

## Curriculum

for the Master Programme in

## Wildlife Ecology and Wildlife Management

Programme Classification No. 066 223

Effective Date: October 1<sup>st</sup>, 2024



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<p style="text-align: center;"><b>Curriculum of the Master Degree Programme</b> <b>“Wildlife Ecology and Wildlife Management”</b> At the University of Natural Resources and Life Sciences, Vienna</p>
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*As at October 1<sup>st</sup>, 2024*

## **§ 1 QUALIFICATION PROFILE**

The Master programme in "Wildlife Ecology and Wildlife Management" is a degree programme which serves to deepen and extend students' pre-vocational academic education, building on the basis provided by a Bachelor degree programme (§ 51 [2] item 5 of the Universities Act UG 2002, Federal Law Gazette BGBl I no. 81/2009). The programme fulfils the requirements of Directive 2005/36/EC on the recognition of professional qualifications, article 11, letter e.

### **1a) Knowledge and Personal and Professional Skills**

Game animals (mammals, birds and fish) are often between the contradictory contexts of ecology, economy and social policy. Many game varieties serve an important ecological function that needs to be preserved and enhanced. Other species are of economic importance due to their forestry operations (hunting, fishing). In addition, there are those that hold a conflict potential between various interest groups (nature conservation, agriculture, etc.) after their naturalization or immigration. Last but not least, there are some game varieties that are endangered in their population so that laws and regulations need to be fulfilled on a national as well as international basis.

In order to be able to make allowance for these various social fields of work there is the need for professionals who did not only learn about the basics of wildlife ecology but also know about actions and methods for the management of the various game varieties and can plan and implement these in cooperation with various individual groups of users and representative bodies. Not only are nature conservation and land use as parts of human fields of interests in opposition to each other for those groups, but also various types of traditional ways of environmental utilisation (settlement operations, agriculture, forestry, hunting, fishery), new ways of environmental utilisation (tourism and leisure activities) and spreading types of environmental utilisation (settlement operations, extension of infrastructure, urban sprawl).

A graduate of the Master degree programme “Wildlife Ecology and Wildlife Management” has competent knowledge of the principles of the subject and is enabled to implement these in practically oriented applications. He / she also gains competences for issues and problems that are related to free-living game animals in the fields of forestry, agriculture, energy management and water supply and distribution, for the management of wildlife, for the realization of aims and goals in the field of the protection of species as well as for the preservation of natural habitats. All this requires a versatile and interdisciplinary study programme.

The graduate

- possesses knowledge on species and has expertise in the field of the biology and ecology of European wildlife (birds, (non-marine) mammals, fish).

- has knowledge about biodiversity (habitats, species, populations, individuals).
- possesses knowledge in research methods in the field of wildlife biology and ecology.
- has knowledge when it comes to wildlife management and can apply this knowledge in an international context in the fields of protection, usage and supervision.
- has acquired skills to critically analyze taking inter and trans disciplinary aspects into account.
- possesses knowledge when it comes to dealing with claims of various lobbies, interest and land use groups (agriculture, forestry and water economy; recreational economy and tourism; nature protection).
- has dealt with various social skills (ability to work in a team, organisational skills, reasoning).
- has practical experience in scientific projects in the field of wildlife ecology and wildlife management.
- is enabled to independently plan, develop and conduct scientific projects.
- can interpret, express and present scientific work (in German and English).

### **1b) Professional Qualifications**

The interdisciplinary focus of the Master programme in "Wildlife Ecology and Wildlife Management" has valuable advantages for graduates of this study programme when applying for the following fields of work:

- Authorities for nature conservation, hunting and forestry
- City and community administration, district authorities, province authorities, federal governments
- Administration departments for sanctuaries
- Lobbies and bodies of representations of interests
- Educational and scientific institutions
- Planning and design offices
- Media and public relations
- Zoos and wildlife parks

## **§ 2 ADMISSION REQUIREMENTS**

For the Master study programme Wildlife Ecology and Wildlife Management, graduates of study programmes of accredited national or international postsecondary educational institutions are admitted if these stand in a thematic relation with biology, ecology, agriculture and forestry, landscape design, veterinary medicine, etc.

