SUMMARY

The Slamannan Bog Restoration Project began in September 2014 with the aim of restoring at least 150 hectares (ha) of degraded raised bog habitat in the Slamannan Plateau. The project is focused on an area of peatland called Fannyside Muir, 3km from Cumbernauld.

The project is managed by Buglife Scotland in partnership with landowners Forest Enterprise Scotland (FES), North Lanarkshire Council (NLC), Scottish Wildlife Trust (SWT) and additional stakeholders Royal Society for the Protection of Birds (RSPB), Cumbernauld Living Landscape (CLL) and Scottish Natural Heritage (SNH).

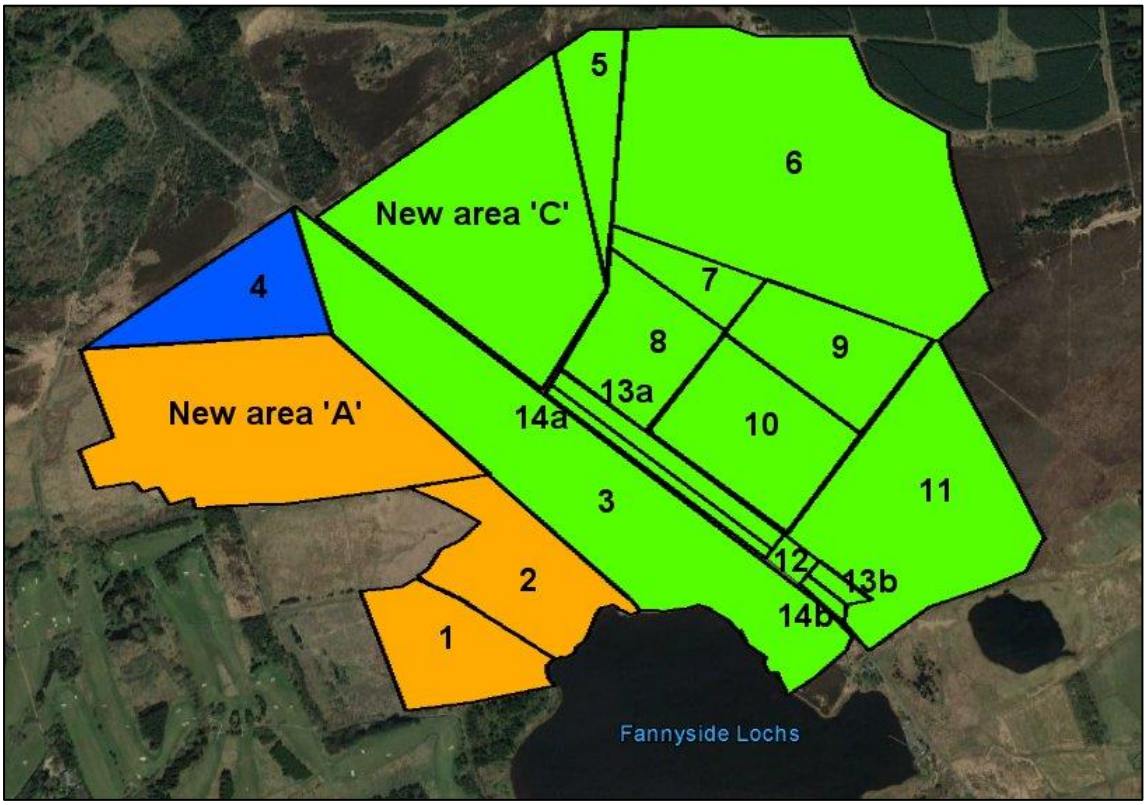
The production of a Management Plan and the work associated with the restoration of bog habitats at Fannyside Muir has been funded by WREN grant BAF14 - 'The Slamannan Bog Restoration Project' and through contributions of the European Union to the EcoCo LIFE+ project LIFE13 BIO / UK / 000428 '*Implementation of integrated habitat networks to improve ecological coherence across the CSGN'.* This work was supported by SNH as part of the Peatland Action project and contributes to Scotland's National Peatland Plan and North Lanarkshire Council's Bog Action Plan.

