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Assessing biodiversity conservation conflict on military installations

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ABSTRACT

Conflict over endangered species conservation on military lands is becoming increasingly important as militaries attempt to balance an increased operational tempo with endangered species conservation. Successfully managing this conflict has major implications for biodiversity conservation given the US military alone manages over 12 million ha of land providing habitat to hundreds of at risk species, 24 of which are endemic to military installations. This paper provides the first assessment of this issue with a qualitative study of military trainers and civilian natural resource professionals who are employed by the Department of Defense (DoD) at the interface of endangered species conservation and troop training on installations throughout the Southeastern US. Emerging conflicts over endangered species conservation on DoD lands differed from non-military contexts because military structure forced interactions into strict protocols allowing avoidance, but not direct contention. Although all informants officially stated nothing impacted training, training area supervisors described endangered species conservation the greatest threat to training they faced. Despite pointed efforts to avoid engagement and official denial that conflict existed, interactions between the groups were characterized by deindividualization and communication breakdown, residues typically associated with highly escalated conflicts. These findings suggest suppressing conflict may create the same negative outcomes typically associated with prolonged direct conflict, by denying parties the ability to resolve differences. These negative outcomes can be addressed by both acknowledging biodiversity conservation conflict exists and allowing dissent during decision-making. Improved cooperation between TASU and NRECM can help reduce impacts of warfare on wildlife conservation, while ensuring sustainability of military training on lands critical to biodiversity conservation.

1. Introduction

The relationships between people and their environments represent a core element of biodiversity conservation (Chan et al., 2007); yet social issues are addressed less commonly than ecological issues in conservation biology scholarship (Chan et al., 2007). A growing body of literature addressing conflict over biodiversity conservation is starting to fill this gap. Biodiversity conflict reflects disputes between stakeholders over the goals and priorities for conservation (Marshall et al., 2007). Studies have addressed biodiversity conservation conflict in a wide range of socio-cultural contexts including protected areas management (Pimbert and Pretty, 1995; West et al., 2006), endangered species regulation (Peterson et al., 2002), and the use of public lands (Benson, 2004), but few if any have addressed biodiversity conservation conflict in military contexts. Although some literature does address military environmental views (Coates et al., 2011), it does not address the internal divide between military environmental managers and military operators.

This lack of research represents a conspicuous gap given the land base controlled by the world's militaries, and the global impacts of warfare on biodiversity conservation (Machlis and Hanson, 2011; Hanson, 2011). It is unknown how many hectares are used globally for military training, but the United States Department of Defense (DoD) alone utilizes more than 12,140,569 ha and owns over 2,202,735 ha of land, in 63 countries, hosting diverse ecosystems that sustain high levels of biodiversity (Stein et al., 2008). Military installations represent a critical element of biodiversity conservation due to their large size and the tendency for military groups to strictly regulate human behaviors on their land (Vanderpoorten et al., 2005; Boice, 2006). Military activities prevent land use changes (e.g., subdivision) often allowed on other lands. Accordingly, military installations often present snapshots of what the landscape looked like when the installations were created (Cohn, 1996).

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In 2004, the DoD funded a study (Stein et al., 2008) that reported 523 at risk species on 224 DoD installations. Of these species, 47 were candidates for listing under the Endangered Species Act (ESA) with 24 endemic to individual DoD installations. The study concluded that for 82 species, half of their worldwide occurrences are found only on individual installations. The biodiversity on military installations is not a matter of coincidence. In the US, government policies have contributed to cultural and historical trends promoting biodiversity on DoD lands. The Sikes Act of required DoD installations to manage for wildlife habitat while section 7 of the ESA of 1973 gave unprecedented authority to wildlife conservation experts on military lands by prohibiting training actions that could harm endangered species. In 1986, the federal government passed an addition to the Sikes Act that required each installation "to use trained professionals to manage the wildlife and fishery resources under their jurisdiction, and required Federal and State fish and wildlife agencies be given priority in management of fish and wildlife activities on military reservations" (Sikes Act, 2004). These wildlife professionals work to ensure installations remain in compliance with the ESA, and thus avoid training restrictions that can be imposed if the U.S. Fish and Wildlife Service were to decide that military actions are jeopardizing an engendered species (i.e., write a jeopardy biological opinion against an installation) (U.S. Army Environmental Command, 2009).

During periods of military direct-action conflict (e.g., 2001–2011), exemptions to environmental laws can be granted in order to expedite military training (Babcock, 2007). This combined with increased training demands can pit endangered species conservation against military preparedness. Conflict over endangered species conservation on DoD lands became increasingly important in the first decade of the 21st century. Understanding this conflict is essential for improving conservation efforts both inside and outside installations. Further, the emerging trend of military installations attempting to engage nearby private landowners in endangered species conservation contracts (Sorice et al., 2011) means that military biodiversity conservation conflict may have implications for large areas of private land extending beyond installation boundaries.

