

1997 LOCH INVENTORY: SOUTH EAST SCOTLAND*

NNSO 3158.1
NS59 3158.2

Code NW 5016 Name Lake of Menteith Grid Ref NN 576 004
 Date 22.7.97 Surveyors CC + OLL SSD Estate
 Area 264.40 ha Altitude 10 m Catchment ha Geology 75.....
 Water colour Pale brown Clarity Clear Boat used Secchi disc depth 1.38 m
 Loch type 3/5A Edge type(s) S9a S10a S23 S27a S19b M23a S4a S4c S5a (NVC codes)
 Status Lake of Menteith SSSI Access 1 Road/houses present (underline)
 Land use % Open water Semi-natural Forestry Agriculture

Substrate types (underline main type, tick others present)

- | | |
|---|---|
| <input checked="" type="checkbox"/> Bedrock | <input checked="" type="checkbox"/> Silt (<0.1mm diam.) |
| <input checked="" type="checkbox"/> Boulders (>30cm max. diam.) | Organic mud |
| <input checked="" type="checkbox"/> Stones (5-30cm diam.) | Peat |
| <input checked="" type="checkbox"/> Gravel (4-50mm diam.) | <input checked="" type="checkbox"/> Artificial embankment |
| <input checked="" type="checkbox"/> Sand (0.1-4mm diam.) | |

USES AND DAMAGE

Use	Observations
Adjacent forestry	<u>fringed by Salix, Betula and Alnus between plantation & lake.</u> <i>-extensive plantation to south > 25 yrs.</i>
Agricultural pollution	.....
Edge trampling	<u>Very little encountered, sheep pasture at NE corner</u>
Fishing (edge/boat)	<u>Fishing from boat with petrol or electric engine. 10+ boats.</u>
Litter	<u>Occasional -> locally frequent</u>
Shooting	.....
Water abstraction	.....
Recreation	<u>Trips to Inchmahome Priory every 1/2 hr by small boat & windsurfing & dinghy use from new chalets at SE corner</u> <u>Swimming & camping at East corner where road meets lake.</u>

SURROUNDING LAND USE:

Pasture, arable, rough grazing and forestry. Hotel/Church Holiday village

FAUNA

Mammals	Birds	Reptiles Amphibians	Fish	Dragonflies & other invertebrates
	<u>Osprey (2)</u> <u>Great Crested Grebe (Br)</u> <u>Heron (3+)</u> <u>Mallard</u>	<u>Toad</u>		<u>Enallagma cyathigerum</u>

SPECIES DIVERSITY

Edge 35
Open water 33
Total 66

RARE SPECIES

Scarce (*) Elodea hydropiper
Najas flexilis
Nuphar pumila
Red Data Book (**)
* Nysitrichia thyrsoiflora

WATER CHEMISTRY

Alkalinity 0.44 meq/l
Conductivity 95 µS/cm
p.H. 9.23

* Includes Angus, City of Edinburgh, Clackmannanshire, Dundee City, East Lothian, Falkirk, Fife, Midlothian, Perth & Kinross, Scottish Borders, Stirling and West Lothian unitary authorities.

1997 SOUTH EAST SCOTLAND LOCH INVENTORY: AQUATIC PLANT SPECIES LIST

Code NN.5016 Site name Lake of Menteith..... Grid ref NN.576.004..... Date 22.7.97.

