



Maine Association of Wetland Scientists (MAWS)

***Exploratory Paper on the Issue of Credentialing Wetland
Scientists in Maine***

Prepared by: MAWS Certification Subcommittee

Prepared for: MAWS Executive Committee and Membership

Final Report
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EXECUTIVE SUMMARY

The MAWS Subcommittee was formed to explore the Need for potential credentialing of wetland scientists in the state; identified the current attitude with respect to establishing wetland certification and/or licensing by practitioners and other stakeholders; then prepared a report stating the advantages and disadvantages of credentialing wetland scientists. If credentialing is pursued, two options are discussed: 1) pursuing licensing through the State of Maine; and 2) pursuing an in-house certification program. A third option discussed is 3) taking no action. The report does not recommend a course of action, but provides documentation to assist members with the decision making process. Findings of the Subcommittee follows.

The Subcommittee identified 8 perceived *Needs* to support wetland credentialing. These needs can generally be placed into, but not necessarily limited to, four categories including 1) protecting our environment; 2) improving the consistency of wetland delineations; 3) ensuring a high level of professional standards of practice; and 4) protecting our clients' interests.

A MAWS questionnaire distributed in 2005 found that 67% of respondents support credentialing of some kind, while 17% indicated they would not support it. While relatively few members responded, results of the questionnaire generally mirror that of similar surveys that have been distributed by MAWS in recent years.

Pros and Cons of pursuing *state recognized Licensing* were identified. Advantages include, but are not limited to: a higher confidence that wetlands and their attendant functions and values will receive a higher level of protection and concurrently help curtail wetland loss; a higher level of confidence that the land development community would have in wetland delineations; and a perceived greater efficiency to process land development permitting. Disadvantages include, but are not limited to: a still unrealized but high economic cost of establishing licensing; no guarantee that the public and/or environment can be better protected; and a still unrealized greater cost to hire licensed versus unlicensed wetland scientists that would be borne by the land development community.

Pros and Cons of pursuing *In-House Certification* were identified. Advantages include, but are not limited to: a greater degree of confidence that MAWS would be in control of establishing some kind of credentialing as opposed to a legislative vote to approve licensing; wetlands are likely to receive greater protection; and confidence that MAWS already has in place most of the elements required for in-house certification by other professional groups such as the Society of Wetland Scientists, Soil Science Society of America, and The Wildlife Society. Disadvantages include, but are not limited to: no guarantee that the public and/or environment can be better protected; and a still unrealized greater cost that would be borne by the land development community to hire certified versus uncertified wetland scientists.

Pros and Cons of *Taking No Action* were identified. Advantages include, but are not limited to: maintaining a status quo with respect to current membership fees; and a faster response to changes that can be made to respond to future areas of weakness by utilizing the existing framework of MAWS. Disadvantages include, but are not limited to: the realization that the historic topic of credentialing may not be adequately addressed; and current rates of wetland loss and/or degradation due to inadequate wetland delineations and assessments may continue.

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On behalf of the Maine Association of Wetland Scientists, the Certification Subcommittee would like to thank everyone who contributed to the preparation of this document. This product would not have been possible without the many hours of volunteer time and vast breadth of knowledge contributed by the authors. This paper is a major accomplishment that is the result of dedicated effort from very busy people! Listed in alphabetical order below are the names of the people who spent considerable time and energy discussing the issue of certification, and researching and writing this paper for the MAWS membership.

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1.0 INTRODUCTION

The MAWS membership totals around 140 people and is composed of wetland scientists, soils scientists, planners, consultants, engineers, surveyors, government personnel, botanists, wildlife biologists, students, and environmentalists. Of this total, approximately 100 people are of active member status and the majority of MAWS members describe themselves as wetland and/or soil scientists. The credentialing of wetland scientists has been an issue of discussion of the Maine Association of Wetland Scientists (MAWS) since the founding of the association in 1990. Throughout the duration of MAWS' history, constructive arguments have been made both for and against the certification of wetland scientists in Maine. Furthermore, the issue of credentialing continues to be an important item of discussion amongst the MAWS membership. In response to this on-going debate, in 2005 the MAWS Executive Committee formed a subcommittee of experienced wetland scientists recruited from within its ranks to explore the current attitude regarding wetland certification/licensing in Maine, its possible implications if pursued, and to submit an unbiased written report of its findings to the membership no later than the date of the 2006 MAWS Annual Meeting. This report summarizes the Subcommittee's findings, as described in the following report. It is composed of eight sections including the Introduction. Sections 2.0 through 8.0 are described below.

