

JOB OFFER

Expert statistician

Specialized in statistical sampling and forest inventory

The National Institute of Geographical and Forest Information * (IGN) is the State's operator in terms of geographical and forest information, certified neutral and interoperable. The Institute is constantly developing new standards, products and geoservices, meeting the growing and evolving needs for cartographic data and geolocated information.

Powerful digital public actor for the multithematic description of the territory, the IGN intervenes in support of the definition, the evaluation and the implementation of the public policies in relation with different domains and has particular competences on the forest.

Innovation is at the heart of the IGN's strategy through its five research laboratories, its school (ENSG), its accelerator of digital geoservice projects (IGNfab), its forestry experts and services provided by IGN Council, IGN Space and special geodesy-leveling works.

Job context

A main mission of the Laboratory of Forest Inventory (LIF) is to contribute to optimizing the permanent sovereign national forest inventory program, created in 1958, and currently conducted by IGN. This optimization aims at increasing the efficiency and precision of the forest inventory as well as reducing its costs, and requires developments on the sampling design and its stratification, measurement protocols, and associated statistical estimators.

It must also contribute to turn the national forest inventory a privileged monitoring tool for forest ecosystems in a highly transitional context (forest expansion, bio-economy strategy, climatic change) that forms an essential research orientation of the future joint research unit INRA/IGN "B2IF" (Biogeochemistry, Inventory and Indicators for Forest ecosystems) to which LIF laboratory will be associated.

A second mission is to contribute to the development of current researches on new quantitative methods for the analysis of forest resources, based on the national forest inventory program, and allowing 1) the temporal projection of forest resources over the longer term (> 50 years) that requires defining appropriate partitioning of the forests, developing large-scale forest dynamics models, and quantifying the uncertainties associated to temporal projections, 2) to increase the resolution and precision in the assessment of forest attributes from NFI sampling points and auxiliary spatialized information (downscaling), by developing and implementing a so-called "multisource" inventory.

Hiring an Inventory statistician in statistical sampling and inference will enable a contribution to developing and optimizing current forest inventory methodologies, and bring support to emerging multi-source inventory and temporal projection methods, and therefore reinforce current activities of the laboratory.

Missions

The main activities will be:

- **To pursue the optimization of the national forest inventory program**, and in particular already implemented changes, including 1) sampling design (set up of a continuous and temporarily renewed sample), 2) optimization of statistical data acquisition (imputation methods, model-based inference), 3) post-stratification of statistical estimators based on remote sensing information, 4) development of estimators associated to these innovations, while replacing these contributions in an international framework (European national forest inventory network, ENFIN, EU-funded project Diabolo) in order to ensure dissemination and publication.

- **To contribute to developments and statistical estimators associated to emerging methodologies for resource quantification** under study at the laboratory, 1) in their spatial dimension, **the multi-source national forest inventory (MS-NFI)** aiming at producing more accurate and regionalized estimates of forest resources, using remote sensing satellite, A-Lidar information and other auxiliary information, 2) in their temporal dimension, **methods of resource projection** based on large-scale dynamic models.
- **To contribute to prospective for the design of a new forest inventory for the equatorial forests of French Guyana** (8 Mha) that should soon form a new mission of the French NFI.
- **To contribute to integrate novel data collected on the national forest inventory program in the information produced by the inventory program, turning it a reliable and updated monitoring tool of forests in their environment.** Integration of outputs related to forest biomass and carbon are a priority based on recently initiated projects.

Requested profile

Experience and skills :

- Advanced expertise in statistics or environmental biometrics specialized in sampling methods and inferential statistics.
- Confirmed statistician, with a demonstrated capacity for publication
- Capacity to develop a strong operational link with the service in charge of of the national forest inventory
- Ability to speak French or strong wish to learn it desired.

A research note (position paper of 2-3 pages) is required in any application, intended to draft a mid-term vision (3-5 years) on how to address the challenges listed in the job description, and in particular those related to forest inventory optimization. For this, it is highly recommended to contact the reference persons indicated below.

A cover letter is also expected, which demonstrates the adequacy between the job requirements and candidate's profile.

Conditions

Status : Civil servant or permanent position (French "CDI"), open to international applications, salary to be negotiated (minimum 40 k€/year)

Modalities and schedule : competitive recruitment, application deadline 1st June 2018, for an appointment from June to later months of 2018.

Location: French National Institute for Geographic and forest information (IGN), Laboratory of Forest Inventory (LIF) –14 rue Girardet, 54000 Nancy, France

<https://sites.google.com/site/LabForestInventory>

Contact

Please send your application (cover letter + CV + research note) at :

recrutement-mobilite@ign.fr

Under reference YLD-Statistician-Nancy

Contacts: Jean-Daniel Bontemps, jean-daniel.bontemps@ign.fr; Frank Fuchs, frank.fuchs@ign.fr ; Nicolas Paparoditis, nicolas.paparoditis@ign.fr

Deadline for application : June 1st, 2018