Progress in the third year of the project is summarised below:

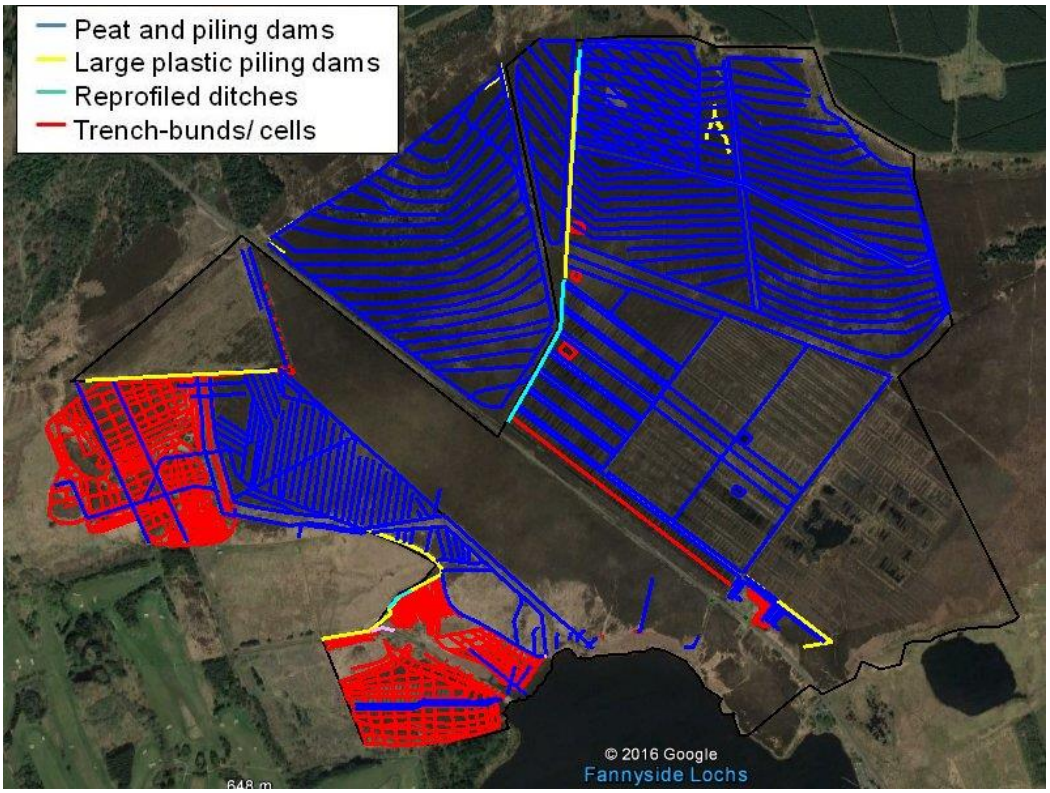
- Heather cutting was carried out in September 2017 to help reduce evapotranspiration from areas of tall woody heather. Cutting was undertaken by trained SNH/ EcoCo LIFE staff using a Softrak Cut & Collect system. Due to the time of year, the area that could be cut was limited prior to the return of Taiga Bean geese in late September. Approximately 1.2 ha of heather in Compartment 7 was cut, with the heather cuttings added to surrounding ditches to help with ditch occlusion.
- Monitoring of the site included monthly hydrological monitoring of 32 dipwells across the site, checking 7 fixed vegetation monitoring quadrats, 32 mini vegetation quadrats, protected species surveys, nesting bird surveys, moth trapping, butterfly timed counts, aquatic invertebrate surveys and other invertebrate surveys.
- An additional 430 peat depth readings were measured across the site and surrounding peat deposits. The deepest reading within the project site was 915cm, while a reading of 930cm was recorded just outside the project area.
- A grass fire in April 2017 damaged approx.1 ha of Compartment 2 (next to Palacerigg Country Park) however, surrounding blocked ditches and re-wetted areas limited the spread of the fire.
- A total of 775 species have been recorded on the site since the start of the project.

