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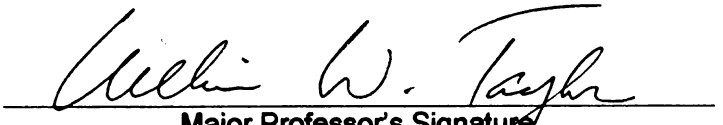

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TOWARD A CURRICULUM IN CONSERVATION LAW AND POLICY

By

Daniel T. Eichinger

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ABSTRACT

TOWARD A CURRICULUM IN CONSERVATION LAW AND POLICY

By

Daniel T. Eichinger

This study includes an exploration of conservation law as a discrete discipline by reviewing the origins and evolution of natural resources related law. The study also reviews the challenges confronting the conservation and natural resources field and evaluates a course and program designed to provide interdisciplinary exposure to conservation, science, and policy-making for MS/PhD and law students at Michigan State University.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AFWA: Association of Fish and Wildlife Agencies

BCC: Boone and Crockett Club

BLM: Bureau of Land Management

CW: Curriculum Workgroup

DFW: Michigan State University Department of Fisheries and Wildlife

FW: Fisheries and Wildlife

JD: Juris Doctor degree

MS: Master of Science degree

MSU: Michigan State University

NAFTA: North American Free Trade Agreement

NGO: Non-governmental organization

PhD: Doctor of Philosophy degree

SECTION I: SCOPING CONSERVATION LAW

Understanding Conservation Law

Concern for natural resources conservation in North America can be tracked back to the early settlements of the 17th century, well before the United States won their independence from England. The origins of this conservation ethic have manifested themselves differently at different points in our history. During periods of rapid expansion, exploration, and development, resources were viewed as commodities and the sheer vastness of the continent contributed to a sense that these resources could not be permanently depleted. In spite of this manifest destiny driven desire to conquer and tame the wilderness, clear instances of restraint, foresight, and forbearance suggest that a conservation ethic has been an ever-present, if not dominant feature, of the American consciousness. The purpose of this paper is to briefly discuss this conservation ethic and trace significant developments of conservation law in our history. In addition to providing a historical review of conservation laws, I will consider definitions for what conservation is, frame the role of the primary actors in making conservation law, how state and federal authorities overlap and reside adjacent to one another, discuss the means by which conservation is provided for in this country through professional management, and provide an operational overview of how conservation laws are administered in the State of Michigan as a case-study-lite. This paper will also consider briefly the role of the North American Model in providing an imperative for organizing conservation laws in the manner in which we currently do. The overarching purpose of this review is to begin to frame the breadth and scope of conservation laws in this country as a predicate

to a future discussion about proposing a method for teaching conservation and beginning to probe conservation law as a distinct practice and field unto itself.

What is conservation?

Before considering the breadth of what could be considered conservation law, it is useful for us to spend some time considering what is meant by the term "conservation." The term conservation first entered our lexicon in the early 20th century. In *An American Crusade for Wildlife*, James Trefethen recounts the origin of the term in the following way:

"The word conservation as it applies to natural resources did not come into the English language until 1907. In his autobiography Breaking New Ground Gifford Pinchot wrote that, while riding in Rock Creek Park in Washington D.C. the thought occurred to him that there was no single word to describe the interrelationship and sustained-yield use of forests, soils, waters, fish, wildlife, minerals, and all other natural resources...He discussed this gap in the vocabulary with a number of friends, among them Overton Price, as associate in the Forest Service. In this discussion, either he or Price came up with the word 'conservation'. The word apparently was derived from 'conservator', the title of an office in colonial India under the British Civil Service. When Pinchot discussed the newly coined term with Roosevelt, the President adopted it immediately."

(Trefethen 1975).

Harold Ickes, Secretary of the Interior under Franklin Roosevelt offered the following definition for conservation:

"Conservation means the prudent use of our natural resources without waste or needless destruction, and having in mind always, that, so far as not inconsistent with our own

needs, they should be preserved for the use and enjoyment of future generations." (Bryan 1943).

There are several critical features to these definitions of conservation. First, it describes the relationship between all segments of the resource arena meaning that it applies across disciplines to forestry, wildlife management, fisheries management, land use policy, and others. Secondly, implicit within the concept of conservation and the meaning ascribed to the word by Pinchot, Overton, and Roosevelt is the principal of wise use. Natural resources conservation has historically been equated to wise use (Young 1952). Wise use makes several important presumptions that are inherent to conservation. First, that the considered depletion of some resources is sustainable, and second, that such use is not necessarily harmful but in fact beneficial to the resource. Regulated consumptive uses of our resources perform important roles in natural resources management such as providing balance within the white-tailed deer population (Brown, Decker et al. 2000) Wise use is significantly related to the system developed for resource management and described in the North American Model which will be discussed in greater detail later. The salient point is that conservation as an ethic presumes and encourages some level of use. As we will see, virtually the entire regime that can be included in conservation law seeks to negotiate the differences between competing notions of wise use. For this reason, conservation as a concept differs significantly from other ideologies that pertain to the natural resources. The protection or preservation ethic implies non-use and a locking away of resources, for example (Trefethen 1975). Understanding that the term conservation refers to the wise use of the whole suite of

natural resources is essential to understanding the systems of laws, ethics, and models that have been innovated to manage that use.

Conservation Law and Environmental Law

In my review of the literature surrounding conservation and conservation laws, I have yet to encounter a working definition for conservation law. Moreover, if conservation laws are not considered within a field unto its own, I presume it is considered within the context of a similar and more settled field: environmental law. Some suggest that it is appropriate to categorize conservation laws as such (Aagaard 2009). In consideration of the definition of conservation I concluded that the notion of *use* is central to conservation as a concept. In that regard, if use is the central concept of the definition of the term, it should also be considered the defining feature of conservation law as well. The body of laws that pertain to use of the natural resources date back to the settlement of the continent (Trefethen 1975) and thusly predate the genesis of the environmental movement and the field of environmental law that was initially described in the early 1970's (Davidson 1990). It has been further suggested that environmental law is practiced in more or less traditional fields of law that pertain to torts, property law, in addition to practicing on environmental statutes and environmental law, and these represent the essential substance of environmental law (Davidson 1990). Conservation laws, on the other hand, are apparently derivative from the North American Model for conservation where a system of proactive management from executive agencies with wildlife users. If conservation pertains to the sustainable and wise use of the natural resources and if conservation law pertains to the laws, regulations, and statutes that condition the circumstances of that sustainable use-that perspective is

fundamentally different than what Aagaard proposes as the fundamental considerations of environmental law which are:

"The special difficulties with attempting to regulate conflicts among uses in the environmental context, lies at the heart of all problems that arise in environmental law. Wanting clean air or wanting to burn coal to generate electricity are not themselves environmental problems, the problem is when those uses conflict, when some people want clean air and others (or even the same people) want to pollute air to generate electricity (Aagaard 2009)"

What Aagaard suggests is that environmental law is the negotiation of relative benefits between one desire and the attendant negative environmental consequences. By its nature, conservation law is the negotiation of allocating resources predicated on a use that is validated to be of benefit to the environment. I propose that conservation law is a more distinct field rather than a subset of the realm of environmental law. The North American Agreement on Environmental Cooperation, which establishes the process for addressing environmental policy and grievances under NAFTA (North American Free Trade Agreement), define environmental law as something substantially different than the ethic of "wise use" that is inherent in the practice of conservation and the expression of conservation laws:

Article 45 Definitions offers the following in defining "environmental law:"

For purposes of Article 14(l) and Part Five:

*(a) **"environmental law"** means any statute or regulation of a Party, or provision thereof, the primary purpose of which is the protection of the environment, or the prevention of a danger to human life or health, through*

(i) the prevention, abatement or control of the release, discharge, or emission of pollutants or environmental contaminants,

(ii) the control of environmentally hazardous or toxic chemicals, substances, materials and wastes, and the dissemination of information related thereto,
or
(iii) the protection of wild flora or fauna, including endangered species, their habitat, and specially protected natural areas
in the Party's territory, but does not include any statute or regulation, or provision thereof, directly related to worker safety or health.

(b) For greater certainty, the term ***"environmental law"*** *does not include any statute or regulation, or provision thereof, the primary purpose of which is managing the commercial harvest or exploitation, or subsistence or aboriginal harvesting, of natural resources.*

(c) The primary purpose of a particular statutory or regulatory provision for purposes of subparagraphs (a) and (b) shall be determined by reference to its primary purpose, rather than to the primary purpose of the statute or regulation of which it is part.

Subsection b clearly establishes excludes from the purview of environmental law those acts, regulations, and provisions that pertain to the harvest or exploitation of the natural resources (1993).

Early Conservation Laws

During the settlement of the continent early cultivation and husbandry provided the majority of the food stocks, however manipulation and use of the landscape was an essential enhancement to early efforts at agriculture (Bergstrom 1939). Hunting was considered a necessary fact of an otherwise medieval existence and sport hunting was considered a perquisite of the elite (Bergstrom 1939). Early conservation laws provided for limits on harvest of desirable game species such as white-tailed deer and waterfowl. In many states and territories, hunting proceeded unchecked so long as those resources were allocated for private use. As commercial markets in desirable game species opened, many states sought to limit the number of animals harvested so as to perpetuate the species. By the end of the 17th century, Connecticut and a number of other states had

established statutes that closed hunting for deer during critical times of the year and implemented stiff penalties for violating the law (Kawashima and Tone 1983). Settlement era conservation laws did not pertain exclusively to wildlife. Aggressive laws that sought to provide for the exploitation of the forests were enacted in the early 17th century to limit the scope and size of the timber harvest (Kawashima and Tone 1983). Laws were not enacted simply to provide for the perpetuation of desirable species but to accelerate the decline of what were purported to be undesirable species, in particular the gray wolf. Laws encouraging the killing of wolves were adopted by a number of the colonies. In 1630, the Massachusetts Bay Colony decreed the killing of wolves to be desirable and provided a bounty as reward for doing so, Virginia followed suit not long afterwards (Trefethen 1975). Later, in 1682, the colonies encompassing modern New Jersey provided for a comprehensive predator bounty system(Woodward 1929). Despite the need for establishing restrictions on harvest for flora and fauna, perhaps the single greatest contributor to the decline in a number of game species were the dramatic landscape changes that took place to clear and cultivate land. Land use, save for the timber harvest restrictions referenced above is a topic that appears unaddressed by early conservation laws. Nevertheless, these early laws seem to suggest that the concept of wise use and conservation (which implies the sustained-yield use imperative) was present in the earliest iterations and formulations of laws pertaining to the natural resources.

The Role of the State and the Public Trust Doctrine

State management of natural resources grew during the 19th century as policies pertaining to the development and management of resources evolved from broad policy declarations to the assertion of more detailed and nuanced control over specific species

and compartments of natural resources(Randall 1939). Early 19th century laws provided protections for wildlife-game-birds in particular-during key times of the year including prohibitions on hunting during breeding periods (Trefethen 1975). States carried out the role of natural resources trustee and throughout the 19th century saw their role as natural resources and public trust managers defined and refined by the courts. States were presumed to have inherited the right to control wildlife that had been possessed by the English Crown via Martin v. Waddell (1842) and Smith v. Maryland (1855; Matthews 1986). The concept of public trust that was affirmed in these decisions was derivative of notions of public trust resources that date back to the Romans and track through English Common Law (Sax 1970). Further, the scope of the public trust doctrine extends beyond problems of ferreting out bottomlands ownership cases as Martin v. Waddell (1842) and Illinois Central Railroad v. Illinois (1892) by encompassing a broad range of natural resources questions in which public rights are diffuse throughout the spectrum of the resource, and that the doctrine can be used as tool of litigation to ensure that resources are being conserved and managed by the trustee(Sax 1970). These decisions provide the framework for a doctrine that affirms that resources are held in the public trust and that the state, acting as trustee should manage them for the benefit of the public. The public trust doctrine has played an important role in breeding conservation related laws and policies and for orienting the management frameworks that implement conservation laws. In more modern settings, some states have sought to institutionalize the concept of the public trust doctrine by amending state constitutions to contain a clause that essentially captures the concept of the public trust doctrine-moving the doctrine from a common law setting to one with constitutional force (Kirsch 1997).