In any case, students need to have gained the following knowledge in their previous study programme:

- Basics in ecology
- Basics in zoology
- Knowledge on species determination and biology of native birds, (non-marine) mammals and fish

- Basics in limnology
- Basics in forms of land use (agriculture, forestry and water economy) as well as forms of land planning (landscaping and land use planning)
- Basics in statics

Furthermore, competences in English at a level of B2 (according to the Common European Framework of Reference for Languages by the Council of Europe) are recommended.

## § 3 PROGRAMME STRUCTURE

### 3a) Duration, Total ECTS Credits and Structure

The Master programme in Wildlife Ecology and Wildlife Management consists of courses and other requirements worth a total of 120 ECTS credits. This is equivalent to a duration of four semesters (a total of 3,000 60-minute credit hours). The programme is divided into:

Compulsory courses:	47.5 ECTS credits, including
Compulsory internship:	3.0 ECTS credits
Master's Thesis seminar:	2.0 ECTS credits
Other compulsory courses:	42.5 ECTS credits
Master's Thesis:	30.0 ECTS credits
Elective courses:	28.0 ECTS credits
Free electives:	14.5 ECTS credits

Students are required to complete courses, which are related to the field of study, worth a total of 10 ECTS credits taught in a foreign language. These courses can be compulsory courses, elective courses, free electives or internships. Courses taken at international universities abroad are to be credited. General language courses (with the exception of language courses specialised for science and technology except German for Science) will not be considered. (General foreign language courses may be credited in the framework of free elective courses.) A total of 10 ECTS credits worth of courses taught in English must be offered in the list of compulsory and elective courses included in this curriculum.

### 3b) Three-Pillar Principle

The three-pillar principle is one of the central identifying characteristics of both the Bachelor and Master programmes offered at the University of Natural Resources and Life Sciences, Vienna. In the Master programmes, the sum of the compulsory and elective courses must be made up of at least

- 15% technology and engineering
- 15% natural sciences
- 15% economic and social sciences, law

The Master's Thesis, compulsory internship and free electives are excluded from the three-pillar rule.

## § 4 COMPULSORY COURSES

### Used Abbreviations:

ECTS = European Credit Transfer System

WS = Winter Semester

SS = Summer Semester

### Notes:

<sup>1)</sup> In English

<sup>2)</sup> In English and German

<sup>3)</sup> Courses not offered in the academic year 2024/25

<sup>4)</sup> Courses only offered in uneven academic years (e.g. 2021/22, 2023/24)

<sup>5)</sup> Courses only offered in even academic years (e.g. 2022/23, 2024/25)

The following compulsory courses worth a total of 47.5 ECTS credits (including Compulsory internship (3 ECTS credits) and the Master's seminar (2 ECTS credits)) are required to

complete the Master programme. The compulsory courses constitute the basics of this

programme.

For courses with a limited number of participants the head of the Master course is authorised

to first admit students enrolled in the Master programme (that means that students enrolled in a Bachelor study programme can only be admitted to the courses if further

Compulsory Courses - Basics					
Course Number	Course Title	University	Course Type	Semester	ECTS Credits
832313	Basics in wildlife ecology	BOKU	VO	WS	2.0
832319	Basics in wildlife management	BOKU	VO	SS	2.0
832307	Biology of Austrian wildlife species	BOKU	VO	WS	2.0
812344	Ecology of fishes <sup>1</sup>	BOKU	VO	WS	3.0
812346	Ecology of aquatic systems <sup>1</sup>	BOKU	VS	WS	3.0
8C2020	Introduction to Global Change Biology and Conservation Medicine	Vetmed	VO	WS	1.5
223001	Introduction in Pathology of wild animals	Vetmed	VO	SS	2.0
832332	Conservation biology	BOKU	VO	WS	1.0
832333	Behavioural and population ecology	BOKU	VS	WS or SS	4.5
832335	Wildlife ecology and management of habitats (biotopes)	BOKU	VO	WS or SS	3.0
832339	Habitat suitability and biotop management	BOKU	VS	WS	4.5
812395	Sustainable fisheries management and related aspects of nature conservation	BOKU	VO	WS	2.0
732307	Participation and conflict resolution	BOKU	VS	SS	3.0
832308	Introduction into wildlife research methods	BOKU	VU	SS	3.0

