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Pāwehe Ke Kai a'o Hā'ena: Creating State Law based on Customary Indigenous Norms of Coastal Management

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ABSTRACT

Much research has demonstrated the effectiveness of customary indigenous management at conserving natural resources. However, little is known about integrating customary management with state-level institutions. We present a model case study of collaborative rulemaking based upon customary norms for interacting with resources. We explore the efforts of one Hawai'i community to create formal state law based on customary norms to understand: (1) What is needed to integrate customary norms into state law? (2) What factors influence this integration? (3) What lessons emerge for similar efforts in other locations? First, we find that implementing some norms of customary management requires fundamental changes to state-level institutions. Second, communities can overcome institutional constraints by identifying substitutes for those customary norms that cannot be implemented directly. And third, formal regulation must be supplemented with educational and social programs. Based on these findings, we offer suggestions to integrate customary and state management in other geographies.

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Introduction

Under certain conditions, local-level customary indigenous resource management systems provide a sustainable alternative to centralized management (Berkes et al. 2013; Menzies 2013). Research on near-shore fisheries suggests benefits of basing contemporary state management on customary systems, particularly in the Pacific (Johannes 2002). Customary management systems consist of “local practices designed to regulate the use, access, and transfer of resources ... which have been crafted through generations of human interaction with the environment” (Cinner and Aswani 2007, 202). These benefits include incorporation of “best practices” adapted to effectively conserve specific resources (Kittinger et al. 2015), and increased legitimacy of regulations leading to enhanced compliance (McClanahan et al. 2006). Customary management may complement marine protected areas (MPAs) (Christie et al. 2002), ecosystem-based management (Tissot, Walsh, and Hixon 2009), and nested governance arrangements (Gruby and Basurto 2014).

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Scholarship on integration of contemporary and customary management systems has tended to focus on specific practices (Cinner and Aswani 2007), for example, use of particular fishing techniques. In contrast, we identify norms or principles underlying customary practices, and trace their integration into contemporary law. Customary norms are ancestral place-based principles or “rules in use” that guide behavior (Ostrom 2000), while customary practices are ancestral place-based behaviors or actions (Kittinger et al. 2015). Norms are important because they express fundamental cultural values and understanding of relationships between people and natural resources (Jones, Rigg, and Lee 2010). Norms can function to constrain self-interested behavior (Baland and Platteau 1996). Though norms are not legally sanctioned or enforced, people often comply with them (Ellickson 1991; Posner 2004).

Co-management partnerships, in which authority is shared between governmental agencies and community groups (Berkes et al. 2009), often attempt to integrate customary knowledge and practices into state management regimes without examining underlying norms or institutional barriers to operationalizing those norms (Natcher et al. 2005; Diver 2012). Failure to address conflicts in underlying norms has hindered government co-management partnerships with indigenous groups, including New Zealand Maori (Taiepa et al. 1997) and Canadian First Nations (Nadasdy 2003).

We examine a model case of creating state law based on native Hawaiian customary norms regulating coastal use within one rural Hawai‘i fishing community. Here, legislation mandated that state resource agencies partner with area residents to “develop and enforce customary regulations for the maintenance of the fishery” (Hawai‘i Revised Statutes, Ch. 188, §22.6 1994). We investigate three research questions: (1) How are informal, local level customary norms integrated into state law to enhance co-management of coastal resources? (2) What key factors and constraints influence integration? (3) What lessons emerge for other efforts to base contemporary management on customary systems?

Background

Customary nearshore fisheries management in Hawai‘i occurred at the local level. We focus this study on the *ahupua‘a* of Hā‘ena, a rural community located within the *moku* (district) of Halele‘a on the island of Kaua‘i’s North Shore (Figures 1 and 2). *Ahupua‘a* are traditional Hawaiian land divisions that delineate rights and responsibilities to utilize natural resources (McGregor 1996; Andrade 2008). *Ahupua‘a* fisheries extend from shore to the edge of the fringing coral reef (Higuchi 2008). Areas seaward of this boundary were ruled centrally by the *ali‘i* (Hawaiian Kingdom royalty). Rights to manage and use *ahupua‘a* fisheries were reserved for residents and the *konohiki*, often a local overseer representing the ruling *ali‘i* (Kosaki 1954). These local-level property rights to nearshore fisheries were formally recognized and incorporated into Hawai‘i’s first constitution in 1848, but were terminated in most areas by the Organic Act of 1900 following U.S. annexation (Kosaki 1954).

