



**1. Overview**

**A. Provide a brief description of the new certificate.**

The undergraduate Wildlife Management certificate program is open to students of all majors at ASU and is built on biology course work currently being taught at the university. This certificate provides students with professional credentials to qualify for positions offered by state and federal agencies and provides students with application-based and hands-on experience in the field. This certificate will give a hiring edge to those in the growing field of environmental careers.

**B. This proposed certificate (check one):**

- Is cross disciplinary; or
- Is certified by a professional or accredited organization/governmental agency; or,
- Clearly leads to advanced specialization in a field; or,
- Is granted to a program that does not currently have a major.

**C. Why should this be a certificate rather than a concentration or a minor?**

Agencies have very specific course work to qualify as a wildlife biologist/manager. Courses listed in the certificate include those that provide students with hands-on experience and content necessary to qualify for state and federal agency positions. A certificate can be a more focused field of study to optimize skills and approaches suitable for career paths for students to meet agencies requirements.

**D. Affiliation**

If the certificate program is affiliated with a degree program, include a brief statement of how it will complement the program. If it is not affiliated with a degree program, incorporate a statement as to how it will provide an opportunity for a student to gain knowledge or skills not already available at ASU.

This certificate is not affiliated with a specific degree program; however, it does align with formal degrees offered for those pursuing degrees in applied biological sciences (CLS), biological sciences (CLAS), and biology (New College).

**E. Demand**

Explain the need for the new certificate (e.g., market demand, interdisciplinary considerations).

Students will be interested in this certificate because it will provide application-based courses in the areas of wildlife biology, ecology, and wildlife management. Government agencies have very specific course requirements to qualify as a wildlife biologist or wildlife manager. In addition to agencies, students will also be well suited to hold positions with non-government organizations (such as The Nature Conservancy). ONET categorizes environmental careers as green occupations which are likely to grow with increasing demand for expertise in sectors related to natural resource and environmental remediation and management.

**F. Projected enrollment**

What are enrollment projections for the first three years?

|                                   | <b>1<sup>st</sup> Year</b> | <b>2<sup>nd</sup> Year</b><br>(Yr. 1 continuing + new entering) | <b>3<sup>rd</sup> Year</b><br>(Yr. 1 & 2 continuing + new entering) |
|-----------------------------------|----------------------------|---|---|
| Number of Students<br>(Headcount) | 15                         | 25  | 35  |

**2. Support and Impact**

**A. Faculty governance**

Provide a supporting letter from the chair of the academic unit verifying that the proposed certificate has received faculty approval through appropriate governance procedures in the unit and that the unit has the resources to support the certificate as presented in the proposal, without impacting core program resources.

Please see attachments.

**B. Other related programs**

Identify other related ASU programs and outline how the new certificate will complement these existing ASU programs. (If applicable, statements of support from potentially-affected academic unit administrators need to be included with this proposal submission.)

Natural science programs (SOLS degree in Biological Sciences, including the concentration in Conservation Biology and Ecology) will have the background to benefit from the certificate. Students in SOLS can take some of the courses listed in the certificate or their prerequisites in their own department.

West: New College, Lara Ferry, Interim Director & Professor, School of Mathematical & Natural Sciences

Tempe: School of Life Sciences, Michael Angilletta, Associate Director of Undergraduate Programs

**C. Letter(s) of support**

Provide a supporting letter from each college/school dean from which individual courses are taken.

**3. Student Learning Outcomes and Assessment Methods**

**A. Knowledge, competencies, and skills**

List the knowledge, competencies, and skills students should have when they graduate from the proposed degree program. You can find examples of program Learning Outcomes at (<https://uoeee.asu.edu/plan-outcomes>).

This certificate program introduces students to the history of wildlife management in North America, includes biological and ecological concepts and principles, and provides project-based and hands-on experiences. Upon completion, students will be able to understand and communicate the relationships among natural resource management, life history patterns of vertebrate species, data collection to assess populations and communities, and importance for wildlife habitat.

**B. Assessment**

Describe the plan and methods to assess whether students have achieved the knowledge, competencies and skills identified in the Learning Outcomes. You can find examples of assessment methods at (<https://uoeee.asu.edu/creating-plan>).

- 75% of student research-projects will earn a rating of 'meets expectations' (A or B range)
- 70% or more of student will earn a grade of B or higher on final exams in organismal 400-level courses
- 80% of alumni respondents will report they are employed in a related or closely related field of wildlife management

**4. Academic Curriculum and Requirements**

**A. Admissions criteria**

List the admissions criteria for the proposed certificate. If they are identical to the admission criteria for the existing major and degree program under which this certificate will be established, please note that here.

Although no specific degree is required for admission to the Wildlife Management certificate, a strong natural sciences background is essential (found in majors including applied biological sciences, biological sciences - conservation biology and ecology, biology - environmental science, and sustainability). The certificate is awarded to students completing at least 23 credit hours (14 credits of required courses and 9 credits of elective courses) with a grade of "C" (2.00) or higher.

**B. Curricular structure**

Provide the curricular structure for this certificate. Be specific in listing required courses and specify the total minimum number of hours required for the certificate.

