



# INSTITUTE OF DENDROLOGY

## POLISH ACADEMY OF SCIENCES

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**Director of the Institute of Dendrology, Polish Academy of Sciences,  
invites applicants for the position of Post-doc  
at the Department of Ecology**

### **I. REQUIRMENTS**

1. Doctoral degree in the field of biological, forest, Earth information or closely related sciences\*;
2. Knowledge about spatial modeling, remote sensing, and geographic information systems;
3. Knowledge and expertise in spatial modeling using satellite or airborne images and airborne laser scanning; additional advantage will be an experience in vegetation data or multi- or hyperspectral images;
4. Scientific achievements including publications indexed by Clarivate Analytics, with total IF>10;
5. Proficiency in English (speaking and writing);
6. Skills in data analyses using statistical (R or Python) or geoinformatic (QGIS or ArcGIS) software;
7. Readiness to participate in scientific expeditions and training, and ability to conduct field investigations;
8. An additional advantage will be an internship abroad or an internship in a research unit in Poland;
9. High motivation for further development and ability to work in a team;
10. Aptitude for scientific research;
11. Very good work organization.

\* According to the criteria of the National Science Centre (Kraków, Poland), the candidates can be accepted only if they were awarded the PhD degree up to 7 years before employment in the project. This period excludes intervals due to maternity leave, adoption leave, paternity leave, parental leave, or parental care leave, granted according to the principles set out in the Labor Code, or else associated with receiving sickness benefits or disability benefits because of temporary inability to work, including those caused by a disease requiring therapeutic rehabilitation. In the case of women, the above-mentioned 7-year period can be extended with 18 months for each born or adopted child. Women can choose more favorable ways to document the intervals in their scientific career.

### **II. POSSIBILITIES**

1. Salary of ca. 120,000 PLN annually (the amount includes remuneration costs along with non-wage labor costs, the so-called gross-gross);
2. Possibility to cooperate with research centers in Poland and abroad;
3. Scientific development;
4. Strengthening the scientific portfolio.

### **III. PROJECT DESCRIPTION**

The recruitment for 20 months concerns OPUS 18 project no. 2019/35/B/ST10/04141, entitled "Linking soil substrate biogeochemical properties and spontaneous succession on post-mining areas: novel ecosystems in a human transformed landscape" funded by the National Science

Centre with the possibility of extension up to 24 months (subject to the extension of the duration of project no. 2019/35/B/ST10/04141).

**Principal Investigator:** prof. dr hab. Andrzej M. Jagodziński

**Key words:** hyperspectral imaging, laser scanning, remote sensing, geoecosystem, spoil heaps, biodiversity, ecosystem functioning

**Project topics:**

In the Anthropocene epoch we observe continuous transformation of the environment. This contributes to the novel ecosystems development. Such ecosystems result from recombination of species composition and resources availability, caused by human activity. The knowledge about biodiversity in novel ecosystems and their ecosystem services is scarce. It is also hard to predict how much time novel ecosystems desire to reach level of biodiversity and ecosystem functioning typical of natural ecosystems. In this research project we aim to assess the differences in functioning of natural and novel ecosystems, spontaneously developing in post-coal mining spoil heaps. We will also assess when novel ecosystems will be similar to natural ecosystems. We conduct our study in Upper Silesia (Poland), region with long-term tradition of coal mining industry. In our research project we will test the following hypotheses:

1. Functions of spontaneous ecosystems on post-mining areas will trend towards the levels of natural ecosystems, increasing ecosystem values along successional gradients of time since abandonment. Due to low resources availability, initial successional stages will reach low biomass and nutrients cycling rates.
2. Alpha and beta diversity of post-mining areas will increase in the first phase of successional development and decrease in the second phase. We assume the peaks of abundance and biodiversity in the intermediate stages of succession, as well as that this patterns will differ among various groups of organisms.
3. Level of completeness of the interaction network among ecosystem functions and diversity of particular organism groups will increase along successional gradients. This will be due to encroachment of late-successional species and increase of resources availability.
4. Levels of ecosystem functions and biodiversity will be strongly dependent on landscape context, i.e. spoil heap shape and area, surrounding ecosystems characteristics and connectivity to their species pools.

In the study we will integrate field measurements with remotely sensed data. In the project we obtained hyperspectral images and airborne laser scanning for 60 heaps. Linking them with ground-based data will allow to develop models revealing variability of ecosystem functions and biodiversity within spoil heaps, as well as along successional gradients. Results will significantly expand the knowledge about mechanisms of assembling and development of post-industrial ecosystems. This will bridge the gap in knowledge about relationships among biodiversity, ecosystems functioning and their productivity. We assume that our results will help in developing novel analytical frameworks, supporting further studies on ecosystems restoration and biological conservation in post-industrial lands.

In our research project we offer a collaboration with a wide team of scientists, analyzing biodiversity of various groups of organisms: bryophytes, lichens, fungi, bacteria, mites, insects and birds, as well as nutrients cycling specialists. Joining to our research team will support wider studies aimed to increase our understanding of mechanisms of ecosystems shaping in post-industrial landscape. We offer ability to wide exchange of ideas and scientific development in a dynamic team, focused on broad scope of ecological research.

**Tasks for the Post-doc:** implementation of the task in accordance with the research plan of the project i.e. preparation of landscape-scale models and calculations for all tested heaps, in particular, participation in: 1) verification and preprocessing of hyperspectral images and airborne laser scanning data for further analyses; 2) development of ecosystems functions and biodiversity models, based on remotely sensed data; 3) application of models to predict ecosystem functions and biodiversity for whole study area and development landscape-scale models.

