1. **Name of the scientific laboratory Scientific laboratory “Dendrochronology”**

**2. Objectives of the scientific laboratory**

1. To study the growth of trees and forest stands; 2. For a retrospective study of the influence of environmental factors (for example, climatic, astrophysical) on the formation of wood growth; 3. For diagnostics and forecast of the condition of trees and forest stands; 4. To assess the impact of unfavorable factors (for example, recreation, insect defoliation) on tree growth; 5. To assess the effectiveness of forestry activities (for example, thinning); 6. To examine the causes of tree drying out (for example, identifying trees that have dried out as a result of long-term weakening as a result of competition, or died from exposure to factors of a pathological nature); 7. To establish the exact date for the cessation of cambial activity in the tree trunk (calendar time of drying out or cutting down); 8. To identify the place of origin of felled wood; 9. To assess the technical properties of wood during different periods of growth; 10. In order to reconstruct the history of forest phytocenosis in a local area; 11. To study intrapopulation variability in hereditary environmental properties.

**3.List of laboratory equipment**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **№**  | **Name of the equipment**  | **Brief characteristics of the equipment**  | **Tasks performed on the equipment**  | **Year of manufacture** | **Certification (yes/no)** | **Date of equipment verification** | **Notes** |
| 1 | Tree ring measuring device "LINTAB 6" | Drive type - lead screw, Design - water and dust protected, Measuring range, mm - from 0 to 560, Resolution, mm - 0.01, Permissible absolute error of displacement measurement ∆, within the measurement range, mm - ± (2.8 × 10) 10¯⁴ Ɩ + 0.017), Feed, mm/revolution - 2.5, Flywheel diameter, mm - 100, Maximum load on the object table, kg, no more than - 50, PC connection (Microsoft WindowsⓇ) - USB port, Stereo microscope magnification (LeicaⓇ) - 60 times, Weight, no more, kg - 19.5. | Dating the width of tree rings, conducting cross-dating. Office processing of samples. | 2009 | yes |  |  |
| 2 | Laboratory centrifuge | Timer, min - 1-30; Number of seats, pcs - 6; Maximum volume of tubes, ml - 10; Centrifugal acceleration (RCF), g - 1320; Rotor speed, rpm - 3400 | Conducting biological experiments | 2019 | no |  |  |
| 3 | Water bath | Supply voltage, V - 220±22, Temperature range (±5%), °C - ≤ 100; Temperature maintenance accuracy, °C - ±1; Power consumption (±5), W - 500; Dimensions of the working chamber (± 5%), mm - 300×150×110; Net/gross weight (± 5%), kg - 3.4/4; Overall dimensions (L×W×H) (±5%), mm - 190×330×240; Overall packaging dimensions (L×W×H) (±5%), mm -250×380×280 | Distillation, drying, evaporation and thermostatic heating. | 2019 | no |  |  |
| 4 | Microscope BIOMED-2 | Microscope magnification - from 40x to 1000x; (up to 1600x)\*; Lenses - 4x, 10x, 40x, 100x mi; Eyepieces - 10x, (16x)\*; Condenser - Abbe system with iris diaphragm; Illuminator - halogen lamp 6 volt/20 watt; weight - 3.5 kg; Packaging dimensions (L, W, H) - 170x21x350 mm. Turret head for four lenses | For optical studies in various fields of biology and for research work | 2021 | no |  |  |
| 5 | Navigator | Battery type - NiMH battery or two AA batteries (1.5 V alkaline or less, NiMH or lithium); Battery life - up to 16 hours; Waterproof - IEC 60529 IPX7; Operating temperature range - -20° to 70°C (-4° to 158°F); Charging Temperature Range - - 0° to 40°C (32° to 104°F); Radio frequency range and protocols - 2.4 GHz ANT+; BluetoothⓇ 4.0 (including EDR and BLE protocols); Safe distance from compass - 17.5 cm (7 in.) | To determine location | 2021 | no |  |  |
| 6 | Grinding machine | Bosch GBS 75 AE grinding machineWeight, 3.4 kg, Dimensions of consumables 75 x 533, Speed stabilization system available, Processing width 75 mm. | Power tools for removing and leveling surfaces, stripping wood, plastic and metal. | 2022 | no |  |  |
| 7 | Drill driver | DeWALT drill/driver DCD709M2T-QWMax drilling diameter (wood) 30 mm, Max drilling diameter (metal) 13 mm,Max torque 65 Nm, Max rotation speed 1650 rpm, Max shock frequency 28050 beats/min, Weight 1.5 kg, Battery capacity 2•h. | For drilling holes of different diameters in wood. | 2022 | no |  |  |
| 8 | Quadcopter | Quadcopter DJI Air 2S Fly More Combo gray Type quadcopterDJI brand, Magnesium alloy case, Battery capacity 3500 mAh, Charging time 90 min, Article 6941565911209, Built-in memory size 8192 MB, Max. horizontal viewing angle 88°Number of megapixels 20 MP, Color gray, Speed 68.4 km/h, Navigation GPS+GLONASS+GALILEO, Connectivity 2.4 GHz / 5.8 GHz, Signal range 12 km (FCC) 8 km (CE). | To describe the area | 2023 | no |  |  |

Responsible person Nariman Beibutovich Mapitov

Contacts: tel. 8(7182)67-36-85, email mapitov@mail.ru