



Kilcatherine, Eyeries, County Cork

<http://www.friendsoftheirishenvironment.org>

*Submission On Forestry Review,
Bridgeena Nolan, Principal Officer,
The Forest Service,
31 March, 2010*

forestryreview@agriculture.gov.ie

Re: Forestry Review

Dear Ms Nolan;

We are pleased to attach a submission to your review. It is limited to the 'Critical Role of Forestry in Relation to Climate change' and the 'The effectiveness of current forestry grant schemes'.

It argues that the current planting policy lessen Ireland's ability to adapt to climate change. It is anticipated that climate change will stress existing water supplies. This is because forestry is permitted where it will impact on the quantity of water. Under certain lowlands conditions the net effect of a mature evergreen forest can be a reduction in the limited water yields of 70% or more with consequent implications for groundwater resources and river flows.

Equally, drainage of peatlands results in a net loss of carbon storage over the forestry cycle on peatlands.

We argue that the current forestry grant scheme encourages the establishment and management of forestry on peat soils which release water borne dissolved organic carbons (DOC) resulting in the formation of carcinogenic trihalomethanes in chlorinated potable water supplies. DOC is difficult and expensive to remove and has **significant economic and health implications as the tax payer is supporting the polluter and in turn paying the price to eliminate the pollution.**

We would be grateful if you considered these argument in the context of your Review and would be pleased to provide references and further information.

Yours, etc.,
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Director

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'THE EFFECTIVENESS OF CURRENT FORESTRY GRANT SCHEMES'

Integration of forestry and water quality and supply are essential to ensure effective use of afforestation grant schemes.

Forestry Grants must no longer be paid where forestry will have negative impacts on water yields and/or quality.

Protection of source is the most cost effective solution for quantity and quality of water supplies. Due to the importance of proper planning for water provision and quality for potable water supplies (in terms of economic costs and human health) the principle of source protection must be established at catchment level.

The failure to protect the source of our water supplies has significant economic and health implications. Under current grant aided schemes, the tax payer is supporting the polluter and in turn paying the price to eliminate the pollution.

The cumulative impacts of degraded peat soils - principally drainage, peat extraction and forestry plantations - must be assessed before forestry policy is determined.

Degradation of peat soils causes the release of historic heavy metals and water borne pollutants, in particular dissolved organic carbons (DOC) which, in chlorinated potable water supplies, results in the formation of carcinogenic trihalomethanes. DOC is difficult and expensive to remove which has significant economic and health implications.

The failure to assess this issue and consequent inability to formulate sustainable forestry policy is evidenced by the fact that:

- The actual impact of peat extraction and forestry on potable water quality, particularly cumulative impacts, are unknown (EPA).
- The area of forestry that requires fertilisation on a catchment basis is not known (Forest Service).
- No assessment for water provision or quality have been undertaken (EPA).

We submit that the following principles of forestry policy are essential for catchment-based forestry relating to water supply and quality:

Forests are established and managed to maintain or improve:

- Water yields
- Water quality
- Carbon storage

WATER QUANTITY

Forestry research suggests there may be a 1.5-2.0% reduction of potential water yield for every 10% of a catchment under mature evergreen forest.

In the drier and less windy climate in the lowlands the net effect of a mature evergreen forest can be a marked reduction in the limited water yields that characterise these areas, amounting to as much as 70% or more. This can have important implications for the quantity and quality of lowland groundwater resources and the maintenance of river flows.

Proposals for new planting of evergreen species pose a significant threat to water supplies.

Broadleaved woodland presents a smaller threat to water resources, and may even enhance supplies in some areas.

One exception is the large-scale planting of short rotation coppice crops of poplar and willow and in such cases it is recommended that sensitive locations be avoided.

On peatlands where afforestation is a major component, drainage as part of site preparation has been found to significantly reduce water retention, resulting in faster runoff times. In addition, evapotranspiration will be a further factor in reducing stream flows. The rate of evapotranspiration will increase as the forest canopy closes and the trees mature.

These rivers are often important spawning and nursery habitats for salmonids and therefore the impact on local fish populations can be severe.

WATER QUALITY

Nutrient Enrichment

Forestry can affect nutrient enrichment in a number of ways.

The application of phosphate and nitrogen fertilisers that are required as conditions of grant payments to achieve the satisfactory establishment of forests on certain soil types – peat and peaty podsoils - can lead to significant leaching losses. Nutrient releases following large-scale felling operations, windblow or wildfire can also present a problem for receiving waters.

In the lowlands where the generally higher nutrient status of soils means that woodlands rarely require fertiliser applications. Nutrient inputs tend to be much lower compared with agriculture and thus woodland planting on ex-agricultural land may help to protect water quality within sensitive areas such as Nitrate Vulnerable Zones and grant support for these areas is effective.

The main exception even in lowlands concerns evergreen forests, which can enhance the capture of nitrogen pollutants from the atmosphere and concentrate nitrate levels in groundwater. High nitrogen inputs can also result where forests are downwind of local pollutant sources, such as intensive pig- and poultry-rearing units.

Sediments and Dissolved Organic Carbon

Forestry has caused unacceptable turbidity levels and siltation which can seriously disrupt water treatment works, water supplies and fisheries. The financial consequences of such incidents can be very great.

Sediment transport results in damage to aquatic organisms e.g. deposition of fine peat silt on river beds (impacting on salmonid spawning beds and their food chain in rivers), increased turbidity in lakes and rivers (resulting in a reduction in light penetration and primary productivity), coating of aquatic plant surfaces with fine particles (inhibiting photosynthesis) and nutrient enrichment.

Sediment can also have a high nutrient, metal or pesticide content, which can contribute to the enrichment and contamination of downstream waters, particularly reservoirs and lakes where the sediment may remain for a considerable period of time.

Sediment traps are not effective for the removal of fine sediments.

High levels of dissolved organic carbon (DOC) are difficult to treat for potable water supplies and chlorination can lead to the production of carcinogenic trihalomethanes (THMs). Waters containing algae are also prone to THM formation. In their 2007 EPA water quality report THMs are identified as the major threat in 55 public drinking water supplies.

CARBON STORAGE

The drainage of peat required for afforestation lowers the water table. This reduces the output of methane, but leads to a vast increase in emissions of carbon dioxide.

When drained peat is afforested the extra carbon stored in the trees planted on the peat will compensate for this loss during the first cycle of planting, but the system will suffer a net loss of carbon in the long term. While the trees are eventually cropped, or stop growing, the peat bog will continue to leak carbon dioxide for many centuries. If you want to plant forests to store carbon, you don't plant on peat.

By contrast, well-drained lowland soils accumulates carbon when planted with trees. But the rates of accumulation - around 1 tonne per hectare per year - are low compared to the losses from forested peatlands.

ENDS