Appendix IV: Acid sensitive water catchments

The purpose of this document is to provide an assessment of proposed felling and canopy cover for East Loch Ard as per the 'Managing forests in acid sensitive water catchments' FC (2014) guidance. Acid sensitive catchments are assessed as follows:

- Critical loading: restocking proposals are evaluated to determine if the area of closed canopy forest (age > 15 years) will exceed 30% of the (sub-)catchment in 15 years' time.
- Potential felling impacts: the scale of planned felling in any three year period is checked against a 20% (sub-)catchment threshold.

The catchment relevant to the East Loch Ard block is the Duchray Water (failing), which has an area of 7027.25 ha. Relevant map showing the catchment and sub-catchments can be found at the end of this appendix.

1.0 Assessment of Canopy Cover

The estimated area of closed canopy cover in 15 years' time exceeds the 30% threshold in three sub-catchments within the Duchray Water catchment. At a catchment scale, closed canopy cover is borderline at 30%. See table below.

East Loch Ard: Assessment of Canopy Cover		
Sub-catchment / Catchment	**Estimated area of closed canopy forest (age>15 years) in 15 years' time**	
	Hectares (ha)	**Percentage (%)**
A	604.06	22
B	77.21	70
C	207.21	53
D	78.28	52
E*	2121.42	30
* The whole catchment Note: Catchments A and E include some canopy cover on non FLS land		

With the block and adjacent blocks being heavily forested, compliance with the threshold is unlikely to be achieved as long as sustainable forestry is an objective. As deforestation on this scale is not a reasonable option, efforts to mitigate the forestry acidification effect include the introduction of UKFS compliant riparian buffers, increases in species diversity including broadleaf woodland establishment (Alder excluded), and open hilltops remaining unplanted. In the current and proposed plan, this includes the establishment of a Forest Habitat Network that is primarily based on, but not exclusive to, riparian areas. We are also seeking permission for non-native species removal within this network, which would include targeted removal of streamside non-native conifer regeneration.

It is also important to note that during the development of the recently approved West Loch Ard plan (which lies within the same catchment), expert opinion and guidance was sought from SEPA, Forest Research, Scottish Forestry and the FLS national support team. SEPA

believe that much of the acidity in this catchment comes from the underlying geology and that forestry factors although relevant, do not play a key part in this issue and further research into this is required.

Exceedances and potential mitigating measures will continue to be explored in subsequent LMP renewals.

2.0 Assessment of proposed felling

The 20% felling threshold is not exceeded across the Duchray Water catchment. Felling is therefore unlikely to have a significant effect on the freshwater environment. See table below.

East Loch Ard: Felling site impact in (sub-)/catchment overlapping with forest operations					
3 year period	**Estimated proposed felling in (sub-)catchment (%)**				
	A	**B**	**C**	**D**	**E***
26/28	1.16	1.41	8.08	5.89	2.85
27/29	1.16	-	8.08	5.89	2.82
28/30	0.53	-	8.08	5.89	1.84
29/31	1.27	4.62	8.08	5.89	3.47
30/32	1.27	4.62	-	-	4.39
31/33	1.27	4.62	0.26	-	6.06
32/34	1.27	4.62	8.45	1.46	6.52
33/35	-	-	8.45	1.46	4.68
34/36	-	-	8.45	1.46	2.68
35/37	-	-	8.19	1.46	1.02
36/38	-	-	-	-	1.74
37/39	-	-	5.23	13.49	3.09
38/40	-	-	5.23	13.49	2.53
*The whole catchment					

3.0 Map of Duchray catchment and East Loch Ard sub catchments