

Certification

Macrolichens of the Pacific Northwest



Northwest Lichenologists Inc.

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What is the certification for?

Certification demonstrates competency in a particular group of species in a particular region. This includes field and laboratory identification and recognition of rare or listed species. The certification program is currently only for macrolichens from coastal Alaska to northern California, inland to the crest of the Cascade Range.

Why is there a certification program?

- to promote and encourage professional development, growth, and renewal
- to enhance the visibility of the profession
- to maintain and promote high standards of performance by all members of the profession
- to publicize and exemplify the Code of Ethics

Certified scientists are frequently called on to provide information on issues pertaining to issues of public concern. For example:

- consulting for industry and forestry
- advising government agencies
- giving expert witness testimony
- providing valid information to the media

Professional standards are needed for those whose activities affect the well-being of the general public. Professional standards have been recognized in such professions as medicine, law, engineering, and accounting. Problem solving in land-use, forest management, range management, environmental monitoring, and management of endangered species create a need for the services of professionals in lichenology. Such professionals must be able to show evidence of their qualifications. A certification program that identifies professionals for educational, scientific and service activities with public and private agencies is within the public interest.

NWL Certification

Certification is based on examination. Individuals certified by the NWL have passed the examination, and subscribe to the CODE of ETHICS.

Certification is for individuals only. The designation of “NWL Certified” may not be used in such a manner as to indicate that a business, firm, or agency is a certified entity. Further, the NWL certification may not be used in any way to connote NWL endorsement of a business, firm, agency, consulting service, product, or program.

Certification is for competency with a group of organisms in a particular region (in this initial case macrolichens in the Pacific Northwest). Applicants will demonstrate competency by a combination field and laboratory practical examination. Skills may be obtained through self study, or workshops. The certification program is financially supported solely by applicant fees. Oversight is provided by the Board of Directors of NWL.

The NWL certification program was derived from the following considerations:

- The sponsoring body should be the professional organization representing the person being certified. This avoids any potential conflict of interest.
- Credentials based on academic transcripts or other representations of experience on paper are a poor expression of field skills.
- Certification should be separated from training, since the amount of training and practice needed far exceeds what can be done in a course.
- Skills can be obtained without formal training in botany; similarly, formal training in botany does not necessarily result in the competency being certified.
- It is necessary to separate the evaluation of skills with crustose lichens and macrolichens, since competency is often gained in one but not the other.
- Short courses have limited potential for developing expertise. They can be a nice start, but whatever the subject of a short course, the students do not emerge as experts. Expertise comes with persistence and lots of work outside of classrooms.

The Certification Program

Geographic Scope

Certification will initially be for the west slope of the Pacific Northwest, from coastal Alaska to northern California, inland to the crest of the Cascade Range. Other regions can be added as interest arises.

Taxonomic Scope

The current certification program is for macrolichens (foliose and fruticose species). As interest arises other taxa may be added (crustose lichens; bryophytes). Other combinations of taxa and regions of western North American can also be added, for example biotic crusts in the intermountain steppe.

Financial Support

The certification program will be supported by applicant fees. This money is used to pay for the examiners time and expenses (test preparation, logistical and location planning, shipping collections, travel, and supplies) and facility rental. Any excess income generated from certification (income from applicant fees less expenses for examination) will be retained in the NWL accounts and held to defray future deficits in that certification program. The Board will examine an annual accounting so that the application fees can be adjusted up or down as needed.

Examiner

The examiner for a given taxonomic group and region should have an intimate working field knowledge of the species in that region and be widely accepted as a regional authority and maintain their own certification. The NWL will maintain a file of names and addresses of all certified people in the region and make the list available by request.

Recertification

Certification expires after 10 years, at which time recertification is required.

Eligibility

Any person is eligible to apply for certification. There is no formal educational requirement.

Fees

Applicant fees are collected at the time of online registration (<https://northwest-lichenologists.wildapricot.org/>). Information about the exam including fees and refunds with cancelation will be addressed at the NWL website.

Certification Procedures and Standards

The west-side macrolichens exam is scheduled every other year. The location rotates between Oregon and Washington. The examiner determines and organizes the exact location. Exams for other groups in other areas will be scheduled as needed. The date will be set by the examiner.

The goals of the exam are to evaluate (1) skills at finding and identifying species within the designated taxonomic group and (2) knowledge of taxonomic characters and habitats of species from the region that are listed as rare, threatened, or endangered.

The macrolichens exam consists of two parts, a field test and a written test.

The written test will consist of a one-hour indoor exam administered the morning of the first full day. Exam topics will include characters, geography, and habitats of listed species, ethics of collecting and vouchering, and comparisons of rare species and similar but more common species. A list of all such rare species in the region will be available from the examiner or posted on the NWL web site at least 3 months in advance of the exam. To pass the indoor exam requires a score of 80% or better. Results will be promptly reported to the oversight Board. Successful applicants will receive a certificate signed by the examiner on behalf of the NWL.

