

The Minabe-Tanabe Ume System: Parcel Dynamics and Border vegetation

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Article

The Minabe-Tanabe Ume System: Linkage of Landscape Units by Locals

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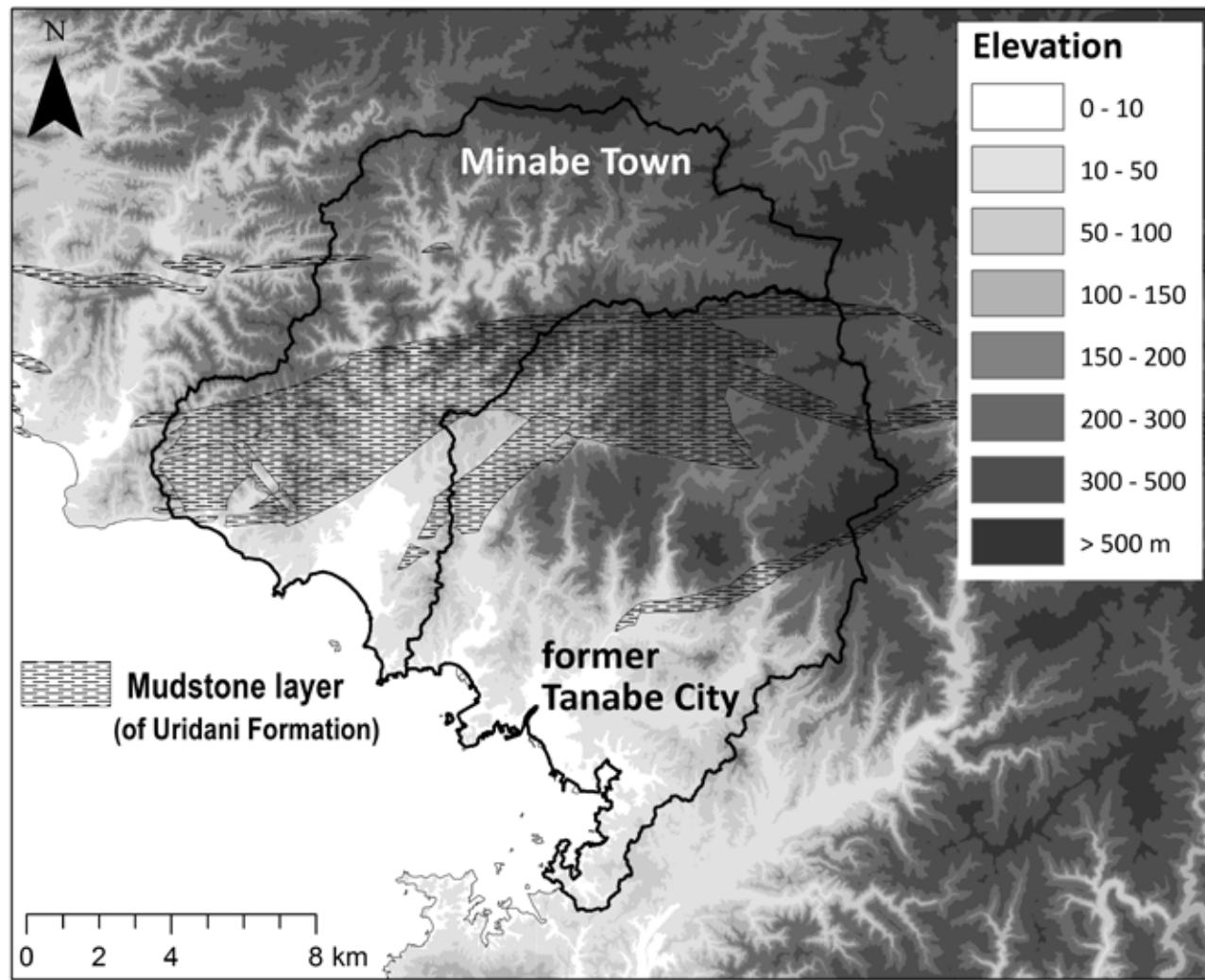
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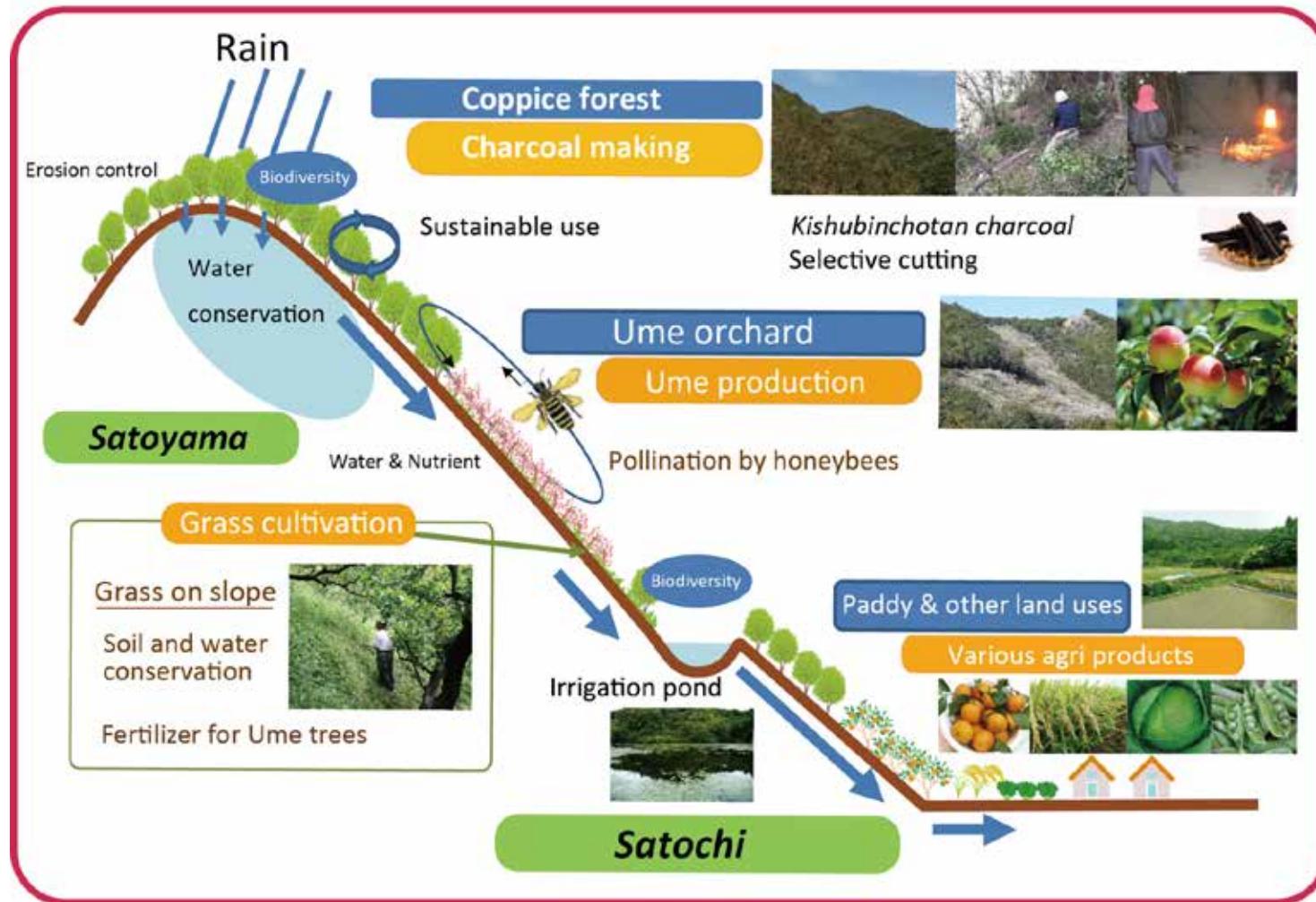
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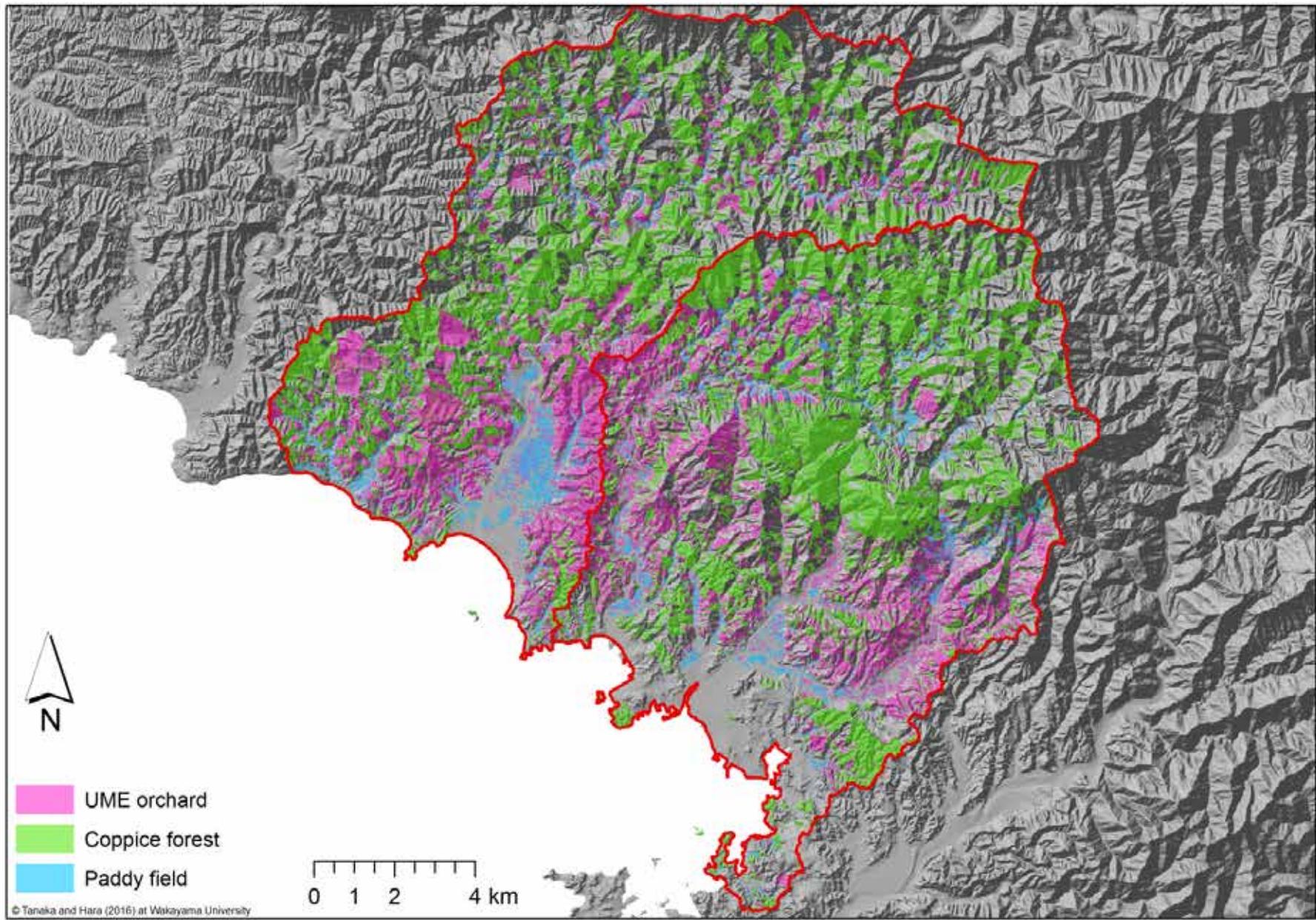