As in other parts of the Pacific, management of nearshore fisheries in Hawai‘i has shifted from the local level to centralized government management under the State Department of Land and Natural Resources’ (DLNR) Division of Aquatic Resources (DAR), based in Honolulu, HI. Catch, size, and seasonal restrictions apply uniformly, though research shows species spawning at different times across Hawai‘i (Schemmel 2015). State agencies struggle

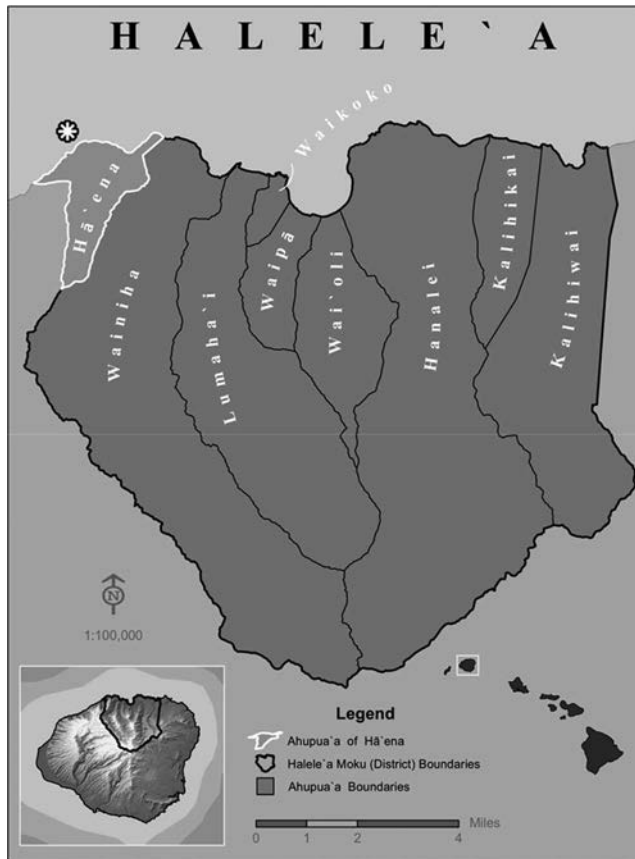


Figure 1. Location of the *ahupua'a* of Hā'ena in the district of Halele'a, on the island of Kauai, Hawai'i. Figure credit: Peter King.

to enforce restrictions due to budget constraints and lack of personnel (Jokieli et al. 2011). In Hawai'i, evidence suggests customary management can result in more fish biomass and species richness than state-level regulations (Friedlander, Shackeroff, and Kittinger 2013). In response to community pressure, Hawai'i enacted legislation in 1994 allowing DLNR to designate community-based subsistence fishery areas (CBSFAs) for "reaffirming and protecting fishing practices customarily and traditionally exercised for purposes of Native Hawaiian subsistence, culture, and religion" (Hawai'i Revised Statutes, Ch. 188, §22.6 1994). Achieving a CBSFA designation "allows community members to assist DLNR to create management strategies based on native Hawaiian values" (Higuchi 2008, 2). Nineteen Hawai'i communities have taken steps towards becoming CBSFAs, with eight, including three entire islands, submitting bills for legislative designation (Ayers and Kittinger 2014). Hā'ena is the first permanently designated CBSFA in Hawai'i and the first community to develop state law based on customary coastal management (Vaughan and Caldwell 2015).

Hā'ena fishermen and community members who were engaged in local management efforts formed a committee to develop rule proposals with facilitation from a conservation nongovernmental organization (NGO). This committee gathered input through meetings with area Hawaiian fishing families, Hā'ena coastal users such as surfers and commercial

