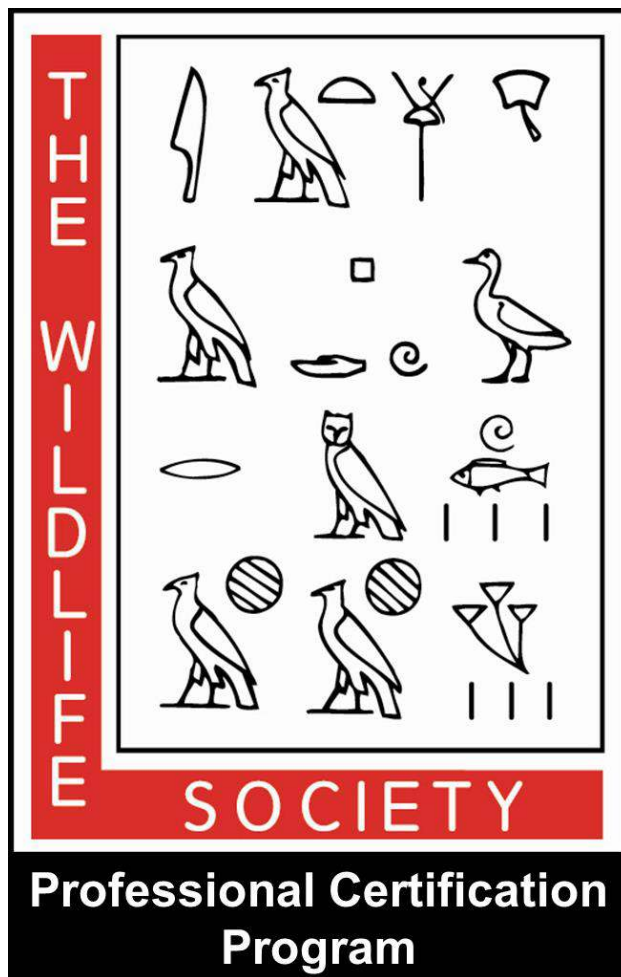


The Wildlife Society

Wildlife Biologist Certification Program *Policies & Procedures Manual*

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I. PURPOSE AND OVERVIEW

The Wildlife Society (TWS), a nonprofit professional society, is dedicated to excellence in wildlife stewardship through science and education and is committed to the premise that these objectives can be achieved best with the guidance of well-educated, experienced, and dedicated wildlife biologists. The Wildlife Society has sought to promote and strengthen professional standards in all activities devoted to wildlife resources. To this end, TWS has developed a professional certification program designed to evaluate the education and professional experience of wildlife biologists. The Wildlife Society's Certification Program is managed by [TWS Council](#) via TWS Staff and the [Certification Review Board](#) (CRB) with TWS Council providing oversight and approving aspects of the certification process.

A professional wildlife biologist is a person with demonstrated expertise in the art and science of applying the principles of ecology to the sound stewardship and management of the wildlife resource and its environment. The certification review process is used to designate an applicant as a Certified Wildlife Biologist® (CWB) or an Associate Wildlife Biologist® (AWB) based on each applicant's education and experience. Further, such designated wildlife biologists are expected to adhere to the [TWS Code of Ethics](#) and maintain current membership in TWS as an expression of their ongoing professional engagement and development.

Many professional disciplines contribute to the education and experience of today's wildlife biologist, and certification requirements strive to encompass the full breadth of the wildlife field. However, it is vital that those criteria distinguish a wildlife biologist from professionals in other fields, including other disciplines that have a vested interest in wildlife resources. Some natural resource professionals do not meet the criteria for certification as wildlife biologists, but this fact does not diminish their important contributions to wildlife conservation and management.

Strict application of rigidly defined criteria would be detrimental to recognizing the evolving nature of the wildlife biologist profession. The Wildlife Society's certification requirements are structured to demonstrate the special expertise required to work and serve as a wildlife professional. If an applicant does not meet the specified minimum educational requirements, the CRB, composed of highly qualified CWB® members, must determine whether the applicant's education, experience, and professional contributions satisfy the intent of the established minimum educational requirements.

The Wildlife Society supports developing and advancing wildlife professionals throughout their careers. The program for certification of wildlife biologists is a service provided by TWS for its members to help meet this goal. Certification constitutes recognition by TWS that, to its best knowledge, an applicant meets the minimum educational, experience, and ethical standards adopted by TWS for professional wildlife biologists. Certification does not constitute a guarantee that the applicant meets a certain standard of competence or possesses certain knowledge.

A. Objectives

The primary objective of TWS' Certification Program is to provide public and private clients and employers an indication of the quality of professional advice in matters concerning wildlife resources. Specific goals include:

- To guide wildlife biologists, governmental agencies, courts, and the public in defining minimum standards of education and experience for professional wildlife biologists, and to encourage all practicing wildlife biologists to meet such standards.
- To create and maintain public confidence in the advice and opinions of CWBs® as well-educated and experienced professionals who have pledged to uphold TWS' [Code of Ethics](#), through TWS membership, and the Standards for Professional Conduct of TWS, and to act in the best interest of wildlife resources and the public.
- To assist the public in evaluating qualifications of wildlife biologists by establishing a procedure for critical peer evaluation based upon defined minimum educational, experience, and ethical requirements.

B. History

Serious thoughts on individual wildlife biologist certification were offered as early as December 1964 by then Director of the Bureau of Sport Fisheries and Wildlife, John S. Gottschalk. In 1965, TWS adopted curriculum criteria for a Bachelor's degree in wildlife. The Wildlife Society's 1968-69 Professionalism Committee considered, but took no action, on certification. Attempts in the early 1970s to explore accreditation of wildlife schools failed to find consensus among TWS members, educators, and employers. Therefore, TWS Council put accreditation on the shelf in 1972.

A number of efforts in the early 1970s in different regions of the country suggested the need for better definition of standards for wildlife professionals. In June 1972, the Sacramento California Chapter of TWS, and later the Western Section of TWS, urged TWS Council to undertake certification responsibilities. The New York Chapter of TWS proposed details for a certification program to TWS Council. The Southeastern Section of TWS offered to serve as a test case for a regional experiment with certification. Moves toward state government licensing of forest, range, and wildlife specialists also developed in New York, California, and Maryland early in the 1970s.

In December 1972, TWS Council agreed to charge a committee to develop the certification concept. President Tony J. Peterle appointed the first Certification Committee in early 1973. The Committee continued working through March 1976. The Wildlife Society Council endorsed the concept of certification in March 1975 and a preliminary draft of the program went to the membership in the summer 1975 issue of the *Wildlife Society Bulletin* [3 (2):84-91].

Following circulation of the proposed program, many members provided constructive criticism and comment. More than 50% of the respondents endorsed the proposal. An additional 30% approved of the concept, but suggested specific revisions. Twenty-eight TWS sections and chapters endorsed at least the concept of certification. Following this significant input, plus

additional comments received at section, chapter, and TWS business meetings, the Certification Committee met for 2 days in May 1976 to finalize the certification program materials. Their final draft was submitted to TWS Council with recommendations to clarify procedural desires expressed by the membership. In late July 1976, TWS Council unanimously approved the draft. In December 1976, the certification program was submitted to the membership for vote; and in early 1977, the membership approved the program by a 3 to 1 margin.

In March 1977, James D. Yoakum was appointed Acting Chair of the CRB; and in May 1977, he and Executive Director Fred Evenden presented a program implementation schedule to TWS Council that was accepted. In July 1977, all members of the CRB were appointed; and in September 1977, the CRB held its first meeting to review application procedures and initiate the program. Appendix I details the changes to certification requirements since that time.

C. Trademark

On 13 March 2008, the Trademark Office's Principal Register officially approved TWS' Associate Wildlife Biologist® and Certified Wildlife Biologist® for trademark registration.

This entitles all current AWB® and CWB® members to place the trademark symbol ® after their certification title along with the certification logo. Example: Jane Smith, PhD, CWB®

The Wildlife Society is the only organization to provide the peer-reviewed wildlife biologist certification process that bestows the title of Associate Wildlife Biologist® and Certified Wildlife Biologist®.

