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Source: *Wildlife Society Bulletin*, Vol. 30, No. 4 (Winter, 2002), pp. 1245-1252

Published by: Allen Press

Stable URL: <http://www.jstor.org/stable/3784294>

Accessed: 07/12/2009 16:11

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Directions in professionalism and certification in The Wildlife Society

David S. Maehr, Bruce C. Thompson, George F. Mattfeld, Kent Monte, Jonathan B. Haufler, Junior D. Kerns, and James Ramakka

Abstract Certified wildlife biologists make up a minority of The Wildlife Society (TWS or Society) membership. Although professionalism and minimum standards are issues that have consistently confronted the profession since before the inception of the Society in 1937, a low rate of certification suggests disinterest among members and ineffective marketing by Society leaders. Certification has the potential to be a surrogate for accreditation of university wildlife curricula and could encourage high standards of professionalism among members. This will not occur until more members ascribe a value to certification. It is important that wildlife agencies and other employers of wildlife biologists offer incentives to those who are certified and that they encourage certification for employees who are not. Universities also must do a better job of linking wildlife curricula with certification standards. One alternative to more effectively promoting certification is to accept it as only partially fulfilling its intended purpose. Certification can become more widespread if TWS leaders provide clearer indications about specific types of professionals it seeks to certify and how such professionals can gain from that recognition. Effective leadership is required from TWS to stimulate employers to require certification for specific professional assignments.

Key words accreditation, certification, historical perspective, performance standards, professionalism

Few subjects are as likely to elicit such divergent opinions from members of The Wildlife Society (TWS or Society) as those relating to certification and professionalism. The fact that 22% of 8,995 members were certified at the end of 2001 (an additional 716 had associate status; TWS records) suggests that most members are either ambivalent toward or against attempts to encourage minimum education and employment standards for wildlife biologists. Although Swank (1987) predicted that the certification rate among TWS members would increase following certification's humble beginnings (about one-third were certified in 1987), we have actually witnessed a decline in the proportion

of certified members. What is the reason for this trend, and what can be done about it? Or should we do anything? As long-standing TWS members and past or current members of the Certification Review Board (CRB), the authors of this paper offer a history and update of certification.

More than a quarter century ago Mattfeld et al. (1975:84) observed, "Although we have come a long way in the formation of our profession, many members have seen signs of the erosion of our progress. Increased awareness of wildlife and the environment as well as statutes requiring impact statements have been accompanied by increasing numbers of 'private practitioners' who are poorly

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trained at best to function as stewards of the wildlife resource." Has anything changed since the unveiling of the certification program? In the fiftieth anniversary volume of the *Wildlife Society Bulletin*, Swank (1987) provided an excellent summary of the evolution of professionalism in TWS. A quick read of this review suggests that very little has changed in over 70 years of grappling with the identity of a wildlife professional. Education standards and membership categories were Society concerns from the very start. Today's certification standards are the result of an evolving process. The current standards can be viewed as a compromise for the issues that were hotly debated during the formative decades of the Society:

1) Dual membership—The Society's 2 original membership categories in the late 1930s, "Active" and "Associate," were viewed by some as too exclusive, and a majority of members eventually came to believe that this would create divisiveness among members. Nonetheless, many of the Society's leaders such as P. L. Errington and E. R. Kalmbach favored this approach (Swank 1987). The Committee on Professional Standards (1939:155) offered a report that became the majority opinion of the Society: "There is no justification for the erection of impassable barriers to Active Membership based *solely* (emphasis ours) upon such concrete requirements as courses taken, degrees received, or positions held." Nonetheless, the dual membership program remained in force until 1950 (McAtee et al. 1961). Today, anyone can become a member of TWS so long as annual dues are paid and the Code of Ethics is followed.