Minabe-Tanabe Ume System GIAHS designated area



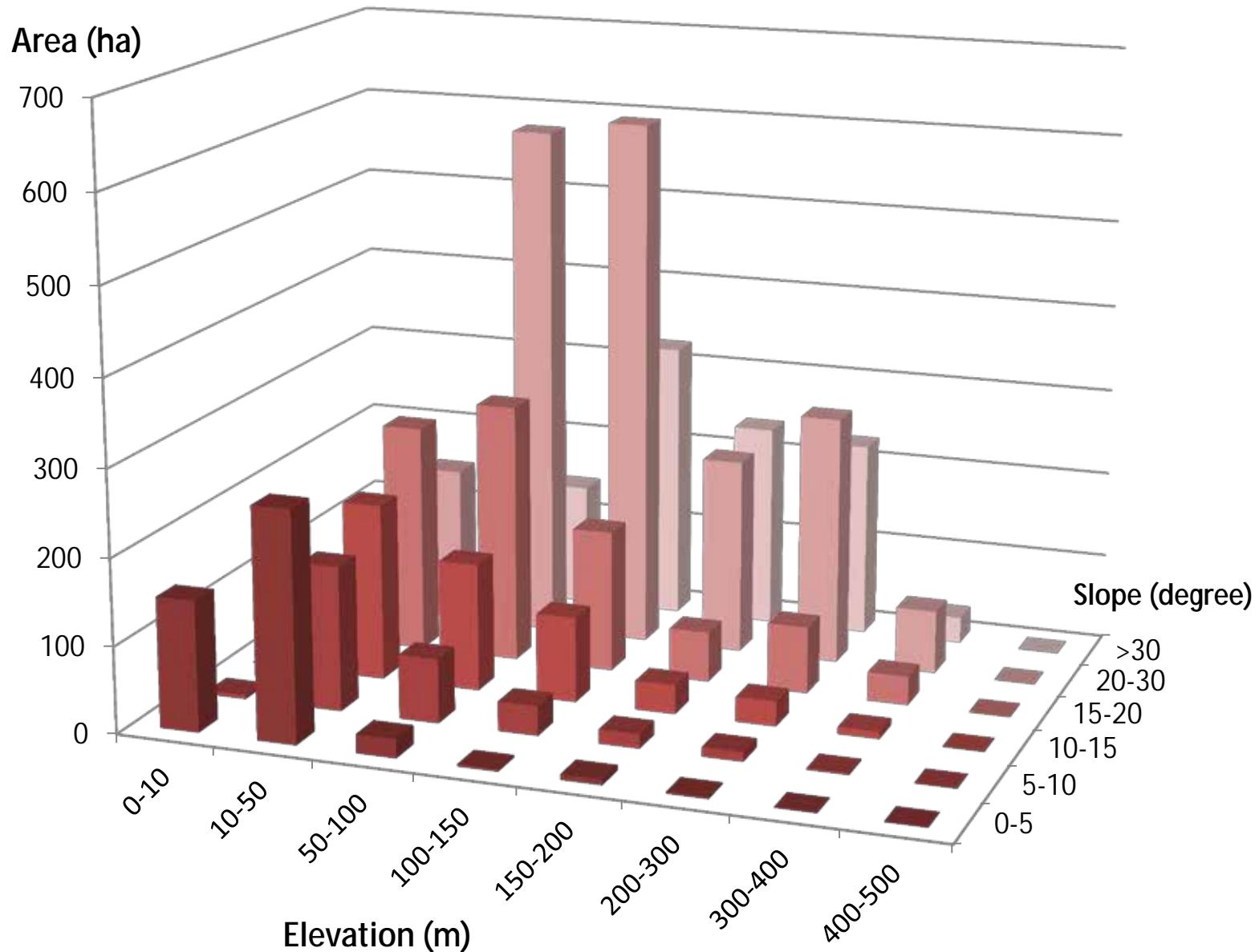
Schematic transect image model in GIAHS application form