II. PROGRAM DESIGNATIONS

Certification is a members-only program that highlights the achievement and application of rigorous educational, professional, and ethical standards as a wildlife practitioner. Individuals must maintain membership in TWS for their certification to remain valid.

Associate Wildlife Biologist®

An individual who has completed rigorous academic standards and is deemed by the CRB as able to represent the profession as an ethical practitioner will be designated as an Associate Wildlife Biologist® (AWB®).

AWB® certification is granted for 10 years and cannot be renewed, but may be extended for up to 3 additional years. The AWB® can apply to upgrade to CWB® when 5 years of professional-level experience has been obtained.

Certified Wildlife Biologist®

An individual with the educational background and demonstrated expertise in the art and science of applying the principles of ecology to the conservation and management of wildlife and wildlife habitat, and is deemed by the CRB as able to represent the profession as an ethical practitioner, will be designated as a CWB®.

The certification is valid for 5 years and may be renewed upon demonstration of adequate continual learning and professional development.

Professional Development Certificate

A Professional Development Certificate is issued to an individual that has fulfilled at least 150 hours of continuing education. This certificate is valid for 5 years and may be renewed upon demonstration engagement in a variety of professional development activities.

III. CODE OF ETHICS

Associate and CWB® shall conduct their activities in accordance with TWS' Code of Ethics and the Standards for Professional Conduct expected of members and prescribed by TWS. The code and standards are available at www.wildlife.org.

IV. OPERATION OF THE CERTIFICATION PROGRAM

The Wildlife Society Council oversees administration of the Certification Program through the CRB. A TWS Staff member is designated to provide support to the CRB. The Director of Wildlife Policy & Programs maintains oversight of the program, coordinates appeals, and obtains liability insurance coverage to protect CRB members while conducting duties associated with the program.

A. Certification Review Board

1. Composition

A Certification Review Board (CRB) shall be comprised of at least five members (operating quorum), and a maximum of eight members, each appointed by a majority vote of Council, chosen to provide equitable representation of TWS Sections and professional disciplines. Nominees for CRB appointment are provided to Council by TWS Sections, as requested. Each member of the CRB must be a CWB®.

2. Terms

Certification Review Board members are appointed for a 3-year term. The term officially begins 1 November. Incoming CRB members are expected to attend the annual CRB meeting held during TWS' Annual Conference preceding their official term, as observers.

An individual may be appointed for one 3-year term and reappointed for a second 3-year term by TWS Council, if nominated by a TWS Section. Certification Review Board members normally shall be ineligible for reappointment after two (2) consecutive full terms, except under unusual circumstances when a third consecutive term is needed to maintain CRB continuity.

Unexpected vacancies on the CRB should be filled as quickly as possible by TWS Council; the CRB will continue to function with the vacant position. The vacant position should be filled by a nominee from the same TWS Section as the departing member; the nominee will complete the vacant term upon approval by TWS Council. If the individual is available for appointment to a second 3-year term, the individual filling the vacancy can pursue that appointment at the appropriate time.

3. Appointment Process & Schedule

Individuals are nominated by TWS Sections according to the schedule below; TWS Sections define and facilitate their own nomination process. Nominations are reviewed by TWS Council at each spring meeting. Nominees are appointed to the CRB by a majority vote of TWS Council. If a TWS Section determines they do not have a qualified and willing nominee, that TWS Section's seat on the CRB will remain vacant until a nominee can be identified by that TWS Section and appointed to fill the remainder of the term.

Individuals appointed to the CRB must exemplify high standards of professional judgment, competence, and integrity, and shall be a CWB®. The Wildlife Society Council shall strive to achieve a balance in the CRB membership that equitably represents private and public

employment, educational, management, research, gender, and international components of TWS' membership.

All TWS Sections are allowed to maintain representation on the CRB given they are able to provide a qualified and willing nominee for a 3-year term according to the schedule below. To ensure continuity and a minimum of five CRB members, no more than three TWS Section representatives will end their term on the CRB in a given year.

Appointment Schedule to build up from a current 5-member CRB to an 8-member CRB by 2020:

To provide a nominee every three years starting in 2018:

Northwest

Canadian

To provide a nominee every three years starting in 2019:

North Central

Western

Southeast

To provide a nominee every three years starting in 2020:

Central Mountains and Plains

Northeast

Southwest

The Wildlife Society Staff will notify current CRB members of the newly appointed member shortly after the appointment is made. Appointments will be staggered to ensure continuity of standards.

The outgoing CRB member is to transfer all necessary CRB files, materials, and information to the incoming member before the start of the new member's term. Further, the outgoing member and the current CRB Chair are to contact the incoming member in advance of the annual meeting and provide orientation on the role of the CRB and application review process and to ensure the incoming member has received a copy of the Policies and Procedures Manual (this document).

4. Chair Appointment

The CRB Chair is selected by the members of the CRB with consultation of TWS Staff as needed. Selection of the Chair occurs at the conclusion of the annual CRB meeting at TWS' annual conference. The CRB Chair serves a 1-year term and, if deemed willing and able, can be reappointed by a majority vote of the CRB members.

The outgoing CRB Chair is responsible for the transfer of all necessary records, unfinished applications, and other CRB work to be completed and any necessary orientation for the new CRB Chair. To help maintain institutional memory and ensure a smooth transition between incoming and outgoing CRB Chairs, the CRB should avoid having individuals serve as Chair during their final year on the CRB. The appointed TWS Staff will be available to help with this transition.

5. Responsibilities & Authorities

The CRB shall determine eligibility of certification applicants by majority vote and shall have the authority to confer certification as an AWB® or CWB®. The CRB Chair has the authority to make the final decision on any tied votes. Certification Review Board members shall correspond as necessary to ensure equitable and timely evaluation of each applicant. No member of the CRB shall discuss at any time a particular application with any person other than a member of the CRB or TWS Staff, except to clarify or verify contents of an application.

The CRB shall meet in-person at least once annually at TWS' Annual Conference. Conference calls shall be held monthly, and as needed, to discuss pending applications. The need for additional calls will be determined by the CRB Chair, following conferral with TWS Staff.

The CRB Chair, in coordination with TWS Staff, is responsible for notifying incoming and current CRB members of the dates and location of upcoming meetings. The CRB Chair shall facilitate meetings and coordinate the application voting and approval process.

The CRB shall report on progress and identified challenges annually to TWS Council via TWS Staff and/or TWS Council subcommittees.

6. Reimbursement of Expenses

The Wildlife Society will reimburse all reasonable expenses of CRB members attending the annual conference and CRB meeting if not reimbursed by the employer of a CRB member. The Wildlife Society will reimburse travel, room, and board expenses associated with the conference; conference registration will also be provided. This will include reimbursement for both incoming and outgoing CRB members.

7. TWS Staff Engagement

TWS Staff are responsible for monitoring certification@wildlife.org. The Wildlife Society Staff review all applications for completeness, process the applications in appropriate databases and files, facilitate application of appropriate fees, and ensure all applications are transmitted to the CRB.

The Wildlife Society Staff will work with the CRB Chair to facilitate conference calls and review of applications. The Wildlife Society Staff will also communicate with prospective applicants, and send letters and certificates to applicants.

Appointed TWS Staff are also conferred the authority to review and approve/deny CWB® Renewal, AWB® Extension, and Professional Development Certificate applications.

B. Fee Structure

Applicants must be members of TWS before an application will be reviewed and processed.

The fee structure for applying:

- Certified Wildlife Biologist® application: \$155
- Associate Wildlife Biologist® application: \$115/\$95*
- Upgrade AWB® to CWB® application: \$75
- Certified Wildlife Biologist® Renewal application: \$25
- AWB® Extension application: \$25
- Professional Development Certificate application: \$25

*The reduced \$95 AWB® fee is for individuals who meet at least one of the following incentive requirements:

1. application within six (6) months after graduation with (conferral of) a Bachelor's degree that fulfills the certification education requirements;
2. application within six (6) months after the time the degree and certification education requirements have been completed, although the degree has not been conferred (a confirming letter is required from an appropriate academic official);
3. application after the Bachelor's degree has been awarded but within six (6) months after specific course work requirements for certification have been completed;
4. application during a period of continuous student status in pursuit of an advanced degree beyond a baccalaureate that fulfills the certification educational requirements, and/or;
5. application within six (6) months after graduation with the graduate degree or completion of the graduate degree program, although the degree has not been conferred (a confirming letter is required from an appropriate academic official).