2) Accreditation—The need for setting standards of performance at universities offering wildlife degrees has long been recognized (Leopold 1933). However, a method for ensuring the attainment of high standards was never agreed upon by TWS Council. University professors objected to the restrictions of set curricula (agency administrators, however, were very much in favor), an objective method for evaluating universities was not envisioned, and a proliferation of wildlife programs rendered a standardized approach unlikely (Swank 1987). The reason for academic resistance to generally described course topics (not content) remains elusive to us (although some would argue that a university's bottom line is more about enrollment than about a quality education). By the early 1950s wildlife training was offered at 50 institu-

tions, versus 34 that offered degrees in forestry. By 1972 continued growth in university wildlife programs sounded the alarm of too many graduates for too few jobs (Scott 1975), a problem that continues today. Further, although many certification applicants succeed with a 4-year undergraduate degree, TWS leaders have long recognized that the Master's degree is the practical entry-level professional benchmark (Leopold 1939, Cronemiller et al. 1952, Mattfeld et al. 1975).

The adoption of a certification program solved the first conundrum by creating a voluntary program of multiple membership options. A member could 1) choose to ignore the program altogether without consequence to voting status, or 2) submit an application to review and evaluation by the CRB. Such review is also available for non-TWS members. The outcome of the review determines the applicant's fate as an associate wildlife biologist, a certified wildlife biologist, or neither, depending primarily on the degree to which education and experience requirements are met. Certification helped address the accreditation interests by adopting course requirements that offer explicit directions to students, faculty advisors, and their institutions. A student can now choose a school that offers the needed courses for certification, and institutions can modify curricula to meet the needs of aspiring wildlife professionals. This leaves others to patch together a set of courses and experiences in the tradition of Leopold (1939:158) whereby a wildlife student upon graduation "should be able to examine a piece of land or water and to deduce (a) its original condition and recent history, (b) the present status of its principal wildlife species and the population trend and behavior of each, (c) the status of its economic uses and their effects on wildlife, (d) the modifications of economic use needed in the interest of wildlife, and (e) the rough outlines of researches needed to refine and verify his diagnosis." While many might argue the degree to which this process "solved" the dual membership and accreditation debates, it did offer answers.

Certification became a reality in 1977 after nearly 2 decades of argument; yet this debate is older than the profession itself. Among Leopold's (1930) 7 recommendations relating to American game policy was the creation of a professional organization much like other applied biological disciplines. When the Society was established in 1936, 1 of its 4 objectives was the maintenance of professional

standards. By 1939 educational standards and criteria for measuring student success in attaining those standards had been developed (Leopold et al. 1939). Although it has been suggested the training received by wildlife biologists in the United States is adequate (Peek 1986), Leopold might or might not agree with this view if he were with us today. Aside from having a “reasonably sound physique and a cooperative personality,” Leopold (1939:157) was not terribly specific with respect to the qualities required of a wildlife professional. He observed:

Professional training is ordinarily defined in terms of years at school, courses taken, and degrees received. The lack of standard meanings invalidates some of these terms for our purposes, especially the lack of standards for specifying courses. The most elaborate curricula may be offered at the weakest schools. We, therefore, cannot define professional training in terms of courses.

Years at school and degrees come nearer having a standard meaning. In general the minimum period for professional training is five years of college work: four years of undergraduate work plus one year of graduate work. Six years is better, seven frequent in the better schools. In general, a master's degree is the minimum for professional standing.

Leopold (1939:157-158) elaborated: “What biological field offers the best ‘gateway’ to professional training? There is no ‘best’ that can be laid down for all individuals. It is desirable that the profession be recruited from *majors in a wide variety of sciences and in the arts of land use* (emphasis added). In general, some biological science is the best gateway to a career in research; some agricultural art (including forestry) to a career in policy or administration.... The quality of teachers should carry more weight in selecting a major field than the departmental label.... In addition to academic preparation, the student should have attained... considerable knowledge and field skill in some branch of natural history (such as ornithology, mammalogy, ichthyology, or botany).... More than average ability to express thoughts in writing and in speech is indispensable.” Clearly, he recognized that a solid professional foundation was attainable through a variety of educational pathways.

