

**Testimony of Mr. Charles M. Tebbutt, Attorney
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**Before the House Committee on
Transportation and Infrastructure's Water Resources and the
Environment Subcommittee**

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Mr. Chairman, members of the Committee, my name is Charlie Tebbutt. I am an attorney who has worked for the great people of this nation to protect their health and the environment for over 20 years.

I have work assiduously since 1988 to try to implement the goals of protecting our nation's waters from pollution, both through enforcement and policy. In these endeavors, I have worked on pollution issues in every region of the United States, from the abundant waters of the Great Lakes and St. Lawrence River to the arid regions of the interior West, and consequently understand the many different impacts that our nation's waters have suffered and continue to suffer. Despite the Clean Water Act's stated goal to eliminate pollution of our nation's waters by 1985, I regret to say we are still a long way from accomplishing this critical mission.

My purpose for presenting testimony to you is three-fold: First, I will briefly discuss the history of the Clean Water Act in order to provide context for the issues considered in the hearing of February 16 and, particularly, the problems with the Bush-era EPA rule. Second, I will discuss some of the case history and the reasons why *National Cotton Council v. EPA*, in which I was lead counsel for the Environmental Plaintiffs, was correctly decided and should not be undone by legislative amendment to the Clean Water Act. Third, I will discuss the practical reasons why the Clean Water Act should not only be left alone in this situation but, even more crucially, why EPA should be fully supported by Congress in implementing the permitting system required by the decision in *National Cotton*. I will provide you with examples from two earlier cases in which I was involved, one of which was the catalyst for the matter that has come before this subcommittee some 13 years later, to show why requiring adherence to the Clean Water Act is so important to reducing exposure to harmful pollutants while still simultaneously protecting public health from pest concerns. I sincerely hope that you will read my testimony and work with me and others who are greatly concerned with your proposed actions to understand how we can move forward to sustain strong Clean Water Act protections for all of the nation's waters and the health of our children and the environment.

Importance of the Clean Water Act

Seven years ago, I presented testimony to this committee about related, but somewhat different, Clean Water Act matters. Parts of that testimony are as directly relevant to the issues presented today as they were then.

Almost 32 years ago, Congress revolutionized our country's approach to controlling and, ultimately, eliminating water pollution, when it enacted wide-ranging reforms to the Federal Water Pollution Control Act. The vision of the 92nd Congress in enacting what is now known as the Clean Water Act stands as one of the legislative pinnacles in the history of this Congress and our country.

Based upon decades of experience, Congress recognized in 1972 that relying on states to fund, implement and enforce effective water pollution control (and resource protection) policies, without the financial, technical, and political assistance of a strong federal program was doomed to continued failure. Congress created a broad but flexible federal "floor" of clean water safeguards, a mandatory but innovative system for protecting the nation's waters and the public's health.

As the legislative history of the Act reflects, "[s]ection [301] clearly establishes that the discharge of pollutants is unlawful. Unlike its predecessor program which permitted the discharge of certain amounts of pollutants under the conditions described above, this legislation would clearly establish that no one has the right to pollute--that pollution continues is because of technological limits, not because of any inherent right to use the nation's waterways for the purpose of disposing of wastes."

Under the Clean Water Act, great advances have been made in reducing water pollution. Of course, the successes have been fewer, and slower in coming, than the 92nd Congress envisioned. This is due to several factors, including recalcitrance and opposition of regulated industries to strong implementation and enforcement of the provisions of the Act to achieve the law's goal of restoring and maintaining the chemical, physical and biological integrity of the nation's waters.

Technologies and scientific knowledge have continued to progress with respect to all pollution sources, thus contributing to a more evolved common sense of how to best use, or avoid or reduce use of, man-made chemicals to address pest issues. While one would hope that common sense translated into sensible action, unfortunately that has not been the case with the pesticide industry. The Clean Water Act is one of the few mechanisms that provide a vision and practical means for continuously improving our handling of dangerous pollutants. Site-specific pesticide permit limitations are fundamentally different than the very general, registration-based approach of FIFRA. The problem presented to this committee, I submit, has thus far been framed by an industry that is hell-bent on maintaining sales and dealing with problems in ways that are no longer the smartest, safest, and most efficacious methods of managing pest problems.