Other judicial decisions during this period described the scope of the state's responsibilities for wildlife. In Greer v. Connecticut (1896) the U.S. Supreme Court ruled that the state owned wild animals and had a right to conserve them(Matthews 1986). These decisions situated and reaffirmed the role of the state as primary conservator of natural resources. They further affirmed that memorializing those conservation practices would be the province primarily of law enacted and promulgated in the states by pursuing statutory amendment through the legislative branch or through the promulgation of rules and regulations by state agencies in an administrative law context. While the institution of wildlife conservation law was generally the province of the states, Congress became involved in the conservation law-making regime for the first time with the passage of the Lacey Act of 1900 which pertained to supporting state laws respecting the killing and taking of indigenous game and wildlife (Cart 1973). Heretofore, the presumption that wildlife species were owned and controlled by the states comported with the authority of the states to manage them under rights guaranteed by the 10th Amendment of the Constitution that provides that "Powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

Competing, Overlapping, and Adjacent Authorities

The concept of the state as conservator and trustee of wildlife and natural resources was partially reversed when the Supreme Court struck down an Oklahoma statute in Hughes v. Oklahoma (1979) and with it, vacated part of the the decision rendered Greer v. Connecticut. Rather, the court concluded, virtually any and all wildlife can be subject to federal control because it can become an article of commerce. The

invocation of the commerce clause and its relationship to conservation laws and law making has not substantially changed the role of the state as primary actor in the establishment of conservation laws but has provided space for federal interest. So long as there is no federal action on a subject and the law is not prohibited or preempted by a constitutional provision, the states are generally free to regulate wildlife and other resources(Matthews 1986). While Hughes v. Oklahoma may have changed the notion of state ownership of wildlife later in the 20th century, conservation was practiced most often at the state level, however not to the exclusion of significant instances of federal interest and involvement. Near the end of the 19th century, the federal government began to take a more formal interest in providing for the conservation of the natural resources (Randall 1939). In the early 1870's disparate interests converged to create a host of institutions and federal agencies to administer specific and individual pieces of natural resources conservation. This early period saw the establishment of the Office of the Commission of Fish and Fisheries and not long thereafter the first federal agency to deal with forestry was established(Randall 1939). State wildlife management continued to be refined in the early 20th century with the more concerted establishment and creation of state fish and wildlife agencies during the post-World War I era (Randall 1939).

The management of natural resources across various jurisdictions saw the expansion of federal law in conservation with the passage of the Migratory Bird Treaty Act of 1918, the Pittman-Robertson Wildlife Restoration Act of 1937, the Dingell-Johnson Sportfish Restoration Act of 1953, the Wilderness Act of 1964, the National Environmental Policy Act of 1969, the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the National Forest Management Act of 1976. The

situation of federal authorities above those of the states provided for a concept of natural resources conservation that moved beyond the strictures of political boundary. More contemporary reviews of these laws and the disposition of federal and state authorities suggest that these laws are still delimited in their scope and do not adequately address the sum of ecosystems in their scope (Keiter 1998). Moreover, federal conservation require the establishment and implementation of conservation laws at the state level. For example, the Endangered Species Act requires that states that management species that come under the jurisdiction of the act to provide certain protections within the scope of state law. Federal conservation laws and state conservation laws and authorities are often positioned adjacent to one another.

State Conservation Management: Michigan

At the end of the 19th century, state agencies were emerged to address the depletion of game populations and other natural resources (Trefethen 1961 in (Jacobson and Decker 2006). To ensure that citizen oversight of the publicly managed resources is provided for, 47 states have a formal board, commission, advisory council or other entity that either advises on natural resource management decisions or has certain decision making authorities vested within them (Nie 2004).

The State of Michigan's executive agency responsible for the conservation of the natural resources is the Department of Natural Resources and Environment. Additionally, Michigan has a Natural Resources Commission that has certain management decision making responsibilities. Michigan's conservation laws primarily reside in three arenas: the Michigan State Constitution of 1963, Michigan Compiled Laws Chapter 324, and the administrative rules and regulations promulgated by the

Department and the Natural Resources Commission. These rules take the form of Fisheries Orders, Wildlife Conservation Orders, and Land Use Orders. Other, more general rule making authority exists for the Department as well.

The Michigan State Constitution of 1963 Article IV Section 52 reads that:

> The conservation and development of the natural resources of the state are hereby declared to be of paramount public concern in the interest of the health, safety and general welfare of the people. The legislature shall provide for the protection of the air, water, and other natural resources of the state from pollution, impairment and destruction.

The Michigan legislature provides for the conservation of the natural resources through the statutes that comprise the Natural Resources and Environmental Protection Act of 1994. This act directs the Michigan Department of Natural Resources and Environment to perform those acts that may be necessary to provide for the conservation of the natural resources of the state. The Act prescribes the powers, duties, and responsibilities of the various actors that assume management of natural resources conservation. The Michigan Department of Natural Resources and Environment is the primary actor overseeing the establishment of policies aimed at conserving the natural resources, the construction of the state conservation laws recognize that role and is organized in such a manner so as to provide for the administrative decision space to make rules and regulations that provide for the conservation of the natural resources. Part 401 of the Natural Resources and Environmental Protection Act (1994 PA 451) charges the Department with the trusteeship of managing all animals in the state and grants the Department and the Natural Resources Commission with the order and rule making authority it needs to provide for the conservation of the natural resources.

This tiered or cascading model of law: broad declarative statements in the constitution, establishment of executive level authorities in statute, and the administrative and operational functions carried forward through setting regulations and promulgating rules. By arranging the conservation laws in this manner, natural resource managers and public policy makers are able to continue the fulfillment of the principles of the North American Model for Conservation. The management system that has guided natural resources conservation since the late 19th century and remains the guiding principle to this day ((Mahoney, Geist et al. 2008)

North American Model for Conservation

Born out of the legal space created by the description of the public trust doctrine in Martin v. Waddell, the state ownership of wildlife in Greer v. Connecticut and other such decisions was a framework upon which professional management of natural resources could take place. In describing the development of the North American Model, Canadian scholar Valerius Geist wrote that:

"A system of management arose based on state-employed wildlife managers responsible to elected representatives at the state, province, and federal levels. In support, there grew institutions of teaching and research and a society to advance a profession of wildlife management. It provides refereed journals, accreditation, and representatives to bodies dealing with conservation. North America became a model for other parts of the world, as evidenced in the creation of national parks, university curricula and research in biology, and international use of North American wildlife experts as consultants."

(Geist 1988).

Still today, the Model serves as the point around which a regime of management practices, ethical considerations, and perhaps most importantly, a system of laws were innovated that provide for the perpetuation and conservation of our natural resources. The enduring federal laws that pertain to conservation are virtually all derivative of the tenets established under the management concept innovated through the Model. Additionally, the passage of state laws and the promulgation of state rules and regulations are also derivative of basic tenets contained within the Model. To understand the nature of conservation law is to appropriately understand the framework around which those laws are organized. In 2001, Geist, Mahoney, and Organ proposed that there were seven basic principles contained within the North American Model: wildlife as public trust resource, elimination of markets for wildlife, allocation of wildlife by law, killing wildlife for legitimate purposes, wildlife as an international resource, science as the proper to discharge wildlife policy, and the democracy of hunting (Geist, Mahoney et al. 2001) . Upon each one of these principles rests an important component of the law that provides for the fulfillment of these principles.

1. Wildlife as public trust resources: Government authority over wildlife has been secured by the courts via the public trust doctrine in Martin v. Waddell and Illinois Central Railroad v. Illinois (Geist, Mahoney et al. 2001). State laws and constitutions have formalized the public trust doctrine by adding in to relevant section of statute and state constitutions (Nie 2004).
2. Elimination of Markets for Wildlife: The Lacey Act of 1900 asserted federal control over the introduction of birds and wildlife. Among the more controversial of the bill's provisions was the support the law gave in strengthening existing

state laws that effectively eliminated the market for dead wildlife (Cart 1973). This key component of the law moved hunting away from a commercial enterprise to a recreational or subsistence enterprise. In part, this law assists in fixing the values of wildlife received by the public above those of the value received by a private or commercial concern.

3. Allocation of wildlife by law: Surplus wildlife is allocated to the public for consumption (Geist, Mahoney et al. 2001). One way in which wildlife is allocated to the public is in the form of regulated take through hunting seasons. In the State of Michigan, for example, game species are established by the legislature and the Michigan Department of Natural Resources and Environment and the Michigan Natural Resources Commission are charged with establishing seasons that provide the take and harvest of those game species via MCL 324.40104 (1994), MCL 324.40110, (1994), and 324.40113a (1994). Further, this principal is complementary to the first, in that it renders each citizen a de jure shareholder in most jurisdictions in the United States and Canada (Geist 1988) building upon the concept that conservation laws are derivative and supportive of the North American model.
4. Killing wildlife for legitimate purposes only: an enhancement of the second principle in that the value in wildlife is enhanced by the absence of a market value in dead wildlife(Geist 1988). In keeping with the spirit of this principle, laws were established to reflect an ethical imperative against waste and methods deemed unsporting such as sink-boxing and jack-lighting (Trefethen 1975) and

were enacted to ensure that the public support necessary to sustain these forms of wise use remained (Geist, Mahoney et al. 2001).

5. Wildlife as an international resource: The North American Model also conceives that wildlife and natural resource interests surpass political boundaries (Geist, Mahoney et al. 2001). A series of treaties and laws that govern internationally migrating species, such as the Migratory Bird Treaty Act of 1918, is reflective of this tenet.
6. Science as the proper tool for the discharge of wildlife policy: Michigan state law compels natural resource officials to utilize, to the greatest extent practicable, the principles of sound science when considering and rendering natural resources management decisions (MCL 324.40113a (1994)). Memorializing the role of science in state law is intended to inoculate natural resource decisions from being reached at the compulsion of an ulterior force. Moreover, with respect to the State of Michigan, the laws as we discussed previously are constructed in such a way to ensure that science and technical knowledge is directly informing the establishment of conservation rules and regulations.
7. Democracy of hunting: because resources are held in trust by the public they are not allocated by wealth, land holding, or birthright. Each individual citizen has the right to access and use the public trust resources. The allocation of resources in this fashion, is markedly different then the allocation of resource access in Europe, where privilege and land ownership connote access to resources (Geist, Mahoney et al. 2001).

The North American Model and its seven principles index the range and scope of natural resources management in the United States and Canada. As a consequence of this indexing, distinct lines can be drawn around the field of conservation law in addition to the field of natural resources management. As conservation laws are derivative of the seven principles described above they assist in informing the distinct practice area for conservation law.

It is necessary to point out, however, that the North American Model as has been described above is a relatively new phenomenon as a description that is not referenced until the 1990's in wildlife conservation literature. While elements of what we refer to as the Model were certainly present during the much of the past century and a half, neither Roosevelt nor his contemporaries such as Leopold and others would have known what the North American Model is or was. This point is not made to undermine the importance of the Model, rather to properly contextualize it. Describing conservation along the lines of the North American Model is a useful way of describing and considering the evolution of conservation behavior on the continent. It was and is not, a system unto itself, rather a way to coherently draw together the different principles manifest in American conservation behavior.