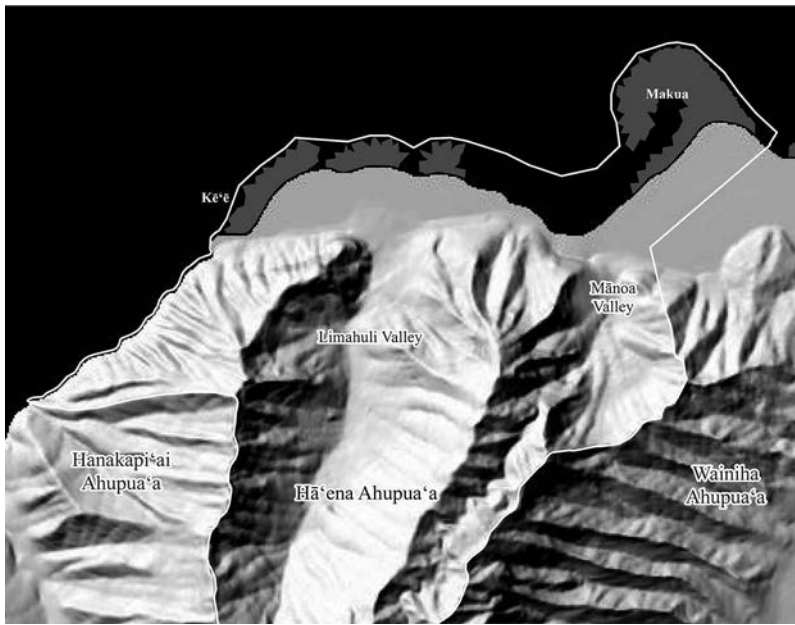


Figure 2. Aerial view of the *ahupua'a* of Hā'ena and its near-shore fishery. Figure credit: Carlos Andrade.

kayak operators, and the neighborhood association. Personnel from DAR and other DLNR divisions met with community members, reviewed rule drafts, suggested changes, and ultimately translated rules into legal language. DAR and DLNR then took 4 years to formally review the rules following Hawai'i's administrative rulemaking process. From legislation, to planning, to passing rules into law required 9 years, over 60 meetings, 15 rule drafts, attorney general review, and three public hearings in which 99% of testimony supported rules passage (Vaughan and Caldwell 2015). Hawai'i's governor finally signed them into law in August 2015.

Methods

Government agencies and the Hā'ena community were mandated to co-develop customary regulations for the area. To assess this process, we traced integration of underlying customary norms governing coastal use in Hā'ena into proposed, then final regulations. We identified customary norms through document analysis supplemented by interviews and a focus group. First, we analyzed primary source documents spanning 1840–2010. These included 19th-century myths, legends, the earliest written constitutions, and case law in Hawai'i, along with 14 oral histories of area elders on coastal use between 1920 and 1970 (Maly and Maly 2003). From these documents, we compiled a list of seven customary norms for review by a focus group of knowledgeable Hā'ena community members, including five fishermen, elders, and members of the rules committee. All agreed the list reflected “traditional values” guiding fishing in Hā'ena.

We then traced the seven norms through all 15 community rule drafts over 9 years, from initial brainstorming to actual law, noting how and why rules, and their incorporation of norms, changed. Legislation required rules to reflect “traditional regulations,” with cultural

perpetuation an identified community goal of the process (Act 241 2006). Though the Hā'ena rules committee identified key customary practices and cultural goals in initial planning, they did not explicitly design rules to cover various norms. We discussed this research with community members twice during the rulemaking process; however, neither instance corresponded with changes in the proposed rules.

We also searched for contemporary expressions of the customary norms by observing 40 rulemaking meetings and analyzing minutes. We interviewed 20 knowledgeable fishermen and Hā'ena community members engaged in the rulemaking process, asking, "What traditional rules and lessons should be followed when fishing?" We selected interviewees through criterion-based snowball sampling where community members recommended individuals knowledgeable about fishing and customary management in Hā'ena, who then recommended others (Noy 2008). Because customary knowledge of a small (less than 2 miles) rural (less than 431 residents) coast like Hā'ena is specialized and passed within area families (U.S. Census Bureau 2010), our interview sample included everyone suggested. Many were Hawaiian descendants of area fishing families, 90% of whom were represented in the interview population. We triangulated our data using HyperResearch analytical software to code oral histories, interview transcripts, and meeting minutes, seeking representative quotes, examples, and documentation of each norm.

Results

All seven customary norms derived from historic sources in this study (Table 1) were perpetuated in contemporary community understanding and practice, reflected in interviews and meeting minutes. Some were emphasized more than others. Our analysis of how each norm was integrated into draft rules yielded three findings. First, implementing some norms of customary management requires fundamental changes in the organization, procedures, or management scale of state resource agencies, including integration across agencies, increased acceptance of community knowledge and data gathering, and increased flexibility to adapt rules. Second, communities can sometimes overcome constraints in state institutions by identifying substitutes for community norms that cannot be implemented directly, but at the cost of increased complexity. Third, because many community norms play a major social role, implementing them requires supplemental educational and social programs outside the rulemaking process.