The Clean Water Act provides a regulatory tool to implement the evolving technologies and science of whether pesticides, particularly the most harmful types, are the best means of addressing a problem.

Later in this testimony I will provide you with real-life examples of how applying the principles of best available technology, which in some cases is as simple as thinking about a problem from different perspectives, not only is consistent with the mandates of the Clean Water Act, but also brings about a healthier country to live in. Progress is being made without unnecessarily burdening agriculture, despite what you are presently hearing from exaggerated claims of the pesticide manufacturers and users.

History of the Rule and How We Got Here In the First Place

The issue presently being discussed essentially began with the 1998 filing of a Clean Water Act citizen suit against an irrigation district for discharging an herbicide, Magnacide H, directly into irrigation canals for the purpose of killing aquatic weeds. Because the herbicide is toxic to fish, and its label so noted, it killed 92,000 juvenile steelhead salmon when it flowed from the canals into an adjacent creek. The same problem had occurred in prior years as well. In addition, the canals regularly seeped pesticide-contaminated water into nearby connected natural waterways, thereby causing lower level impacts on fish and wildlife. These intermittent, interconnected waterways were also steelhead spawning grounds. *See* attached article, Register Guard, 12/24/08, *Streams useful to steelhead during state's rainy periods*. The legal issues in the case were ultimately resolved by the Ninth Circuit in 2001. *Headwaters, Inc. v. Talent Irrigation District*, 243 F.3d 526 (9th Cir. 2001). In *Headwaters*, the court ruled that the discharge of the herbicide to surface waters is unlawful unless done pursuant to an NPDES permit and recognized that: “[t]he NPDES permit requirement under the CWA [...] provides the local monitoring that FIFRA does not. (Citing *Wisconsin Pub. Intervenor v. Mortier*, 501 U.S. 597, 614 (1991)(FIFRA does not preempt entire field of pesticide regulation, but instead leaves room for local ordinances requiring permit before pesticide use).” *Headwaters*, at 531. In an amicus brief filed by the United States, the EPA described the different analyses required by the statutes:

In approving the registration of th[e] pesticide, EPA concluded that the overall economic benefits of allowing the use of the product outweigh adverse environmental effects. EPA did not analyze, was not required to analyze, and could not feasibly have analyzed, whether, or under what conditions, the product could be discharged from a point source into particular public water bodies in compliance with the CWA. In approving the registration of Magnacide H, EPA did not warrant that a user's compliance with the pesticide label instructions would satisfy all other federal environmental laws. Indeed, EPA approves pesticides under FIFRA with the knowledge that pesticides containing pollutants may be discharged from point sources into the navigable waters only pursuant to a properly issued CWA permit.

Id. (citing *Amicus Curiae Brief of the United States*, p. 12).

Unhappy with the *Headwaters* decision, a lawyer for Baker Petrolite, the purveyor of the chemical at issue in the case, came to my office shortly after the decision and threatened that if we did not “withdraw our victory”, he and his cohorts would go to Washington and get the case overturned. The pesticide industry groups then wrote and lobbied EPA for a more lenient rule.¹ Their efforts soon bore fruit. A guidance document was first published for comment by EPA about eight months after the industry rulemaking request. *See* 68 Fed. Reg. 48385 (Aug. 13, 2003). On February 1, 2005, EPA published for comment a broader proposed rule and interpretive statement. 70 Fed. Reg. 5093 (Feb. 1, 2005). EPA took final agency action by issuing a rule entitled “Application of Pesticides to Waters of the United States in Compliance With FIFRA, Final Rule.” 71 Fed. Reg. 68483-68492 (Nov. 27, 2006) (“the Rule”). This Rule, codified at 40 C.F.R. § 122.3(h), stated that an NPDES permit would not be required (1) for “the application of pesticides directly to waters of the United States in order to control pests,” or (2) for “[t]he application of pesticides to control pests that are present over waters of the United States, including near such waters, where a portion of the pesticides will unavoidably be deposited to waters of the United States in order to target the pests effectively.” 71 Fed. Reg. 68483/1.

