agencies might consider conducting systematic appraisals of strategies that challenge the idea that sustainable fish and wildlife governance should be based on the objectification and commodification of nature. Ongoing debates about the value of "selling nature to save it" (McAfee 1999) or protecting only species "that pay their way" (Mahoney and Geist 2019:5) are gaining momentum because critics of commodification forecast imminent "biological annihilation" under the current economic system (Franklin 1996; Brightman and Lewis 2017; Ceballos et al. 2017; Van Eeden et al. 2018). Additionally, a continued reliance on incentives (e.g., tax breaks, compensation for loss) and hegemony are also questionable tools to change individual behavior across large scales, which is needed to achieve landscape-scale conservation goals. Moreover, continued emphasis on targeting individual rather than organizational behavior change may support the argument that fish and wildlife agencies are not critical actors (i.e., irrelevant) in the greater societal pursuit of systemic change that produces more sustainable human–wildlife relations. Filling the toolbox with novel, innovative, and even so-called "radical" tools (e.g., technology, conservation basic income [Fletcher and Büscher 2020], expansive fenceless corridors [Kopnina 2016]) will help fish and wildlife agen-

cies redefine relevancy and positively influence human–wildlife relations in the 21st century. More broadly, a robust system for influencing land use outcomes (e.g., nonmarket approach, international law) is argued to better address global, human-induced ecosystem change (Büscher and Fletcher 2020), which impacts all of Earth's citizens.

A fourth challenge is that decision making in fish and wildlife management is complex, multifaceted, and difficult (Fuller et al 2020). These challenges are expanded within the Fish and Wildlife Relevancy Roadmap's "political and legal constraints barriers." For instance, responsibility for protection of terrestrial and aquatic resources comprises a patchwork of agencies, each with its own and sometimes conflicting values, vision, and mission (e.g., Texas Parks and Wildlife, Texas Commission on Environmental Quality, Texas Water Development Board, and Texas General Land Office at the state level and a plethora of agencies at the federal level). As such, fish and wildlife agencies are embedded within a larger matrix of decision making. Hence, there is a need to develop systematic processes for examining complex public policy choices. These processes should evaluate trade-offs between two or more goals and improve associated understandings of the complex linkages between social, political, economic and ecological domains. How can an organization torn in different directions begin to transform? Some research suggest that entities can coordinate to establish a legitimate process of interaction and resolve multiple and conflicting goals, criteria, and constituencies across wide expanses. Enhancing legitimacy during transformation in North American natural resource entities has involved but not been limited to embracing collaboration to break free of preconceived ideas about or boundaries constricting positions or procedures, building a shared sense of responsibility and commitment, willingness to experiment, and holistic and proactive approaches (Wondolleck and Yaffee 2000). Additionally, agreeing upon a set of undesirable conditions for which to pursue positive rather than negative (i.e., avoidance) goals can envelop a wider range of values and interests (Zenner 2016). An ecosystem approach focused on enhancing ecosystem integrity is one way to operationalize this philosophy (MacKenzie 1996). Aggregating the entire system of innovative ideas could underpin a novel universal system of conservation objectives (e.g., Edvardsson 2004) that are designed, in this case, to address short- and long-term problems affecting all fish and wildlife species, their habitats, and society. Agencies could explore institutionalizing the use of cross-functional and cross-level teams to balance goals, improve systemic process (Mea et al. 2000), or adopt systematic decision analysis methods (e.g., structured decision making coupled with multi-criteria decision analysis) to identify socially acceptable trade-offs (Fuller et al. 2020).

Finally, state fish and wildlife agency resources are finite, are routinely created or dedicated by political bodies for specific purposes, and have strict oversight. These funding challenges make it difficult if not illegal for fish and wildlife agencies to reallocate resources in a manner that unites the public to advocate for all fish and wildlife. Further, because resource agencies are political creations, there is always intense pressure to allocate those resources cautiously. Under the current paradigm, investment funding for fish and wildlife conservation can arguably be placed into three camps: those funds with a focus on species with a clear economic return, those with high existence values, and those with a focus on species of greatest conservation need whose abundance can restrict other economic activities. This designation splits citizens into cohorts and often plays out in the political realm as "us" versus "them" dichotomy, wherein resources are divvied up based more on political power than need, and disregards a range of other species as well as complex or hidden human–nature relations. For

