

# Sustainable Water Network (SWAN)

- Response to Consultation -

## Draft Environmental Requirements for Afforestation



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## 1. Introduction to SWAN

The Sustainable Water Network (SWAN) is an umbrella network of 27 of Ireland's leading environmental NGOs, national and regional, working together to protect and enhance Ireland's aquatic resources through coordinated participation in the implementation of the Water Framework Directive (WFD), the Marine Strategy Framework Directive (MSFD) and other water-related policy and legislation. SWAN member groups are listed in Appendix 1. SWAN has been actively engaged in Water Framework Directive (WFD) and other water policy implementation at both national and River Basin District (RBD) level since 2004, representing the environmental sector on WFD River Basin District (RBD) Advisory Councils, the South Eastern RBD Management Group, The Irish Water Stakeholder Forum and other water policy-related fora.

## 2. Comments on the draft Requirements

SWAN welcomes the opportunity to comment on the draft Environmental Requirements for Afforestation (ERA). Due to capacity please note that this submission is by no means a thorough review and critique of the proposed draft ERA. SWAN would also wish to stress that guidelines and requirements which prevent/reduce the impact of afforestation on water quality are only effective if they are adequately implemented and adhered to.

The draft Significant Water Management Issues Report<sup>1</sup> recognises that *"forestry activity represents a potential source for sediment and for nutrients"*. SWAN believes that coniferous plantation significantly impacts both the quantity and quality of water passing through forest stands. Good forest management can improve water quality and regulate the flow of water in the landscape. Poor forest management can damage or destroy valuable aquatic habitats and exacerbate local flooding. There are serious impacts on water quality from afforestation and forest management, particularly in upland areas and areas with thin or otherwise fragile / erodible soils. Impacts include nutrient enrichment, sedimentation and consequently loss of wildlife and ecosystems services. The planned expansion in forestry is particularly worrying in light of the recent increase in storm events and rainfall which would further increase the loading of nutrients and sediments to streams/rivers/lakes and further increase acidity. These two factors combined have the potential to significantly negatively impact water quality, high status and sensitive sites in particular. Most forestry in Ireland relies on heavy use of artificial fertilisers, which then run off the forested land in to waterways causing serious pollution (eutrophication). Nutrient loss to streams is particularly evident after clearfelling and storm events<sup>2</sup>.

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<sup>1</sup><http://www.environ.ie/sites/default/files/migratedfiles/en/Publications/Environment/Water/FileDownload%2C41917%2Cen.pdf>

<sup>2</sup>Rodgers M, O'Connor M, Healy M.G., O'Driscoll C, Asam Z, Nieminen M, Poole R, Müller M and Xiao L. (2010) Phosphorus release from forest harvesting on an upland blanket peat catchment. *Forest Ecology and Management*. 260: 2241–2248

## Protected Areas and pNHAs

The draft ERA states that '...the Forest Service 'screens' afforestation applications to assess if there is a possibility of the project - alone or in combination with other projects - having a significant effect on a NATURA site – i.e. a Special Area of Conservation (SAC) or a Special Protection Area (SPA). This applies to projects both inside and outside SACs and SPAs.' The Forest and Water Quality Guidelines (FWQG) state that 'Planting is not permitted in SACs and SPAs'. SWAN would recommend that planting should not be permitted in NATURA 2000 sites and this should be stated in the new ERA guidelines. The FWQG also state that 'Approval for planting in pNHAs is dependent on formal consultation between the Forest Service and Dúchas The Heritage Service.' However the draft ERA states that Note, 'the dual consent process does not exist for proposed Natural Heritage Areas (pNHAs), and a completed Notifiable Action Form is not required.' Any proposed afforestation on proposed NHAs should require the approval of the DAHG and not just the Forest Service. Consideration of the application of an AA style screening approach could be adopted for high status catchments, not just for SACs and SPAs to improve the assessment of cumulative impacts within these catchments, and to trigger the requirements for EclA or EIA.

## High Status Sites

The draft ERA states that 'The Minister for Agriculture, Food & the Marine is listed as a public authority under the European Communities (Water Policy) Regulations 2003 (S.I.722 of 2003), the principal transposing legislation in relation to the European Water Framework Directive (WFD). The Minister must "exercise functions [including the issuing of afforestation approval] in a manner which is consistent with the provisions of the [Water Framework] Directive and which achieves or promotes compliance with the requirements of the Directive".'