851303	Advanced statistical methods for wildlife research	BOKU	VU	WS	3.0
832309	Current contributions in wildlife research and wildlife management	BOKU	SE	WS or SS	3.0
<b>Compulsory Internship</b>					
832346	Compulsory internship seminar <sup>1</sup>	BOKU	SE	WS or SS	3.0
<b>Master's Seminar</b>					
832347	Master's thesis seminar	BOKU	SE	WS or SS	2.0

## § 5 ELECTIVE COURSES

In the course of the study programme optional courses have to be completed successfully to an extent of 28 ECTS credit points. These optional courses serve as advanced subject-specific training in the fields of wildlife ecology, wildlife management, limnology and wildlife medicine. The subjects Wildlife Ecology, Wildlife Management and Limnology are obligatory, the subject Wildlife Medicine, however, is optional (limited numbers of participants). In order to choose the subject Wildlife Medicine, a positive grade in the lecture "Introduction to Pathology of Wild Animals" is necessary. In order to successfully complete a subject, a minimum of 7 ECTS credit points have to be completed. For courses with a restricted number of participants, the lecturer of a Master programme is entitled to first assign students of the Master programme (that is to say that those students enrolled in a Bachelor programme can only be considered according to available capacities!).

<b>Wildlife Ecology</b>					
<b>Course Number</b>	<b>Course Title</b>	<b>University</b>	<b>Course Type</b>	<b>Semester</b>	<b>ECTS Credits</b>
128804	Selected themes of wildlife ecology <sup>1</sup>	Vetmed	KV	WS or SS	2.0
834320	Biodiversity of ME cultural landscape	BOKU	SE	SS	3.0
832321	BOKU International wildlife lectures <sup>1</sup>	BOKU	VS	WS	3.0
140802	Ecology, behaviour and physiology of wild birds	Vetmed	KV + UE	WS	3.0
800701	Evolution and populations genetics	Vetmed	VO	WS	1.5
	Movement Ecology	Vetmed	SE	WS	2.5
223004	Basics of Wildlife Biology <sup>3</sup>	Vetmed	VO	WS	2.0
831307	Austrian habitats	BOKU	EX	SS	4.5
832338	Multidisciplinary field trip in wildlife ecology	BOKU	EX	SS	1.0
215605	Biotelemetric methods in wildlife research <sup>1,3</sup>	Vetmed	KV	SS	1.5
912330	Mountain forest dynamics and fire ecology <sup>1</sup>	BOKU	VS	SS	3.0
128807	Ecophysiology: adaptations to extreme environments <sup>3</sup>	Vetmed	KV	WS	2.0
215601	Wildlife Population Ecology <sup>3</sup>	Vetmed	KV	SS	1.5