#### **IV. CONDITIONS OF EMPLOYMENT**

Fulltime employment contract.

Employment period: 20 months.

#### **V. LIST OF REQUIRED DOCUMENTS**

1. Application for employment, addressed to the Director of the Institute of Dendrology, Polish Academy of Sciences;
2. Personal data questionnaire valid at the Institute;
3. PhD diploma or its confirmed copy;
4. Description of previous scientific, teaching, and organizational activity of the job applicant, with documentation confirming his/her achievements.
5. Please be advised that foreign diplomas entitle you to continue education in Poland on the terms specified in international agreements, and in the absence of such agreements - on the basis of relevant national regulations, by means of nostrification. We ask foreign candidates and Polish citizens who have obtained a professional title or academic degree abroad to check whether the diploma they hold may be recognized as equivalent to Polish one.

Written information about the diploma obtained abroad, in particular about the level of education and the status of the university, is provided at the request of the person concerned by the Director of the National Agency for Academic Exchange. Information is provided on the basis of documents submitted by the applicant.

**At the stage of the recruitment process, there is no requirement to present documents certified with the apostille clause, nor a requirement to nostrificate diplomas. These requirements must be met after the candidate is accepted.**

Detailed information can be found at:

<https://nawa.gov.pl/en/apostille-and-legalization>

<https://go-poland.pl/recognition-degrees-0>

The documents should be sent by e-mail to the Department of Scientific Information of the Institute of Dendrology, Polish Academy of Sciences (Magdalena Łukowiak, lukowiak@man.poznan.pl) with a note: **“Application for the position of Post-doc at the Department of Ecology”** in the form of a pdf attachment. If sending by electronic means is not possible, applications sent to the address Institute of Dendrology, Polish Academy of Sciences, Parkowa 5, 62-035 Kórnik, Poland, with a note on the envelope **“Application for the position of Post-doc at the Department of Ecology”**.

Please do not send original documents.

#### **VI. Application deadline: 31/10/2023**

## Recruitment

The recruitment procedure will take place in two stages:

1. First stage – the committee will evaluate the submitted documents. On this basis, a group of candidates will be selected to participate in the second stage of recruitment.
2. Second stage – interviews with the recruitment committee. The selected candidates will be informed by email about the date and time of the interview.

The final decision will be published until **14/11/2023**

The Institute of Dendrology, Polish Academy of Sciences, does not provide any flat for the Candidate.

Additional information may be provided by the Principal Investigator: prof. dr hab. Andrzej M. Jagodziński, email: amj@man.poznan.pl

Kórnik, 19/09/2023

ZASTĘPCA DYREKTORA  
DS. NAUKOWYCH  
INSTYTUTU DENDROLOGII PAN  
*A. Ratajczak*  
dr hab. Ewelina Ratajczak, prof. ID PAN

Job applicants who are interested in starting to work at the Institute of Dendrology, Polish Academy of Sciences, Kórnik, are asked to submit also the following statement:

***"I hereby declare that I agree to processing of my personal data during the process of recruitment for the position of ....., conducted by the Institute of Dendrology, Polish Academy of Sciences, Kórnik (62-035, ul. Parkowa 5).***

In compliance with article 13 of the General Data Protection Regulation (EU) 2016/679 of 27 April 2016, on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing the Directive 95/46/EC (general directive on data protection), hereafter referred to also as "GDPR", the Institute of Dendrology, Polish Academy of Sciences, informs that: The personal data included in the job application (and the documents attached to it) will be administered by the Institute of Dendrology, Polish Academy of Sciences, address: 62-035 Kórnik, Parkowa 5 (hereafter referred to also as "Administrator").

The Administrator can be contacted via an e-mail message sent to iod.idpan@man.poznan.pl or a letter sent to the address: Institute of Dendrology, Polish Academy of Sciences, 62-035 Kórnik, Parkowa 5, marked as "Dane osobowe" (= "Personal data").

Your personal data will be processed by the Administrator to conduct the process of recruitment for the position indicated in the recruitment announcement.

The legal basis for personal data processing is the consent (article 6, paragraph 1(a) of GDPR). At any time you have a right to withdraw consent, with no effect on the compliance with the right to process, which was implemented on the basis of the consent before its withdrawal. If the consent is withdrawn, the data covered by the consent, processed on its basis, will be removed immediately.

The consent can be withdrawn via an e-mail message sent to iod.idpan@man.poznan.pl or a letter sent to the address: Institute of Dendrology, Polish Academy of Sciences, 62-035 Kórnik, Parkowa 5, marked as "Dane osobowe" (= "Personal data").

The personal data will be processed until the end of the recruitment process and will be removed within 3 months after the end of the recruitment.

The predicted categories of recipients of the data are: providers of job announcement publication services, providers of systems for recruitment management, providers of IT services, such as providers of information systems.

Providing of personal information is voluntary but necessary for participation in the recruitment process. You have a right to ask the Administrator for access to your personal data, including also asking for their copy, a right to correct them, remove or limit their processing, and a right to move the data (for processing of which a consent was given). You also have a right to lodge a complaint with the supervisory authorities (President of the Personal Data Protection Office in Poland, i.e. Urząd Ochrony Danych Osobowych).