**Protocol list**

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| Protocol number | Process | Status | Comments |
| 0 | Lab safety checklist – full version | Completed |  |
| 0b | Lab safety checklist – short version | Completed |  |
| 1 | Lab cleaning/washing | Completed |  |
| 2a | Soil grinding | Completed |  |
| 2b | Soil grinding 15N | Almost Completed |  |
| 2c | Grinding fish tissue | Completed |  |
| 3a | Plant tissue grinding | Completed |  |
| 3b | Plant tissue grinding 15N | Completed |  |
| 3c | Small sample tissue grinding 15N | Almost Completed |  |
| 3d | Plant tissue grinding with rotary mill (MF10) | Completed |  |
| 4a | Point framing Daring 2005 | Completed |  |
| 4b | Point framing Daring - Tara |  |  |
| 4c | Point framing Opinicon |  |  |
| 5 | TOCN (Shimadzu) | Draft completed | Yvette to enter all the updates and review/revise as she sees fit. |
| 6 | NH4/NO3/PO4 (Autoanalyser) | Draft completed | Yvette to enter all the updates and review/revise as she sees fit. |
| 7 | CNS (LECO) | Completed | LECO now replaced by Elementar |
| 8 | Waste disposal procedures |  |  |
| 9a | Weighing/Taring balances |  |  |
| 9b | Weighing out 15N samples | Draft completed |  |
| 10 | CO2 fluxes (LiCOR) | Draft completed |  |
| 11a | 15N Diffusion Protocol | Completed |  |
| 11b | 15N salt dry-down protocol | Draft completed |  |
| 12 | Bacterial and fungal biomass using epifluorescent microscopy | Completed |  |
| 13 | Growth Chamber operation |  | Not done yet. |
| 14a | Soil dissolved inorganic nutrients |  | Need to enter data lines to include mean and SE of a data set. |
| 14b | Nitrate in soil water spreadsheet |  |  |
| 15 | Soil microbial and dissolved organic nutrients |  | Need to enter data lines to include mean and SE of a data set. |
| 16 | Soil moisture |  | Need to work up whatever data is available for gravimetric vs volumetric water contents |
| 17 | Daring Lake expt manipulations | Completed |  |
| 18 | Suction cup lysimeters |  | Paul to do |
| 19 | Static chamber gas fluxes |  | Paul to do |
| 20 | Labelling protocol | Completed |  |
| 21a | Aboveground biomass and roots (tundra - organic rich soils) | Completed |  |
| 21b | Root and soil biomass calculations spreadsheet | Draft completed | Needs careful revision and more data |
| 21c | 15N ecosystem labelling and initial harvest | Completed |  |
| 21d | Ecosystem (plant and soil) sampling for 15N, including fumigation in the field | Completed |  |
| 21e | Root and soil biomass (mineral soil ecosystems) | Completed | Meghan |
| 22 | Soil pH |  | Casper updated Haiyan’s version |
| 23 | N Mineralisation (Buried bag) | Completed |  |
| 24a | Soil Extractions for nutrients, F/B microscopy and DNA | Completed |  |
| 24b | General Biogeochemical field methods | Completed by Nishka |  |
| 25 | Mixed bag resins for nutrient assays | Draft completed | Paul to revise |
| 26 | DNA extraction (Haiyan) | Completed |  |
| 27 | Soil sampling using the big corer | Completed |  |
| 28 | Litter bag sorting | Completed |  |
| 29 | pH measurement, including organic soil pH | Completed |  |
| 30 | IPY soil sampling protocol | Completed |  |
| 31 | Birch new shoot apical growth | Draft by Tara available |  |
| 32 | Litter collection | Draft by Casper available |  |
| 33 | Total P in solid samples by acid digest | Completed |  |
| 34 | DGGE image analysis using GENETOOLS | Completed by Nishka |  |
| 35 | Soil texture analysis/ Particle Size Analysis (hydrometer method) | Completed by Kristen | Calculations spreadsheet revised by Paul July 2022 |
| 36 | Ion exchange membranes to measure soil nutrient availability | Completed | Draft by Nishka updated by Meghan and Qian |
| 37 | Sampling protocol for collection of birch leaves | Completed |  |
| 38 | Dissolved organic Phosphorus |  | Kate Buckeridge |
| 39 | Biogeochemical field methods |  | Nishka’s summary of winter field methods |
| 40 | Elemental analysis sample weighing out procedure | Julia White | Julia White |
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