EMERGENT & EDGE SPECIES

Map code	Species	DAFOR	Map code	Species	DAFOR
Ac	<i>Acorus calamus</i>	.....	Ma	<i>Mentha aquatica</i>	F.....
Ags	<i>Agrostis stolonifera</i>	LF	Mt	<i>Menyanthes trifoliata</i>	0/LD
Al	<i>Alisma lanceolatum</i>	.....	Mg	<i>Mimulus guttatus</i>	.....
Apa	<i>Alisma plantago-aquatica</i>	0	Ml	<i>Mimulus luteus</i>	.....
Apn	<i>Apium nodiflorum</i>	.....	Mm	<i>Mimulus moschatus</i>	.....
Bar	<i>Baldellia ranunculoides</i>	.....	Mi	<i>Mimulus sp.</i>	.....
Ber	<i>Berula erecta</i>	.....	Mon	<i>Montia fontana</i>	0/LF
Bom	<i>Bolboschoenus maritimus</i>	.....	Myl	<i>Myosotis laxa</i>	0/LF
Bu	<i>Butomus umbellatus</i>	.....	Msc	<i>Myosotis scorpioides</i>	0/LF
Cal	<i>Calla palustris</i>	.....	Msec	<i>Myosotis secunda</i>	.....
Cab	<i>Callitriche brutia</i>	.....	Mst*	<i>Myosotis stolonifera</i>	.....
Cas	<i>Callitriche stagnalis</i>	.....	Oa	<i>Oenanthe aquatica</i>	.....
Cap	<i>Caltha palustris</i>	0	Oc	<i>Oenanthe crocata</i>	.....
Cxat	<i>Carex acuta</i>	.....	Of	<i>Oenanthe fistulosa</i>	.....
Cxaf	<i>Carex acutiformis</i> ^{outfall}	LA	Pam	<i>Persicaria amphibia</i>	0
Cxa	<i>Carex aquatilis</i>	.....	Ph	<i>Persicaria hydropiper</i>	0
Cxl	<i>Carex lasiocarpa</i>	.....	Pha	<i>Phalaris arundinacea</i>	F/LA
Cxli	<i>Carex limosa</i>	.....	Phr	<i>Phragmites australis</i>	LA
Cxn	<i>Carex nigra</i>	LF	Pop	<i>Potentilla palustris</i>	R
Cxri	<i>Carex riparia</i>	.....	Rfl	<i>Ranunculus flammula</i>	LF
Cxro	<i>Carex rostrata</i>	0/LA	Rh	<i>Ranunculus hederaceus</i>	.....
Cxv	<i>Carex vesicaria</i>	0/LA	Rl	<i>Ranunculus lingua</i>	.....
Ca	<i>Catabrosa aquatica</i>	.....	Ro	<i>Ranunculus omiophyllus</i>	.....
Civ*	<i>Cicuta virosa</i>	.....	Rr	<i>Ranunculus reptans</i>	.....
Clm	<i>Cladium mariscus</i>	.....	Rs	<i>Ranunculus sceleratus</i>	.....
Des*	<i>Deschampsia setacea</i>	.....	Roa	<i>Rorippa amphibia</i>	.....
Elac	<i>Eleocharis acicularis</i>	.....	Roi	<i>Rorippa islandica</i>	.....