Indeed, Leopold (1949:185) wrote at length

about the inclusiveness that could benefit The Wildlife Society when he wrote of the significant contributions by “amateurs” such as Margaret Morse Nice, Charles L. Broley, and others who likely had minimal training in any of the “ologies.” Such people, despite proven competence, would be unqualified as certified wildlife biologists if they were evaluated solely on their college transcripts. Today, wildlife agencies across the country employ people with diverse, nonwildlife backgrounds who often make valuable contributions to management and research. It is not unusual for such applicants to be denied certification, even at the associate level, because they lack prerequisite coursework. Who benefits from these outcomes? Is the exclusion of a particular course sufficient to exclude someone from the certified ranks? Regardless, the Committee on Professional Standards (1939:155) recognized that “the ‘Academic’ and ‘Experience’ requirements, as hitherto applied by the Membership Committee, must continue to provide an indispensable measuring stick for nearly all applicants” even though there “is no justification for the erection of impassable barriers to Active Membership based solely upon such concrete requirements as courses taken, degrees received, or positions held.” Today, TWS gives a fair amount of discretion to the CRB, which “must determine whether the education, experience, and professional contributions of the applicant satisfy the intent of the established minimum requirements” (The Wildlife Society 2001:1).

A question of need

So what is the purpose of certification, and how can the very specific course requirements demanded of applicants be justified? In other words, why do people not apply for certification? This question has been posed frequently to the authors by students and other TWS members. Often the arguments go like this:

- 1) Applying for certification is too time-consuming.
- 2) Certification is too expensive.
- 3) The recent change to continuing education and the exemption of pre-2000 applicants from meeting these requirements have created an uneven playing field (i.e., why should we have to struggle for periodic recertification when the same is not required of the “grayhairs?”).

- 4) There is a perception that qualified applicants are too often denied certification and incompetent applicants are too often accepted.
- 5) I am already functioning as a wildlife biologist. Why do I need a piece of paper that confirms what my employer already knows?
- 6) Certification is unlikely to provide a professional benefit to me (i.e., to whom do benefits accrue?).

Little can be done to address arguments 1 and 2. However, the other issues are valid and relevant to certification and its continued evolution.

It is important to recognize that the need for certification has never been unanimous among TWS membership. The initial process was a compromise that specifically excluded continuing education and recertification as a requirement. It was recognized that sufficient resistance would be directed against the process if standing members needed to periodically demonstrate efforts to maintain and update their skills and knowledge. This resistance is more likely rooted in human nature and our inherent tendency to resist change (and extra work) than it is an objective opinion that continuing education of wildlife biologists cannot benefit our profession and the wildlife resource for which we are stewards. The Society succeeded in establishing certification at a time when continuing education was stubbornly resisted by many members. The logic, perhaps, included the realization that enough of the original resistant "grayhairs" would be leaving the profession through various forms of attrition and future members might embrace the burden of continuing education. It is possible that resistance to certification has declined, but there has been no concomitant increase of certified members to suggest that the Society now views the process as necessary (even the great surge of applications we dealt with toward the end of 1999 and early 2000, in large measure, might have been the result of efforts to avoid the new continuing education requirements).

Who we are

Swank (1987) observed that the interest in a professional wildlife society stemmed from the need for members to be associated with an organization that provided them with professional stature. In the early years, agency biologists were few and far between. It was the university professor who was perceived to

embody the pinnacle of professional achievement. Today, large government budgets, increasing regional challenges to wildlife management, and expectations of the public have caused the ranks of agency biologists to swell, sometimes beyond the capacities of office space (Wildlife Management Institute 1997). We would argue that these people (>53% of TWS membership; TWS records) are the heart and identity of the modern Society, agency staff who fight the daily battles with shrinking space, dwindling autonomy, and fewer available resources. By virtue of their numbers, their uniforms, and their organization at state and national levels, the identity issue has shifted. University professors today are fortunate to develop formal links with wildlife agencies in the training of future professional staff and research needed to facilitate effective agency decision-making. Too often, a university professor becomes a teacher of wildlife management and ecology with no more experience than that which went into a dissertation or was gained from a textbook. Such an educator might not be a TWS member or even be aware of a professional certification program. Is the stature of today's wildlife educator on par with the view that prevailed in the mid-1900s? This question is at the root of accreditation efforts that sought to ensure some level of practical experience and education applicability among faculty members and academic programs.