The pesticide industry challenged the Rule as not broad enough, though the legal basis for the claim was marginal at best. The filings in eight different circuits, sometimes by the same law firms with different named clients, appeared to be a thinly-veiled attempt to determine the appellate forum that the industry desired to have hear the case. Different environmental and organic farm entities filed in three circuits. The industry’s choice of the Sixth Circuit was selected by lottery under the federal procedures for multi-district litigation. Thus, CropLife’s recent claims to Representative Issa that “activist courts” issued the decision is a complete falsehood. After losing the case, the industry sought both rehearing before the entire Sixth Circuit and petitioned for certiorari to the United States Supreme Court. Both requests were denied.²

¹ The American Mosquito Control Association submitted a petition for rulemaking to EPA asking for virtually the same result that the 2006 Rule provided. *See* Declaration of Charles M. Tebbutt In Support of Environmental Petitioners’ Motion to Dismiss in *National Cotton Council v. EPA*, ¶¶ 2-3 (AMCA Petition dated 1/16/03 and “White Paper on the Exclusion of Application of Pesticides from NPDES Requirements,” authored by, e.g., Kenneth Weinstein of Latham & Watkins (counsel for Seventh, Tenth, and D.C. Circuit Industry Petitioners in *National Cotton*).

² *CropLife, et al., v. Baykeeper, et al.*, No. 09-533 and *American Farm Bureau Federation, et al., v. Baykeeper, et al.*, 130 S.Ct. 1505 (2010)(pesticide industry's request to have Supreme Court reverse environmental groups' victory is denied).

Why Clean Water Act Permitting Will Provide Needed Protections for Our Nation's Waters and Further Improvement to Children's Health

When a pesticide enters the waters of the United States, FIFRA provides no method for analyzing the local impact and regulating the discharge from a particular point source; however, the CWA does provide for the application of site specific conditions, such as water quality monitoring, buffers based on local conditions or needs of endangered species, existence of section 303 impaired waters, allocation pursuant to watershed TMDLs, and numerous other factors that were not envisioned, and cannot be accounted for, by FIFRA. Since EPA cannot make blanket determinations through its label approval process of whether, or under what conditions and what amounts, it is safe to discharge a particular pesticide into a particular body of water, the CWA's purpose of restoration and maintenance of the nation's water quality is clearly required to fill this void.

In *Headwaters v. Talent Irrigation District*, 243 F.3d 526, 531 (9th Cir. 2001), the court emphasized the necessity of the CWA augmenting FIFRA regulations in protecting our nation's waters from pesticide application:

The label's general rules for applying a herbicide must be observed under FIFRA, but whether the herbicide will enter waters of the U.S., FIFRA provides no method of analyzing the local impact and regulating the discharges from a particular point source. The NPDES requirement under CWA thus provides the local monitoring that FIFRA does not.

As noted by the Ninth Circuit, the United States took the position that FIFRA and the CWA should be read as separate, distinct guidelines:

In approving the registration for Magnacide H, EPA did not warrant that a user's compliance with the pesticide label instructions would satisfy all other federal environmental laws. *Indeed, EPA approves pesticides under FIFRA with the knowledge that pesticides containing pollutants may be discharged from point sources into the navigable waters only pursuant to a properly issued CWA permit.*

Headwaters, 243 F.3d 526, 531 (9th Cir. 2000) (quoting from Amicus Brief) (emphasis added).

