

An Argument For Placing Logging Roads Under The NPDES Program

*By Kevin Boston & Matt Thompson**

INTRODUCTION

Recent judicial decisions addressing the impact of forest management on water quality suggest that the Environmental Protection Agency's clarification of regulations under the Clean Water Act (CWA) may become increasingly important. Courts currently must decide whether water pollution from forest roads and their drainage systems meets the criteria for point source pollution, rendering such sources subject to National Pollution Elimination Discharge System (NPDES) permit requirements under the CWA. Two federal district courts recently reached conflicting decisions regarding this very issue. In *Environmental Protection Information Center v. Pacific Lumber Co.* ("EPIC"), the court found that ditches and culverts associated with a forest road drainage system fall within the CWA's point source category.¹ However, in *Northwest Environmental Defense Center v. Brown* ("NEDC"), a case now on appeal in the Ninth Circuit, another district court reached the opposite conclusion.² Differences in the rulings center largely on whether the disputed pollutant—fine sediment generated from forest roads—is discharged into streams naturally or as a result of human activity.³

In this Article, we argue that, where transported to navigable rivers, the sediment generated from certain features of forest roads categorically meets the statutory requirements to be regulated under the CWA

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1. *Envtl. Prot. Info. Ctr. v. Pac. Lumber Co.*, 469 F. Supp. 2d 803 (N.D. Cal. 2007).

2. *Nw. Env'tl. Def. Ctr. v. Brown*, 476 F. Supp. 2d 1188 (D. Or. 2007), *appeal argued*, No. 07-35266 (9th Cir. Nov. 19, 2008).

3. Other pollutants can also be found on forest roads, such as automotive oils, lubricants, and dust from brakes, which are common to all roads. Additionally, soil is often deposited on the surface of the roads from logging operations and this material is collected in the tire treads and later deposited onto different segments during hauling operations. Our focus in this Article is on fine sediment originating from the road and ditch surfaces.

NPDES program. Specifically, we contend that road drainage ditches, which deliver sediment directly into streams, constitute point sources under the CWA. Our analysis provides support for the *EPIC* ruling that forest road drainage structures constitute point sources. Further, our analysis refutes the *NEDC* ruling that this type of pollution is more closely aligned with nonpoint source pollution, as traditionally understood. We will demonstrate that the argument for a nonpoint source classification is founded on a significant mischaracterization of the processes of sediment generation and delivery.

CLEAN WATER ACT: BACKGROUND

The question posed in this Article is whether sediment delivery from forest roads and associated drainage systems meets CWA requirements to be regulated under the NPDES program. An NPDES permit is required where a discharged material: (1) reaches the nation's waters; (2) is classified as a pollutant; and (3) is discharged from a point source. The CWA defines a point source as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, [or] well... from which pollutants are or may be discharged."⁴ The Environmental Protection Agency (EPA) has promulgated regulations directly concerning silvicultural activities, which include a definition of silvicultural point sources. The relevant portion of the regulation reads:

Silvicultural point source means any discernible, confined and discrete conveyance related to rock crushing, gravel washing, log sorting, or log storage facilities which are operated in connection with silvicultural activities and from which pollutants are discharged into waters of the United States. The term does not include non-point source silvicultural activities such as nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance from which there is natural runoff.⁵

IMPACTS OF FOREST ROADS

The largest environmental impact from forest roads often manifests in aquatic resources because of the sediment runoff in excess of that which naturally occurs. Forest roads differ from many other types of roads in that they typically have unsealed surfaces, composed of either compacted aggregates (crushed rock) or native soil. Over time, however, heavy vehicle traffic (e.g., timber haul) necessary to the forestry industry can break down the aggregate into fine sediment available for transport

4. 33 U.S.C. § 1362(14) (2008).

5. 40 C.F.R. § 122.27(b)(1) (2008).

via runoff. During periods of precipitation, the fine sediment available at the road surface, along with other pollutants, can be transported into drainage ditches located along the hillside of forest roads. Lateral drainage structures usually deposit runoff onto the forest floor where it will infiltrate into the soil. However, there are road segments where the water travels downslope in the ditch until it reaches a stream. In this way, the fine sediment produced during hauling on unsealed aggregate roads pollutes local aquatic resources to a significantly greater extent than sediment generated during naturally occurring erosion and runoff.

