

Importance of The Plants for Sustainable Ecotourism Activities: Mountain Phrygia

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ABSTRACT

Study area named as Mountain Phrygia is located in the borders of Eskişehir, Afyon and Kütahya provinces so it includes many ecotourism area. According to the grid system of Davis, the whole part of the study area is in the B3 square. Floristic diversity of study area was identified according to the performed excursion studies between the years of 2012 to 2015 and recent literatures. In the light of habitat and floral diversity of study area, Floral calendar of Phrygian walking way was created. Besides, some nature conservation precautions were suggested for ecotourism activities based upon excursion studies and observations.

Keywords: Flora, Phrygia, Eskişehir, Kütahya, Afyon

INTRODUCTION

Tourism is one of the sectors with high economic returns and it is one of the important income sources for many countries. While the sense of tourism in the past has been merely consisted of sea, sand and sun, with the globalization, people's view of tourism has changed considerably. Today, easy access to information by means of increasing environmental and nature awareness, has led tourists to seek for different tourism alternatives. Thus, regions like Anatolia, which contains unique historical, cultural and natural riches, have come forward as ecotourism centers and have an important share in the tourism revenues of the countries. The desire to have a holiday intertwined with historical and cultural values in a clean and unspoiled environment, which is integrated with nature, clearly replaces the understanding of classical tourism. This new understanding of tourism, called ecotourism, is rapidly advancing towards becoming today's rising tourism trend (Ceballos-Lascurain, 1996; Çevirgen, 2004).

However, unconscious ecotourism activities to meet increasing tourist demands are damaging the historical texture and environment. Moreover, our unique cultural and natural values are often destroyed irreversibly. At this point, to ensure sustainability in ecotourism is among the development of ecotourism strategies that are indispensable for nature and environment friendly tourism, protecting our historical and cultural heritage. At this point, the importance of developing ecotourism strategies that protect our nature and environment, historical and cultural heritage is emerging. This is only possible with the so-called 'Integrated protection'. This process involves the preservation of the historical texture and environment with all its elements and dimensions. Moreover, this process expresses ecotourism strategies that improve the social and economic structures of the people of the region and create employment and added value in order to ensure sustainability. Unfortunately, it is not possible to develop eco-friendly ecotourism strategies without fully knowing our biodiversity. The first step in determining the biodiversity of a region is the floral and faunal studies of that region (Demir ve Çevirgen, 2006; Erdoğan, 2008; Sağiroğlu ve Karayazı, 2017).

The area, which spreads over the region within the borders of Eskişehir, Kütahya and Afyon provinces and contains historical ruins and antique works bearing traces of Phrygian civilization, is called Mountain Phrygian (Phrygian Valleys). The region, which was home to Phrygian civilization between the 12th and

7th centuries BC, contains many ancient cities and archaeological remains. However, Roman and Byzantine societies lived in the region and historical monuments of these societies are also frequently encountered in the region. When the richness of the region is considered in terms of both cultural and natural resources, it is better understood how important the region is in terms of nature and cultural tourism.

The aim of this study is to evaluate the floristic diversity data of the Mountain Phrygian region and to provide a resource for future natural ecotourism practices in the region. Another aim of this study is to create the floristic calendar of the region and to increase the awareness of tourists on the unique plant diversity of Phrygian Valley.

MATERIALS AND METHODS

In the scope of the study, especially during the determination of terrain routes, the Phrygian valleys and their environment in the study area were taken into consideration. For this purpose, the Phrygian road walking routes in which the ecotourism activities are intensified are taken as reference in the “Phrygian Way Guide Book” written by Hüseyin Sarı in 2013. Between 2012 and 2015, 2214 plant samples were collected from 94 localities in all seasons of the year and so habitat types were identified.