The concept of conservation has defined the interaction of North Americans with natural resources since the settlement of the continent. This ethic is predicated on the notion that use, harvest, and exploitation of the resources can occur in a fashion that is not only harmless to the resource but beneficial. Our dependence on effecting and maintaining a sustainable pattern of use for our resources gave rise to the earliest laws governing the conservation of the natural resources and has continued through the

refinement of our understanding of human behaviors and its impact on wildlife, and wild places. Environmental law, is a relatively new field, having been described as recently as the early 1970's. Environmental law is predicated on a fundamentally different ethic-one that seeks to eliminate diminution of the natural resources and seeks to provide a framework around which conflicts concerning negative environmental impacts (such as pollution) can be negotiated. I will not suggest that the fields of environmental law and conservation law are exclusive in the range of their purview, but their perspectives and motivations are fundamentally different which makes one an ill fit if it is only defined within the context of the other. Understanding the field of conservation law also requires an understanding of the model of natural resources management that has been innovated through the growth of professional resource management as doing so frames in an area in which future conservation law practitioners can pursue their craft.

SECTION II: DEVELOPMENT OF A COURSE AND CURRICULUM FOR CONSERVATION LAW AND POLICY

Background

In 2008, faculty in the Michigan State University (MSU) Department of Fisheries and Wildlife were approached by members of the Boone and Crockett Club (BCC), a not-for-profit, national conservation organization about developing a program to teach conservation policy and law. BCC claimed that they had conducted research showing

> "a disturbing culture divide between senior and retiring state and federal resources managers and the mid-level career professionals following them by some 15-20 years. The seniors were primarily agrarian based, having farm and ranch backgrounds with a childhood connection to the land and its fish and wildlife, while the mid career professional following had primarily urban backgrounds,"

BCC also believes that most current law students come from an urban or suburban based childhood, which they believe equates to having no relationship to the land, presuming that urban and suburban children and experiences provide fewer opportunities to develop an ethic around wise land use, conservation, and consumptive recreation such as hunting, fishing, and trapping.

In its original conception (see Appendix C for further detail), the program desired by the Boone and Crockett Club consisted of four components:

1. A conservation law curriculum that specializes a law student in the conservation/natural resources field and contributes toward the coursework needed for a Juris Doctor degree.
2. An interdisciplinary component of course work and curriculum in fish, wildlife, habitat, natural resource science, management and policy that grounds students in

contemporary conservation management issues. The interdisciplinary component would complement a join M.S./J.D or Ph.D./J.D.

3. A law clinic in which contemporary conservation law issues are explored by students on behalf of clients who may include land owners, non-governmental organizations (NGO's), or state and federal regulators. This practical component would include research, preparation of advisory memos, pleadings and court appearances under the supervision of clinic staff.
4. A supervised internship/externship program where students would spend a semester or summer working for state or federal natural resources agencies or conservation/natural resource focused NGO's.

BCC believed that a program comprising essentially these four parts would overcome the biases of primarily urban/suburban law students by providing particular training in conservation, law and policy.

Faculty with MSU Department of Fisheries and Wildlife (DFW), staff from the Association of Fish and Wildlife Agencies (AFWA), faculty and staff from the MSU College of Law, and staff from the Michigan Department of Natural Resources convened from December 2008 until August 2009, for a series of meetings to discuss the development of the program. Those meeting resulted in the formation of a workgroup to prepare a recommendation outlining a curriculum that could teach conservation law and policy to interested law students who would presumably go on to occupy positions of leadership in policy-making and judicial circles, and MS/PhD level Fisheries and Wildlife students who would presumably occupy positions of leadership within

conservation oriented public agencies such as state fish and wildlife agencies and the conservation NGO community.

The workgroup was composed of an individual representing MSU College of Law, Michigan DNR, AFWA, and DFW. An guiding principle for the curriculum held that it must cover topics and impart competencies that were relevant for modern natural resources management to future policy maker.

Development of the Workgroup Recommendation

Between April and August of 2009, the curriculum workgroup (CW) met a total of four times and convened around the following charges:

1. Evaluate existing courses within MSU for inclusion in the Conservation Law and Policy Curriculum.
2. Develop and propose novel courses for an interdisciplinary curriculum.

Program Elements

The target student constituencies for this program, second and third year law students, and MS/PhD level graduate students in Fisheries and Wildlife, function not only within distinct units within the University (the MSU College of Law is a private college affiliated with Michigan State University) the requirements necessary for graduation are substantially different as well (Table 1).

Table 1: Credit Requirements for MSU Law and FW Graduate Students

	Law Students	Ph.D Requirements	M.S Requirements
Credit Requirements	88 credits	30 credits, minimum	
		24 research credits	6-10 research credits

Additionally, the differences between overall credit requirements, the CW recommended slightly different program plans for the graduate student cohort versus the law student cohort (Table 2). Both cohorts are required to successfully complete an overview course and an externship experience, however electives, which are required for the law cohort, are not required of the graduate cohort. This required the development of a program predicated upon collaborative work and shared experience between the law student cohort and the MS/PhD cohort, but that culminated in different outcomes: an area of concentration for the law cohort and a specialization and degree endorsement for MS/PhD students.

Table 2: Program Requirements

Law Students	**Graduate Students**
Overview Course (6 credits)	Overview Course (6 credits)
Externship (6 credits)	Externship (3 credits)
Electives (4-6 credits)	Electives (optional, not required)
Total: 16-18 credits	Total: 9 credits

Courses

The CW concluded that there were three primary inputs for courses content that comprise the curriculum: novel courses, those which were developed specifically for use in the Conservation Law and Policy Program, university courses, those which offer material that is applicable to the field of conservation law and policy within the existing catalog of university courses, and MSU Law courses, those which are offered as either required or elective courses in the MSU College of Law course catalog (Figure 1).

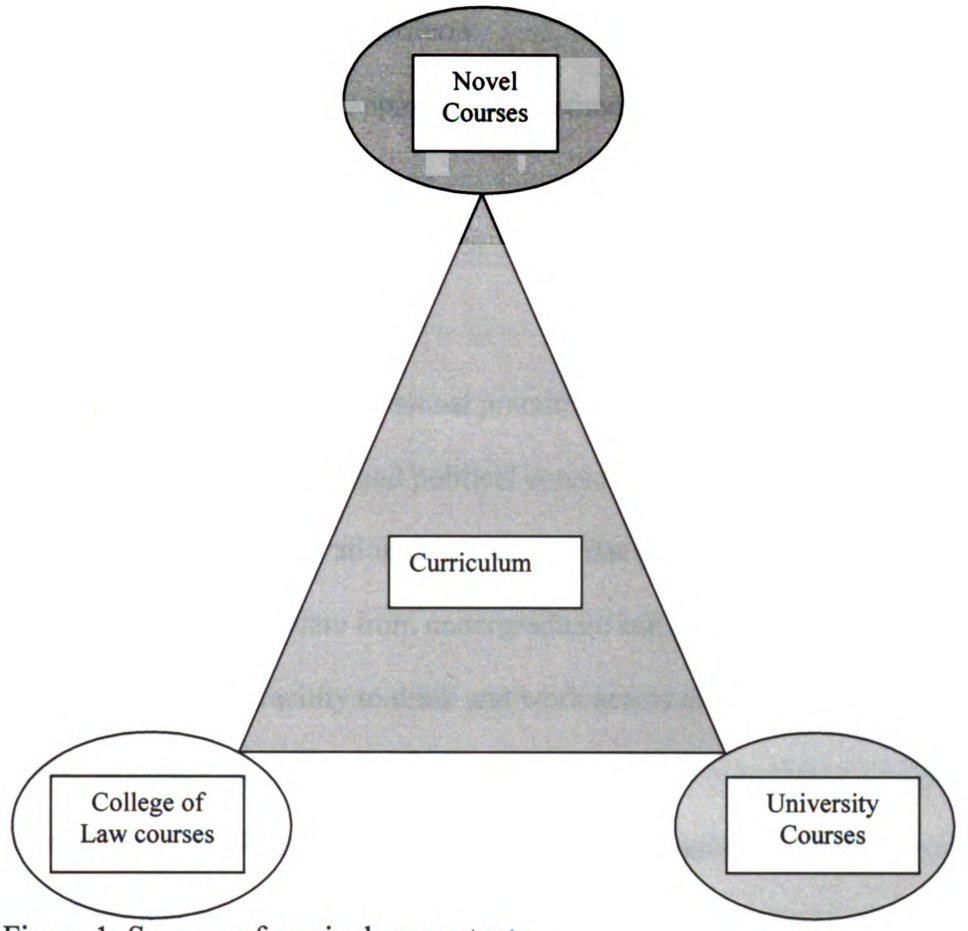

Figure 1: Sources of curriculum content.

Electives

Courses that may be taken as electives were either courses that existed within the university or that had been designed particularly for use in this program. The complete lists of courses offered through the MSU College of Law or throughout other academic units throughout the university are included in the Appendix A and B. Examples of courses offered through the MSU College of Law that are applicable include, Wildlife Law, Natural Resources Law, and Land Use and Planning. Examples of courses that are applicable through other units within the university include Ecosystem Ecology, Policy

Evaluation, and Urban Land Management. The CW determined that applicable courses needed to meet the following criteria:

- Interdisciplinary in approach and methodology
- Topical and contemporary
- Skill-based, leading to a practice ready graduate

Interdisciplinary

Increasingly, the professional practitioners of conservation must operate within a context of social, economic and political consideration (Nissenbaum and Lewis 2003). As a consequence conservation as a field and discipline will increasingly require professionals who graduate from undergraduate and graduate level programs who have the capacity and the facility to think and work across disciplines (Touval and Dietz 1994). In reviewing the employment of interdisciplinary techniques by surveying texts and course syllabi for reference to interdisciplinary themes, Nissenbaum and Lewis found that while interdisciplinary themes related to policy, sociocultural aspects, economics of conservation, case studies, and advocacy (the five themes they considered integral for conservation professionals) were becoming increasingly present in conservation biology texts and noted positive trends in course syllabi that suggested attempts were being made to integrate these themes into core conservation coursework(Nissenbaum and Lewis 2003). Their findings suggest movement within the discipline to accept an interdisciplinary method as an increasingly significant component of the practice. The movement of the professional field and prevailing pedagogy toward teaching and implementing interdisciplinary skill sets, suggested that interdisciplinary methods should

be employed within the context of this program to ensure that it was reflective of contemporary methods employed by practitioners to undertake conservation work.

Topical and Contemporary, Skill Based

Considering these two elements together, recognizes that effective pedagogical methods suggest that the teaching wildlife conservation is enhanced through the application of learner strategies that integrate active learning techniques(Ryan and Henry Campa 2000). Making use of techniques that involve case studies of current or contemporary problems and addressing them by replicating collaborative problem solving and other tools employed by field professionals, better equips students with the skill set needed to be immediately impactful contributors to the profession (Ryan and Campa 2000). Ensuring that these elements were present in courses to which the program could be linked and courses that were developed intentionally for their use within the program meets the current thinking that effective education within the field of conservation is founded in part upon the successful integration of interdisciplinary teaching methods and an exposure to issues that directly and indirectly provide the context in which the field of conservation is practiced. Imparting what is determined to be essential knowledge and skill sets through an active, practice-based learning environment prepares students for scenarios and situations they are likely to encounter in professional environments.

Novel Course Development

While courses developed within the College of Law and throughout the University would provide an important source of courses that could be taken as electives to enhance more formative coursework, the CW felt that it would be necessary to develop

a suite of courses specifically for use within this program. Descriptions of two courses, one pertaining to the North American Model and the other on Agency-Based Fish and Wildlife Management law are included in the Appendix for reference, but were not evaluated in conjunction with this study.

Overview Course

During the meetings held by the CW between April and August of 2009, the CW developed a syllabus for the gateway or overview course which is listed as a requirement for both the cohort of law students and graduate students. Formally titled "Overview of Conservation Law, Policy, and Practice," the overview course was designed to provide an introduction to the two disciplines being convened within the program: law and fisheries/wildlife management. Thematically, the course brings together different elements of both disciplines exposing students from the graduate cohort to practices and methodologies of the law and policy practitioner. Similarly, for students in the law cohort, the course is intended to introduce science-based natural resources management and the principles and methodologies employed by that field.