Cultural differences rooted in the fundamental objectives of the parties to biodiversity conservation conflict on military installations present unique management challenges. Military operators, including training area supervisors and users (TASUs) are immersed in war fighter culture (Dunivin, 1997), focused on making rapid, difficult decisions in pursuit of national defense. Civilian natural resource and environmental compliance managers (NRECMs) are full time natural resource professionals employed by the DoD to be responsible for endangered species conservation. Most (NRECM) come from an environmental management background (e.g., forestry, fisheries and wildlife, civil engineering) and are responsible for environmental compliance and endangered species conservation. Although they may personally have service experience and be sympathetic towards war fighting goals, their organizational objectives are typically rooted in a culture focused on preserving, protecting and maintaining biodiversity (Coates et al., 2011). This context reflects other biodiversity conservation conflicts, such as those involving the Spotted Owl (Yaffee, 1994) or the Florida Key Deer (Peterson et al., 2002), where the divergent cultures promote fundamentally different values and morals. Cultural differences can encourage the development of incompatible aspirations, influence whether conflict surfaces (because some cultures avoid it while others embrace it), influence which potential strategies parties use to achieve their goals (e.g., avoidance, contentiousness, accommodation, or problem solving), and promote conflict escalation (Pearce and Littlejohn, 1997; Bodtker and Jameson, 2001; Rubin et al., 2004). This process can eventually lead to reinforcing mechanisms (e.g., unwillingness to attempt communication with opposing parties) that serve to perpetuate the conflict (Northrup, 1989). In this paper we begin to address the need for research on biodiversity conservation conflict on military installations with a qualitative study of conflict between TASU and NRECM who work at the interface of endangered species conservation and troop training on DoD installations throughout the SE US.

1.1. Background

The Southeastern (SE) United States presents a good context for studying the evolution of biodiversity conservation conflict on military lands both because conflict over management of the endangered red cockaded woodpecker (RCW, *Picoides borealis*) has occurred for over 30 years on military installations, and because the region is home to a large, and growing, military force. DoD reported that the SE States of Tennessee, North Carolina, South Carolina, Georgia, Alabama and Florida are home to 66 DoD installations and 421,140 personnel (Army Environmental Division, 2009). Shifts in internal military structure such as those associated with the decisions of the Base Relocation and Closure Commission coupled with changes in training methods have made this region a hub for troops and training as bases were being phased out elsewhere in the US.

Increased troop numbers, expanded training area needs, rapid deployment schedules associated with wars, and the focus on military installations as core areas for RCW conservation have exacerbated longstanding tensions over how to balance training and endangered species conservation on SE Military Installations. In 2007, former US president George W. Bush began "Grow the Force," a program that resulted in an additional 27,000 Marines and over 74,000 soldiers being added to the existing infrastructure (United States Governmental Accountability Office, 2008). The additional troops created the need for larger barracks, more dining facilities and other services, with installations internally encroaching upon themselves. At the same time the addition of new technologies resulted in the expansion of training area needs from the 90 km^2 footprint that most installations were based on in the early 1940s to the over 2500 km^2 needed by some brigades in the 2000s (Taphorn, 2003). Fort Bragg's 2001 Integrated Natural Resources Management Plan estimated it was facing "154,000 acres" of training land shortfall (INRMP, 2004). At the same time, suburban sprawl around installations progressively isolated endangered species on military lands. There are six primary installations with RCW populations that are at the core of recovery efforts, Eglin Air Force Base, Fort Bragg, Fort Polk, Fort Stewart, Fort Benning, and Marine Corps Base Camp Lejeune (U.S. Fish and Wildlife Service, 2008). The DoD has been the most effective federal agency in terms of recovering RCW populations with a 43% increase in RCW clusters from 1998 to 2006 on SE Army installations alone (Boyne, 2008).

Although TASU and NRECM do not dictate training and environmental priorities at a national level, they are the primary parties implementing activities designed to balance endangered species conservation with training on installations. TASU must prepare troops to use technology that requires larger ranges in progressively smaller training lands while NRECM must manage for and increase endangered species populations that reside on landscapes being progressively isolated from outside habitats through suburban encroachment around installations. Any disagreements between TASU and NRECM over biodiversity conservation are governed by military regulations (e.g., Army Regulation 600-20), which outline policy on conflict. Specifically, everyone under the DoD umbrella must address issues through the chain of command within their unit, by taking any problems to their direct superior,