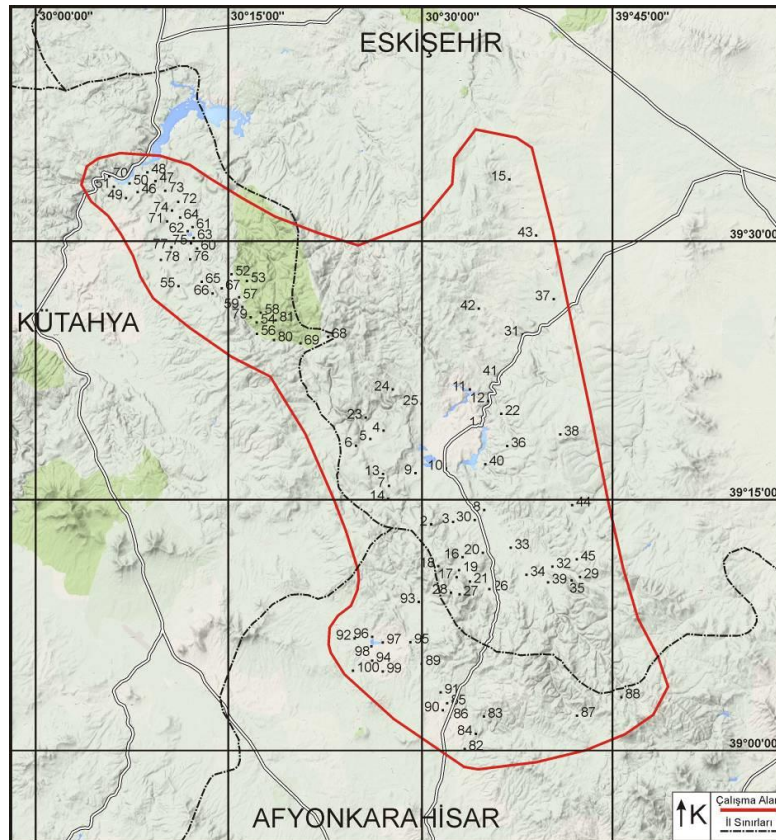


Fig. 1. The map of the study area (Numbers indicates the localities)

RESULTS AND DISCUSSION

From September 2012 to August 2015, a total of 94 days of fieldwork was carried out in the research area. As a result of the field studies, 2214 veined plant samples were collected. At the end of the identification of

these samples, totally 855 taxa (834 species, 18 subspecies and 3 varieties) belonging to 390 genera from 80 families were identified.

The first factor affecting the distribution of plant taxa is altitude. The localities where 855 taxa were determined from the study area were grouped according to their heights and 7 different height classes were formed by us. Another factor which is effective in the distribution of plant taxa is habitat characteristics. In this context, 11 habitat groups were generally determined by us when the habitat characteristics of taxa collected from the study area were examined. The taxa identified from the study area were first grouped according to the elevation preferences. Then, taxa under each height group were re-grouped according to their habitat preferences. In addition, the months when each taxon was determined in the field were indicated in brackets next to the taxon name. Again under habitat classes, taxa are grouped according to their date of occurrence in the field (Fig. 2 and Table 1).

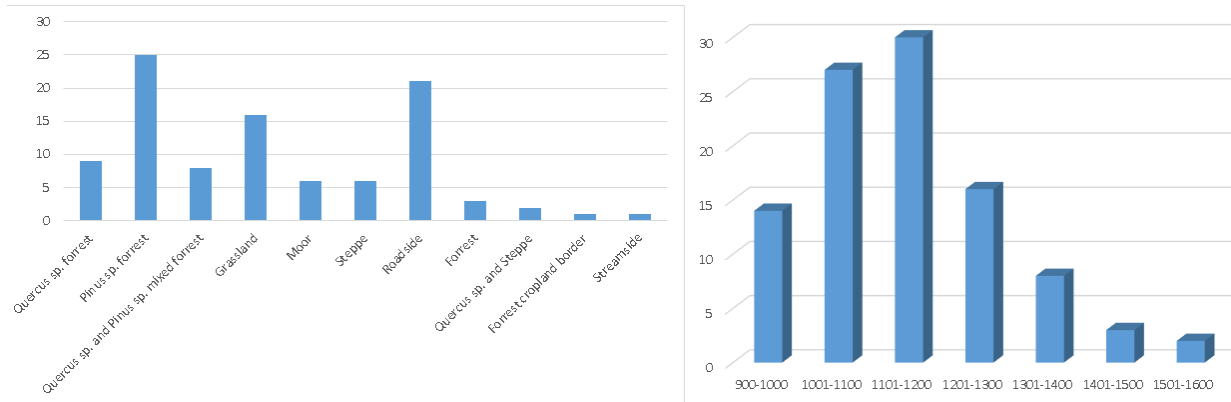


Fig. 2. a) Distribution of the plant localities in habitat classes, b) Distribution of the plant localities in altitude classes

The main purpose of this table is to provide an estimated taxon list that can be encountered when the height and habitat data are known at any point on the Phrygian walking route. The biggest problem encountered in the creation of this table is the endemic taxa with narrow distribution area. In particular, neoendemic taxa are distributed in too limited areas, causing errors in the lists. For example, a taxon determined from a single locality in the study area shows the result as if it exists everywhere in its current height and habitat characteristics. From this it can be clearly stated that such tables to be used by plant enthusiasts in ecotourism activities give healthy results especially when large spread taxa are used. This is actually an advantage. Because the identification of rare endemic taxa by tourists without a guide increases the possibility of damaging the natural populations of these taxa.