- **Section 2.0, *Background***, discusses MAWS role (including information obtained from various questionnaires distributed to MAWS members and others ; MAWS Resolution to set minimum qualifications for wetland scientists (Appendix C); the former “Wetland Delineator Certification Program” that the Corps of Engineers unsuccessfully tried to establish in the 1990’s; and New Hampshire’s experience developing its certification program.
- **Section 3.0** presents the *Goals and Objectives* of this paper.

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- **Section 4.0**, *Discussion of Possible Need*, describes the issue of potential need for certification and/or licensing of wetland scientists in Maine.

 - **Section 5.0**, *Problems and Opportunities*, generally discusses how wetland resources are currently protected in Maine, potential obstacles to the establishment of a wetland certification / licensing program, and how these obstacles may be overcome, and the potential benefits and detriments associated with a certification or licensing program.

 - **Section 6.0** provides a discussion of the *General Implementation Processes Associated with Credentialing Options*. Specifically, Section 6.1 discusses the processes required to establish a State program for a potential Maine Certified Wetland Scientist registration, and Section 6.2 discusses related Certification programs that are offered by various nationally based professional societies, along with criteria required to earn these Certifications. Section 6.3 discusses a “Take No Action” option.

 - **Section 7.0** summarizes the findings and recommendations of the Subcommittee and presents topics that should be discussed by the membership prior to a formal vote to guide the 2006 MAWS Executive Committee regarding how to proceed.

 - **Section 8.0** is a list of references that were reviewed during the preparation of this paper.

2.0 BACKGROUND

2.1 History of the Certification Issue

Certification for wetland scientists as professionals has been an ongoing issue of discussion for the Maine Association of Wetland Scientists (MAWS) since its inception in 1990. Much of the certification discussion within MAWS mirrored those which were on-going in similar organizations and state/federal agencies across the U.S. beginning about **1989**.

One of the early leaders addressing the issue was the national Society of Wetland Scientists (SWS), which formed a Certification Committee and queried their membership of 400 in the spring of **1989** regarding the need for professional certification (the results presented in Appendix A)

The fledgling MAWS undertook the initiative on this issue at the August **1990** organization meeting, by listing as agenda topics the “need for certification” and “minimum qualifications for wetland scientists”. The legitimacy of this issue was confirmed shortly thereafter with the results of a MAWS questionnaire (9/1990) sent to 85 individuals. Under GOALS FOR MAWS; Professional consistency/quality control & Certification received the highest responses at 27 and 15 percent, respectively. The survey also revealed that 12 percent of the respondents felt certification was of benefit to members and 17 percent felt that a certification committee should be formed within MAWS.

In **1991** the idea of formally having a legislator introduce a bill on behalf of MAWS requesting that the state institute a licensing program was tabled by the Executive Committee.

The advent of the federal Corps of Engineers Wetland Delineator Certification Program (WDCP) re-kindled certification discussions. The purpose of the nationwide WDCP

established under authority of the Federal Water Resources Development Act of 1990 was to (1) improve the quality and consistency of wetland delineations submitted to the Corps and (2) stream-line the regulatory process by developing procedures for expediting review and consideration of delineations submitted by certified delineators. Participation in the WDCP was to be voluntary. A pilot program was initiated in **1993** with field and written testing of applicants' knowledge and skills as they pertained to the 1987 Corps of Engineers Wetland Delineation Manual. The program was abandoned in **1997** due to insufficient funding. Currently there are no plans underway to revive the program (The Obligate 1997; National Wetlands Newsletter 1997).

In the summer of **1993** MAWS sent out a more specific questionnaire regarding certification to members of MAWS, MAPSS, Maine Landscape Architects, Maine Licensed Engineers, and the environmental departments of the state's larger law firms. The results to 12 questions were cited in the January 1994 MAWS newsletter, The Obligate. Of the 92 responses (a 20% return rate), 74% stated that they felt there was a need for a certification program; of the respondents who were MAWS members, 85% felt the same.

In the summer of **1995**, the Executive Committee, and representatives from MAWS formulated a Resolution entitled: "Minimum Qualifications for Practicing Wetland Delineators in Maine" (Appendix C). This Resolution was passed by the membership at the February **1996** annual meeting. Although the Resolution clearly articulates "*minimum qualifications for persons professionally engaging in the practice of wetland delineation in Maine*" the Resolution did not provide for certification of delineators, nor was there a formal review established for judging the qualifications of individuals. The intent of the Resolution was to make MAWS' position known and provide guidance to those interested in judging qualifications.