834310	Conservation genetic analysis method <sup>1</sup>	BOKU	VO	SS	1.0
834312	Conservation genetic lab <sup>1</sup>	BOKU	PR	SS	2.0
223005	Wildlife field trip	Vetmed	EX	WS or SS	3.0
<b>Wildlife Management</b>					
Course Number	Course Title	University	Course Type	Semester	ECTS Credits
833316	Citizen science in ecology	BOKU	VS	SS	3.0
832345	Field trip wildlife ecology and management of habitats (biotopes)	BOKU	EX	WS	1.5
736368	Forestry, hunting and fisheries legislation	BOKU	VO	SS	2.0
832302	Human dimensions in wildlife research & management <sup>1</sup>	BOKU	VO	SS	1.5
832326	Hunting and game management	BOKU	VO	WS	3.0
832341	Hunting and game management – exercises	BOKU	UE	WS or SS	1.5
732315	History of hunting	BOKU	VX	WS	3.0
834301	Mediation	BOKU	SE	WS or SS	3.0
832311	Wildlife-based conflicts and their management <sup>1</sup>	BOKU	VX	SS	1.5
832342	Natural resources management in mountainous areas III - wildlife problems <sup>1</sup>	BOKU	VS	SS	2.0
832349	Collaborative decision analysis for wildlife management <sup>1</sup>	BOKU	VS	WS	1.5
911322	Role of soils in nature conservation and wildlife management <sup>1</sup>	BOKU	VU	WS	1.5
832301	Wildlife management issues in protected areas in Central Europe	BOKU	VO	WS	1.5
832343	Integrated management of forest and game ungulates	BOKU	VS	SS	4.5
8C1016	Wildlife Management <sup>3</sup>	Vetmed	KV	WS	1.5
832303	Wildlife ecology in protective and in selectively harvested forest stands	BOKU	VO	WS	1.5
<b>Limnology</b>					
Course Number	Course Title	University	Course Type	Semester	ECTS Credits
812381	Aquatic habitat modeling <sup>1</sup>	BOKU	VU	SS	2.0
812384	Aquatic biomonitoring and -assessment <sup>1</sup>	BOKU	VO	WS	2.0
212701	Current aspects in fish pathology	Vetmed	SE	WS	3.0
812349	Ecological river landscape management <sup>1</sup>	BOKU	VO	WS	2.0
812343	Taxonomy and ecology of benthic invertebrates <sup>1</sup>	BOKU	VU	WS	3.0
812387	Environmental impacts on riverine ecosystems I <sup>1</sup>	BOKU	SE	WS	4.0



812388	Environmental impacts on riverine ecosystems II <sup>1</sup>	BOKU	SE	WS	2.0
812378	Fish farming and aquaculture <sup>1</sup>	BOKU	VO	SS	2.0
812376	Fish parasitology and pathology <sup>1</sup>	BOKU	VO	SS	2.0
812347	Human impacts in riverine landscapes <sup>1</sup>	BOKU	VO	WS	2.0
812329	Selected chapters in ecology of aquatic environments	BOKU	VO	WS	3.0
812345	Physical environment of riverine landscape <sup>1</sup>	BOKU	VO	WS	2.0
812385	Restoration and conservation of riverine landscapes I <sup>1</sup>	BOKU	SE	SS	4.0
812386	Restoration of fish and invertebrate communities II <sup>1</sup>	BOKU	SE	SS	2.0
812353	River habitat and landscape assessment <sup>1</sup>	BOKU	VU	WS	4.0
<b>Wildlife Medicine (optional)</b>					
<b>Course Number</b>	<b>Course Title</b>	<b>University</b>	<b>Course Type</b>	<b>Semester</b>	<b>ECTS Credits</b>
801203	Applied Ethics in Veterinary Medicine I	Vetmed	KV	WS	1.0
500014	Parasite biology	Vetmed	VO	WS	1.0
500208	Darwinian Medicine <sup>1</sup>	Vetmed	KV	WS	2.0
223006	Introduction in Essentials of Disease in Wildlife <sup>3</sup>	Vetmed	KV	WS	1.5
800801	Principles of Regulatory Networks and Mechanism <sup>2</sup>	Vetmed	VO	WS	2.5
8C1017	Infectious Diseases of Wild Birds	Vetmed	KV	WS	1.0
223002	Conservation genetics in One Health <sup>3</sup>	Vetmed	KV	WS	2.0
8C1014	Case studies in conservation medicine	Vetmed	SE	WS	1.5
128806	Capture, immobilization and transportation of wildlife animals <sup>3</sup>	Vetmed	KV	SS	2.0
832348	Research in wildlife veterinary medicine	BOKU	VU	WS	1
2C0804	Environment and species protection in the OneHealth context	Vetmed	SE	WS	1.5
800301	Zoology for Veterinarians	Vetmed	VO	WS	0.5
128802	Zoonosis	Vetmed	VO	SS	2.0

## **§ 6 FREE ELECTIVES**

Free electives worth a total of 14.5 ECTS credits are required to complete the Master programme. Free electives may be selected from all courses offered by all recognized universities in Austria and abroad. Free electives are intended to impart knowledge and skills in the student's own academic subject as well as in fields of general interest.

It is recommended to choose free electives from the offered list of elective courses.

## **§ 7 COMPULSORY INTERNSHIP**

(1) The compulsory internship is intended to help students improve the skills learned in their degree programme. It is also intended to encourage students to learn to apply what they have learned in practice, and recognize relationships between theory and practice.

