



The Battle to Protect Soils and Streams

NEFA BACKGROUND PAPER

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Application of prescriptions in the real world is where the process can often fail (Grayson *et al.* 1993). In practice poor implementation is a common occurrence (Croke and Hairsine 1995, Croke *et al.* 1999, Pugh 2000). Croke and Hairsine (1995) note *“the economic pressure on contractors to supply resources often compromises code compliance and in some instances forces deliberate violations”*. Croke *et al.* (1999) note *“Through the course of the project, we have observed many instances of poor road and track drainage, resulting from operator confusion and poor communication”*. The excuse of ignorance is not tenable for repeated offences, particularly when these occur year after year.

Prescriptions intended to reduce soil erosion and stream pollution have long applied to forestry operations, and for just as long have been routinely ignored and contravened. Guidelines for the mitigation of soil erosion during and after logging operations were first formulated in 1975 by a working party comprising representatives of the Soil Conservation Service, Forestry Commission and Catchment Areas Protection Board. Called the ‘Standard Erosion Mitigation Conditions for Logging in New South Wales’, they were meant to be applied to all forestry operations on Crown lands and ‘protected lands’.

In part, the Standard Erosion Mitigation Conditions specified:

A filter strip shall be retained where the catchment area of a stream or drainage line exceeds 100 hectares or such lesser area as otherwise specified. The minimum width of any filter strip shall be 20 metres along each side of a drainage line or banks

of a stream. Both the width of the filter strip and catchment area may be varied if, in the opinion of the Forestry Commission or the Commissioner, shape erosion hazard or stream conditions so warrant.

In May 1981 Commissioner Wal Gentle told a "Senior Officers Conference" that their field performance was *"too sloppy; there is no doubt in anyone's mind that the Conditions were being breached, and seriously, almost all the time"*. Stating:

Our barrister told us that we certainly could never put in evidence the fact that what was happening in the bush was in fact what we said was happening when we wrote these erosion conditions into our management plans. In other words, the field performance was too sloppy. So a very, very big improvement has to be made by everyone because these are the grounds we can be pulled into the Land and Environment Court for breaching the law, which we are doing.

In the late 1980s NEFA found that the Standard Erosion Mitigation Conditions were still being routinely breached, sometimes being totally ignored.

In April 1992 NEFA blockaded a logging operation at Mount Killekrankie (Oakes SF) in the New England Wilderness to halt horrendous logging and roadworks that were causing massive erosion and pollution of the Bellinger River. CaLM (1992) investigated our complaints and found numerous violations of the SEMCs, including 26 incursions into streamside protection areas, pushing of soils into watercourses, unmapped drainage lines "did not obtain special protection", logging occurred on mapped "steep slideslopes", 86 required cross banks were not constructed, 179 cross banks were inadequate or failed, snig track grades were exceeded on 82 readings, snig tracks were constructed on side slopes in excess of 30° on 220 occasions, and a log dump was constructed in a drainage line (to name just a few). CaLM (1992) estimated soil loses were 3,300 tons from snig tracks, at least 17,140 tons from snig track batters, and 67,700 tons from road batters, noting:

In total this represents an estimated 88,140 tons of soil lost from the batters and tracks of these compartments. If it was necessary to carry that tonnage out of the forest in trucks it would take 8,814 loads or at one truck per hour over a 40 hour week it would take over 7 months to remove that volume of fill.

CaLM (1992) identified that one of the problems was:

The language used in the SEMC's and the discretionary nature of the clauses indicates their intent as an extension or advisory document based on soil conservation principles, not a set of enforceable conditions in a legal document.

...

It is not possible to determine whether some clauses within the SEMC's have been correctly complied with because they allow for discretionary approval and it is not known whether this approval was given or not. Similarly some clauses refer to the intent of the operator, and this cannot be judged ...In other cases the clauses are worded loosely, reflecting their intent as guidelines not prescriptive regulations against which performance can be measured. ...

They also note that:

It was apparent that the operator had no understanding of the standards with which he was obliged to comply.