Appendix i. Maps

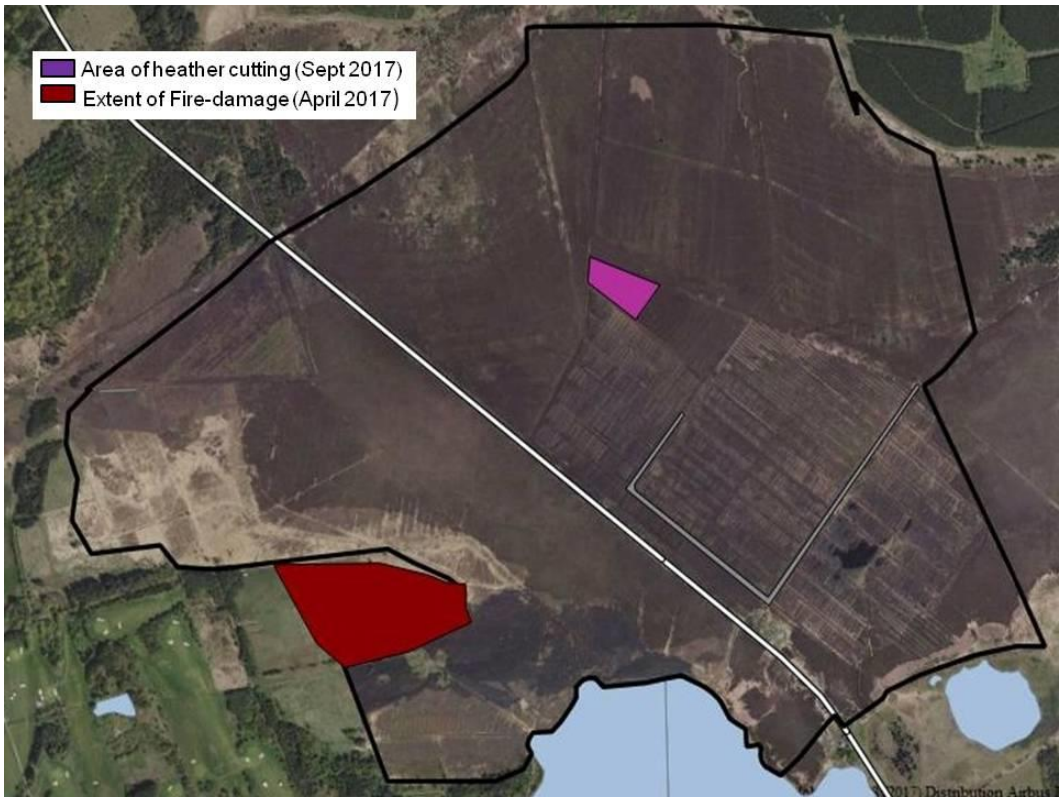
Map 1: Location of Fannyside Muir bog restoration site
Core project area outlined in black. 3km east of Cumbernauld on the Slamannan Plateau.



