

1997 LOCH INVENTORY: SOUTH EAST SCOTLAND*

NO 10 3183.1
NF 19 3183.2

Code No 1005 Name Loch Leven Grid Ref No 144 015
 Date 29/7/97 Surveyors M.B./o.k. Estate
 Area 1415.3 ha Altitude 100 m Catchment ha Geology 78
 Water colour COLOURLESS Clarity CLEAR Boat used YES Secchi disc depth m
 Loch type 7 Edge type(s) S4a, S28a, S10a, S8a, S19c Scragumilis (NVC codes)
 Status Loch Leven SSSI Access 1 Road/houses present (underline)
 Land use % Open water Semi-natural Forestry Agriculture

Substrate types (underline main type, tick others present)

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

USES AND DAMAGE

Use	Observations
Adjacent forestry
Agricultural pollution
Edge trampling
Fishing (edge/boat)
Litter
Shooting
Water abstraction

SURROUNDING LAND USE:

Various : boat yards + sheds, woodland, amenity grassland, pasture (sheep) arable

FAUNA

Mammals	Birds	Reptiles Amphibians	Fish	Dragonflies & other invertebrates
	Reed bunting Red wingtail Coot (Br) Tufted duck (Br) Gull Mallard (Br)	Common sandpiper kingfisher Greylag goose heron Swan (Br) lapwing	3-spine stickleback	

SPECIES DIVERSITY

RARE SPECIES

WATER CHEMISTRY

Edge	<u>19</u>	Scarce (*)	Alkalinity	<u>1.34</u> meq/l
Open water	<u>15</u>	Red Data Book (**)	Conductivity	<u>260</u> µS/cm
Total	<u>33</u>		p.H.	<u>9.22</u>

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* 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 N01005 Site name Loch Haven Grid ref N.O.144.015 Date 29/7/97

SUBMERGED & FLOATING SPECIES

Map code	Species	DAFOR	Map code	Species	DAFOR
Api	<i>Apium inundatum</i>	R	Pxn	<i>Potamogeton x nitens</i>	
Apd	<i>Aponogeton distachyos</i>		Pob	<i>Potamogeton obtusifolius</i>	
Af	<i>Azolla filiculoides</i>		Pxo	<i>Potamogeton x olivaceus</i>	
Bar	<i>Baldellia ranunculoides</i>		Ppec	<i>Potamogeton pectinatus</i>	F/LA
Cah	<i>Callitriche hamulata</i>	R	Pper	<i>Potamogeton perfoliatus</i>	LF
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/LF
Cas	<i>Callitriche stagnalis</i>		Pxsa	<i>Potamogeton x salicifolius</i>	
Ca	<i>Callitriche sp.</i>		Pxsp	<i>Potamogeton x sparganiiifolius</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>		Pxz	<i>Potamogeton x zizii</i>	
Elh*	<i>Elatine hydropiper</i>		Ra	<i>Ranunculus aquatilis</i>	
Ef	<i>Eleogiton fluitans</i>		Rb	<i>Ranunculus baudotii</i>	
Ec	<i>Elodea canadensis</i>	O/LA	Rc	<i>Ranunculus circinatus</i>	
En	<i>Elodea nuttallii</i>		Rf	<i>Ranunculus fluitans</i>	
Fon	<i>Fontinalis antipyretica</i>		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>		Sas	<i>Sagittaria sagittifolia</i>	
Jb	<i>Juncus bulbosus</i>		Spa	<i>Sparganium angustifolium</i>	
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 sp.</i>	
Lt	<i>Lemna trisulca</i>		Spp	<i>Spirodela polyrhiza</i>	
Lit	<i>Littorella uniflora</i>	O/LF	Sta	<i>Stratiotes aloides</i>	
Lob	<i>Lobelia dortmanna</i>		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>		Uo	<i>Utricularia ochroleuca</i>	
Msp	<i>Myriophyllum spicatum</i>		Us	<i>Utricularia stygia</i>	
Nf*	<i>Najas flexilis</i>		Uva	<i>Utricularia vulgaris/australis</i> agg.	
Nua	<i>Nuphar advena</i>		Ut	<i>Utricularia sp.</i>	
Nul	<i>Nuphar lutea</i>		Zan	<i>Zannichellia palustris</i>	F
Nup*	<i>Nuphar pumila</i>		Chaco	<i>Chara contraria</i>	ALD
Nus	<i>Nuphar x spenneriana</i>		Chav1	<i>Chara sp. virgata</i>	F
Na	<i>Nymphaea alba</i>		Nit/flagg	<i>Nitella sp. flexilis agostoides</i>	O
Nyp	<i>Nymphoides peltata</i>		Chaa3	<i>Chara aspera</i>	F
Pam	<i>Persicaria amphibia</i>	F/LA	Tolgl	SPECIES TOTAL	15
Pil*	<i>Pilularia globulifera</i>			<i>Tolypella glomerata</i>	
Pal	<i>Potamogeton alpinus</i>			<i>Enberomorpha sp.</i>	O
Pbe	<i>Potamogeton berchtoldii</i>			Other species not included in total:	
Pbe	<i>Potamogeton berchtoldii</i>		Sphag	<i>Sphagnum sp.</i>	
Pcol*	<i>Potamogeton coloratus</i>			<i>Filamentous algae</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>				