Table 1. Seven Hā'ena customary norms and their integration into state rules.

Customary norms	Integration into state rules
1) <i>Ahupua'a</i> (integrated management at the watershed level)	1) Cannot be integrated into rules without changes in state resource management institutions.
2) <i>Ho'omalū</i> (minimize disturbance)	
3) <i>Ho'omaha</i> (rest areas and rotate harvest)	
4) <i>Kuleana</i> (exclusive rights based on responsibilities)	2) Indirectly integrated into rules but customary norms may be unrecognizable in their new form.
5) <i>Lawa pono</i> (take only what you need)	
6) <i>Hō'ihi</i> (maintain respectful relationships with resources)	3) Cannot be integrated within state sanctioned rules, must be pursued through education and other social efforts.
7) <i>Mahele</i> (share catch)	

Need for Institutional Changes in Government Resource Management Agencies

The following section illustrates institutional barriers to creating state law based upon customary norms. We focus on three norms from the Hā'ena process: *ahupua'a* (or integrated management); *ho'omalū* (minimizing disturbance to key habitat); and *ho'omaha* (rotating harvest areas).

Ahupua'a (integrated management):

When we go up to the mountain, we must respect, don't *kapulu* (dirty) the place. not to *kapulu* the *kahawai* (river) and the *kai* (ocean). (Hā'ena and Wainiha elder in Maly and Maly 2003, 825)

In some cases, customary norms may not match the scale and structure of governmental regulations. In Hā'ena, the customary norm of *ahupua'a* recognizes the interconnectedness of resources from mountain to sea. Health of nearshore fisheries is believed to depend upon the flow and cleanliness of fresh water reaching the ocean. Hā'ena community members' goals for rules included addressing declining fresh water quality and quantity, land-based pollution, and sedimentation from coastal development (Hui Maka'āinana o Makana 2011). However, DLNR regulates forests, coastal lands, freshwater resources, and boating separately from fisheries through five distinct divisions. DLNR required Hā'ena's rules to fall under the exclusive jurisdiction of only the Division of Aquatic Resources, dealing solely with fisheries and fishing (see Table 2). Though customary management extended from mountain peaks to the deep ocean, new rules govern only a narrow band of shoreline, from the high water mark to the fringing reef, due to the fragmented organizational structure of Hawai'i's state resource management department.

Ho'omalū (minimize disturbance of key habitat areas):

If you're a farmer then you want your cows and pigs to be comfortable and happy, not scared. It's the same with fish. If you're always driving over with the boat, they're going to be scared. (Hā'ena community member)

Another barrier to integration of customary norms was the discrepancy in knowledge sources accepted by community versus government. Customary management in Hā'ena emphasized *ho'omalū*, or protection, minimizing disturbance to coastal areas where fish were known to feed and seek shelter. One 80-year-old recalled her father instructing her not to walk along the shoreline of a nursery lagoon. Instead, they walked 100 yards up the beach in the trees, lest their shadows or footsteps scare the *pua* (baby fish) from the shallows where they were safe from predation.

Today, this same lagoon is the center of recreational activity for the 900,000 visitors who visit Hā'ena each year, with up to 300 people at a time snorkeling, scuba diving, and swimming, and an average of 20 at a time walking the shoreline on a typical summer day (Vaughan and Ardoin 2013). Initial community rules proposed closing all access, including for fishing, to one-fourth of the inner lagoon.

DAR officials refused to consider the closure without scientific studies proving the lagoon was a hatchery and linking recreational use to negative impacts:

When you're proposing to exclude all kinds of activities, not necessarily fishing activities, for the benefit of the resource, there has to be some supporting evidence. [At] a public meeting ...

Table 2. The process of translating broad customary norms into enforceable legal language.

Customary Norm	1) Three types of proposed rules encompass this norm	2) Example of one rule drafted with DAR's rulewriter	3) Actual legal language (definition of just one term within rule 2)
Take only what you need.	<ul style="list-style-type: none"> a. Limits on exploitative fishing methods such as lay net b. Catch limits for a few species (e.g., two lobster, five urchins, two squid) c. Ban on commercial harvest (Hā'ena community rules proposal draft, April 2010) 	<p>It is prohibited to use a lay net [gill net], except that lay nets may be used where at least two people are in the ocean and touching the net or are within five feet of the net as in the fishing practices commonly referred to as bang-bang or pa'ipa'i, or surround or ho'opuni. Practices that use lay nets which do not require at least two people immersed in the ocean and touching the net or within five feet of the net at all times, such as in the practices known as lay/set/soak or moemoe, are not allowed. (Hā'ena CBSFA submitted rules draft, 5/14/2011).</p>	<p>"Gill net" means a panel or curtain of net made of various materials, that is suspended vertically in the water with the aid of a net float line that supports the top edge of the net up towards the ocean surface and parallel to a net lead line that keeps the lower edge of the net down towards the ocean bottom. (Hā'ena CBSFA rules, October 4, 2014)</p>