**Required certificate courses**

| Prefix                    | Number | Title                                 | Is this a new Course? | Credit Hours |
|---------------------------|--------|---------------------------------------|-----------------------|--------------|
| ABS                       | 274    | Introduction to Wildlife Management   | No                    | 4            |
| ABS                       | 376    | Wildlife Ecology                      | No                    | 3            |
| ABS                       | 475    | Habitat Management for Small Wildlife | No                    | 4            |
| ABS                       | 476    | Big Game Habitat Management           | No                    | 3            |
| <i>Section sub-total:</i> |        |                                       |                       | 14           |

**Elective certificate courses**

| Prefix | Number | Title                               | Is this a new Course? | Credit Hours |
|--------|--------|-------------------------------------|-----------------------|--------------|
| ABS    | 377    | International Wildlife Conservation | Yes                   | 3            |
| ABS    | 380    | Restoration and Wildlife Plants     | No                    | 3            |
| ABS    | 470    | Life History of Mammals             | No                    | 3            |
| ABS    | 472    | Applied Herpetology                 | No                    | 3            |
| ABS    | 473    | Applied Ornithology                 | Yes                   | 3            |

*Section sub-total:* 9

**Other certificate requirements**

**E.g.** – Capstone experience, internship, clinical requirements, field studies, foreign language skills as applicable 0

**Total minimum credit hours required for certificate 23**

**C. Minimum residency requirement**

How many hours of the certificate must be ASU credit?  
23 credits

**D. New Courses**

Provide a brief course description for each new course.

The following courses have been taught before in the applied biological sciences major. (1) ABS 473: Applied Ornithology - focuses on the biology and ecology of birds by exploring patterns of distribution, physiology, and behavior, and understanding how characteristics of birds influence their susceptibility to the effects of human activity. (2) ABS 377: International Wildlife Management - focuses on the global dimensions of wildlife conservation and management, survey of methods commonly used in study of wildlife populations, with particular coverage of regulations and differences among countries.

Note: All new required courses should be submitted in Curriculum Changemaker and ready for the University Provost’s Office approval before this certificate is put on Curriculum and Academic Programs Committee (CAPC) agenda.

**5. Administration and Resources**

**A. Administration**

How will the proposed certificate be administered (including admissions, student advisement, retention, etc.)?

This certificate will be administered by the existing structures in the College of Letters and Sciences including the Science and Math faculty. Students will be advised by a faculty member designated as the Certificate Coordinator. Verification of completion of all requirements will be done by academic advisors.

**B. Resources**

What are the resource implications for the proposed certificate, including any projected budget needs? Will new books, library holdings, equipment, laboratory space and/or personnel be required now or in the future? If multiple units/programs will collaborate in offering this certificate please discuss the resource contribution of each participating program. Letters of support must be included from all academic units that will commit resources to this certificate.

The courses offered in the certificate program are already included in classes being offered by the college.

**C. Primary Faculty**

List the primary faculty participants regarding this proposed certificate. For interdisciplinary certificates, please include the relevant names of faculty members from across the University.

| <b>Name</b>     | <b>Title</b>        | <b>Area(s) of Specialization as they relate to proposed certificate</b> |
|-----------------|---------------------|---|
| Heather Bateman | Associate Professor | Conservation and ecology of birds, reptiles, and amphibians             |
| Kelly Steele    | Associate Professor | Plant taxonomy  |
| Marianne Moore  | Assistant Professor | Animal physiology, mammals  |
| Stan Cunningham | Lecturer            | Wildlife management, mammals  |
| Eddie Alford    | Lecturer            | Plant taxonomy, habitat restoration, range management                   |
|                 |                     |   |

**6. Additional Materials**

- A. Complete and attach the Appendix document.
- B. Provide one or more model programs of study (if appropriate).
- C. Attach other information that will be useful to the review committees and the Office of the University Provost.

## APPENDIX

### OPERATIONAL INFORMATION FOR UNDERGRADUATE CERTIFICATES

(This information is used to populate the Degree Search/catalog website.

Please consider the student audience in creating your text.)

#### A. Proposed Certificate Name: Wildlife Management

#### B. Description (150 words maximum)

The undergraduate wildlife management certificate program is for both traditional and nontraditional students at ASU interested in biology, conservation, sustainability and management of natural resources. The certificate provides students with professional credentials to qualify for many positions offered by state (e.g., Arizona Game and Fish Department) and federal agencies (e.g., US Forest Service, US Geological Survey, US Bureau of Land Management). The certificate will provide students with application-based and hands-on experience in the field and allow them to engage with wildlife professionals. The certificate may give a hiring edge to those in the growing field of environmental careers for agencies and non-government organizations.

#### C. Contact and Support Information

|   |   |
|---|---|
| Building Name, code and room number: ( <a href="#">Search ASU map</a> ) | WANER 1   |
| Program office telephone number: ( <i>i.e.</i> 480/965-2100)            | 480/727-1526  |
| Program Email Address:  | CLS@asu.edu   |
| Program Website Address:  | <a href="https://cls.asu.edu">https://cls.asu.edu</a> |

#### D. Program Requirements: Provide applicable information regarding the program such as curricular restrictions or requirements, specific course lists, or academic retention requirements.