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		<i>Lappula barbata</i> (6), <i>Lotus corniculatus</i> (6), <i>Cistus laurifolius</i> (6), <i>Paronychia kurdica</i> (6), <i>Convolvulus linearis</i> (6), <i>Scabiosa argentea</i> (6), <i>Bupleurum flavum</i> (6), <i>Tribulus terrestris</i> (8), <i>Hypericum heterophyllum</i> (8), <i>Rhinanthus angustifolius</i> subsp. <i>grandiflorus</i> (8), <i>Campanula ajacifolia</i> (8), <i>Echinops microcephalus</i> (8), <i>Echinophora tournefortii</i> (8), <i>Vicia cracca</i> subsp. <i>stenophylla</i> (8), <i>Inula britannica</i> (8)
	Steppe	<i>Thlaspi perfoliatum</i> (2), <i>Astragalus hamosus</i> (4), <i>Moenchia mantica</i> (4), <i>Astragalus condensatus</i> (6), <i>Sanguisorba minor</i> subsp. <i>balearica</i> (6), <i>Fumana procumbens</i> (6), <i>Cnicus benedictus</i> (6), <i>Linum cariensis</i> (8)
	Roadside	<i>Thlaspi perfoliatum</i> (2), <i>Crocus chrysanthus</i> (2), <i>Ranunculus damascenus</i> (4), <i>Geranium purpureum</i> (4), <i>Aburtria deltoidea</i> (4), <i>Clypeola jonhthaspi</i> (4), <i>Muscari tenuiflorum</i> (4), <i>Cytisus hirsutus</i> (4), <i>Malcolmia africana</i> (4), <i>Platanus orientalis</i> (4), <i>Alyssum limifolium</i> (4), <i>Asperula arvensis</i> (4), <i>Hypericum inberbe</i> (4), <i>Papaver somniferum</i> (4), <i>Prunus spinosa</i> (4), <i>Viola odorata</i> (4), <i>Cistus creticus</i> (4), <i>Androsace maxima</i> (4), <i>Onosma taurica</i> (4), <i>Consolida raveyi</i> (6), <i>Astragalus campylosoma</i> subsp. <i>atropurpureum</i> (6), <i>Turritis glabra</i> (6), <i>Echium italicum</i> (6), <i>Myosotis lithospermifolia</i> (6), <i>Cuscuta approximata</i> (6), <i>Hyoscyamus reticulatus</i> (6), <i>Nepeta stricta</i> (6), <i>Ziziphora capitata</i> (6), <i>Bungea trifida</i> (6), <i>Tanacetum parthenium</i> (6), <i>Aristolochia maurorum</i> (6), <i>Iris kerneriana</i> (6), <i>Asparagus officinalis</i> (6), <i>Chrysogonum gryllus</i> (6), <i>Phleum pratense</i> (6), <i>Sedum alexpicuale</i> subsp. <i>tenuifolium</i> (6), <i>Agrostemma githago</i> (6), <i>Gypsophila perfoliata</i> (6), <i>Ajuga reptans</i> (6), <i>Marrubium parviflorum</i> subsp. <i>oligodon</i> (6), <i>Astragalus micropterus</i> (6), <i>Erigeron acris</i> subsp. <i>pycnocarpus</i> (6), <i>Senecio vernalis</i> (6), <i>Morina persica</i> (6), <i>Anethum graveolens</i> (6), <i>Prospero autumnale</i> (8), <i>Poa compressa</i> (8), <i>Consolida aconiti</i> (8), <i>Micromeria cristata</i> subsp. <i>phrygia</i> (8), <i>Chondrilla juncea</i> (8), <i>Pimpinella tragioides</i> subsp. <i>polycolata</i> (8), <i>Allium olympicum</i> (8), <i>Medicago sativa</i> (8), <i>Pianthus calceolatus</i> (8), <i>Teucrium scorodius</i> subsp. <i>scordoides</i> (8), <i>Lactuca serriola</i> (8), <i>Scorzonera tomentosa</i> (8), <i>Sedum album</i> (8), <i>Cydonia oblonga</i> (8), <i>Pseudisobutyrifolius</i> (8), <i>Rhaponticum repens</i> (8), <i>Lamium amplexicaule</i> (10)
