

FLORA OF MOUNT TUAM ECOLOGICAL RESERVE

Mount Tuam

Ref. No.:

85

ECOLOGICAL RESERVES COLLECTION
GOVERNMENT OF BRITISH COLUMBIA
VICTORIA, B.C.
V8V 1X4

DIVISION PTEROPHYTA

SELAGINACEAE- SPIKEMOSS Family

Selaginella wallacei Hieron

Abundant on open rock outcrops (4 community) among grasses such as Aira praecox and A. caryophyllea; occupies dry, bare areas on out-crop shoulders, in crevices and small vertical rock faces.

EQUISETACEAE - HORSETAIL Family

Equisetum arvense L. (Common horsetail)

Rare; found in rich alluvial muck in seepage areas. Overhead canopy generally consists of Thuja plicata, Alnus rubra or Acer macrophyllum. Indicative, in most cases, of previous human disturbance.

Equisetum hyemale L. (Common scouring rush)

Rare; frequently intermixed with Equisetum arvense and definitely occupying similar seepage and standing water environments.

POLYPODIACEAE - COMMON FERN Family

Adiantum pedatum L. (Northern Maidenhair Fern)

Sparsely distributed overall in the reserve. Localized in vertical and horizontal rock crevices near running water in shaded creek beds on the reserve.

Asplenium trichomanes L. (Maidenhair spleenwort)

Rare; found in moist rock crevices at the foot of, and on, rocky precipices. The fern is generally associated with thick mats of Dicranum fuscescens Turn. or Polytrichum juniperinum Hedw. within the community.

Sylvia Handley, Deana Macquay and Dave Clark 1974. Flora of Mount Tuam Ecological Reserve. Bot. & Zoology, University of Victoria.

Athyrium filix-femina (L.) Roth. (Lady fern)

Very rare; growing in muck soil near the southeastern border of the reserve in the (3) community.

Blechnum spicant (L.) Roth. (Deer fern)

sparse; generally in damp, shaded regions previously logged and a reasonable depth of soil. This fern is often associated with the (3) community.

Pityrogramma triangularis (Kaulf.) Maxon

Rare; associated with dry, moss covered crevices in Arbutus menziesii-Pseudotsuga menziesii stands or in outcropping region.

Polypodium hesperium Maxon

Abundant on the reserve; found in shaded, rocky areas and in crevices on vertical rock faces. It is associated with open stands of Pseudotsuga menziesii and Arbutus menziesii where the understory, particularly the herb layer, is sparse.

Polystichum munitum var. munitum (Kaulf.) Presl. (Sword fern)

Common in moist to mesic sites on the reserve where the tree canopy (Arbutus menziesii, Pseudotsuga menziesii, Alnus rubra or Thuja plicata) provide shade. Exposed to direct sunlight in recently disturbed or deep soil pockets. As a generality, size increases with depth of soil, organic content of soil, shade and moisture.

Pteridium aquilinum var. pubescens Underw. (Bracken)

Abundant; found in open or disturbed areas. It is often interspersed with Gaultheria shallon and, as it never appears under dense stands of Pseudotsuga menziesii or Thuja plicata, it could be considered intolerant of shaded conditions.

Woodsia scopulina D.C. Eat.

Common; usually growing from beneath mass-wasted rocks in shaded areas of the rock outcrop.

DIVISION SPERMATOPHYTA

CLASS GYMNOSPERMAE (Conifers)

CUPRESSACEAE - CYPRESS Family

Thuja plicata Donn (Western Red Cedar)

Common on Mount Tuam in a broad range of environmental conditions and elevations. Extensive pure stands are found at low elevations in deep podzol or muck soils of a moist regime (heavy rain or drainage basin). Often found as young trees under an Alnus rubra canopy and is potentially the next successional stage in these regions.

PINACEAE - PINE Family

Abies grandis (Dougl.) Lindl. (Grand fir)

Rare to common; found in podzols of a mesic nature and usually interspersing Pseudotsuga menziesii.

Pinus contorta var. contorta Dougl. ex. Loudon (Lodgepole pine)

Sparsely distributed in open Pseudotsuga menziesii and Arbutus menziesii stands from the shoreline to the highest elevations on the reserves. Grows in gravelly podzols with a mesic moisture regime.

Pinus monticola Dougl. (Western white pine)

Very rare; one tree seen at 1,100 foot elevation among scrub Pseudotsuga menziesii, Holodiscus discolor, Camassia quamash, and representative species of the outcrop community.

Pseudotsuga menziesii (Mirbel) Franco (Douglas fir)

Abundant; providing approximately 50% of the tree cover on the reserve and surrounding land. P. Menziesii occurs in mesic sites with deep podzol soils. About fifty to sixty years ago, and then once more 20 years ago, this tree was selectively logged for on the reserve. New stands of Pseudotsuga menziesii now occur in the old logging cuts.

Tsuga heterophylla (Raf.) Sarg. (Western hemlock)

Common; preferring moist sites - generally under the canopy of Alnus rubra, Thuja plicata or Acer macrophyllum. Seldom found with Pseudotsuga menziesii or Arbutus menziesii.

CLASS ANGIOSPERMAE (FLOWING PLANTS)

MONCOTYLEDONS

JUNACEAE - FUSH Family

Luzula campestris (L.) var. multiflora (Ehrh.) Celak.

Sparse; often found in disturbed areas with little canopy. Frequents old logging regions in areas that have mesic moisture regimes. The plants, however, appear to occupy runoff channels and seepage basins within these.

CYPERACEAE - SEDGE Family

Carex canescens Baily

Rare; found only in very wet regions in association with young Salix sitchensis in the (3) or (5) communities.

Carex bolanderi (C. deweyana Schw.)

Rare; occurring in wet areas, often with Alnus rubra and Urtica dioica var. dioica.

Carex obnupta Bailey

Rarely occurring, although extensive patches can be found. Seems to prefer very wet sites in swampy muck soils. Associated with Alnus rubra and Urtica dioica var. dioica in slow-moving seepage beds.

Carex pensylvanica Lam.

Rare; found in a dry, open area with Bromus mollis, Festuca myuros, and Cynosurus echinatus in a grassy outcropping area.

Carex vesicaria L. (Inflated sedge)

Rare; found only in damp, swampy site associated with the Typha latifolia (6) swamp community.

GRAMINAE (POACEAE) - GRASS family

Agrostis exarata var. exarata Trin.

Rare; usually within the (3) community in damp sites.

Agrostis tenuis (Sibth. (Colonial bentgrass)

Rare; found interspersed with Agrostis exarata var. exarata in in wet drainage or disturbed areas.

Aira caryophyllea L. (Hairgrass)

Common to abundant on outcrop regions of the (4) community where the land is flat or slightly sloping and fully exposed to the sun. In these situations it often completely covers winter runoff channels and is flanked by mixtures of Aira praecox, Bromus sterilis and Cynosurus echinatus. Infrequently, A. caryophyllea is located in open Pseudotsuga menziesii or Pseudotsuga menziesii-Arbutus menziesii forests.

Aira praecox L. (Little hairgrass)

Common to abundant in similar habitats to Aira caryophyllea but found on more concave, and therefore drier, microlandforms.

Anthoxanthum odoratum L. (Sweet vernal grass)

Rare; occurrence scattered. Found most frequently along roadsides and in logged regions. Flowers generally appear in June.

