

CONNECT

Inclusive open schooling
with engaging and
future-oriented science

BEST PRACTICES

Environmental education – monitoring of protected natural areas in Prahova County

This report presents an open schooling initiative on Environmental Education – monitoring protected natural areas in Prahova County, which was developed by the Forestry Technical College – Campina between April and November 2023. The activities included a science professional, professors, engineers of the forestry department and partners – Prahova Natural Areas and Campina Forestry District. It was supported by Valahia University in Targoviste, Romania.

Care: Students were involved, interested or concerned about monitoring the state of forests Protected Natural Area – Plopeni Forest and Glodeasa Forest, a real-life problem, the vegetation state of the forest, the age of trees, the diameter of trees, their height. Students who participated in the activities were 17-19 years old, eleventh and twelfth grades, forestry and natural sciences.

Know: Students used knowledge about forestry, environment, ecology. The competences that students practiced were the ability to use measuring instruments, to correctly determine diameters, tree heights and appreciation of their ages, students' questions were related to the composition of the forest and the presence of dead wood fallen to the ground that has not been extracted, maintenance of forest roads, information and clarifications that were presented and explained by both guiding teachers and partner representatives, all of which can be found in individual student portfolios.

Do: At the end, students prepared posters, campaign, infographic, video, interviews. They made PPT presentations, portfolios and were supported by families and representatives of the above-mentioned partners, former students of the college.

Findings related to the Open Schooling approach: The activity was framed in C.D.L., in the curriculum. It was useful, relevant, challenging, innovative, interesting and appealing, as evidenced by the attached photos. Open schooling could be useful for other teachers because it has an inter and transdisciplinary character – practical applications, worksheets from the work for obtaining the first didactic degree of Professor Ifrimu Iulia – *Apprendre et développer le lexique du domaine forestier: approches didactiques en classe de FLE.*



Results obtained by students: Students were curious, pleasantly impressed, attracted by field trips, whose memory created confidence that they will become students of forestry and biology faculties in the future. As an example, one student mentioned: "it is much easier to determine the height of trees with state-of-the-art devices – vertices than with old dendrometers in the school's equipment" which is relevant and related to their achievements.