Biologists with environmental consulting firms often are alienated by agency staff because their activities frequently are associated with development, the continuing spread of human influence on the environment, and a diminution of biodiversity. But who should be commenting on wildlife concerns in the cumbersome and circuitous environmental permitting process? So long as TWS members who serve as consultants uphold the Society's code of ethics (a pledge made in the certification process), we should be grateful for their involvement. True, their activities are not always directly related to a particular wildlife species, but they are almost always related to wildlife habitat and the land. In this sense environmental consultants are the professionals who are most apt, on a day-to-day basis, to deal with Leopold's 5 basic traits of a wildlifer (Leopold 1939). Further, it is the biologists with consulting firms who are most likely to put their professionalism to the test in the courts and other legal proceedings that deal with environmental permitting (however, increasing litigation involving wildlife agencies also argues for certification

among government wildlife biologists). The credentials of certification appear to have some standing with respect to the credibility of an expert witness. Again, presuming that these individuals uphold the Society's code of ethics, who would be better to participate in such proceedings (especially because so few agency biologists feel the need for the certificate)? Our perception is that the private sector is a growing segment among certified wildlife biologists, both within and outside of TWS, and that it is important for us to provide standards of expected performance in terms of education and experience.

Whereas individuals engaged in private-sector wildlife management often perceive tangible benefits from certification, agency biologists appear to see little incentive. At least, this is the message from the >75% rate at which TWS members *do not* pursue certification. If, in fact, a student has taken the necessary courses for certification, and if most agency administrators recognize the value of standardized wildlife curricula, why have agencies been slow to reward those who have pursued certification? Has TWS been lax in convincing agencies and educators that certification is vitally important? Recent events concerning the handling of lynx (*Lynx canadensis*) hair samples by several agency biologists sparked barrages by media and politicians critical of the Endangered Species Act of 1973 (Anonymous 2002). A subsequent Congressional hearing requested TWS input regarding professional standards and ethics for wildlife biologists. Could a better example exist to illustrate the need for agencies to encourage and reward the kind of professionalism exemplified by certification? If we accept that certification is one way around accreditation, and if it is still true that agency leaders value people who have a strong, wildlife-related academic background, why are virtually no rewards offered for new agency hires or standing agency employees to be certified (exceptions include the state of Alabama's pay raises to certified employees and United States Department of Agriculture Animal and Plant Health Inspection Service, Wildlife Services payments for and encouragement of certification)? This situation could be the single most serious impediment to a more widespread adoption of certification as a Society standard. When employers and educators demonstrate their support for certification, perhaps the Society as a whole will take it more seriously.

Changing (remembered) times

An issue with which the CRB regularly contends

is the increasing number of applicants who do not follow a traditional wildlife pathway in their academic careers. It is not unusual for an applicant to use a conservation biology course to partly fulfill the "Wildlife Management" requirements of the certification application. Officially, acceptable courses are those that emphasize "the principles and practices of wildlife management" and "demonstrate training in understanding and manipulating habitat relationships and population dynamics in the context of objectives and influences established by human concerns and activities" (TWS 2001:30). Is it not just as relevant to understand the demographic effects of a variety of harvest regimes on a popular game species as it is to understand the genetic consequences of highway construction on a local amphibian population? The former has traditionally fallen under the purview of game management courses, whereas the latter might be from a case study in a conservation biology class. Does one illustrate better than the other the effects of "manipulating habitat relationships and population dynamics"? We think not. The outcomes of both examples depend on the choice of management approaches. The CRB might not be unanimous on this subject, but we contend that an understanding of the effects of habitat fragmentation on relatively obscure fauna and flora could have as much to do with modern wildlife management as growing trophy antlers. At the very least, the understanding and prevention of species extinctions is certainly as noble a role for wildlifers as is the production of trophy deer or elk.