Fees shall be reviewed periodically and set by TWS Council at levels sufficient to sustain the program.

Refunds will not be given to applicants denied certification or a Professional Development Certificate.

C. Application Procedure & General Requirements

Application forms are available at www.wildlife.org and may be submitted at any time. Forms shall be completed and submitted electronically to certification@wildlife.org.

Upon receipt of a complete application and verification by TWS Staff that the applicant is an eligible TWS member, the applicant will be emailed an online payment form. The application will be processed once payment is received.

Should applicants encounter any questions, they are encouraged to contact TWS Staff at certification@wildlife.org.

1. General Requirements

i. CWB® and AWB®

Applicants shall list all academic courses in the proper category where the contents fulfill the educational requirements for certification. In addition, applicants should provide

catalog or own-word course description, directly below the course, wherever specified and as needed to demonstrate content relevant to the requirement category. When experience is used, applicants should describe specifically their duties and responsibilities as a professional wildlife biologist and not simply provide a general job description. Failure to provide complete documentation of education and experience may result in significant time delays in processing the application and may limit an applicant's rights of appeal if denied certification.

ii. CWB® Renewal

Applicants shall log contact hours toward CWB® Renewal to demonstrate continuing education and professional development activities. The Renewal program operates under an honor-based system, but applicants may choose to provide documentation of their experience.

iii. AWB® Extension

Applicants shall list and fully describe experience as a professional wildlife biologist. Applicants should provide an explanation as to their intended steps to fulfill all requirements necessary to submit the AWB®-CWB® Upgrade application within the next 3 years.

iv. Professional Development Certificate

Applicants shall log contact hours toward the Professional Development Certificate to demonstrate continuing education and professional development activities. The Professional Development program operates under an honor-based system, but applicants may choose to provide documentation of their experience.

The Wildlife Society reserves the right to make changes in the certification program at any time.

Substitutions of Experience and Professional Development for Course Requirements: The CRB is frequently asked to substitute experience or other professional development for course credits, especially in Botany; Communications; and Policy, Administration and Law categories. In many cases, candidates would be best served by preparing a written explanation of why they feel that their formal and continuing education course work and work experience, taken as a whole, qualify them to be certified as a wildlife biologist. A substitution may be granted provided the applicant has at least one college or university course in that educational category.

Transcripts: Scans of original or electronic certified academic transcripts are required. Evidence of conferral of degree(s) should be either the graduation date(s) imprinted on the transcript(s), a copy of the diploma, or, when necessary, an official letter from the academic institution confirming completion of degree requirements.

Degree: Applicants must have, at minimum, completed a course of study in a college or university leading to a Bachelor of Science, Bachelor of Arts, or equivalent. At least one degree (Bachelor's degree and/or advanced degree) must have been completed in a wildlife-related field.

2. Updating and Review of Application Forms

Application forms are maintained by TWS Staff and the specific format may be periodically updated, based on recommendations from TWS Council, the CRB, applicants, or TWS members. When the format and style of forms are updated, TWS Staff may designate a specific deadline at which point the previous version of an application will no longer be accepted.

The Wildlife Society Council may periodically review and update requirements for certification. The Wildlife Society Staff shall facilitate such program changes in the application and issue new applications via www.wildlife.org.

D. Application Processing & Review

1. Timeline

Certification normally will be confirmed or denied within four (4) months from the date a complete application and payment is received unless the CRB advises the applicant that additional time is needed for review.

Certified Wildlife Biologist® Renewal and Professional Development Certificates will be approved or denied within 1 month from the date payment is received.

2. Review and Voting

Complete CWB®, AWB®, AWB®-CWB® Upgrade applications, and ballot forms are emailed by TWS Staff to each CRB member for review. Certified Wildlife Biologist® Renewal, AWB® Extension, and Professional Development Certificate applications are retained and reviewed by TWS Staff.

Each CRB member independently conducts an initial review of each application and sends their votes and comments to the CRB Chair and TWS Staff. Each CRB member is responsible for ensuring that electronically transmitted ballots and/or comments and any “discussion” points are transmitted and stored in a confidential manner. All reviews are kept strictly confidential. The CRB Chair will determine when votes are due for each batch of applications.

The CRB Chair will determine a system to assign CRB members responsibility to contact applicant references prior to monthly calls or meetings.

The CRB Chair will determine when a final vote is due on an application, and will conduct a conference call to discuss applications. The fate of an application is determined by a majority vote of the CRB.

- If the CRB members indicate unanimous approval of an application, and no individual on the CRB indicates a desire to discuss an applicant, then the applicant is approved.

- If any CRB member votes no on an application, or states that they would like to discuss the application further, then the CRB can discuss the application at the discretion of the CRB Chair. The discussion should be facilitated by the CRB Chair. Certification Review Board members can change their votes on an applicant at any time during the discussion.
 - If during the discussion the CRB determines that more information is needed from an applicant to make an informed decision on certification approval or denial, the CRB can decide to contact the applicant via TWS Staff to clarify the nature of the applicant's education or experience. The CRB can also decide to contact the applicant's references if any aspect of the application is under question.
 - If a majority of the CRB votes no on an application, a discussion is facilitated by the CRB Chair to determine the specific reasons for the denial. The CRB then provides guidance to be included in a letter to the applicant to enable them to submit another application in the future addressing the CRB's concerns.

If an applicant for CWB® does not yet have the required 5 years of professional experience, the CRB Chair can grant credit for experience acquired since the date the application was received. The CRB Chair also has the discretion, if approved by the CRB, to "hold" the application for up to 1 year. If the applicant continues to work in a credited position and will have acquired the needed experience within this time period, the CRB Chair can approve the application when the required experience has been obtained. If this option is extended to the applicant, the applicant shall be required to notify the CRB Chair via TWS Staff when the necessary time has been reached.

If an applicant applies for CWB® certification and has all of the requisite coursework, but is denied as a result of inadequate professional experience, the CRB can choose to approve the applicant for AWB® certification. If approved for AWB® status, and accepted by the applicant, the applicant will be issued an AWB® certificate and a letter stating the reason(s) for CWB® denial; no refunds will be granted.

3. Process for Approved Applications

An applicant approved for certification is mailed with 1) an approval letter sent under signature of the CRB Chair, and 2) a TWS-branded certificate indicating the level of certification granted. No academic, honorary, other titles or nickname will be included with the applicant's name on the certificate.

The Wildlife Society Staff will facilitate mailing of the letter and certificate. The Wildlife Society Staff will also update the records in the membership database and certification database to indicate that certification was approved and the date certification materials were mailed.

The date of approval is logged as the first day of the month in which the application was approved.

4. Process for Denied Applications

An applicant denied certification is mailed a letter sent under signature of the CRB Chair. The denial letter shall state the specific reasons for denial and the steps the applicant needs to take to meet certification standards. The applicant will also be notified of their right to appeal the decision (see below).

Unsuccessful applicants may reapply six (6) months after the filing of their previous application; standard application fees will apply to the reapplication.

The Wildlife Society Staff will facilitate drafting and mailing of the letter. The Wildlife Society Staff will also update the records in the membership database and certification database to indicate that certification was denied and the date a letter was mailed.

E. Appeals

An appeals process is available to any applicant who feels a denial by the CRB was discriminatory or arbitrary and capricious; an applicant is notified of their right to appeal in the letter of denial sent by the CRB Chair. An applicant's right to appeal expires 1 year from the date of denial.

Appeals should be addressed to TWS Board of Inquiry (BOI), submitted to certification@wildlife.org, and document all allegations of "discrimination or arbitrary and capricious action" by the CRB.

Only information on education and experience previously submitted to the CRB will be subject to review, and new or additional documentation may invalidate an appeal. Applicants are generally prohibited from using education or experience gained after the filing of their initial application to meet deficiencies identified by the CRB; explanations of or elaborations on material contained in the original application are acceptable.

A copy of the appeal document, the denial letter from the CRB, and the applicant's original application are sent to the CRB and the BOI, which is the TWS Council Executive Committee or their designee. The BOI and the CRB independently review the appeal before discussing the matter.