Specimens: *C. virgata* + *C. contraria* + *T. glomerata*
Chara sp. *C. virgata* 132/97, *Chara virgata* 132/97, 137/97
Nitella sp. *N. flexilis* 131/97, *N. flexilis* 131/97, *N. flexilis* 135/97
Potamogeton sp. *P. co.* 241/97, *P. co.* 242/97, *P. co.* 243/97, *P. co.* 244/97, *P. co.* 245/97
Utricularia sp.

Note: * = Scarce plants (occurring in 16-100 10x10km squares in Great Britain) known
 verified by N.F. Stewart
 Potamogeton identification verified by G.D. Preston

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All species names follow those in Stace 1991.
C. contraria + *C. aspera* 133/97
C. contraria + *T. glomerata* 136/97
T. glomerata 134/97 135/97
 OLL5/97



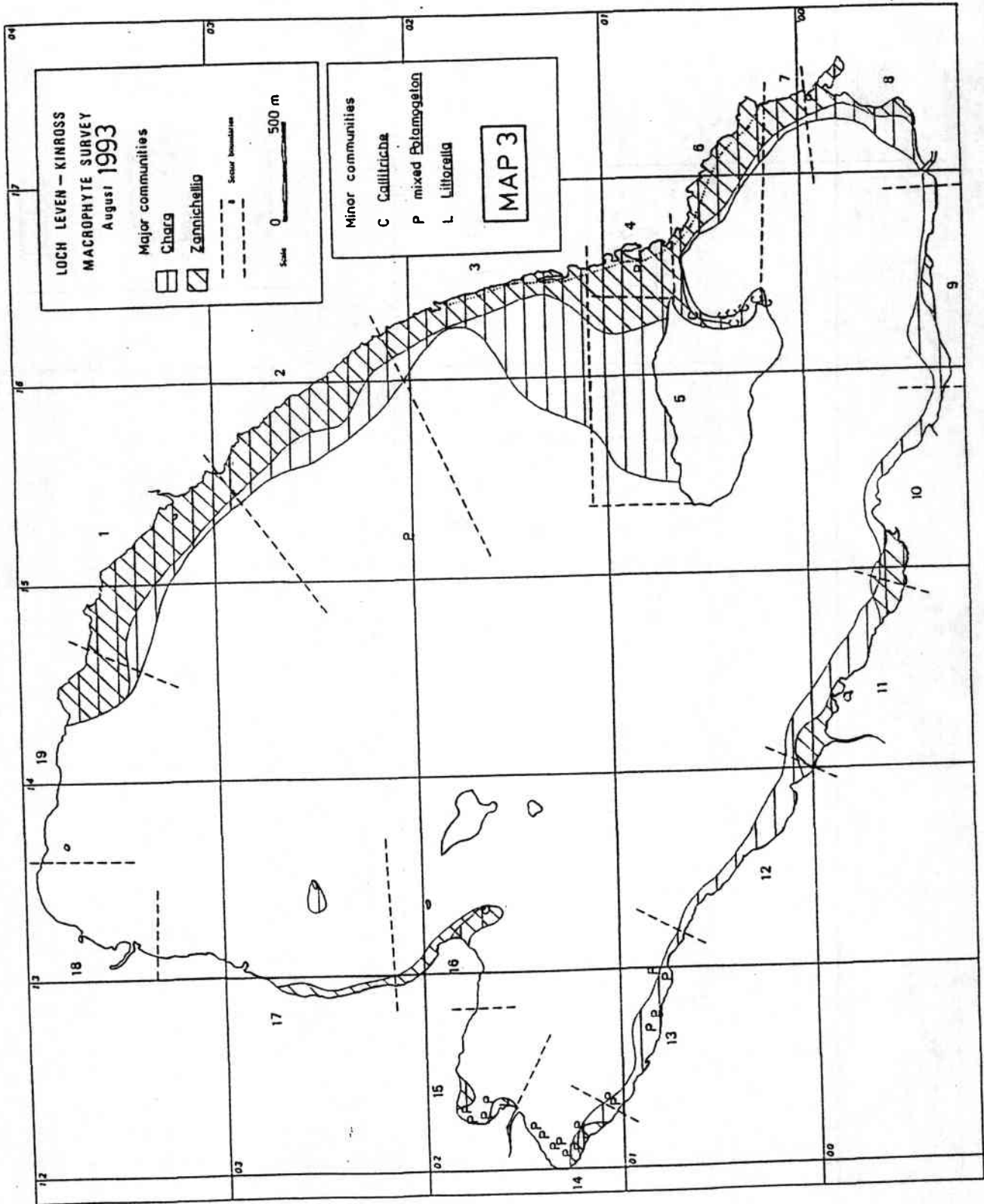
1997 LOCH INVENTORY

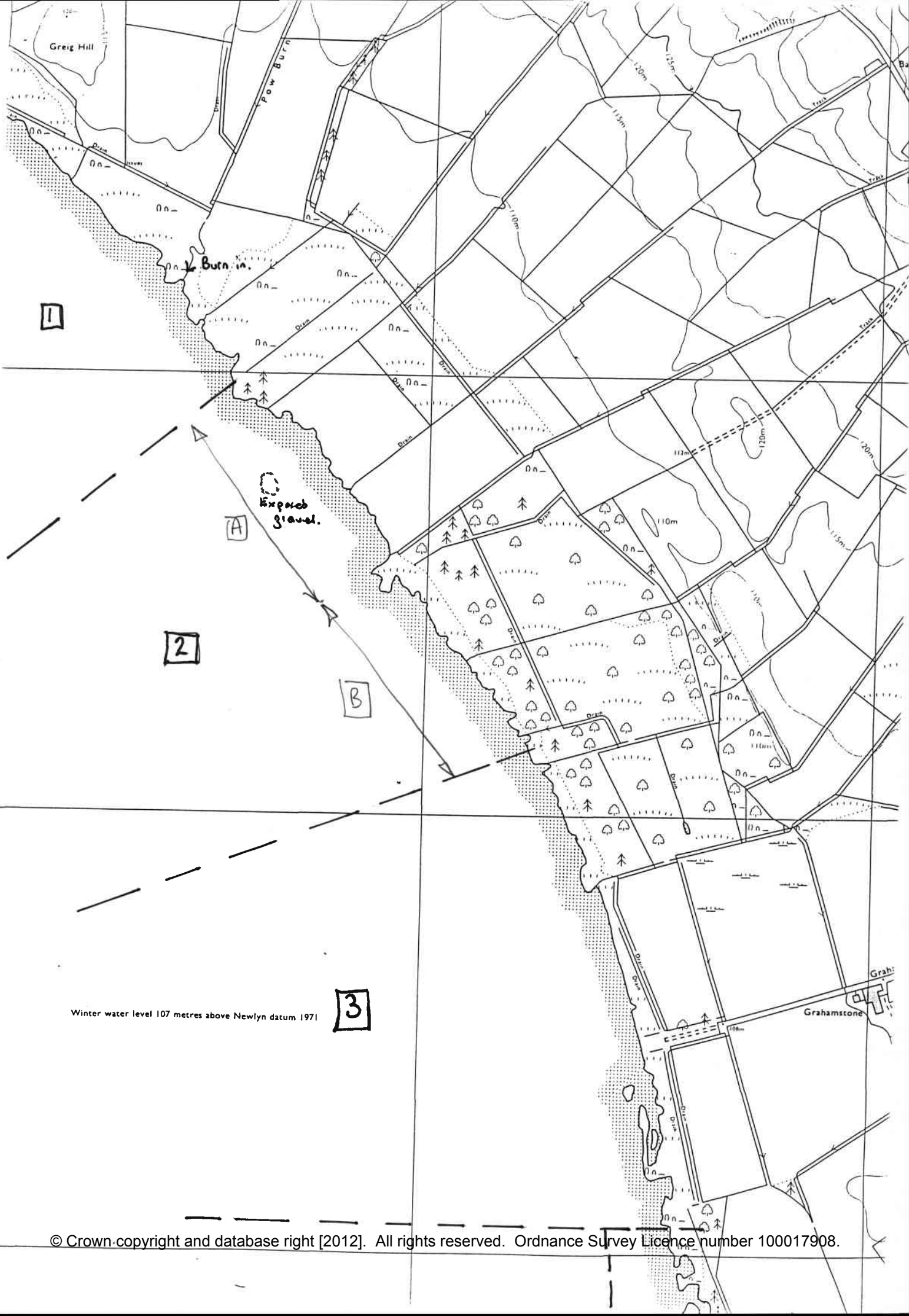
Site location map for N01005

Loch Leven

Grid reference N044015

Date 29/7/97





Greg Hill

Pow Burn

Burn in.

Exposed gravel.