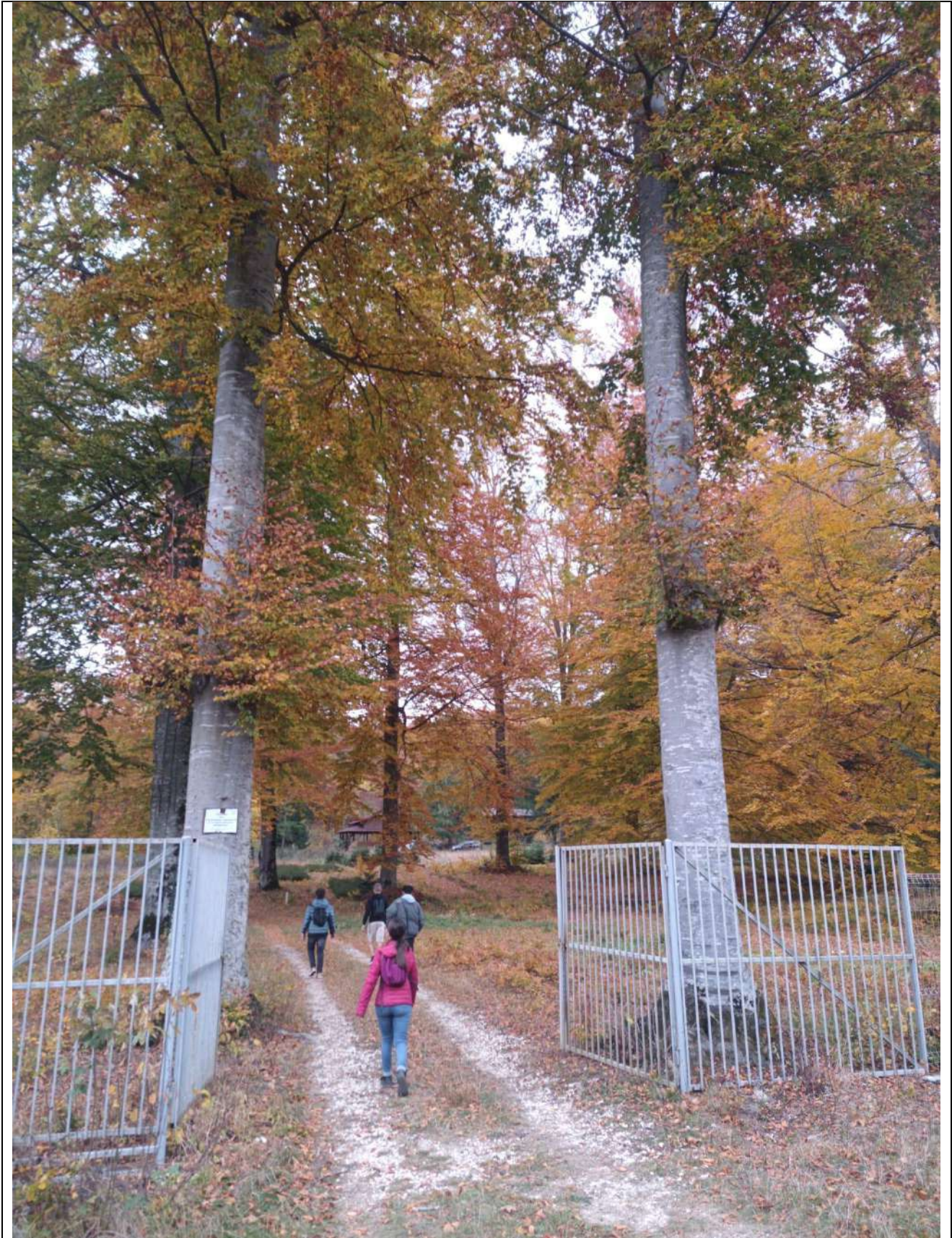




Please select the most relevant photo about your initiative (which will be public and published under an open license on the website to represent the practice).

