

МИНОБРНАУКИ РОССИИ

**Федеральное государственное бюджетное образовательное
учреждение высшего образования "Пермский
государственный национальный исследовательский
университет"**

Кафедра биогеоценологии и охраны природы

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Программа учебной практики
ACADEMIC PRACTICE IN NATURE CONSERVATION
Код УМК 95380

Утверждено
Протокол №9
от «12» мая 2020 г.

Пермь, 2020

1. Вид практики, способ и форма проведения практики

Вид практики **учебная**

Тип практики **практика по получению первичных профессиональных умений и навыков**

Способ проведения практики **стационарная, выездная**

Форма (формы) проведения практики **дискретная**

2. Место практики в структуре образовательной программы

Учебная практика « Academic practice in Nature conservation » входит в обязательную часть Блока « Б.2 » образовательной программы по направлениям подготовки (специальностям):

Направление: **05.03.06** Экология и природопользование

направленность Экологическая инженерия и новая энергетика

Цель практики :

Consolidation of the acquired knowledge in the course Nature Protection and conservation and the necessary skills for environmental research.

Задачи практики :

- * consolidation of students basic knowledge on nature protection and its territorial forms -protected areas;
- * introduction to the methods of studying objects of living and inanimate nature
- * study of the application of modern environmental methods and techniques

3. Перечень планируемых результатов обучения

В результате прохождения практики **Academic practice in Nature conservation** у обучающегося должны быть сформированы следующие компетенции:

05.03.06 Экология и природопользование (направленность : Экологическая инженерия и новая энергетика)

ПК.2 иметь навыки идентификации организмов, описания биологического разнообразия и его оценки современными количественными методами

4. Содержание и объем практики, формы отчетности

Field practice on "Academic practice in Nature conservation" is aimed at consolidating and developing knowledge, skills, practical skills in the theoretical course of the same name. Knowledge about specially protected natural areas is essential for understanding the scale and patterns of the impact of human activity on natural complexes and objects. Practice in Nature Conservation and Reserve Management reinforces knowledge in this discipline and allows you to learn how to apply it in the field.

Направления подготовки	05.03.06 Экология и природопользование (направленность: Экологическая инженерия и новая энергетика)
форма обучения	очная
№№ триместров, выделенных для прохождения практики	6
Объем практики (з.е.)	3
Объем практики (ак.час.)	108
Форма отчетности	Экзамен (6 триместр)

Примерный график прохождения практики

Количество часов	Содержание работ	Место проведения
Academic practice "Nature protection and conservation"		
104	Consolidation of the acquired knowledge in the course Nature Protection and conservation and the necessary skills for environmental research.	Perm. If possible, a field trip to the Permian Nature Park (Gremyachinsky district), the Basegi State Nature Reserve (Gremyachinsky and Gornozavodsky districts), the complex reserve of regional significance "Preduralie" (Kungursky and Kishertsky districts) For students with disabilities and disabilities, alternative places of practice are provided, individually provided, taking into account the recommendations of the psychological, medical and pedagogical commission or the ITU.
1. System of specially protected natural territories		
20	Topic 1. The system of specially protected natural territories Regional classification of OPT. Regional features of the placement of protected areas in the Kama region. Areas of	Perm city For students with disabilities and disabilities, alternative

Количество часов	Содержание работ	Место проведения
	different types of protected areas. General scheme of protected areas of the Kama region. Tactical and strategic objectives of the development of the SPNA system. Regional laws on protected areas. State regulation.	places of practice are provided, individually provided, taking into account the recommendations of the psychological, medical and pedagogical commission or the ITU.
2. Protected areas of federal significance		
20	<p>Topic 2. Specially protected natural territories of federal significance</p> <p>Classification and categories of protected areas. State Nature Reserve. Definition, tasks (environmental, research, monitoring, cultural and educational), spatial (protected and buffer zones) and organizational structure (scientific department, forest department, protection inspection). Chronicle of Nature. Structure and order of conduct. Features of functioning. Assessment of anthropogenic transformation of ecosystems.</p>	<p>city of Perm, if possible, field trip to the state nature Reserve "Basegi" (Gornozavodsky and Gremyachinsky districts of the Perm Territory)</p> <p>For students with disabilities and disabilities, alternative places of practice are provided, individually provided, taking into account the recommendations of the psychological, medical and pedagogical commission or the ITU.</p>
3. Protected areas of regional significance		
22	<p>Topic 3. Specially protected natural territories of regional significance</p> <p>Classification and categories of regional protected areas. Nature Park. Definition, tasks (environmental, research, monitoring, cultural and educational), spatial (protected and buffer zones) and organizational structure (scientific department, forest department, protection inspection). Features of functioning. Assessment of anthropogenic transformation of ecosystems.</p> <p>Nature reserve. Definition, tasks (environmental, research, monitoring, cultural and educational), organizational structure, Features of functioning. Assessment of anthropogenic transformation of ecosystems.</p>	<p>the city of Perm, If possible, a field trip to the Permsky Nature Park (Gremyachinsky district of Perm Krai), a complex reserve of regional significance "Preduralie" (Kungursky and Kishertsky districts of Perm Krai)</p> <p>For students with disabilities and disabilities, alternative places of practice are provided, individually provided, taking into account the recommendations of the psychological, medical and pedagogical commission or the ITU.</p>
4. Local protected areas		
22	<p>Topic 4. Specially protected natural areas of local significance</p> <p>Classification and categories of local protected areas. Protected landscape and natural monument. Definition, tasks</p>	<p>Perm city</p> <p>For students with disabilities and disabilities, alternative</p>