- UME orchard
- Coppice forest
- Paddy field

0 1 2 4 km



Area (ha)

2500

2000

1500

1000

500

0

Slope (degree)

0-10

10-50

50-100

100-150

150-200

200-300

300-400

400-500

Elevation (m)

>30

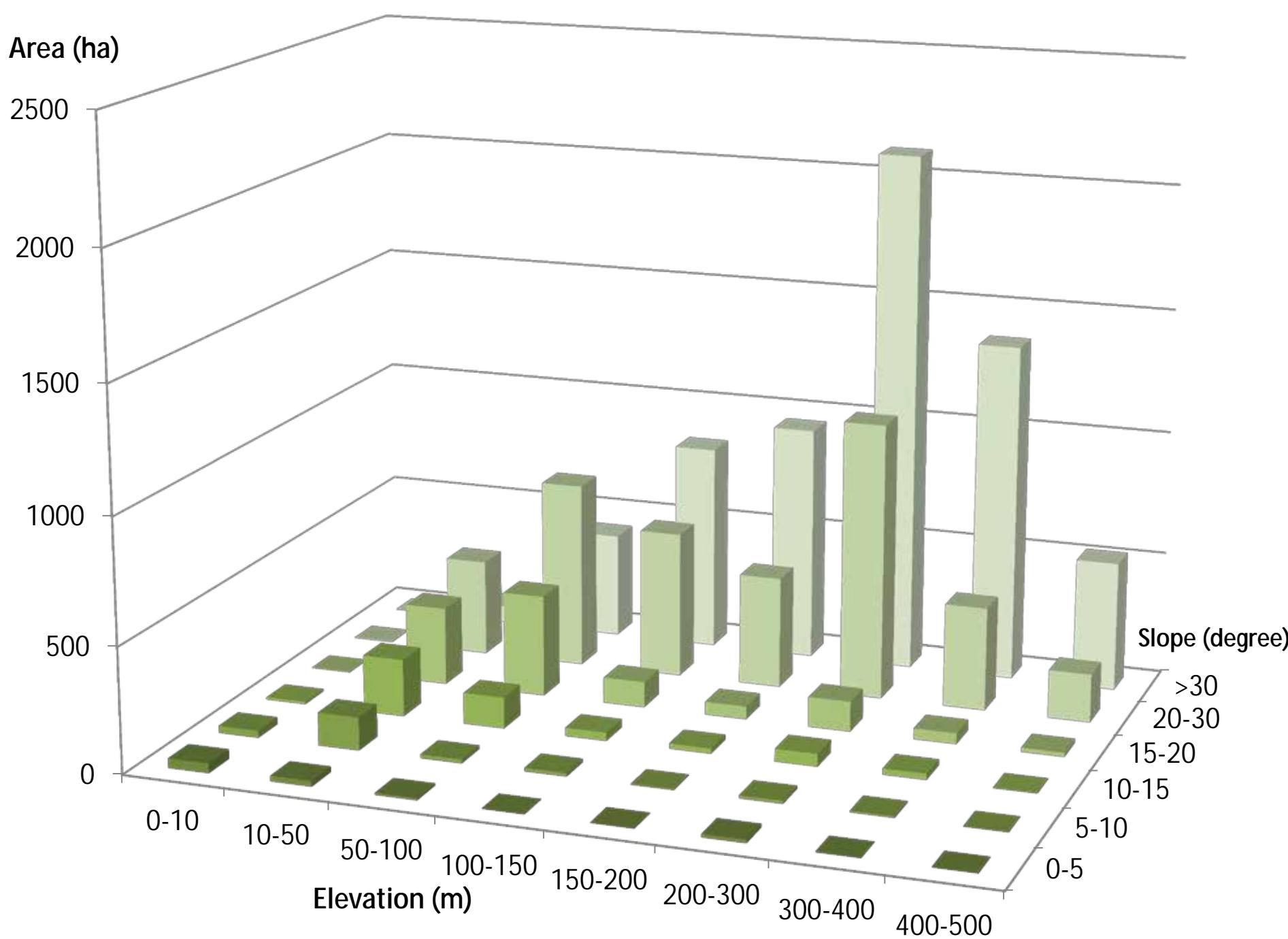
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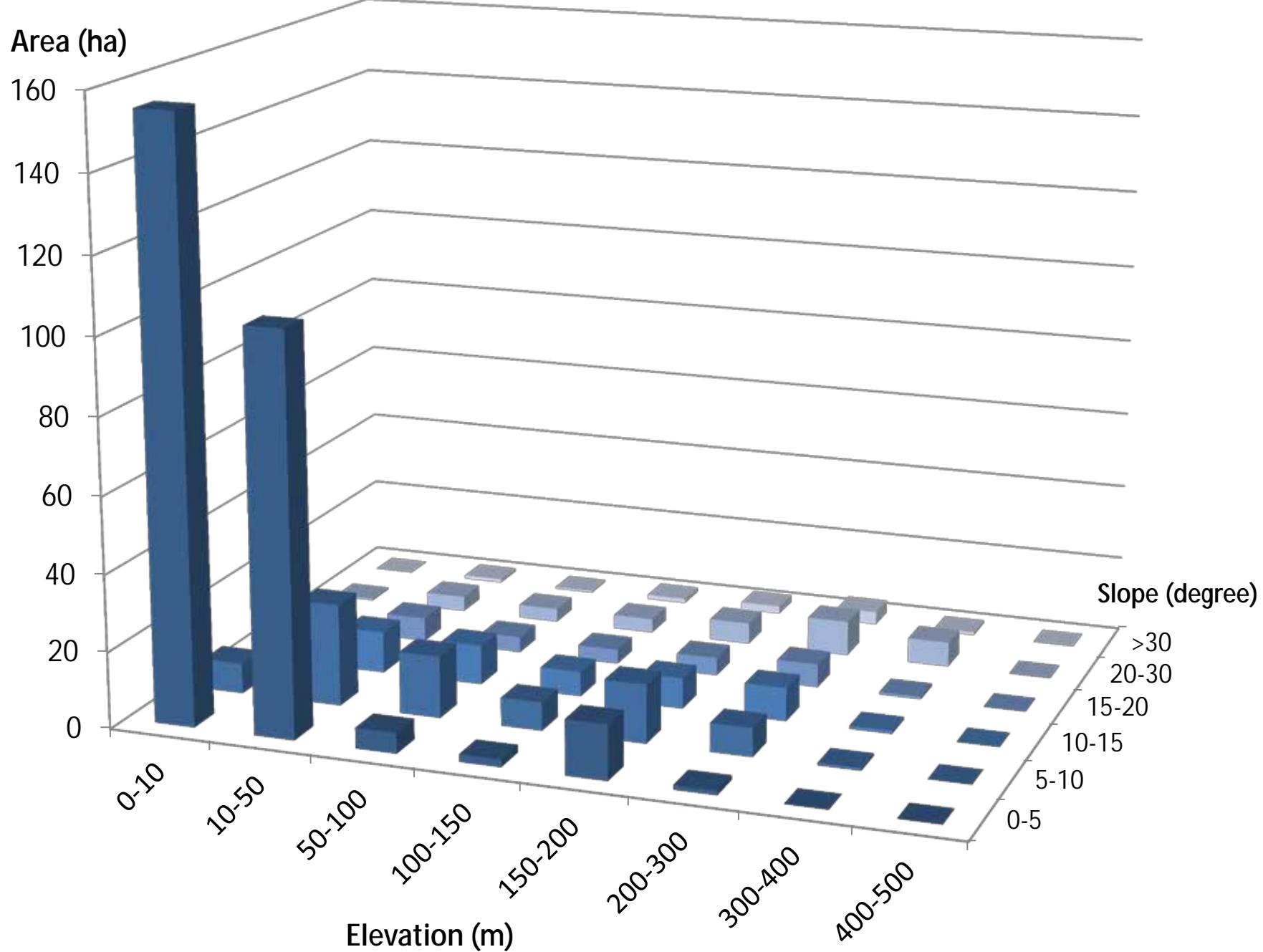
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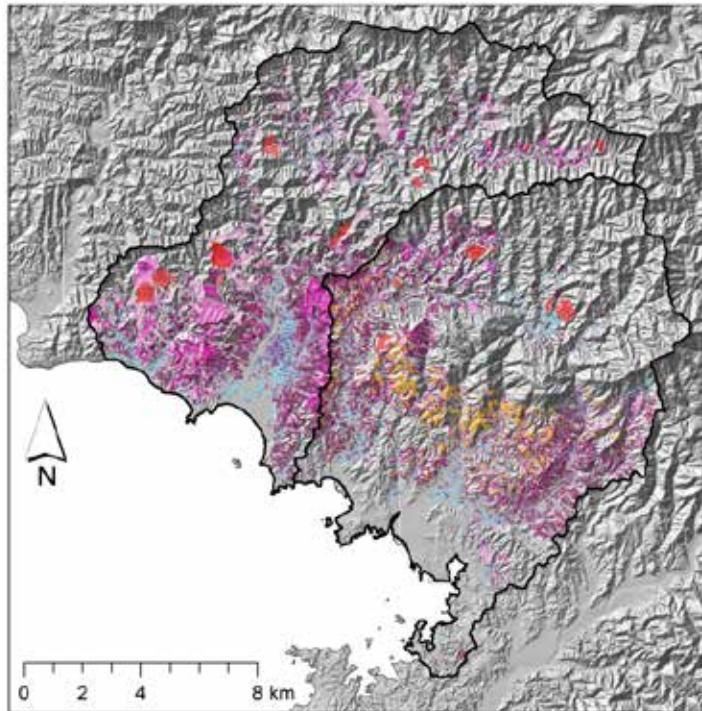
5-10