Table 3: Weekly Topics in Overview of Conservation Law and Policy Course

Week 1	Introduction: overview of contexts in which conservation law is practiced
Week 2	Science of conservation law: biological and ecological concepts of management and conservation law
Week 3	Philosophy and ethics: sources of ethical standards, ethics and philosophy for wildlife and natural resources
Week 4	Federal Fish and Wildlife Regulation: Federal agency overview, sources of federal law related to resource management, Pittman-Robertson/Dingell-Johnson
Week 5	State Fish and Wildlife Regulation: state agency responsibilities to manage wildlife, jurisdictional issues between state/federal management, multilateral state DNR's
Week 6	Federal Natural Resources and Habitat Management: Federal mining and forestry royalty systems, national parks/forests, BLM, tribal resources mgt

Table 3 continued

Week 7	State Natural Resources Habitat Management: parks and recreation, hunting and fishing, state forest management
Week 8	Refining Skills for Practice-advanced legal research/writing
Week 9	Legislative Drafting
Week 10	Advocacy before judicial and administrative tribunals
Week 11	Role of NGO's
Week 12	Alternative Dispute Resolution in the administrative context
Week 13	Private actors in natural resources management: equipment manufacturers, guides, conservation oriented business and industry
Week 14	Client management skill and ethical consideration

SECTION III: EVALUATION

INTRODUCTION

An overarching goal of the conservation law and policy program (Program) described in the previous section is that the skills and information taught in the Program reflect the skills and knowledge needs desired by current natural resources policy practitioners. An additional goal is that the Program remains nimble in for the future by institutionalizing the capacity to change to meet the future needs perceived by natural resources policy practitioners. To accomplish both goals, I designed a protocol to evaluate the 14-week overview course described in Section II. The purpose of the evaluation is two-fold: to probe and baseline current challenges confronting the natural resources conservation field and to determine how effectively the overview course is situated to address those challenges.

METHODS

Participants

I identified a sample pool of 12 prospective interview candidates for participation in this study. The candidates were selected for their expertise in the field of natural resources management. Of the 12 candidates, 9 interviews were conducted (participants). Of the 9 interviews, that were conducted the data collected from 8 of those interviews were used to generate the data set used in this study. One participant's data was dismissed prior to coding because that individual had previously provided input into the development of the Program.

All but one candidate was contacted via email to solicit their participation in the study. One candidate was solicited via telephone. Of the 12 candidates, one declined to

participate after the initial email solicitation and two candidates were not able to arrange their schedule to accommodate an interview either in person or via telephone.

The participants included a legislative affairs manager for a state-based conservation organization, two executive directors of statewide conservation organization, a legislative director for a national conservation association, the chairman of the board of a national conservation organization, a former senior federal official, a state assistant attorney general, and the chief legal officer for a state department of natural resources. The participants were identified and solicited because of their professional affiliation with natural resources conservation and their understanding of the machinations of conservation law and policy.

Procedures

The point of quantitative research is to classify, count, and construct statistical models to discern overall patterns that explain observation (Miles and Huberman 1994); however the point of qualitative research is not the normalized distribution of data points - it is to collect extensive, in-depth data and details about specific sites or individuals (Creswell 2007). As Creswell (2007, p.126) notes, "The intent of qualitative research is not to generalize the information but to elucidate the particular, the specific."

Qualitative research is inherently exploratory in nature, and the researcher often only has a rough idea of what they are looking for. As such this methodology lends itself well to studies seeking to explain shared experiences among a specific group of individuals (Miles and Huberman 1994). Mine is a phenomenological study (Creswell 2007) designed to try and understand the natural resources practitioners perspective on current and future issues, and determine how they perceive the effectiveness of the

overview course in the Program at overcoming those challenges. I used multiple individual interviews to build a picture of the participants shared perspectives (Manen 1990), and distilled that information into descriptions of its "universal essence" (Creswell 2007, p. 60). Specifically, I conducted a transcendental phenomenology (Moutsakas 1994) which incorporates Husserl's (1970) concept of *epcohe* where the researchers "bracket" or segregate their personal opinions and feelings as much as possible to reduce subjectivity and to gain new perspectives on the phenomenon being studied.

Individual semi-structured interviews were used to investigate the participants current perception of challenges confronting the natural resources profession, the role of the judiciary in those challenges, an awareness of existing conservation law and policy training opportunities and their the perception of how well the overview course for the Program provides the essential training they perceive future practitioners need.

Participants individually arranged their interviews and each was conducted at a location of mutual agreement; in each case my private office or theirs. One participant was interviewed via telephone. All interviews were audio recorded with the consent of each participant. All procedures were approved by the Michigan State University Institutional Review Board Use of Human Subjects (IRB # x10-337).

Data Analysis

Analysis was a three step process. First, participant responses to interview questions were transcribed and independently coded by 3 researchers. Participants were provided pseudonyms in this paper to protect their identity. Primary qualitative document analysis was conducted on all transcribed materials (Creswell 2007) and codes

were developed inductively (e.g., emergent themes and ideas based on participant responses) by the researchers. Each complete idea or thought articulated by the participant was coded and counted. Second, all 3 researchers compared their results and mutually developed five overarching themes from the data. Third, each researcher independently re-coded each interview using the agreed upon themes and a consensus was reached on a single code for each complete idea represented in all 8 interview transcripts.

RESULTS AND DISCUSSSION

Five major themes were identified through the interview coding (Table 1). Interviews were broken into two distinct sections for analysis: determining the current challenges perceived by current natural resources conservation practitioners in conservation law and policy and evaluating the overview course for the Program. The semi-structured interview format provided some flexibility in how each interview was conducted, consequently some of the responses and data generated for both the Current Challenges in Conservation Law and Policy section and the Evaluating the Overview Course section may have been captured during the other interview segment.

Current Challenges in Conservation Law and Policy

The interviews were designed to assess each participant's understanding of the current challenges facing natural resources policy makers. In the general sense, the interview questions were designed to try and probe the extent and nature of the problems they participants confront and who some of the relevant actors in those challenges may be. The first eight questions of the interview were oriented toward developing, understanding, and recording the challenges confronting current natural resource

practitioners. The purpose of probing this knowledge was to establish a baseline for the types of challenges and inadequacies the field perceived about itself. In the ensuing discussion, I will examine the major themes and the sub-themes that emerged and were identified during the data coding process. In many cases the themes and the sub-themes offer insight and perspective that is additive to, and not necessarily exclusive of, other themes and sub-themes emergent from the interviews.

Three major themes (knowledge, trust/distrust, funding; Table 5) emerged during this first component of the interviews.

Knowledge

Knowledge emerged as a main theme which generated 67.6% of the comments generated from all 8 participants in the first of the interview segments. The concept of knowledge encompassed the notion of awareness, that is, how aware the profession was of other actors in the policy making arena and how aware other actors were of the conservation field. In discussing this theme, the following sub-themes emerged: disconnect with nature, lack of stewardship, lack of public knowledge, the economic value of fisheries and wildlife, disconnect with science, and training.

Disconnect with Nature

The participants indicated that the public's declining participation in hunting and angling (consumptive outdoor recreation) was indicative of an increasing disconnect between the public and nature. This disconnect, they believe, will have a confounding effect on the ability of natural resources managers to effectively provide for the conservation of the natural resources in the face of a declining or increasingly ambivalent user base. Philip expressed this idea by stating:

"I think that what the future generation of resources managers will have to confront is the fact that fewer and fewer people will choose to spend less time in their venue-choosing to go outdoors, be active and spend time pursuing outdoor activities. For instance, we are busy trying to protect and add to habitat for waterfowl in the face of a declining base of waterfowl hunters and we are already looking at overgrazing by Canada Geese populations that skyrocketed without many management tools to address those because nobody is much hunting geese anymore at least comparatively to what was the case thirty years ago or compared to the geese populations that we have to manage. So what I see, unless we can figure out how to reverse the trend, a greater disconnect between the resources that we are trying to manage and the interest and aptitude of the people of the body politic as a whole in a way that is going to affect management options in the future."

So long as conservation management decisions are dependent in part upon the participation of the public to provide management control for game species or funding through the sale of licenses, which is discussed later on in additional detail, the effectiveness of those decisions will correspond to the rise and fall in participation.

Lack of Stewardship

The disconnect between the public and natural resources suggested to the participants, that as that disconnection grows the field will have to confront a corresponding decrease in a general sense of stewardship and willingness among the public to participate in those activities. That sentiment is reflected in part by the statement offered above that suggests that declining participation in hunting will limit

management options that are employable by resource managers - if the primary population management tool is no longer as effective as it historically had been-what does that imply for the future of managing wildlife populations? This sub-theme emerged from the notion that the public is losing a sense of stewardship or perhaps that their sense of stewardship no longer manifests itself in a way that easily recognizable to natural resource managers (e.g., participation in hunting and fishing sports). If that is the case, it implies that projection of public values onto fish and wildlife resources may have changed undetected by the field, which Dennis suggests, necessitates a discussion among public actors and natural resources practitioners, "how society values fish and wildlife resources vs. how resource managers see fish and wildlife, those societal and behavioral aspects of how people view fish and wildlife and how they would like it to be managed in their best interest." While other participants identified these disparate perspectives as the primary challenge to natural resource managers Philip stated:

> *"the main issues that land and water resources managers are going to have to confront is the increasing amount of disconnect between the average populace and the broad public, and the kinds of things that natural resources managers do in the interest of resource stewardship. It is much more disconnected now than it has been any time in the country's past, and looking at what the future weighs suggests that it is going to continue to become more disconnected. So we are going to be dealing with management issues that fewer and fewer people have any understanding of."*

Lack of Public Knowledge

The discord that the participants identified in the notion of stewardship between resource managers and the public may be representative of a shared lack of knowledge among the public about the essential elements of natural resources conservation. If the public projects a different value set onto the resource landscape than the professional natural resource managers, the management options will necessarily be limited because the public will have the ability to influence political or judicial actions that redefine management actions to comport with their viewpoint. Dennis articulated this sentiment when he said "this gets back to societies' perception of fish and wildlife and how they believe it should be managed vs. how the professionals conclude it should be managed. When individuals or organizations feel aggrieved then they run to the courts and they have a good track record of having the courts rule in their favor."

Understanding the Economic Value of Fisheries and Wildlife

Perhaps one explanation for why resource managers may struggle to effectively assert the importance of natural resources conservation in the public dialogue is that some of the ancillary benefits of sound fisheries and wildlife management are not well understood by the public. In referring to the desired awareness's of various policy makers, Susan suggested that changing and elevating awareness of the economic contributions of well managed fish and wildlife resources is an important undertaking:

> *"But I guess I would tie it to if you are really going to try to tip that scale, and make sure that more judges or almost every judge in the state has that background, I would tie it to economic studies so that you're making it part of the core curriculum as one of Michigan's economic drivers. You're trying to make*

people aware of all the economic pieces that drive the state and putting it in there."

This statement implies that conservation is not successfully contextualized by discussing the values that attend sound conservation practices or it may suggest that as a field no endeavor to do so has been attempted. Nevertheless, the point compels the notion that the conservation profession should in part define and describe the nature of the work within the context of a host of other important social metrics that include economic considerations.

Disconnect with Science

The notion that the public lacks certain knowledge and performs (or does not perform) certain actions desired by conservation professionals generically speaks to the public's perception of the field and the issues that attend it, but it also underscores the different means in which the public and the resource professional subscribe to a scientific paradigm to evaluate that knowledge and those actions. The participants suggested that while the field of conservation is necessarily predicated on the notion of employing the best science, the public may or may not use science in the same way to adjudicate their values and the perception of value in natural resources. That phenomenon is manifested in the way that legislators (if legislators can be counted as proxy or amplifiers for public values), for example, employ science in negotiating the relative value of a particular action. "Most policy managers that don't understand the science behind conservation decisions aren't going to understand why they are important. And I think that's half the problem right now. I think you miss when politics weighs too heavily into those decisions and unfortunately and that is a product of term limits in Michigan" said Kevin.