In addition to affecting erosion processes, roads can significantly alter hillslope hydrology. They intercept rainfall and subsurface flow, divert water from natural flow paths, and concentrate water on the surface or in drainage ditches. The cut banks created during road construction change the subterranean flow path of water and can cause these subsurface flows to surface, and increase the flow in the road-side ditch. Experimental tests have demonstrated that the subsurface flow following a storm is composed at least in part of “old” water, or water that had been stored in the soil prior to the storm.⁶ When redirected into and channelized in a ditch, surface runoff and intercepted flow may be more rapidly transported to streams or deposited directly into the nation’s waters.

CASE LAW

There are four pertinent cases that deal with the nature of silvicultural point and nonpoint sources of pollution, culminating in the two recent district court decisions. First, in *Natural Resources Defense Council v. Costle* (“NRDC”), the court ruled on the legality of EPA regulations exempting entire categories of point sources from NPDES requirements, including all silvicultural point sources.⁷ Despite perceived technical and administrative difficulties (EPA estimated an “intolerable permit load” of three hundred thousand silvicultural point sources), the court clearly stated that NPDES permits are required for all point sources and that the EPA does not have the authority to create categorical exemptions to this rule.⁸ However, the court gave the EPA latitude in its administration of these permits, not mandating uniform effluent limitations and allowing the use of area-wide or general permits.⁹ Notably, the court recognized the inherent ambiguity in assigning a point source classification where stormwater runoff is involved, and stated that

6. See Jeffrey J. McDonnell, *A Rationale for Old Water Discharge Through Macropores in a Steep, Humid Catchment*, 26 WATER RESOURCES RES. 2821, 2828 (1990).

7. *Natural Res. Def. Council v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977).

8. *Id.* at 1380–82.

9. *Id.* at 1379–81.

the EPA does have interpretational powers for defining point and nonpoint sources.¹⁰

More recently, however, the *Forsgren* court limited the EPA's power to define point and nonpoint source pollution to those circumstances where there is room for "reasonable interpretation of the statutory definition."¹¹ At issue was whether the U.S. Forest Service (Forest Service) is obligated to obtain an NPDES permit prior to aerial application of pesticides. All parties agreed that a mechanical spraying apparatus met the statutory definition of a point source, but the Forest Service argued that the silvicultural regulations excluded aerial spraying from a point source classification by listing pest control among nonpoint source activities. The Ninth Circuit ruled that the list of point sources in the silvicultural regulation is not exhaustive and therefore aerial application constituted a point source. Further, the court established that the EPA does not have the authority to define a source as nonpoint if it clearly meets the statutory definition of point source.¹²

Forsgren also articulated criteria to determine what constitutes nonpoint source pollution, which is not statutorily defined. Nonpoint sources occur where

1. pollutants discharged are induced by natural processes, including precipitation, seepage, percolation, and runoff;
2. pollutants discharged are not traceable to any discrete or identifiable facility;
3. pollutants discharged are better controlled through the utilization of best management process and planning techniques.¹³

Later in this Article, we use these three criteria in our analysis of forest road drainage structures.

In *EPIC*, plaintiffs EPIC contended that respondents Pacific Lumber Co. ("PALCO"), a large forest owner in northern California, violated the CWA by discharging sediment without obtaining a NPDES permit.¹⁴ As a preliminary matter, EPIC argued that PALCO's system of ditches and culverts used to drain forest roads constituted point sources. Further, EPIC contended that the EPA, a co-defendant, committed an *ultra vires* (i.e., beyond its power) act through their promulgation and interpretation of the silvicultural regulations. *EPIC* reasoned that the regulations effectively and illegally exempted point source discharges of stormwater and pollutants.

Performing a *Chevron* analysis, the court first determined that the CWA lacked clear indication of congressional intent regarding the exact

10. *Id.* at 1378–79.

11. *League of Wilderness Defenders v. Forsgren*, 309 F.3d 1181, 1183–90 (9th Cir. 2002).

12. *Id.* at 1187–90.

13. *Id.* at 1187–88.