0-5



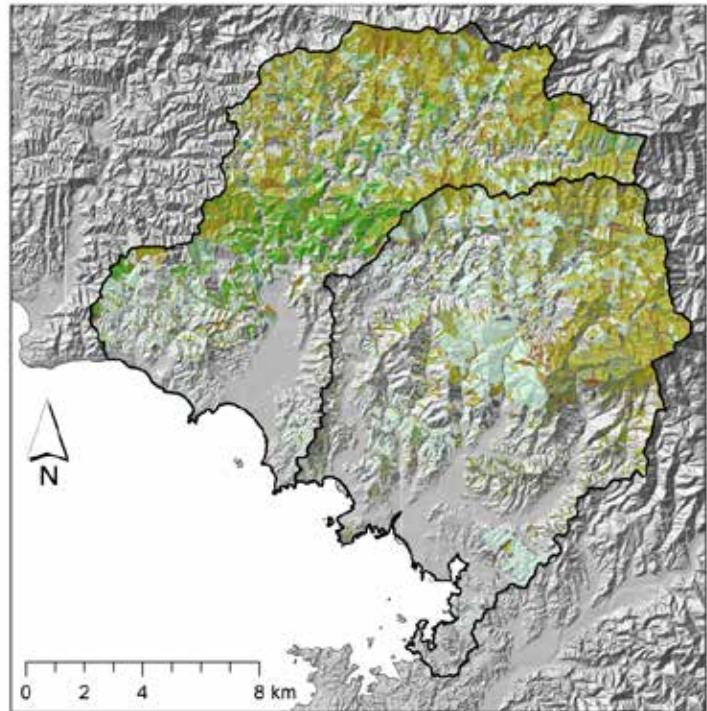


What are the detailed vegetation patterns in Ume and forests?



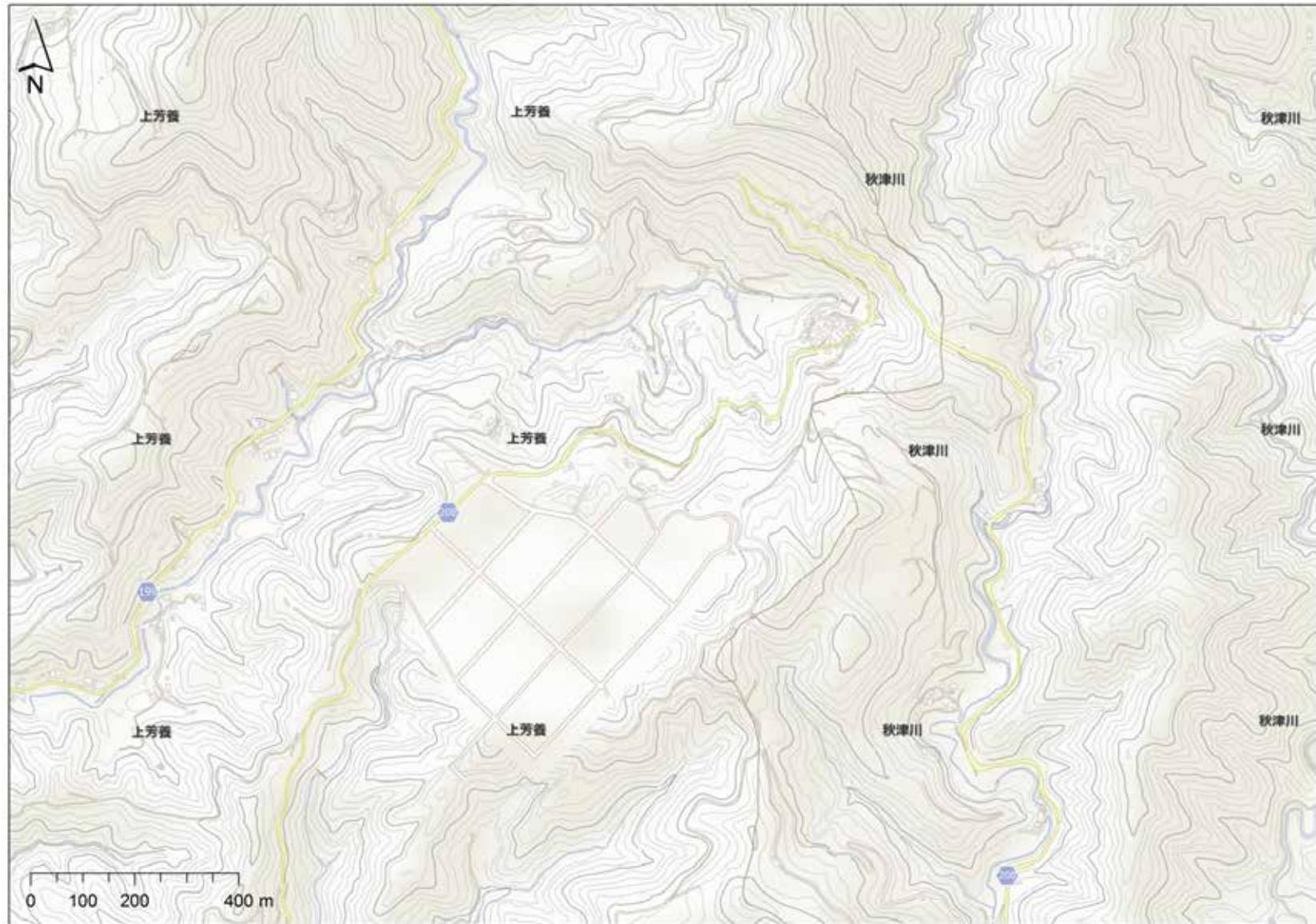
- parcel with 100% Ume by cut-fill land development
- parcel with 100% Ume
- parcel with 75% Ume
- parcel with 50% Ume
- parcel with 25% Ume
- uninterpretable
- other orchards (e.g. Citrus)