Broadening suitable wildlife management courses helps TWS be more inclusive in its certification program and recognizes the conservation origins of the Society. As Bennitt et al. (1937:1-2) observed in the first issue of *The Journal of Wildlife Management*, "Wildlife management along sound biological lines is also a part of the greater movement for conservation of our entire fauna and flora." The certification program has already evolved to include more than just mammalogy and ornithology as acceptable wildlife biology courses (Appendix 1). One could argue that the advent of the Society for Conservation Biology finally brought this element of our profession back to the forefront. Though it is not our intent to rekindle the conservation biology debate (Teer 1988, Anonymous 1989, Capen 1989, Edwards 1989), as a Society we have been an outlet for this "new" thinking for more than a decade (e.g., Conner 1988, Koenig 1988, Capen 1989, Noss 1998). As many populations of wildlife become increasingly small and fragmented and as wildlife

managers deal increasingly with the prevention of inbreeding, isolation, and denatured landscapes, conservation biology solutions become increasingly applicable. The CRB has attempted to recognize the importance of this perspective.

The need for improved communication skills

The importance of and the need for wildlife professionals to possess effective communication skills is an issue that has existed since the Society's inception (Leopold 1939, Lochmiller and Mahr 2000). A wildlife biologist should have "more than average ability to express thoughts in writing and in speech..." (Leopold 1939:158), especially with today's pressures on biodiversity and the need for effective public outreach. Whether a biologist is active in research or focuses primarily on the practice of habitat or population management, effective communication with the public, supervisors, and other professionals is a critical component of successful biodiversity conservation. The TWS certification program reflects this need by requiring 12 semester hours of communications (Appendix 1). Yet there is a widespread impression among academics and agency administrators alike that writing skills are woefully lacking, even among biologists with advanced degrees. Nonetheless, private and government employers agree that writing and speaking skills are among the most important criteria for hiring a wildlife professional (Hein and Bates 1983). Hein and Bates (1983:82) further concluded that "the best academic courses for wildlife employment appeared to be in ecology, writing, and wildlife with diverse support from other areas.... Ability to write and speak effectively surfaced repeatedly as the item of greatest concern." Perhaps TWS's certification program discourages better writing skills by allowing as much as half of the communications requirements to be made up of "a completed Master's thesis and Ph.D. dissertation" (TWS 2001:4). We challenge the wisdom behind such leniency in meeting these requirements and suggest that writing a thesis or dissertation is seldom equivalent to effective communication or publication, nor can they replace rigorous courses in writing and speaking. While the practice of writing might be the best way of improvement (Henson 1999), there is no guarantee that the successful completion of an advanced degree results in improved communications skills, particularly if the foundations of writing were never established (see Jacobson [1999] for a more detailed discussion of

effective conservation communication). This could be one aspect of TWS certification requirements that deserves close scrutiny with respect to future revisions.

Conclusions

We believe the Society's certification program is a valuable guide that can promote high standards in wildlife education and professionalism. However, its sporadic use by wildlife professionals limits its effectiveness in promoting standards of competency and accomplishment. Certification clearly benefits private-sector wildlife biologists, and it is becoming more important among agency biologists (especially in light of modern society's litigious nature). We encourage TWS and government agencies to create employment incentives for certified wildlife biologists. In addition, we encourage educators and administrators of post-secondary wildlife programs to improve their promotion of certification among students. Without this "top-down" interest and demonstration of support in the program, certification will continue to be a service that is sporadically used and falls short of its potential. We also suggest that the communication credit for theses and dissertations be reconsidered in light of the need for improved communications skills. Finally, we suggest that TWS more explicitly describe the type of wildlife biologist professional targeted for certification. Do we need to become more inclusive or more exclusive?