The CRB will review the entire appeals packet and advise the BOI how they would have voted if they had access to the appeal information when originally reviewing the application. The BOI is to determine if the CRB's original decision was appropriate.

If the BOI and the CRB independently come to the same resolution, the BOI may then issue a final decision to the applicant. If the BOI and CRB remain in disagreement after discussing the application, the BOI presents the information to TWS Council, including the CRB's and BOI's recommendations, and TWS Council makes the final determination.

The Director of Wildlife Policy & Programs coordinates all appeals. The Director acknowledges each appeal, outlines the appeal process, and establishes an approximate date for a decision,

usually the next scheduled TWS Council meeting. The Director facilitates final notification from the TWS President on the results of the appeal to the applicant.

F. Renewals & Lapses in Certification

Anyone who submitted an AWB® or CWB® application by 31 December 1999 (postmarked by that date and subsequently approved) is not required (but are encouraged) to renew their certification on a voluntary basis [Council 7 September 1999]. Anyone who submitted an AWB® application by 31 December 1999 (postmarked by that date and subsequently approved) had 10 years to upgrade to CWB® status and are not required (but encouraged) to renew their certification on a voluntary basis. Anyone who submitted an AWB® or CWB® application after 31 December 1999 is required to complete the CWB® Renewal requirements every 5 years to maintain their certification.

As long as membership remains in good standing with TWS, members shall maintain certification status through the specified expiration date unless they are found to be in violation of the Code of Ethics (see above). Should membership with TWS lapse, individuals need only to renew their membership to maintain continuity of certification status.

Applications for AWB®-CWB® Upgrade must be submitted within five years of AWB® expiration. If certification lapses for more than five years, applicants shall submit a full CWB® application.

CWB® Renewal and AWB® Extension applications will be accepted if prior certification has lapsed, as long as membership is in good standing and the listed experience occurred within the appropriate timeframe.

G. Curriculum Reviews

Colleges/universities may submit current or proposed curriculum to TWS Staff to be reviewed by the CRB, to determine if available curricula meet the minimum education requirements for certification. Submissions should include full descriptions of curriculum and a completed AWB® application. The CRB will offer feedback and guidance, but this process does not constitute an official accreditation or guarantee of AWB® certification of the institution's graduates.

H. Continuing Education Units

The Wildlife Society offers pre-approval of contact hours, or Continuing Education Units (CEUs), for attendance at a variety of conferences, workshops, meetings, and trainings through TWS Sections, Chapters, Working Groups, and conservation partners. Continuing Education Units may be applied toward Category I of the CWB® Renewal application and/or the Professional Development Certificate application. Host organizations are not required to submit member attendance. Applicants will occasionally provide certificates of completion or other confirming documents alongside their applications, but it is not necessary for consideration.

Continuing Education Units do not need to be pre-approved to be logged on CWB® Renewal and Professional Development Certificate applications.

I. Administration, Record Keeping, & Database

The CRB reports to TWS Council biannually on progress, problems encountered, trends that seem to be emerging in applications being submitted, etc. As needed or requested, the CRB may report to TWS Council at other times.

Once an applicant has been approved or denied, the original application, final vote, and any correspondence are stored by TWS; applications are kept for at least 15 years.

Applications that have been approved by the CRB will be destroyed (shredded, deleted) by each CRB member. Applications that have been denied by the CRB will be retained by TWS Staff and potentially each CRB member for 15 months as applicants may appeal within 1 year after being denied; retaining these applications will assist CRB members in reviewing or reconsidering their decisions. Certification Review Board members need to keep denied applications confidential. Should a CRB member wish to see a previously denied application or reasons for denial, they must contact TWS Staff for a copy.

V. GUIDANCE ON APPLICATION REVIEW

A. CWB®/AWB® Education

When reviewing applications, the CRB should consider whether the educational courses listed by the applicant are in accordance with the intent of the program and a wildlife-related degree was bestowed. The total package of the applicant must be considered.

No applicant should be denied for lack of a single course, with the exception of meeting a specific category requirement as stated in the application. However, CRBs have struggled with the philosophical idea that a shortfall of one course should not cause denial with the reality that a shortfall in some areas is more important than in other areas. Most CRBs have tended to look more critically at the Biological Sciences, Wildlife Management and Wildlife Biology, and tended to be more accepting of a single deficiency or substitutions of experience and continuing education in the other (non-wildlife biology and management) categories. The CRB accepts high school AP courses provided the applicant can verify passing the AP course through a college transcript or a score of 4 or better. With changes in university systems, the CRB now accepts a course that combines mammalogy, ornithology, and/or herpetology. The CRB has the discretion to move courses around and subdivide course credits among categories if they feel it strengthens the application and fills any gaps.

Associate Wildlife Biologists®-CWB® upgrade applications usually don't contain the coursework section or transcripts because that information was submitted with the original AWB® application and is on file with TWS. If an applicant wishes to use advanced degrees toward their experience, they will include proof of conferral and/or transcripts and an abstract or brief research summary detailing the focus of their degree.

Applicants from outside the United States often have different educational approaches for degree requirements that likely will not conform to the educational requirements of the program. These cases likely will require greater time and effort to evaluate education (and possibly experience). The CRB Chair likely will need to contact the applicant via TWS Staff to both clarify issues raised by CRB members and to notify the applicant of additional time needed to complete the review.

B. CWB®/AWB® Experience

Experience always has been the most difficult aspect of the certification program review process. Some CRBs have been more conservative, believing that the appeal avenue was available for applicants who may not have been correctly evaluated. Other CRBs have been more liberal in their approach and attempted to find creditable experience in every position included in an application. However, most CRBs have recognized that the definition of a wildlife biologist is not all inclusive and have struggled with related professional experiences (especially in the private sector) and identifying technician-level experience. Attempts have been made to define or quantify these types of experience, but definitions or guidelines have been difficult. Criteria were developed in 1987 for crediting Wildlife Law Enforcement experience; and from 1988 to 1990, the CRB labored to develop evaluation guidelines for both education and experience (Appendix D).

Only professional wildlife experience gained after completion of the first wildlife-related degree may be used to meet the experience requirement. While this degree is usually a B.S. degree, care must be taken as sometimes the first wildlife-related degree is an M.S. or even a Ph.D.

Time spent obtaining advanced degrees may be credited for experience, subject to several provisions.

1. The degree must be "relevant to the wildlife profession" as judged by the CRB. Experience credit normally is not given until the degree is completed.
2. If a degree is not completed, some CRBs have granted credit for R.A. or T.A. experience at a 50 percent time equivalent rate - up to 9 months total. At present, the CRB will consider such substitutions of education-related experience based on the merits of the overall application and on a case-by-case basis.
3. A Master's degree can be credited for up to 12 months:
 - 3 months for a relevant M.S. degree that required neither research nor a thesis;
 - 6 months when the degree required papers but no research-type thesis;
 - 12 months for research and a thesis.
4. A Ph.D. degree can be credited up to 24 months.
5. A maximum of up to 36 months can be credited for both an M.S. and Ph.D. degree.
6. An applicant may attain credit for simultaneously obtaining work experience and a graduate degree (if independent of the job).

C. Professional Development Certificate

The Wildlife Society Staff will review applications for completion of a minimum of 150 contact hours. Applicants may use hours for professional activities in which they act in the role of leader/organizer or participant. Activities should fall outside of typical duties associated with the applicant's occupation. Applicants will only receive credit for contact hours that fall within the five years prior to the date of submission, regardless of when/if a previous certificate was issued.

Applicants should expect notification of a decision within 4 weeks.

D. CWB® Renewals

The Wildlife Society Staff will review applications for completion of a minimum of 80 contact hours. Applicants may use hours for professional activities in which they act in the role of participant. Activities should fall outside of typical duties associated with the applicant's occupation. Applicants will only receive credit for contact hours that fall within the five years prior to the date of submission, regardless of when previous certification approval was issued.

Applicants should expect notification of a decision within 4 weeks.