example, paying additional attention to hunters and anglers with state or national legislation (e.g., amending a state constitution to ensure a right to hunt and fish [at least 20 states], the Modernizing the Pittman–Robertson Fund for Tomorrow's Needs Act [H.R. 2591]) may reinforce the existing perception that regardless of where funding originates, state trustees prefer to use their limited political and economic capital to govern in a way that prioritizes the needs of special interests rather than design solutions to meet the urgent needs of all constituencies and species (Gill 2004). The dichotomy is fulfilled through the Endangered Species Act and efforts to pass RAWA, prioritizing imperiled species. It remains to be seen how fish and wildlife agencies will unite and secure legitimacy among their divergent constituencies while, for instance, enthusiastically supporting R3 and simultaneously contesting large carnivore recovery projects or supporting funding mechanisms that rely on industries that have degraded terrestrial and marine environments and human rights domestically and abroad (e.g., Fox 1999; O'Rourke and Connolly 2003; Wallace 2010; Malin and DeMaster 2016; Orta-Martínez et al. 2018). At a minimum, preserving the "us" versus "them" dichotomy arguably reinforces business as usual and prevents agencies from pursuing repeated second-order change necessary to embrace third-order change and the union of constituencies and species.

Other challenges are noteworthy and have been mentioned by organizational change researchers. Lauricella et al. (2017:434) stated, "Lack of clarity in the vision, lack of urgency for change, poor communication, failure to remove structural obstacles, and declaring success too soon" are primary reasons why transformation in state wildlife agencies falls short. Public and private organizational researchers have more deeply explored the drivers of disengagement with change. For instance, heightened perceptions of risk (e.g., fear of losing organizational identity, institutional knowledge, external and internal loyalty), difficulty shepherding staff through the process, distrust in the broader change process (e.g., Chadwick et al. 2004; Sennett 2007; Bryant and Cox 2011), and systemic ad hoc decision making undermining crisis decision-making capacity (Kettl 2000) are influential as well. Resultantly, organizational isomorphism (i.e., homogeneity of structure) remains to produce stability and predictability of specialization, authority, process, and roles (Kondra and Hinings 1998; Kettl 2000).

13.4.2 Cultivating Capacity to Transform through Design

Any attempt to create a better public organization that does the work of the people should begin with extensive planning and design that lays out courses of action aimed at changing existing undesirable situations into preferred ones (Simon 1988). Ed Carter's call for introspection is an acknowledgment of the importance of considering whether the fish and wildlife institution and its structure and processes fit a new reality. These are questions about the design of fish and wildlife agencies to enhance the institution's legitimacy (e.g., representativeness, effectiveness, accountability). The intentionality behind the Fish and Wildlife Relevancy Roadmap (AFWA 2019) and RAWA suggests that agencies both recognize the challenges they and society face and are considering ways to navigate into the future. Nevertheless, there is more work to be done to deal with new responsibilities, changing civic goods, and evolving service needs (Kettle 2000). Fish and wildlife agencies can help close this gap for natural resource agencies around the world by reconsidering a true social learning design that would encompass a flatter hierarchy, increased collaboration, diverse networks, permeable agency boundaries, devolved decision making, tolerance and diversity of thought, composition and culture, self-organizing and flexible departments, and staff

and constituent empowerment (see Daft and Lewin 1993). The introspection should also consider what kind of design an organization has embraced, its historic successes and short-comings, and how that design can or will not contribute to the adaptive capacity needed to meet evolving fish and wildlife contexts (Danter 2000).

There are three design approaches that can be used in the transformation process. These design approaches are instructive because they reveal where existing efforts to meet societal shifts fall within the wider universe of organizational transformation. Relevancy would not be based on how many people have been converted to meet the agency where it is, but places the onus on agencies to individually and collectively transform in a way that renders them more representative of society and helps conserve or even save nature differently by helping make nature a part of the background of everyday living (Büscher and Fletcher 2020).

Each of the three design approaches treat the problem–solution differently and require some imaginative energy to envision how agencies can change their culture (Danter et al. 2000; Jacobson and Decker 2006; Biber 2009; Li and Lin 2011) to help integrate humans and wildlife in new ways. As stated by Weick and Quinn (1999:368), with each approach an "organizational action builds toward an episode of change when preexisting interdependencies, patterns of feedback, or mindsets produce inertia." These three approaches are as follows:

1. **Design for service**: Wetter-Edman (2014) discussed how a central virtue in design work has been that society has been moving towards optimizing the human experience to achieve innovation and success in business. Service providers will have shifted from viewing customers as passive consumers and users to active co-creators of value. These new kinds of value are understood through a service-oriented logic (Sangiorgi 2012). Design for service is, thus, an interdisciplinary mindset that fish and wildlife agencies have embraced to enhance their capacity to understand, integrate, and engage with their constituents' values, knowledge, and practices. This design expands platforms to satisfy an increasing array of needs. Salient examples include designing R3 programming to include wildlife watchers or offering free fishing days.