14. *Env'tl. Prot. Info. Ctr. v. Pac. Lumber Co.*, 469 F. Supp. 2d 803, 810 (N.D. Cal. 2007).

definitions of point and nonpoint sources in the silvicultural context.¹⁵ Next, the court found that the silvicultural regulations did constitute a reasonable construction of the CWA, citing the precedent of *Forsgren* to construe the regulations as consistent with the CWA's point source definition.¹⁶ However, the court added the caveat that the silvicultural regulations must be read so as to not conflict with the statutory definition of a point source.¹⁷ That is, the regulations may not define as nonpoint sources discrete conveyances that would otherwise fall under section 502(14) of the CWA. The court next held that ditches, culverts, and other components of forest road drainage systems may constitute point sources as a matter of law.¹⁸ Further, the court argued that the silvicultural regulation's own language does not allow consideration of forest roads as nonpoint sources because, upon entering the system of conduits, the "runoff ceases to be the kind of 'natural runoff' §122.27 expressly targets."¹⁹

NEDC brought a similar suit against Brown, the Oregon State Forester, arguing that ditches, culverts, and other forest road drainage structures constitute point sources, and that discharges of stormwater from roads in Tillamook State Forest therefore require NPDES permits.²⁰ In contrast to the *EPIC* ruling, the *NEDC* court found that the silvicultural exemption did apply, effectively classifying all road-related drainage as nonpoint source pollution.²¹ Beyond referring to the *EPIC* decision as unconvincing, the *NEDC* opinion offers no analysis regarding whether the structures in question fall under section 502(14) point source definition. Rather, the court cites the *Forsgren* criteria to argue that pollution from forest roads is more accurately described as nonpoint source pollution. The court described the activity of timber hauling as a traditional dispersed activity and deemed forest road-related sediment delivery to be nothing more than deposition of pollutants that are ultimately carried to water bodies by natural runoff.

ANALYSIS

As the first step in our NPDES analysis, we consider whether sediment delivery from ditches would constitute a discharge normally requiring a permit. We begin by assuming that the discharges are

15. See *Envtl. Prot. Info. Ctr. v. Pac. Lumber Co.*, 2003 U.S. Dist. LEXIS 25734, *39 (Oct. 14, 2003) (applying *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837 (1984)).

16. See *id.* at *45-47.

17. See *id.* at *48-51.

18. See *Envtl. Prot. Info. Ctr. v. Pac. Lumber Co.*, 301 F. Supp. 2d 1102, 1113 (N.D. Cal. 2004).

19. *Envtl. Prot. Info. Ctr.*, 2003 U.S. Dist. LEXIS 25734, *50.

20. *Nw. Env'tl. Def. Ctr. v. Brown*, 476 F. Supp. 2d 1188, 1191 (D. Or. 2007), *appeal argued*, No. 07-35266 (9th Cir. Nov. 19, 2008).

21. See *id.* at 1197.

ultimately deposited into the nation's water. Additionally, the material transported from the road is a mixture of oil, lubricants, rock and sand, clearly defined as a pollutant under section 502(6) of the CWA. Therefore, we must ask whether the drainage structures are point sources. Recall that the CWA defines point sources as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, [or] well... from which pollutants are or may be discharged."²² We are inclined to agree with the *EPIC* court that man-made ditches designed to collect, channelize, and convey runoff from both surface and subsurface sources containing pollutants appear to clearly fit this statutory definition. This argument is bolstered by the fact that the very type of conveyance under consideration, a ditch, is listed by name in the definition. Therefore, in-sloped and crowned road segments with ditches that empty into streams meet the CWA criteria of a point source. Stormwater exemptions, which exclude discharges composed entirely of stormwater from NPDES permit requirements, do not apply because, as we state above, the runoff is composed of both rainwater and intercepted subsurface flow.

Next we consider the silvicultural regulations, which define those forest activities, including "surface drainage," from which there is natural runoff as nonpoint source pollution.²³ Delivery mechanisms are significantly altered via the man-induced processes of interception, diversion, and channelization. Where storm runoff naturally flows down an out-sloped portion of a road segment, it may be aptly characterized as natural runoff. But where runoff is redirected into a man-made ditch, mixes with intercepted subsurface flow from the hillside so that the total flow is no longer composed entirely of stormwater, and is directed along a non-natural flow path to empty directly into a stream, we contend the runoff is definitively non-natural. Therefore the silvicultural exemptions do not apply here. Again, we agree with the *EPIC* decision, but note that the runoff is non-natural not only because the water enters a man-made conduit, but further because the *entire* hydrology of the runoff process has been altered. Even if the silvicultural regulation's nonpoint source definition seems appropriate, from *Costle* and *Forsgren* we know that the EPA cannot exempt or define away that which statutorily constitutes a point source. It is not clear to us that the court in *NEDC* applied a similar analysis. Rather, the court chose to rely on an analogy to nonpoint source pollution as described in *Forsgren*.²⁴ We now turn our analysis to this same three-pronged test for nonpoint source pollution.