One of the WFD's main objectives is to prevent the deterioration in status of water bodies in particular High Status Sites. The number of high status sites are continuing to decline and the loss of these sites have been identified as a significant water management issue. There has been a dramatic decline by 40% of high status river sites since 1987: from 30% to 18%. Between the last two reporting periods of 2007-2009 and 2010-2012 there was a loss of 57 high status water bodies and a worrying continued decline in Q5 high status reference sites.<sup>3</sup> The 2009-2015 River Basin Management Plans accurately describe the very significant risk of many rivers 'failing to achieve the required standards due to potential impacts from forestry' (Section 2.2.2 'Pressures'), as shown by a risk assessment of acidification, eutrophication and sedimentation pressures. Approximately 10% of Galway-Mayo is afforested and the most recent Integrated Water Quality Report<sup>4</sup> from that region states 'Many of these afforested areas are located in sensitive salmon and trout spawning catchments, such as the Owenriff, underpinning the need for adequate control of forestry operations in sensitive areas. The impact of forestry

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<sup>3</sup> Bradley C., Byrne C., Craig M., Free G., Gallagher T., Kennedy B., Little R., Lucey J., Mannix A., McCreesh P., McDermott G., McGarrigle, M. Ní Longphuirt S., O'Boyle S., Plant C., Tierney D., Trodd W., Webster P., Wilkes R. and Wynne C. (2012) *Water Quality in Ireland 2010-2012*. Environmental Protection Agency.

<sup>4</sup> EPA (2013) Integrated water quality report 2012 Galway Mayo. Environmental Protection Agency.

on water quality continues to be an issue of concern in Galway and Mayo.' Again this highlights how forestry is a highly significant water management issue in our most vulnerable sites. Some types of forestry, spruce plantations in particular, acidify water making conditions inhospitable for fish and aquatic invertebrates. The acidification of head water streams from forestry has been shown to have localised impact on the entire macroinvertebrate community<sup>5</sup>. The Article 17 Habitats Directive report cites forestry as one of the sources of sediment and nutrients that enter freshwater pearl mussel (FWPM) rivers which results in serious impacts to their recruitment and survival. The Overall Status of FWPM sites are assessed as being as bad and declining<sup>6</sup>. Consideration of the application of an AA style screening approach could be adopted for high status catchments, not just for SACs and SPAs to improve the assessment of cumulative impacts within these catchments, and to trigger the requirements for EclA or EIA.

Even with good forest management guidelines, unless they are adhered to then our vulnerable sites remain at risk of failing WFD objectives. SWAN would recommend that afforestation is not permitted in sensitive and high status sites/areas.

As part of the objective *'To protect and enhance water quality, both at afforestation stage and throughout the forest rotation.'* As part of the pre application stage *'to assess and reflect the degree of risk to receiving waters'* during on site assessment it is necessary to *'identify and map aquatic zones and relevant watercourses adjoining or crossing the site, and also 'hotspots'.* These features are defined as follows:

- *Aquatic zone: A permanent or seasonal river, stream or lake shown on an Ordnance Survey 6 inch map. (Note, the EPA water layer on iFORIS may not capture all aquatic zones onsite.)*
  
- *Relevant watercourse: A watercourse that is not shown on an OS 6 inch map but which is connected to an aquatic zone onsite, adjoining the site or elsewhere, and which has the potential to carry significant amounts of sediments / nutrients, or show evidence / signs of erosion/deposition. Relevant watercourses are often artificial, and include drains and channels and other potential pathways that may only contain flowing water during and immediately after rainfall. Note, not every watercourse may be deemed as a 'relevant watercourse'. For example, an existing well-vegetated agricultural drain on moderately sloping ground may not be regarded as a relevant watercourse.'*

The term 'relevant' should be removed from 'watercourses' as what is deemed to be a relevant watercourse is too subjective.

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<sup>5</sup> Feeley H. B., Kerrigan C, Fanning P, Hannigan E and Kelly-Quinn M (2011) Longitudinal extent of acidification effects of plantation forest on benthic macroinvertebrate communities in soft water streams: evidence for localised impact and temporal ecological recovery. *Hydrobiologia* 671:217–226

<sup>6</sup> NPWS (2013) The status of EU protected habitats and species in Ireland. National Parks and Wildlife Service, DAHG

## Water Setback Distances

SWAN welcomes the increases in water setback distances compared to the buffer zone distances in the FWQG and welcomes the addition of setback distances for 'relevant' watercourses and hotspots however the setback distances for 'relevant' watercourses and hotspots should be increased to a minimum of 10m.

## Site inputs

The draft ERA states that '*Regarding fertilisers, phosphorus (P) is the main nutrient fertiliser applied in afforestation, with nitrogen (N) and potassium (K) occasionally applied as remedial fertilisation. Note that peaty soils have a very low capacity to bind phosphorus.*' SWAN would recommend that P should not be applied in afforestation on peaty soils although we would also recommend that afforestation should not be approved on peaty soils at all.