	Forrest	<i>Globularia orientalis</i> (2), <i>Crocus flavus</i> subsp. <i>dissectus</i> (4), <i>Lathyrus latifolium</i> (4), <i>Lathyrus cicera</i> (4), <i>Medicago minima</i> (4), <i>Trifolium arvense</i> (4), <i>Clypeola jonhthaspi</i> (4), <i>Diplotaxis tenuifolia</i> (4), <i>Thlaspi jaubertii</i> (4), <i>Ephedra major</i> (6), <i>Lolium perenne</i> (6), <i>Chenopodium botrys</i> (6), <i>Paracaryum racemosum</i> (6), <i>Verbascum flavidum</i> (6), <i>Centaurea solstitialis</i> (6), <i>Jurinea consanguinea</i> (6), <i>Consolida orientalis</i> (6), <i>Consolida regalis</i> subsp. <i>paniculata</i> (6), <i>Nigella arvensis</i> var. <i>involuta</i> (6), <i>Genista albida</i> (6), <i>Hedysarum varium</i> (6), <i>Potentilla recta</i> (6), <i>Arabis nova</i> (6), <i>Neslia paniculata</i> subsp. <i>thracica</i> (6), <i>Campanula cymbalaria</i> (6), <i>Gundelia tournefortii</i> (6), <i>Quercus petraea</i> subsp. <i>iberica</i> (8), <i>Mathiola longipetala</i> subsp. <i>bicornis</i> (8), <i>Anagallis foemina</i> (8), <i>Chaerophyllum byzantinum</i> (8), <i>Juniperus communis</i> var. <i>saxatilis</i> (8), <i>Melilotus officinalis</i> (8), <i>Clinopodium vulgare</i> (8), <i>Juniperus oxycedrus</i> (10)
	Quercus sp. and Steppe	<i>Hypericum procumbens</i> (2), <i>Colchicum speciosum</i> (2), <i>Crocus chrysanthus</i> (2), <i>Euphorbia anacamperos</i> (4), <i>Cruciata taurica</i> (4), <i>Veronica grisebachii</i> (4), <i>Veronica multifida</i> (4), <i>Juniperus oxycedrus</i> (4), <i>Plantago lanceolata</i> (4), <i>Sonchus asper</i> subsp. <i>glaucescens</i> (4), <i>Alkanna orientalis</i> (6), <i>Globularia trichosantha</i> (6), <i>Melilotus officinalis</i> (6), <i>Centaurea urvillei</i> (6), <i>Stachys byzantina</i> (8), <i>Centaurea olympica</i> (8), <i>Quercus cerris</i> (10)
	Quercus sp. forrest	<i>Viola parvula</i> (4), <i>Veronica chamaedrys</i> (4), <i>Lamium orientale</i> (4), <i>Salvia tomentosa</i> (4), <i>Turgeneia latifolia</i> (4), <i>Iris kerneriana</i> (6), <i>Astragalus lydius</i> (6), <i>Onobrychis oxydonta</i> var. <i>armena</i> (6), <i>Malva neglecta</i> (6), <i>Dianthus aculeatus</i> (6), <i>Silene vulgaris</i> (6), <i>Galium verum</i> subsp. <i>glabrescens</i> (6), <i>Myosotis lithospermifolia</i> (6), <i>Nepeta nuda</i> (6), <i>Salvia aethiops</i> (6), <i>Sideritis montana</i> (6), <i>Teucrium chamaedrys</i> (6), <i>Carduus nutans</i> (6), <i>Astrantia maxima</i> (6), <i>Convolvulus arvensis</i> (8), <i>Digitalis ferruginea</i> (8), <i>Clinopodium vulgare</i> (8), <i>Mentha longifolia</i> subsp. <i>typhoides</i> (8), <i>Scutellaria albida</i> subsp. <i>velenovskyi</i> (8), <i>Achillea arabica</i> (8), <i>Cyanus triumfetti</i> (8)
	Pinus sp. forrest	<i>Crocus flavus</i> (2), <i>Crocus olivieri</i> (2), <i>Vicia sativa</i> (2), <i>Pinus nigra</i> (2), <i>Anemone coronaria</i> (2), <i>Thlaspi perfoliatum</i> (2), <i>Rochelia disperma</i> (2), <i>Fritillaria leischeriana</i> (4), <i>Papaver dubium</i> (4), <i>Adonis flammula</i> (4), <i>Adonis aestivalis</i> (4), <i>Nigella arvensis</i> var. <i>involuta</i> (4), <i>Primula vulgaris</i> (4), <i>Doronicum orientale</i> (4), <i>Turgeneia latifolia</i> (4), <i>Scilla bifolia</i> (4), <i>Adonis aestivalis</i> (4), <i>Saxifraga hederaea</i> (4), <i>Alyssum minutum</i> (4), <i>Dactyloflosa romana</i> (4), <i>Adonis flammula</i> (4), <i>Ranunculus damascenus</i> (4), <i>Trigonella cretica</i> (4), <i>Raphanus sativus</i> (4), <i>Alkanna orientalis</i> (4), <i>Fragaria vesca</i> (4), <i>Viola parvula</i> (4), <i>Epilobium angustifolium</i> (4), <i>Brunneria orientalis</i> (4), <i>Crepis sancta</i> (4), <i>Tussilago farfara</i> (4), <i>Paonia peregrina</i> (6), <i>Vicia cracca</i> subsp. <i>stenophylla</i> (6), <i>Asyneuma limonifolium</i> (6), <i>Cyanus pichleri</i> (6), <i>Onopodium tauricum</i> (6), <i>Carex hispida</i> (6), <i>Berberis crataegina</i> (6), <i>Astragalus