Bromus mollis L. (Soft cheat)

Located quite commonly on the reserve - particularly in either the (3) community, the (4) or the (2) community, where deep soil and lightly shaded or sunny regions appear. Flowering occurs in June and grains are released in July, August and September.

Bromus sterilis L.

Common; usually associated with (2) community in full exposure to the sun although a sparse occurrence was noted in some heavily shaded regions and along stream banks.

Cynosurus echinatus L. (Dog's tail grass)

Common; often grouping in sunny to lightly shaded areas with Bromus mollis, Festuca myuros, Aira caryophylla, Aira praecox and other species associated with either the (4) or (1) communities. This grass is also somewhat common in the Pseudotsuga-Arbutus mixed stands. Flowering occurs May through July.

Deschampsia elongata (Hook) Munro

Commonly occurring on the reserve, it prefers shaded sites in the (2) or open (1) communities. Soils are often mesic to damp, quite high in organic content and deep. Flowering occurs in July and August.

Elymus glaucus Buckle. (Blue Wild Rye)

Common on Mount Tuam in partially shaded conditions in the (2) community. Flowering is generally initiated in late spring.

Festuca myuros L. (Rat-tailed fescue)

Occurrence sparse to common overall; generally found in partially shaded sites on the (3) or (4) communities.

Festuca reflexa (F. microstachys NuH.) (Nuthill's fescue)

Rare, occurring in moist shaded regions. Seeds were usually released before mid-June.

Festuca occidentalis Hook. (Western fescue)

Abundant, most frequently encountered in sites forested with Pseudotsuga menziesii or Arbutus-Pseudotsuga. Flowering occurs May - July; seeds are released by mid-August.

Festuca subulata Trin. (Bearded fescue)

Commonly occurring in shaded sites supporting (3) communities.

Holcus lanatus L. (Velvet grass)

Sparse; found in areas with a history of disturbance (logging, fire, grazing, roadbuilding) which has resulted in a very "open" or exposed community development. This grass can therefore be found in conjunction with species indicative of (3) or (4) communities.

Hordeum murinum L. (Mouse barley)

Rare; found in open, disturbed area.

Poa howellii Vasey and Scribn. (Howell's bluegrass) - *must be something else*

Rare; found in wooded (Pseudotsuga menziesii-Arbutus menziesii mixed forest), lightly shaded area.

Poa palustris L. (Marsh bluegrass)

Rare; found in wet lowlands especially under an Alnus rubra canopy.

Poa pratensis L. (Kentucky bluegrass)

Sparse; appearing in communities without substantial tree cover (2); (4). Flowering occurs in July.

Poa trivialis L.

Rare; found in deep muck soil of the (6) community.

TYPHACEAE - CAT-TAIL family

Typha latifolia L. (Cat-tail)

Sparse; characteristic species of Typha latifolia - swampland community isolated near Mountain Road at the extreme eastern border of the reserve.

ARACEAE - ARUM family

Lysichitum americanum Hulten & St. John (Skunk cabbage)

Rare; occurring in muck soils in drainage basin in the southeast corner of the reserve interspersed with Equisetum arvense and Carex obnupta under a mixed Alnus rubra - Acer macrophyllum canopy.

LILIACEAE - LILY family

Alliumcernuum Roth (Nodding onion)

Fairly common in (4) community growing in either soil pockets on flat ground or in vertical, soil-filled crevices. Flowers appear in mid-July to August.

Brodiaea coronaria (Salisb.) Engl. (Harvest Brodiaea)

Rare; found mainly at low elevations in the (4) community among Aira and other grasses. Its blue flowers are noted in July and may be seen on flat, open ground in full sunshine.

Brodiaea howellii Wat. (Howell's brodiaea)

Rare; found in similar conditions, and interspersed with, Brodiaea coronaria.

Camassia quamash (Pursh.) Greene (Common camas)

Sparsely occurring within sample plots but suspected to be sparse to common in the (4) community or in grassy, open fields. It is possible that the Indian bands cultivated this species on the reserve.

One large field (at approximately 1400 feet) was encountered. Flowering generally occurs in May and early June; seeds are released in August and September.

Similacina stellata (L.) Desf. (Starry Solomon's seal)

Very rare; in densely shaded moist habitat on a steeply sloping stream bank. Flowers were not in evidence.

Trillium ovatum Pursh. (White trillium)

Rare; found only twice. Growing in moist, fine, silty soil with Achlys triphylla, Urtica dioica var. dioica and Mnium glabrescens under a mixed Alnus rubra-Acer macrophyllum canopy.

ORCHIDACEAE - ORCHID family

Calypso bulbosa (L.) Oakes (Fairy slipper)

Rare; usually associated with mesic regions in Pseudotsuga menziesii forests. Grows concurrently with Goodyera oblongifolia and Eurynchium oreganum and does not appear if the Gaultheria shallon or Berberis nervosa ground cover is thick. Flower in May and early June.

Corallorhiza maculata Raf. (Spotted coral root)

Intermittent within pure, well-shaded Pseudotsuga menziesii stands or in P. menziesii - complexed forests. C. maculata frequently occurs in dense patches in these conditions. Flowering in May and early June.

Goodyera oblongifolia Raf. (Rattlesnake plaintain)

Common; found in open Pseudotsuga menziesii or mixed Pseudotsuga-Arbutus stands where Gaultheria shallon and Berberis nervosa do not exceed 60% ground cover and Eurynchium oreganum constitutes approximately 80% of the moss layer. Generally flowering in early June but one specimen showed buds in August.

Habenaria unalascensis (Spreg.) Wats. (Bog orchid)

Sparse; usually associated with (4) and (2) communities where soil pockets permit growth and exposure favours full sunlight.

Listera cordata (L.) R.Br. (Heart-leaved twayblade)

Sparse; generally within Pseudotsuga menziesii, pure and mixed forest (1), (2), and (5) communities.

SALICACEAE - WILLOW family

Salix lasiandra Benth. (Pacific willow)

Rare; found in moist to wet roadside ditches and swampy meadows. Often associated with Spiraea douglasii Hook.

Salix scouleriana Barrat (Scouler willow)

? Rare; found in sites similar to Salix lasiandra Benth.

Salix sitchensis Sanson (Sitka willow)

? Common; found within (1) or (2) communities in podzol or disturbed mineral soils.

BETULACEAE - SWEET GALE family

Alnus rubra Bong. (Red alder)

Abundant in seepage regions at all elevations and wet lowland areas - especially those disturbed by roadbuilding. Seems to prefer deep muck-type soils, high in organic content, but will grow in gravel and bare mineral soils if run-off water is abundant.

FAGACEAE - BEECH family

Quercus garryana Dougl. (Garry oak)

Distribution sparse; associated with hot, dry, outcrop regions with a south to southwesterly aspect. Quercus garryana appears to inhabit

soil pockets (1-3' deep) in these regions. Aspect and water regime rather than slope or soil type seem to govern the distribution of this species.

URTICACEAE - NETTLE family

Urtica dioica var. lyalli (Wats.) C.L. Hitchc. (Stinging nettle)

Commonly dominating the herbaceous layer under an ^AUlnus rubra Bong. canopy. It is also abundant in shaded seepage areas in old logging road beds. U. dioica var. lyalli flowers in late June and has set seeds by the end of July.