These quotes show that EPA was aware of its duties to protect our nation's waters even though it had not taken the steps necessary to provide the protections. A well-structured general NPDES permit from EPA would require a "needs analysis" before a permit is issued for chemical applications. The Clean Water Act is a technology forcing statute-- without such forward-looking provisions industries would still be discharging pollutants at the same rates as in the 1960's when some of our nation's rivers spontaneously combusted from being used as industrial sewers. The Act requires constant revisiting of the best means to address point source pollution. In the case of pesticide use, the best available technology includes progress in understanding the

effectiveness of pesticides and looking at options that address alternatives to chemical applications. This process, generally referred to as Integrated Pest Management, has certainly become the best available technology, and is fast becoming, if it hasn't already become, the industry standard.

EPA also does not assess the impacts of so-called "inert" ingredients in pesticides. FIFRA "inert" ingredients are simply non-target chemicals added to the compound and often are more toxic than the active pesticide ingredient itself. Many hazardous chemicals that are used as pesticide inert ingredients are regulated by EPA through statutory programs other than FIFRA. These chemicals are regulated under these statutes because EPA has made individual determinations that each of them are toxic, flammable, explosive, hazardous, or otherwise dangerous to human and environmental health. The fact that other statutory programs regulate so many chemicals used as inert ingredients demonstrates the extent to which many of these chemicals present an unreasonable risk of injury to human health and the environment and highlight some of FIFRA's many limitations.

In fact, many inert ingredients are listed as "toxic pollutants" under section 307 of the Clean Water Act and as extremely hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).³ EPA has no way to assess the risks of these inert ingredients under FIFRA. The CWA, however, partially fills this gap by providing EPA with a mechanism to determine site specific concerns related to these chemicals that are otherwise unknown to the public.

Two cases illustrate how NPDES permitting can spur the effective use of non-pesticide or reduced pesticide alternatives. In the first case, after a challenge to its unpermitted aquatic pesticide use, Idaho's Gem County Mosquito Abatement District eliminated the direct discharge

³ At least sixteen inert ingredients are identified as toxic under the Clean Water Act, as listed in EPA's Substance Registry System (SRS), *available at* <http://www.epa.gov/srs/>. At least ninety-six inert ingredients have been evaluated for carcinogenicity by the International Agency for Research on Cancer (IARC), according to the SRS. Of these, two inert ingredients are classified as carcinogenic to humans and seventeen are classified as possibly carcinogenic to humans. Additionally, at least eleven inert ingredients are identified as "flammable" by the Clean Air Act in the SRS. "Agents Reviewed by the IARC Monographs", volumes 1-88, *available at* <http://www-cie.iarc.fr/monoeval/Listagentsalphorder.pdf>. EPA has "long known and acknowledged that some inert ingredients are not benign to human health or the environment. The 'inert' ingredients in some products may be more toxic or pose greater risks than the active ingredient." EPA's Pesticide Registration Notice 97-6, *available at* http://www.epa.gov/opppmsd1/PR_Notices/pr97-6.html. Overall, there are 374 chemicals included as hazardous under other federal statutes that are also included in EPA's list of inert ingredients under FIFRA. See Petition to U.S. EPA of Northwest Coalition for Alternatives to Pesticides, *et al.*, to Require Disclosure of Hazardous Inert Ingredients on Pesticide Product Labels, filed July, 2006.

of chemical pesticides to water, implemented programs to reduce mosquito habitat, and significantly reduced pesticide use overall. See Dill Decl. Supp. Pet. Opp'n EPA Mot. Stay Mandate ¶¶ 6-7 (5/8/09) in *National Cotton Council v. EPA*. This approach has proven successful in controlling pests and insect-borne disease: Gem County experienced a *decrease* in the incidence of West Nile virus after the settlement terms began being implemented. *Id.* ¶ 7. The Gem County experience has shown, for instance, that simply doing surveys of pests before regularly applying pesticides can reduce overall pesticide use by many times. Concomitantly, pest resistance to chemicals is lessened by avoiding unnecessary uses. Aerial spraying, known to be the least efficacious means of mosquito control and to create the widest route of human exposure, has also been eliminated. Instead, application of better science, not to mention good old-fashioned common sense, has led to a greater emphasis on less toxic larvacides to control mosquito populations in the first instance and then improved mosquito population surveys to determine whether, where and when pesticides should be applied. This type of management improvement has been brought about by the kinds of analyses that should be present in all NPDES permitting: in other words, do the chemicals need to be used, and if so, how can they be more effectively applied. By going through this process, pesticide use has been reduced by 50% or more while pest control has remained at least equally, if no more, effective.⁴

