

**JETTY CREEK:
MUNICIPAL WATER SOURCE
WITHIN AN
INDUSTRIAL FOREST**

Nancy Webster

Rockaway Beach, OR

&

Rockaway Citizens for Watershed Protection

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Jetty Creek Watershed

Jetty Creek is the only municipal water source for the City of Rockaway Beach and Twin Rocks water districts. We have three principal concerns:

- 1) Ensuring adequate safe drinking water;
- 2) Protecting the quality of the air we breathe; and
- 3) Restoring a viable habitat for migratory fish.

My concern with this issue was heightened on September 16, 2012, when I observed aerial pesticide spraying of the recently clear cut section of the Jetty Creek watershed. Since that time, we have contacted a number of local, state, and private agencies in attempt to obtain information regarding the past history of forest practices in that watershed, as well as to determine if adequate monitoring of the current and future situations could be instituted. While all of the individuals at these agencies have been most helpful, it seems that no one agency has a complete picture of the situation or authority over it.

The Jetty Creek watershed comprises approximately 1,200 steep acres facing the Pacific Ocean north of Rockaway Beach. It is privately owned. Back in 2004, most of the second-growth conifers in the watershed had not been cut, but in the last three years, an estimated 80% have been logged. The headwaters of Jetty Creek are located near the top of ridges east of Highway 101. The headwaters and numerous small tributaries which flow into Jetty Creek have been logged. In the lower section of Jetty Creek, above the City of Rockaway Beach water treatment plant, large tracts have been logged, in many places leaving only the minimum legally-mandated buffer. This lower section of the creek is listed as "fish-bearing." As we understand it, more logging of the watershed will take place in the near future.

Safe Drinking Water

In July 2011, Judy Coleman, a retired DEQ natural resource specialist, and I hiked into the watershed. We observed that steep slopes, including areas adjacent to small streams, had been clear cut. When it rained hard, we saw that the water in Jetty Creek looked like chocolate milk. Judy told me that in her opinion, the clear cutting had created "serious stressors" on the water source. On that hike, we met two contract loggers working in the area who said that the Jetty Creek headwater springs had some of the best drinking water in Tillamook County. They suggested that we should contact the Oregon Dept. of Forestry to express our concerns about possible future pesticide spraying. Also, they emphasized that this is our watershed.

The City of Rockaway Beach has a new two-year-old membrane-filter water treatment plant located east of Highway 101, not far from where Jetty Creek runs into Nehalem Bay. When it rains hard, the plant

can easily become over-taxed by the turbidity of the water. Increased water turbidity necessitates adding more chlorine, but chlorine combines with organic materials present in the water to create a potentially long-term harmful substance known as trihalomethane (THM). The allowable limit of THM in drinking water is defined by the Environmental Protection Agency and the City of Rockaway Beach has frequently exceeded that limit in the past 2 1/2 years. It is generally acknowledged that clear cutting in a watershed will increase water turbidity. There have been times during periods of especially heavy rain when it has been difficult to make drinkable water. Treatment plant water filters need to be replaced excessively often when this occurs and also additional money has had to be used for additional water treatment chemicals. Before the end of 2013 a new sand filter system will be installed at the water treatment plant which presumably should reduce the level of THM's so that they are within EPA acceptable standards. (Even though the City has back-up wells under the Nedonna Beach area, these cannot be used to supplement drinking water since they are contaminated, most likely from septic tanks.) To state the obvious, the clear cutting of the privately-held watershed that provides Rockaway Beach with drinking water not only does not in any way benefit the City, it actually costs it money, as well as adversely impacting the quality of the natural resources it depends on.

A person I spoke with at the Tillamook office of the Oregon Dept. of Forestry office said that they are monitoring the situation at Jetty Creek, but that these logging operations are legal and within the guidelines of the Oregon Forest Practices Act. They do monitor runoff from logging roads, but apparently runoff from steep slopes is not measured. He agreed with me that the size of the buffer zone left along the lower wetland bordering Jetty Creek seemed questionably-effective, but he said that it was within the law.

A Bureau of Land Management forester that we talked with stated that an intact forest helps maintain healthy drinking water and fish habitat. The forest can act as a filter and keep streams cooler. And if selective logging is done instead of clear cutting, a forest canopy with native plants remains which discourages invasive plants from growing which, in turn, limits the need for pesticides.

On May 1, 2013, the Tillamook Headlight-Herald, in part of an article, reported on a meeting of the Neskowin/Nestucca/Sandlake Watersheds Council (NWC) at which Joshua Seeds, a forest ecologist who specializes in drinking water protection for the Department of Environmental Quality, DEQ, gave an informational presentation. The Headlight-Herald stated the following: "He (Mr. Seeds) declared that the best water quality comes from forested watersheds because 'natural forest and hydrologic processes store, filter and deliver water to downstream sources.' Many communities along the coast of Oregon are dependent on water from such watersheds... Forest disturbances, such as roads, clear cuts, and development can increase turbidity (which leads to cloudiness from sediment in the water), increased nutrients that interfere with the food web, and increased water temperature. 'Tree farms suck up a lot of water, too; young trees are thirsty,' he said. The application of pesticides or fire retardants can also impact drinking water quality. Laws are in place to protect the forests that produce our drinking water, but Oregon's is the least stringent along the West Coast, including in Canada, according to Seeds. 'The law seeks to put the least economic burden on the landowner as possible,' he emphasized."

Some people have expressed concern that Rockaway Beach may face future water shortages. In past years, Rockaway Beach was getting its water from various watersheds other than Jetty Creek, but after these were clear cut, water flow was insufficient. A forester from the Oregon Dept. of Forestry stated that clear cutting in watersheds can increase run off and flow in the winter when it's rainy, but decrease it flow in the summer when it's dry. Leaving an intact forest promotes infiltration during the rainy season and provides a steady source of water.