The supervisor, likewise

- *had no understanding; or*
- *did not check or see the operation; or*
- *if he did understand, was not prepared to enforce the conditions.*

NEFA collected the required expert evidence, though did not proceed with a proposed court case on the basis that the newly formed Environmental Protection Authority would take action. The Forestry Corporation was charged with an offence of polluting waters contrary to s 16 of the *Clean Waters Act* 1970, and while the offence was proven no conviction was entered against the Forestry Corporation.

This case did prove the need for legally enforceable prescriptions for forestry and did result in the application of Pollution Control Licences to Forestry Corporation's operations. Standard Erosion Mitigation Guidelines for Logging (SEMGL) were consequently drafted by CaLM in 1994 to strengthen the conditions under which logging operations can be carried out in order to control erosion. The Forestry Corporation vigorously resisted their adoption, with the SEMGL's having to be imposed upon them by the Minister for Planning as part of the Environmental Impact Statement (EIS) determination process.

EPA's 1994 intended minimum filter strip width for streams and drainage lines/

	Low Hazard		Moderate Hazard		High Hazard	
	Slopes <18o	Slopes >18o	Slopes <18o	Slopes >18o	Slopes <18o	Slopes >18o
Watercourses	20m	30m	30m	40m	40m	50m
Drainage features (catchment >30ha), wetlands, swamps, drainage plains	10m	20m	15m	20m	20m	30m
Drainage features (catchment <30ha)	5m	5m	10m	10m	15m	15m

The EIS process was a total failure, only a few were ever determined and the Forestry Corporation managed to avoid the improved regulations for most of their operations until the adoption of interim Conservation Protocols (NPWS 1996) as an outcome of the IAP. Though the EPA's intended prescriptions were greatly reduced in the process, as is apparent from the reduced filter strip widths. The Regional Forest Agreements replaced these with the current Environmental Protection Licences in 1999.

EPA's 1999 minimum filter strip width for mapped and unmapped drainage lines, prescribed streams and watercourses in public native forests (metres - measured along the ground surface).

Stream Order	Inherent Hazard Level 1	Inherent Hazard Level 2	Inherent Hazard Level 3
Unmapped	10	10	15
1st order	10	15	20
2nd order	15	20	25
3rd order or greater	20	25	30

EPA's 1999 minimum filter strip width for mapped and unmapped wetlands and swamps in native forests (metres - measures along the ground surface).

	Total Area of Wetlands or Swamps (ha)	
	0.01 - 0.5 ha	Greater than 0.5 ha
Wetlands or Swamps	10	40

Mapped drainage lines are those identified on 1:25,000 topographical maps. While the identification of streams on these maps is relatively good, many smaller streams are often missed, and some larger ones, particularly in dense forests. These missed streams are the "unmapped drainage lines" protected by the EPL. The EPL requires the exclusion of logging from within 10 metres, and the exclusion of machinery from within 5 metres, of unmapped drainage lines. An additional 10 m wide protection zone is applied in which machinery disturbance is meant to be minimised. The Fisheries Licence also protects these in the vicinity of records of threatened fish (when Fisheries bother to report their presence to Forestry Corporation).

As an outcome of the RFA it was intended that unmapped streams would be protected in accordance with the Environmental Protection Licence (condition D6) and Fisheries Licence (condition 7). To account for this in determining the available timber yields modeling was undertaken to identify likely unmapped streams and likely highly erodible areas, which were excluded from the net harvest area for yield assessments. These areas "*of modelled GIS data where field verification is required to accurately map the features*" were subsequently classified as Forest Management Zone 8 on the basis that field investigations would be undertaken as harvesting progressed to determine the locations of the unmapped streams and rezone them for permanent protection as FMZ3A. This rezoning never happened and such areas are now treated as part of the nett harvesting area.

In 1997 the EPA prosecuted the Forestry Corporation for three breaches of its Pollution Control Licence .in Nullum State Forest following a blockade by local residents The Forestry Corporation pleaded guilty and were fined \$25,000 plus costs. Sheahan J (1997) commented:

The Forestry Commission, although gaining a profit from its activities, carries out a function in the public interest, and the public looks to the public body involved in the industry to set some standard for the private sector of it, to be the "leading edge" operator in the industry.

The forestry industry must be persuaded to adopt preventative measures because the potential for harm to the environment is great, and is a public concern reflected in the relevant legislation. Such harm as is an inevitable consequence of industry operations must be minimised as to extent and duration.

