BANDO N. 331.5 RIC IBE

Selezione per titoli e colloquio ai sensi dell'art. 8 del *"Disciplinare concernente le assunzioni di personale con contratto di lavoro a tempo determinato"*, per l'assunzione, ai sensi dell'art. 141 del CCNL del Comparto "Istruzione e Ricerca" 2019-2021, sottoscritto in data 18 gennaio 2024, di una unità di personale con profilo professionale di Ricercatore III livello, presso l'Istituto per la BioEconomia (IBE)- sede di Sesto Fiorentino (FI)

Oggetto: Trasmissione tracce prova orale relative alla Selezione per titoli e colloquio

In relazione al bando in oggetto si richiede la pubblicazione sulla pagina del sito Internet del CNR agli indirizzi https://www.urp.cnr.it/ delle domande della prova orali allegate al presente provvedimento.

Il responsabile del procedimento
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1

Quali strumenti digitali per l'inventariazione, misurazione e/o tracciabilità dei prodotti forestali conosce e che utilità possono avere nella ricerca forestale?

Reading

The results of the calculations were significantly affected by systemic errors that arise from the manual measurement-based inventory methods, and due to the technical limitations of forest machinery. The attention should be paid to the technical condition of the harvester felling head and the accuracy of the measurement system, by regularly performing assortment control measurements and calibration of the harvester felling head. It should also be noted that factors used to predict bark thickness may differ between the regions and the factors integrated in the *HprGallring* should be adapted to other regions. Debarking during harvesting process can also affect accuracy of the diameter forecast by underestimation of the diameter of trees debarked at stump level. Supplementing the dataset with information from harvester calibration data could help to eliminate potentially erroneous measurements, while the errors in the stand characteristics associated with manual measurements can be reduced by the additional use of remote sensing data.

2

Cosa è lo standard StanForD 2010 e che utilità può avere nella ricerca forestale?

Reading

The stand characteristics can be based on harvester data and field measurements acquired using mainly the sample plot approach and remote sensing based methods. The harvester measurements are automated. The information system of the harvester records operator's activities, felling head and other sensor readings, including the tree species, diameter, trunk length, harvester location coordinates and, in modern harvesters, the angle of rotation of the crane tower relative to the harvester's longitudinal axis. For some machines, the distance of the harvester felling head from the base machine is also recorded, so the location of every harvested tree can be recorded with centimetres accuracy. The harvester control software constructs the trunk model using a log length and diameter measurements. To implement this function and to improve the mechanism for automated calculation of stand characteristics, a complete solution for the analysis of production files that comply with StanForD2010, the *HprGallring* software, was developed. The software can be integrated into the harvester control system or other computer, and can reconstruct the stand before and after thinning using the trunk model, the position of the felled trees, and other parameters recorded by the harvester.

3

Cosa è la tecnologia LiDAR e che utilità può avere nella ricerca forestale?

Reading

After the selection of the felling areas, sample plots were established to determine the stand characteristics and for the calibration tree height models in the remote sensing projection. The centre of the sample plot was determined using a Garmin GPS eTrex 30 receiver. The diameter of the trees was measured by holding a tree calliper in a position relative to the centre (Fig. 1). The height of the tree was measured from the root collar to the top using Vertex 5, with an uncertainty of ±0.5 m. The number of sample plots depends on the area and the heterogeneity of the stand. At least one plot per hectare was set up. Exceptions were done in situations when the stand characteristics of the stand differed significantly within a sub-compartment of more than 0.5 ha, where additional plots were established in those parts of the stand. The area of the sample plot (SP) is 200 m2 (R – 7.98 m). Within SP, trees were measured and broken down by species –pine, spruce, birch, aspen, black alder, grey alder, hardwood deciduous species considered separately, and softwood deciduous species likewise combined. The diameters were measured at 1.3 m from the root collar.