The field test will consist of surveying a 0.38 hectare plot (radius = 34.7 m) for as many epiphytic macrolichen species as possible, subject to a 2-hour time limitation. Samples will be collected of all species detected. Only enough material to ensure identification by both the examinee and examiner should be collected.

Twenty-four hours later, having worked independently, the applicants will submit their named and correctly spelled collections to the examiner. Applicants should bring their own equipment, microscope and books. Reagents should also be brought though the examiner may have a P reagent “station” set up for the group.

To pass the field test the applicant must find and name correctly at least 70% of the total number of species found by the examiner in the same plot in the same amount of time. Applicant scores will be calculated as $\text{score} = 100(R-W/2)/T$, where R is the number of species correctly identified, W is the number wrong, and T is the target value, based on 70% of the examiner's total for that plot. Points will be deducted for misspelling species names.

Example examination schedule:

10-11 AM Indoor exam

1-4 PM Field Plot

4 PM next day Turn in collection.

Notes on the field collection:

- Submit specimens in standard paper packets (scrap paper OK for these)
- Use good practices for handling chemicals. Do not hand in examiner collections with spot tests on them -- always remove and dispose of tested fragments. For more information, see McCune and Geiser 2009. *Macrolichens of the PNW* pages xxi-xxiii.
- Record all spot test results on the outside of the packet.
- Correctly spell genus and species on packet.
- Include your name and date on all packets.
- Organize your collections alphabetically and submit a list along with your collection.

Code of Ethics

(The following Code of Ethics was adapted from ARCPACS, a federation of certifying boards in agriculture, biology, earth and environmental Sciences. ARCPACS is a membership service of the American Society of Agronomy.)

Article I. Preamble

1. The privilege of professional practice imposes obligations of responsibility as well as professional knowledge. The Northwest Lichenologists (NWL) program certifies individuals who pass regional examinations in a particular group of species. Such certified individuals are registered with the NWL.

Article II. Relation of Professional to the Public

1. A Registrant shall avoid and discourage sensational, exaggerated, and/or unwarranted statements that might induce participation in unsound enterprises.
2. A Registrant shall not give professional opinion or make a recommendation without being as thoroughly informed as might reasonably be expected considering the purpose for which the opinion or recommendation is desired, and the degree of completeness of information upon which the opinion is based should be made clear.
3. A Registrant shall not issue a false statement or false information even though directed to do so by employer or client.

Article III. Relation of Professional to Employer and Client

1. A Registrant shall protect, to the fullest extent possible, their employer's or client's interest insofar as such interest is consistent with the law and professional obligations and ethics.
2. A Registrant who finds that obligations to their employer or client conflict with their professional obligation or ethics should work to have such objectionable conditions corrected.
3. A Registrant shall not use, directly or indirectly, an employer's or client's information in any way that would violate the confidence of the employer or client, insofar as such action or inaction is consistent with the law and professional obligations and ethics.
4. A Registrant retained by one client shall not accept, without the client's written consent, an engagement by another if the interests of the two are in any manner conflicting.
5. A Registrant who has made an investigation for any employer or client shall not seek to profit economically from the information gained, unless written permission to do so is granted or until it is clear that there can no longer be a conflict of interest with the original employer or client.
6. A Registrant shall engage, or advise employer or client to engage, and cooperate with other experts and specialists.

7. A Registrant protects the interests of a client by recommending only products and services that are in the best interest of the client and public.

8. A Registrant protects his/her credibility by disclosing to clients how he/she will be compensated for providing recommendations to the client.

Article IV. Relation of Professionals to Each Other

1. A Registrant shall not falsely or maliciously attempt to injure the reputation of another.

2. A Registrant shall freely give credit for work done by others, to whom the credit is due, and shall refrain from plagiarism of oral and written communications and shall not knowingly accept credit rightfully due another person.

3. A Registrant shall not use the advantage of public employment (i.e., university, government) to compete unfairly with other certified professions.

4. A Registrant shall endeavor to cooperate with others in the profession and encourage the ethical dissemination of technical knowledge.

Article V. Duty to the Profession

1. A Registrant shall aid in exclusion from certification those who have not followed this Code of Ethics.

2. A Registrant shall uphold this Code of Ethics by precept and example and encourage, by counsel and advice, other Registrants to do the same.

3. A Registrant having positive knowledge of deviation from this Code by another Registrant shall bring such deviation to the attention of the NWL Board.

Article VI. Collecting

1. Registrants shall refrain from significantly damaging populations of rare species by their collecting.

2. Registrants shall use discretion in collecting to minimize the visual impact to others.