POLYGONACEAE - BUCKWHEAT family

Polygonum spergulariaeforme Meisn.

Rare; found in rock crevices on sunny outcrops under numerous tree canopies. The small pink flowers may be easily seen in August and September.

Rumex acetosella L. (Sheep sorrel)

Common in the (4) community and in sparsely shaded regions along roadsides and deer trails. R. acetosella flowers from late spring into July.

PORTULACACEAE - PURSLANE family

Montia parvifolia

Fairly common within the ^AUlnus rubra-Urtica dioica-Mnium glabrescens disturbed (lowland?) community frequently associated with sandy muck soils or sand or clay deposits. Other regions suggest its preference of well-shade stream beds (in mixed organic debris and sand deposits or the above-mentioned habitat) to the open Pseudotsuga menziesii-Holodiscus-

discolorGaultheria shallon-Eurynchium oreganum

Montia perfoliata (Donn.) Howell (Miner's lettuce)

Sparsely scattered in the Pseudotsuga-Holodiscus-Goodyera-Eurynchium community - usually in shade close to the base of the Douglas fir trees. Plants exposed to sun generally are smaller in stature, have smaller leaves and limp petioles. Flowering occurs in May and June.

Montia sibirica (L.) Howell (Siberian miner's lettuce)

Fairly common on Mount Tuam - found along roadsides and in similar streambed habitats as Montia parvifolia (Dougl.) Howell. Flowers late July to September in shaded regions.

CARYOPHYLLACEAE - PINK family

Arenaria macrophylla Hook. (Bigleaf sandwort)

Fairly common in open areas under a pure Pseudotsuga menziesii or mixed Arbutus menziesii-Pseudotsuga menziesii canopy. It does not like dense understory. Flowering continues from July to August.

Cerastium arvense L. (Field mouse-ear)

Commonly growing in deep soil pockets in rock crevices in exposed, logged-over, outcroppings at any altitude but particularly those above 600 feet, having a south to southwestern aspect. Flowers mid-May to June.

Cerastium viscosum L. (Sticky chickweed)

Very common in the same outcrop areas as Cerastium arvense - especially common in stands dominated by Arbutus menziesii, grasses and mosses such as Rhacomitrium canescens, Polytrichum juniperinum and Dicranum fuscescens. Flowers occur before June.

Silene gallica L. (Windmill pink)

Rare; usually found within the same releve as Cerastium viscosum or Cerastium arvense. Flowers are dead by June.

Stellaria crispa Cham and Schlecht (Crisped stellaria)

Common; found mainly in soil whose rich organic matter maintains a high water holding capacity. It is often found on the forest floor under a thick Alnus rubra or Thuja plicata canopy.

Stellaria humifusa Roltb. (Spreading stellaria)

Extremely rare; a single specimen was found.

Stellaria media (L.) Cyrill (Chickweed)

Sparse; found in both rocky outcrop (with Cerastium viscosum and C. arvense) and open forest regions (little tall understory or shade).

RANUNCULACEAE - BUTTERCUP family

Ranunculus occidentalis var. occidentalis Nutt. (Western buttercup)

Rare; found in the (4) community with flowers occurring in May and June and seeds setting in July and August.

Ranunculus repens L. (Creeping buttercup)

Sparse; found in most shaded areas of the ^AAlnus/Acer-Urtica lowland or disturbed community. Few flowers were seen but several green seeds were seen on some plants. Normally however, the plant was devoid of reproductive structures.

Thalictrum occidentale Gray (Western meadowrue)

Extremely rare; a single occurrence of this species was noticed among Festuca subulata and Mnium glabrescens in a moist site shaded by Alnus rubra.

BERBERIDACEAE - BARBERRY family

Achlys triphylla (Smith) DC. (Vanilla leaf)

Fairly common in moist, shaded (3) communities with Acer macrophyllum as a secondary canopy tree. The plant seems to grow best in lightly dappled shade in stands with little understory.

Berberis aquifolium Pursh. (Shining Oregon grape)

Sparse; complexed with natural or logged rocky outcrops or within the Pseudotsuga menziesii-Arbutus menziesii-Berberis nerosa-Eurynchium oreganum community. Soil relationships are varied as specimens were encountered surviving in gravel, then rocky or clay soils. Sunlight, however, had to be moderately intense.

Berberis nervosa Pursh. (Dull Oregon grape)

Abundant to dominant understory in forests shaded by Pseudotsuga menziesii, Arbutus menziesii, or a mixture of the two. As these forests become more open - in progression from pure Douglas fir to Arbutus, the percentage of Berberis nervosa increases at the expense of Gaultheria shallon. Thus, sites with Berberis nervosa tend to be clearer and less tangled than those dominated with Gaultheria shallon. Flowers occur in June; fruit sets in late July to August.

CRUCIFERAE (BRASSICACEAE) - MUSTARD family

Capsella bursa-pastoris (L.) Medic. (Shepherd's purse)

Rare; found in open logged, cleared or otherwise disturbed areas on gravel soil. Flowering starts in late June and is known to continue into October. Seeds are set during the same time period.

Cardamine oligosperma var. oligosperma Nutt. (Little western bittercress)

Common; an integral part of the (4) community - particularly in regions shaded by either Arbutus menziesii or Quercus garryana.

Flowering before mid-May. By late July the seeds have ripened and the plant undergoes rapid senescence and turns bright red.

Lepidium virginicum L. (Tall peppergrass)

Rare.

Sisymbrium officinale (L.) Scop. (Hedge mustard)

Rare; found in open, disturbed lands and along roadsides.

Flowering throughout late summer and early fall.

CRASSULACEAE - STONECROP family

Sedum spathulifolium Hook. (Broadleaf sedum)

Sparse; on the shoulders within shallow pockets and vertical crevices of rock outcrop which seem devoid of thick moss covering. The bright yellow flowers can be seen in mid-June.

SAXIFRAGACEAE - SAXIFRAGE family

Heuchera micrantha var. diversifolia R.B. & L. (Smallflower alumroot)

Sparse; often occurring in deep soil pockets and crevices in outcrop regions. It is frequently associated with mass-wasted seepage areas or the vertical rock faces of stream beds. Habitat range suggests a tolerance of extremes in light conditions. Flowers are evident early June to August.

Tiarella trifoliata L. (Foam flower)

Abundant in shaded plots crowned by Pseudotsuga menziesii and devoid of a dense understory of Gaultheria shallon or Berberis nervosa; flowering late June to early July.

GROSSULARIACEAE - CURRANT AND GOOSEBERRY family

Ribes lacustre (Pers.) Poir (Prickly currant)

Common; generally found in areas disturbed by logging although the occasional bush was found in the (2) community. Flowering in early summer; fruit sets in August.

ROSACEAE - ROSE family

Amelanchier alnifolia Nutt. (Western shadbush)

Rare; growing in moist disturbed areas, stream beds and in ditches along Mountain Road.

Fragaria vesca. L. (Woods strawberry)

Common within the (4) community on gently to steeply sloping thin, gravelly soil with a south to southwesterly aspect. Flowers are evident in May to July, while small berries appear July to August.