1

2

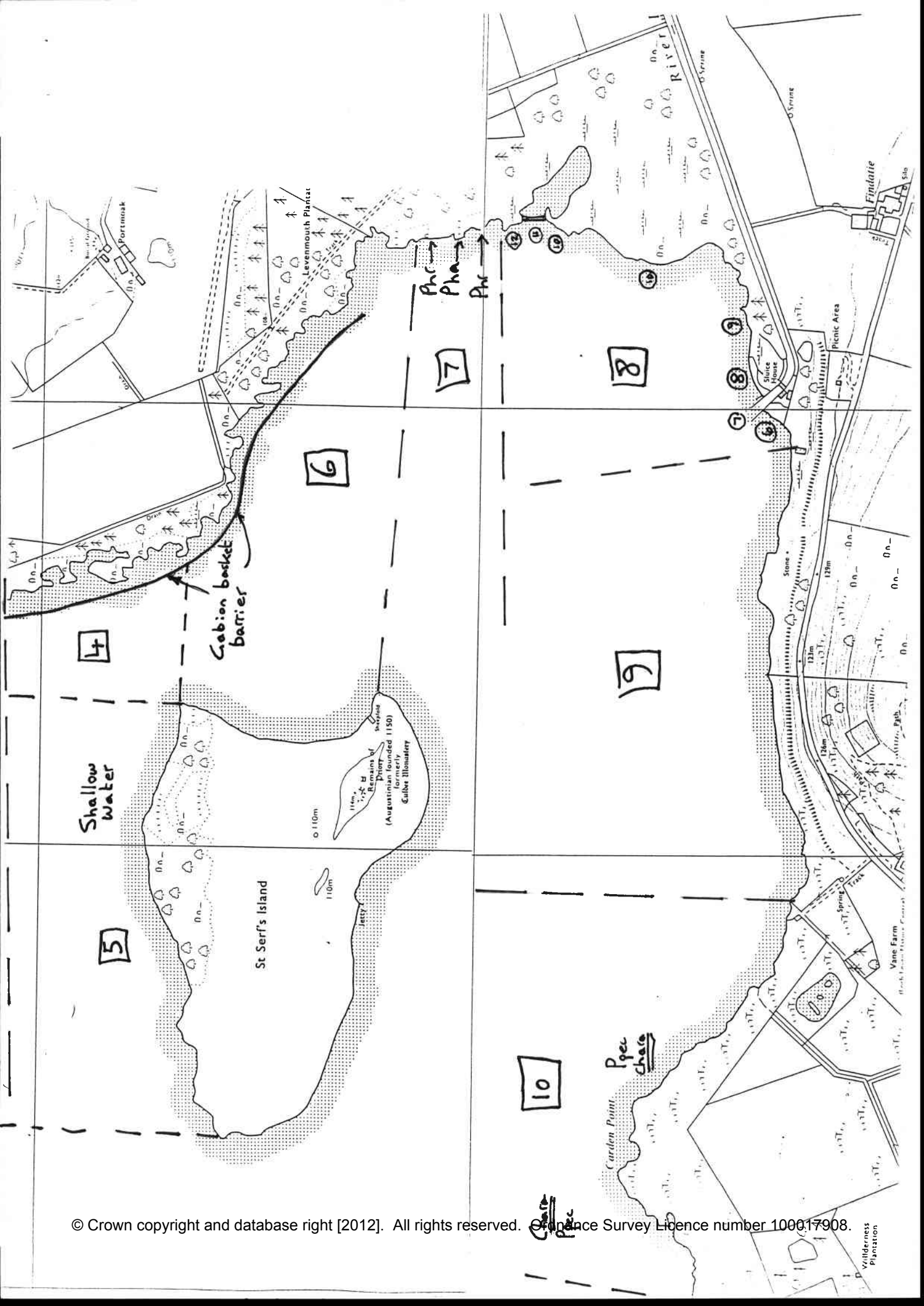
B

3

Winter water level 107 metres above Newlyn datum 1971

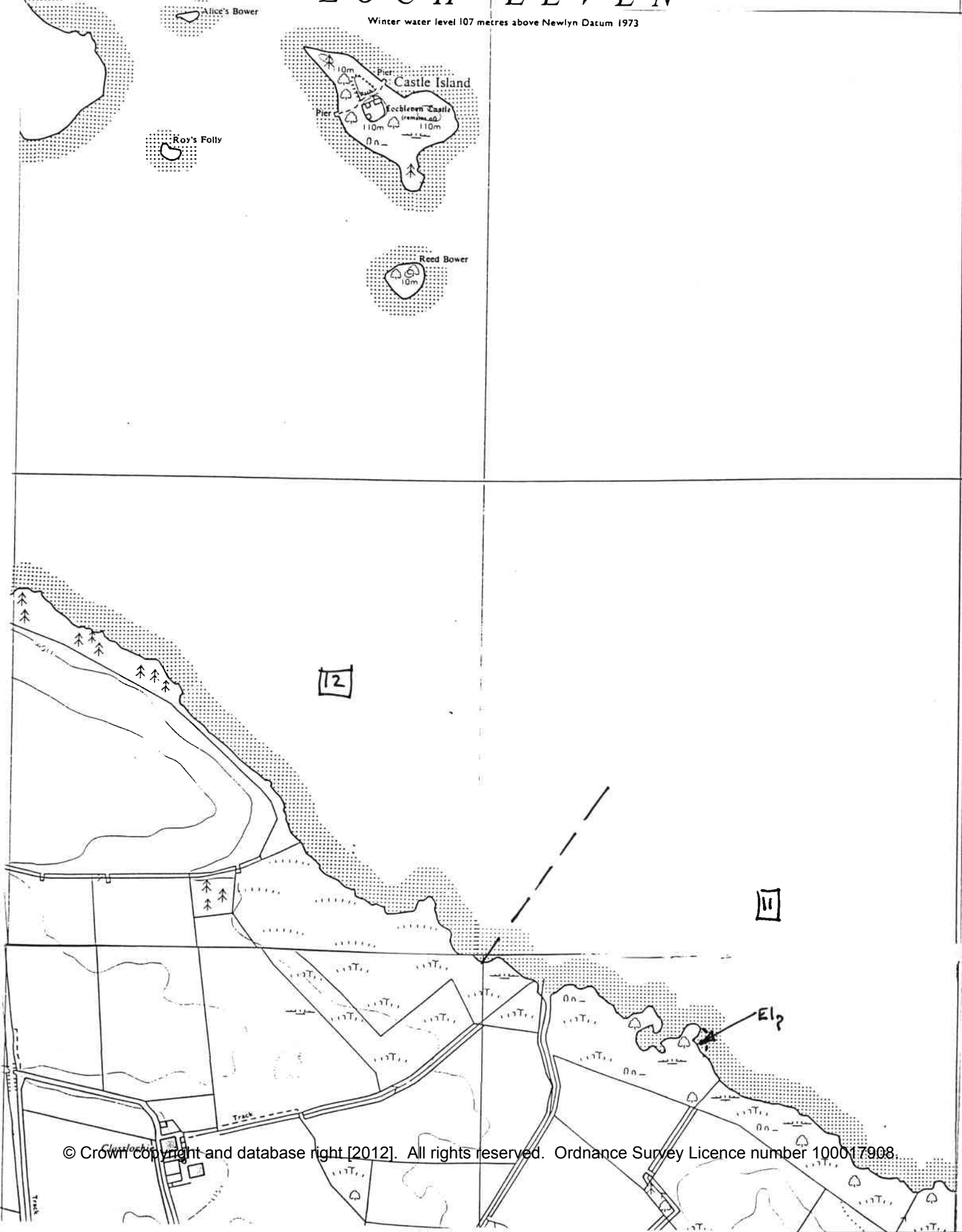
Grah

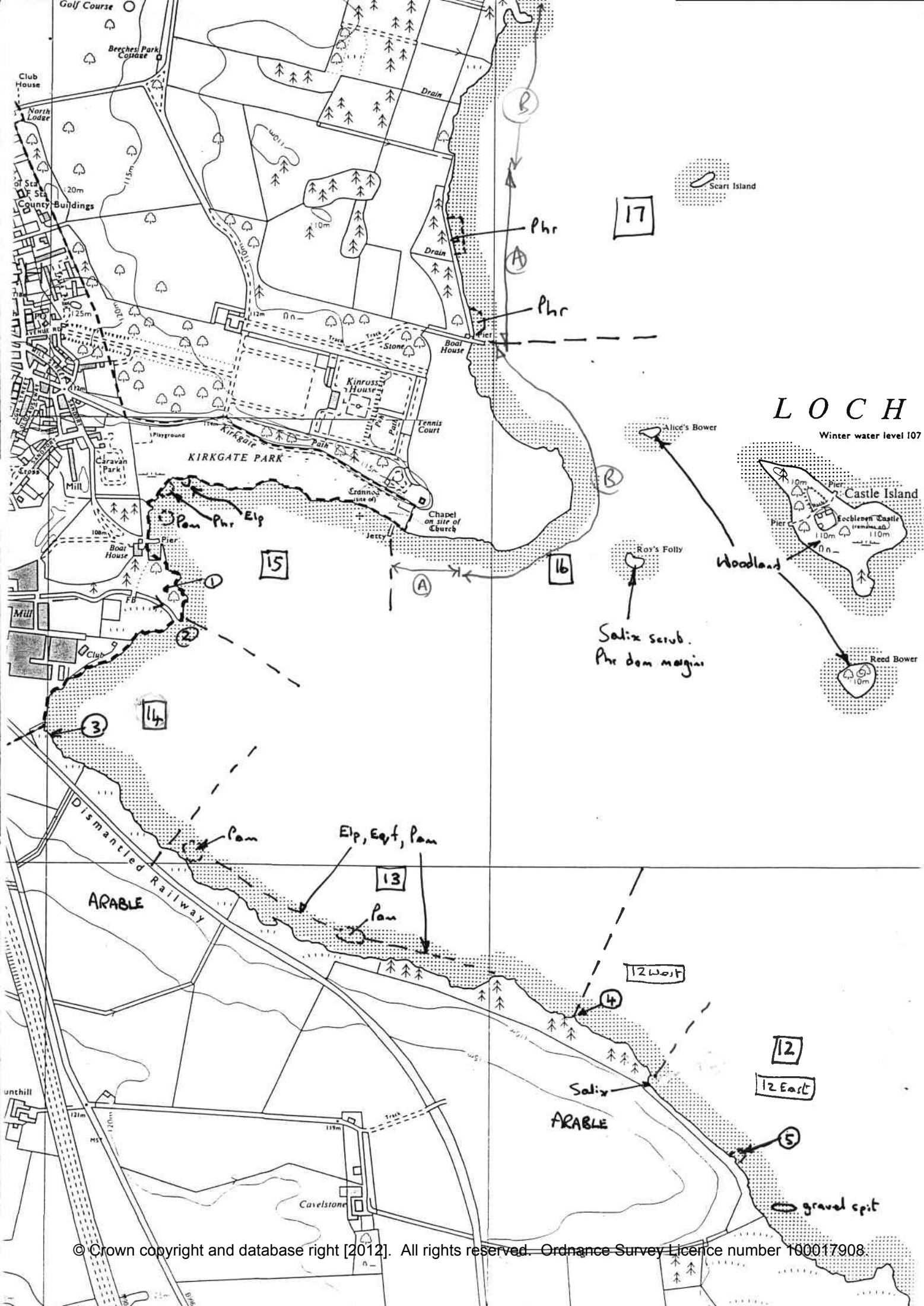
Grahamstone

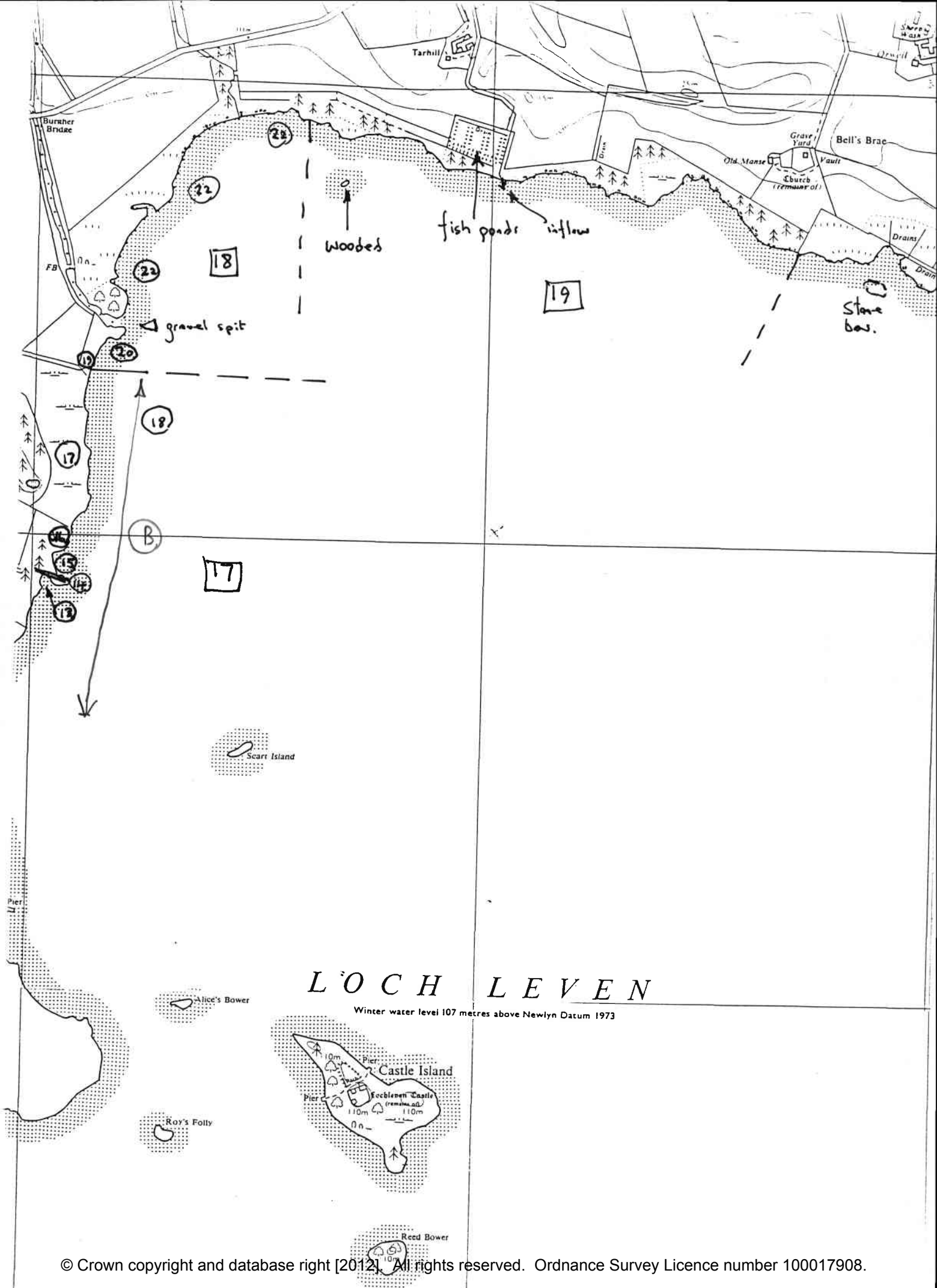


LOCH LEVEN

Winter water level 107 metres above Newlyn Datum 1973







LOCH LEVEN

Winter water level 107 metres above Newlyn Datum 1973

This large loch has been split into sectors as in the 1993 macrophyte survey - see attached map.
(Sector numbers are depicted inside a square, so \boxed{N} , and target notes inside a circle \textcircled{N})

SECTOR 1 Shoreline as $\boxed{19}$ (but without pine belt). Elp (LA) fronts Pha in part.