angustifolius</i> subsp. <i>pungens</i> (6), <i>Brassica elongata</i> (6), <i>Fibigia clypeata</i> (6), <i>Salvia cadmica</i> (6), <i>Centaurea urvillei</i> subsp. <i>Steppeosa</i> (6), <i>Anacamptis pyramidalis</i> (6), <i>Glaucium corniculatum</i> (6), <i>Consolida hellespontica</i> (6), <i>Ranunculus constantinopolitanus</i> (6), <i>Astragalus melanophryus</i> (6), <i>Medicago lupulina</i> (6), <i>Polygala pruinosa</i> (6), <i>Amaranthus bitoides</i> (6), <i>Convolvulus galaticus</i> (6), <i>Verbascum stenostachyum</i> (6), <i>Hieracium pseudodontorichum</i> (6), <i>Picris pauciflora</i> (6), <i>Scabiosa calceolifolia</i> (6), <i>Hypericum montbretii</i> (6), <i>Epilobium lanceolatum</i> (6), <i>Rhus coriaria</i> (6), <i>Berberis vulgaris</i> (6), <i>Lotus corniculatus</i> (6), <i>Geranium pyrenaicum</i> (6), <i>Consolida thirkeana</i> (8), <i>Consolida thirkeana</i> (8), <i>Carex remota</i> (8), <i>Elaeagnus angustifolia</i> (8), <i>Acantholimon puberulum</i> (8), <i>Stachys byzantina</i> (8), <i>Scopolym hispanica</i> (8), <i>Oenanthe fistulosa</i> (8), <i>Delphinium venulosum</i> (8), <i>Galega officinalis</i> (8), <i>Anchusa leptophylla</i> subsp. <i>ineana</i> (8), <i>Seseli tortuosum</i> (8), <i>Rubus canescens</i> var. <i>glabratus</i> (8), <i>Rumex crispus</i> (8), <i>Scrophularia scopoli</i> (8), <i>Lamium gurganicum</i> (8), <i>Scutellaria salvifolia</i> (8), <i>Malva sylvestris</i> (10), <i>Juniperus excelsa</i> (10)
	Quercus sp. and Pinus sp. mixed forrest	<i>Thlaspi arvense</i> (2), <i>Orchis purpurea</i> (4), <i>Muscari negicolum</i> (4), <i>Stipa bromoides</i> (4), <i>Aethionema arabicum</i> (4), <i>Molikia aurea</i> (4), <i>Orobancha minor</i> (4), <i>Acer campestris</i> (4), <i>Iberis canina</i> (4), <i>Turritis laxa</i> (4), <i>Cephalanthera rubra</i> (6), <i>Mniuraria hirsuta</i> subsp. <i>falcata</i> (6), <i>Centaureum erythraea</i> (6), <i>Polygala supina</i> (6), <i>Crataegus monogyna</i> (6), <i>Potentilla recta</i> (6), <i>Hypericum olympicum</i> (6), <i>Anthemis aciphylla</i> (6), <i>Crepis foetida</i> subsp. <i>rheoedifolia</i> (6), <i>Cyanus triumfetti</i> (6), <i>Teucrium polium</i> (8), <i>Campanula rapunculoides</i> subsp. <i>cordifolia</i> (8), <i>Securigera varia</i> (8), <i>Achillea arabica</i> (8), <i>Agrimonia eupatoria</i> (10), <i>Plantago lanceolata</i> (10)
	Grassland	<i>Anemone coronaria</i> (2), <i>Ranunculus ficaria</i> subsp. <i>ficariformis</i> (2), <i>Daucus carota</i> (2), <i>Hyacinthella linearis</i> (4), <i>Veronica pectinata</i> (4), <i>Ornithogalum oligophyllum</i> (4), <i>Adonis aestivalis</i> (4), <i>Alcea biennis</i> (4), <i>Brassica elongata</i> (4), <i>Veronica samuelsenii</i> (4), <i>Salvia syriaca</i> (4), <i>Ornithogalum oligophyllum</i> (4), <i>Trigonella samuelsenii</i> (4), <i>Amygdalus amara</i> (4), <i>Trifolium repens</i> (4), <i>Acer platanoides</i> (4), <i>Raphanus sativus</i> (4), <i>Salix virens</i> (4), <i>Alyssum limifolium</i> (4), <i>Arabis caucasicus</i> (4), <i>Eruca sativaria</i> (4), <i>Cephalanthera damasocornis</i> (6), <i>Sambucus nigra</i> (6), <i>Cephalaria syriaca</i> (6), <i>Bifora radians</i> (6), <i>Ornithogalum oligophyllum</i> (6), <i>Berberis crataegina</i> (6), <i>Potentilla reptans</i> (6), <i>Potentilla maxima</i> (6), <i>Melica ciliata</i> (6), <i>Glaucium grandiflorum</i> (6), <i>Clematis viticella</i> (6), <i>Consolida regalis</i> subsp. <i>paniculata</i> (6), <i>Ranunculus