Kevin seems to suggest that otherwise scientifically sound management decisions may not necessarily be a politically sound decision. As a field, natural resources conservation has evidently not determined how to effectively cast scientifically valid management decisions as necessarily good political ones, or if they have it has not been done so consistently. Susan expressed this by stating "the science can tell you one thing but its society that dictates how you implement it and that is where most of the battle is. And so it is going to be very important that they (natural resources professionals) understand the difference and that they can articulate that in their decisions."

Training

Ineffectively connecting science with other public values and necessity may be a product of insufficient training for natural resources professionals. The participants seemed to indicate that the current training of natural resources professionals left them inadequately prepared to understand the various inputs that contribute to the resource management system. Randall clarified this by stating:

> *"I developed a course at my alma mater in natural resource problem solving, because when I was [head of unit] I had so many young biologists that I was hiring from my alma mater who were dropping out of the profession because their interpretation was that political interference was corruption. Somehow this is corruption, 'I saw it on TV, and politicians are meddling around in our biological work'. 'This isn't right – I'll just go build houses.' You know, could you guys just return to this planet? If you are not working in a swirling political tornado you're not working on anything important. In a democracy, that's how you know you are working on something important. You've got the attention of the political*

system, you're a trusted advisor. What kind of a bone headed idea is this that we are going to leave it up to the biologist? No sensible society would do this. Who told you this nonsense? So I went back there and taught a course to get rid of that idea."

This comment points to the notion that current resource professionals are being inadequately prepared to confront and navigate the various legal and political considerations that overlay any public management responsibility. As a consequence, resource managers who are incapable of quickly repositioning their thinking, find themselves unable to connect the importance of their work with publicly expressed values on the natural resources. Inadequate preparation is leading to a crop of public resource managers who are ambivalent about public engagement. Dennis confirmed this by stating "the other one is the societal challenge of how do we engage the citizens of our country and of our state in contributing support for and understanding of natural resource management issues...I see that we haven't done a really good job of convincing, that's not the right word, of informing people of the science of fish and wildlife management and the levels at which these resources are managed." This concept of training is a central component to the Program. The suggestion is that current educational and training opportunities are not preparing conservation professionals to truly understand and successfully work within the actual dimensions of the field. The comments explored in this sub-theme intimate at a field that trains aggressively to the scientific requirements of profession, but does not emphasize or provide effective training that may confront the political or social contexts in which the field must interact. Moreover, some participants felt that many of the challenges confronted by the field are more or less related to the

capacity of the field to work within those other contexts and not necessarily reflective of a limitation on the understanding of the scientific context as articulated by Ben:

> *"I don't think we're missing very much knowledge. I think the research that we have now is about 90% of what we need to do a great job. The way I view management right now is that it is very common that 10% of our current knowledge is currently employed on a regular basis. So when I think of issues as far as the technology ones, the knowledge, the science side; its how do we get more of what we know in use. Being used for decision making, being used for everyday management. I don't make a strong pitch for needing tons and tons more research"*

Trust / Distrust

It should be no surprise that with the lack of knowledge by and among the many actors that have inputs into natural resources conservation that there is a correspondingly high level of perceived distrust among those actors as well. Approximately 21% (Table 5) (emerging from 5 of the participants) of the comments emergent under this theme identified specific areas of distrust within the context of the following subthemes: politics, responsiveness to global society, stakeholders, and collaborative processes.

Politics

The emergence of this sub-theme was not necessarily the product of one (or a variation) of one basic concept. Rather, comments coded to this sub-theme explored different aspects of the political role in establishing trustful or distrustful environments. Susan identified a lack of strategic vision or capacity to undertake and remain faithful to strategic processes:

"I think because of [state A's] term limits, the lack of understanding from our legislature about what's happening, because of the [higher level decision making authority within the agency] lack of strategic focus. I think in general, there is nobody in the state, because our partisan politics are pulling things apart, there are very few people who are looking at the big picture. And everybody if they are not getting the decision they want they are going to the next level. There is no acceptance that a decision is a decision. Because no decisions are being made with a big picture in mind so it's hard to explain to people that I made decision X because it fits into this big plan, because there is no big plan out there."

In this regard, the misuse of political actors to trump or short-circuit natural resources decision making processes contributes to the skepticism resource professionals have for the perceived intrusion of politics to an otherwise science-governed enterprise.

The concept of politics within the trust theme is not exclusively represented by the notion of the profession's mistrust of politicians. In some respects, the profession may misunderstand its fundamental role in public decision making. Randall expressed this idea by stating:

"We are the trusted advisors on certain specialties some times. If everything works perfectly, that's the most you can expect, Nobody is going to give really important decisions to the biologist to make unless you going to talk about opening the deer season – you can make that decision – who cares? It's not really important. The best you can hope for is to be the trusted advisor and occasionally you can say is "will the fish live, or will they die" is this biologically adequate or not. We know it's politically doable, but is it biologically adequate?

You say with some certainty, "Yes, no, or I don't know." That's a culmination of a life of work. We should be training every one of our biologist for that moment."

If conservation professionals are unprepared for or insensitive to these moments, it can undermine the stature of the profession in the eyes of the political leadership. As Randall suggested, the role of the conservation professional is to be the trusted advisor, but if, as the previous theme has suggested the profession is not prepared to provide the right advice or articulate it in a meaningful way the capacity of the field to be trusted can be limited.

Responsive to Global Society

While the role of the natural resources professional may require service as an advisor to political entities, some participants indicated that the role of the profession may be to serve as advisor but that does not preclude the profession from serving the role as opinion leader as well. Randall emphatically shared his sentiment on this by stating:

> *"And what we say is, "Here's our best advice, this is the world that [state name] will be experiencing in 50 years. Your grandchildren in their lifetime, and their children, your great-grandchildren, will be experiencing this [state name] in 50 years. Now if you like that, then be happy because we are right on track. If you don't like that then we are going to have to change the incentive and disincentives that drive the trajectory. Here are some things that you could do, but you are going to need the political will to do them. We are not decision makers we are just your trusted advisors, but what we are telling you is that this is most likely the [state name] that your children and grandchildren will experience. We're afraid to do that right now, we're afraid that we are too uncertain, we're afraid that*

nobody has asked us, we're afraid that people don't want to hear it. Politicians sure as hell don't want to hear it because what it says is that our fundamental core system won't stand that kind of change and it will be politically difficult to change it. Politicians don't want to hear that, they want to hear easy solutions, they don't want to hear talk about hard solutions. They sure don't want to hear about one of their agencies presenting solutions that force them to make hard decisions or comment in the public forum on very, very hard decisions. Sportsmen don't want to hear it because it means our agencies are starting to put their focus on the broad landscape and on all the resources and all the people rather than sportsmen owning their own little agency. So there are a lot of reasons why fish and wildlife agencies don't want to do this. But I think it's absolutely crucial that they do, do it. Because I think it's central to helping people understand that we are moving toward a world that isn't necessarily our objective but it will be the result of the current incentives and disincentives. It is our trajectory and it will be our reality unless it gets changed."

Stakeholders

While it is said among natural resources professionals that every citizen of the world has a stake in vibrant natural resources, for the purposes of this study, 'stakeholders' generally refer to active and engaged groups of citizens who are avid participants in hunting, fishing, and outdoor recreation and the organizations that have been developed around those activities. Effecting solutions to concerns raised by stakeholders is not necessarily an uncomplicated enterprise; there are times when political consideration or agency ambivalence creates stagnancy in the advancement of a

policy issue. While there are valid reasons for viewing the use of the courts by activist stakeholders as a threatening instrument of blunt force "we are going to continue to get the federal courts to make interpretations that turn what we believe what was Congress' original intent on its head, and they also continue to narrow the flexibility that the law gave the federal executive branch agencies so that there isn't a lot of discretion by natural resource managers" said Dennis. Another perspective views the use of the courts by stakeholder organizations as a means by which otherwise reluctant political actors or conservation professionals are compelled to remain faithful to their charge; "you either change the law or you just kind of edge it or ignore it, and that's what lawsuits do, they bring us back to a respect for the fundamental law as it is and then force us, if we don't like it, then let's try to mobilize the political horsepower to change it in a more positive way. I think lawsuits ensure fidelity to the original intent" pointed out. The stakeholder interface is a subject rife with the implications about concept of preserving trust by ensuring performance on prime issues among the conservation field and as an arena to foment distrust among stakeholder organizations who use such tactics as a means by which engagement on issues can be sidestepped.

Collaborative Process

Building upon that concept, the capacity to which the profession can employ and engage in meaningful collaborative processes can provide a means to negotiate and assuage fundamental differences. Several participants suggested that the current professional class of conservation managers are relatively ineffective at structuring and entering into meaningful collaborative processes, as a consequence the opportunities to build trusting relationships with stakeholders, the political class, and demonstrate a

responsiveness to global society are more or less limited. In many respects, this sub-theme is indicative of many of the other ideas that have been explored within the category, which is to say reconciling the way in which the profession relates to other disciplines and the public on whom they depend to perform their work. Randall reflected this by stating:

> *"Most biologists are trained to believe that lawyers are fundamentally bad. They usually work for the bad guys, and reinforce the status quo against hard working, salt-of-the-earth biologists that are trying to change things for the better. That's just the common sense way that biologists look at lawyers. Most lawyers look at biologists as some kind of people who are out of sync with reality. The whole world is about the political and legal way of compromise and these biologists are a bunch of crusaders who are tilting at windmills while nature goes away and they are so unrealistic that they are almost inconsequential in the big picture of things. Neither caricature is correct. We can change those caricatures by celebrating successes in our case examples of where the two professions help facilitate change. Help change happen. Biologists know that change has to happen and that all things have to adapt. Society has a hard time adapting. The law helps us to adapt. Now the law without good science doesn't adapt properly and science without the legal and political process doesn't work very well either you are just talking into the dark and sitting on the status quo. What we need to do is start out with some training at the root levels to give a respect to the role that the two professions help in making policy that help facilitate change as we learn more as the situation changes."*

Funding

While the funding theme emerged with in only 11.7% of the responses offered and by only 3 of the participants (Table 5), it was referenced tangentially and inferred in a number of responses coded primarily to other themes. In that regard it was referenced by participants as being both a significant challenge that must be confronted by the natural resources profession and in some respects serves as an indicator of how effective the field has been or is at connecting its work in a meaningful way with the public, stakeholders, and policy makers. Current conservation funding models cause conservation agencies to be beholden to a declining segment of the conservation arena as noted by Randall:

> *"If we don't make the jump to a new basis for fundamental conservation funding, we're done. In twenty-five years we will barely able to use sportsmen's fees to cover sportsmen's services. No more, if we don't substitute in some component of dedicated funds, general funds, sales tax money, other strategies and make that jump while there is still time we will see the state agencies of this country essentially fade into insignificance. They will be managing small groups of hunter's more or less in kind of a sportsman's services service mechanism and that will be it."*

Declining sources of funding and a declining user base underscore the phenomenon described in other themes as well and exemplified in Susan's observation:

> *"Let's just call it a passive use of our resources and there is a complete lack of understanding how the active use of our resources fuels that long term resource protection. And so when you have people who are passively recreating or*

passively managing or passively doing these things you're losing all the benefits that the dollars come back in to fund natural resources. And passive recreation a lot of it doesn't inspire the passion in the individual person like active recreation does."

Susan's statement speaks to how natural resources conservation is funded: which is primarily through the sale of hunting and fishing licenses. If use patterns suggest move away from the consumptive forms of recreation for which licenses are sold, there means by which conservation is funded is similarly affected. She also suggests that different forms of recreation connote different connections with nature and instill different stewardship values. In this way, Susan's comment significantly shows the linkage between several sub-themes.

Evaluating the Overview Course

The second major objective of the interviews was to evaluate the overview course presented in Section II. The questions in this section were designed at establishing the following: identifying what topics are most important for a conservation law and policy program, determining whether or not the course adequately covered the range of conservation issues confronted by the profession, and determining whether or not there were critical issues, knowledge, or skills that were overlooked.