→→ Increasing complexity →→

people will say, “Where’s your proof? How can you propose to take away surfing because you think that it’s going to affect the fish ... ?” Maybe the residents of Hā’ena [are] very good fishermen who understand that there’s a connection. But I can’t find something in the literature, some study that would support that. (DAR administrator)

University of Hawai‘i scientists have since conducted studies corroborating community assertions of the area’s importance for spawning and provided multiple references showing impacts of recreational use, convincing DAR to allow closure of a portion of the inner lagoon (Friedlander et al. 2013). Yet DAR’s preference for scientific studies over customary community knowledge in decision making delayed and impeded incorporation of holistic customary norms such as *ho’omalu*, while privileging particular user groups.

Ho’omaha (rest areas and rotate harvest):

That is how the old folks did it. Grandpa did not fish certain places and he told all the uncles, “Don’t go fish over here for certain months out of the year.” And sure enough, they don’t fish, and when they go back, AH! The *i’a* (fish) stay home again. (Hā’ena fisherman)

Procedural obstacles to modifying state rules present a final institutional challenge. In customary management throughout the Pacific, spatial fishing closures are temporary, usually for short periods of weeks to a year (Cinner et al. 2006). Often these closures occur as part of a larger system of “fallow” rotation (Cinner and Aswani 2007). Elders interviewed in Hā’ena recommended a similar, self-enforced system of resting fishing areas after harvest to restore the fishery (Maly and Maly 2003). As one elder fisherwoman suggested, “Make sure they *kapu* [rest or close], a certain season. Give the fish a chance to come back again” (Maly and Maly 2003, 675).

However, rests and rotation were impossible to implement under DAR policy. DAR staff only allowed for closures to end through automatic expiration after a set number of years or set thresholds of population abundance, with no means of reinstating them. Due to the difficulty of implementing rules, the fisheries committee opted against automatic expiration dates. DAR staff asserted that existing scientific data were insufficient to justify thresholds for all but one species, *opihi*, a culturally significant limpet. As a result, the only closure in the final rules package bans harvest of *opihi* (ending in 3 years if the population recovers to the target threshold), while leaving out four other species of concern community members had proposed to temporarily rest. For review and modification of all other rules, DLNR must hold a public hearing in Hā’ena every 5 years, solicit input, and then suggest rule changes. Any changes would undergo the same approval process as the initial rules, which took more than 9 years. Extensive procedural changes in state rule-making are needed to allow for customary flexibility to rotate and adapt rules to local resource conditions.

Communities are Finding Ways to Indirectly Integrate Some Customary Norms without Institutional Change

Communities can sometimes overcome constraints in state institutions by identifying substitutes for norms that cannot be implemented directly (Cinner and Aswani 2007). The Hā’ena rules committee crafted multiple substitutes that indirectly limit access or translate norms of a small homogeneous group into concrete, enforceable regulations for the general public. Substitutes for two norms of customary management, *kuleana*, or “exclusive rights based on responsibility,” and *lawa pono*, or “taking only what you need,”

illustrate how communities can indirectly achieve the underlying purposes of customary management within state law, although with greater complexity.

Kuleana—exclusive rights based on responsibilities:

We normally used to fish mostly down in this area and leave that [nearby reef] for them [another area family]. (elder Hā'ena fisherman)

Customary marine management is embedded in local-level common property systems that limit harvest to small groups of local users (Johannes 2002). In Hā'ena, customary norms assigned *kuleana*—exclusive rights of fishing—to certain groups on the basis of responsibility. Examples include limiting harvest to members of the family responsible for taking care of an area, reserving one species for the *konohiki* who regulated each *ahupua'a* fishery, and limiting harvest of seaweed on easily accessible reefs to elders. As in other parts of Hawai'i, familial gathering areas in Hā'ena were smaller than the *ahupua'a* boundaries (Beamer 2008). Small stretches of reef, generally fronting certain families' homes, were informally reserved for those families, who were expected to take care of them. Today, people come to harvest in Hā'ena, known for its healthy reef and plentiful fish populations, from across the island of Kaua'i and even other parts of the state (Hā'ena Community Fishing Study, unpublished data 2009) without regard for family gathering areas or rights of *ahupua'a* residents.