(2) The compulsory internship shall be at least 4 weeks in duration. It is recommended to complete the internship between the second and third semesters of the degree programme. Students may also split the internship into more than one part.

(3) The compulsory internship seminar (Compulsory internship seminar (in Eng.)) provides students with a thematic review of the internship experience.

(4) The student must contact the instructor of the internship seminar in a timely manner before the start of his/her internship to arrange supervision. The instructor shall consult with the student and advise him/her on the choice of an internship placement and the necessary procedures and reporting requirements. The approval of the instructor is required if the student wishes to split the internship into more than one part.

(5) If no internship placement pursuant to (1) can be organised in spite of a genuine effort on the part of the student, a substitute must be selected in agreement with the instructor of the internship seminar. Possible substitutes include e.g. participation in a research project at BOKU or another research institution in a relevant field.

(6) Completion of the internship seminar (Compulsory internship seminar (in Eng.)) is confirmation of the completion of the compulsory internship or the substitute activity. This includes the delivery of an internship report in the form of a manuscript and an oral presentation of the compulsory internship.

## **§ 8 MASTER'S THESIS**

A Master's Thesis is a paper on a scientific topic, to be written as part of a Master degree programme (for exceptions please see the By Laws of the University of Natural Resources and Life Sciences, Vienna, part III- Teaching, § 30[9]). The thesis is worth a total of 30 ECTS credits. With their Master's Thesis, students demonstrate their ability to independently address a scientific topic, both thematically and methodologically (§ 51 [8] UG 2002 BGBl. I no. 81/2009).

The topic of a Master's Thesis shall be chosen in such a way that it is reasonable to expect a student to be able to complete it within six months. Multiple students may jointly address a topic, provided that the performance of individual students can be assessed (§ 81 [2] UG 2002 BGBl. I no. 81/2009).

The Master's Thesis shall be written in German or English. Languages other than German or English are permissible only if approved and confirmed by the thesis supervisor. The thesis defence must be held in German or English regardless of the language of the thesis.

## **§ 9 COMPLETION OF THE MASTER PROGRAMME**

The Master programme in "Wildlife Ecology and Wildlife Management" has been completed when the student has passed all required courses and received a positive grade on the Master's Thesis and defence examination.

## **§ 10 ACADEMIC DEGREE**

Graduates of the Master programme in "Wildlife Ecology and Wildlife Management" are awarded the academic title Master of Science, abbreviated as MSc or M.Sc. The academic title MSc (M.Sc) shall follow the bearer's name (§ 88 [2] UG 2002 BGBl. I no. 81/2009).

## **§ 11 EXAMINATION REGULATIONS**

(1) The Master programme in "Wildlife Ecology and Wildlife Management" has been completed successfully when the following requirements (corresponds to components in [7] below) have been met:

- positive completion of compulsory courses (including compulsory internship and Master's Thesis seminar) worth a total of 47.5 ECTS credits (§ 4)
- positive completion of elective courses worth a total of 28 ECTS credits (§ 5)
- positive completion of free electives worth a total of 14.5 ECTS credits (§ 6)
- a positive grade on the Master's Thesis and the defence examination.

(2) Student evaluation takes the form of course and module examinations. Course examinations can be either written or oral, as determined by the course instructor, taking the ECTS credit value of the course into account.

(3) Student evaluation in modules: Module evaluation is based on the grades given the students in the individual courses that make up the module. The total evaluation for the module is calculated as the average of the grades of all module courses, weighted by ECTS

credits. Average values of .5 or lower are rounded to the better (numerically lower) grade; values of over .5 are rounded to the worse (numerically higher) grade. If deemed necessary, the Dean of Students may require a module examination at his/her discretion.

(4) The choice of examination method shall be based on the type of course: Lectures shall conclude with a written or oral examination, if continuous assessment of student performance is not applied. Seminars and project-based courses can be evaluated based on independently written papers, length and contents of which are determined by the course instructor. For all other course types, the examination type is at the instructor's discretion.