Aquatics: very dense Chara virgata with Ppec

SECTOR 2 \boxed{A} Shoreline varies with parts bare beach and parts vegetated with Pha, Elp, M.
Offshore: Chara virgata, Ppec over sand substrate.
 \boxed{B} Mixed woodland reaches shoreline. Shoreline dom by Salix + Pha. Many windblown trees along shoreline.
Aquatics: Chara virgata (dense, but less so in north), Ppec, Zan. Occ small Pan beds just offshore in north.

SECTOR 3 Shoreline dom by fringing Pha or Phr with Elp (LA) + occ patches of Salix.
Gabion basket anti-erosion barrier just offshore thro much of sector.
Aquatics: dense Chara virgata, Ppec, Zan, (Ches), (Ec). Salix carr adjacent

SECTOR 4 Similar to $\boxed{3}$, with adj Salix carr, shoreline dom by Phr, Salix + Pha. Cra (LA).
Gabion basket barrier offshore
Aquatics: Chara virgata, mostly not so dense as in $\boxed{3}$
"Lagoon" with areas of exposed sand supporting Elac (LA), Pan (LA), Sa, Mim, Cus vulg.

SECTOR 5: Stony beach on island with little veg to west. Salix dominated beach to east.
Aquatics: filamentous algae + Chara virgata, + Zan over stony substrate.

SECTOR 6 Aquatics: dense Chara virgata, (Ppec)
Shoreline dom by Phr in west and Pha in east, with Salix and Elp (local); backed by Salix with mixed woodland beyond. Gabion basket erosion barrier offshore, except at eastern end.

SECTOR 7 Phr fringe with (locally Pha) backed by Salix carr
Offshore: dense veg: Pot pec, Chara virgata, Zan

SECTOR 8

- ⑥ Beach with ± no veg.
- ⑦ Stone pier leads to sluices - outflow
- ⑧ Tree-lined, stone-clad bank. Aquatics Chara vir, Ppec, Ppec, Ches.
- ⑨ Stony beach with freq Salix shrubs (occ trees) and occ patch herbs: Pha, Elp, Pan
- ⑩ Banks dominated by Pha + Salix

Sector 8 continued ⑩ Pool/lagoon, now cut off from loch by beach. ⑫ boulder bank.

Sector 9 Adjacent land: mosaic of tall herb, grassland + gorse scrub, lightly cattle-grazed to east. Bracken + woodland (local) on bank up to road.
 Beach (similar to ⑩): stones/gravel/sand with Elp, Pot auc, Pha, Mentha sp, (Cap)
 Offshore: dense Chara vir with Pot pec, Pper, Zon, (Ppu).