Количество часов	Содержание работ	Место проведения
	(environmental, research, monitoring, cultural and educational), Features of functioning. Assessment of anthropogenic transformation of ecosystems.	places of practice are provided, individually provided, taking into account the recommendations of the psychological, medical and pedagogical commission or the ITU.
5. Anthropogenic transformation of the natural environment in protected areas		
24	Topic 5. Anthropogenic transformation of the natural environment. Preparation of the report. Comparative analysis of the results of the survey of protected area ecosystems of different categories and ranks	Perm city For students with disabilities and disabilities, alternative places of practice are provided, individually provided, taking into account the recommendations of the psychological, medical and pedagogical commission or the ITU.

5. Перечень учебной литературы, необходимой для проведения практики

Основная

1. Sarah E. Gergel • Monica G. Turner: "Learning Landscape Ecology A Practical Guide to Concepts and Techniques. Second Edition", 2017, ISBN 978-1-4939-6374-4. [Электронный ресурс].
<https://link.springer.com/book/10.1007/978-1-4939-6374-4>
2. Mike Alexander, "Management Planning for Nature Conservation A Theoretical Basis & Practical Guide", 2008, ISBN 978-1-4020-6581-1 [Электронный ресурс]. <https://link.springer.com/book/10.1007/978-1-4020-6581-1>

Дополнительная

1. C. Max Finlayson, Mark Everard, Kenneth Irvine, Robert J. McInnes, Beth A. Middleton, Anne A. van Dam, Nick C. Davidson: "The Wetland Book", 2017, ISBN 978-94-007-6172-8. [Электронный ресурс].
<https://link.springer.com/referencework/10.1007/978-94-007-6172-8?page=1#toc>
2. Stephen C. Trombulak, Robert F. Baldwin: "Landscape-scale Conservation Planning", 2010, ISBN 978-90-481-9575-6, [Электронный ресурс]. <https://link.springer.com/book/10.1007/978-90-481-9575-6>
3. Filippo Schilleci Vincenzo Todaro Francesca "Lotta Connected Lands New Perspectives on Ecological Networks Planning" ISBN 978-3-319-55233 [Электронный ресурс] URL:
<https://link.springer.com/book/10.1007/978-3-319-55233-0> <https://link.springer.com/book/10.1007/978-3-319-55233-0>
4. Monica G. Turner, Robert H. Gardner. Landscape Ecology in Theory and Practice. Pattern and Process. Springer, New York, NY, 2015. Online ISBN 978-1-4939-2794-4. Текст электронный.
<https://link.springer.com/book/10.1007/978-1-4939-2794-4>
5. Humberto Blanco, Rattan Lal. "Principles of Soil Conservation and Management", 2008, ISBN: 978-1-4020-8709-7. [Электронный ресурс]. <https://link.springer.com/book/10.1007/978-1-4020-8709-7>

6. Перечень ресурсов сети «Интернет», требуемых для проведения практики

При прохождении практики требуется использование следующих ресурсов сети «Интернет» :

<http://in.psu.ru/elis/> ELIS Library

<http://www.iprbookshop.ru> Electronic library system IPRbooks

7. Перечень информационных технологий, используемых при проведении практики

Образовательный процесс по практике **Academic practice in Nature conservation** предполагает использование следующего программного обеспечения и информационных справочных систем:

Presentation materials (slides on the topics of lectures and practical classes); on-line access to the Electronic Library System; access to the electronic information and educational environment of the university Internet services and electronic resources (search engines, e-mail, professional thematic chats and forums, audio and video conference systems, online encyclopedias, etc.)