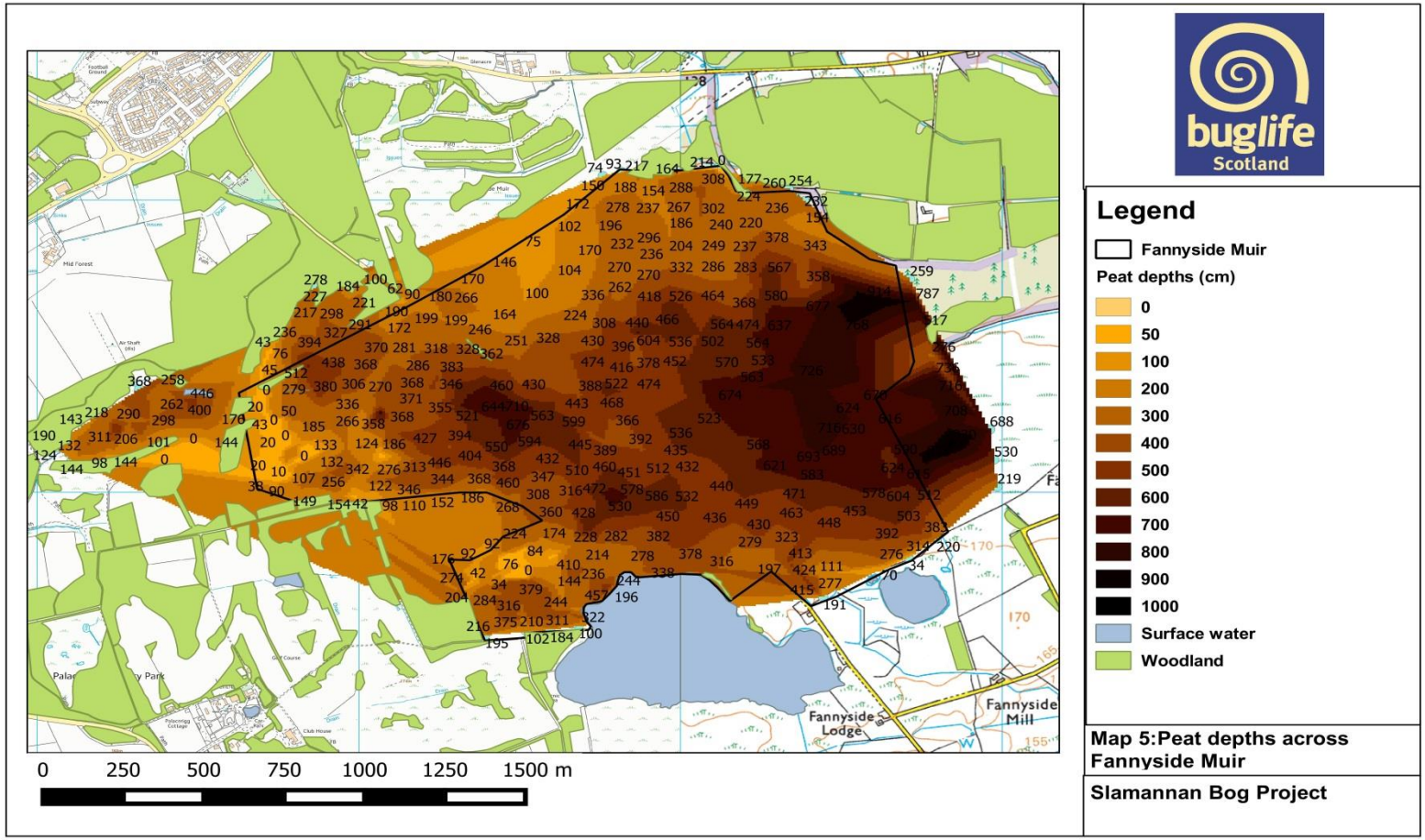
Map 2: Compartments and land ownership within restoration area.
North Lanarkshire Council (NLC) in orange; Forest Enterprise Scotland (FES) in green and Scottish Wildlife Trust (SWT) in blue. Numbers relate to Compartments mentioned in the Management Plan.



Map 3. Overview of restoration work carried out at Fannyside Muir (dams and bunds).



Map 4. Area of heather cutting at Fannyside Muir in 2017.
Also showing area fire-damage at the edge of Compartment 2 in April 2017.



Map 5 Map showing interpolated Peat depths acros Fannyside Muir based on data obtained using peat probes to survey the depth across the site.

Appendix ii. Photographs

Figure 1. Heather cutting in Compartment 7.
Top: Softrak Loglogic 'Cut and Collect' system harvesting heather to reduce evapotranspiration. Heather brash added to surrounding ditches to help with ditch occlusion. September 2017. Bottom Left: Dumping heather brash into small ditch to help with occlusion. Bottom Right: Softrak Loglogic 'Cut and Collect' system harvesting heather. Area of bog in foreground has been cut, and brash visible in the collection cage

Figure 2. Peat dams on ditch between Compartments 7 and 8.
Top Left: Just after dam installation. Top Right: Late September2015 - blocked ditches filling with water. Middle: March 2016 - ground water raised to surface of the peat. Bottom: September 2017– Cottongrass and Sphagnum colonisation of blocked ditch and peat.

Figure 3. Successful ditch blocking at Fannyside Muir to raise water table and promote Sphagnum colonisation.
Top: A ditch blocked with peat dams in Compartment 10 (in 2015) showing good Sphagnum colonisation both in ditch and on surface of peat dam. Cottongrass colonisation also evident. Bottom Left, Middle and Right: Downloading data from the 3 water depth data loggers at Fannyside Muir in September 2017

Figure 4. Large blocked ditch in Compartment 2 at Fannyside Muir helped to constrain spread of fire in April 2017
Top Left: Before work began. Top Right: Ditch in late October 2015 after dam installation. Bottom Left: Ditch in June 2016 after further dams added, lower section reprofiled and existing dams backed with peat and vegetation. Bottom Right: Spread of fire in April 2017 constrained by water-filled ditch (dark area on opposite side of ditch is burnt vegetation).

Figure 5. Wildlife of Fannyside Muir.