Elm	<i>Eleocharis multicaulis</i>	.....	Rm	<i>Rorippa microphylla</i>	.....
Elp	<i>Eleocharis palustris</i>	0/LF	Rna	<i>Rorippa nasturtium-aquaticum</i> ^{egg}	0
Elq	<i>Eleocharis quinqueflora</i>	.....	Rxs	<i>Rorippa x sterilis</i>	.....
Elu	<i>Eleocharis uniglumis</i>	.....	Rxh	<i>Rumex hydrolapathum</i>	.....
Egf	<i>Equisetum fluviatile</i>	0/LF	Scp**	<i>Scheuchzeria palustris</i>	.....
Eqp	<i>Equisetum palustre</i>	.....	Sl	<i>Schoenoplectus lacustris</i>	LA
Eqxl	<i>Equisetum x litorale</i>	.....	St	<i>Schoenoplectus tabernaemontani</i>	.....
Era	<i>Eriophorum angustifolium</i>	.....	Spem	<i>Sparganium emersum</i>	.....
Gld	<i>Glyceria declinata</i>	.....	Sper	<i>Sparganium erectum</i>	R
Glf	<i>Glyceria fluitans</i>	R	Ta	<i>Typha angustifolia</i>	.....
Glm	<i>Glyceria maxima</i>	F/LA	Tl	<i>Typha latifolia</i>	0/LA
Gln	<i>Glyceria notata</i>	.....	Vaa	<i>Veronica anagallis-aquatica</i>	.....
Glxp	<i>Glyceria x pedicellata</i>	.....	Vb	<i>Veronica beccabunga</i>	.....
Hip	<i>Hippuris vulgaris</i>	.....	Vc	<i>Veronica catenata</i>	.....
Hyd	<i>Hydrocotyle vulgaris</i>	LF	Vs	<i>Veronica scutellata</i>	.....
Ip	<i>Iris pseudacorus</i>	0			
Iv	<i>Iris versicolor</i>	.....		SPECIES TOTAL	35
Jac	<i>Juncus acutiflorus</i>	F/LA			
Jaa*	<i>Juncus alpinoarticulatus</i>	.....		Other edge species	
Ja	<i>Juncus articulatus</i>	0/LF	Cxd	<i>Carex viridula ssp. oedocarpa (=C.demissa)</i>	0
Jb	<i>Juncus bulbosus</i>	0	Cxe	<i>Carex echinata</i>	.....
Jc	<i>Juncus conglomeratus</i>	LF	Cxp	<i>Carex panicea</i>	.....
Je	<i>Juncus effusus</i>	0/LA	Cxpa	<i>Carex paniculata</i>	LF
Lim*	<i>Limosella aquatica</i>	.....	Gp	<i>Galium palustre</i>	0
Lit	<i>Littorella uniflora</i>	.....	Sa	<i>Senecio aquaticus</i>	.....
Lyc*	<i>Lycopodiella inundata</i>	.....	Tp	<i>Triglochin palustre</i>	.....
Lyt*	<i>Lysimachia thyrsiflora</i>	R/LF	Vp	<i>Viola palustris</i>	0/LF
Lyp	<i>Lythrum portula</i>	.....		
Lys	<i>Lythrum salicaria</i>	0			

