**Sampling for the bird’s nest fern**

**Location**

Wulai *Cryptomeria japonica* artificial forests

**Field sampling schedule**

|  |  |  |
| --- | --- | --- |
| 1st field trip | 2nd field trip | 3rd field trip |
| Collecting 12 fern samples (Large:4, Medium: 4, Small:4) | Collecting 12 fern samples (Large:4, Medium: 4, Small:4) | Recording tree information  Tea bag |

**Criteria of fern sampling**

1. No other epiphytes on the bird’s nest ferns
2. There is no other bird’s nest fern above the focal bird’s nest fern
3. Size

|  |  |  |
| --- | --- | --- |
| Small | Medium | Large |
| 200 cm > max leaves width > 150 cm | 150 cm > max leaves width > 100 | 100 cm > max leaves width |

1. Layer stratification (Fig. 1)

|  |  |  |
| --- | --- | --- |
| Small | Medium | Large |
| One layer | Outer  Upper  Lower | Outer  Upper  Middle  Lower |

*nest for sampling invertebrates = (1+3+4)\*4 = 32*

**Protocol of fern sampling (2nd and 3rd field trip)**

*In the field (D1)*

Measure fern height

Collect the fern

Measure max leaves width

Record the species

Measure leaf length: random sampling 3 leaves measured from the base above the litter

Collecting the litter tying leaves into one zipper bag

Measure nest width, length, and height

*In the lab (D1)*

Measure the weight nest

Measure the weight of the litter+ leaves

Collect leaf tissue

Store the leaves in a 4°C fridge

Collecting soil in 15 ml tube and storing it in a 4°C fridge

Store the litter and the soil in room temperature

*In the lab (D2)*

Ko Ko’s protocol (before weighting to 250 mg) and storing it in a 4°C fridge

*In the lab (D3)*

Weight the soil sample

Extract the DNA

*Measure leaf trait: SLA, LDMC, thickness (D1-D3)*

SPAD 3 measurement of each side distributed evenly

3 mature leaves without damage and punch 8 holes (4 holes on each side distributed evenly)

Wet weight

Thickness: randomly choose 2 holes on each side

Dry weight (after 72°C at least 72 hours)

Storing holes in the zipper bag

**Data**

|  |  |  |
| --- | --- | --- |
| Tree info | Individual-level info | Layer-level info |
| DBH  Tree height  Spatial distribution  Canopy base height | Height above the ground  Max leaves width  Mean leaf length  Nest width, length, and height  Nest weight  All leaves + Litter weight  Chlorophyll content  SLA  LDMC  Leaf thickness  Plant tissue (for DNA) | C-N ratio  pH  Bacteria community composition  Fungi community composition  Invertebrate community composition |

**Tree information (1st field trip)**

DBH, Tree height, Tree map, Canopy base height

**Tea bag**

Small:2 pairs, Medium: 2 pairs, Large: 2 pairs

Record the GPS

**Packing list for field survey**

*樹*

DBH 尺

測距儀＋備用電池

測高桿

電火布

蘭花牌

*巢蕨 （背大背）*

地布

小檳榔刀

鐵卷尺

小枝剪

夾鏈袋/厚塑膠袋（裝巢）

夾鏈袋（裝litter 和葉子）

冰保

Bleach

酒精

紙巾

冰箱

大背

採集袋

茶包

茶包六組＋電火布

漆包線

*文書*

公文

紀錄表 （蕨類）

紀錄表（樹）

鉛筆

紀錄板

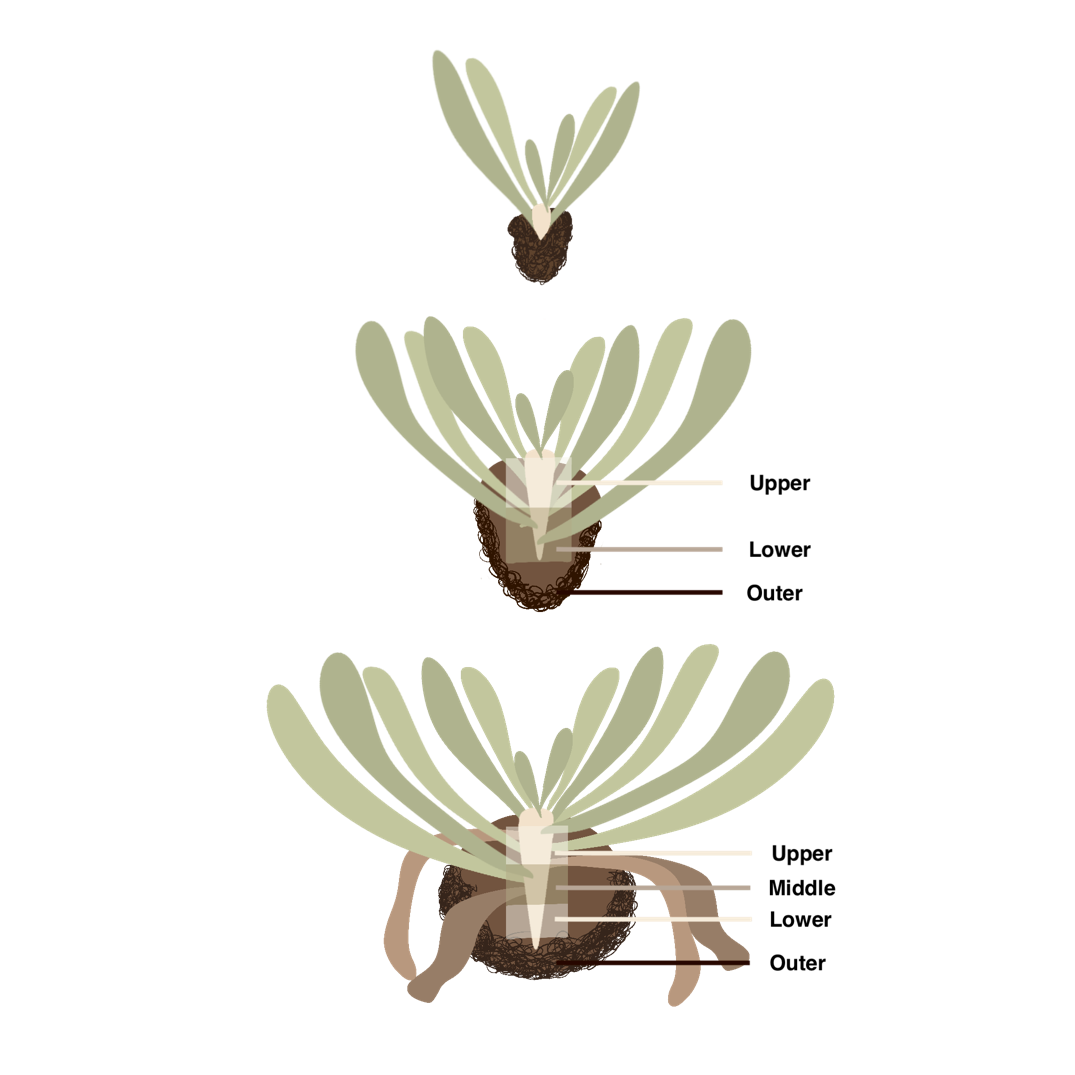
奇異筆

*Others*

Compass

雨傘

雨衣雨褲

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