Office application package "LibreOffice". Programs, demonstrations of video materials (player).

Software for the laptop: OS "Alt Education" (Contract No. DS 003-2020).

The discipline does not provide for the use of special software

При освоении материала и выполнения заданий по дисциплине рекомендуется использование материалов, размещенных в Личных кабинетах обучающихся ЕТИС ПГНИУ (student.psu.ru).

При организации дистанционной работы и проведении занятий в режиме онлайн могут использоваться:

система видеоконференцсвязи на основе платформы BigBlueButton (<https://bigbluebutton.org/>).

система LMS Moodle (<http://e-learn.psu.ru/>), которая поддерживает возможность использования текстовых материалов и презентаций, аудио- и видеоконтент, а так же тесты, проверяемые задания, задания для совместной работы.

система тестирования Indigo (<https://indigotech.ru/>).

8. Описание материально-технической базы, необходимой для проведения практики

For conducting laboratory-type classes, for group and individual consultations, routine monitoring and intermediate certification-an audience equipped with presentation equipment (projector, screen, laptop) with appropriate software, chalk (s) or marker board.

Specialized equipment: GPS-navigators, soil drill and wood drill, moisture meter, aspiration psychrometers, luxometer, Ph meter, eclimeter-altimeter, measuring tapes, measuring fork.

Independent work: An audience for independent work, equipped with computer equipment with the ability to connect to the Internet, provided with access to the electronic information and educational environment of the university;

Premises of the Scientific Library of PSNIU

For field practices - equipment provided by the organization.

Помещения научной библиотеки ПГНИУ для обеспечения самостоятельной работы обучающихся:

1. Научно-библиографический отдел, корп.1, ауд. 142. Оборудован 3 персональными компьютера с доступом к локальной и глобальной компьютерным сетям.

2. Читальный зал гуманитарной литературы, корп. 2, ауд. 418. Оборудован 7 персональными компьютерами с доступом к локальной и глобальной компьютерным сетям.

3. Читальный зал естественной литературы, корп.6, ауд. 107а. Оборудован 5 персональными компьютерами с доступом к локальной и глобальной компьютерным сетям.

4. Отдел иностранной литературы, корп.2 ауд. 207. Оборудован 1 персональным компьютером с доступом к локальной и глобальной компьютерным сетям.

5. Библиотека юридического факультета, корп.9, ауд. 4. Оборудована 11 персональными компьютерами с доступом к локальной и глобальной компьютерным сетям.

6. Читальный зал географического факультета, корп.8, ауд. 419. Оборудован 6 персональными компьютерами с доступом к локальной и глобальной компьютерным сетям.

Все компьютеры, установленные в помещениях научной библиотеки, оснащены следующим программным обеспечением:

Операционная система ALT Linux;

Офисный пакет Libreoffice.

Справочно-правовая система «КонсультантПлюс»

9. Методические указания для обучающихся по освоению дисциплины

To keep track of the work, the student keeps a report, where he clearly records all the types of work performed for each day. In the report, the student reflects all the information and materials on the studied issues with the greatest completeness. To conduct the practice of obtaining primary professional skills, the student receives a set of documents, which includes: an order for the admission of students to practice, safety instructions, work program, tasks for, rights and obligations of students, an annual plan for the practice, a schedule of consultations for students. Each student in the first days of practice receives an individual task from the head of the practice to study the analysis of a specific object.

The individual task involves the collection of initial data

In a generalized form, the task execution sequence should be as follows •

- * analysis of the current state of the problem being solved;
- * the choice of the research direction, including the justification of the accepted direction, possible methods of solving the problem and their comparative assessment;
- * theoretical and / or practical research;
- * summarizing and evaluating research results;
- * conclusions and suggestions.

Based on the records, the student makes a report on the practice in accordance with the program, individual task. The student is engaged in the preparation of the report in stages throughout the entire practice.

Report content:

1. Cover (title page).
2. Table of contents of sections
 - 2.1. Introduction. Purpose of the practice, place and date of the practice;
 - 2.2. General characteristics of the laboratory, structure and schemes.
 - 2.3. Safety precautions.
 - 2.4. Individual task.
 - 2.5. Conclusion (conclusions and suggestions).
 - 2.6. List of references.
3. Applications.

The report should include elements of analysis and criticism of the ecological state of the natural object, specific suggestions and comments of the student. The report must be illustrated with graphic material (sketches, diagrams). The report must be designed in accordance with the requirements of regulatory documents for text

documentation. The report should contain 15-20 pages of typewritten text on A4 paper, be bound and have a cover page according to the requirements.

All descriptions given in the report should be accompanied by drawings. The digital material placed in the report is recommended to be arranged in the form of tables.