## Peat soils

Forestry on peat soils in particular causes a suite of environmental problems. All of these problems described can and often do result in reduced water quality, loss of wildlife and ecosystems services, damage to fisheries, and increased costs of treatment for drinking water. Drinan *et al.* 2013 found elevated nutrient, iron, aluminium and DOC in lakes in afforested blanket bog catchments. The study '*demonstrated a clear, deleterious impact of conifer plantations on the water quality draining from blanket bog catchments, with major implications for the management of afforested peatlands.*<sup>7</sup> Afforestation in many sites requires drainage and drainage of peat causes degradation of the peat, reduction of water storage capacity in catchment, release of nutrients<sup>8</sup>, heavy metals<sup>9</sup>, dissolved organic carbon<sup>10</sup>, and sediments<sup>11</sup>. SWAN would recommend that afforestation should not be approved on peaty soils at all.

## Climate change

The planned expansion in forestry is particularly worrying in light of the recent increase of storm events and increasing rainfall which would further increase the loading of nutrients and sediments

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<sup>7</sup>Drinan T.J., Graham C.T., O'Halloran J, and Harrison S.S.C. (2013) The impact of catchment conifer plantation forestry on the hydrochemistry of peatland lakes. *Science of the Total Environment* 443: 608-620

<sup>8</sup> Bowman J.J., McGarrigle M.L. and Clabby K.J. (1993) *Lough Derg an investigation of eutrophication and its causes*. Part 1 Water quality assessment, nutrient sources, conclusions and recommendations. A report to the Lough Derg Working Party, Environmental Research Unit.

<sup>9</sup> Rothwell J., Evans M.G., Daniels S. and Allotta T.E.H. (2008) *Peat soils as a source of lead contamination to upland fluvial systems*  
*Environmental Pollution*.153: 582-9.

<sup>10</sup>Holden J., Shotbolt L., Bonne A., Burd T.P., Chapman P.J., Dougille A.J., Frasers E.J.D., Hubacek K., Irvine B, Kirkby M.J., Reede M.S., Prell C., Stagl S., Stringer L.C., Turner A. and Worrall F. (2007) Environmental change in moorland landscapes. *Elsevier Earth-Science Reviews* 82: 75-100

<sup>11</sup>Bana S K. and GOOS K. (2004) Effect of peat-bog reclamation on the physico-chemical characteristics of the ground water in peat. *Polish Journal of Ecology* 52: 69-74

to streams/rivers/lakes and further increase acidity, these two factors combined have the potential to significantly negatively impact high status and sensitive sites. All measures to prevent and mitigate impacts on water quality must be climate resistant.

### Pesticides

Cypermethrin a Priority Substance pesticide which is highly toxic to aquatic invertebrates is widely used by Coillte. The FSC has classed cypermethrin as highly hazardous and Coillte have applied for a further derogation to continue to use it. The Environmental Pillar called for a ban on its use in its submission on the public consultation this year on the continuation of the derogation<sup>12</sup>. SWAN would also call for a ban on the use of cypermethrin.

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<sup>12</sup> <http://environmentalpillar.ie/wp/wp-content/uploads/2015/07/Cypermethrin-Consultation-July-2015.pdf>

# Appendix I: SWAN Member Organisations & Board of Directors

<b>SWAN National Groups</b>		<b>SWAN Regional &amp; Local Groups</b>	
1.	An Taisce	16.	Carra Mask Corrib Water Protection Group
2.	Bat Conservation Ireland		
3.	Birdwatch Ireland	17.	Cavan Leitrim Environmental Awareness Network
4.	Coastwatch Europe Network		
5.	Coomhola Salmon Trust Ltd.	18.	Celebrate Water
6.	Eco-UNESCO	19.	Cork Environmental Forum
7.	Friends of the Earth	20.	Cork Nature Network
8.	Friends of the Irish Environment	21.	Longford Environmental Alliance
9.	Irish Doctor's Environmental Association		
10.	Irish Peatland Conservation Council	22.	Macroom District Environmental Group
11.	Irish Seal Sanctuary	23.	Save Our Lough Derg
12.	Irish Water and Fish Preservation Society	24.	Save Our Lough Ree
13.	Irish Whale and Dolphin Group	25.	Save The Swilly
14.	Irish Wildlife Trust		
15.	Voice Of Irish Concern for the Environment (VOICE)	26.	Shannon Whale & Dolphin Foundation
		27.	Slaney River Trust

<b>SWAN Board of Directors:</b>	
Mark Boyden, Chair	Coomhola Salmon Trust
Mindy O'Brien, Vice-Chair	Voice of Irish Concern for the Environment (VOICE)
Geoff Cooper, Director	Irish Water and Fish Preservation Society
Karin Dubsky, Director	Coastwatch Europe
David Healy, Director	Friends of the Irish Environment
David Lee, Director	Cork Environmental Forum
Elaine Nevin, Director	EcoUNESCO
Joachim Schaefer, Director	Cavan Leitrim Environmental Awareness Network