Note: * = Scarce plants (occurring in 16-100 10x10km squares in Great Britain) known to occur in the Scottish Environment Protection Agency East & West Regions.

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Red Data Book Species (occurring in 2-15 10x10km squares in Great Britain) known to occur in the Scottish Environment Protection Agency East & West Regions.

1997 SOUTH EAST SCOTLAND LOCH INVENTORY: AQUATIC PLANT SPECIES LIST

Code NN 5016 Site name Lake of Menteith Grid ref. NN 576 004 Date 22.7.97

SUBMERGED & FLOATING SPECIES

Map code	Species	DAFOR	Map code	Species	DAFOR
Api	<i>Apium inundatum</i>	.....	Pxn	<i>Potamogeton x nitens</i>	LF
Apd	<i>Aponogeton distachyos</i>	.....	Pob	<i>Potamogeton obtusifolius</i>	LO
Af	<i>Azolla filiculoides</i>	.....	Pxo	<i>Potamogeton x olivaceus</i>	.....
Bar	<i>Baldellia ranunculoides</i>	.....	Ppec	<i>Potamogeton pectinatus</i>	.....
Cah	<i>Callitriche hamulata</i> 11F	LO	Pper	<i>Potamogeton perfoliatus</i>	O
Cher	<i>Callitriche hermaphroditica</i>	O	Ppol	<i>Potamogeton polygonifolius</i>	.....
Cao	<i>Callitriche obtusangula</i>	.....	Ppra	<i>Potamogeton praelongus</i>	.....
Cpla	<i>Callitriche platycarpa</i>	.....	Ppu	<i>Potamogeton pusillus</i>	O
Cas	<i>Callitriche stagnalis</i>	o/LF	Pxsa	<i>Potamogeton x salicifolius</i>	.....
Ca	<i>Callitriche</i> sp.	.....	Pxsp	<i>Potamogeton x sparganiifolius</i>	.....
Ced	<i>Ceratophyllum demersum</i>	.....	Pxsu	<i>Potamogeton x suecicus</i>	.....
Crh	<i>Crassula helmsii</i>	.....	Pt*	<i>Potamogeton trichoides</i>	.....
Ela	<i>Elatine hexandra</i>	o/LA	Pxz	<i>Potamogeton x zizii</i>	.....
Elh*	<i>Elatine hydropiper</i>	LF	Ra	<i>Ranunculus aquatilis</i>	.....
Ef	<i>Eleogiton fluitans</i>	.....	Rb	<i>Ranunculus baudotii</i>	.....
Ec	<i>Elodea canadensis</i>	O	Rc	<i>Ranunculus circinatus</i>	.....
En	<i>Elodea nuttallii</i>	.....	Rf	<i>Ranunculus fluitans</i>	.....
Fon	<i>Fontinalis antipyretica</i>	F/LA	Rxk	<i>Ranunculus x kelchoensis</i>	.....
Grd	<i>Groenlandia densa</i>	.....	Rp	<i>Ranunculus peltatus</i>	.....
Hip	<i>Hippuris vulgaris</i>	.....	Rpse	<i>Ranunculus penicillatus</i>	.....