Top Left: Sphagnum ground beetle (*Agonum ericeti*); Top Middle: Northern sallow mining bee (*Andrena ruficrus*); Top Right. Large red damselfly (*Pyrrhosoma nymphula*); Centre Left: Common lizard (*Zootoca vivipara*); Centre Middle: Green hairstreak (*Callophrys rubi*) on Cranberry flowers (*Vaccinium oxycoccos*). Centre Right: Fir clubmoss (*Huperzia selago*) on old railway bund; Bottom Left: Map-winged swift moth (*Korscheltellus fusconebulosa*); Bottom Middle: European Hedgehog (*Erinaceus europeaus*); Bottom Right: Sphagnum (*Sphagnum magellanicum*) and Reindeer lichen (*Cladonia portentosa*).

		Rainfall (cm)	0	6.55	1.52	2.53	2.14	6.92	13.05	11.25	11.83	5.57	5.56	2.34	4.67	4.67	13.41	4.01	5.18	2.87	0.86	2.34	7.8	3.25	0.94	16.1	7.39	12.14	12.17	5.92	5.92	
		Reading No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
		Date	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Oct-17	
STATION	Grid Ref	Elevation		Phase 1	Phase 1						Phase 2	Phase 2	Phase 2			Phase 3	Phase3															
1	NS8030073771	171	28.0	36.5	40.5	44.0	21.0	10.5	11.5	26.5	31.0	26.0	28.5	27.5	11.0	9.5	3.5	17.5	10.0	15.5	8.5	10.0	16.0	25.0	37.5	22.0	25.5	5.5	7.5	3.5	3.0	Control**
2	NS8025873853	172	8.5	18.0	22.0	15.5	4.5	3.5	5.5	6.0	9.0	4.0	4.0	14.5	4.0	3.0	0.0	14.0	5.0	2.5	3.5	4.0	7.0	16.0	27.5	13.0	17.0	3.0	10.0	4.5	2.5	
3	NS8024073868	173	15.0	16.5	20.0	12.0	2.5	3.0	4.0	8.0	7.5	4.0	5.5	7.0	2.0	1.0	3.5	9.0	2.5	2.0	0.0	2.0	6.5	8.5	14.5	9.0	8.0	0.5	5.0	1.0	1.0	
4	NS8040174093	174	9.0	15.5	22.5	9.5	1.0	0.0	-0.5	3.0	7.5	2.0	3.5	6.0	0.0	1.0	1.0	5.5	2.0	2.5	1.0	2.5	3.0	10.0	25.0	7.0	10.0	0.5	3.0	1.5	1.0	
5	NS8038174089	174	3.0	1.5	5.0	2.0	-1.5	-2.0	-2.0	-1.0	0.0	-2.0	-2.0	1.0	-2.0	-1.5	-3.0	-1.0	-2.0	-1.0	-1.0	-2.0	-1.5	1.0	13.5	0.5	2.5	-2.0	-2.0	-2.0	-2.0	
6	NS8055474278	175	12.0	15.0	21.5	17.0	1.0	-1.0	2.0	4.5	8.0	2.0	4.0	8.0	0.0	7.0	9.0	11.0	7.0	7.5	5.0	6.0	6.0	10.0	17.0	8.0	9.0	5.0	4.5	4.0	2.0	
7	NS8053474295	174	10.0	9.5	14.0	10.0	5.0	2.5	5.0	7.0	8.0	6.5	7.0	9.0	6.0	5.5	4.0	7.5	6.0	5.0	5.5	5.5	6.5	9.5	25.5	9.0	11.0	5.0	6.0	5.0	5.0	
8	NS5056074270	174	19.5	32.0	41.5	46.0	8.0	5.5	6.5	21.0	28.0	19.0	20.0	28.5	18.0	24.5	15.0	28.0	15.0	27.5	9.0	12.0	23.5	29.5	41.0	28.0	29.0	13.0	14.0	14.5	18.0	Control