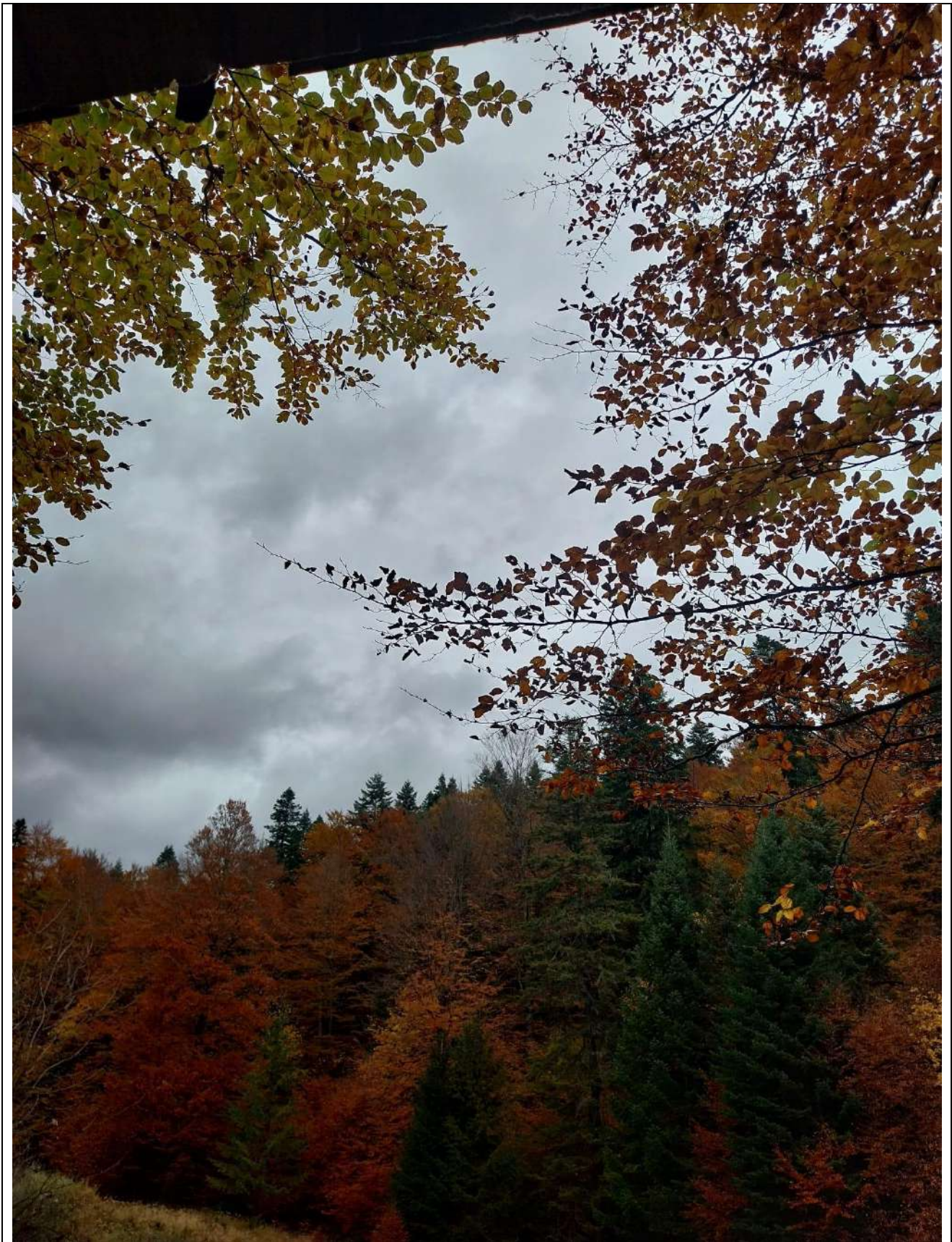




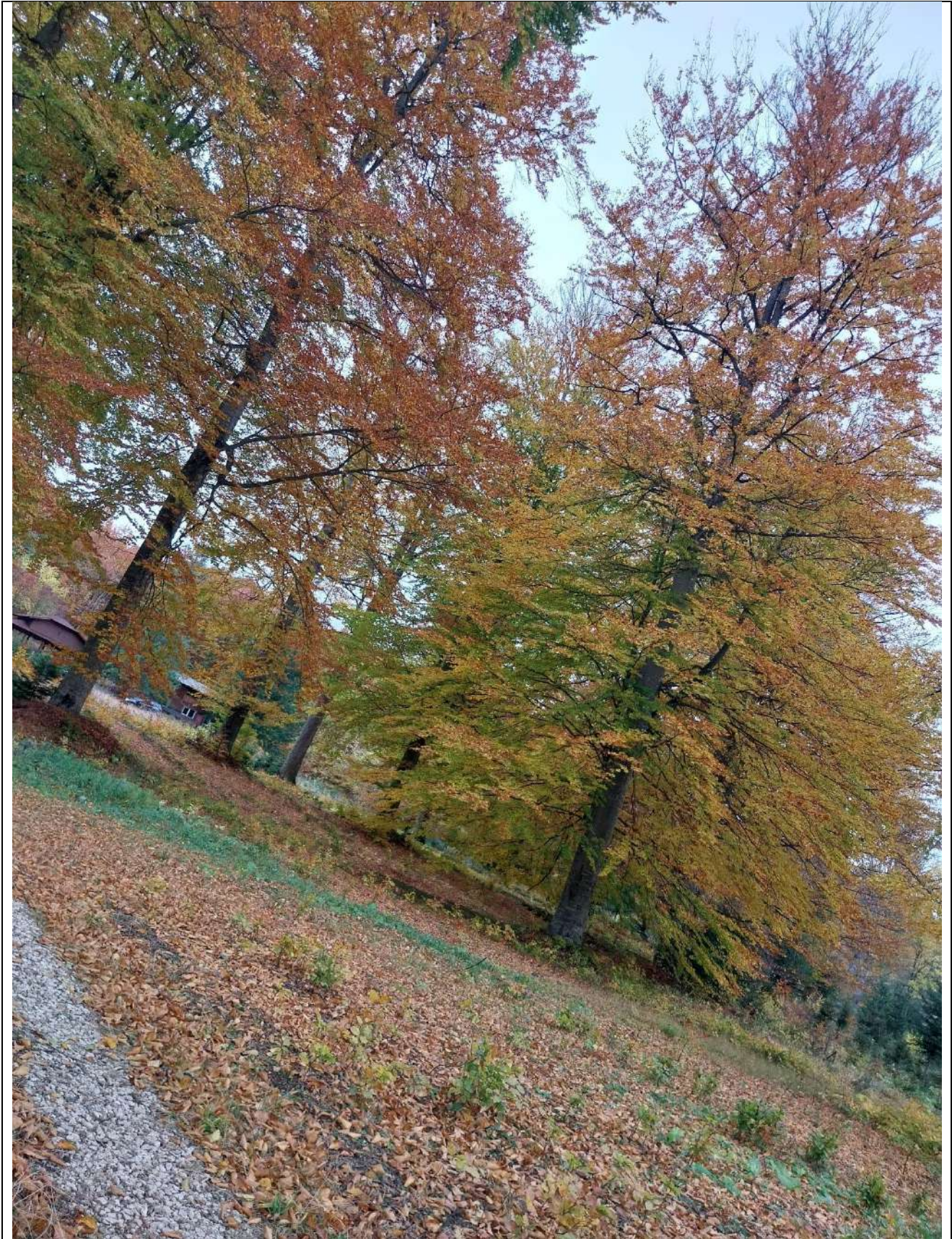


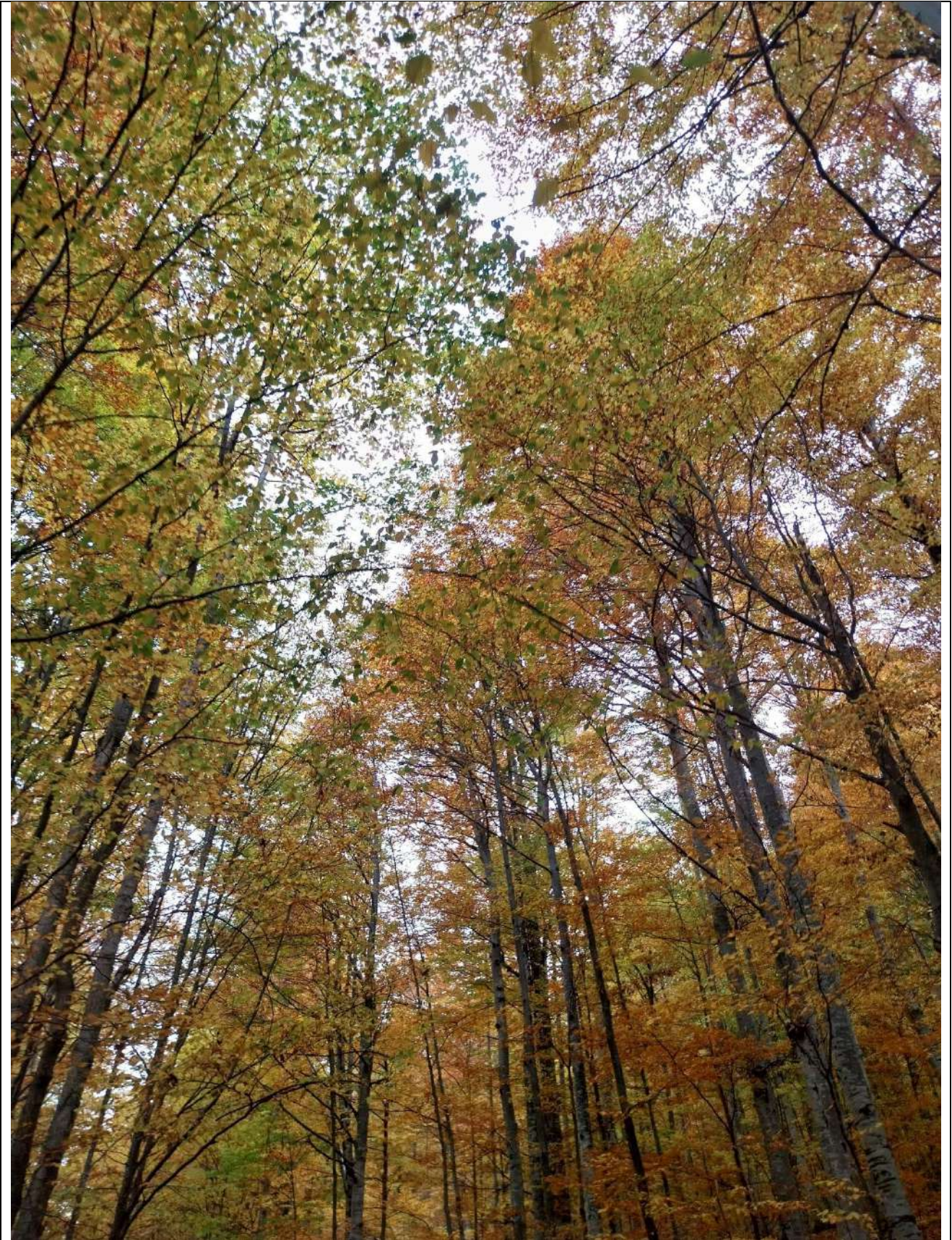




























REGIA NAȚIONALĂ A PĂDURILOR - ROMSILVA DIRECTIA SILVICĂ PRAHOVA
OCOLUL SILVIC CÂMPINA

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REZERVAȚIA NATURALĂ GLODEASA SIT NATURA 2000

AMPLASARE: U.A.T VALEA DOFTANEI
UP V ORJOGOAIA; UA 69-83

LIMITE:
SUD: CÂMPINA - VALEA DOFTANEI - SĂCELE
EST ȘI NORD: CULMEA MUSITA
VEST: CULMEA ORJOGOAIA

SUPRAFAȚĂ: 535 HA

POZIȚIE GEOGRAFICĂ: CARPAȚII DE CURBURĂ,
MUNȚII BAIULUI, VERSANTUL DREPT AL BAZINULUI
VĂII DOFTANEI

ALTITUDINE: (m): MIN 842m, MAX 1400m

GEOLOGIE: FORMAȚIUNI DE FLIS GREZOS -