Elsewhere, the state of New Hampshire adopted rules for the Certification of Wetland Scientists by the Board of Natural Scientists in November 1998 with certification beginning in 1999. Attempts for state administrated certification began back in May

1991. The Society of Wetland Scientists (an international organization of wetland scientists) initiated certification for their members beginning in 1994. Criteria to earn standing as a SWS Professional Wetland Scientist, and for other certifications offered by related professional associations, are discussed in Section 6.2.

2.2 Recent Survey Results

In March **2005** a MAWS Certification Subcommittee formed to reexamine credentialing of wetland scientists and make recommendations to the Executive Committee. At the 2005 MAWS annual meeting, this subcommittee handed out surveys on the issue of wetland scientist certification to all meeting attendees (included non MAWS members but did not include all MAWS members). This survey consisted of 21 questions and was completed by 36 of the 62 respondents (58%). Of the 36 total respondents, 67% indicated that there is a need for a wetland certification/licensing program in Maine, 17% indicated that there is no need, and the remainders were unsure. The overall results of this survey are presented in Appendix A.

3.0 GOALS AND OBJECTIVES

The goal of this report is to provide a documented summary of both historic and contemporary discussions regarding the topic of credentialing wetland scientists in Maine. The Subcommittee's objective (defined in Section 1.0) is to provide a written summary of advantages and disadvantages of credentialing wetland scientists from the perspective of various stakeholders (i.e., developers, regulators, wetland scientists, the people of the State of Maine). Once identified, a mindful weighing of advantages and disadvantages will be possible.

The ultimate goal of this report is to provide the MAWS membership with documentation to initiate formal decision-making on the subject of credentialing wetland scientists in Maine. We prepare this report with the expectation that, as with nature, things will change. However, this report and documentation of the decision making process that will follow will enable MAWS to grow as an organization. As variables in the decision making equation change, it is our hope that documentation presented in this report will also facilitate decision making for MAWS in the future.

4.0 DISCUSSION OF POSSIBLE NEED

The purpose of this section is not to establish or advocate that there is, or is not, a need to credential wetland scientists in Maine. Rather, its purpose is to present a bulleted list of possible needs for credentialing that have been previously discussed by MAWS members and others. This bulleted list is not intended to be “all inclusive”. Beyond the simple need for having Wetland Scientists perform a technical service, it is equally important to have dedicated Wetland Scientists who value, and pledge to uphold, the highest professional standards of practice related to wetland issues. To this end, most of the past discussions that have taken place regarding the issue of certification have focused on delineation and the lack of consistency and/or inaccuracies in wetland delineations and mapping. This section focuses on that particular aspect of wetland science.

Some of the possible needs for certification that have been previously discussed include [these are not listed in any order of importance]:

- Needed to increase stability to the implementation of the NRPA and Section 404 of the Clean Water Act;
- Needed to protect the profession of wetland science by increasing public and regulatory confidence and helping enhance the quality/consistency of wetland delineations;
- Needed to reduce the potential for “bad” work by ensuring that individuals conducting wetland delineations meet minimum educational (both past and continuing) and experience requirements;
- Needed to make the regulatory process more efficient, thereby saving money for clients and the taxpayers of Maine;
- Needed to provide a mechanism for encouraging good, thorough work through the possibility of being reprimanded for conducting sub-par work;
- Needed to protect water resources, water quality, and the human and natural environments by reducing the number of erroneous wetland delineations

(assuming that certified individuals are, on average, more qualified than those who are not certified);

- Needed to prevent abuses in the practice of wetland science by untrained or unprincipled individuals;
- Needed to provide the land development community reasonable expectation that individuals hired to conduct wetland delineations will be qualified to do quality work.

5.0 PROBLEMS AND OPPORTUNITIES

5.1 *Regulation of Wetland Resources*

Activities in and near wetlands (freshwater and coastal) in the State of Maine are regulated at the three levels of government: federal, state, and local. Primary jurisdiction at each of these levels respectively is headed by the US Army Corps of Engineers (Corps), the Maine Department of Environmental Protection (MDEP) or in unorganized municipalities of the State, the Land Use Regulation Commission (LURC) and local Planning Boards (Plng Bds). To varying degrees other regulatory agencies (Environmental Protection Agency; Maine Department of Inland Fisheries and Wildlife, etc.) and voluntary Boards (Municipal Conservation Commissions, etc.) provide additional input for the three main governmental entities.