Holodiscus discolor var. discolor (Pursh.) Maxim. (Creambush ocean-spray)

Abundant; dominant shrub from under canopies. Quercus garryana, Arbutus menziesii, Pseudotsuga menziesii and complexes of the above species. Holodiscus is also ⁱⁿ exposed mass waste areas disturbed by logging (usually above 600' elevation). Maximum flowering occurs in June and early July although the occasional spray may be spotted in August.

Potentilla pacifica Howell (Pacific silverweed)

Rare; forming part of the herb layer in the Pseudotsuga-Holodiscus-Goodyeara-Eurynchium community.

Prunus emarginata var. mollis (Dougl.) Brew. (Bittercherry)

Rare; generally associated with dense canopies of mixed Thuja plicata and Pseudotsuga menziesii in moist lowland forests. Flowers were not noted on this shade adapted form.

Rosa gymnocarpa Nutt. (Wild rose)

Abundant; similar in habitat to Holodiscus discolor var. discolor - also displaying tolerance of a wide range of forest canopy. Similar to Holodiscus, Rosa gymnocarpa is also found in disturbed areas.

Rosa nutkana var. nutkana Presl. (Nootka rose)

Rare; generally associated with habitats similar to Rosagymnocarpa but much sparser in distribution. Rosa nutkana seems to prefer a more open, sunnier location than Rosa gymnocarpa.

Rubus laciniatus Willd. (Evergreen blackberry)

Rare; found only once on a shaded, streambank among Polystichum munitum.

Rubus parviflorus Nutt. (Thimbleberry)

Rare; in moist areas such as streambanks, drainage areas, roadsides, and trails. Seems to enjoy deep alluvial or muck soils.

Rubus spectabilis Pursh. (Salmonberry)

Sparse; found in wet regions along Mountain Road and in gravels and sand deposits in streams. Often recorded in the same localities as Rubus parviflorus

Rubus ursinus Weihe & Nees. (Pacific blackberry)

Abundant on Mt. Tuam, especially in the (2) community among Gaultheria shallon and Berberis nervosa cover. No flowers or fruit were observed on this plant at any location on the reserve.

Spiraea douglasii Hook. (Douglas' spiraea)

Sparse; in wet ditches along Mountain Road; densest in the Typha latifolia swamp in the northeast corner of the reserve.

LEGUMINOSAE (FABACEAE) - PEA family

Cytisus scoparius (L.) Link (Scot's broom)

Sparse; characteristic of open, exposed land disturbed by logging, agriculture or grazing. Flowers occur in May through to September, although a maximum number of blooms are observed early in the season. Seeds are dispersed from late July into autumn.

Lathyrus nevadensis L. (Sweet pea)

Abundant; usually located under Quercus garryana or open Arbutus menziesii canopies. It is also recorded as frequenting forest floors dominated Pseudotsuga menziesii complexes.

Lotus micranthus Benth. (Small-flowered deer vetch)

Abundant in the (4) community and in sunny, open spaces in the (2) community.

Trifolium dubium Sibth. (Suckling clover)

Sparse; characteristic of disturbed areas which are now dominated by a variety of grasses (Family Graminae). Flowers to the end of July; heads then plant dry drastically in August and early September.

Trifolium microcephalum Pursh. (Smallhead clover)

Fairly common; interspersed with grasses, Lotus micranthus, other Trifolium species and Myosotis discolor in the (4) community. Flowers May to June.

Trifolium microdon H. & A. (Thimble clover)

Common in regions occupied by Trifolium microcephalum and Trifolium variegatum. Flowering May to June; subject to severe dessication in late July and August.

Trifolium oliganthum Stevd. (Few-flowered clover)

Sparse; most frequently recorded in the (4) community whenever shaded conditions prevailed.

Trifolium tridentatum Lindl. (Sand clover)

Sparse; associated with other clover species in outcrop and open, logged regions.

Trifolium variegatum Nutt. (White-tip clover)

Common to widespread in (4) community and in sunny open spots of the (1) and (2) communities. Flowers May to June.

Vicia sativa var. augustifolia (L.) Wahlb. (Common vetch)

Common within shade or sun of the (2) community. Flowering in June, seeds ripening in August.

GERANIACEAE - GERANIUM family

Erodium cicutarium (L.) L'tter. (Stork's bill)

Sparse in rock outcrop and open logged regions where there is partial shading. Flowering before mid-May and becoming completely dry by July.

Geranium dissectum L. (Cut-leaf geranium)

Sparse; found interspersed with Geranium molle and other species characteristic of the (4) community. Flowers occur in June.

Geranium molle L. (Dove-foot geranium)

Common within the (4) community or in lightly shaded but dry areas such as the open, logged-over reaches above 600 feet elevation. Flowers appear from May to early August.

ACERACEAE - MAPLE family

Acer macrophyllum Pursh. (Broadleaf maple)

Abundant on Mount Tuam; generally found in moist lowland areas mixed with Pseudotsuga menziesii and Alnus rubra although the occasional tree was found in seepage areas at higher altitudes.

VIOLACEAE - VIOLET family

Viola sempervirens Greene (Evergreen violet)

Sparse; found in the (2) community. Flowers were not observed.

ELEAGNACEAE - OLEASTER family

Shepherdia canadensis (L.) Nutt. (Soapberry)

Extremely rare; found in a grassy, open region close to the shore.

ONAGRACEAE - EVENING PRIMROSE family

Circaea alpina L. (Enchanter's nightshade)

Rare; few plants were seen under the dense growth of young Pseudotsuga menziesii in the logged regions of the upper elevations in the southwest corner of the reserve.

Epilobium minutum Lindl. (Small-flowered willow-herb)

Rather common; usually growing in outcrop or open, logged areas (4) community, although sometimes recorded in sparsely canopied Arbutus menziesii stands. Flowers continuously from July to September. Seeds are visible immediately after the floral parts senesce.

UMBELLIFERAE (APIACEAE) - PARSLEY family

Daucus pusillus Michx. (Rattlesnake weed)

Common within the (4) community and under open, grassy stands of Arbutus menziesii or Arbutus-Pseudotsuga. Daucus becomes evident in May and flowers approximately two months later. Seeds can be released in August.

Lomatium utriculatum (NuH.) Coult. & Rose (Common lomatium)

Very rare; found in outcrop regions which also support Allium cernuum. Flowering late June to mid-August with the majority of flowers opening mid to late July.

Oenanthe sarmentosa Presl. (Pacific western parsley)

Sparse in the reserve; recorded only in ditches beside Mountain Road.

Osmorhiza sp. Raf.

Common; generally in shaded plots under pure Pseudotsuga menziesii canopies or complex canopies of Pseudotsuga and other trees - frequently Alnus rubra. Flowers occur in late June and early July.

Perideridia gairdneri (H. & A.) Math. (Gardner's yampah)

Very rare; found once in a moist site within a Pseudotsuga menziesii stand.

Sanicula crassicaulis Poepp. (Pacific sanicle)

Abundant under dense stands of Pseudotsuga menziesii or Pseudotsuga menziesii and Arbutus menziesii. Flowers can be seen from July to August; the black seeds mature in late autumn.

CORNACEAE - DOGWOOD family

Cornus canadensis L. (Bunchberry)

Rare, several specimens were noted among a sparse Gaultheria Shallon

bed in an open Pseudotsuga menziesii stand. The plants appeared to be associated with a decomposing Pseudotsuga menziesii log. No flowers were observed.