Figures and tables should be placed directly after the reference to them in the report text. The table of contents specifies the section titles and the page number from which the section begins.

A list of references may be provided at the end of the report. The collected technological and environmental documents are attached to the report in the form of an appendix. The report is signed by the student, after verification, the report is signed by the head of the practice. After passing the practice test, the report is deposited.

Фонды оценочных средств для проведения промежуточной аттестации

Планируемые результаты обучения по дисциплине для формирования компетенции. Индикаторы и критерии их оценивания

ПК.2

иметь навыки идентификации организмов, описания биологического разнообразия и его оценки современными количественными методами

Компетенция	Планируемые результаты обучения	Критерии оценивания результатов обучения
<p>ПК.2 иметь навыки идентификации организмов, описания биологического разнообразия и его оценки современными количественными методами</p>	<p>Knows the specifics of the modern system of protected areas in the region, their categories and features of the environmental regime. He is able to apply the acquired knowledge in the preparation of analytical reports and works. Owns modern methods of evaluating the effectiveness of the functioning of protected areas systems</p>	<p style="text-align: center;">Неудовлетворительно</p> <p>Knows the features of the modern system of protected areas in the region, their categories and environmental regime. Does not know how to apply the acquired knowledge in the preparation of analytical reports and works. Does not know modern methods of assessing the effectiveness of the functioning of protected area systems.</p> <p style="text-align: center;">Удовлетворительно</p> <p>Knows the features of the modern system of protected areas in the region, their categories and environmental regime. Does not know how to apply the acquired knowledge in the preparation of analytical reports and works. Does not know modern methods of assessing the effectiveness of the functioning of protected area systems.</p> <p style="text-align: center;">Хорошо</p> <p>Knows the features of the modern system of protected areas in the region, their categories and environmental regime. He/she is able to apply the acquired knowledge in the preparation of analytical reports and works. He/she knows modern methods of assessing the effectiveness of the functioning of protected area systems, but cannot formulate their essence and specifics.</p> <p style="text-align: center;">Отлично</p> <p>Knows the features of the modern system of protected areas in the region, their categories and environmental regime. He/she is able to apply the acquired knowledge in the preparation of analytical reports and works. He/she knows modern methods of assessing the effectiveness of the functioning of protected area systems, can formulate their essence and specifics.</p>
<p>ПК.2</p>	<p>He/she knows the specifics of the</p>	<p style="text-align: center;">Неудовлетворительно</p>

<p>иметь навыки идентификации организмов, описания биологического разнообразия и его оценки современными количественными методами</p>	<p>functioning of protected areas of federal significance - state nature reserves and national parks, their nature protection regime, and organizational structure. He/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. He/she has modern tools, devices, and techniques that allow him to assess the ecological state of natural complexes and their individual components.</p>	<p>Неудовлетворительно Does not know the specifics of the functioning of protected areas of federal significance - state nature reserves and national parks, their nature protection regime, and organizational structure. Does not know how to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. Does not have the basic tools, devices, and techniques to assess the ecological state of natural complexes and their individual components.</p> <p>Удовлетворительно Superficially knows the features of the functioning of protected areas of federal significance - state nature reserves and national parks, their nature protection regime, and organizational structure. Partially able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. Does not have the basic tools, devices, and techniques to assess the ecological state of natural complexes and their individual components.</p> <p>Хорошо He/she knows the specifics of the functioning of protected areas of federal significance - state nature reserves and national parks, their nature protection regime, and organizational structure. He/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. He/she has partially mastered tools and devices, and is proficient in techniques that allow him to assess the ecological state of natural complexes and their individual components.</p> <p>Отлично He/she knows the specifics of the functioning of protected areas of federal significance - state nature reserves and national parks, their nature protection regime, and organizational structure. He/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. He/she has modern tools, devices, and techniques that allow him to assess the ecological state of natural complexes and their</p>
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		Отлично individual components.
ПК.2 иметь навыки идентификации организмов, описания биологического разнообразия и его оценки современными количественными методами	Knows the features of the functioning of protected areas of regional significance - natural parks, nature reserves, natural monuments, and others. Distinguishes their environmental regime. He/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. He/she has modern tools, devices, and techniques that allow him to assess the ecological state of natural complexes and their individual components.	Неудовлетворительно Does not know how to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. Does not have the basic tools, devices, and techniques to assess the ecological state of natural complexes and their individual components. Удовлетворительно He/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. Does not know the basic tools, devices, and techniques that allow you to assess the ecological state of natural complexes and their individual components. Хорошо He/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. Does not know the basic tools, devices, and techniques that allow you to assess the ecological state of natural complexes and their individual components. Does not know the basic tools, devices, and techniques that allow you to assess the ecological state of natural complexes and their individual components. Отлично he/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. Does not have the basic tools, devices, and techniques to assess the ecological state of natural complexes and their individual components. He/she has modern tools, devices, and techniques that allow him to assess the ecological state of natural complexes and their individual components.
ПК.2 иметь навыки идентификации организмов, описания биологического разнообразия и его оценки современными количественными	Knows the features of the functioning of protected areas of local significance - protected landscapes, reserves, natural monuments, and others. Distinguishes their environmental regime. He/she is able to conduct research on the assessment of the	Неудовлетворительно Does not know how to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. He has modern tools, devices, and techniques that allow him to assess the ecological state of natural complexes and their individual components.