2. **Design for social innovation**: Unlike design for service, this design approach is used to respond to societal trends and needs, such as lack of access to or interest in outdoor recreation among segments of the public, to affect or enhance quality of life. The aim is to build a sustainable future by using design to understand its possible relationships with social innovation. Change agents, such as legislators or directors, must recognize which social dynamics produce sustainable outcomes and then proactively pursue system-based solutions that are good for society, encourage activism, empower community and self-sufficiency, promote partnerships for positive change, and create an environment of perpetual positive change (Manzini 2015). Broad goals of this design include dedicating ample resources to help urbanites connect with nature or promoting land use policymaking consciousness that better integrates humans and natural processes.

3. **Transition design**: Irwin (2015) explained that transition design is distinct from service or social innovation designs in the following ways. First, this design embraces the idea that humanity's problems are much bigger and more complex than service design or innovation design can address. Transition design reconceives the fabric of humanity at every level through modifications of infrastructures, policies, and systems that, in this case, help halt spiraling biodiversity (not just fish and wildlife) loss and extinctions. This design concept supports a redesign and enhancement of lifestyles and ways of knowing, evolv-

ing, and existing. Second, transition design uniquely emerges from a deep understanding of social-ecological connections and attempts to fill the gap between existing human lifestyles and sustainability (e.g., throwaway societies, "arrogance" of humanism [Stanley 1995]) by fundamentally altering our lifestyles. Third, transition design recognizes that the problems facing humanity require long-range thinking and new socioeconomic and political paradigms. For instance, curbing the global biodiversity crisis requires sweeping or radical changes in human–nature relations and concedes that the historical fish and wildlife management institution is not configured in a way that embraces all aspects of change necessary to achieve a sustainable future. Critical actors in redesign are change agents and can channel their efforts to identifying and seizing emergent possibilities rather than prescriptive (e.g., market-based, expanding service boundaries) solutions or yielding to contextual pressures. Finally, problem solving is an iterative endeavor that eventually solves the unsolvable problem. The roles fish and wildlife agencies will play in the future will require some degree of imagination because they have yet to be defined or materialize, but agencies will likely be asked to lead changes to policies and language that are often used to value certain species over others, creating sustainable cities of the future, influencing consumption behavior, and influencing the evolutionary redesign of worldviews that promote positive relations between humans and nature (e.g., caring, connectedness, commitment; Schultz 2002; Colding et al. 2020).

Taking the literature in aggregate, positive and long-term change to yield a neutral fit begins with at least design for social innovation. It should seek to establish a new "North Star" and address multi-goal problems through innovation, collaboration, experimentation (e.g., pilot projects), learning, risk-taking, and provisional decision making (asking, "How does the information I have now stack up with any information I may receive or need in the future?"). Moreover, unlike private organizations, public organizations explicitly exist to do the work of the people. Strategic planning that advocates constant, quicker transformation for the benefit of societal well-being should be well-received by broader segments of society.

It is one thing to consider the possible approaches to engage transformation through design; it is another to set the wheels in motion so that the potential advantages of change are maximized while its potential disadvantages are minimized. For instance, the extreme ends of institutional change (low, high) tend not to yield satisfactory organizational transformation due to incomplete core capacities (Newman 2000). At these low–high poles, uncertainty, confusion, disruption, and leadership are often excessively deficient to successfully develop form and function and enhance legitimacy. Hence, successful fish and wildlife agency cultural change must start with transformational leadership.

Leadership will guide an organization through the suggested eight steps of transformation (Table 13.1) by first recognizing an urgent need and then providing a vision, securing resources, and inspiring transformation (Kotter 1995). The legitimacy of state fish and wildlife governance rests on the shoulders of change agents or leaders who embrace repeated second-order change to alter the nature of their organizational institutions (i.e., formal and informal rules) and achieve meaningful outcomes for all (Greenwood and Hinings 1996). A leader can occupy any position within the agency hierarchy or exist outside of it. Leaders with positional authority can often, but not always, promote more effective organizational change than can leaders without that authority. Research occurring in different global contexts conclude that designs that allow leadership to embrace partiality and privilege special interests or political economy are a barrier to sustainable

outcomes (e.g., Nelson et al. 2007; Hanich and Tsamenyi 2009; Sullivan 2019). Specifically, some impediments include constraints on how resources can be used, political influence, corruption, interference, special interests, and an ad hoc structure that encumbers critical information flows to leadership (Kettl 2000). In sum, agencies and their leadership that succumb to these contextual constraints are less likely to achieve meaningful transformation.