This certificate requires 23 credit hours. A “C” (2.00 on a 4.00 scale) or better is required in each course.

Required courses (14 credit hours)

ABS 274 Introduction to Wildlife Management (4)

ABS 376 Wildlife Ecology (3)

ABS 475 Habitat Management for Small Wildlife (4)

ABS 476 Big Game Habitat Management (3)

Elective certificate courses (9 credit hours; choose three:)

ABS 377 International Wildlife Conservation (3)

ABS 380 Restoration and Wildlife Plants (3)

ABS 470 Life History of Mammals (3)

ABS 472 Applied Herpetology (3)

ABS 473 Applied Ornithology (3)

Depending upon a student’s program of study, prerequisite courses may be needed in order to fulfill the requirements of this certificate

#### E. Additional Admission Requirements If applicable list any admission requirements (freshman and/or transfer) that are higher than and/or in addition to the university minimum undergraduate admission requirements.)

Students interested in pursuing the certificate should see an academic advisor in the College and Letters and Sciences at [CLS@asu.edu](mailto:CLS@asu.edu).

#### F. Delivery/Campus Information Delivery: **On-campus only (ground courses and/or iCourses)**

*Note: Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.*

#### G. Campus/Locations:

Indicate **all** locations where this program will be offered.

Downtown Phoenix     Polytechnic     Tempe     West    Other:

**Letters of Support  
Section 2A**

January 6, 2016

To: Duane Roen, Vice Provost, Polytechnic campus  
Dean, College of Letters and Sciences  
Dean, University College Arizona State University

From: Chris Martin, Professor and Faculty Head, Science and Mathematics Faculty  
College of Letters and Sciences  
Arizona State University

I am writing to give my full support for the proposal to establish a Wildlife Management Certificate administered through the Science and Mathematics faculty on the Polytechnic campus. This new certificate will give Life Science students across ASU campuses the opportunity to achieve and quantify an marketable expertise in natural resource and wildlife management.

Sincerely,

Chris Martin

From: David Wells  
Sent: Saturday, January 30, 2016 3:32 PM  
To: Holly Huffman; Jenifer Boshes; Carlos Santos; Pamela Stewart; Manuel Aviles-Santiago  
Cc: Chris Martin; Duane Roen; Patricia Rosciano; Sandra Chavez-Lopez  
Subject: RE: CLS Curriculum Committee: Disestablishing Applied Ecology/Pre-Vet--Est. Applied Biology two versions and Wildlife management certificate

Chris and Duane,

The CLS Curriculum Committee approved all of the actions related to the following proposal:

1. Establishing Wildlife Management Certificate

On behalf of the committee,

Dave

College of Liberal Arts and Sciences, School of Life Sciences:

**Letters of Support  
Section 2B**

From: Michael Angilletta  
Sent: Tuesday, November 03, 2015 11:31 AM  
To: Chris Martin  
Subject: RE: undergraduate certificate in wildlife management

Dear Chris,

The School of Life Sciences at the Tempe campus supports this proposal. We have been unable to offer classes in wildlife ecology in recent years so would look forward to having them available at the Poly campus.



Best regards,  
Mike

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Michael J. Angilletta Jr.  
Professor & Senior Sustainability Scholar  
Associate Director of Undergraduate Programs

School of Life Sciences  
Arizona State University  
Tempe, AZ 85287

From: Lara Ferry  
Sent: Monday, October 26, 2015 1:03 PM  
To: Chris Martin  
Subject: Re: undergraduate certificate in wildlife management

Hi Chris-

We've had a look at the certificate and don't see any issues with it from West. It is similar to our ENV BS in the "organismal track", in that both try to give the correct number of credit hours in wildlife/animal courses to meet criteria for getting hired in government positions dealing with game and wildlife. Most of the courses in your certificate seem to only offered at Poly, so we're not likely to be competing for the same pool of students. I think students would choose either to be at West and be ENV majors OR to go Poly and choose to major with them and also get their certificate. History shows, I think, that their decision will largely depend on where they live.

We would love to collaborate with you so we can share the course load and effort, and support more students in the individual courses as a result. Perhaps we can encourage students to start using the shuttle more between our two campuses. If you see courses where we can serve both campuses at once, maybe alternating the course offerings and cross-listing, please let us know! This might also afford us the opportunity to really diversify what we can offer students across the two programs, while balancing both the workload and the return in terms of enrollment for the two units.

Good luck!

Lara Ferry, PhD  
Interim Director & Professor, School of Mathematical & Natural Sciences  
Honors Faculty, Barrett The Honors College

Arizona State University  
Mailing Address (letters): PO Box 37100, MC 2352 • Phoenix, AZ 85069  
Shipping Address (packages): 4701 W. Thunderbird Rd, FAB N137 • Glendale, AZ 85306  
Office: FAB N153 • (602) 543-2817  
Research Website: <http://morphology.asu.edu>