CALCAROS (STRATE DE SINAIA)

HIDROLOGIE: PĂRĂUL GLODEASA

CLIMĂ: REGIUNEA CLIMATICĂ DFBX

- PE SUPRAFAȚA SUS MENȚIONATĂ A FOST IDENTIFICAT UN HABITAT NATURAL DE INTERES COMUNITAR - 91V0, PADURI DACICE DE FAG „SYMPHYTO-FAGION”, IMPORTANT PENTRU ARBORETELE CVASIVIRGINE DE BRAD ȘI FAG UNICE ÎN BAZINUL VĂII DOFTANEI
- SUNT PREZENTATE DOUĂ SPECII DE FLORĂ DE INTERES COMUNITAR (GALANTUS NIVALIS ȘI CAMPANULA SERRATA) ȘI DOUĂ SPECII DE FAUNĂ DE INTERES COMUNITAR (UN AMFINIAN - BOMBINA VARIEGATA ȘI UN MAMIFER - URSUS ARCTOS)
- LA DATA ACTUALĂ, FACTORII ANTROPICI CU IMPACT NEGATIV LA ADRESA HABITATULUI ȘI A SPECIILOR DE FLORĂ ȘI FAUNĂ RĂMÂN, LA UN NIVEL SCĂZUT









Pădurea Glodeasa- Mărturie a trecutului, moștenire a viitorului



Pădurea Glodeasa este o arie protejată aflată în partea nordică a comunei Valea Doftanei, la aproximativ 3 km distanță de satul Trăisteni. De zece de ani, Pădurea Glodeasa e cunoscută pentru speciile de plante și animale ce trăiesc aici, ea fiind considerată pădure protejată. Bătrânii satului cunoșteau această arie sub numele de "Pădurea Regelui" și o protejau cu sfințenie!

În interiorul Pădurii Glodeasa, peisajele deosebite se îmbină armonios cu susurul apei și cu cântecul păsărilor. Orchideele, broscuțele și bufnițe, ursul, căprioara și lupul se întrec în jocuri diverse, iar bradul, fagul și laricele povestesc istoria de sute de ani a pădurii, legându-se ușor în adierea vântului.