At the federal level activities in wetlands or “waters of the United States” are regulated by the Corps under the provisions of Section 404 of the Clean Water Act, which defines wetlands as:

“those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”.

At the state level, activities in or adjacent to wetlands in organized municipalities are regulated by the MDEP under the provisions of the Natural Resources Protection Act. In unorganized territories, wetlands are regulated by the Land Use Regulation Commission. The definition of wetlands at the state level is similar to the federal definition.

At the local level, activities in certain wetlands designated on maps adopted for individual municipalities are regulated under the provisions of the Shoreland Zoning Ordinance (SZO). Requirements of a local SZO must address minimum guidelines

developed by the MDEP but, subject to local approval, may be more stringent than these guidelines. Under the minimum guidelines wetlands are defined as:

“freshwater swamps, marshes, bogs and similar areas, other than forested wetlands, which are: (1) of ten or more contiguous acres; or of less than 10 contiguous acres and adjacent to a surface water body, excluding any river, stream, or brook, such that in a natural state, the combined surface area is in excess of 10 acres; and (2) inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils”.

Although not regulatory bodies per se, various non-governmental organizations (NGO’s) play differing advocacy, educational, professional, protective or stewardship roles that also contribute to increasing the public awareness for wetlands in the State of Maine. Roles of these NGO’s extend beyond ecologic aspects and can also encompass regulatory considerations. Although not intended to be complete, examples of NGO’s routinely involved in wetland related issues include: Maine Audubon, local and regional land trusts, the Nature Conservancy, the Natural Resources Council of Maine, and MAWS.

While typically not considered to be NGO’s, without doubt academia involved in the fields of biology, earth sciences, ecology, environmental, and wildlife programs also contribute to raising an awareness of wetlands as regulated resources throughout the State of Maine. Finally, some elementary, middle, and high school programs teach about the value of wetland resources.

Therefore awareness and protection of wetlands as regulated resources in Maine occur at a wide variety of levels. With respect to regulatory credentialing of individuals that delineate wetlands as regulated resources, ultimately the impact on the resource is controlled by the regulated community or resource stakeholders involved with wetlands.

5.2 Possible Benefits/Detriments Certification or Licensing

The following section outlines the benefits and detriments of having some form of certification or licensing program for wetland scientists in Maine. For purposes of this section, “certification” is to mean a formal recognition by a *non-governmental* entity (i.e. Society of Wetland Scientists) that a given individual has met, and perhaps demonstrated, certain minimum requirements of the profession. This certification is typically voluntary.

Licensing is the same; however, the license is issued by a *governmental* licensing board or agency (i.e. NH Board of Certification for Natural Scientists) and is required for an individual to perform certain activities within the profession.

Within the paper, the word “credentialing” is used to address “certification” and “licensing” collectively.

5.2.1 Potential Benefits to:

Land Development Community

- Assures that there is an identifiable and acceptable level of knowledge and diligence by those working in the profession (i.e., certified individuals would likely have the responsibility of maintaining and enhancing their skills);
- Provides a vehicle for selecting consulting services from those with proven credentials;
- Minimizes the financial, time, and legal risk of incurring professional negligence by using unqualified consultants.

Consultants

- Promotes a level “playing field” between competing service providers which promotes a higher level of service to the regulated community;
- The profession of wetland science better recognized as a distinct skill set with economic value in the marketplace;
- Allows for better communication and education within this professional community whereby changes in the science/industry are better distributed for general consumption. For example, certification/license review or CEU requirements helps ensure that everyone is aware of technical changes to the delineation manual, regulations, documentation requirements, etc.;

Government (federal, state, and municipal)

- Can help facilitates review of wetland documentation submitted to the regulators and makes the overall regulatory process more efficient and cost-effective;
- Helps improve the quality and consistency of wetland documentation submitted to the regulators.

MAWS

- Affords professional integrity in the science as administered. Allows for internal control (i.e. revocation of certification or an accounting before the Ethics Committee).

General Public

- Provides some assurance that the natural resource is being accurately characterized and by a method that ensures repeatability by others;
- Provides for a broader level of protection for the resource.

5.2.2 Potential Detriments to:

Land Development Community

- May incur higher fees/billing rates for services provided by certified/licensed wetland scientist;
- Credentialing will not entirely eliminate the risk of receiving an inferior work product.