Hmr	<i>Hydrocharis morsus-ranae</i>	.....		ssp. pseudofluitans	.....
Hyd	<i>Hydrocotyle vulgaris</i>	.....	Rtr	<i>Ranunculus trichophyllus</i>	.....
Ise*	<i>Isoetes echinospora</i>	.....	Rum	<i>Ruppia maritima</i>	.....
Isl	<i>Isoetes lacustris</i> sp.	LO	Sas	<i>Sagittaria sagittifolia</i>	.....
Jb	<i>Juncus bulbosus</i>	o/LF	Spa	<i>Sparganium angustifolium</i>	o/LF
Lam	<i>Lagarosiphon major</i>	.....	Spem	<i>Sparganium emersum</i>	.....
Lg	<i>Lemna gibba</i>	.....	Spn	<i>Sparganium natans</i>	.....
Lm	<i>Lemna minor</i>	.....	Sp	<i>Sparganium</i> sp.	.....
Lt	<i>Lemna trisulca</i>	.....	Spp	<i>Spirodela polyrhiza</i>	.....
Lit	<i>Littorella uniflora</i>	LA	Sta	<i>Stratiotes aloides</i>	.....
Lob	<i>Lobelia dortmanna</i>	LF	Sub	<i>Subularia aquatica</i>	.....
Lun	<i>Luronium natans</i>	.....	Uti	<i>Utricularia intermedia</i>	.....
Lyp	<i>Lythrum portula</i>	.....	Um	<i>Utricularia minor</i>	.....
Mal	<i>Myriophyllum alterniflorum</i>	F/LA	Uo	<i>Utricularia ochroleuca</i>	.....
Msp	<i>Myriophyllum spicatum</i>	.....	Us	<i>Utricularia stygia</i>	.....
Nf*	<i>Najas flexilis</i>	R	Uva	<i>Utricularia vulgaris/australis</i> agg.	.....
Nua	<i>Nuphar advena</i>	.....	Ut	<i>Utricularia</i> sp.	.....
Nul	<i>Nuphar lutea</i>	LA	Zan	<i>Zannichellia palustris</i>	R
Nup*	<i>Nuphar pumila</i>	LA	Chavi	<i>Chara virgata</i>	o/LF
Nus	<i>Nuphar x spenneriana</i>	.....	Chas/s	<i>Chara</i> sp. <i>aspera</i> f. <i>subnervis</i>	R/LF
Na	<i>Nymphaea alba</i>	LA	Nit/agg	<i>Nitella</i> sp. <i>flexilis</i> agg. <i>stans</i>	A
Nyp	<i>Nymphoides peltata</i>	.....	Nit tr	<i>Nitella translucens</i>	O
Pam	<i>Persicaria amphibia</i>	LA	Nitop	SPECIES TOTAL	33
Pil*	<i>Pilularia globulifera</i>	.....		<i>Nitella opaca</i>	A
Pal	<i>Potamogeton alpinus</i>	LF			
Pbe	<i>Potamogeton berchtoldii</i>	O			
Pcol*	<i>Potamogeton coloratus</i>	.....		
Pcom*	<i>Potamogeton compressus</i>	.....		
Pxco	<i>Potamogeton x cooperi</i>	.....		
Pcr	<i>Potamogeton crispus</i>	.....		
Pfil*	<i>Potamogeton filiformis</i>	.....		
Pfr	<i>Potamogeton friesii</i>	.....		
Pgr	<i>Potamogeton gramineus</i>	.....		
Plu	<i>Potamogeton lucens</i>	.....		
Pn	<i>Potamogeton natans</i>	O			