методами	state of natural complexes, apply and make a report on the results of work. He/she has modern tools, devices, and techniques that allow him to assess the ecological state of natural complexes and their individual components.	<p style="text-align: center;">Удовлетворительно</p> <p>He/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. Does not possess modern tools, devices, techniques that allow you to assess the ecological state of natural complexes and their individual components.</p> <p style="text-align: center;">Хорошо</p> <p>Knows the features of the functioning of protected areas of local significance - protected landscapes, reserves, natural monuments, and others. Distinguishes their environmental regime. He/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. Does not possess modern tools, devices, techniques that allow you to assess the ecological state of natural complexes and their individual components.</p> <p style="text-align: center;">Отлично</p> <p>Knows the features of the functioning of protected areas of local significance - protected landscapes, reserves, natural monuments, and others. Distinguishes their environmental regime. He/she is able to conduct research on the assessment of the state of natural complexes, apply and make a report on the results of work. He/she has modern tools, devices, and techniques that allow him to assess the ecological state of natural complexes and their individual components.</p>
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Оценочные средства

Вид мероприятия промежуточной аттестации : Экзамен

Способ проведения мероприятия промежуточной аттестации : Защищаемое контрольное мероприятие

Продолжительность проведения мероприятия промежуточной аттестации :
время отводимое на доклад 2

Показатели оценивания

Does not know the terminology of nature protection, can not define the terms, does not know their differences. It can not give a physical and geographical description of the territory of the internship.	Неудовлетворительно
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<p>Does not know the methods and methods of research, the features of their application in the field and office conditions.</p> <p>Does not possess the tools and devices necessary for conducting environmental research in protected areas, does not know how to apply them in practice.</p> <p>Has no idea about the biodiversity of the study area.</p> <p>Does not know the quantitative and qualitative methods of determining biodiversity.</p> <p>Does not know how to interpret and analyze the results, draw conclusions, and identify cause-and-effect relationships of processes occurring in ecosystems.</p>	<p>Неудовлетворительно</p>
<p>He knows the terminology of nature protection.</p> <p>It can give a physical and geographical description of the territory of the internship.</p> <p>Knows the methods and techniques of research.He has the tools and devices necessary for conducting environmental research in protected areas, and is able to apply them in practice.</p> <p>Has no idea about the biodiversity of the study area.</p> <p>Does not know the quantitative and qualitative methods of determining biodiversity. Does not know how to interpret and analyze the results, draw conclusions, and identify cause-and-effect relationships of processes occurring in ecosystems.</p>	<p>Удовлетворительно</p>
<p>He knows the terminology of nature protection.</p> <p>It can give a physical and geographical description of the territory of the internship.</p> <p>He knows the methods and techniques of research, the features of their application in the field and in-house conditions.</p> <p>He/she has the tools and devices necessary for conducting environmental research in protected areas, and is able to apply them in practice.</p> <p>Has an idea of the biodiversity of the studied area.</p> <p>He/she is proficient in quantitative and qualitative methods of determining biodiversity.Does not know how to interpret and analyze the results, draw conclusions, and identify cause-and-effect relationships of processes occurring in ecosystems.</p>	<p>Хорошо</p>
<p>He knows the terminology of nature protection.</p> <p>It can give a physical and geographical description of the territory of the internship.</p> <p>He knows the methods and techniques of research, the features of their application in the field and in-house conditions.</p> <p>He/she has the tools and devices necessary for conducting environmental research in protected areas, and is able to apply them in practice.</p> <p>Has an idea of the biodiversity of the studied area.</p> <p>He/she is proficient in quantitative and qualitative methods of determining biodiversity.He is able to interpret and analyze the results obtained, draw conclusions, and identify cause-and-effect relationships between the processes occurring in ecosystems.</p>	<p>Отлично</p>