Consultants

- Employers may have to pay higher wages to employ those holding a professional certification/license;
- Employers may incur professional development costs related to the certification or License of the employee in the form of application fees, renewal fees, and CEUs to maintain the credential;
- May restrict/limit out-of-state consulting firms or otherwise qualified individuals from performing work in Maine, thus resulting in the land development

community having a smaller pool and/or availability of qualified individuals to provide wetland services.

Government

- Credentialing will not entirely eliminate the risk of receiving an inferior work product, and may instill a sense of “false security” amongst regulators that work conducted by credentialed individuals is being done correctly.

MAWS

- Certification program may be an administrative burden in the form of time allocation (review panel, revision of certification standards, record keeping) and expenses;
- Attempting to implement a certification program could incur retribution from individuals and organizations in opposition of such a program¹.

General Public

- May instill a misconception that certification/licensing offers a “guarantee”;
- If licensing is conducted by a state entity, non-recoverable program costs may be passed onto the taxpayer;
- Not an end-all solution to all problems identified within the profession.

¹ This occurred in Minnesota where a proposed voluntary certification program was challenged in court by practicing soil scientists. However, the certification program ultimately prevailed (Greg Larson 2006). In addition, the New Hampshire certification effort was originally opposed by septic designers, engineers, and soil scientists. However, the now defunct New Hampshire Association of Wetland Scientists met with these groups and resolved differences regarding the proposed certification program (NHAWS Board of Directors 1995).

6.0 CREDENTIALING OPTIONS/IMPLEMENTATION

6.1 *State of Maine License*

In the State of Maine, the Department of Professional and Financial Regulation (DPFR) oversees the regulation of many professions and occupations that provide services to the general public. Within DPFR, the Office of Licensing and Registration houses 41 professional licensing boards, commissions, and registrations without boards dedicated to public protection through licensure, inspection, enforcement/complaint handling, and discipline. In Maine, soil scientists and geologists are licensed through DPFR, as are professional engineers. A proposal to add a new licensing board for wetland scientists would require a statutory change to Title 32: Professions and Occupations. Alternatively, rather than seeking to add another licensing board specifically to administer the certification of wetland scientists, another option could include exploring the possibility of administering the certification of wetland scientists under the existing State Board of Certification for Geologists and Soil Scientists. This Board, as established by Title 5, section 12004-A, subsection 19, currently administers Title 32, Chapter 73.

The following is a simplified list of steps to license wetland scientists through the process of adding a licensing board for wetland scientists:

1. Preliminary steps include formally defining the need for licensing of wetland scientists, and deciding whether wetland scientists will go on their own or try to work with existing licensing boards such as the soil scientists and geologists. Title 5, Section 12015 provides guidance in statute for establishing new boards. These guidelines would have to be adhered to, as would Title 32, Sections 60-J, 60-K, and 60-L. Section 60-J lists 13 evaluation criteria for which research and answers must be provided. These evaluation criteria would need to be answered during the spring and summer in order to have the bill heard during the following legislative session. The criteria include: data on group, specialized skill, public health; safety; welfare,

voluntary and past regulatory efforts, cost; benefit, service availability of regulation, existing laws and regulations, method of regulation, other states, previous efforts, mandated benefits, minimal competence, and financial analysis.

2. Identify a leader who will be the contact person and in charge of organizing the legislative process. If funding is available, hire a lobbyist² who will be able to find politicians receptive to sponsoring or supporting a bill, and who knows the legislative process. This particular task would likely cost thousands of dollars (possibly tens of thousands). For example, immediately following the passage of the certification bill by the New Hampshire legislature in 1997, the New Hampshire Association of Wetland Scientists (NHAWS) owed a lobbying firm \$9,000 (NHAWS 1997). The cost could have been more; however, NHAWS had signed a lump-sum contract with the lobbying firm, and it was suspected that this firm had conducted *pro bono* work after the lump-sum money had been exhausted. As an additional example of potential lobbying costs, according to the Soil Science Society of America, some states have spent from \$15,000 to \$25,000 (2004 dollars) to get licensure for soil scientists approved during the first legislative session. Some states have had to go through multiple legislative sessions before achieving licensure (SSSA 2005). Getting a bill passed takes months, if not years. To have a bill heard during the ensuing legislative session, legislators should be contacted and a sponsor confirmed during the spring.
3. Identify state agencies and other organizations that are supportive of a bill to license wetland scientists and are willing to testify in favor of it. The schedule within legislative committees can change suddenly - identify individuals within those agencies and organizations who are available at a moment's notice to testify.
4. Develop a draft bill that addresses, among other things, the Board, qualifications for licensing, registration fees, disciplinary actions, continuing education requirements,

² It is not absolutely necessary to hire a lobbyist. However, minus a professional lobbyist, a MAWS representative(s) would have to devote significant time to work with the legislature and "lobby" for the cause of certification.

grandfathering, and seals. The language developed for soil scientists and geologists would provide a good template. Obtain input from a variety of professionals during this process. To be considered in the next ensuing legislative session, the bill should be drafted during the summer and then submitted to the Reviser's Office to be prepared in the proper technical form during the fall.