E. AWB® Extension

The Wildlife Society Staff will review applications for completion of a minimum of 24 months of professional experience. Applicants should document that consideration has been given as how to best use the three-year extension to meet the requirements for the AWB®-CWB® Upgrade application. While AWB® Extension approval does not guarantee AWB®-CWB® Upgrade approval, TWS Staff may ask for clarification to ensure applicants will be prepared to meet CWB® requirements.

Applicants should expect notification of a decision within 4 weeks.

F. Special considerations (disability, online education, etc.)

The Wildlife Society will extend all reasonable considerations for certification applicants with disabilities as long as a request does not involve disregarding education, experience, or other characteristics that are fundamental to function as a wildlife biologist. Applicants are encouraged to use advance contact with TWS staff that oversee certification process to explore anticipated requests for disability-based deviation(s) from requirements.

Online education and degrees can be used to meet the basic degree and coursework requirements for certification.

VI. APPENDICES

A. Detailed Description of Certification Requirements

1. Education – AWB® and CWB®

The educational requirements were approved initially by TWS membership. Subsequent educational requirements were approved by TWS Council.

The Wildlife Society Council shall review the educational requirements at least once every five (5) years and may revise the requirements as necessary. Once certified, wildlife biologists are not required to conform to changes in educational requirements resulting from future revisions.

It is the applicant's responsibility to provide full documentation of education. Each applicant must submit original or certified transcripts documenting completion of the educational requirements.

All courses must be taken for credit and passed (i.e., D or better or a "Pass" in the case of pass-fail). When course titles do not describe content, a written description or course syllabus must be provided. In addition, applicants must provide catalog or own-word course description wherever specified and as needed to demonstrate content relevant to the requirement category.

Applicants who do not clearly meet the stated minimum educational requirements, but believe they satisfy their intent, must submit detailed documentation of comparable qualifications. For continuing education or professional experience to substitute for educational requirements, the applicant must have at least one college or university course (at least 3 semester hours documented on a college transcript) in that educational category. This experience must be detailed in the application in the same fields as a college course. To meet requirements, applicants may split and distribute credits in a course with broad coverage to two (2) categories where course content is appropriate; for example, 4 credit hours in general biology may be used to satisfy up to 2 credit hours in zoological courses and up to 2 credit hours in botany. Similarly, 4 credit hours in general genetics may be used to satisfy up to 2 credit hours in zoological courses and up to 2 credit hours in botany.

The smallest unit of credit that may be distributed is one semester hour and applicants must provide documentation supporting the credit distribution for each course that is split. Full course credits cannot be listed or counted in more than one category.

College credits taken outside the United States often vary from the American system. Canadian and other non-U.S. applicants must organize and present course titles, credits, and contents in the format listed to facilitate evaluation. When the educational program differs considerably from the American system, applicants must present a detailed description of courses taken and the credits obtained. Wildlife graduates and scientists from all countries are invited to apply for certification. High School A.P. classes will be accepted provided the applicant validates the course either through college transcripts or A.P. test score of 4 or better.

Applicants must have completed a course of study in a college or university leading to a Bachelor of Science, or Bachelor of Arts, or equivalent, or higher degree, and should have the following, or equivalent, course work listed below:

- i. **Wildlife Management (6 hours):** Courses emphasizing the principles and practices of wildlife management. Course descriptions, immediately following course listing, are required and should demonstrate training in understanding and manipulating habitat relationships and population dynamics in the context of objectives and influences established by human concerns and activities. Conservation biology courses count if they contain a specific focus on management and decision making.
- ii. **Wildlife Biology (6 hours):** Courses in the biology and behavior of birds, mammals, reptiles, or amphibians. Course descriptions, immediately following course listing, are required. Courses should demonstrate training in understanding the biology of vertebrate wildlife species and their habitat relationships as the basis for management and must include at least one course dealing solely with the science of mammalogy, ornithology, and/or herpetology (this course must be taken at a college/university and cannot be substituted by another course or experience). A course that combines mammalogy, ornithology, or herpetology will meet the “ology” requirement in this category. Ichthyology, marine biology (except courses focusing on marine mammals or reptiles), microbiology, entomology, or related courses will not count in this category, but will qualify in the Zoology category.
- iii. **Ecology (3 hours):** Courses in general plant or animal ecology (excludes human ecology). Course descriptions, immediately following course listing, are required.
- iv. **Zoology (9 hours):** Courses in the taxonomy, biology, behavior, physiology, anatomy, and natural history of vertebrates and invertebrates. Course descriptions, immediately following course listing, are required. Courses in genetics, nutrition, physiology, disease, and other biology or general zoology courses are accepted. Ichthyology or fisheries biology courses are accepted (9 hours).
- v. **Botany (9 hours):** Courses in general botany, plant genetics, plant morphology, plant physiology, or plant taxonomy. Course descriptions, immediately following course listing, are required. One of the following courses – dendrology, silvics, or silviculture are accepted. At least one course must be primarily concerned with plant taxonomy or identification (this course must be taken at a college/university and cannot be substituted by another course or experience).
- vi. **Physical Sciences (9 hours):** Physical sciences such as chemistry, physics, geology, or soils, with at least two disciplines represented. Course descriptions are not required.
- vii. **Basic Statistics (3 hours):** A course in basic statistics. Course description, immediately following course listing, is required.

- viii. **Quantitative Sciences (6 hours):** Courses in calculus, biometry, college algebra, advanced algebra, trigonometry, systems analysis, mathematical modeling, sampling, computer science, or other quantitative science. Course descriptions, immediately following course listing, are required. Elementary algebra, remedial algebra, introductory GIS, and introductory personal computing courses do not count in this category.
- ix. **Humanities and Social Sciences (9 hours):** Humanities and social sciences, such as economics, sociology, psychology, political science, government, history, literature, or foreign language. Course descriptions are not required.
- x. **Communications (12 hours):** Courses designed to improve communication skills such as English composition, technical writing, journalism, public speaking, or use of mass media. Course descriptions, immediately following course listing, are required. A maximum of three (3) semester hours each will be allowed for a completed Master's thesis and Ph.D. dissertation. Courses in literature interpretation, foreign languages, classes requiring a term paper, class projects, and seminars in non-communication courses will not count toward this category.
- xi. **Policy, Administration, and Law (6 hours):** Courses that demonstrate significant content or focus on natural resource policy and/or administration, wildlife or environmental law, or natural resource/land use planning will apply; as will courses that document contributions to the understanding of social, political and ethical decisions for wildlife or natural resource management. Course descriptions, immediately following course listing, are required. Up to three (3) semester hours in classes dealing with human dimension issues may count in this category depending on course content. Conservation Biology courses that effectively integrate legal and policy aspects of conservation planning will count toward this category. Courses that are tools supporting professional practice, e.g., Landsat, GIS techniques, or more general courses such as environmental science, resource management, law enforcement, criminology, political science, and introductory survey courses in conservation will not apply.

Credit Hours: The educational requirements are expressed in semester hours. One semester hour usually reflects one lecture hour or 3 laboratory hours of instruction per week for a 16-week term. One quarter hour normally equals 0.67 semester hours. Applicants for certification who attended educational institutions that grant credits in different units must convert their credits to semester hours according to definitions above. For example, in many Canadian universities a one-credit course meets 3 hours per week for 2 terms and thus equals 6 semester hours. The Certification Review Board recognizes that the minimum number of credit hours may not be met exactly in some cases because of differing credits awarded to the same subject at different institutions and/or because of uneven conversions from quarter hours to semester hours.

Addressing deficiencies with experience: Professional experience may be used to satisfy the educational requirements where specific deficiencies exist. Examples may include published

papers or a completed thesis to meet course requirements in English composition or technical writing. Also, documentation of demonstrated professional competence through experience may meet the requirements for such courses as botany, resource policy, administration, land use planning, or public speaking. When using professional experience to substitute for a college course, make sure at least one college course is in that category already and any other specific category requirements are met. The same fields of the application must be filled out whether inserting a college course or professional experience.

It is recommended that such documentation be supported by attaching a letter of reference from a professional wildlife biologist. In many cases candidates would be best served by attaching a written explanation of why they feel that their formal and continuing education course work and work experience, taken as a whole, qualify them to be certified as a wildlife biologist. In unusual cases a special examination may be required. The form, content, and administration of such an examination shall be at the discretion of the CRB and shall be conducted without discrimination. The CRB shall evaluate the examination and shall determine, in its sole discretion, to grant or deny certification.