For the evaluation of the overview course, two major themes emerged: curriculum and skills (Table 6).

Curriculum

Not surprisingly, more comments were coded in this theme than any other theme, representing 82.2% of all responses with all 8 participants providing comments about

curricular content. The responses represent the areas the participants believed needed particular attention from the curriculum.

Interdisciplinary

The Program and the course were both designed to deliver knowledge and skills in a manner that was interdisciplinary. Reconciling the pedagogical differences in teaching the law and policy with natural science, it was clear from the interviews that disciplines have some difficulty in understanding why the other works the way they do but perhaps more fundamentally *how* the other works the way they do. Susan noted this by stating:

> *"So you're talking about people that probably have never been exposed to just the bare minimum of science like changing moles to grams or something. Not actually interpreting data. I think it's going to be very important, and I don't know how you fit this into a curriculum, but to talk to the different layers of resource management, at the same time, or on the same issue. So say you're going to pick an issue like trout management. I think it's important that you have an NGO person, a state and federal agency person, an actual scientist -- a university person; all come in and talk about the same issue and have the class explain what the difference is in their interpretations and their roles. Because that's critical to understanding the big picture and you have to make a curriculum that guides them towards understanding those differences not just telling them there is a difference."*

This notion is not without limitation, however, as Paul proposes, "It sounds like a good idea to get these two people together finding a curriculum that isn't completely remedial

one or the other while you are trying to educate the lawyers on biology and what are the people who already know that doing?" Relating basic knowledge from one discipline to the other without misusing the time of the other is a point well taken. The intention for the course and the expectation of the faculty teaching the course will be that there is particular value in getting the students with expertise in one discipline to effect the knowledge transfer to the student from the other discipline and vice-versa. Therefore, the lesson of working across discipline is one that is employed within the dynamic of the classroom rather than being simply "taught" as a technique.

There are practical reasons for doing so as well. As Paul notes here, the attorneys trying a conservation case are going to rely on their client as expert:

> *"I don't think just from our practice perspective, you are going to need to be able to understand the issues but you are going to need to rely on the client to explain the more difficult issues. For example, the [animal name] delisting issue, we are going to have to rely on the biologists and [agency] because we are not biologists, we are not going to be able to answer all the questions that make all the technical or science arguments."*

The point of the course is not to obviate the need for expert witness or expertise, but to more effectively and efficiently allow those with the technical expertise to be able to communicate meaningful information to those with a different expertise in a meaningful and significant way.

Alternative Dispute Resolution

Building upon the collaborative process sub-theme, alternative dispute resolution emerged as a sub-theme in the curriculum category; a similar concept appears in the skills

theme that is discussed later. Several participants articulated the belief that alternative dispute resolution, mediations, and other forms of formal negotiation will become increasingly significant in resolving conflicting points of view in conservation. Kevin referenced this by stating:

> *"I think ADR-the alternative dispute resolution piece towards the end of the course is interesting. The more you look at the field of law in general, court dockets are tied up and you need to think about the fallout of having a judge make a decision on these issues, and you kind of start to cringe when you think about it. I think ADR is a really creative, innovative way we see the field of law trending towards. Because you can have a selective tribunal of scientific experts and administrative law and you can have a three panel arbitration panel and you can have parties go back and forth and best decide how to solve problems."*

Overview of Science and Conservation Management

Participants believed that the overview course needed to effectively provide a primer on the science and how science is employed in the course of performing natural resources conservation. "I think it (the curriculum) needs to address, obviously, natural resource science and management, active management. I think it needs to address applying science and social science to natural resources management decisions. Because the science can tell you one thing but its society that dictates how you implement it and that is where most of the battle is" said Susan. Others suggested that presenting the management context for the science of conservation management would be particularly useful for those entering the program from undergraduate or other programs that were not based on natural science. Kevin suggested "basic survey or background in the scientific

expertise ...There are things that most kids attending law school don't have a background in. The science behind that goes into fisheries and wildlife decisions, land use decisions or whatever." Dennis cautioned, however, that an objective of the program should be to teach awareness and appreciation:

> *"I don't know that attorneys need to be biologists any more than biologists need to be attorneys. I think some type of exposure particularly for those attorneys who are interested in specializing in natural resources law, some type of exposure to conservation principles, and management principles, during their educational training would certainly be helpful."*

Defining Conservation and the Differences Between Conservation Law and Environmental Law

As I discussed in Section I, there is ample need to better probe the question of defining conservation law and distinguishing it as a field that is discrete from environmental law. Understanding conservation as an ethic that is fundamentally different, though certainly related to the environmental ethic is an important exercise for the program and probing that definition is an important task for the curriculum as suggested by Paul:

> *"Putting a finer point and a gross over generalization, you sometimes think that the environmental side is a no. No, don't do it, don't touch it, don't change it. And that's not what people who think of themselves as outdoorsman, hunters, fishers, resource managers, I mean they are managing it for a purpose not just to have it sit there. I think that would be a useful thing for the lawyers to understand. If people are thinking about it in a different way here. This is not*

environmental law this is a different thing here. People have a different ethic and a different viewpoint here on the natural resources. It is a gross over generalization."

While the definition of conservation law has not yet been the subject of debate among scholars, legal practitioners have yet to consider conservation law as a distinct practice area. Cathy reflects on this stating:

"If you look at the [state name] Bar and all the different committees they have and I don't recall there is a conservation committee but there is an environmental committee. To draw people here you want clean air, clean water, you want conservation outdoor opportunities, hunting opportunities; and it's just the right thing to do to manage the game in this state. I think there should be opportunities where people can get that knowledge. I don't know how to do that because I venture there are not a lot of people who wake up and decide that they want to study conservation law. There are people who wake up and decide they want to be an environmental attorney."

North American Model

In Section I, I described the North American Model as being an efficient way of summarizing the myriad activities that can be defined as being derivative or supportive of natural resources conservation in the United States. Many of the participants believed that specifically and explicitly teaching the North American Model was an essential component to an effective course and a complete program. Dennis exemplifies this sentiment by stating:

"The other thing I think there needs to be is some type of exposure of The North American Model of Fish and Wildlife Management or North American Model of Wildlife Management. You would assume that some of that would come through in course work that discusses the evolution of wildlife law in the United States and its origins in English Common Law. There is not, as I understand it, not a lot of exposure of the North American Model even in conservation curricula in universities. So I think we need to highlight the predicate for conservation in this country being on the principles that are found in the North American Model."

As Dennis notes, the North American Model is not an aspect of the conservation arena that is featured in many curricula, in this respect including the Model in the course and featuring it within the Program, is a distinguishing feature of the curriculum's design.

Federal/State Authorities

Another essential curricular element identified by the participants was a discussion that situated the various federal and state authorities for the management of the natural resources. Understanding the fundamental role of the state and the fundamental role of the federal government was considered an important and instructive component to the course. Dennis reflects:

"Our basis of our system of conservation in the United States is preeminent in importance that in the fact, unless Congress has given federal agencies certain conservation responsibilities, that the states in exercising their appropriate authority either have the principle, either salutatory or constitutional, responsibility for managing fish and wildlife within their borders for their citizens. You know that's not a delegated authority. The big difference between

fish and wildlife conservation and a lot of the other federal environmental laws is that the states exercise fundamental authority for fish and wildlife management except where Congress has given federal agencies certain responsibilities with The Clean Water Act, The Clean Air Act and other federal environmental laws they have a delegated authority opportunity to the states suggesting that the authority for management of those particular resources derives from the federal government and that is the big difference or distinction that the course needs to highlight and firmly ground in the students there. I think all the topical areas you have identified are very germane and important, but I think, but most fundamentally they need to start off understanding the relationship that exists between the states and the federal government agencies."

Tribal Considerations

Not only did the participants articulate a need to address relationships among state and federal governments, many also identified a need to better understand and address relationships among sovereign tribal governments and the shared resource management authority that is preserved by treaty among the federal and tribal governments. The assertion of tribal rights to allocate natural resources has changed the context in which natural resources management can be practiced. "I like the tribal issues, particularly in Michigan, as we have the treaties and the agreements for fishing and for hunting" stated Cathy.

Conservation Ethics

Ethics and ethical considerations emerged strongly as a curriculum sub-theme. One participant viewed a discussion of ethics as an important component of the

foundation for the rest of the course. Cathy suggests that "you give the large overview and you talk about the context in which conservation law is practiced and the philosophy and ethics. That I think is extremely important because again it sets the stage and that foundation." Susan suggested that discussing the philosophy and ethics of conservation was important however,

> *"it's equally important for you to somehow get a pulse of the philosophies and ethics of the students coming into this program because it goes back to that discussion of core values. What you grow up with. . . and you ask people questions, and you ask them questions, and you ask them questions, and you get to the point where they can't tell you why they feel that way about something you've hit their core value. And something about their upbringing what grew them into the person they are today has formed that core value and with those core values are going to come philosophies and ethics."*

Compelling discussions about personal and professional ethics was viewed by Randall as an essential exercise when he stated:

> *"What's not okay, what's out of bounds in terms of the ethics of our profession. What's in bounds, what's out of bounds? And it not just intuitive to people what's in and out of bounds, in the legal profession. To legal and policy people, I guarantee you its not intuitive to know what is in and out of bounds. Nor in the biological profession, there are a hell of a lot of biologists who don't know what is in and out of bounds."*

Mid-Career Development

Perhaps one of the most surprising components of the interviews was a discussion that emerged in one of the early interviews about creating opportunities for current professionals, not simply graduate and law students seeking to develop a specialized skill in this area. One benefit of offering a continued learning opportunity is that you are able to embed and institutionalize this knowledge much quicker than waiting for law and graduate students of the program to ascend to leadership positions. Randall conceptualized this by stating:

> *"Eventually you are going to get someone who wants to do a PhD in it; wants to change their whole life. That won't be 90% of the people, that won't be 90% of your value. 90% of your people will be people who are just a little more aware, got some mid career training, can see where this could really help, are ready to be your expert witnesses; they are trained not to be afraid, they are trained to know what to expect in discovery and cross examination. Just give them practice getting them ready for a legislative hearing. Think what it would mean if you had twenty or thirty people in your agency that you could absolutely take to the bank. You bring them into a hearing and they say all the right things and they aren't going to say all the bone head stupid things. They are going to be respectful, they are going to be on target, they are going to know what their ethical limits are for describing uncertainty and you know you are going to have an effective witness every single time; all twenty of them." "I think this is sort of a prime case for continued learning. I think that a lot of people you described sort of ended up in resource management law as an accident or maybe they really like it but they never thought that they would be doing it."*

Discussing the development of the mid-career program as an appendage to the program from graduate and law students speaks to the sense of urgency current professionals have for imparting these essential skills and knowledge. As an alternative to the overview course as proposed, the developers could consider offering the course on weekends to accommodate working professionals or disaggregate the components of the class into mini-courses available for continuing education credits. There is no requirement, however, that a university be the sole source of this information. Many government agencies have training and development for staff on a host of topics, many agencies require some training for all new employees. The essential elements of the course could be adapted to conform to a training offered by a government agency that could specifically target policy focused employees. A third option for providing mid-career training could come from stakeholder organizations. To the extent that many of the participants who work for non-governmental organizations, also identified a mid-career option in their responses indicates that there is interest in the non-government organizations (NGO) community to develop these skills among their ranks as well, consequently, these skills could be transferred by NGO's to their members to add a class of volunteers and activists to the professional for whom the class was initially conceived.

Skills

The final theme that emerged in the evaluation component of the interview pertained to the particular skills that the course needs to provide related to development opportunities. In 17.8% of the comments received (Table 3) 5 participants identified a suite of skills that would serve to more effectively address the challenges they articulated in the first portion of the interview or to perfect and employ the knowledge they

described within the context of the curriculum. The sub-themes that emerged under this theme explore different aspects of many concepts explored by other themes and sub-themes, which is not surprising considering that this theme addresses specific tools the field should employ in response to or in support of some of the themes and sub-themes described earlier.