Cornus nuttalli Aud. (Dogwood)

Sparse; generally found on the forested edge of areas disturbed by natural or man-made causes. It is often associated with Salix, Acer and Arbutus. Flowers occur in May; seeds develop and mature in autumn.

ERICACEAE - HEATHER family

Arbutus menziesii Pursh. (Pacific madrona)

Abundant; pure stands occupy dry rocky sites in close to outcrop regions. In mesic sites it is frequently mixed with Pseudotsuga menziesii. While xeri sloping lands with a southwest aspect tend to Quercus garryana and its complexes those with a south to southeast aspect seem to sustain Arbutus menziesii. Flowering occurs early in the summer, leaves are shed in July and seeds set in July.

Chimaphila umbellata (L.) Bart. (Prince's pine)

Sparse on Mt. Tuam; often sited growing with Eurynchium oreganum in mesic to dry sites in extremely open Pseudotsuga and Pseudotsuga-Arbutus stands.

Gaultheria shallon Pursh. (Salal)

Monotropa uniflora L. (Indian pipe)

Very rare; a single mass of this saprophyte was sited in a heavily shaded area beneath one of the lowland stands of Thuja plicata. The turf at this location was mesic - not wet, 8 - 12 inches deep and

formed from loosely compacted Thuja plicata bows and scales.

Pterospora andromeda Nutt. (Woodland pinedrop)

Sparse; its pink flowers were detected under dense stands of regenerated Pseudotsuga menziesii (twenty to twenty-two years old) in July.

Pyrola picta Smith (White vein pyrola)

Sparse; intermixed and often confused with Gaultheria shallon. Flowers and seeds were not detected on any specimen observed in the reserve.

Vaccinium ovatum Pursh. (Evergreen huckleberry)

Sparse within Pseudotsuga menziesii complexed forests of a slightly moister nature than those supporting Vaccinium parviflorum. Vaccinium ovatum seldom forms large shrubs in the reserve and is located in a layer similar to Gaultheria shallon.

Vaccinium parvifolium Smith (Red huckleberry)

Abundant on Mount Tuam where Pseudotsuga menziesii or complexes of Douglas fir dominate. It is often associated with Holodiscus discolor and occupies a similar height/position and spatial orientation as this species. Often, however, V. parvifolium prefers growing from rotting stumps or logs and was recorded from these positions in stands of Thuja plicata. The inconspicuous flowers form in April, May and June; fruit is mature in late July or early August.

PRIMULACEAE - PRIMROSE family

Trientalis latifolia Hook. (Broad-leaved starflower)

Abundant on Mt. Tuam and can be located under Gaultheria shallon in any Pseudotsuga, Pseudotsuga-Arbutus, Pseudotsuga-Alnus or Alnus-Acer stand. Plants are associated with Achylys triphylla and Rubus ursinus

in alluvial or muck soils in shaded sites.

POLEMONIACEAE - PHLOX family

Collomia heterophylla Hook (Varied-leaf collomia)

Abundant in the (4) community. Flowers are evident until August when outcroppings become too dry to support many species.

Linanthus bicolor (Nutt.) Greene (Bicolored linanthus)

Sparse; also associated with the (4) community. Flowers can be seen in early June and seldom last beyond mid-July.

Microsteris gracilis (Hook). Greene

Similar in abundancy, height, habitat preference and flowering period to Linanthus bicolor.

HYDROPHYLLACEAE - WATERLEAF family

Nemophila parviflora var. parviflora Dougl. (Small-flowered nemophila)

Common; although this species can be found in open forested areas and on rock outcrops, its maximum size is obtained in shaded regions along stream beds and in the numerous seepage areas of the reserve. Plants within shaded sites seldom bloom; those on the outcrop produce flowers in May and June.

BORAGINACEAE - BORAGE family

Myosotis discolor Pers. (Forget-me-not)

Sparse on Mount Tuam; forming, on occasion, part of the (4) community but it is also found in forest communities where canopies afford little shade (Pseudotsuga-Arbutus or Arbutus primarily.) Flowering May to July.

LABIATAE (LAMIACEAE) - MINT family

Satureja douglasii (Benth.) Briq. (Savory)

Abundant on outcroppings and in Arbutus-Pseudotsuga stands which are not heavily shaded or choked with understory. Flowers first appear in June and continue until September or October.

SCROPHULARIACEAE - FIGWORT family

Castilleja miniata Dougl. (Indian paintbrush)

Rare; found in clay soils close to the shoreline at a distance where the influence of the salt spary is still detectable.

Collinsia parviflora Lindl.

Sparse; usually growing in the (4) community. The tiny blue flowers appear in May and June; seeds are shed in July and August.

Digitalis purpurea L. (Foxglove)

Rare to common on Mt. Tuam in open sites such as the rock outcrop community and in disturbed sites such as previously logged stands and some Alnus stands on old logging roads.

Mimulus alsinoides Dougl. (Chickweed monkey-flower)

Rare; found only on the wet banks of a seepage area in plot in the

Verbascum thapsus L. (Flannel mullein)

Fairly sparse on Mt. Tuam in outcrop, logged and disturbed roadside regions. Flowers occur in July; seeds mature in August and September. Flower spikes from the previous summer are often helpful in detecting plants in an open region.

Veronica arvensis L. (Common speedwell)

Widespread in open communities such as the (4) and Arbutus-Pseudotsuga communities. The plant seems to prefer deep soil and a

location. Flowering occurs in May.

PLANTAGINACEAE - PLANTAIN family

Plantago lanceolata L. (English plantain)

Sparse; characteristic of disturbed, open, grassy or roadside areas. Flowers May to August.

RUBIACEAE - MADDER family

Galium aparine var. echinospermum (Wallr.) Farw. (Goose-grass)

Abundant in dry or mesic habitats, in Pseudotsuga menziesii or Arbutus menziesii forests, in open outcrop or logged regions. Although Galium aparine var. echinospermum seems to prefer partially shaded locations, it is occasionally found with full exposure to the sun. Flowers can be found in late May and June.

Galium trifidum L. (Small bed-straw)

Common in Alnus rubra stands which are wetter than those sites occupied by Galium aparine var. echinospermum.

CAPRIFOLIACEAE - HONEYSUCKLE family

Linnaea borealis var. longiflora Torr. (Western twinflower)

Sparse to common in partially shaded to sunny localities in the (2) community where the understory is not dominated by either Gaultheria shallon or Berberis nervosa. Flowers may be seen in June through to July.

Lonicera ciliosa (Pursh.) DC. (Orange honeysuckle)

Less than common on Mt. Tuam; usually within partially shaded, disturbed areas climbing shrubs such as Holodiscus discolor or trees

such as Salix sitchensis and Pseudotsuga menziesii. The bright orange flowers can be detected among forest foliage mid-June to early August.

Lonicera hispidula (Lindl.) Dougl. (Hairy honeysuckle)

Abundant in dry to mesic (2) and (1) communities. This vine creeps along the ground or climbs trees and shrubs. The mauve flowers bloom mid-June to July.

Sambucus cerulea Raf. (Blue elderberry)

Sparse on Mt. Tuam; usually recorded in moist roadside ditches and in Alnus rubra-Thuja plicata stands. Flowers appear in May and early June. Fruit matures in July.