A pollution control licence "imposes... a degree of public trust", per Stein J in EPA v Caltex Refining (Unreported, 21 July 1994), in that the licence permits a licence holder to pollute within the constraints of that licence.

This comprehensive regulation achieved by the RFA was short-lived. In 2003 the EPA prosecuted the Forestry Corporation after 600 cubic metres of fill from a road they had constructed in Chichester State Forest collapsed into a creek in contravention of the

Environmental Protection Licence. The ground slope of the road exceeded 30 degrees, the engineer's plans had been changed and the track was poorly constructed. The parties agreed that "*Quality assurance procedures were not implemented to ensure that the road was constructed in accordance with accepted procedures and guidelines. Accordingly the failure resulted from inadequate site planning, poor construction techniques and methodologies and unsuitable equipment*". Estimated costs for rectification were \$206,000. The court concluded there was harm caused to streams, that were both avoidable and foreseeable, though because of their guilty plea fined the Forestry Corporation \$30,000 and awarded costs. .

This offence occurred in May 2003 and the judgment was delivered in December 2004, though in May 2004 the Forestry Corporation was successful in getting the Environment Protection Licence amended to have the effect of excluding "non-scheduled" forestry operations from requiring licences. Since then the Forestry Corporation have been refusing to obtain licences for increasing numbers of their operations. Now over 90% (often over 97%) of their logging operations are no longer subject to EPLs. For example in 2006/7 there were 221 forestry operations in the UNE region, the EPL applied to 23 of these, leaving 198 operations where logging occurred without EPL coverage. This enables the Forestry Corporation to avoid regulation, while also having the benefit of avoiding some requirements of the EPL.

While Forestry Corporation claim that they will still abide by the intent of the EPL our recent audits have found that they routinely breach prescriptions intended to protect water quality and fish habitat, most notably by refusing to implement prescriptions for unmapped drainage lines, wetlands and drainage depressions, dropping trees into stream buffers, poorly constructing and failing to rehabilitate stream crossings, failing to establish adequate drainage on tracks and roads, and otherwise being careless (see **Protecting Streams**).

Most particularly, the Forestry Corporation refuse to apply riparian buffers to unmapped streams. When the Forestry Corporation was granted exemption from the EPL for most of their operations in 2004 they obtained a major resource windfall by allowing themselves to log the banks of the unmapped streams and increasing disturbance to drainage depressions. These are now routinely logged despite their overwhelming importance for catchment health (see **The Need for Stream Buffers**).

While Justices Stein and Sheahan (1997) consider that "*A pollution control licence imposes... a degree of public trust*", the public can have no faith in the adequacy of the EPL or its application by the Forestry Corporation. The failure of the EPA to ensure that minimum requirements are implemented becomes even starker when the high rainfall intensities experienced in north east are accounted for, along with the increases in intensities being experienced as a result of climate change (see **North East NSW expected climate changes**).

The EPA (2014) are now intending to change the approach to stream protection to one based on catchment size, with better identification of streams, particularly currently unmapped streams in the headwaters. Stream buffers will be based on the size of the catchment area (ie 50ha, 50-100ha, 100-200ha, etc). They say that some equivalence will be maintained with existing buffers (ie there will be no net change to protected areas or timber availability), though this may mean that because of the high number of unmapped

streams identified that they will significantly reduce protection for already mapped lower order (ie 1st order) streams in return for some protection for currently unmapped streams.

Currently stream exclusion areas are required to be manually marked in the field, with buffers measured from the top of the stream bank. The EPA (2014) are proposing that there will be less (no?) marking of riparian and other exclusion areas in the field and more reliance upon GPSs. This is all part of the new approach to mechanical logging, with no requirement for anyone to get out of their logging machines and set foot in the forests. GPSs have limited accuracy, particularly in valleys under dense canopies, and are unable to locate the tops of stream banks to measure from. Even with this marking there are frequent reckless breaches. Without marking, and the vagaries of GPSs, there is likely to be a far worse, and unenforceable, outcomes.

Logging impacts on streams

The Need for Stream Buffers

Protecting Streams

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