Advocacy Techniques: Legal Interpretation

Randall previously discussed the role of the professional as "trusted advisor," who is capable of answering discrete questions about a policies' impact the natural resources. Randall suggests in the following statement that the role of the professional may also include adopting the role of professional advocate capable of inciting important, if difficult discussions "most state agencies aren't going to initiate a lawsuit, even if they believe that one is justified. They politically aren't ever going to initiate a lawsuit because they work fundamentally at the pleasure of politicians who don't want these lawsuits." The implication here is that the unwillingness of some conservation professionals to use all of the tools available to them may undermine their overall effectiveness. Some responses explored in our discussion of other sub-themes seems to suggest that as a field, natural resources conservation professionals are not necessarily taught to be entrepreneurial in their use of the judicial system or legislative options, limiting their potential impact as effective advocates. Comments from the participants seem to suggest that emphasizing and refining the use of advocacy tools is an important consideration.

Art of Compromise

The skill set reflected in this sub-theme refers to some of the challenges identified in the Current Challenges in Conservation Law and Policy section of the interviews and speaks to specific curricular comments discussed in that section. Randall suggested, when discussing the need to develop the essential tools of effective negotiation that "increasingly these problems are not going to get solved in court. Increasingly these problems are going to get solved at the negotiating table but you need lawyers and you need biologists at the negotiating table. So the question comes down to what do we know about the skills of alternative dispute resolution and collaboration that are going to inform the legal profession and the biological profession as comfortable ways of making progress." Providing particular training and development in this skill area may solve some of the complicating elements that prevent the development of trusting relationships among the conservation professionals and other policy making entities.

Communications

Some participants suggested that the capacity to effect positive conservation policies depends in part on the ability of conservation policy professionals to be effective and forceful advocates and to make sensitive and appropriate use of different communications techniques to articulate needs in a way that can be understood and acted upon by necessary agents. The perceived disconnect between the profession, the public, policy makers, and stakeholders, could all be ameliorated, if not solved, by more effective use of communications techniques. The effective use of communications tools also contributes to the general sense of value delivered by the profession as Randall recognized in his comment:

"We have to have a communication strategy that has both depth and breadth. The depth question is how do you train the lawyers to understand natural resource management and how do you train natural resource managers to understand law? The breadth question is why is obeying the law really important in terms of determining of what the future of [state name] will be for our children? And talking about the role that lawyers play, and the teamwork of lawyers and natural resource professionals; the teamwork that DNR's and NGO's play; how change gets made. A lot of times change gets made when we finally have a policy that just won't work anymore. But we try to avoid it, and the lawsuits, the judicial rulings basically say this isn't working anymore and now we have to go back and change the law. Because simply ignoring the law or violating the law systematically is not working very well. The way that you come to that realization is by having conversations about it in the media."

This seems to suggest that the effective use of the media plays an important role in softening ground for policy change and creating the decision space needed by conservation policy makers to get work done.

CONCLUSIONS

The emergent themes from the first component of the interviews (Current Challenges in Conservation Law and Policy) spoke to an overall perception that training or educational opportunities for conservation professionals were not meeting all of the areas of need that current practitioners perceived. Many of the challenges identified in this interview segment implied that a mastery of certain skills or an awareness of certain knowledge would necessarily yield a better result or achieve greater perceived success.

The themes that emerged from the second component of the interviews (Evaluating the Overview Course) appear to validate or support the direction of the overview course in addressing some of the skills and knowledge gaps identified in the first phase of the interviews. When the participants were asked for a response to "From your perspective, are there critical elements that have been overlooked in this overview course?" none offered any particular omissions. Further, in response to "Does the overview course adequately cover the range of contemporary conservation issues you confront on a daily basis?" respondents generally indicated that it did. One question that would have been particularly instructive, but was not asked of the participants would have been to probe the extent to which they believed the overview course would contribute to the elimination of the challenges they identified earlier in the interview. While it can be inferred from the discussion of the challenges and the ensuing discussion about the course that this is the case, it is a weakness that the question was not explicitly considered and posed during the interviews.

Two areas of concern were raised by the participants. First, several participants questioned the need for including a discussion of legal techniques (e.g., client management) when law students would otherwise be exposed to those skills in other components of their legal training. At the time of the interview I did not explain that the purpose of including those skills was to ensure that the students had some exposure to those skills prior to entering their externship, in which those practical legal competencies would be particularly useful. Had I done so, it may have obviated the concern. A second concern that was raised pertained to the pacing of the course and the amount material that it attempts to cover. Some participants suggested disaggregating the course into distinct

parts rather than have a single course cover all of the material in one semester. As the course is taught, it will possible to evaluate the need for doing so.

Susan touched particularly on the topic of continued evaluation of the course stating "I think if you are going to launch this program you really have to do some intensive pre-evaluation of the people going in and some intensive post evaluation of the people going in and make sure that you are getting your desired outcome." Institutionalizing a program review component will be an essential and distinguishing feature of this program. The challenges perceived by the field today may not be the challenges the field confronts in 10 years time. The training that is offered to nascent conservation law and policy professionals should be nimble so as to continually provide topical and contemporary training. One method to measure the effectiveness of the program and to ensure that it remains vibrant is to continually survey graduates of the program to scope how well the skills and training they received within the program translate into a practical setting. Evaluating the effectiveness of the program is another challenge and a separate question altogether. Pelfrey and Pelfrey (2009) proposed an evaluation program for a Master's program in the nascent field of Homeland Security, one that changes and evolves quickly as national security needs, intelligence, and technology change. For programs and disciplines that are dependent upon relevance in a practical setting, instituting an evaluation technique that sufficiently measures a curriculum's effectiveness so that curricular revisions may be employed could have an important application in the conservation law and policy program as well. The institutionalization has allowed the Homeland Security to mature quickly because it has instituted rigorous and constant evaluation (Pelfrey and Pelfrey 2009). Further, the

interdisciplinary nature of the Homeland Security (attracting students with degrees in medicine, veterinary medicine, law, and a host of other advanced degrees (Pelfrey and Pelfrey 2009) is similar to the many backgrounds that prospective students may bring to a conservation law and policy program. The need to keep the program viable and on the leading edge of where practitioners see as the skills and competencies needed for future practitioners should be intentionally and thoughtfully explored and executed.

In considering future evaluation, it may be valuable to consider the qualitative measurements that could be used to evaluate the effectiveness of the program. Consistently and routinely interviewing graduates to determine how often and how important the skills and knowledge taught in the program are used with success by them, surveying and interviewing the colleagues and employers of program graduates to determine what kind of impact the program is having on the field. It may also be appropriate to consider quantitative measurements for program success, for example evaluating the number of legal challenges that successfully overturn conservation laws and policies or determining whether instances of legal challenge to conservation policies are on the decline.

This evaluation and project are also instructive for the development of courses and curricula that are not necessarily germane to conservation but to any discipline that depends in part upon graduating students with practice ready skills that can immediately applied to pressing issues. The course discussed in this project was developed first and then evaluated, however the other designers may agree with my belief that while the product we developed appears to track closely with what the field believes are core knowledge and skills, conducting a focus group to probe some of those issues before

beginning the development of the course may have been instructive, and should be preferred.

Certainly few, if any, other courses have undergone a development and validation process like this course has, and while not necessarily practical in every curriculum development setting, this project does show that such a method is feasible and can strengthen the content of the curriculum. Future evaluation may be able to show if this method for course development yields better, more employable graduates.

Table 4. Description of major themes that emerged from participant interviews including example quotation.

Theme	Description	Example Quotation
Curriculum	Essential curricular elements that should be represented in the overview course.	*"A basic survey or background in the scientific expertise that you need to know. There are things that most kids attending law school don't have a background in. The science behind that goes into fisheries and wildlife decisions, land use decisions or whatever. ."*
Knowledge	Assessment of the knowledge base for the various actors involved in conservation policy making including science-based practitioners, members of the judiciary, political actors, and the public.	*"And most judges, and most prosecutors, can understand the penal code, they can understand the traffic code, but the nuances of some of the language in conservation law and environmental law, they don't see it that often, they don't want to see it, and they don't want to deal with it. And so that in itself sets the path for very bad decisions that come out. And decisions where I don't think it's again the intent of a judge or a prosecutor to make a bad decision, I think that they do the best they can."*

Table 4 continued

Skill	Beyond establishing competency, the development of different skills or tools that policy practitioners should have exposure to.	*"Increasingly these problems are not going to get solved in court. Increasingly these problems are going to get solved at the negotiating table but you need lawyers and you need biologist at the negotiating table. So the question comes down to what do we know about the skills of alternative resolution and collaboration that are going to inform the legal profession and the biological profession as comfortable ways of making progress."*
Trust/Distrust	Participant perception of trust among conservation policy actors, how trust or distrust is manifest in the field-whether the field of conservation professionals are trusted by the public and whether conservation professionals trust other inputs into the conservation policy making process.	*"People get frustrated with biologists because they basically don't want to compromise because we come from a culture that makes it difficult to compromise because resource lives or dies. We have a certain amount of uncertainty and we understand that uncertainty is a potential course of risk that we might miscalculate and we might create and extinction when we didn't intend to. Politicians and lawyers generally don't understand that at all...."*
Funding	Perception that funding for conservation is a challenge to be confronted by the conservation profession.	*"The first thing that comes to mind has to do with appropriate funding for resource managers to be able to do their job and that derives from , in Michigan that funding comes from users; hunters and anglers*

Table 4 continued

		and from other folks that use the natural resources in Michigan. Those numbers are declining, so from a broader context I would have to say the issue is declining participants, declining users of recreational uses of natural resources in a traditional sense that funds those programs, hunters and anglers."

Table 5: Number (%) of coded responses (out of 34) for participants that were assigned to each of the major themes identified in Current Conservation Policy Issues.

Theme	*n*	%	# of participants referencing theme
Knowledge	23	67.6	8
Trust/Distrust	7	20.5	5
Funding	4	11.7	3

Table 6: Number (%) of coded responses (out of 73) for participants that were assigned to each of the major themes identified in Evaluation of Overview Course.

Theme	*n*	%	# of participants referencing theme
Curriculum	60	82.2	8
Skill	13	17.8	5

APPENDIX A

List of Michigan State University College of Law Courses

The list of MSU College of Law Courses applicable as electives to the Conservation Law and Policy Program:

Air Pollution Law and Policy

Bioethics and the Law

Contract Drafting

Corporate Law and Policy

Energy Law and Policy

Environmental Law

International Environmental Law

Land Use Planning

Legislation

Natural Resources Law

Negotiation

Regulatory and Administrative State

Water Law

Wildlife Law

APPENDIX B

List of Michigan State University Courses

The list of MSU courses applicable as electives in the Conservation Law and Policy Program:

Integrated Risk Assessment of Environmental Hazards

Physical, Chemical, and Biological Processes of the Environment

Human Systems and the Environment

Human and Ecological Health Assessment and Management

Environmental Applications and Analysis

Forest Ecology

Population and Community Ecology

Ecosystem Ecology

Advanced Environmental and Resource Economics

The Economics of Environmental Resources

Advanced Natural Resource Economics

Information Economics and Institutions in Natural Resources

Economics of Renewable Resources

Recreation and Tourism Economics

Economics of Planning and Development

Landscape Ecology

Concepts and Issues in Planning and Development

Urban Land Management

Legal, Financial, Institutional Frameworks in Watershed Management

Law of Environmental Regulation

Parks and Protected Areas Policy and Management

Leadership and Policy Process in Agriculture and Natural Resources

Policy Evaluation

Public Policy

Policy Development and Administration

Cost-Benefit Analysis in Public Policy

Incentives and Public Policy

Planning and Development Law

APPENDIX C

Draft Statement of Need for Conservation Law Program

Statement of Need for a Conservation Law Program

The Conservation Law Program consists of four components:

1. A balanced conservation law curriculum that specializes a law student in the conservation/natural resources field, and leads to a J.D. degree.