Symphoricarpos albus (L.) (Snoberry)

Common in disturbed areas - especially at the border of the Pseudotsuga menziesii forest canopy. It is often associated with Pteridium aquifolium and Holodiscus discolor. Flowering occurs in July and the white berries are first visible in late August to early September.

VALERIANACEAE - VALERIAN family

Plectritis congesta (Lindl.) DC. (Sea blush)

Sparse; its pink heads are found in seepage areas and sometimes in moist regions of the (4) community in June or July.

CAMPANULACEAE - HAREBELL family

Campanula scouleri Hook. (Scouler's Harebell)

Common on Mt. Tuam in shaded habitats of the (1) community. Flowers were visible in July.

COMPOSITAE (ASTERACEAE - SUNFLOWER family)

Achillea millefolium L. (Yarrow)

Occasionally found in large quantities on the rock outcrops. The plants seem to prefer at least six inches of acidic type soils (built from decomposition of mosses) in very sunny locations. Flowers occur in July.

Adencaulon bicolor Hook. (Trail plant)

Sparse to common in shaded areas with little understory in the herb layer - as is found in dense stands of Pseudotsuga menziesii.

Agoseris heterophylla (Hutt.) Greene

Common; found mainly in the (2) community where the herb layer is not completely dominated by Gaultheria shallon or Berberis nervosa.

Anaphalis margaritacea (L.) B. & H. (Pearly everlasting)

Rare; this composite is usually found in disturbed, open areas along roadsides, power lines and in heavily burnt areas. Flowers appear in late June and July and although seeds are released in August, the sepals and ray florets remain intact throughout autumn.

Cirsium arvense (L.) Scop. (Canadian thistle)

Commonly found in any area disturbed by road construction, power lines, logging or slash burning; often seen with Pteridium aquifolium. Flowering June to August; seeds released early August to September.

Cirsium vulgare (Savi) Tenore (Common thistle)

Common in habitats similar to those of Cirsium arvense. Flowering period and seed production of this plant parallel those of C. arvense.

Gnaphalium sp. L. (Everlasting)

Common; often pokes through mats of Rhacomitrium canescens in the (4) community. Flowers occur throughout summer from late June to early August.

Hieracium albiflorum Hook. (White-flowered hawkweed)

Common on Mt. Tuam in the clay mineral and grey podzol soils of the (2) community. White flowers can be seen in sunny locations late in June through July.

Hypochaeris radicata L. (Hairy cats-ear)

Abundant in a number of open or disturbed areas within the (4) and (2) communities. Flowers were recorded as occurring mainly in June; seeds are released during dry periods in July and August.

Lactuca muralis (L.) Fresen. (Wall lettuce)

Abundant in the reserve in mesic to moist, partially to fully shaded sites such as roadside ditches, rock crevices and within dense Pseudotsuga menziesii stands and its related Alnus rubra and Arbutus menziesii complexes. Flowering occurs from June to September or October.

Madia madiodes (Nutt.) Greene (Woodland tarweed)

Abundant in the reserve; generally growing in open or disturbed areas of the (4) and (2) communities and flowering from late June to August.

Senecio sylvaticus L. (Wood groundsel)

Rare to sparse; usually located in soil pockets and full sunshine of the (4) community.

Sonchus asper (L.) Hill (Prickly sow-thistle)

Sparse; in open disturbed areas such as logged and burnt land with mineral clay or grassy, humic soils. Flowers are prevalent from May to June.

Taraxacum officinale Weber (Common dandelion)

Sparse; found in similar habitats to Sonchus asper, but is also recorded from densely shaded regions along the major stream tranversing the reserve. Flowering begins in late June or early August.

DIVISION BRYOPHYTA

CLASS MUSCI

AMBLYSTEGIACEAE Family

Cratoneuron filicinum (Hedw.) Spruce

Sparse; found in the small swampy region characterized by Typha latifolia.

AULOCOMIACEAE Family

Aulacomium androgynum (Hedw.) Schwaegr.

Fairly common on fallen Acer and Alnus logs in moist to mesic habitats.

BARTRAMIACEAE Family

Philonotis fontana (Hedw.) Brid.

Sparse; found in running water of seepage areas and the edges of streams.

BRACHYTHECIACEAE Family

Eurynchium oreganum (Sull.) Jaeg. & Saverb.

Abundant; definitely the most commonly encountered moss on Mt. Tuam. Eurynchium oreganum has a wide tolerance range - being located in all communities mapped, but achieves its greatest ground cover on the mesic soils of forests without an abundant herb layer ((1) and (2) communities, for instance.)

Homalothecium lutescens (Hedw.) Robins

Fairly common; often growing on fallen trees in dry to mesic sites which are partially shaded.

Homalothecium megoptilium (Sull.) Robins

Sparse; usually found intermixed with Eurynchium oreganum and Dicranum fuscescens in the mesic (2) community.

Brachythecium frigidum (C. Mull.) Besch.

Sparse; found on very wet muck soils in the (3) community.

Isothecium spiculiferum var. stoloniferum (Mitt.) Ren. & Card.

Abundant on rocks, trees and rotten logs in shaded areas of dry to mesic sites. This moss is often mixed with Eurynchium oreganum.

BRYACEAE Family

Bryum capillare Hedw.

Sparse; found in the (4) community wherever tiny crevices, vertical faces or scoured rock avail colonization space.

CUMACEAE Family

Climacium dendroides (Hedw.) Web. & Mohr.

Frequently seen on wet ground in the (3) community associated with Leucolepis menziesii, a moss which is similar in appearance to Climacium.

CRYPHAECEAE Family

Antitrichia curtispindula (Hedw.) Brid.

Common on Mt. Tuam; usually covering rocks and logs in dry to mesic sites in Pseudotsuga menziesii, Arbutus-Pseudotsuga or Pseudotsuga-Alnus stands.

DICRANACEAE Family

Dichodontium flavescens (Turn.) Dixon

Very sparse; recorded only from wet cliff crevices in seepage areas.

Dicranum fuscescens Turn.

Abundant in dry to mesic sites on rocks and logs offering fully exposed to completely shaded light. This moss seems most abundant around the periphery of trees where rain is constantly being shed. Mats at these locations are often four to six centimeters in depth. Sporophytes are evident in May.

Dicranum strictum Mohr.

Sparse; occupying wet to mesic sites on soil or logs in the (3) communities.

Dicranoweisia cirrhata (Hedw.) Lindb.

A dry to mesic site moss frequently found in the (4) community but in no significant abundance in each plot. It is usually located in small crevices of exposed rock surfaces and in grooves or shallow depressions of fallen logs.

DISTRICHACEAE Family

Ceratodon purpureus (Hedw.) Brid.

Common in a variety of sites on Mt. Tuam where there is both an exposed rock surface and an abundant supply of runoff water. The color of this moss varies from lime green to a luxurious-looking plum purple.

Fontinalis bingsbergii Ren. & Card.

Sparse; totally aquatic in nature. This moss grows attached to cobble or a rock surface in swiftly flowing sections of streams or seepage flows.

FUNARIACEAE Family

Funaria hygrometrica Hedw.

Sparse; found forming mats on fallen logs in areas of moist water regimes. Sparce; found forming mats on fallen logs in lowland areas with a high moisture content.

GRIMMIACEAE Family

Racomitrium canescens (Hedw.) Brid.