constantinopolitanus</i> (6), <i>Lepidium perfoliatum</i> (6), <i>Dianthus lydius</i> (6), <i>Silene subsonica</i> (6), <i>Hypericum orientale</i> (6), <i>Amaranthus retroflexus</i> (6), <i>Noaea mucronata</i> (6), <i>Polygala anatolica</i> (6), <i>Astragalus hindsii</i> (6), <i>Galium verum</i> (6), <i>Salvia tomentosa</i> (6), <i>Ziziphora tenuifolia</i> (6), <i>Anthemis aciphylla</i> (6), <i>Cymbalaria griffithii</i> (6), <i>Betonica umbellatus</i> (8), <i>Eosynum lydius</i> (8), <i>Stachys cretica</i> subsp. <i>anatolica</i> (8), <i>Colchicum umbrosium</i> (8), <i>Anagallis arvensis</i> (8), <i>Marrubium parviflorum</i> subsp. <i>oligodon</i> (8), <i>Rhinanthus angustifolius</i> subsp. <i>grandiflorus</i> (8), <i>Fumana paphlagonica</i> (8), <i>Poa compressa</i> (8), <i>Digitalis ferruginea</i> (8), <i>Onobrychis oxydonta</i> (8), <i>Xeranthemum annuum</i> (8), <i>Solanum americanum</i> (10)
	Moor	<i>Crepis sancta</i> (2), <i>Ornithogalum neurosigium</i> (4), <i>Scorzonera eriophora</i> (4), <i>Potentilla recta</i> (6), <i>Alcea biennis</i> (6), <i>Linaria corifolia</i> (6), <i>Alyssum murale</i> (6)
	Roadside	<i>Gagea bohemica</i> (2), <i>Scorzonera suberosa</i> (4), <i>Turritis glabra</i> (4), <i>Lezousia speculum-veneris</i> (4), <i>Scorzonera suberosa</i> (4), <i>Taraxacum campyloides</i> (4), <i>Valeriana dioscoridis</i> (4), <i>Artemisia squamata</i> (4), <i>Arum elongatum</i> (6), <i>Ornithogalum narbonense</i> (6), <i>Koeleria pyramidata</i> (6), <i>Genista sessilifolia</i> (6), <i>Lotononis perfoliatus</i> (6), <i>Securigera varia</i> (6), <i>Hypericum organifolium</i> var. <i>deplatum</i> (6), <i>Clinopodium graveolens</i> subsp. <i>rotundifolium</i> (6), <i>Salvia aethiops</i> (6), <i>Sideritis montana</i> (6), <i>Orobancha ranosa</i> (6), <i>Achillea phrygia</i> (6), <i>Cota tinctoria</i> (6), <i>Cyanus depressus</i> (6), <i>Leontodon asperimus</i> (6), <i>Tragopogon gonistifolius</i> (6), <i>Tragopogon porrifolius</i> subsp. <i>longirostris</i> (6), <i>Trifolium pratense</i> (8), <i>Xeranthemum annuum</i> (8), <i>Echinophora tournefortii</i> (8)
	Forrest	<i>Orchis mascula</i> subsp. <i>phoenicea</i> (4), <i>Astragalus densifolius</i> (4), <i>Alyssum hirsutum</i> (4), <i>Iberis canina</i> (4), <i>Viscum album</i> (4), <i>Poa bulbosa</i> (6), <i>Papaver argemone</i> (6), <i>Pallurus spina-christi</i> (6), <i>Rumex crispus</i> (6), <i>Saponaria glutinosa</i> (6), <i>Silene spergulifolia</i> (6), <i>Verbascum bombyciferum</i> (6), <i>Ballota nigra</i> (6), <i>Erenogone ledebouriana</i> (8), <i>Cynoglossum creticum</i> (8), <i>Ptenomon acarna</i> (8)
	Tarla kenari	<i>Iris schachii</i> (4), <i>Rhynchosium thymifolia</i> (4), <i>Descurainia sophia</i> (4), <i>Juniperus oxycedrus</i> (6), <i>Avena barbata</i> (6), <i>Hypericum perforatum</i> (6), <i>Mniuraria hirsuta</i> subsp. <i>falcata</i> (6), <i>Lamium orientale</i> (6), <i>Prunella laciniata</i> (6), <i>Setaria viridis</i> (8), <i>Cichorium intybus</i> (8), <i>Portulaca oleracea</i> (10)
	Quercus sp. forrest	<i>Crocus danfordiae</i> (2), <i>Viola parvula</i> (4), <i>Erophila verna</i> (4), <i>Polygonatum orientale</i> (4), <i>Bromus tectorum</i> (4), <i>Iris kerneriana</i> (6), <i>Astragalus lydius</i> (6), <i>Onobrychis oxydonta</i> var. <i>armena</i> (6), <i>Erysimum crassipes</i> (6), <i>Isatis glauca</i> (6), <i>Cruciata albida</i> (6), <i>Galium verum</i> (6), <i>Malva neglecta</i> (6), <i>Briza media</i> (6), <i>Quercus pubescens</i> subsp. <i>crispata</i> (8), <i>Capsella bursa-pastoris</i> (10)