(5) The topic of the Master's Thesis shall be selected from one of the subjects of the Master programme. The student must inform the dean in writing prior to the commencement of the work on the Master's Thesis. Thereby, the student has to state the Master's Thesis topic as well as the name of the supervisor of the Master's Thesis.

(6) The completed Master's Thesis which has been assessed positively by the supervisor shall be publically presented by the student and defended in the form of an academic discussion (defence examination) after successful completion of all courses. The committee shall consist of a committee chair and two additional university lecturers with a *venia docendi* or equivalent qualification. The student's total performance (thesis and defence examination) will be assigned a comprehensive grade. Both thesis and defence examination must receive a passing grade for the student to complete the programme. The written evaluations stating the grounds for the thesis grade and the defence examination grade are included in calculating the comprehensive grade and are documented separately.

The comprehensive grade is calculated as follows:

- Master's Thesis: 70%
- Defence examination (incl. presentation): 30%

(7) A comprehensive evaluation of the student's performance on the entire programme shall be assigned. A comprehensive evaluation of "passed" means that each individual component of the programme was completed successfully. If individual components of the programme have not been successfully completed, the comprehensive evaluation is "failed". A comprehensive evaluation of "passed with honours" is granted if the student has received no grade worse than a 2 (good) on all individual components, and if at least 50% of the individual components were graded with 1 (excellent).

## **§ 12 TRANSITIONAL PROVISIONS**

Students who have not completed the formerly effective Master's curriculum in "Wildlife Ecology and Wildlife Management" (H 223) when this new Master's curriculum comes into force are transferred to the currently valid one.

For students in the new Master's curriculum already positively completed exams on courses from the old Master's curriculum are acknowledged based on the equivalence list for the respective study programme.

### **§ 13 EFFECTIVE DATE**

This curriculum shall take effect on October 1<sup>st</sup>, 2024.

## **Annex A    Types of Courses**

The following types of courses are available:

### **Lecture (VO)**

Lectures are courses in which certain areas of a subject and the methods used in this area are imparted through didactic presentation.

### **Lab Course (UE)**

Lab courses are courses in which students are instructed in specific practical skills, based on theoretical knowledge.

### **Practical Course (PR)**

Practical courses are classes in which students deal with specific topics independently, based on previously acquired theoretical and practical knowledge.

### **Compulsory Internship Seminar (PP)**

The compulsory internship seminar is a class in which students deal independently with topics related to their internship placements, based on previously acquired theoretical and practical knowledge.

### **Seminar (SE)**

Seminars are courses in which students are required to work independently on the respective subject, deepen their knowledge of the topic and discuss relevant issues.

### **Conversation Class (KV)**

Conversation classes are courses in which students discuss issues with internationally renowned and top-ranked scientists in the course of a series of lectures.

### **Patient-Presentation, Case Study (PF)**

Students present their processed data on patients or case studies respectively and put findings up to for discussion.

### **POL-Seminar (PO)**

Students acquire module-specific and topic-related knowledge in self-study sessions during their in-depth training. This is then presented and discussed in its broader context.

### **Special Training (ST)**

Students are introduced to special research procedures and treatments.

### **Field Trips (EX)**

Field trips are courses in which students have the opportunity to experience relevant fields of study in real-life practical application, to deepen their knowledge of the respective subject. Field trips can be taken to destinations both in Austria and abroad.

### **Master's Thesis Seminar (MA)**

Master's Thesis seminars are seminars intended to provide students with academic support during the thesis writing process.

**Project Course (PJ)**

Project courses are characterized by problem-based learning. Under instruction, students work (preferably in small groups) on case studies, applying appropriate scientific methods.

**Interdisciplinary Project Studies (IP)**

Interdisciplinary Project Studies are courses that serve the scientific and academic work including data enquiry and discussion. These courses shall enhance interdisciplinary thinking.

***Mixed-Type Courses:***

Mixed-type courses combine the characteristics of the courses named above (with the exception of project-type courses). Integration of different course-type elements improved the didactic value of these courses.

**Lecture /Seminar (VS)****Lecture/Lab (VU)****Lecture/Field Trip (VX)****Seminar/Field Trip (SX)****Lab/Seminar (US)****Lab/Field Trip (UX)**