Pe parcursul vizitei dumneavoastră în aria protejată Pădurea Glodeasa, vă rugăm să:

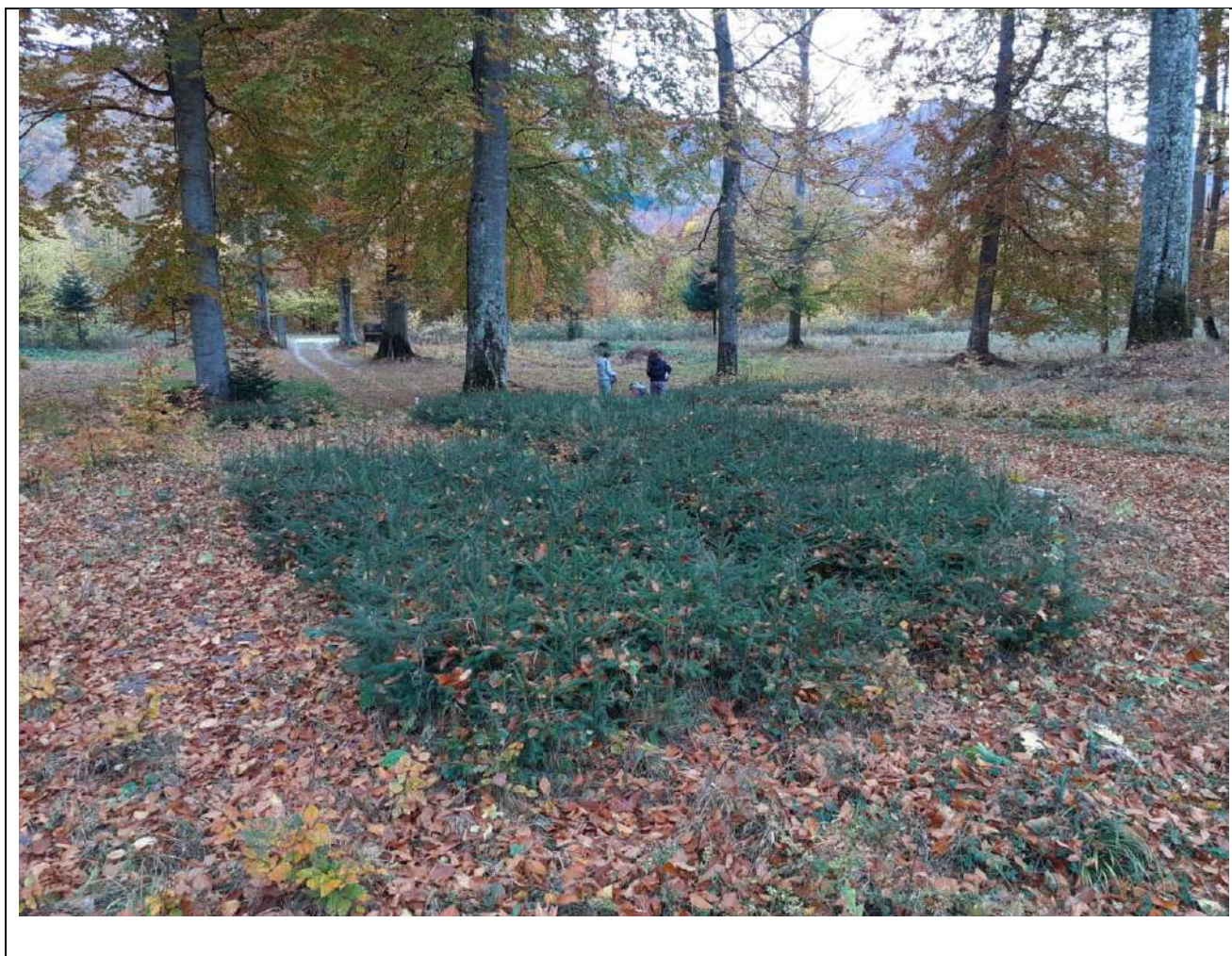
- mergeți în grupuri organizate
- nu faceți zgomot, pentru a nu deranja animalele
- nu faceți fumuri în aer liber
- nu faceți focuri
- nu stricați arborii/vegetația din pădure
- nu săriți în apă
- nu vă apropiați de animalele sălbatice și sărbătoriți
- faceți în urma dumneavoastră curățenie
- vă bucurați de peisaj, de fructe și de respirația pădurii

Vă mulțumim și vă mai așteptăm!