Paddy field



- アカマツ (Pinus densiflora)
- クロマツ (Pinus thunbergii)
- シ (Castanopsis)
- アラカシ (Quercus glauca)
- クヌギ (Quercus phellosoides)
- 其他 evergreen Oaks
- ツバキ (Camellia japonica)
- 其他 evergreen-broadleaf trees
- クズギ (Quercus acutissima)
- コナラ (Quercus serrata)
- ケイキ (Zelkova serrata)
- other deciduous-broadleaf trees
- other broadleaf trees
- スギ (Cryptomeria japonica)
- ヒノキ (Chamaecyparis obtusa)
- 其他 trees for human use
- モウソウチク (Phyllostachys edulis)
- ハチク (Phyllostachys nigra)
- other bamboos
- others
- after logging (planted forest)
- non-native coniferous forest
- after logging (natural forest)
- bare rock
- wasteland

Ongoing vegetation survey Two sites: traditional model system and cut-fill development





► Cut-Fill: Parcel based vegetation with windbreak hedges



► Traditional model Ume system



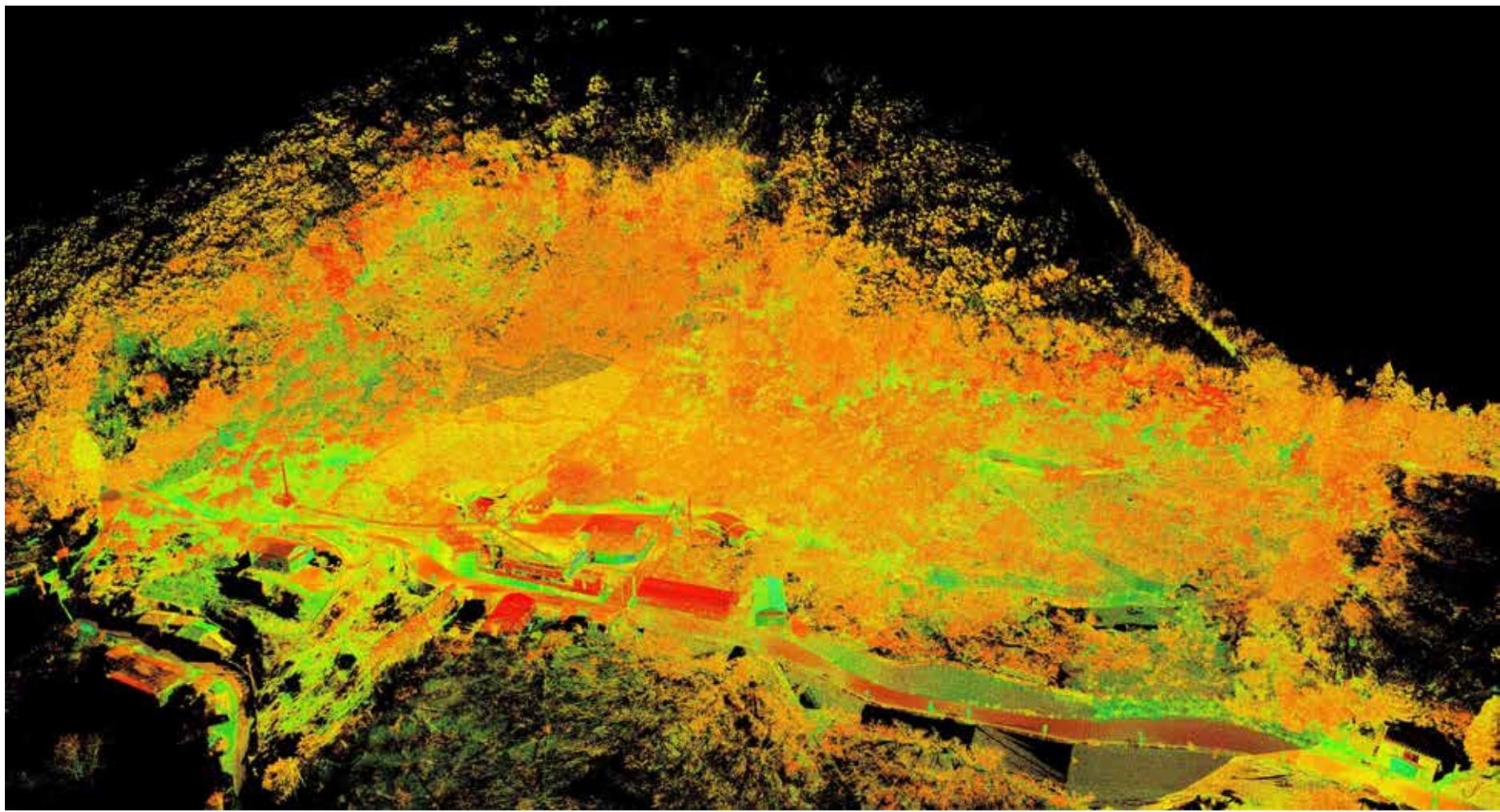
- ▶ Also parcel based vegetation subject to succession management and abandonment