Ultimately, certification should be valuable for establishing standards of accomplishment that are voluntarily met and serve the purpose of individual biologists. Ideally, certification should be adopted by a majority of TWS members. While certification need not be a metric for all who subscribe to TWS ideals, it will never be "needed" unless it is a broad requirement for some kinds of professional employment. Because a broadly accepted view of what a "wildlife biologist" is does not exist among our many public and private employers and because TWS certification has been historically slanted toward those with bird and mammal backgrounds, it might be that certification should be broadened to include specialties in the many biological fields rather than seeming to address all possible fields. Perhaps certification will then be viewed as a required standard of employment and a more compelling yardstick of wildlife professionalism. Without the continued evolution of TWS certification, including changes in

course requirements, adoption of employment incentives, and widespread acceptance by TWS members, the certification program will remain a minority elective. We believe its continued evolution deserves the vigorous and creative machinations of TWS council and its diverse membership.

Acknowledgments. We thank L. Fitzhugh, J. Yoakum, J. Larkin, and J. Cox for discussions and comments essential to the development of this essay. An anonymous reviewer and the editorial staff of the *Wildlife Society Bulletin* helped improve the quality and clarity of our message. The leadership of the New York Chapter of TWS, the Western Section of TWS, and the American Fisheries Society was instrumental in shaping the original certification program. We are especially appreciative of TWS Council in recognizing our efforts to grapple with this long-standing Society issue and for allowing us to be closely linked to the certification program.

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Appendix 1. Changes to TWS Certification Requirements, 1977–2002

1977–1979: Educational requirements were satisfied with a B.S., B.A., or comparable degree in any wildlife-related science.

1980–1982: The same basic degree requirements and,

- A. 30 semester hours in biological science that must include at least:
 - 1) 6 semester hours in courses related to understanding or manipulating environments, such as principles of wildlife management, wildlife biology, environmental biology, or ecology.
 - 2) 6 semester hours in vertebrate biology and classification, such as mammalogy, ornithology, ichthyology, or similar courses.
 - 3) 9 semester hours in zoology including such subjects as general zoology, invertebrate zoology, comparative anatomy, animal physiology, genetics, parasitology, or similar courses.
 - 4) 9 semester hours in botany and related plant sciences in such subjects as general botany, plant taxonomy, plant ecology, or plant physiology.
- B. 15 semester hours in basic mathematics and physical science including at least:

- 1) 1 course in college algebra or its equivalent and 1 course in statistics.
 - 2) 1 additional course each in 2 or more of the following disciplines: chemistry, physics, mathematics, soils, or geology.
- C. 15 semester hours in humanities and social science, which must include at least 4 semester hours in English composition, or demonstrated abilities (e.g., by examination) in satisfactory letter and report writing as officially certified by the university, or as demonstrated by published papers and reports, and 1 course in resource economics.

1983–1985: The associate wildlife biologist category was introduced in 1983. Education requirements were required to be reviewed by TWS council at least once every 5 years. Once certified, wildlife biologists were not required to satisfy future changes.

- A. Biological science requirements were increased from 30 to 36 semester hours. The change was reflected in an additional 6 hours of basic zoological courses.
- B. Physical science courses now accounted for 9 semester hours and statistics and quantitative courses now accounted for 9 semester hours. Previously, both of these categories accounted for a combined total of 15 semester hours.
- C. Humanities and social sciences now require 9 semester hours; communications courses now require 12 semester hours, and policy and administration courses now require 6 additional hours.

1986–1988: Course requirements remained basically unchanged.

1989–1992: Subtle adjustments were made to the basic requirements.

- A. Among the 36 semester hours required in the biological sciences, 3 were required to be in ecology and another 3 could be distributed among any of the 5 subject areas.
- B. Physical science requirements remained, but 3 hours in calculus were required.
- C. Humanities, communications, and policy and law requirements remained the same.

1993–present: All course requirements remained unchanged except for the calculus requirement which was dropped. The quantitative science requirements reverted to 3 hours in basic statistics and 6 hours in other mathematical and quantitative science.

2000: Continuing education requirements instituted.