The state constitution protects open access by mandating that fisheries “shall be free to the public” subject only to state regulation (Haw. Const. art. XI, § 6). Though exclusive fishing rights are unconstitutional, proposed Hā'ena rules limit access in other ways. Gear limits, a common form of fisheries regulation, restrict use to centuries-old Hā'ena methods. One rule requires harvesting squid by hand or stick, a customary practice used mainly by area elders, instead of a spear. Another rule bans spear guns, permitting only free diving using a hand-held spear released with a rubber band. These permitted gears require greater skill and knowledge of the area to catch fish, indirectly privileging regular Hā'ena area users. Here, substitute rules perpetuate not just specific customary harvest practices, but a foundational customary norm restricting harvest rights to the local community, even within the constraints of statewide constitutionally protected public access.

Lawa pono (enough)—take only what you need:

It's about taking what you need, never pillaging the spot, because once you take a resource and it's gone, it's gone forever. (young Hā'ena fisherman)

Lawa pono, the norm of “take only what you need,” was the most frequently mentioned value guiding harvest in interviews with both elders (Maly and Maly 2003) and younger generations of Hā'ena fishermen and women. All 20 interviewees articulated a cultural expectation of restraint in harvest. As one elder explained, “Only enough to eat, that's how they used to fish before. Not you go for the kill no, in my life we never did that. We were always cautious... you leave some back... so you always get.” Customary practices for limiting harvest included “catch and release,” with part of the school freed after communal surround (gill) net harvests, and harvesting just enough for a family meal. As an elder explained, “Maybe you [are] only going [to] use five, six, the rest... what do you do? ... Let them go.” Customary management in Hā'ena did not define specific catch limits, relying instead on broad norms such as “don't waste” or “take only what you can use.”

Translating these simple norms of customary management into substitutes that were clear and enforceable to the public, state enforcement officers, and courts, made proposed rules increasingly complex (see Table 2). The community initially proposed banning all commercial harvest in Hā'ena, but state enforcement personnel, along with DAR staff, argued that enforcement would require officers to observe a violator both harvesting and selling the same fish. In response, the Hā'ena rules committee attempted to enhance enforceability by restricting gear used by commercial versus subsistence fishermen, limiting boat size to preclude commercial vessels, and setting catch limits too small to be commercially viable. Substantial changes between initial and final rules related to the simple norm of harvesting restraint highlight both community ingenuity in incorporating certain norms despite institutional barriers, and the increased complexity of resulting rules (Table 2).

Social and Educational Purposes of Customary Norms Pursued Outside State Law

Customary norms historically served educational and social functions, teaching people how to interact with natural resources and each other. State regulations, by contrast, focus on negative restraints rather than positive standards. Educational and social purposes of customary norms like *hō'ihī* (respect for resources) and *mahele* (generous distribution of catch) had to be pursued through avenues other than law, such as community education programs.

Hō'ihī (respect)—maintaining respectful relationships with resources:

When I go fishing, I'm not thinking about how much I need to catch. I just say a *pule* (prayer) and throw my net. Whatever I get is exactly what I need. (Hā'ena fisherman)

The customary norm of *hō'ihī* (to cause something to be sacred, to give respect) teaches the importance of maintaining balanced, reciprocal relationships between humans and the environment. In Hā'ena, an important part of fishing and gathering is respect for the resources. Numerous customary fishing rules impart understanding of fish as conscious beings that choose whether to be caught. People refrain from naming targeted species or talking about “fishing,” using the euphemism “*holoholo*” (cruising around). They avoid conversation with fishers on their way to harvest. Two elders recall their grandfather's reaction when asked what he was doing while preparing to fish:

CC “He throw that net down and walk away, *pau* [finished], he not going fishing.”

TH “Because it's bad luck?”