Note: * = Scarce plants (occurring in 16-100 10x10km squares in Great Britain)

** = Red Data Book Species (occurring in 245 10x10km squares in Great Britain)

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All species name.

Charophyte identification
verified by N.F. Stewart

Potamogeton identification
verified by C. D. Preston

Specimens:	
Chara sp.	<i>c. virgata</i> 108/97 111/97 <i>E. aspera</i> 109/97 f. <i>subnervis</i>
Nitella sp.	<i>N. translucens</i> 106/97 <i>N. flexilis</i> 107/97 <i>N. opaca</i> 107/97 agg. <i>stans</i>
Potamogeton sp.	<i>P. alpinus</i> 212/97 <i>P. x nitens</i> 213/97 218/97 223/97
	<i>P. pusillus</i> 214/97 <i>P. perfoliatus</i> 215/97 219/97
	<i>P. obtusifolius</i> 216/97 217/97
	<i>P. berchtoldii</i> 220/97
	<i>P. gramineus</i> 222/97
	<i>P. x Pxn</i>

NN5016 Lake of Mentairu

22/7/97

3158

NN5016.1

NN5016.2

3158.1

3158.2

NN50

NS59

Species

✓

Agg

✓

✓

Apa

✓

✓

Cap

✓

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Ckaf

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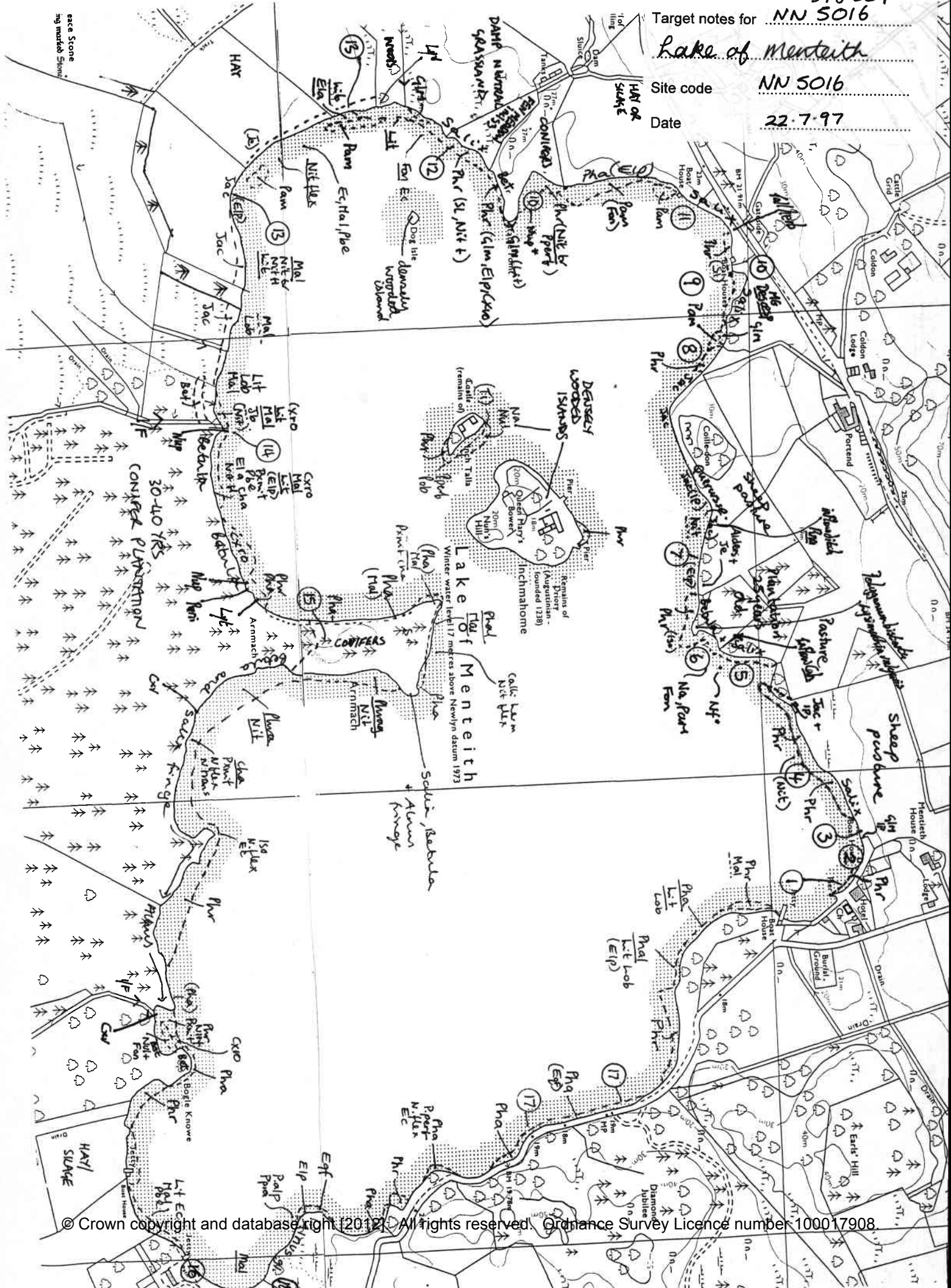
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Target notes for NN 5016