Another real-life example comes from the *Headwaters* case. After the Ninth Circuit's 2001 decision, the Talent Irrigation District switched from a chemical herbicide to mechanical means for controlling aquatic vegetation, thus eliminating entirely its aquatic chemical applications and avoiding the need for an NPDES permit altogether.⁵ Simultaneously, the

⁴ In contrast, the pesticide industry has offered no concrete examples of increased threats to public health resulting from NPDES permitting. The fears fomented are myth, not reality. Recent history also shows this fear to be unfounded. Four states – California, Oregon, Washington, and Nevada – issued general NPDES permits covering many pesticide applications to waters after the 2001 *Headwaters* decision. And, as EPA has noted, “twenty-three states have developed permits to cover some types of pesticide discharges.” In none of these situations were pest control efforts substantially impeded, or a public health threat caused, by the imposition of a permitting requirement.

⁵ In the *Headwaters* case, the Talent Irrigation District applied Magnacide H. Acrolein, a 92% component of Magnacide H, is used as an aquatic herbicide by hundreds of irrigation systems at concentrations of 6-10 parts per million (ppm), which translates to 6,000-10,000 parts per billion (ppb). The EPA recommends that for aquatic organisms, acrolein concentration in water should not exceed 2.7 ppb. If applied as recommended, at 6,000 ppb, it will take over 11 half-lives before concentrations reach 2.7 ppb. The half-life of acrolein in water is anywhere from 10 hours to 20 days depending on the environmental conditions (and whose half-life you believe). For example, acrolein volatilization rates depend upon the depth, temperature, pH, and turbulence of the water, factors that are considered in NPDES permits, but not the FIFRA label requirements. Consequently, the concentration of acrolein harmful to aquatic organisms may be present in the water for a minimum of 22 days if environmental conditions are extremely favorable to volatilization. As a result, the presence of acrolein will have a long-lasting and highly

environmental quality of the waterways in the irrigation district has improved. See Graham Decl. Supp. Pet. Opp'n EPA Mot. Stay Mandate ¶¶ 4-8 (5/8/09) in *National Cotton Council v. EPA*.⁶

Pesticide exposure presents a very serious national health concern. Children have high burdens of industrial chemicals, many of which are pesticides, in their bodies at birth. Based in large part on this growing body of knowledge, Congress passed the Food Quality Protection Act of 1996 (110 Stat. 1489), which required EPA to reevaluate the potential health risks to children of exposure to pesticides found in food. 21 U.S.C. § 346a. After conducting this research, EPA was required to establish, modify, or revoke tolerances for pesticide chemical residues on food products. Tolerances are the maximum amount of pesticides allowed to remain on food products.

Organophosphorus pesticides are among the most widely used pesticides in the United States and are often used in the types of applications that will be subject to NPDES permitting. According to U.S. EPA sales data, organophosphorus pesticides account for about half of all insecticides used in the United States. In a study conducted by the National Center for Environmental Health, researchers found that children age 6-11 had significantly higher levels of organophosphorus residuals in their bodies than the rest of the population. D.B. Barr, R. Bravo, G. Weerasekera, L.M. Caltabiano, R.D. Whitehead, Jr., et al., 2003, Concentrations of Dialkyl Phosphate Metabolites of Organophosphorus Pesticides in the U.S. Population, *Environ. Health Perspect.*, 112(2): doi:10.1289/ehp.6503. A similar study found that, out of the 110 children living in the Seattle metropolitan area that were sampled, 99% had measurable quantities of residual organophosphorus pesticides in their bodies. C. Lu, D.E. Knutson, J. Fisker-Andersen, R.A. Fenske, 2001, Biological Monitoring Survey of Organophosphorus Pesticide Exposure among Pre-school Children in the Seattle Metropolitan Area, *Environ. Health Perspect.*, 109:299-303. doi:10.1289/ehp.01109299.