ABOUT the CONNECT institution that supported the school	
ORGANIZATION	Valahia University of Targoviste
COUNTRY	Romania
Name of partner (contact person)	Mihai Bizoi
Implementation period	Starting date: 01/11/2022_ Finish date: 15/07/2023
ABOUT THE INTERVIEWED TEACHER(S)	
SCHOOL	Forestry Technical College, Campina
Names of TEACHERS (for certificates of good practice)	Serban Vali, Secareanu Emilia, Mitrof George, Stanciu Daniela, Milea Sorin.
LIKE	Male/Female
DISCIPLINE (Science, Physics, Chemistry, Biology, ...)	geography, physics, biology, technical disciplines, forestry and computer science
How many lessons were used in open schooling?	15
Title of the Open School Resource used	Rural biodiversity and ecology in forestry
Type of scientific actions (structured or open-ended scenario)	PPT presentations, books, worksheets, field activities
Curricular themes	Monitoring of protected natural areas, Analysis of the overall state of visited forests in protected areas



ABOUT TEACHERS' STUDENTS	
Class	X and XI, forestry and natural sciences
Average age	17
Total student participants	50
Total students who have completed scientific actions	37

SCIENTISTS INVOLVED:	
Name	Tudor Liviu Mihai, Vlasceanu Claudia, Iorga Viorel, Bran Gabriel, Manea Ancuta,
Field	Forestry/Hunting

Questionnaire

01. How have you (teachers) used open school resources? Could you describe what you did in your lessons?

Student activities with scientists:

Measurements of tree heights and diameters and determinations of the vegetation status of stands

Student activities with families:

Greening and biodiversity conservation actions

02. How have your students used the CONNECT resources? Do you have (or could you describe) examples of the best scientific action (for our website/awards)?

Any examples of why the students prepared?

PPT presentation on the role of forests in reducing the effects caused by climate change

Slide? Poster? Video? (Add some images if possible)



Serviciul Teritorial Prahova din cadrul Agenției Naționale pentru Apă și Natură Protejate (ANP)

Arborii reprezintă filtre de aer ale lumii

Ei absorb dioxidul de carbon din aer și îl înlocuiesc cu oxigen.

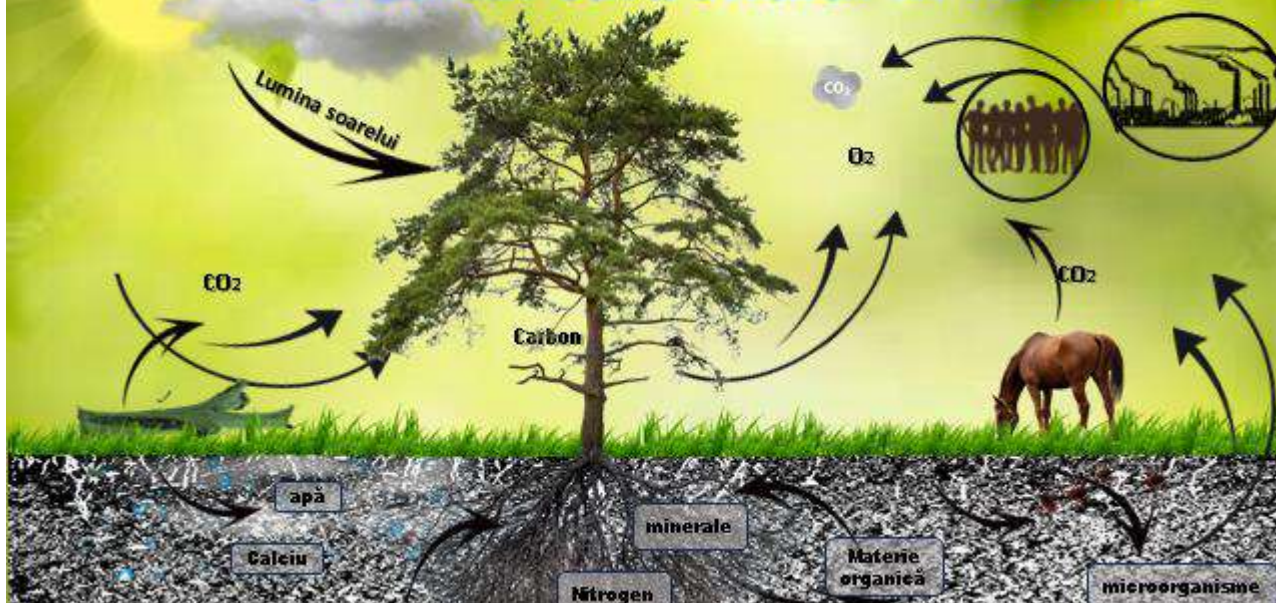
Caracteristici:

