

**NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES
OF UKRAINE**

**EDUCATION AND RESEARCH INSTITUTE OF FORESTRY AND
LANDSCAPE-PARK MANAGEMENT**

Department of Silviculture

“CONFIRMED”

Dean of the Faculty (Director of Institute)

Roman VASYLYSHYN

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“APPROVED”

at the meeting of the department of Forestry

Protocol №22 dated 28.05.2024 p.

Head of Department

Nataliia PUZRINA

”REVIEWED ”

Program Coordinator of Forestry

Program Coordinator

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**PROGRAM OF THE TRAINING PRACTICE
FOR THE COURSE OF
VEGETATION FIRES: SCIENCE & MANAGEMENT**

Specialization: 205– “Forestry”

Educational program: “Forestry”

Faculty (Institute): Education and Research Institute of Forestry and Landscape-Park
Management

Developers: Professor, Doctor of Agricultural Sciences Sergiy ZIBTSEV

(position, academic degree, academic title)

Kyiv – 2024

1. Purpose and objectives of the training practice. The purpose of the training practice is to study all aspects and stages of the organization of forest protection from fires, as well as the organization of fire extinguishing, forest fire statistics, study of factors affecting the success of extinguishing, fire extinguishing equipment, procedures for interdepartmental interaction during extinguishing, ensuring communication and logistics on fire, safety and individual protection of fire personnel.

The objectives of training practice is to prepare highly qualified specialists in forestry, who will be able to effectively organize the protection of forests from fires based on an understanding of the species composition, structure and spatial distribution of plant combustible material, the nature of the occurrence and behavior of fires, to organize prompt extinguishing of fires in order to protect the lives of people and their property and preventing the further spread of the fire to other landscapes, assess the fire situation, take command and organize interdepartmental cooperation on extinguishing, form fire brigades, ensure communication and logistics and the necessary level of safety during extinguishing forest fires. As a result of studying the discipline, the student must

know:

- the order of forest protection against fires;
- distribution of responsibility during fire suppression;
- basics of aviation firefighting organization;
- regularities of planning technical support for fire suppression;
- logistics and financial support of fire suppression;

be able:

- to organize the protection of forests against fires;
- analyze combustion conditions and features of fire suppression;
- draw up extinguishing plans with formation of tactics and strategies;
- organize a command post for fire suppression and its operations.

2. The scope and organization of works

In accordance with the current educational and calendar plan, tree days (15 hours) is allocated for conducting training practice in "Vegetation Fires: Science & Management" in the second semester for master's students. Management of training practice is carried out by the Department of Silviculture. The responsible head of practice is a scientific and pedagogical employee of the department. Working out the topics of practice is carried out with the involvement of employees of forestry enterprises, fire suppression equipment, cartographic materials and relevant documentation.

To perform practice tasks, before starting work, the academic group of students must be divided into fire teams. The team of students is led by the incident

commander, who receives the necessary tools, devices, manuals and handouts before the start of practice. All students fill in a practice diary every day. Entries in the diary should be kept carefully and accurately.

Each day of practice consists of two stages of work:

- performance of work in the forest, at the forest fire station or in the office of the forest enterprise;
- chamber work on the processing of the collected material and design of the diary.

At the beginning of practice, the training manager conducts an introductory briefing on labor protection and safety techniques, which is noted in a special journal. Before carrying out work related to the use of manual fire suppression equipment, fire hoses and barrels, motor pumps, slip-on-unit modules, fire tankers, tractor equipment and tillage mechanisms, as well as ignition devices, an initial briefing is conducted at the workplace by company representatives.

Before the practice assessment, each team submits diaries to the leader with attachments that reflect the performance of tasks in accordance with the approved practice program. Assessment includes practical questions, individual and team tasks in accordance with the training practice program.

3. Methodology of training practice

During the practice, verbal, visual and practical teaching methods are used. Individual topics of the program are worked out during excursions to the forest, to forest fire stations of various types, water supply facilities and other institutions, organizations, and departments. Individual tasks are performed individually, in teams and as part of an academic group.

4. Content of training practice

Calendar plan, supervisors, and place of training practice

1. Calendar plan of the training practice for the course of Vegetation Fires: Science & Management

№	Topic	Duration, hours
1	Organization of the landscape fire management system	5
2	Features of forest firefighter training. Personal protection, equipment and risk management	5
3	Behavior of forest and landscape fires. Organization of fires suppression operations	5
Total		15

2. Supervisors, date, and place of training practice

Place of the training	Course, group	Date	Supervisors
NULES of Ukraine	5, 1	03-05.06.2024 p.	Prof. S.V. Zibtsev Assoc. Prof. V.V. Gumeniuk

5. Structure of training practice

In accordance with the current curriculum and program of the discipline "Vegetation Fires: Science & Management", the following topics are considered during training practice:

Topic 1. Organization of the landscape fire management system

The main provisions of the organization of forest protection against fires. Normative and legal basis of protection of forests from fires. Accounting for fires at the enterprise. Basic documentation. Determining the dynamics of natural fire danger and indicators of combustibility of the forest stock. The concept of the fire season.