Data from the CDC indicates that sampled children had particularly high body burdens of chlorpyrifos, a common organophosphorus pesticide used to control insects. Center for Disease

detrimental effect on the particular ecosystem even if it is applied in accordance with FIFRA requirements. Many canal systems in the West have natural waterways which are hydrologically connected to canal systems. Many of the natural waterways run directly through, and in part supply water for, the canals. Others seep or spill into natural waterways. No FIFRA label can address such site specific issues. In addition, the NPDES process would afford the opportunity to assess the impact on inert ingredients in the pesticide products. The above situation provides only one example why it is necessary for NPDES permits to be required for aquatic pesticide applications.

⁶ *Headwaters* also illustrates the serious potential harm from aquatic pesticide use: one application of chemical herbicide to control aquatic weeds killed over 92,000 juvenile steelhead (and many other fish and invertebrates) along a five mile stretch in Bear Creek, a tributary to the famous Rogue River fishery in Oregon. See 243 F.3d at 528. The chemical used by many irrigation districts, acrolein, is also so potent that it has killed exposed workers.

Control, *Fourth National Report on Human Exposure to Environmental Chemicals*, 2009, p. 135-6.

The negative effects that these pesticides have on children are well documented. For instance, researchers have linked pesticide use with an 11-fold increase in the risk of childhood leukemia and a 10-fold increase in the risk of childhood brain cancer. J.M. Pagoda and S. Preston Martin, Household pesticides and risk of pediatric brain tumors, *Eviron. Health Perspect.*, 1997, 105(11): 1214-20. Children with high levels of pesticides in their blood will have an increased likelihood of developing lymphoma. S.H. Zahn, D.D. Weisenburger, et al., A case-control study of non-Hodgkin's lymphoma and the herbicide 2,4-dichlorophenoxyacetic acid in eastern Nebraska, *Epidemiology*, 1990, 1(5): 349-56. Pregnant women who are exposed to pesticides suffer an increased risk of numerous birth defects, including cleft lip/palate, limb reduction defects and neural tube defects. See J.E. Gordon and C.M. Shy, Agricultural chemical use and congenital cleft lip and/or palate, *Arch. Env. Health*, 1981, 36: 213-21; D.A. Schwartz and J.P. LoGerfo, Congenital limb reduction defects in the agricultural setting, *Am. J. Pub. Health*, 1988, 78: 654-57; G.M. Shaw, C.R. Wasserman, C.D. O'Malley, et al., Maternal pesticide exposure from multiple sources and selected congenital anomalies, *Epidemiology*, 1999, 10(1): 60-66; A.E. Czeizel, Pesticides and birth defects [letter], *Epidemiology*, 1996, 7(1): 111; E.M. Bell, I. Hertz-Picciotto, and J.J. Beaumont, A case-control study of pesticides and fetal death due to congenital anomalies, *Epidemiology*, 2001, 12(2): 148-56. These are but a few of the studies showing pesticide impacts on human health.

The public health implications of pesticide exposures were anticipated, if not fully understood, 40 years ago when the Clean Water Act was being discussed. During debate, Senator Robert Dole pointedly observed that some pesticides "retain their potency for virtually unlimited periods after application, their residues are introduced into the complicated food chains at work in nature, and, ultimately, they become concentrated at levels which are hazardous to both animal and human life." S.Rep. 92-414, at 99.

The industry argues that NPDES regulation will be unnecessarily burdensome. What about the burden pesticides impose on children's health? Any future disruption to food production or disease control is purely speculative, but impacts to children's health are real. The pesticides that would be subject to NPDES control are often potent neurotoxins that impair intellectual and physical development. And many, as previously cited, are also known or suspected carcinogens.