9	NS8056574246	174	6.5	13.0	17.0	14.0	2.5	1.5	2.0	4.0	8.5	4.0	4.5	6.5	3.0	2.5	1.0	8.0	3.0	4.0	3.0	3.0	5.0	11.0	18.0	7.5	12.0	1.5	3.0	2.5	2.5	
10	NS8021074448	174	18.5	27.0	36.0	37.0	11.0	9.0	9.0	10.0	12.0	10.0	10.5	13.0	9.0	11.5	9.0	13.5	7.5	10.0	8.0	9.0	10.0	12.5	28.5	14.0	16.0	7.5	10.0	9.0	8.5	
11	NS8022674469	174	6.0	14.0	21.0	24.5	4.0	3.0	4.5	5.5	8.5	5.0	5.5	6.0	5.0	7.0	6.0	8.0	5.0	6.0	6.0	5.5	6.0	10.0	25.5	8.0	8.5	4.0	5.5	4.0	4.0	
12	NS8020674446	174	5.5	11.0	21.0	12.0	5.0	4.0	5.0	4.5	7.5	5.5	6.0	8.5	5.0	5.0	3.0	8.5	5.0	5.5	5.0	5.0	6.0	11.0	20.5	10.0	11.5	5.5	6.5	4.0	5.0	Above ground
13	NS8019074427	174	4.5	9.0	11.5	10.0	4.0	2.5	3.5	4.0	5.5	4.5	4.0	7.5	4.0	3.0	1.5	5.0	4.5	3.5	3.0	3.5	4.5	9.0	14.0	7.5	8.5	3.0	4.0	3.0	2.5	0.0 - 10.0
14	NS8011474337	175	8.5	9.5	19.0	9.5	6.5	5.0	6.0	7.5	10.0	7.5	7.0	9.0	5.5	6.0	4.5	8.5	5.5	5.5	6.0	6.0	6.5	12.0	20.0	11.0	13.5	6.0	5.5	5.0	4.5	10.5 - 20.0
15	NS7989374508	172	3.0	10.0	13.0	3.0	-1.5	-3.0	-4.0	-3.0	-3.0	-4.0	-2.5	-0.5	-4.0	-2.0	-3.0	-3.0	-3.5	-2.5	-3.5	-3.0	-3.0	-2.0	7.5	-2.0	-2.0	-4.0	-4.0	-4.0	-4.0	20.5 - 30.0
16	NS7990974526	172	11.0	7.0	9.0	4.0	3.5	3.0	4.0	4.5	6.5	4.5	5.0	5.5	4.0	3.5	2.5	6.0	4.0	4.0	5.0	5.0	5.5	8.5	19.0	7.0	8.0	4.0	4.5	-4.0	-4.0	30.5+
17	NS7985474547	172	6.0	7.0	14.0	14.0	3.5	2.0	3.5	6.5	5.5	4.0	4.0	2.0	0.0	2.0	-0.5	3.0	1.0	2.0	0.5	1.0	1.0	2.0	10.0	2.0	3.0	1.0	1.0	-4.0	-7.0	
18	NS7983074547	172	7.0	9.0	12.5	10.5	3.5	3.0	4.0	6.0	7.5	4.0	5.0	7.0	4.5	3.0	2.0	6.0	3.5	3.5	4.0	5.0	6.0	9.5	13.5	9.0	10.0	4.0	6.5	4.0	3.5	
19	NS7986574609	171	5.5	10.0	14.0	3.0	1.5	1.0	-0.5	2.5	4.0	2.0	2.5	4.0	1.5	-0.5	-0.5	3.5	1.0	0.5	1.0	0.5	1.5	5.5	11.5	5.0	5.0	-1.0	0.5	-0.5	-0.5	
20	NS7988874605	171	4.5	8.0	9.5	4.5	0.0	0.5	-1.0	4.5	6.5	4.5	5.0	6.5	4.0	4.0	2.5	6.5	4.5	4.0	5.0	4.5	5.5	10.0	18.0	10.0	12.0	4.5	5.0	4.0	2.5	
21	NS7972874220	176	22.5	19.5	25.0	23.5	11.0	7.5	10.5	11.5	12.0	11.0	11.5	13.5	11.0	11.0	7.0	13.0	11.0	10.0	10.0	10.5	11.0	12.5	17.0	11.5	12.5	8.5	10.0	8.5	8.0	
22	NS7993174138	175	4.0	12.5	21.5	8.5	0.5	0.0	0.5	2.5	5.0	2.0	2.0	7.5	2.5	2.5	2.0	6.0	2.5	2.5	1.5	1.5	3.0	10.5	27.5	10.0	10.5	1.5	3.0	1.5	-1.0	