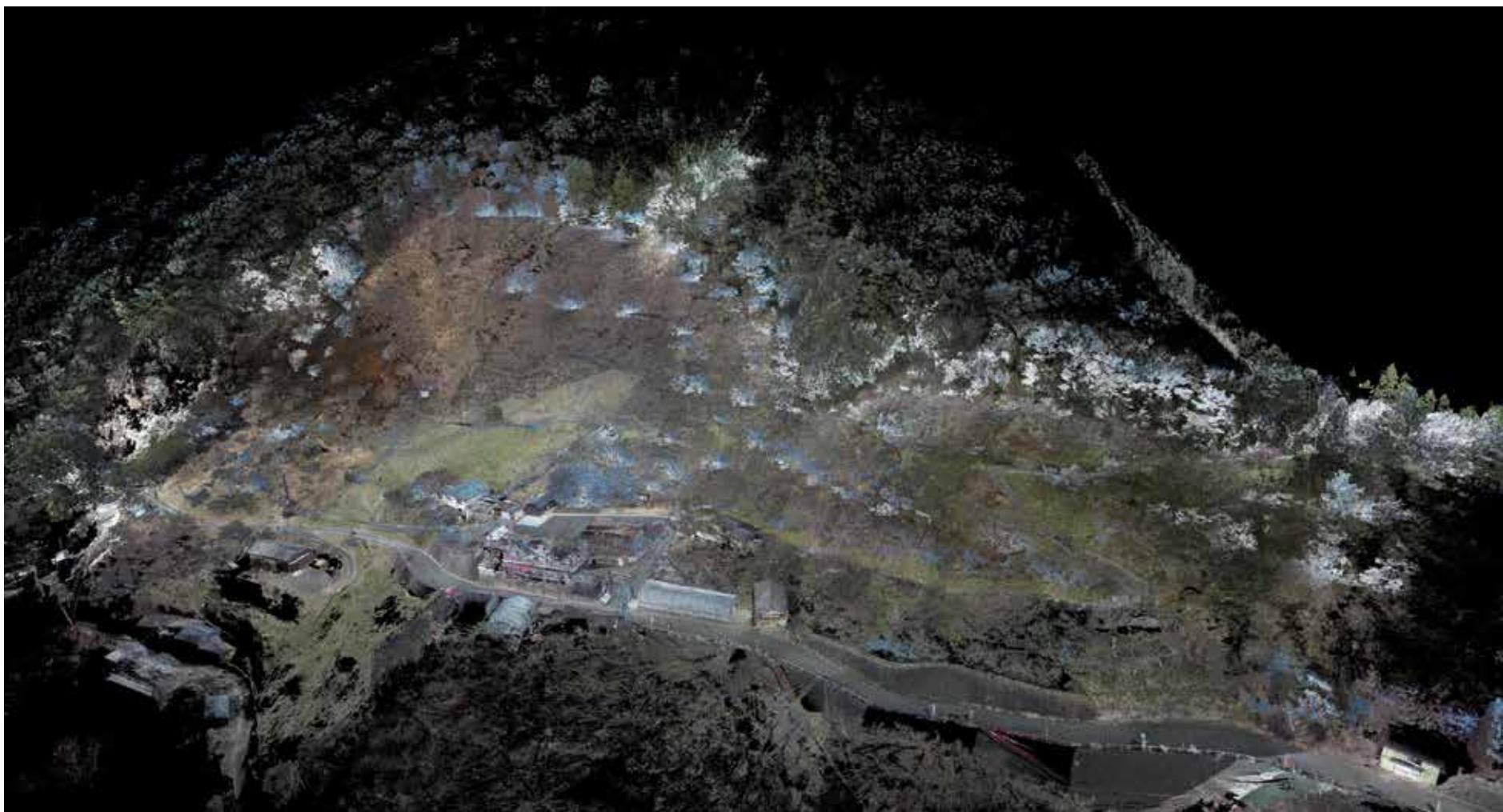


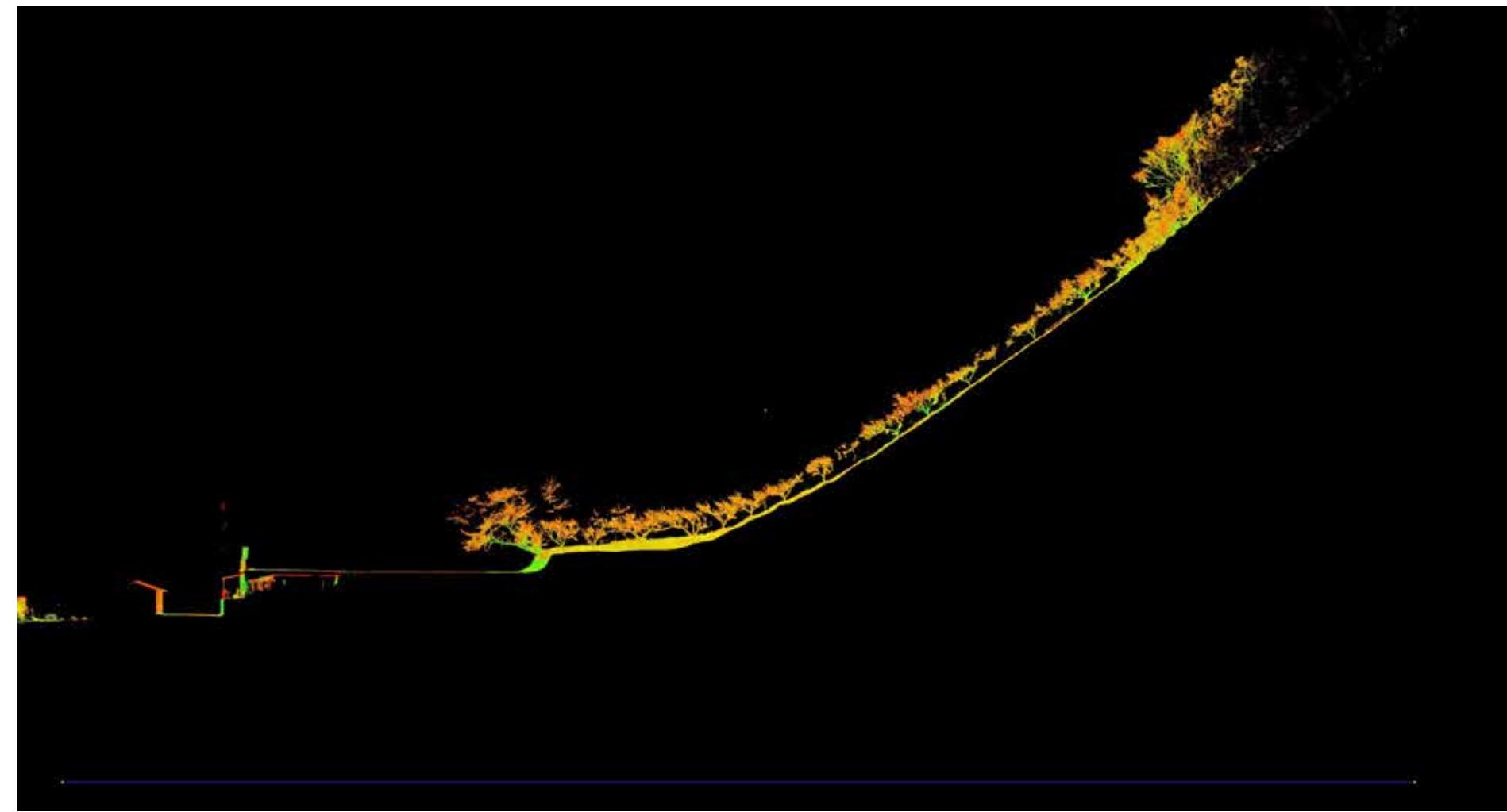
- ▶ Forest-Ume ecotone providing various nectar sources