Applicants who do not meet the specified minimum educational requirements but have ≥ 20 years of professional wildlife experience should refer to the Certification Program Manual, Appendix D, Section 4, for information on how to submit an application for consideration.

2. Experience – CWB®

In addition to the educational requirements, the CWB® must have a minimum of five (5) years of professional experience gained within the ten (10) years prior to applying for certification (or up to 13 years if granted an extension).

Potentially relevant experience begins following completion of the education requirements which usually coincides with the conferral of the first wildlife-oriented degree at a baccalaureate or higher level. Information regarding pre-degree experience is of interest and value to document the applicant's "intent" to pursue a career as a wildlife biologist; however, it is not creditable for experience as a "practicing professional wildlife biologist."

Professional experience must demonstrate the application of current biological knowledge to problems and programs dealing directly with the wildlife resource (administration, education, research, or management) as a significant portion of job responsibilities. Professional experience provides demonstrated expertise in making decisions in the application of ecology to stewardship and management of the wildlife resource and its environment.

Technician-level work, such as data collection, surveys, and habitat manipulation conducted under existing protocol or under the specific direction of another, is not considered professional-level experience. Identification of professional-level experience will require careful evaluation of each application. Therefore, it is the applicant's responsibility to fully document (not just submit a bulleted list) for each experience the percentage of time devoted specifically to activities of a professional wildlife biologist.

Time spent obtaining advanced academic degrees apply toward professional experience subject to the following guidelines:

- i. Experience credit normally will be given only upon completion of a degree judged by the CRB as relevant to the wildlife profession. An abstract or research summary for each advanced degree must be provided by the applicant and accompany the application so the CRB may determine the nature of professional wildlife work.
- ii. A maximum of one (1) year's credit for a Master's degree, a maximum of two (2) year's credit for the Ph.D., and a maximum of three (3) year's credit for a Master's and a Ph.D.
- iii. When time intervals for education and employment overlap, a detailed explanation must be provided. Professional experience credit can simultaneously be granted for a job and advanced degree provided the job is independent of the degree.

Time credited as experience for practicing professional wildlife biologists is based upon the following guidelines:

- i. Partial credit may be granted for experience gained in positions peripheral to wildlife such as forester, range conservationist, soil conservationist, naturalist, environmental specialist, and consultant when a significant portion of the job responsibilities are those expected of a professional wildlife biologist, based upon the following:
 - a. Applicant's estimate of percent of time devoted specifically to professional wildlife work. (Full-time positions are defined as at least 30 hours/week)
 - b. The smallest component of creditable time is one (1) month.
 - c. Description of specific duties, responsibilities, and accomplishments as a professional wildlife biologist. A "general job description" will not be acceptable.
 - d. Working on two (2) or more jobs at the same time does not result in double credit.
- ii. Experience credit will not be granted for positions such as high school biology teachers, park managers, fisheries biologists, or field or laboratory technicians. Experience credit also will not be granted for wetland delineation work unless it specifically addresses wildlife management.
- iii. Up to 12 months of volunteer experience will be credited toward the 5 year experience requirement provided that the position constitutes professional wildlife duties described in this section and is supported by a letter from the supervisor.

- iv. Experience must be gained within the ten (10) years prior to the date the application is signed.

The CRB recognizes that individual job titles in some jurisdictions do not clearly depict actual job responsibilities. The CRB works carefully to judge each applicant's actual involvement and responsibilities as they relate to those of a professional wildlife biologist. Where an applicant's work experience demonstrates immediate and practical impact in furthering wildlife management, research, administration or education, and where that experience demonstrates that the applicant is the person responsible for such work, appropriate credit is then given. Job titles such as wildlife conservation officer may or may not encompass professional wildlife biologist duties.

The CRB does not consider that such routine job responsibilities as license or game checks, patrolling, or similar duties are creditable as professional wildlife biologist experience. However, where an applicant demonstrates direct involvement and responsibility for population surveys, development of forensic techniques for use in law enforcement or similar duties where the applicant is the person responsible for the data or studies, appropriate credit is given for professional wildlife work. It is common for the CRB to judge a portion of an individual's experience as being creditable for purposes of certification. The primary guideline in making such a decision is the level of personal and professional responsibility the person has in conducting the professional wildlife biologist duties. The CRB also considers academic background as a measure of the orientation of the candidate in making judgments related to work experience.

Certification as an AWB® is available to an applicant who meets the educational requirements, but not the experience requirements. Associate Wildlife Biologist® status may be retained for a maximum of ten (10) years before application for certification as a CWB® is required. Associate Wildlife Biologist® certification will terminate on the tenth anniversary of the date such certification was conferred, unless an up to 3-year extension is requested and approved.

3. CWB® Renewal Requirements

To renew certification, applicants must log a minimum of 80 contact hours related to participation in organized activities and mentorship within the five years prior to submission.

A minimum of 60 contact hours from participation in organized activities are required to renew certification. Applicants must act in the role of participant (not leading or organizing) for activities—such as seminars, symposia, short courses, distance learning courses, workshops, training sessions, technical sessions at professional meetings, and conferences. Work projects related to regular professional duties do not count.

Acceptable topics covered for credit include:

- Subjects directly related to the wildlife profession such as big game management, wildlife economics, wildlife pathology, habitat management, wildlife policy, endangered species management, vertebrate population biology, and wildlife law enforcement
- Subjects in other natural resources disciplines, such as forestry, range management, fisheries, entomology, and watershed management

- Subjects that provide general enrichment, such as computer science, leadership, public speaking, marketing, and problem solving

College courses may also be used to meet the requirements. Courses must have been taken following the applicant achieving full-time professional-level employment in a wildlife-related field.

A maximum of 20 mentorship contact hours can be applied, but are not required, to renew certification. Mentorship can involve engagement with a mentor or mentee—phone calls, video conferencing, in-person mentoring sessions and discussions. Meetings should include substantive discussions that detail strategies for self-improvement or explore technical/academic knowledge topics. Preparation of materials—such as drafting a resume, reading an article, or planning for mentoring sessions—does not count.

4. AWB® Extension Requirements

For AWB® Extension, applicants must have previous approval as an AWB® and have completed a minimum of 24 months of professional level experience within the 10 years prior to submission.

See Experience-CWB® for explanation of acceptable professional experience.

Applicants must provide justification for needing AWB® Extension and description of intended steps to become prepared to submit an AWB®-CWB® Upgrade application at the conclusion of the three year extension.

An AWB® Extension application may be supplemented with statements from other professionals supporting the request.

5. Professional Development Certification Requirements

To receive the Professional Development Certificate, applicants must log a minimum of 150 contact hours related to participation and/or leadership in organized activities, mentorship, and other professional development activities within the five years prior to submission.

A minimum of 60 contact hours from participation in organized activities are required to receive the Professional Development Certificate. Applicants must act in the role of participant (not leading or organizing) for activities—such as seminars, symposia, short courses, distance learning courses, workshops, training sessions, technical sessions at professional meetings, and conferences. Work projects related to regular professional duties do not count.

Acceptable topics covered for credit include:

- Subjects directly related to the wildlife profession such as big game management, wildlife economics, wildlife pathology, habitat management, wildlife policy, endangered species management, vertebrate population biology, and wildlife law enforcement
- Subjects in other natural resources disciplines, such as forestry, range management, fisheries, entomology, and watershed management

- Subjects that provide general enrichment, such as computer science, leadership, public speaking, marketing, and problem solving

College courses may also be used to meet the requirements. Courses must have been taken following the applicant achieving full-time professional-level employment in a wildlife-related field.

A maximum of 30 mentorship contact hours can be applied, but are not required, to obtain the Professional Development Certificate. Mentorship can involve engaging with a mentor or mentee—phone calls, video conferencing, in-person mentoring sessions and discussions. Meetings should include substantive discussions that detail strategies for self-improvement or explore technical/academic knowledge topics. Preparation of materials—such as drafting a resume, reading an article, or planning for mentoring sessions—does not count.