5. The bill will go before the legislature, where it would most likely be considered in the Business, Research, and Economic Development Committee. According to Title 5 Section 12015, to evaluate proposed legislation to establish a new board, the joint standing committee considering the legislation will first have an informal review of the proposed legislation and the answers to the evaluation criteria. Following the informal review, the committee will:

- A. Hold a public hearing to accept information addressing the evaluation criteria listed in Title 32, Section 60-J from any interested party who is a proponent or opponent of the legislation;

- B. Request that the Commissioner of Professional and Financial Regulation or a technical committee formed by the commissioner conduct an independent assessment of the applicant's answers to the evaluation criteria listed in Title 32, section 60-J, and report the commissioner's findings back to the committee by a specific date.

6. The joint standing committee will consider this information and hold a vote to determine a recommendation to the full Legislature. If the bill passes through both chambers of the legislature in identical form, it has received final legislative approval and will go before the Governor who must either approve or veto the bill.
7. If the bill is not approved, then the process must start all over again.
8. If the bill is approved and becomes a law, wetland scientists from academic, consulting, and regulatory fields who are willing to serve on the licensing board are

appointed as board members following guidance in Title 5, Section 12015 and in the new section within Title 32. From there, licensing of wetland scientists will begin. Overhead costs for running the licensing program depend in part on the number of wetland scientists who are licensed and, therefore, are highly variable. Presented in Appendix E is an example of costs associated with the certification of wetland delineators in Minnesota. Although this example may have limited applicability in Maine, it is provided as an example of the potential scope of costs associated with running a certification program.

6.2 *In-House Certification*

The Subcommittee researched several non-legally binding certification programs and Associations awarded to qualified individuals who are members of wetland and wetland-related professional associations. These Associations included: (1) the Society of Wetland Scientists, which awards a Professional Wetland Scientist (PWS) certification; (2) the Soil Science Society of America (SSSA), which awards a Certified Professional Soil Scientist (CPSS) certification as a Soil Classifier; and (3) the Wildlife Society (TWS), which awards a Certified Wildlife Biologist (CWB) certification. We note that these professional associations award certification to only those individuals who are able to provide qualifications over and above those that are required for routine, non-credentialed membership.

Table 1 below lists typical criteria that are required for these certifications, and compares each with existing MAWS equivalents.

TABLE 1					
TYPICAL PROFESSIONAL ASSOCIATION CERTIFICATION REQUIREMENTS³					
CRITERIA	SWS	SSSA	TWS	MAWS	COMMENTS
Academic Transcript (T) and/or Resume (R) required	T, R	T, R	T	No	MAWS does not require a transcript or resume.
Bs / BA, MS or PhD Degree required	Yes	Yes	Yes	Yes	
Minimum No. semester hours core Biological Sciences	15	-	36	30 See comments	Requires a combination of Biology, Geophysical and/or Hydrological courses totaling 30 hours ⁴
Minimum No. semester hours core Physical Sciences	≥ 15	≥ 15	≥ 9	See above	See above
Minimum No. semester hours core Quantitative Sciences	≥ 6	-	≥ 9	-	
Minimum No. semester hours core Social Sciences	-	-	≥ 9	-	
Minimum No. semester hours core Communications	-	-	≥ 12	-	
Minimum No. semester hours core Policy, Law, Admin.	-	-	≥ 6	-	
Additional education, workshops etc required	Yes	No	No	Yes	
Related professional work experience	≥ 5 Yrs	≥ 5 Yrs	≥ 5 Yrs	≥ 2 Yrs	
Total No. of Reference Letters	5	5	3	2	
No. of Personal Reference Letters	1	0	0	0	
No. of Professional Reference Letters	4	5	3	2	
Pass a written examination	No	Yes	No	No	
Pass a field examination	No	No	No	No	
Examination fee (Note: fees documented in Table 1 apply only to members; non-members pay higher fees)	N/A	\$125	N/A	N/A	
Certification fee	\$200	\$50	\$130	N/A	MAWS Active Membership annual fee is \$25 per year
Apprentice status required prior to Professional Cert. ⁵	No	No	No	N/A	
Duration of Certification before renewal	1 Yr	1 Yr	5 Yrs	N/A	
Certification renewal fees	\$35	\$50	-	N/A	
Continuing Education Units required for renewal	No	Yes	Yes	No	CEU's not required for year-to-year membership
Sign adherence to a written Code of Ethics	Yes	Yes	Yes	No	MAWS Code approved in 1992 (Appendix D)

³ For MAWS, the listed requirements are for Active Membership, not certification.