Lake of Menteith

Site code NN 5016

Date 22.7.97

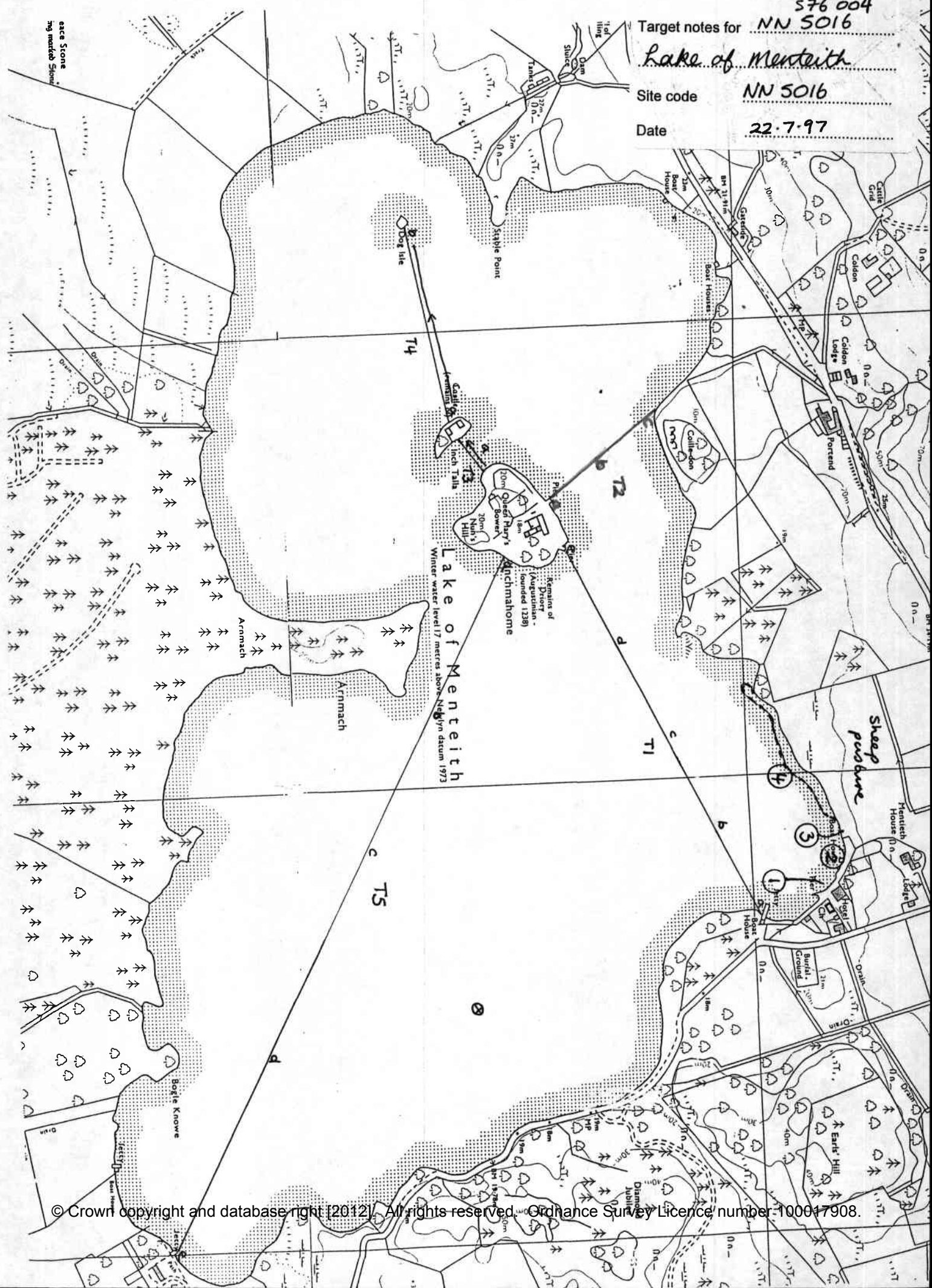


Target notes for NN 5016

Lake of Menteith

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Date 22.7.97



Description: Relatively large lowland mesotrophic loch with extensive stands of emergent and submerged aquatic vegetation dominated by *Phragmites australis*, *Schoenoplectus laustris*, *Carex rostrata*, beds of *Persicaria amphibia* and floating rafts of *Nuphar lutea*, *Nuphar purula* and *Nymphaea alba*. *Salix*, *Betula* and *Alnus* woodland fringe the loch along the southern shore. Scarce species *Elatine hydropiper*, *Najas flexilis*, *Nuphar purula* and *Lythrum thyriflora* all occur on the site