A maximum of 60 contact hours in which an applicant led and/or instructed an activity can be applied, but are not required, to obtain the Professional Development Certificate. Activities may include seminars, symposia, short courses, distance learning courses, workshops, training sessions, technical sessions at professional meetings, and conferences. Work projects related to regular professional duties do not count. Credit accrues at a rate of two contact hours for every one hour of instruction.

A maximum of 60 contact hours in which an applicant develops, writes, edits, reviews, and/or publishes wildlife-related materials can be applied, but are not required, to obtain the Professional Development Certificate. Work projects related to regular professional duties do not count. Authors of books and monographs may claim up to 30 contact hours per publication. Multiple authors may each claim up to full credit at their discretion. Credit accrues at a rate of 10 contact hours per publication for authoring; 5 contact hours for refereeing or editing a publication or article in a magazine, newspaper, proceedings, journal, or similar outlet.

A maximum of 30 contact hours in which an applicant conducts self-improvement activities can be applied, but are not required, to obtain the Professional Development Certificate. Contact hours include self-improvement in professionally related activities that are not organized and not tied to everyday work duties, including readings of literature and use of self-instruction audio-visuals. Credit accrues at a rate of one contact hour for each hour of activity.

A maximum of 30 contact hours in which an applicant holds elected/appointed office or actively serves on committees, taskforces, commissions, etc. in organizations related to the profession can be applied, but are not required, to obtain the Professional Development Certificate. Credit accrues at a rate of 5 contact hours for each year of holding office and 3 contact hours for each year of committee membership.

B. Record of Changes to the Wildlife Biologist Certification Program Administration

2000 - On 1 January 2000 a new certification requirement went into effect. Applicants after 31 December 1999 are required to complete CWB® Renewal requirements every 5 years to maintain their certification. Applicants before 31 December (postmarked by that date and subsequently approved) are encouraged, but not required, to periodically complete certification renewal.

Specifically, here is how the change affects applicants:

- Anyone who applied for certification as a CWB® by 31 December 1999 (and is approved) will not be required, but encouraged, to apply for certification renewal on a voluntary basis.
- Anyone who applies for certification as a CWB® after 31 December 1999 must apply for certification renewal every 5 years to maintain certification.
- Anyone who applied for certification as an AWB® by 31 December 1999 (and was approved) had up to 10 years to upgrade to CWB® status AND then will be encouraged, but not required, to apply for recertification on a voluntary basis.
- Anyone who applies for certification as an AWB® after 31 December 1999 must apply for certification renewal every 5 years to maintain certification following approval as a CWB®.

2009 - A bylaws change was approved by TWS membership. The change requires membership in TWS for all current AWB® and CWB certificates to remain valid. Nonpayment of TWS membership fees will invalidate an approved AWB® or CWB® certificate. Payment of TWS membership fees will revalidate an approved AWB® or CWB® certificate.

* TWS reserves the right to make changes in the certification program at any time.

C. Changes to TWS Certification Requirements, 1977-Present

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

1980-1982 – The same basic degree requirements and,

30 semester hours in biological science that must include at least:

6 semester hours in courses related to understanding or manipulating environments, such as principles of wildlife management, wildlife biology, environmental biology, or ecology.

6 semester hours in vertebrate biology and classification, such as mammalogy, ornithology, ichthyology, or similar courses.

9 semester hours in zoology including such subjects as general zoology, invertebrate zoology, comparative anatomy, animal physiology, genetics, parasitology, or similar courses.

9 semester hours in botany and related plant sciences in such subjects as general botany, plant taxonomy, plant ecology, or plant physiology.

15 semester hours in basic mathematics and physical sciences including at least:

1 course in college algebra or its equivalent, and one course in statistics.

1 additional course each in 2 or more of the following disciplines: chemistry, physics, mathematics, soils, or geology.

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 AWB® 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.

Biological science requirements were increased from 30 to 36 semester hours. The change was reflected in an additional 6 hours of basic zoological courses.

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.

Humanities and social sciences now require 9 semester hours; communications courses now require 12 semester hours; and policy, administration, and law courses now require 6 additional hours.

1986-1988 - Course requirements remained basically unchanged.

1989-1992 - Subtle adjustments were made to the basic requirements.

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.

Physical science requirements remained the same, but 3 hours in calculus were required.

Humanities, communications, and policy, administration, 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 were instituted.

2006 – Plant taxonomy requirement was instituted.

2007 – Clarified unacceptability of “introductory personal computing” courses in Quantitative Sciences.

2008 – Clarified that each category must be filled by a minimum of one college course while willing to accept substitutions for remaining insufficiencies. Further clarified that a minimum of one course in either mammalogy, ornithology, or herpetology is required in Wildlife Biology.

2009 – Clarified that “introductory” GIS courses are not accepted while more rigorous and focused GIS courses can be accepted given the applicability and explanation.

2010 – Clarified that one professional reference must be a CWB® and from outside the employing agency (for CWB® applications). Clarified the new membership bylaws change now requiring membership in good standing for an AWB® or CWB® certificate to remain valid.

2013 – Clarified that high school A.P. classes count provided the applicant can show proof of college transcript credit or a score of 4 or better. Clarified that basic algebra does not count in the Quantitative Sciences category. Clarified that a course that combines mammalogy, ornithology, or herpetology will meet the “ology” requirement in Wildlife Biology category. Clarified that professional experience credit can simultaneously be granted for a job and advanced degree provided the job is independent of the degree.

2014 – Clarified that only one of the following courses can be accepted per applicant for the Botany category – silvics, silviculture, or dendrology. Clarified that elementary, introductory, or basic algebra do not count in the Quantitative Sciences category. Required that applicants provide an abstract or research summary of thesis and/or dissertation to determine the nature of professional wildlife work when using time spent obtaining advanced degrees to qualify for CWB® certification. Changed the definition of wildlife used by the CRB to align with the TWS definition of wildlife in the TWS Strategic Plan. Expanded the review process to allow the CRB to contact applicants for further information before or after the initial vote of approval or denial. Reduced the time required before re-application after denial from 12 months to 6 months from the time of previous application.

2017 – In March 2017, the AWB® Extension was approved. This extension allows members to extend their AWB® designation for 3 years and is not eligible for renewal. Clarified that college algebra and advanced algebra courses count toward certification while elementary algebra, introductory algebra, algebra, and remedial algebra do not count. In September 2017, clarified that online education courses and degrees conferred by accredited universities can be used to meet the basic degree and coursework requirements for certification. Certification Renewal requires the completion of a minimum of 80 contact hours during a 5-year period of organized activities (seminars, symposia, short courses, distant learning courses, workshops, training sessions, technical sessions at professional meetings, and regular college courses) to demonstrate continuing education and professional development activities. In September 2017, Council approved allowing inclusion of up to 20 contact hours of mentorship activities to be counted toward the requirement of 80 hours. Mentorship activities include engagement with a mentor or mentee through phone calls, video conferencing, and in-person mentoring sessions and discussions. These organized activities can be in wildlife, related natural resource areas such as forestry or range management, or in other professionally enriching areas.

D. CRB Guidelines on Education & Experience

In evaluating an application for certification, the CRB must determine whether the applicant meets the minimum requirements for education and (for CWB®) job experience. These guidelines summarize the current (2017) CRB's methods of evaluation.

1. Education. Although required coursework is covered on the application, periodic clarification is needed. The CRB typically does not accept any substitutions for courses covering principles and practices of wildlife management, wildlife biology, or ecology. A variety of courses are accepted in basic zoology, but strong preference is given to organism-level, vertebrate courses other than on humans when evaluating the overall strength of the application. Because sections 2-4 are fairly specific and are basic to most scientific degrees, substitutions are generally not warranted.

Accepted botany courses include those that explore the basic relationships of plant taxonomy, growth, identification, ecology, etc. Applied courses such as horticulture, crop production, etc. ordinarily do not apply. Accepted communications courses are those designed to improve communication skills. A maximum of 3 credits each toward the communication requirements will be allowed for a completed M.S. thesis or Ph.D. dissertation. Term papers, class projects and seminars in non-communications courses ordinarily will not be allowed. In some cases, up to 3 credits for well-documented experience can be substituted in communications. Courses such as resource policy and/or administration, environmental or wildlife law or natural resources/land use planning qualify in policy, administration, and law category. Technical courses such as photogrammetry, LAND-SAT mapping, and introductory general conservation courses ordinarily will not apply. In certain cases well-documented experience can make up for a deficit in this section.