Abundant in very dry exposed sites in the (4) community and occasionally recorded in open sunny localities in the (2) community. This moss shows an amazing ability to recover from complete descication within minutes of the first rainfall.

Racomitrium lanuniginosum (Hedw.) Brid.

Sparse; found in sunny but more mesic sites on rock outcrops than Racomitrium canescens.

HYLOCOMIACEAE Family

Hylocomium splendens (Hedw.) B.S.G.

Common; a mesic site moss growing on rocks and logs in areas where there is both little understory and copious amounts of water dripping from the trees. It is most common in open stands of Pseudotsuga menziesii. Sporophytes are evident from June to August.

HYPNACEAE Family

Scleropodium obtusifolium (Höök.) Kindb.

Rare, occasionally recorded from moist or wet sites such as seepage areas.

Hypnum circinale Hook.

Rare; found in Plot in a logged portion of the (1) community.

Hypnum subimponens Lesq.

Common in a wide range of habitats from very dry, rocky sites in the (4) community to the more mesic (1) community where it is often intermixed with Eurynchium oreganum.

LESKEACEAE Family

Claopodium crispifolium (Hook) Ren. & Card.

Rare; found creeping on an Acer macrophyllum tree in Plot a very moist site.

MNIACEAE Family

Mnium glabrescens Kindb.

Very commonly encountered on rocks and logs where there is little understory in mesic locations. This moss is often found under Alnus rubra, Alnus-Acer, Thuja plicata and Pseudotsuga-Alnus stands.

Mnium insigne Mitt.

Abundant; situated in a wide range of habitats and moisture regimes, but seems to prefer shady, dry to mesic sites such as in the (1) community.

Mnium spinulosum B.S.G.

Rare to sparse; found on silty soil or decomposing dicot logs in wet or mesic sites which are dominated by Alnus rubra, Pseudotsuga-Alnus, Alnus-Acer or Thuja plicata canopies.

Leucolepis menziesii (Hook) Steere

Abundant in very wet, highly shaded localities in seepage beds, stream beds and the (1) or (3) communities.

NECKERACEAE Family

Neckera menziesii Hook.

Common; usually found growing on trees or rocks in the (3) community and stands of Pseudotsuga-Acer, Pseudotsuga-Thuja, Alnus-Acer.

ORTHOTRICHACEAE Family

Orthotrichum lyallii Hook. & Tayl.

Very rare; found on fallen logs in Plot , a moist site dominated by

PLAGIOTHECIACEAE Family

Plagiothecium undulatum (Hedw.) B.S.G.

A rare, moist to wet site moss which grows on mineral, silt or muck soils.

POLYTRICHACEAE Family

Atrichum selwynii Aust.

Found commonly on mineral soil, in streambeds and on fallen logs in damp, shaded localities of the (3) community.

Pogonatum alpinum var. macounii (Kindb.) Card. & Ther

Sparse; on the forest floor and fallen trees of Pseudotsuga menziesii, Pseudotsuga-Alnus, Alnus pulsia, Alnus-Acer and Thuja plicata stands.

Polytrichum juniperinum Hedw.

Abundant in the (4), (2), (1) communities. It is often spotted growing with Rhacomitrium canescens on exposed rocks or with Eurynchium oreganum in moister locations.

POTTIACEAE Family

Tortula muralis Hedw.

Commonly associated with the (4) community. This moss forms small patches on shallow soil pockets, and old logs.

Tortella tortuosa (Hedw.) Limpr.

Rare; found only occasionally in the (4) community.

TETRAPHIDACEAE Family

Tetraphis pellucida Hedw.

Sparse; generally found on rotting logs in very damp, well-shaded localities.

RHYTIDIADACEAE Family

Rhytidiadelphus loreus (Hedw.) Warnst.

Sparse, usually found forming mats on the forest floor in moist, shaded sites of Pseudotsuga-Alnus and Pseudotsuga-Acer stands.

Rhytidiadelphus triquetrus (Hedw.) Warnst.

Abundant or widespread on the reserve in habitats ranging from the dry rock outcrop to the more heavily shaded, moist regions of the (1) community.

SUMMARY OF VASCULAR PLANTS FOUND ON MT. TUAM

		No. Species
DIVISION PTEROPHYTA		
Equisetaceae		2
Polypodiaceae		9
Selaginaceae		1
DIVISION SPERMATOPHYTA		
CLASS GYMNOSPERMAE (CONIFERS)		
Cypressaceae		1
Pinaceae		5
CLASS ANGIOSPERMAE		
MONOCOTYLEDONS		
Juncaceae	(Rush Family)	1
Cyperaceae	(Sedge Family)	5
Gramineae (Poaceae)	(Grass Family)	20
Typhaceae	(Cat-tail Family)	1
Araceae	(Arum Family)	1
Liliaceae	(Lily Family)	6
Orchidaceae	(Orchid Family)	5
DICOTYLEDONS		
Salicaceae	(Willow Family)	3
Betulaceae	(Birch Family)	1
Fagaceae	(Beech Family)	1
Urticaceae	(Nettle Family)	1
Polygonaceae	(Buckwheat Family)	2
Portulacaceae	(Purslane Family)	3
Caryophyllaceae	(Pink Family)	7
Ranunculaceae	(Buttercup Family)	3
Berberidaceae	(Barberry Family)	3
Cruciferae (Brassicaceae)	(Mustard Family)	4
Crassulaceae	(Stonecrop Family)	1
Saxifragaceae	(Saxifrage Family)	2
Grossulariaceae	(Gooseberry Family)	1
Rosaceae	(Rose Family)	12
Leguminosae (Fabaceae)	(Pea Family)	10
Geraniaceae	(Geranium Family)	3
Aceraceae	(Maple Family)	1
Violaceae	(Violet Family)	1
Elaeagnaceae	(Oleaster Family)	1

		No. Species
Onagraceae	(Evening Primrose Family)	2
Umbelliferae (Apiaceae)	(Parsley Family)	6
Cornaceae	(Dogwood Family)	2
Ericaceae	(Heather Family)	8
Primulaceae	(Primrose Family)	1
Polemoniaceae	(Phlox Family)	3
Hydrophyllaceae	(Waterleaf Family)	1
Boraginaceae	(Borage Family)	1
Labiatae (Lamiaceae)	(Mint Family)	1
Scrophulariaceae	(Figwort Family)	6
Plantaginaceae	(Plantain Family)	1
Rubiaceae	(Madder Family)	2
Caprifoliaceae	(Honeysuckle Family)	5
Valerianaceae	(Valerian Family)	1
Campanulaceae	(Harebell Family)	1
Compositae (Asteraceae)	(Sunflower Family)	<u>14</u>
	Total	183

? 172

FAMILIES OF MOSSES

(MT. TUAM RESERVE)

DIVISION BRYOPHYTA

CLASS MUSCI

Amblystegiaceae	1	Hypnaceae	3
Aulocomiaceae	1	Leskeaceae	1
Bartramiaceae	1	Mniaceae	4
Brachytheciaceae	5	Neckeraceae	1
Bryaceae	1	Orthotrichiaceae	2
Climaceae	1	Polytrichiaceae	3
Cryphaeaceae	1	Pottiaceae	2
Dicranaceae	4	Tetraphidaceae	1
Distichaceae	2	Timmeriaceae	1
Funariaceae	1	Rhytidiadaceae	<u>2</u>
Grimmiaceae	2	Total	41
Hylocomiaceae	1		