Sector 10 Beach: stones/gravel/sand, dom by Elp with Pha, Mentha sp, Pot auc, Pan, Msc, Ja, Jo.
 Adj land: grassland dom by Der cer, Hol lan, Agristis spp.
 Aquatics: Chara vir, Pot pec both very abundant throughout.

Sector 11 East Sand and gravel beach with patchy Elp, Ja, Rft, Msc, Mentha sp, Alop gen, Pan, Carex disticha, Jac, Je, Der ces. Backed by open Salix/Betula scrub-woodland, forming mosaic with tall grassland dom by Der crisp + Hol lan.
 Offshore: dense Chara with Pper
West similar to ⑫ East

Sector 12 West Bank: dom by Pha with Msc, Mentha sp, Stachys pal, Pan rep, Salix (occ).
 Adj: tall herb with freq conifers; arable beyond.
 Shoreline: Stony with Elp (LA), Pha (occ). Inshore: occ small Pan bed.
 Offshore: Dense Chara with occ Pper, Elac, Pper
 ④ Gravel spit with small Pan beds either side.

East More exposed shoreline (than in west) with bare beaches +, locally, fringes of Pha, Elp + Pan as in west.
 Offshore: dense Pper + Chara. ⑤ Gravel spit, vegetated.

Sector 13 Bank dom by Salix + Pha with areas of open bank/beach. Backed by wide band of tall herb with arable beyond.
 Emergent fringe (± continuous in centre, more patchy to west + east) dom by Elp with Pan, Egft, Carex aqu, Pha, (Elac), ... fringed by frequent Pan beds.
 Aquatics: Chara, Pper, Pper, Nit.

Sector 14 Aquatics: Ec, Ches, Nit, Pper, Pper.
South of ③ Inshore: Continuous fringe of Egft with Elp + Pan; Pan extends further into loch.
 Bank lined with Salix over freq Pha

North of ③ Freq large Salix with Pha (LA), Pot hyd (LA). No emergent veg.
 Commercial buildings just back from bank in parts.
 ② Gravel spit at mouth of burn in. Salix (LA).

Sector 15 Bank/beach: Pha (usually dom), Salix (o), Epi hir, Stachys pal, Calystegia sp, Elp, Egft, Ach ptor, Pan, Carex hir, Ip, Api, C. disticha, Msc, Min, Pot hyd, often forming tall herb bank a few m wide, with mown grass beyond.
 Fringe/inshore emergents: often none; local beds of Elp, Phr, Pan

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 ① Large Salix overhang low silt bank/inundation zone with Cal, Elac, Rft. Backed by tall herb + Salix scrub. Offshore: Lit, Elac, Ches.

Sector 16 Adj: semi-improved, sheep-grazed pasture.

- (A) Stony beach with Elg(A). Aquatic: Chara spp, Ppec, Ec.
- (B) Beach mostly sand + gravel with some stone + boulders. Veg on beach very sparse: Cas, Pan, Pot ant, Elg, Elac. Occ Jc at back.
Offshore: Chara, Ppec, (Ppu).

Sector 17 (A) Occ wide (c.15m) Phr fringe. Elsewhere, stone or sandy shore with occ Salix (bank = artificial, concrete or stone in parts) herbaceous veg sparse: Pha(o), Ip(R).

- (B) Sandy beach with ± continuous Salix. Freq tall herbs, with Pha, at back of beach.
Aquatic: small Chara, Ec, Zan, Ppu, Nitella, Ppec, Entromorpha.
- (13) Cas on sandy beach. Zan + Chara in shallows
- (14) Pipe in, with overflow wires into southern bay
- (15) Sand bay: sparse Zan, Ppec, FA
- (16) Willow carr / mixed woodland
- (17) Salix carr with Pha fen
- (18) Sand substrate with sparse: Zan, Ppec, FA.
- (19) Narrow inflow.

Sector 18 Aquatic: Zan, Elac (LF), FA, Ec, Ppec, Chara virg. Sparse to south, becoming dense in north with Chara virg + Ppec abundant.

- (20) Sandy beach with sparse veg, mostly seedlings. Back of beach: tall herbs.
Adj: mosaic of Salix carr + Pha tall herb fen.
Offshore: sparse Zan, FA, Entromorpha, Ppec over sand.
- (21) Large inflow. Shoreline dom by overhanging Salix either side of inflow. Offshore: Zan(6)
- (22) (Most of sector). Sand beach with sparse veg backed by Pha + other tall herbs with occ/freq Salix.

Sector 19 Shoreline dom by Pha with occ Salix slightly back from shore. Narrow, discontinuous band of Pines, with asble beyond. Occ parts with sandy beach.
Aquatic: Dense Chara virg, Ppec, Chara asp/vulg(?).