The first *Forsgren* criterion requires that the pollutants discharged are induced by natural processes. As we note above, fine sediment stems

22. 33 U.S.C. § 1362(14).

23. 40 C.F.R. § 122.27(b)(1).

24. *Nw. Env'tl. Def. Ctr.*, 476 F. Supp. 2d at 1197.

from the breakdown of aggregate on the road and ditch surfaces over time. This sediment is generated and made available for delivery through non-natural processes such as timber hauling, road maintenance, and ditch cleaning. The deposition of oil and other vehicle residues is not a natural process. Moreover, while an alternate reading of the first criterion requires the *discharge* to be induced by natural processes, the relevant fine sediment discharge still fails to meet this criterion. Construction and use of a forest road represents a significant manipulation of the landscape, altering numerous geomorphic and hydrologic processes. As we describe above in relation to the silvicultural regulation, the runoff conveying the pollutants is non-natural.

The second criterion requires that the pollutants cannot be traced to any discrete or identifiable facility. However, sediment generated from a road segment during hauling activities *can* be linked back to that individual road segment, since road segments are easily identifiable in the field as the section of road between drainage structures, such as a cross-drain culvert or point where a grade reversal occurs. This criterion is also not met.

The third criterion states that the pollutants discharged are better controlled through best management practices. Arguably, this is true for road management. Alternative construction and hauling operations practices lessen the production of sediment during log hauling. Nevertheless, that road-related pollution is potentially better controlled through best management practices does not by itself turn a drainage ditch into a nonpoint source of pollution. Two of the first three criteria are not met, rendering the question of best management of minimal importance. Further, it was stated in *Costle* that the EPA possesses some leeway when issuing permits, such that a permit may, for instance, proscribe certain management practices.²⁵ Issuance of general or area-based permits may require the adoption of certain practices, or the abandonment of others. For example, such permits might require use of better quality aggregates on forest roads. Foltz and Truebe investigated the quality of local rock sources from eighteen rock pits found in Idaho, Oregon, South Dakota, and Washington.²⁶ Their results showed that the marginal-quality aggregates produced 2.9 times (by weight) more sediment than good quality aggregates, indicating that the use of high quality aggregate can lessen the production of sediment from forest roads.²⁷ However, the existence of potential best management practices does not affect our analysis that ditches meet the statutory definition of a point source, and that the road-related runoff in ditches is non-natural.

25. *Natural Res. Def. Council v. Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977).

26. Randy B. Foltz & Mark Truebe, *Locally Available Aggregate and Sediment Production*, 1819 *TRANSP. RES. REC.* 185, 185 (2003).

27. *Id.* at 190.

CONCLUSION

Our analysis demonstrates that certain forms of pollution stemming from forest roads do not satisfy either the EPA-promulgated silvicultural exemption or the *Forsgren* nonpoint source pollution test. Rather, and in alignment with both the intent and statutory language of the CWA, forest roads should be considered point sources subject to NPDES permitting requirements.

The precedent set by *Costle* and *Forsgren* turns first to the statutory language. If the discharge in question clearly stems from a point source not statutorily exempted, the court need proceed no further. Our analysis demonstrates that forest road drainage ditches that deliver directly to streams satisfy every criterion required for a point source classification. In *NEDC*, the court appears to have minimized this analysis by dismissing the *EPIC* ruling without offering any reasons why the statutory requirements are not met. Rather, the court in *NEDC* based its ruling on a discussion of nonpoint source pollution from *Forsgren*.²⁸ As we demonstrate, even this test fails upon correct application. The *NEDC* court grossly mischaracterized the processes of sediment generation and delivery. Pollutants are not “deposited” on the road surface by natural processes, but rather generated by timber haul and other heavy vehicle traffic.²⁹ Runoff carrying pollutants from forest roads into water bodies does not flow along natural pathways, but rather is intentionally intercepted, diverted, collected, channelized, and conveyed, with significant environmental impacts. As such, this runoff definitively requires permitting under the NPDES program.

28. *Nw. Env'tl. Def. Ctr.*, 476 F. Supp. 2d at 1196-97.

29. *Contra id.* at 1197.