Topic 2. Features of forest firefighter training. Personal protection, equipment, and risk management

Rights and obligations. The structure of the fire command. Reading topographic maps and navigating the terrain using a compass. Personal protective equipment and personal equipment. Risk management: situations to be aware of and basic rules of behavior during a fire. The LCES system (observation, communication, evacuation routes and safety zones. Safety during firefighting at the border of the forest and the settlement. Human factor.

Field exercises: "Individual protection, equipment and risk management" and "Duties and tasks of a fire watcher, use of radio communication, determination of evacuation routes and safety zones"

Topic 3. Behavior of forest and landscape fires. Organization of fires suppression operations

Basic terminology. Forest fuels. Weather conditions, fire environment and topography. Communication. Hand tools. Tank trucks, modules, and motorized pumps. Laying sleeve lines. Stages of extinguishing a fire (reconnaissance, localization, extinguishing, guarding, liquidation). Strategy and tactics of extinguishing.

Exercises:

1. "Elimination of a fire of a given intensity, taking into account combustible materials, weather conditions and terrain" and "Laying of a main hose line, use of fire trucks and modules."

2. "Prediction of fire development and behavior based on known weather parameters, characteristics of forest fuels and terrain" and "Use of hand tools and motor pumps for fire suppression".

6. Tools, devices, firefighting equipment and means of fire suppression

Compasses, altimeters, pocket weather stations, compasses, binoculars, ignition device, shovels, firecrackers, fire back packs, powder fire extinguishers, motor pumps, fire hoses of various diameters, fire barrels, slip-on-unit module, fire truck, tractor with PL-1 plow (PKL- 70) fire-resistant clothing, helmet, glasses, respirators, leather gloves, fire-fighting shoes.

7. Measures for labor protection and industrial sanitation

Before the start of training practice, the leader of the academic group conducts a general briefing on occupational health and safety, safety rules, industrial sanitation, familiarizes students with the requirements of the Regulations on the Procedure for Conducting Educational and Training Practices for students of Education and Research Institute of Forestry and Landscape-Park Management and the Rules of Internal Procedure in student dormitories of NULES of Ukraine, for which students sign up in the corresponding journal.

In the case of involving students in the performance of production work in forestry, conducting and documenting the briefing is carried out by the production manager.

8. Recommended sources of information

1. Earth Observing System - Data and Information System (EOS-DIS)
<http://spsosun.gsfc.nasa.gov/eosinfo/EOSDIS Site/index.html>

2. Economic Commission for Europe (ECE) www.unecce.org/trade/timber/ff-stats.html

3. Environmental Emergencies Partnership (EEP)
www.humanitarianinfo.org/eep/proiectupdates.htm

4. Eurasian Fire in Nature Conservation Network (EFNCN)
www.fire.uni-freiburg.de/programmes/natcon/natcon.htm

5. European and Mediterranean Major Hazards Open Partial Agreement (EUR-OPA) www.coe.int/t/dg4/majorhazards/default EN.asp

6. European Forest Fire Information System (EFFIS)
<http://effis.jrc.it/Home/>
7. Food and Agriculture Organization of the United Nations (FAO)
www.fao.org/forestry/site/infonote/en
8. FAO Committee on Forestry (COFO)
www.fao.org/forestry/site/2962/en
9. FAO Technical Cooperation Programme (TCP) www.fao.org/tc/tcp/
10. Fire Management Working Papers: Thematic Paper series Available at the Fire Management Web site: www.fao.org/forestry/site/35853/en
11. Working Paper FPF/1E Guidelines on Fire Management in Temperate and Boreal Forests. November 2002.
12. Working Paper FM/2E International Wild land Fire Management Agreements Template.
13. Tom Frey, Ricardo Velez Munoz. January 2004.
14. Working Paper FM/3E Legal Frameworks for Forest Fire Management: International Agreements and National Legislation. Fernando Fernandez Arriaga, Frederic St-Martin, Tom Frey, Ricardo Velez Munoz. March 2004.
15. Working Paper FM/4E Community-Based Fire Management in Spain. Ricardo Velez Munoz. April 2005'.
16. Working Paper FM/5E Report on Fires in the South American Region. Maria Isabel Manta Noiasco. March 2006.
17. Working Paper FM/6E Report on Fires in the North East Asian Region. Leonid Kondrashov. March 2006.
18. Working Paper FM/7E Report on Fires in the Baltic Region and adjacent countries. Ilkka Vanha-Majamaa. March 2006.
19. Working Paper FM/8E Report on Fires in the Mediterranean Region. A.P. Dimitrakopoulos and I.D. Mitsopoulos. March 2006.
20. Working Paper FM/9E Report on Fires in the Sub-Saharan Africa (SSA) Region. Alexander Held. March 2006.
21. Working Paper FM/10E Report on Fires in the South East Asian Region. B.J. Shields, R.W. Smith and D. Canz. March 2006.
22. Working Paper FM/11E Report on Fires in the Balkan Region. N. Nikolov. March 2006.

Program of the Training Practice for Course of Vegetation Fires: Science & Management was approved at the meeting of the Department of Silviculture by

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Head of Department, Assoc. Prof.

Nataliia PUZRINA