Reserve Total

224

? 213

MI TURM RESERVE
VOUCHER SPECIMEN
CHECKLIST

- Pinus monticola*
Pinus contorta
Trichia curtispindula
Trichum selwynii
Tulacomium androgynum
Trachythecium frigidum
Bryum capillare
Levatodon purpureus
Cladopodium crispifolium
Limnium dendroides
Cratoneuron filicinum
Dichodontium flavescens
Dicranum fuscescens
Dicranum strictum
Dicranoweisia cirrata
Eurynchium crepanum
Fontinalis Kindbergii
Funaria hygrometrica
Homalothecium lutescens
Homalothecium megaptitium
~~*Homalothecium pinetifidum*~~
Hylacomium splendens
Hypnum circaeale
Hypnum subimponens
Isothecium spiculiferum var. *stoloniferum*
Leucolepis menziesii
Mnium glabrescens
M. insignae
M. spinulosum
Neckera menziesii
Orthotrichum lyellii
Philonotis fontana
Plagiothecium undulatum
Pozoratum alpinum var. *macounii*
Polytrichum juniperinum
Rhacomnium carescens
R. lanuginosum
Phylidactylus loreus
triquetrum
Seropodium obtusifolium
~~*Trichia nallii*~~



A. pinnatifidus

Anthoxanthum odoratum

Juncus tenuis

Elymus

E. stentus

Deschampsia elongata

Elymus glaucus

Festuca nigrescens

F. occidentalis

F. reflexa = *F. microstachys*

F. subulata

Hordeum jarrovi

Hordeum murinum

Poa howellii

Poa palustris

P. pratensis

P. trivialis

Ribes lacustre

Nemophila parviflora var *parviflora*

Luzula campestris var *multiflora*

Satureja douglasii

Cardamine oligosperma var *oligosperma*

Cystium scoparium

Lathyrus nevadensis

Lotus micranthus

Trifolium dubium

T. microcephalum

T. microrhon

T. oliganthum

T. tridentatum

T. variegatum

Vicia sativa var *angustifolia*

Allium cernuum

Brodiaea coronata

B. howellii

Camassia quamash

Smilacina stellata

Trillium ovatum

Circaea alpina

Epidium murinum

Achillea millefolium
Adenocaulon bicolor
Amaranthus margaritacea
Cirsium arvense
C. vulgare
Gnaphalium sp
Hieracium albiflorum
Hypochaeris radicata
Lactuca canadensis
Medicago sativa var sativa
Semeiosylvaticus
Sonchus asper
Taraxacum officinale
Cornus canadensis
C. nuttallii
Sedum spathulifolium
Capsella bursa-pastoris
Lepidium virginicum
Carex canescens
C. bolanderi = C. deweyana
C. hendersonii
C. obnupta
C. pennsylvanica
C. vesicaria

Shepherdia canadensis
Arbutus menziesii
Chimaphila umbellata
Gaultheria procumbens
Monotropa uniflora
Pyrola picta
Pterospora andromedea
Vaccinium ovatum
Vaccinium parvifolium
Quercus garryana
Erodium cicutarium
Geranium dissectum
G. pusillum
Anagallis exarata var exarata
A. tenuis
A. minor

Junonia austriaca ✓
Tortula muralis ✓
Tortula tortuosa ✓
Selaginella wallacea
Equisetum arvense
Equisetum hyemale
Adiantum pedatum
Asplenium trichomanes ✓
Athyrium filix-femina ✓
Blechnum spicant
Pityrogramma triangularis
Polypodium hesperinum
Polystichum munitum var *munitum*
Pteridium aquilinum var *pubescens*
Noctua scopulina
Thuja plicata
Abies grandis
Pseudotsuga menziesii
Tsuga heterophylla
Acer macrophyllum
Lysichiton americanus
Achlys triphylla
Berberis aquifolium
Barbarea nervosa
Rhus rubra
Myosotis discolor ✓
Limnium scouleri ✓
Linnaea borealis var *longiflora* ✓
Lonicera ciliosa ✓
L. hispidula ✓
Sambucus cerulea ✓
Symphoricarpos albus ✓
~~*Symphoricarpos*~~ *macrophyllum* ✓
Cerastium arvense ✓
C. viscosum ✓
Silene gallica
Stellaria crispa
Stellaria humifusa
Stellaria media

SUMMARY REPORT ON STUDIES CARRIED OUT ON
ECOLOGICAL RESERVES, UNDER CAREERS '74 PROGRAMME, 1974.

Marcus A. M. Bell, Department of Biology
University of Victoria

Six students from the Department of Biology, University of Victoria, were employed on studies on Ecological Reserves in 1974. Wages and expenses were paid under the Careers '74 Programme through the Department of Lands, Forests and Water Resources. Four faculty members supervised the studies.

The following studies were made on Ecological Reserves 15, 16, and 37, all in the Gulf Islands. Full reports for each project are attached.

1. The flora and vegetation of Ecological Reserve 37, Mount Maxwell, Saltspring Island, B.C.

Abstract: Species lists were compiled and annotated for abundance, habitat preference and phenology of flowering and seed production for the one hundred twenty-seven tracheophytes and twenty-two bryophytes observed in Ecological Reserve #37 during May and June of 1974. Differentiation of communities was governed by vegetation dominance, landform and history of the stand. On the basis of thirty-five relevés, air photo interpretation and ground surveys, six major community types were described and mapped at a scale of 1:8,000.

The reserve was found to be dominated by a mixed Quercus garryana-Pseudotsuga menziesii forest (40% of reserve area). Pure Quercus garryana (25%), pure Pseudotsuga menziesii (15%) and mixed Arbutus menziesii-Pseudotsuga menziesii (10%) stands were subdominant.

Recommendations for methods of future inventory sampling, depth of sampling, timed sequence of inventories and data storage and retrieval are included in the report.

Sylvia Handley, Diana Mainguy, Dave Clark.

Supervisor: Dr. Marcus Bell.

2. The flora and vegetation of Ecological Reserve 16, Mount Tuam, Saltspring Island, B.C. *no report*

Abstract: Species lists (annotated for abundance, habitat preference, and phenology of flowering and seed production) are presented for the one hundred eighty-three trachyophytes and forty-one bryophytes recorded in July of 1974 on Ecological Reserve #16, Mount Tuam, Saltspring Island. Marked differences in vegetation dominance, landform, and history of the stands allowed differentiation and subdivision into communities. Seventy-two relevés, air photo interpretation and repeated ground checks resulted in the description and subsequent mapping of five major community types at a scale of 1:8,000.

The community covering 65% of the reserve is dominated by a mixed canopy of Arbutus menziesii and Pseudotsuga menziesii. The Alnus rubra-Pseudotsuga menziesii canopy, covering 15% of the reserve and pure Alnus rubra (extending over 10% of the reserve) were sub-dominant.

Recommendations for methods of future inventory sampling, depth of sampling, timed sequence of inventories and data storage and retrieval are included in the report.

Sylvia Handley, Diana Mainguy, Dave Clark.

Supervisor: Dr. Marcus Bell.

3. Survey of the Marine and Freshwater Algae of Ecological Reserve 37, 16 Mount Tuam, Saltspring Island. *no report*