Industry's arguments of gloom and doom are greatly exaggerated. The vast majority of the nation's agricultural activities were unaffected by the rule in the first place and will remain unaffected by the NPDES process, both because the Act exempts agricultural stormwater and irrigation return flows from NPDES regulation and because most agricultural pesticide use does not involve discharges "to" or "over" waters.

Other issues also need to be pointed out. For instance, unlike the CWA, FIFRA imposes no requirements for site specific analysis of the presence of endangered species, or of whether certain waterways need special protections because of extraordinarily pure conditions (*e.g.*, in wilderness areas) or because they are already polluted at levels toxic to fish and wildlife.⁷ Thus, the State of California, in its comments opposing the (now vacated) EPA rule, noted that 27% of its waters were impaired by pesticides and that NPDES permitting gave it an important tool to address point source discharges of pesticides. State Water Resources Control Board, Comments on the Proposed Rulemaking and Notice of Interpretive Statement on Application of Pesticides to Waters of the United States in Compliance with FIFRA, March 29, 2005.

CONCLUSION

Requiring NPDES permits for the application of pesticides “to” or “over” the waters of the United States will have a positive impact on our nation’s overall environmental and economic health. NPDES permitting would also be consistent with the original goals of the Act. In the 1971 CWA Senate Report, Senator Dole emphasized the importance of “develop[ing] *alternative means* of pest, weed and fungal control,” reducing “[o]ff-target applications,” and developing “pesticides which *degrade after application* and *leave no toxic or hazardous after-products*.” S.Rep. 92-414, at 99 (emphases added). If the industry finally accomplishes these goals, NPDES permitting would be averted altogether, thus moving us closer to achieving the protections originally envisioned by the Clean Water Act. It is respectfully requested that you do not create a new exemption in the Clean Water Act for the pesticide industry and instead support EPA in its efforts to provide improved protections for us all through the NPDES process.

⁷ In one nationwide study, “[m]ore than one-half of the agricultural and urban streams sampled had concentrations of at least one pesticide that exceeded a guideline for the protection of aquatic life,” despite regulation by FIFRA, with most samples containing multiple pesticides. U.S. Geological Survey, *The Quality of Our Nation’s Waters, Nutrients and Pesticides* (USGS Circular 1225, 1999), at 6, available at <http://pubs.usgs.gov/circ/circ1225/pdf>.

Streams useful to steelhead during state's rainy periods

THE ASSOCIATED PRESS

MEDFORD — What might strike humans as no more than a moist ditch can be nifty digs for steelhead in the right circumstance — like one of the rainy periods Southern Oregon expects this week.

Biologist Chuck Fustish is examining Ashland's Hamilton Creek, which normally holds just a sliver of water.

When this week's snowstorms turn to rainstorms, Hamilton Creek will be full of water and full of fish, he says, an important part of the world of wild salmon and steelhead in the Rogue River basin.

He wants to understand just how far up a creek local steelhead go in the snow.

Traps will allow Fustish to determine whether, when and to what extent juvenile salmon

and coho salmon rely on Hamilton's intermittent flows as a refuge from Bear Creek.

Hamilton Creek in Ashland is one of five seasonal creeks the Oregon Department of Fish and Wildlife fish biologist will survey.

"Who would think streams like this have fish in them?" said Fustish. But they do. Once the streams start to flow, they do."

Studies at 10 similar creeks in the Rogue and Bear Creek basins during the previous three winters have showed that even the most overlooked of tributaries can be the right place at the right time for the fish.

"The public may not be aware these streams are important to juvenile steelhead during winter freshets," Fustish says.

"Steelhead are so genetically pliable," he says. "As soon as

water comes into these tributaries, they'll run up and be happy as can be."

In the Bear Creek basin, the trapping has shown that the juveniles move around in search of usable habitat.

Fustish is in the fourth winter of a five-year study to map fish use in urban streams of the upper Rogue River basin, particularly those within the Bear Creek drainage.