⁴ This can be waived if individual is certified as a wetland scientist or related field at the federal or state level.

⁵ Apprentice status is a requirement if an individual does not possess the minimum requirements for full certification as a Certified Wildlife Biologist, Certified Professional Soil Scientist, or, Professional Wetland Scientist.

Table 1 indicates that MAWS has most of the basic elements that the SWS, SSSA and TWS have adopted as criteria for in-house certification. However, MAWS membership requirements are intended to address a broader membership base and are therefore apt to be understandably less stringent than those for certification. To that end, under existing conditions MAWS does not have requirements for: (1) submittal of transcript(s); (2) submittal of a list of academic core requirements in specific course types; and (3) submittal of letters of reference. Only one Association (SSSA) requires an applicant to take a written examination prior to certification. None of the four organizations listed in Table 1 require a field examination. The SWS, SSSA, and the TWS place special emphasis on signing an oath to adhere to a Code of Ethics. MAWS has a Code of Ethics, but there is no requirement to signing an oath document. The TWS makes an effort to assess a candidate's "intent" as a means to identify legitimate candidates with a purposeful history to achieve a professional goal, as opposed to those candidates who may have accumulated minimally qualifying experience but only through means that appear to be secondary to that individual's primary career. In addition, the SWS, SSSA, and the TWS all require at least \$130 as an initial fee for certification, along with a relatively smaller fee for each certification renewal period.

Copies of the general SWS, SSSA and TWS criteria for certification are included in Appendix B.

If the MAWS membership elects to proceed with in-house certification, it should be a simple matter for MAWS to adopt any missing minimum requirements perceived as being critical for a certification program, and possibly creating a new position on the Executive Committee for the sole purpose of administering a certification program.

6.3 *Status Quo ("No Action")*

Just as the "No Build Alternative" must be considered by all parties during the wetland permitting process, the existing condition, or Status Quo - the option of "No Action" -

must be evaluated during an analysis of the need for credentialing wetland scientists in Maine. This option should not be construed as inaction. As demonstrated by its 16-year history (Section 2.1) of discussing, researching, surveying, debating and re-reviewing this topic, MAWS has by no means been passive regarding credentialing wetland scientists who practice in Maine.

Possible Needs for credentialing wetland scientists have been identified (Section 4.0) through the course of MAWS most recent review. Outcomes intended to be addressed by these identified Possible Needs include: 1) improved regulatory stability and efficiency, 2) increased public confidence, 3) providing quality control of services performed by wetland scientists and 4) protecting wetland resources along with their associated functions and values. Possible Benefits/Detriments to credentialing wetland scientists in Maine have also been identified in this review (Section 5.0).

In order to accept the No Action option, MAWS must evaluate and decide whether these outcomes can also be achieved within the framework of the Status Quo. In other words, by the presence of these Possible Needs are: “Things Going to Hell in a Hand Basket” and thereby require some form of corrective action to be achieved by credentialing; or might the case be: “If It Ain’t Broke Don’t Fix It” (with “tweaking”/routine maintenance is, of course, always necessary for any system).

Regulation of wetland resources in Maine (Section 5.1) is broad (Federal, State, Local) and has evolved from recognizing just “10-acre wetlands” to all wetlands and recently encompasses protecting vernal pools. Wetland Scientists and thereby MAWS certainly have a role in these regulatory processes as emphasized in Maine’s Natural Resources Protection Act (38 M.R.S.A §480-X7A3⁶), but in the end, while its open membership includes regulatory staff, MAWS is not a regulatory body with promulgated authority.

⁶ “Written certification by a knowledgeable professional experienced in wetland science that the project will not alter, or cause to be altered, a wetland described in subsection 4 or 5” - (from: Application process for Tier 2 review)

Public confidence, if only evidenced by political polls, is fleeting and cannot be static. Here too wetland scientists have a role in shaping public confidence throughout the breadth of wetland science. MAWS' role in this identified Possible Need is also evidenced within the Purpose Statement of the organization (Article II.2, 3). However, in the end MAWS' role is based on its appearances and presence before the public.