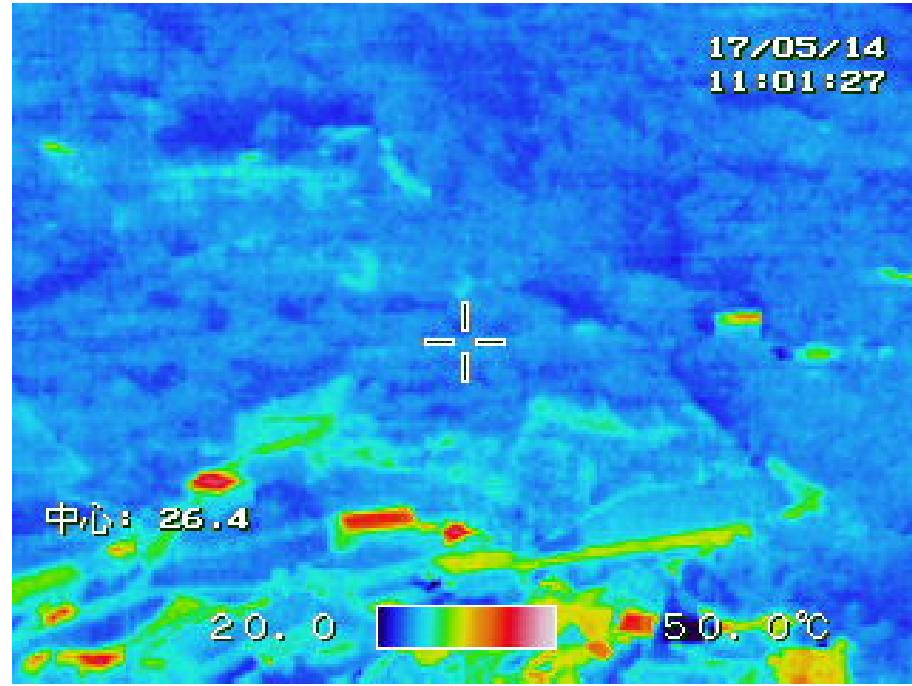
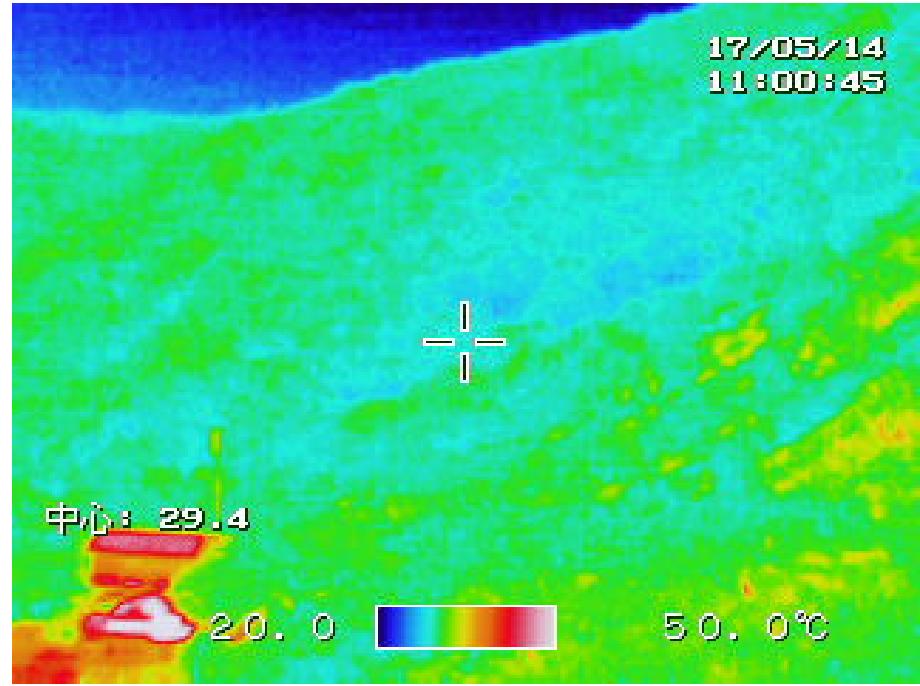


▶ Ume flowering season (Feb.)