	Pinus sp. forrest	<i>Crocus ancyrensis</i> (2), <i>Colchicum burtii</i> (2), <i>Anemone blanda</i> (2), <i>Euphorbia helioscopia</i> (2), <i>Primula vulgaris</i> subsp. <i>rubra</i> (2), <i>Crocus ancyrensis</i> (2), <i>Populus nigra</i> (2), <i>Scandix pecten-venersis</i> (4), <i>Asplenium trichomanes</i> (4), <i>Fritillaria pinardi</i> (4), <i>Orchis purpurea</i> (4), <i>Muscari comosum</i> (4), <i>Hypericum perforatum</i> (4), <i>Corydalis solida</i> (4), <i>Lathyrus digitatus</i> (4), <i>Adonis flammula</i> (4), <i>Linum bienne</i> (4), <i>Cardamine hirsuta</i> (4), <i>Iberis canina</i> (4), <i>Orchis lasioflora</i> (4), <i>Asparagus officinalis</i> (4), <i>Primula vulgaris</i> (4), <i>Lucula forsteri</i> (4), <i>Carex distans</i> (4), <i>Briza media</i> (4), <i>Consolida regalis</i> subsp. <i>paniculata</i> (4), <i>Lathyrus lasioflorus</i> (4), <i>Pisum sativum</i> (4), <i>Corylus colurna</i> (4), <i>Crataegus monogyna</i> (4), <i>Pyraechtha coccinea</i> (4), <i>Euosynum europaeus</i> (4), <i>Helianthemum nummularium</i> (4), <i>Rumex tuberosus</i> (4), <i>Alliaria petiolata</i> (4), <i>Arabis caucasicus</i> (4), <i>Stellaria holostea</i> (4), <i>Convolvulus betonicifolius</i> (4), <i>Ajuga chamaepitys</i> subsp. <i>chia</i> (4), <i>Cotoneaster nummularius</i> (4), <i>Pyrus elaeagnifolia</i> (4), <i>Filago arvensis</i> (4), <i>Oenanthe silaifolia</i> (4), <i>Trifolium arvense</i> (4), <i>Fragaria vesca</i> (4), <i>Gagea graeca</i> (4), <i>Salix alba</i> (4), <i>Velezia rigida</i> (4), <i>Veronica multifida</i> (4), <i>Reseda luteola</i> (6), <i>Stellaria media</i> (6), <i>Phleum bertolonii</i> (6), <i>Ranunculus trichophyllus</i> (6), <i>Polygala supina</i> (6), <i>Crataegus orientalis</i> (6), <i>Corydalis solida</i> (6), <i>Glaucium corniculatum</i> (6), <i>Rosa canina</i> (6), <i>Rubus sanctus</i> (6), <i>Rapistrum rugosum</i> (6), <i>Polygonum bistorta</i> (6), <i>Holosteum umbellatum</i> (6), <i>Silene oites</i> (6), <i>Thymus sylvestris</i> (6), <i>Campanula cymbalaria</i> (6), <i>Centaurea iberica</i> (6), <i>Centaurea thracica</i> (6), <i>Pilosella pilosquama</i> (6), <i>Scorzonera tomentosa</i> (6), <i>Aubrieta pinardi</i> (6), <i>Campanula paphlyca</i> subsp. <i>tokurii</i> (6), <i>Trifolium ochroleucum</i> (6), <i>Crataegus orientalis</i> (6), <i>Rosa canina</i> (6), <i>Barbarea plantaginea</i> (6), <i>Catabrosa aquatica</i> (6), <i>Salvia olivacea</i> (6), <i>Campanula glomerata</i> subsp. <i>hispida</i> (6), <i>Ranunculus polyanthemos</i> (6), <i>Lotus corniculatus</i> var. <i>alpinus</i> (6), <i>Ononis spinosa</i> (6), <i>Polygala pruinosa</i> (6), <i>Agrimonia eupatoria</i> (6), <i>Cotoneaster integerrimus</i> (6), <i>Cnicus benedictus</i> (6), <i>Filipendula vulgaris</i> (6), <i>Catarrhus urbanus</i> (6), <i>Potentilla argentea</i> (6), <i>Cynoglossum creticum</i> (6), <i>Bellis perennis</i> (6), <i>Silene cyparidica</i> (6), <i>Charadrius ornatus</i> (6), <i>Cyanus pichleri</i> (6), <i>Lonicera caucasicus</i> (6), <i>Torilis arvensis</i> subsp. <i>neglecta</i> (6), <i>Ranunculus constantinopolitanus</i> (6), <i>Cytisus pygmaeus</i> (6), <i>Medicago lupulina</i> (6), <i>Silene vulgaris</i> (6), <i>Rubus idaeus</i> (6), <i>Clematis viticella</i> (6), <i>Sedum pallidum</i> (6), <i>Astragalus angustifolius</i> subsp. <i>pungens</i> (6), <i>Hedysarum