CC “Yes. When you talk, the fish can hear and they disappear.” (Maly and Maly 2003, 868)

Another customary expectation of respectful fishing is giving thanks for one's catch by throwing back the first fish. One elder remembers her father always whispering to one fish before setting it free. The next time he harvested, he would call that fish by name to bring the school to him. Other elders recalled watching schools lined up outside the bay to swim into this fisherman's nets. Here fishing skill is not solely physical or intellectual, but based upon a mutually respectful relationship with fish. Restoring respect to user interactions with Hā'ena's coast was frequently mentioned as a goal of the rulemaking process. Initial rules required a permit to fish in Hā'ena, obtained through a course on customary values and harvest behavior. DAR held the rule violated public access rights. No final rules express the norm of respect.

Mahele (share)—equitable distribution of catch:

My dad always said to share because when you share, you get more luck ... And until today, when we catch fish, we always share. (Hā'ena elder fisherman in Maly and Maly 2003, 690)

In addition to teaching respect for natural resources, customary norms strengthen social ties and build community. Fishermen in Hā'ena were expected to share their catch, giving distributions or *mahele* to other Hā'ena community members. Elders remember past generations of head fishermen for their generosity in feeding the community. "There was no limit to the *mahele*, his idea was to share his fish with everybody" (Maly and Maly 2003, 404). In contemporary times, sharing fish through *mahele* continues to supply a key source of food, while helping to maintain strong social networks, from collective harvest to consumption at community gatherings (Vaughan and Vitousek 2013).

The Hā'ena community sought to incorporate this sharing, community-building aspect of fishing into rules. Early brainstormed drafts required anyone harvesting in Hā'ena to share some catch within the area, particularly to elders. However, DAR discouraged sharing rules early on as too proscriptive. The final law prohibits commercial sale of fish, indirectly encouraging sharing by prohibiting alternate, unwanted behavior. In contrast, customary norms educate by promoting desirable behaviors and values.

Concerned that younger generations are not learning customary norms previously handed down within families, Hā'ena community members developed education programs. These include a *lawai'a* (fishing) immersion program where community members camp on the coast. Participants of all ages fish, gather seaweed, sew nets, prepare food harvested from the ocean, and eat together while sharing stories. Another program targets school-age children during vacations, teaching fishing and other cultural activities alongside contemporary management skills, like geographic information systems (GIS) mapping and resource monitoring. Through means other than formal regulation, both programs teach culturally appropriate fishing (and sharing), while building community-vital social functions historically played by customary norms.

Discussion

This case study of legislatively mandated collaborative creation of state law based on customary management illustrates how community-developed rules narrowed and changed in the process of becoming law. Initial rule drafts utilized an array of both customary and contemporary fisheries management tools, for example, rotating *kapu* (closed) areas, educational classes to obtain fishing permits, requiring boats to launch from the *ahupua'a*, substantial protection of juvenile spawning habitat, slot limits, and catch and gear limits. Yet the final rules passed into law include only standard Western fisheries management approaches (an extensively diminished closed area, catch and gear limits). Although community proposals were slowly eroded through state agency review, the Hā'ena community still found ways to implement most local customary norms related to coastal use. Analysis of the challenges community members encountered and their ingenuity in responding suggests three lessons for other efforts to base contemporary management on customary systems. (1) Policies that structure government institutions and decision-making processes may preclude integration of customary norms and favor certain coastal users over others, potentially exacerbating existing power inequities. (2) While underlying principles of

customary management can be achieved indirectly and translated into legal language, the complexity of resulting laws may render them ineffective, decreasing understanding of and compliance with new rules. (3) Educational programs provide a better venue than regulations for perpetuation of many customary norms.

Need for Institutional Changes

As in other studies of co-management, institutional barriers characteristic of centralized state resource management systems preclude integration of certain customary norms (Nadasdy 2003; Diver 2012). Most importantly, the norm that everything is connected, from mountain to sea, while encompassed in contemporary ecosystem-based management approaches, requires increased collaboration among government resource management agencies that operate in isolation. In Australia, the organizational structure and management scale of agencies focused on specific resources such as forests, fresh water, or fisheries made up a crucial barrier to incorporation of customary aboriginal management (Holmes 2010). Similarly, it is impossible to mimic tight feedback loops of customary monitoring and decision making, and the belief in resting areas after harvesting, without devolving authority to review and modify rules to the local level (Ostrom et al. 1999). Incremental changes such as integrated resource management planning (Layzer 2008), shared office space, management experiments, and monitoring partnerships with scientists, government agencies, and communities (Cinner and Aswani 2007) could help to decrease these barriers.