- ① Artificial embankment of boulders with clumps of Pha, Glm and Pum (terrestrial) with frequent *U. dioica*, occasional *Equisetum arvense*, *Gp*, *Filipendula ulmaria*, *Rumex obtusifolius* etc. Stony bottom to loch (5-30cm), grading to sand with hit lawns scattered *P. perfoliatus*, *P. purillus*, *P. nitens* and *N. flexilis* and *Mal*. Significant growth of algae on all plants, and algal bloom in water.
- ② Boat house with stands of Phr (*Is*, *N. flexilis*, *Ec* offshore) or fringe of Glm and Pha with *Hyd*, *F. ulmaria*, *V. officinalis*, *Gp* etc. Shallowly shelving offshore with hit beds, *hob*, *Egf* and *Mal*. *Salix* sp with *Agglutinosa* and *Fraxinus excelsior* on bank. *Oca* sp.
- ③ Rush pasture fringing loch with Jac, Hyd, Elp, Ags, Potentilla anserina, *Gp*, *F. ulmaria*, *Ranunculus repens* and *Holcus lanatus* with LF Glm and lp. Clumps of *Salix* scrub with *Agglutinosa* & *F. excelsior* as ②. Offshore hit and *Mal* with LF *Egf*, or *hob*. Phr bed with *hA* *N. flexilis* and hit off in deeper water. *P. graminifolia* / *P. nitens*, *Ec* occasional with *P. berchtoldii* washed up. *Salix* as broken line on shore or denser carr.
- 4 Sparse Phr with hit beds. Bank with Jac (*Is*), Ags, lp, *Cirsium palustre* etc. *P. graminifolia* / *P. nitens* occasional. Sandy substrate.
- 5 Phr with Glm LF; Spa, Na and Nul LF with Glm towards shore. Backed by thin fringe of *Salix*, and *Betula* around

plantation.

Cher, Pbe and Nf washed up.

- 6 Rafts of Na with Pam, dense Fon beneath. Phr with frequent Glm and Na.
- 7 Alnus and Betula with Jac, D. cespitosa, RH and small stands of Ely with hit lawns.
Small stands of Glm on bank with Ely and Pam.
Nit flea offshore.
Small rounded stones (5-20cm) as substrate.
- 8 Stands of Phr, Glm and Na rafts with Phr and Pam in deeper water. Nit flexilis, Ec, Px nitens, Mal and Iso as aquatics. Inflow with sands and silt making water very shallow.
- 9 P. ob, Ec
- 10 Phr with Glm, Pob and Ec or in species poor stands.
Rafts of Na and Pam with Fon and spg.
Some Nuphar pumila. Backed by Alnus and Salix.
- 11 Floating rafts of N pumila with abundant N. flexilis, some Fon and N. translucens.
- 12 Stands of species poor S.I. or Phr, 10-15M wide.
Small bays with Pam and Na as 10. Small stands of Glm with Nit and Ec.
13. Small beach of coarse sand with rafts of Pam and Nup, N. flexilis in deeper water.
Beach vegetated almost to water with Aqs, Polygonum hydropiper, Rumex acetosella, Pam, Ja, Je, Potentilla amurensis, Mon etc. hit, Clatine sp and abundant filamentous algae.
Damp grassland backing beach.
- 14 Beds of Cxro with Mal and Jb offshore. Dense hit lawns and small Ely beds. Substrate sandy.
- 15 Narrow beach overhung by trees, Betula sp and Alnus, with narrow fringe of Pha. Dense beds of hit with Mal and P. gramineus. Nit. flexilis occasional.
- 16 New houses, plus chalets towards loch. Artificial embankment.

17 Narrow fringe of birch, *Betula* sp, *Salix* sp, *Fraxinus excelsior* + *Fagus sylvatica* along road with discontinuous stand of *Pha* fronted in places by Eg f with *Mal*, *Car* and *Px nitens*.
Stony substrate

Transects

T1 a) *Mal*, *N. flexilis*

b) —

c) —

d) *P. perfoliatus*, *N. flexilis*, *Ec*, *Mal*, *Fon*

e) *N. flexilis*, *Fon*

T2 a) —

b) —

c) —

T3 *N. flexilis*, *Mal*, *P. berchtoldii*

T4 a) *N. flexilis* + *Fon*

b) *Fon*

T5 a) *N. flexilis*, *Mal*

b) *N. flexilis*

c) *N. flexilis*

d) —

e) *hit*, *Ec*, *Mal*, *Pbe*

18 Main outflow - broad stream up to 4m - mainly silt bed with stones, gravels. Meandering thro *Aln. glut* and *Saxin* woodlands channel supports stands of *Sca. Phr* and *Na* beds. Damp woodland spp. rich including stands of *Pha* 528a and *CraF* 57