varium</i> (6), <i>Reseda lutea</i> (6), <i>Dianthus lydius</i> (6), <i>Mniuraria hirsuta</i> subsp. <i>falcata</i> (6), <i>Paronychia kurdica</i> (6), <i>Chenopodium botrys</i> (6), <i>Centaurea thracica</i> (6), <i>Helichrysum plicatum</i> (6), <i>Allium scorodoprasum</i> subsp. <i>notatum</i> (8), <i>Delphinium venulosum</i> (8), <i>Senecio racemosus</i> (8), <i>Carex remota</i> (8), <i>Pileum pratense</i> (8), <i>Galium verum</i> subsp. <i>glabrescens</i> (8), <i>Origanum vulgare</i> (8), <i>Sideritis galatica</i> (8), <i>Melampyrum arvensis</i> (8), <i>Asyneuma rigidum</i> (8), <i>Jurinea pontica</i> (8), <i>Pilosella piloselloides</i> (8), <i>Morina persica</i> (8), <i>Lapsana communis</i> subsp. <i>adenophora</i> (8), <i>Bolanthus minoritoides</i> (8), <i>Atriplex rosea</i> (8), <i>Micromeria cristata</i> subsp. <i>phrygia</i> (8), <i>Centaurea iberica</i> (8), <i>Colatae gilvica</i> (8), <i>Trifolium hybridum</i> (8), <i>Hypericum tetrapetrum</i> (8), <i>Prunella vulgaris</i> (8), <i>Pinus sylvestris</i> (8), <i>Digitalis ferruginea</i> (8), <i>Pilosella ariculoides</i> (8), <i>Pilosella piloselloides</i> subsp. <i>magyarica</i> (8), <i>Juniperus excelsa</i> (10), <i>Phlomis russeliana</i> (10), <i>Consolida aconiti</i> (10), <i>Datura stramonium</i> (10), <i>Chaerophyllum byzantinum</i> (10), <i>Lamium amplexicaule</i> (10)
	Pinus sp. forrest	<i>Limodorum abortivum</i> (4), <i>Iris pseudacorus</i> (4), <i>Stellaria holostea</i> (4), <i>Vicia herbacea</i> (4), <i>Scilla bifolia</i> (4), <i>Ranunculus arvensis</i> (4), <i>Cardamine hirsuta</i> (4), <i>Lamium purpureum</i> (4), <i>Roemeria hybrida</i> (6), <i>Nigella elata</i> (6), <i>Ranunculus repens</i> (6), <i>Astragalus vulnerariae</i> (6), <i>Lathyrus cicera</i> (6), <i>Vicia cassubica</i> (6), <i>Crataegus tanacetifolia</i> (6), <i>Potentilla recta</i> (6), <i>Pyraechtha coccinea</i> (6), <i>Fagus orientalis</i> (6), <i>Cynoglossum cordatum</i> (6), <i>Noaea caspica</i> (6), <i>Veronica serpyllifolia</i> (6), <i>Acanthus hirsutus</i> (6), <i>Inula ensifolia</i> (6), <i>Eleocharis palustris</i> (8), <i>Medicago sativa</i> (8)
	Quercus sp. and Pinus sp. mixed forrest	<i>Paonia peregrina</i> (4), <i>Viola alba</i> (4), <i>Nepeta stricta</i> (4), <i>Sedum pallidum</i> (6), <i>Geum urbanum</i> (6), <i>Asyneuma limonifolium</i> (6), <i>Sedum album</i> (8), <i>Asperula involucreta</i> (8)
	Pinus sp. forrest	<i>Crocus danfordiae</i> (2), <i>Acer hyrcanum</i> subsp. <i>keckianum</i> (2), <i>Pinus sylvestris</i> (4), <i>Juniperus foetidissima</i> (4), <i>Gagea hirsuta</i> (4), <i>Geranium purpureum</i> (4), <i>Descurainia sophia</i> (4), <i>Crupina crupinistrum</i> (4), <i>Doronicum orientale</i> (4), <i>Rosa pulverulenta</i> (6), <i>Cistus laurifolius</i> (6), <i>Mniuraria juniperina</i> (6), <i>Ranunculus bratki</i> (6), <i>Astragalus condensatus</i> (6), <i>Rosa mirzantha</i> (6), <i>Rubus canescens</i> var. <i>glabratus</i> (6), <i>Euphorbia falcata</i> (6), <i>Plantago holosteam</i> (6), <i>Nepeta media</i> (6), <i>Campanula cymbalaria</i> (6), <i>Inula oculus-christi</i> (6), <i>Scorzonera cma</i> var. <i>jacquiniana</i> (6), <i>Tanacetum parthenium</i> (6), <i>Anethum graveolens</i> (6), <i>Smyrnium perfoliatum</i> (6), <i>Lotus corniculatus</i> var. <i>tenuifolius</i> (8), <i>Centaureum erythraea</i> (8), <i>Centaurea olympica</i> (8), <i>Helichrysum graveolens</i> (8), <i>Picris hieracoides</i> (8)