A design for the future will unite all segments of the public, including nonanglers who think and prioritize differently than other interests (Greenwood and Hinings 1996). During the transitional period, discontent is likely. Leadership may become irritated by the suggestion that their practices and policies reinforce traditional inequities or that the transformation to serve nontraditional constituencies is superficial (Rees 1987; James 1996). Indeed, increased resentment at all levels within an organization, as well as from loyal constituents, may persist until cultural change firmly takes root (Allison 1999).

There is no template for third-order change, but there are plausibly three ways leaders can emerge to shepherd development of adaptive capacity or champion change. One way is to encourage individuals to develop their visionary capacity. Fish and wildlife governance has arguably never undergone sweeping cultural change; therefore, leaders who can think unconventionally can position their agency for a more successful future. A second way is for leaders to personally commit to the idea that third-order organizational change is necessary and achievable rather than resist change (e.g., the Fish and Wildlife Relevancy Roadmap). A third is to build political capital by communicating innovative ideas to others within and outside their agencies. From there, fish and wildlife agency leaders will need to contemplate means of exacting change, such as participation in current heated debates about how to reinvent human lifestyles in ways that, for example, halt biodiversity loss and species extinctions, encouragement of experimentation, and creation of a trustworthy process (O'Malley and Cebula 2015).

Fish and wildlife agency leaders will also need to develop the capacity of others (Bartunek and Moch 1987), such as managers who produce consistency and control processes (Kotter 1995) and staff that are trusting and supportive of transformation (O'Malley and Cebula 2015). For example, a more diverse workforce can help close the gap. Hiring must not focus solely on the primary attributes of diversity that are easily measured (e.g., age, race, gender) or conform to existing institutional norms, but also needs to bring the true diversity of society (e.g., values, culture, politics) into the decision-making process. In some cases, the belief system of existing staff needs to be altered to reflect a new vision or expectations. Barzelay (1992) demonstrated that cultural and structural changes were needed to alter the belief system of Minnesota state government employees who were devoted to an outdated rule-based hierarchy. As new people are hired, leadership will need to secure and direct resources to confront new challenges, instead of placating the interests of those previously at the helm or perpetuating the status quo. These commitments will necessitate hiring and developing existing personnel who are professionally or personally committed to advancing goals associated with a redesigned agency.

These steps of culture change require that leaders secure political support and develop structures and procedures, including specific goals, that achieve a higher level of transformation in their decision-making processes. We anticipate that this undertaking will evolve the existing paradigm, its merits and achievements notwithstanding, which was designed to meet old challenges (Nie 2004). We note that little research on this topic exists. Hence, empirical data chronicling the barriers to and progress towards sustainable, innovative design should be

a focal area over the decades to come and be supported by fish and wildlife agencies and their partners who seek to nurture the public's embedded interest in fish and wildlife and contribute to societal well-being.

13.5 CONCLUSION

This chapter encouraged agencies to embrace a new paradigm that results in the modification of fish and wildlife management institutions to align federal and state wildlife governance with the need to expand definitions of relevancy. The next era of state fish and wildlife governance indeed needs to retain its customer-driven and results-oriented core. However, to face urgent challenges, it also needs to be adaptive, developing social learning institutions that are also value-focused, entrepreneurial, flexible, and anticipatory.

For several reasons, including the growth of urban and minority publics, societal values in the United States and elsewhere have shifted from prioritizing fish and wildlife for human use to living in harmony with species (Manfredo et al. 2019). This shift represents a change in the societal fabric and will influence the way public fish and wildlife agencies, particularly at the state level, conduct their affairs to meet the demands of change. As such, we have entered an era of alternative interpretations of what constitutes the fundamental value of wildlife and how best to implement trusteeship (Decker et al. 2019). Pressing ecological challenges not-withstanding, the capacity of public fish and wildlife agencies to represent increasingly diverse human-wildlife relationships is being tested.

Fish and wildlife conservation can motivate the public on all sides of an issue. Whether it comes from PETA (People for the Ethical Treatment of Animals), the Boone and Crockett Club, The Wildlife Society, the American Fisheries Society, Green Peace, or The Nature Conservancy, federal and state fish and wildlife agencies face pressure to meet the evolving needs of society and a changing planet. Attempts to diversify opportunities for all beneficiaries of federal and state trust species presents a fork in the road for these agencies. Each path provides uncertainty and risk. At one end of the range of possibilities, resource agencies will produce a fit with the needs and desires of a broad societal spectrum. At the other end, they risk losing autonomy, political potency, critical relationships, or legitimacy, which may result in reduced agency relevancy, credibility, trust, size, and budget.

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