- ating uneori vârste de până la 1000 de ani
- acoperă 1/3 din partea de uscat a planetei
- cuprind peste 80.000 de specii



Serviciul Teritorial Prahova din cadrul Agenției Naționale pentru Apă și Natură Protejate (ANP)

Circuitul carbonului în natură





Serviciul Teritorial Prahova din cadrul Agenției Naționale pentru Așii Naturale Protejate (ANP)

ABSORBȚIA CARBONULUI ÎN ARBORI



Un arbore absoarbe o cantitate vastă de dioxid de carbon din atmosferă, carbonul fiind captat în interiorul structurii lemnoase a acestuia, în rădăcini, trunchi și crengi

Un arbore sănătos, poate să înmagazineze până la 6 kilograme de carbon anual

Un studiu realizat pe un eșantion de 0,4 hectare de arbori a demonstrat că aceștia înmagazinează circa 2,5 tone de carbon în fiecare an.

Ei pot depozita, de-a lungul vieții, până la 20 de tone de dioxid de carbon în trunchi, ramuri și rădăcini

Această medie de 0,4 hectare de arbori, va genera zilnic suficient oxigen pentru a ține în viață 18 oameni



Serviciul Teritorial Prahova din cadrul Agenției Naționale pentru Așii Naturale Protejate (ANP)

EMISIILE DE CARBON reprezintă un factor important ce influențează masiv cursul schimbărilor climatice

Sursele acestora sunt multiple, fie că vorbim de procesarea și utilizarea combustibililor fosili, industria transporturilor la nivel global sau producția energiei electrice și termice.



Tratatul Climatic de la Paris din 2015 dar și COP26 din Glasgow au pus accent pe nevoia urgentă a reducerii emisiilor de carbon la nivel global și au încercat să propună diverse măsuri și modalități pentru atingerea acestui obiectiv.





03. To what extent have the resources of scientific actions responded to your needs?

Needs related, for example, to school curricula:

The resources were tailored to the competences of C.D.L.: Forest ecosystems

Student involvement:

Active and effective for the learning process

Students' interest and confidence in science:

Students came up with proposed solutions for environmental protection, afforestation and possibilities to limit global warming

04. How easy or difficult was it to use the resources of scientific actions?

Please add any specific issues related to materials, procedures, interactions, or curriculum:

The use of scientific resources was hampered by the lack of materials, measuring instruments that were provided to us by collaborators and partners, were later purchased.

05. What have been the benefits of open schooling for your students?

Describe the results achieved by students in their scientific actions related to:

KNOWLEDGE	Identification of species, parts of field equipment, measuring instruments, calculation modes, types of essences.
SKILLS	Their ability to put into practice the above, to measure, compare and analyze species, landscapes, level of evolution or degradation of the environment.
ATTITUDES	Continuous involvement of students in carrying out field activities, to protect nature, to green where needed, to influence both the community and the entourage in a positive way.

06. What were the challenges of using scientific actions for your students?

Select the main challenges students faced and exemplify:

- Difficult due to inadequate weather conditions on the days set for the field trip
- Long...
- Boring...
- Other (Please specify): Travel time





07. What activities worked well within the curriculum?

What helped students achieve their learning goals:

Thorough specialized preparation of presentations and support provided by our partners.

08. What activities did not work well within the curriculum?

Anything that could be done differently or avoided:

This was not the case.