2. Nature of work experience. Although the discipline of wildlife biology draws from several sciences (e.g. ecology, zoology, general biology, botany), its unique set of guiding principles is distinguished philosophically by:

- i. Viewing wildlife as natural, renewable resources. Inherent in this viewpoint is conservation (wise use) and thus some form of value to society that is typically manifested either in recreation (hunting, wildlife viewing) or simply in the desire for wild animals to survive. "Wildlife" as applied here, includes living organisms that are not humans, domesticated animals, or plants. This includes insects and other invertebrates, fish, amphibians, reptiles, birds, and mammals. However, TWS' interests do not emphasize fish, as that is the focus of our sister organization, The American Fisheries Society (AFS).
- ii. Being applied and production-oriented, central to this discipline is management of land, habitat, and populations (size, composition) to enhance or bring populations of targeted wildlife species and their communities into desired balance. Management generally entails active manipulation of populations and/or treatments of habitat either to help attain desired wildlife population levels or to mimic natural disturbance processes now lacking in natural areas. In some cases it is recognized that a "let alone" policy is appropriate (e.g. restoring certain types of old growth forests).

The CRB considers the nature of experience to qualify if the applicant spent the majority of claimed time in management, research, administration, college education, or impact evaluation in line with the disciplinary elements outlined above.

The CRB considers the mission of the job to be important (e.g. the emphasis of a consultant must be directed toward wildlife, not consider wildlife peripherally as a byproduct of general impact assessment or environmental monitoring). The CRB does not accept experience strictly as animal husbandry personnel (zoo keepers, game breeders, wildlife ranchers, humane society employees, veterinarians); foresters; law enforcement officers; guides for hunting or nature interpretation; park naturalists; high school teachers; museum curators; wildlife artists; film producers; landscape architects; researchers or educators in basic zoology, ecology, biology or botany; cattle range managers/conservationists; soil conservationists; environmental consultants or fisheries biologists. Persons in these occupations may be certified if a significant portion of their job responsibilities are those of a professional wildlife biologist. Experience must be gained within 10 years prior to the date of application. This generally requires that 50% of the applicants' time must be spent on professional level wildlife work.

3. Professional level work experience. Several criteria are employed to assess professional level experience. The term professional implies being paid for services rendered. Therefore the CRB does not credit time spent solely in volunteer positions. The CRB distinguishes between job function of a professional wildlife biologist and that of a technician/assistant/specialist. The criteria used to make this distinction are listed in the attached table.

Table: Guide to Discriminating Professional Level Work Experience

Job Component	Professional Wildlife Biologist	Technical Assistant or Specialist
Decision Making	Draws from and adapts wildlife principles and current methodology to design, plan and organize.	Carries out orders to maintain certain aspects of components or facilities.
Decision Making	Analyzes data from which conclusions are drawn for making decisions.	Uses judgment to accomplish assigned tasks; often conducts routine checks of established management or research systems or repetitive, scheduled tasks.
Work Implementation	Produces primary budget; administers, directs and supervises biological work.	Directly applies techniques to accomplish specific tasks; helps a supervisor in biological work; duties can be accomplished with limited training by other workers.
Scope of Authority	Responsible for and in charge of a defined unit; requires only general, directional supervision.	Limited, at most, to supervising lower level workers; requires direct, frequent supervision.
Reporting	Responsible for final reports.	May assist biologist by supplying information (e.g. reporting observations data gathering, field reports).
Agency Representation	Officially represents professionally and publicly, the employing agency; in policy matters, hunting regulations, land management recommendations, etc.	N/A

4. Guidelines for Applicants with Extensive Coursework Deficiencies. Experience is already being used judiciously by the CRB in cases where applicants do not possess all of the necessary course requirements. However, that experience has not been accepted to replace the minimum

requirement that applicants have (1) at least a B.S. degree in wildlife ecology, management, or a related field and (2) at least 3 credit hours in each certification category. The Wildlife Society Council approved changes to the requirements in March 2015 based on recommendations of the Certification Change Committee to identify those applicants that can use experience to replace missing academic training in wildlife biology, wildlife management, and botany. Using experience to substitute for these specific course requirements should be considered as a rare exception, not a commonplace occurrence. It should only be used for applicants with a very strong professional track record, who otherwise meet all the requirements for certification. Applicants who wish to use experience to substitute for coursework in these categories must meet the guidelines as outlined below.

- i. All CWB® applications must have at least 5 years of experience and must have at least a B.S. degree in a natural resources-related field to be considered for certification with no exceptions.
- ii. Certification applicants must have at least 3 hours in the categories of wildlife biology, wildlife management, and botany unless the applicant is identified as an individual that possesses substantial, verifiable experience in research, management, education, and/or administration. In these rare cases, the applicant can request using experience in lieu of the otherwise required minimum 3 hours of course work in wildlife biology, wildlife management, and botany. As noted above, it must be recognized that this is a rare exception to the education requirement that should be applied sparingly.
- iii. The following criteria should be used by the CRB to identify an applicant as an individual that may be able to use experience in lieu of the required coursework.
 - a. Must have at least 20 years of full-time equivalent, professional experience in the wildlife profession, in wildlife management, research, administration or college education as described in the CRB Policies and Procedures Manual (2014). Additional description was provided by the Certification Review Board below (amended from the AFS description of qualifying experience for certification).
 - b. Must have qualifying experience within the context of wildlife management, wildlife biology, wildlife research, education or administration that applies to the missing educational category or categories (see below for recommended descriptions).
 - c. Must be clearly recognized as possessing exceptional skills within the missing educational requirements by peers in The Wildlife Society and throughout the profession.
 - d. Must have demonstrable achievements through research, management, education, and/or administration that clearly identify the applicant as an exceptional leader and/or technical expert within the missing educational

category or categories.

- e. Must include a letter of verification from at least 2 TWS members in good standing, with at least one being a CWB®, who can attest that the expertise of the applicant clearly demonstrates his or her skills and abilities within the missing educational category or categories.

The following descriptions should be used for what establishes “qualifying experience” per item 2 above.

- i. Wildlife management involves the application of wildlife science principles (e.g., population dynamics, wildlife biology, habitat assessment and manipulation, biometrics) toward the accomplishment of specific wildlife management goals, objectives, and strategies. The applicant should have had responsible charge or supervision over planning, implementation, and assessment of projects. Responsible charge or supervision is defined as the direction of work such that successful completion depends on decisions made by the applicant. Projects must include technical aspects of applying ecological knowledge to solving wildlife management issues or developing conservation/management strategies. Qualifying experience requires that the candidate use independent judgment and action. In addition to the above, the exceptional applicant is one whose work has resulted in specific and extraordinary changes in the way management actions are implemented.
- ii. Research involves responsible oversight or supervision of field or laboratory wildlife research projects. Qualifying experience includes oversight responsibility for design, implementation, analysis, and report writing. Projects must include application of ecological and biological principles to increase our understanding of wildlife ecology and management. Research projects should either be published in a recognized, peer-reviewed journal or used by the employer for the purpose of improved scientific methodology, regulatory decision making, resource management practices, or program planning. In addition to the above, the exceptional candidate is one whose work and publication record is recognized by peers as resulting in an important and lasting contribution to the field.
- iii. Education involves college-level teaching of various facets of wildlife management, ecology, research, and administration. In addition to the above, the exceptional candidate is one who is recognized as an exceptional instructor by peers and has a longstanding and known track record as a mentor to students and early career wildlife professionals.
- iv. Administration involves direct-line authority supervision of wildlife professionals engaged in activities or programmatic responsibilities that qualify for certification described under the headings of management, research, and education given above. Candidates must have responsibility and decision-making authority of such magnitude as district-wide, regional, statewide, or national natural resource programs. Independent judgment and significant consequences of actions must be present. In addition to the above, the exceptional candidate is one who is known in their organization as a leader and has a longstanding and known track record as an individual who can bring divergent interests together to accomplish wildlife management, research or education goals.