Finally, some agency decision-making processes not only preclude integration of customary norms, but privilege certain ocean uses such as tourism over others, such as subsistence fishing, potentially exacerbating inequitable power relations. The state of Hawai'i's administrative rulemaking process contains a step evaluating impacts any proposed regulation may have on small businesses, many of which are tourism related (Kittinger, Ayers, and Prahler 2012). Though recreational activities can impact fish behavior and marine ecosystems (Davenport and Davenport 2006), DLNR did not require commercial tour operators in Hā'ena to provide studies evaluating their effects. However, subsistence fishers needed scientific data to corroborate customary knowledge of the area's importance as a hatchery. Here, as in other studies, legislative mandates were insufficient to ensure meaningful integration of indigenous knowledge without changing inequitable policies (Nadasdy 2003), reorganizing agency structure, and devolving decision making.

Achieving Customary Purposes within State Parameters

Communities can sometimes overcome constraints in state institutions by identifying substitutes for customary norms that cannot be implemented directly. Substitute rules such as gear restrictions may limit harvest to small identifiable groups without violating constitutional public access provisions. However, gear limits do not achieve the underlying customary purpose of predicating harvest rights on responsible caretaking. More pertinent substitutes might limit resource use to groups determined not by identity or ancestry, but by voluntary actions like recording catch data, or conducting training, monitoring, and cleanup activities. Still, recognition of distinct rights for groups with customary ties to an area remains vital to perpetuation of customary management (McGregor 2007). In this

case, creative substitute rules allowed for recognition of collective property rights, but at the cost of greater complexity.

Standards of legal review can further render simple cultural norms unrecognizable (Nadasdy 2003; Tipa 2010). In Hā'ena, straightforward proposed rules translated into legal language emerged as lengthy, indirect (allowing for all activities not explicitly banned, vs. simply listing illegal activities), punitive, and confusing. Though 99% of testimonies submitted in public hearings, including all 40 submitted by Hā'ena community members, supported the rules, most focused on their underlying purpose of reinvigorating customary community management, rather than specifics of the proposal. Will community members continue to recognize underlying values of customary management in the rules? Since the Hā'ena rules just took effect in August 2015, it is too early to determine whether legal language, complexity, and form will hamper perceived legitimacy of rules, decreasing community compliance and participation in enforcement as has occurred in other settings (Drew 2005). Key expected benefits of customary management may be negated when customary norms are integrated into contemporary management in indirect, diminished, or overly complex ways.

Facilitating Educational and Social Purposes

Customary management in Hā'ena was not predicated upon rules but upon trust and common social understandings of a community that included both people and their environment. Many indigenous customary norms regulating harvest emphasize maintaining respectful, balanced, familial relationships with all elements of the natural world, considered not just animate beings but family (Jones, Rigg, and Lee 2010). Customary norms also promote balanced relationships with other people in the community, for example, teaching generous sharing of catch (Severance 2010). Fundamental educational and social purposes of customary norms cannot easily be accomplished through state regulations that focus on restricting undesirable behaviors. Yet stresses on customary management systems operating within a state context make these functions crucial. For instance, the belief that fish will stop coming to a greedy fisher provides a self-enforcing restriction on overharvest. When a fishery is opened to wider public access with greater competition and scarcer resources, fewer fishers share this belief. Teaching respectful connections between people and natural resources becomes even more important. As a result, indigenous communities should actively work to perpetuate and restore educational and community-building aspects of customary management through avenues such as educational programs, community festivals, collective fishing engaging both youth and elders, and informal sharing and barter systems (Severance 2010). At the beginning of any endeavor to create state rules based on customary management, it is important to recognize that formal regulation is not the end goal, but one tool of many for achieving broader purposes.

Conclusion

Basing state management on customary indigenous systems of natural resource management is challenging. Despite obstacles, communities can implement many important customary norms within state law. However, barriers arising from state decision-making scales, processes, and legal requirements may lead to increasingly narrow, obtuse, and convoluted final rules that do not reflect the intent of customary norms. As a result, key

expected benefits of basing contemporary management on customary systems—enhanced community ownership, compliance, and engagement in enforcement—may not materialize. New rules may incorporate best practices adapted through generations of interaction with place, without furthering processes for future adaptation. Further, long-term perpetuation of customary practices requires teaching their underlying values in social context, so that younger generations understand why such practices matter. In addition, policies that continually reinforce rather than address existing power inequities between indigenous peoples and other user groups will not ensure meaningful, effective integration of customary indigenous management into contemporary law.

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