QA/QC, part of the foundation of any science, may be reinforced by the regulatory process but is fostered by adequate education, experience and an underlying commitment to ethics. Here too MAWS' role in this Possible Need is evidenced within the Association's Purpose Statement (Article II.1, 2, 3). This role is also emphasized within its *Ethics Statement* (Appendix D), and the *Resolution Regarding Minimum Qualifications for Practicing Wetland Delineators in Maine* (Appendix C). MAWS' commitment to this role is further demonstrated by regular workshops commonly hosted with MAPSS (Maine Association of Professional Soil Scientists) and is an element of basic "tweaking" and routine maintenance.

Protecting wetland resources along with their associated functions and values in the State of Maine – Can this come about by inaction? Of course not! The question to be resolved is whether credentialing wetland scientists, in the form of State of Maine license or in-house MAWS certification, or by working within the framework of the status quo, is the best means for MAWS to address these Possible Needs.

7.0 FINDINGS AND RECOMMENDATIONS

Based on a review of historic newsletters and other documents, it is evident wetland certification has been an on-going topic of discussion since the inception of MAWS in 1990. Most recently, results from a questionnaire developed by the MAWS Wetland Certification Subcommittee in 2005, and handed out to 2005 annual meeting attendees, indicate that most (67%) questionnaire respondents are in favor of certification or licensing.

Based on review of literature, discussions amongst certification subcommittee members, and other research on the issue of certification, the certification subcommittee offers the following findings and recommendations:

- Pursuing formal state certification/licensing for wetland scientists could be a time consuming and expensive (particularly if a professional lobbyist is hired) endeavor. It is possible that contracting with a professional lobbyist could cost tens of thousands of dollars. In addition, it is probable that state certification would result in increased MAWS membership fees, and a new certification application and renewal fees. This would be particularly true if licensing similar in scope to that currently held by State of Maine licensed geologists and soil scientists was implemented for wetland scientists. However, overall costs (for achieving certification and administering and maintaining it) and time commitments still need to be researched further;
- The entire MAWS membership needs to be queried if they would seek certification if such a program was available for wetland scientists. This likely would need to be broken down into several questions specific to different possible certification types including state mandatory, state voluntary, MAWS voluntary, etc. This information would be useful in calculating estimated costs for the different types of possible certification programs;

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- Establishing wetland certification (particularly at the state-level) could help underscore the legitimacy of the profession of wetland science;
 - The need for certification should be discussed further by the MAWS membership and needs to be more firmly established and, if possible, backed up with quantifiable evidence. Lack of such evidence may indicate that there is no current pressing need for certification. Conversely, such evidence would help legitimize the need for certification; particularly if or when the issue of certification is discussed with the legislature and others outside of MAWS. Comparable, quantitative evidence may be available from the State of New Hampshire and/or the Minnesota, and would be useful in determining if certification programs in those states have improved the quality of wetland delineations or other wetland-related work;
 - MAWS has most of the necessary requirements to establish a voluntary “in-house” certification program. In-house certification administered entirely by MAWS is apt to be less expensive, simpler and faster to implement (given a dedicated effort), but would require more voluntary input from many members. Also, it is not certain if type of certification would help reduce/solve any perceived problems associated with wetland-related work currently being conducted in Maine. In addition, the MDEP would not be empowered to legally require land developers to contract with certified MAWS wetland service providers to conduct wetlands fieldwork nor to prepare wetland-related permit applications;
 - It is the opinion of the certification subcommittee that, based on the contents of this paper and the inherent complexity associated with the issue of credentialing of wetland scientists, that the MAWS membership should conduct a formal vote to decide if the issue should be tabled (for the time being) or researched further. This paper could serve as a “base document” for further research on the issue should the membership vote to choose that particular approach;
 - Should the membership choose to continue researching the issue of credentialing wetland scientists, the effort should involve extensive outreach

and consultation with currently certified or licensed professionals including engineers, soil scientists, geologists, land surveyors, and septic system designers. This should be done to identify any concerns or perceived implications/negative effects to the above-referenced professions that could result from the implementation of a credentialing program for wetland scientists in Maine. Only through such a process could concerns be adequately addressed to benefit all of the above-referenced professions, particularly if a wetland scientist credentialing program is pursued in the future.

8.0 REFERENCES

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