23	NS7993274114	175	24.0	34.5	32.0	36.0	-3.5	-3.0	-9.0	-8.0	-6.0	-5.0	-5.0	-3.0	-3.0	-5.0	-7.0	-4.0	-5.0	-5.0	-6.0	-5.0	-5.0	-1.0	5.0	-1.0	0.5	-5.0	-4.0	-4.0	-4.0	
24	NS7989173872	172	2.0	3.0	16.0	6.0	1.0	-1.0	0.0	1.0	0.0	1.0	1.0	2.0	-3.0	0.0	-1.0	2.0	0.0	1.0	1.0	0.5	1.0	4.0	19.5	2.5	4.0	0.0	1.0	0.5	0.0	
25	NS7984673804	171	12.5	18.5	20.0	12.0	10.0	10.5	10.0	11.5	15.0	12.0	11.5	16.0	10.0	10.0	9.5	15.0	10.0	10.5	10.0	11.0	13.0	22.0	23.0	16.5	20.0	11.0	11.0	10.0	10.0	
26	NS7983273782	171	11.5	21.0	26.0	21.0	9.0	8.0	7.0	11.0	15.5	9.5	10.0	10.5	7.5	9.5	5.5	13.5	9.5	11.0	9.5	10.0	10.0	14.5	21.0	14.5	19.0	9.0	11.5	10.0	8.5	
27	NS7982973780	171	6.0	15.0	23.0	17.0	0.5	0.0	-1.5	2.0	4.0	2.0	1.0	4.0	-2.0	1.0	-1.0	4.0	0.0	1.0	0.0	0.0	1.0	7.0	17.5	4.5	12.0	-1.0	1.0	1.0	0.0	
28	NS7981673758	170	16.0	15.5	17.0	4.5	1.0	1.5	0.0	2.5	5.0	3.5	3.5	6.0	2.0	2.0	1.0	8.5	2.0	2.0	2.5	1.5	7.0	13.0	27.5	10.0	13.5	1.0	5.0	2.0	2.5	
29	NS7965773596	169	12.5	21.0	29.5	26.0	15.0	17.0	14.5	16.5	21.0	15.5	16.5	20.0	9.0	-6.0	-10.0	-11.0	-14.0	-14.0	-14.0	-15.0	-15.0	-13.5	-2.0	-12.0	-11.0	-15.0	-13.0	-15.0	-15.0	
30	NS7965773572	168	18.5	26.0	36.0	31.0	12.5	14.5	9.0	16.0	20.0	20.0	18.0	19.0	7.0	0.0	-3.0	-8.0	-8.0	-8.0	-8.0	-8.0	-7.0	-6.0	4.0	-5.0	-2.0	-7.0	-5.0	-8.0	-8.0	
31	NS7920074474	169	10.0	20.0	30.5	36.0	-2.5	-2.0	-4.0	-1.0	0.5	-2.5	-2.5	0.0	-2.5	-3.0	-3.0	-1.0	-3.0	-1.5	-2.0	-2.0	-1.0	5.0	14.0	2.0	4.0	-2.0	-2.5	-2.5	-3.0	
32	NS7918074468	169	15.5	17.0	24.0	20.0	8.0	9.0	6.5	12.0	14.0	13.0	18.0	14.0	14.0	17.5	16.0	14.0	13.0	13.5	10.0	9.0	12.5	14.5	24.0	13.5	15.0	13.5	11.0	10.0	13.0	Control
				Phase 1	Phase 1						Phase 2	Phase 2	Phase 2			Phase 3	Phase 3												Heath cutting			
		Average	10.8	15.7	21.4	17.0	4.6	3.6	3.5	6.5	8.9	6.1	6.6	8.9	4.2	4.2	2.4	6.8	3.3	4.08	2.78	3.09	4.75	9.09	18.8	7.89	9.88	2.53	2.53	2.16	1.8	
		% within 10cm	56.3	34.4	9.4	40.6	84.4	87.5	90.6	75	71.8	78.1	75	65.6	87.5	87.5	93.8	71.9	90.6	84,4	100	87.5	84.4	65.6	15.6	78.1	50	93.7	93.7	96.8	93.7	

Appendix iii Table 3. Monthly Hydrology Monitoring data. Blue & green colours indicate area suitable for Sphagnum. Orange & red indicate unsuitable