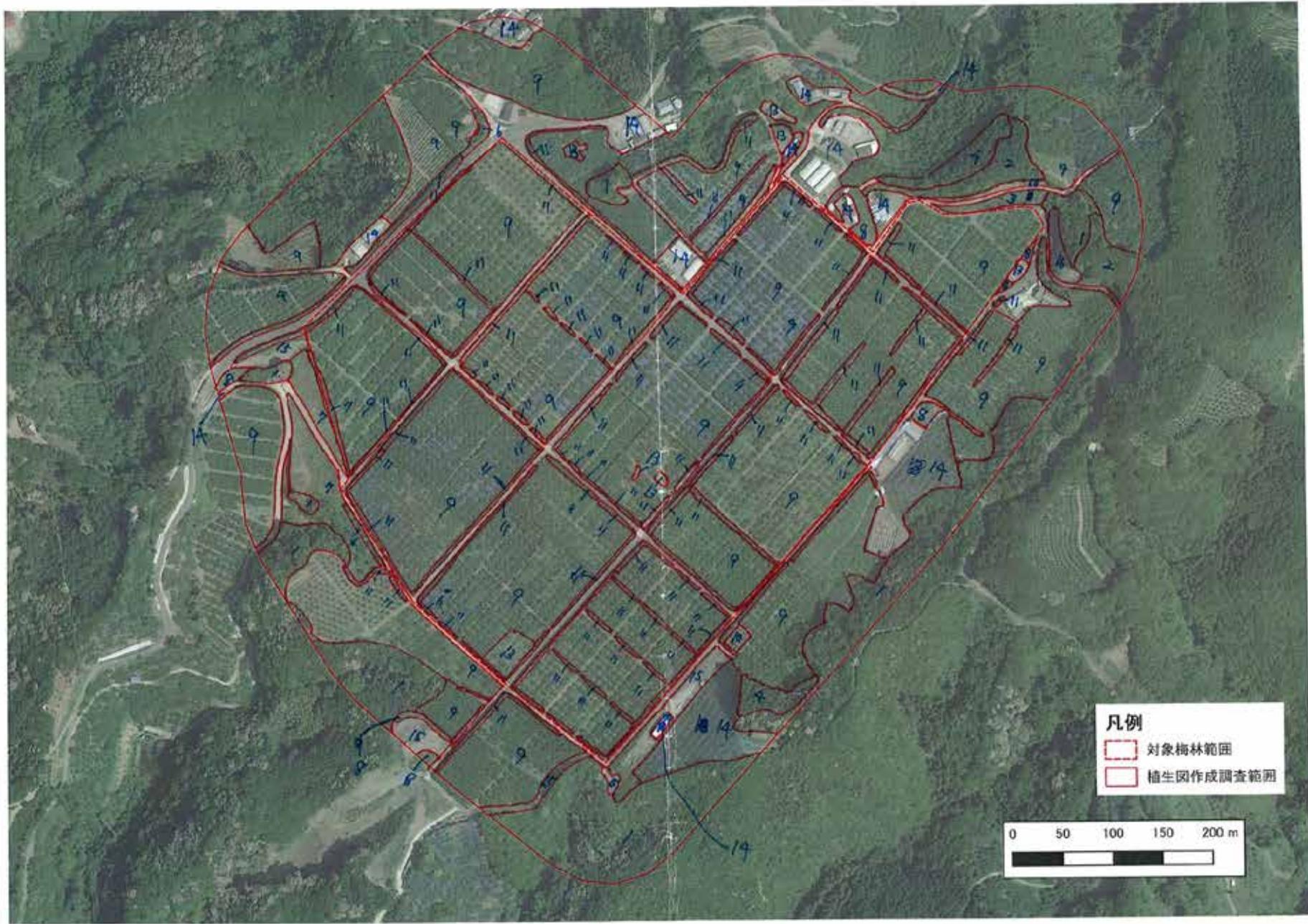


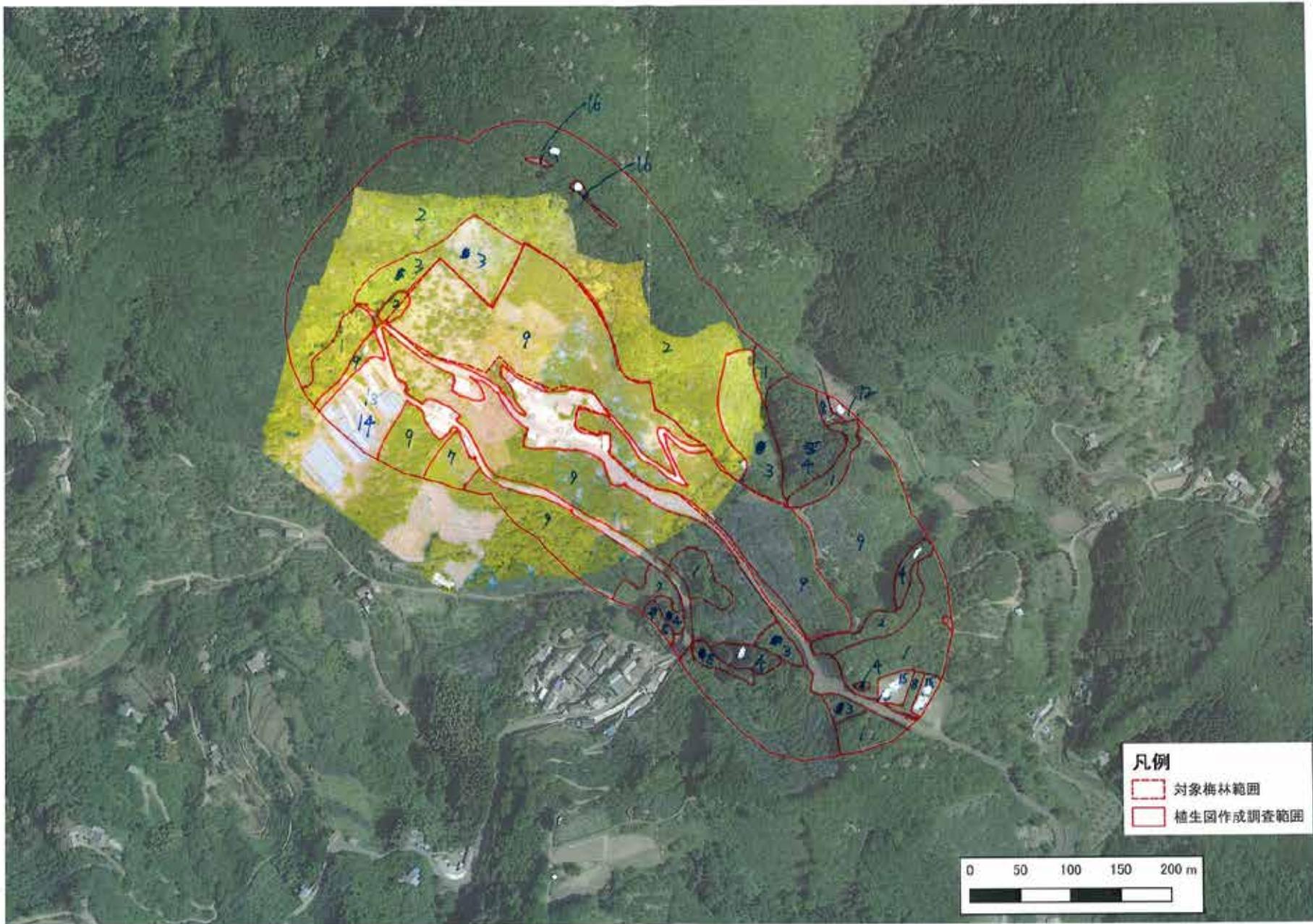


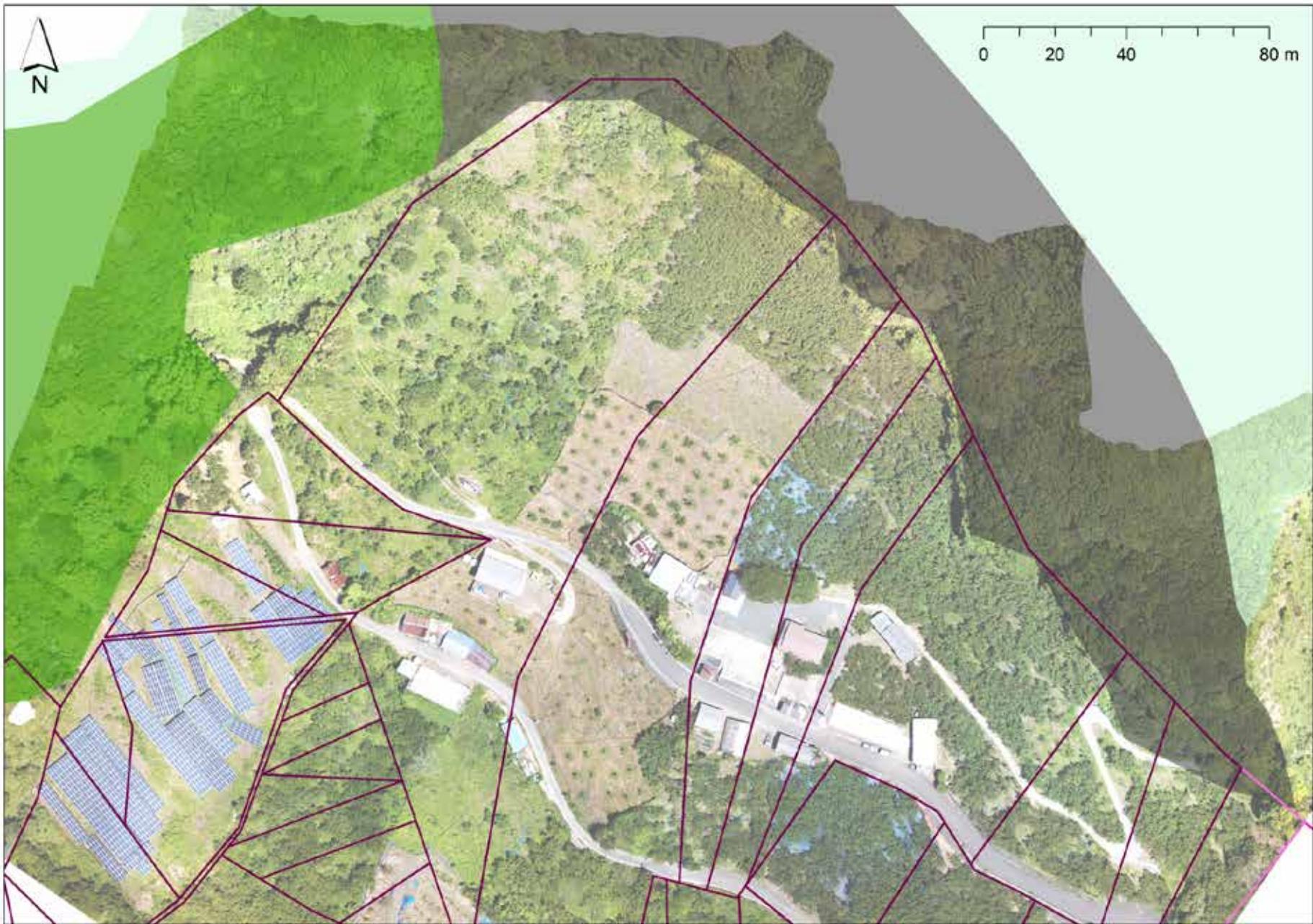
Summary of our ongoing preliminary vegetation survey

- } Tree species
 - } Cut-fill has windbreak hedge trees functioning nectar sources
 - } Traditional has upper forest with various coppice trees especially along the ecotone border with Ume
- } Grass species
 - } Both cut-fill and traditional have grass species compositions basically according to parcel managements
 - } Considerable alien species were investigated especially in cut-fill that were introduced by local governmental guideline for soil erosion prevention and fertilization when cut-fill development was carried out around 2002
 - } Parcels (using former forest topsoil) managed by farmers with strong wills toward organic farming tended to have higher species varieties
 - } Parcels becoming abandoned had higher native potential species compositions









- ▶ Land parcel fragmentations were proceeding over the traditional management units!