2. A companion interdisciplinary component of course work and curriculum in fish, wildlife, habitat and natural resource science, management and policy that grounds a law student in the actual issues that conservation legislation and regulation attempt to address, interpret, regulate and manage. This interdisciplinary component would lead to a joint M.S. or Ph.D. degree.

3. A law clinic where students would work on contemporary legal issues for clients such as land owners, NGO's, state and federal regulatory agencies, etc. This would include research, preparation of advisory memos, pleadings and court appearances, etc. all under the supervision of practicing attorneys.

4. A supervised internship/externship program where students would spend a full semester or several summers working for state and federal natural resource agencies to better grasp how regulatory and management agencies function, and

the contemporary challenges that exist in management of our public lands, fish and wildlife.

Aldo Leopold is regarded as the leader of the development of science underlying natural resource management. It has been an accepted precedent since the 1920-30's when Leopold was most active, that science was the only basis for sound resource management. That precedent prevailed through World War II, and well into the decade of 1960's, but growing citizen activism began to add a "public input" component in the decision making process on how our natural resources were managed. Today the concept that science underlies natural resource management has become an unfortunate myth!

One of the political by-products of the Vietnam War (1964-1975) was fierce citizen activism and involvement that demanded a voice in state and federal policy decisions at all levels, and especially on issues that touched the soul of America, and these included the management of our public lands, fish and wildlife. Rachel Carson's book *Silent Spring* (1962) sparked a nerve in the nation's conscience, as did President John F. Kennedy's call to the country to forge "new frontiers." From this period, a new zeal was generated to protect the environment, and public lands as wilderness, completely unimpaired by mankind, which Wallace Stegner calls the highest refinement of the national park idea since the turn of the century. NGO organizations formed earlier in the century such as the Wilderness Society, Sierra Club, Audubon Society, National Wildlife Federation, etc. became re-energized, spawning the creation of new companion organizations such as American Rivers, Trust for Public Lands, the World Wildlife Fund, Greenpeace, Friends of the Earth, Earth Watch, the Ocean Conservancy, etc. Major

national legislation followed in the 1960's and '70's that included the Wilderness Act of 1964 and the National Wilderness Preservation System, the National Trails System, National Wild and Scenic River Systems, the Land and Water Conservation Act of 1964, the initial 1966 Endangered Species Act (later modified and expanded), and the National Environmental Policy Act of 1970. The Federal Water Quality Control Act of 1965 and Clean Water Restoration Act of 1966 followed, together with a host of laws to protect the environment from toxic wastes and industrially polluted air and water. The era of preservationist environmentalism and a total revolution within America's conservationist consciousness had begun.

Legislation at the state level followed the national agenda. The basis for many of the new laws was public emotion rather than science, promoted and channeled by special interest groups and their lobbyists, forcing the management decisions of resource professionals to be marginalized and compromised. The interpretation and enforcement of the new laws and regulations became fertile soil for citizen activists and their attorneys, and today these players occupy a major and decisive role in natural resource management and decision making. New NGO organizations were created primarily to sponsor litigation, and included Greenpeace; Environmental Defense Fund; Friends of the Earth; Friends of the Animals; Fund for Animals (HSUS); Center for Biological Diversity; WildEarth Guardians; Defenders of Wildlife; Natural Resources Defense Council; Public Employees for Environmental Responsibility; and the Animal Protection Institute. Today resource management is unfortunately governed 10% by science, 40-50% by public activists, and 30-40% by judges and litigation attorneys.

Just one example of the role judges and litigation attorneys play in resource management is the delisting of wolves in the Great Lakes and in Montana/Wyoming. The U.S. Fish and Wildlife Service (USFWS) delisted wolf populations in both geographic regions, and the states prepared management action plans for the species. The delisting by the USFWS was challenged, and two federal district court judges in Missoula, Montana, and Washington, DC, overturned the decision of the USFWS, ordered the species re-listed, and the state's management action plans were suspended. The USFWS is struggling to re-write its delisting determination as published to address the two judges' findings and ruling, and more litigation is certain to follow. This is a contemporary illustration of the increasing role judges and litigants (all without any professional knowledge or appreciation of resource management) are playing in resource management today. The drain from litigation on state and federal resource management budgets away from science-based management operation is crippling the ability of these agencies to effectively function.

The conservation law program contemplated would train attorneys who are well grounded and balanced in the essentials of conservation law, and the underlying science and policy of resource management, with some appreciation of resource agency operations. These well-trained attorneys could then more effectively defend the decisions of our professional managers and their agencies, staff legislative and agency committees drafting laws and regulations, and work within the judicial system to improve judges' appreciation of the realities and science underlying resource management. Over time, as the synergy of this law program gets duplicated in other parts of the country, a cadre of

attorneys will be developed to return resource management decisions to the professionals trained in the science of management.

Conservation law programs have been developed in a number of law schools across the country following the legislation and litigation of the last quarter century. However, a careful examination of the curriculum indicates that those programs are unbalanced, and skewed to primarily regional or national issues. For example, the University of New Mexico Law School focuses on Indian law, water law, native rights, and Spanish land grant law. The University of Colorado's curriculum focuses on energy and mining law, toxic and hazardous waste law, while the University of Vermont's curriculum is primarily a national environmental law and regulation focus.

A truly balanced conservation and natural resource law curriculum would include the following courses:

(INSERT)

A few years ago, research undertaken by the Boone and Crockett Club identified a disturbing culture divide between senior and retiring state and federal resource managers, and the mid-level career professionals following them by some 15-20 years. The seniors were primarily agrarian based, having farm and ranch backgrounds with a childhood connection to the land and its fish and wildlife, while the mid-career professionals following had primarily urban backgrounds. The senior's resource decision making skills were much more intuitive than the urban professionals following them.

Most law students today come from urban based childhoods, with no relationship to the land. The study of law is an academic and intellectual pursuit. To better appreciate and understand conservation law's application to the underlying land, fish and wildlife which the law governs, a student really needs to understand the science and policy of underlying land, fish and wildlife management, and the inter-relationship and inter-dependency of an ecosystem's many parts. They will be far more effective conservation attorneys with an interdisciplinary approach to their education. The interdisciplinary curriculum based in a companion forestry, fish and wildlife college would lead to a joint degree in their program. Essential course work would include:

(INSERT)

This program contemplates the establishment of a fully balanced conservation curriculum, and a functionally integrated clinic and internship that ties all elements of a practical education together, which exists no where else in the country. With an interdisciplinary understanding of natural resources science, management and policy, this program will be unmatched in training attorneys who will be able to provide balance in our judicial system enabling resource management decisions to be the domain of professional managers.

APPENDIX D

Interview Questions

1. What are some of the most pressing, contemporary conservation problem facing resource managers and policy makers?

2. Looking over the horizon, what conservation problems do you envision resource managers and policy makers will have to confront?

3. How important is the role of the judiciary in establishing or maintaining conservation policies?

4. Is the role of the judiciary and legal system increasing or decreasing in its influence over conservation issues?

5. Do you believe attorneys and judges trying and hearing cases involving conservation issues are adequately familiar with the principles of conservation?

6. Are you aware of formal training opportunities for attorney's to acquire this skill set?

7. In your view, would a conservation law program (curriculum, clinical application, and externship) assist in developing the basic skill set needed to establish baseline competency on conservation issues?

8. If such a law program were developed, what areas are most in need of attention through the curriculum?

9. In looking at the syllabus of the overview course, what topics do you consider to be especially important?

10. Does the overview adequately cover the range of contemporary conservation issues you confront on a daily basis?

11. From your perspective, are there critical elements that have been overlooked in this overview course?

REFERENCES

(1842). Martin v. Waddell 41. U. S. S. Court. **234**.

(1855). Smith v. Maryland 59. U. S. S. Court. **71**.

(1892). Illinois Central Railroad v. Illinois 146. U. S. S. Court. **387**.

(1896). Greer v. Connecticut 161. U. S. S. Court. **519**.

(1979). Hughes v. Oklahoma 441. U. S. S. Court. **322**.

(1993). North American Agreement on Environmental Cooperation Government of Canada Government of the United Mexican States Government of the United States of America

(1994). Michigan Natural Resources and Environmental Protection Act United States

Aagaard, T. S. (2009). "Envrionmental Laws as a Legal Field: An Inquiry in Legal Taxonomy." Cornell Law Review **95**(263).

Bergstrom, E. A. (1939). "English Game Laws and Colonial Food Shortages " The New England Quarterly **12** (4): 9.

Brown, T. L., D. J. Decker, et al. (2000). "The future of hunting as a mechanism to control white-tailed deer populations." Wildlife Society Bulletin **28**(4): 10.

Bryan, A. H. (1943). "Conservation " The American Biology Teacher **5**(4): 3.

Cart, T. W. (1973). "The Lacey Act: America's First Nationwide Wildlife Statute " Forest History **17**(3): 9.

Davidson, J. H. (1990). "Introduction " South Dakota Law Review

Geist, V. (1988). "How Markets in Wildlife Meat and Parts, and the Sale of Hunting Privileges, Jeopardize Wildlife Conservation " Conservation Biology **2**(1): 11.

Geist, V., S. P. Mahoney, et al. (2001). "Why hunting has defined the North American model of wildlife conservation " Transactions of the North American Wildlife and Natural Resources Conference **66**.

Jacobson, C. A. and D. J. Decker (2006). "Ensuring the Future of State Wildlife Management: Understanding Challenges for Institutional Change " Wildlife Society Bulletin **34**(2): 5.

Kawashima, Y. and R. Tone (1983). "Environmental Policy in Early America: A Survey of Colonial Statutes " Journal of Forest History **27**(4): 11.

Keiter, R. B. (1998). "Ecosystems and the Law: Toward an Integrated Approach " Ecological Applications **8** (2): 9.

Kirsch, M. T. (1997). "Upholding the Public Trust in State Constitutions " Duke Law Journal **46**(5): 41.

Mahoney, S. P., V. Geist, et al. (2008). The North American Model of Wildlife Conservation: Enduring Achievement and Legacy. Strengthening America's Hunting Heritage and Wildlife Conservation in the 21st Century: Challenges and Opportunities S. C. Council. Washington D.C. .

Manen, M. v. (1990). Researching lived experience: Human science for an action sensitive pedagogy Albany State University of New York Press

Matthews, O. P. (1986). "Who Owns Wildlife? ." Wildlife Society Bulletin **14**(4): 6.

Moutsakas, C. E. (1994). Phenomenological Research Methods Thousand Oaks Sage

Nie, M. (2004). "State Wildlife Policy and Managemetn: The Scope and Bias of Political Conflict " Public Administration Review **64**(2).

Nissenbaum, R. A. and T. Lewis (2003). "Ghettoization in Conservation Biology: How Interdisciplinary Is Our Teaching? ." Conservation Biology **17**(1): 6-10.

Randall, R. H. (1939). "Conservation of Natural Resources " Annals of the American Academy of Political and Social Science **206**(Government Expansion in the Economic Sphere): 4.

Ryan, M. C. and I. Henry Campa (2000). "Applications of Learner-Based Teaching Innovations to Enhance Education in Wildlife Conservation " Wildlife Society Bulletin **28**(1): 168-179.

Sax, J. L. (1970). "The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention " Michigan Law Review **68**(3): 95.

Touval, J. L. and J. M. Dietz (1994). "The Problem of Teaching Conservation Problem Solving " Conservation Biology **8**(3): 902-904.

Trefethen, J. B. (1975). An American Crusade for Wildlife New York Winchester Press

Woodward, C. R. (1929). "Agricultural Legislation in Colonial New Jersey " Agricultural History **3**(1): 13.

Young, H. A. (1952). "Conservation and Wise Utilization of Natural Resources in Canada " Annals of the American Academy of Political and Social Science **281**(The Future of Our Natural Resources): 6.