Another concern we have that is related to clear cutting in watersheds is pesticide spraying. As mentioned above, on September 16, 2012, I personally observed aerial spraying taking place within the watershed. I have a house in Nedonna Beach (within the Rockaway Beach city limits) that is about 1/2 mile from Jetty Creek. From my home I could smell the pesticide in the air; there was no prior warning. (It is important to point out that there are also two schools within about 1/2 mile from Jetty Creek.) Neither the City of Rockaway Beach nor the Tillamook ODF office could tell me what pesticides were used that day, but they referred me to Josh Miller, forester for Olympic Resources Management (ORM), one of the watershed landowners. The forester told me that they had sprayed MSO ("a spray adjuvant formulated to enhance activity of post-applied herbicides"), Agsurf Sulfomet Extra Herbicide, and Accord XRT II ("a non-selective broad spectrum herbicide"). A person that I spoke to at the Oregon Dept. of Forestry characterized Accord XRT II as an industrial-grade Roundup.

I have a paid subscription through the ODF Tillamook office for notices filed by timber companies listing future planned activities in the Jetty Creek watershed (and other areas in Tillamook County); however, these notices are of limited value since they merely state that an activity may happen sometime in the next six months using some chemicals from a submitted list. This does not inform the public of the exact date of an activity such as aerial spraying nor which chemicals will actually be used. A DEQ representative suggested that in order to best assess possible chemical contamination in the Jetty Creek watershed, I obtain a five-year history of pesticide use there. When I called to request this historical information from the ODF Tillamook office, I was told that the report would cost approximately \$500. After I said that that was more money than I could spend, they suggested meeting in their office and reviewing the records. When two of my friends and I visited the office, the records were not available. A member of the Lower Nehalem Watershed Council told me he also asked for this information from the ODF Tillamook office, but that it was not forthcoming.

Dave Farrer, a toxicologist at the Oregon Health Authority (OHA), told me that there is limited research about the long-term effects of combining these various chemicals. According to DEQ, Roundup's half-life can be anywhere between 1 and 174 days depending on environmental conditions (moist conditions extend its half-life). According to the Oregon Forest Practices Act, aerial spraying can occur within 60 feet of a water source and hand-spraying can occur within 10 feet.

Last fall when I talked to York Johnson, the North Coast Basin Coordinator at DEQ, regarding the aerial spraying of the Jetty Creek watershed, he agreed with my concerns; however, he said that at that time there was insufficient funding to test for water contamination in that water source. Furthermore, he said that ideally a 28-day POCl membrane test should be placed in the creek the day spraying occurs, but

there is no way to coordinate that with the timber company land owner given the large "window of opportunity" allowed for spraying. This year, however, DEQ did approve the Jetty Creek watershed for both a spring and a summer 28-day POI membrane test. Unfortunately, this testing cannot be coordinated with any actual spraying that may occur. Also, the DEQ lab presently does not have the capacity to test for Glyphosate which is found in Accord XRT II (Roundup), but they are working on a solution to this problem.

According to one of the notifications I received from the ODF Tillamook office, in April 2013, a six-month permit was requested to hand-spray a surfactant and Triclopyr in the Jetty Creek headwaters within 10 feet of streams. Then in May 2013, a notification was sent for a 6-month permit to hand-spray the following in the headwaters areas: 2,4-D, Glyphosate, Imazapyr, Sulfometuron methyl, Surfactant, and Triclopyr.

As an ODF subscriber, on 7-5-13 I received notices for aerial spraying to occur sometime in the next 6 months in the Jetty Creek watershed. The first notice permits Olympic Resource Management to target the area near the entrance to Jetty Creek and our water treatment plant. There are residences and two marinas with camp grounds near the spray zone. On July 15, we observed inside the entrance to the Jetty Creek watershed, posted on a stump by the timber company, a notice for this aerial spraying to occur in the next two months. When we called the posted phone number we were told it was planned for the next two weeks, depending on weather. Pesticides to be used include OUST EXTRA, Accord XRT, Chopper and a Surfactant. Olympic Resource Management has agreed to notify Rockaway Beach Works Public Works before spraying. DEQ has offered to help Rockaway Beach conduct a "grab" test.

Another notice permits Stimson Lumber Company to aerial spray three sections in the upper basin of Jetty Creek, where the headwaters originate. Sprays to be used include Glyphosate, Imazapyr, Metsulfuron Methyl, Sulfometuron Methyl, surfactant and Triclopyr. Targeted vegetation includes elderberry, salmonberry, thimbleberry, cascara buckthorn and grass. This spray timeline is also within the next six months with no mention of contacting Rockaway Beach Public Works.

According to the Oregon Health Authority assessment, herbicides applied by helicopter or plane can move two to three miles from the application site. The assessment also found higher levels of herbicides in nearby residents' urine when spraying on private timber lands has occurred. Dr. Jae Douglas, administrator for the Health Authority center for prevention and health promotion, stated, "I am concerned as a public health professional." (Source Oregonian, May 30, 2013.) This spraying is not occurring in an isolated area. There is no official process in place to inform businesses and residents of upcoming spraying.

An ODF worker, who asked to remain anonymous, expressed her concern about spraying in watersheds and stated that the only training the ODF workers receive regarding pesticides is from the pesticide manufacturers themselves. Current scientific literature says there is uncertainty about the short and long-term health consequences of pesticides on human health. Some research indicates that these chemicals enter our bodies and affect metabolic functioning. OHA told me that there is current research on the effects of pesticides as hormone interrupters, but that that research has not yet been incorporated into EPA regulations. It would seem logical and prudent to err on the side of caution regarding the use of these chemicals, since there are possible unknown health effects on people and other living beings. Also, there is no testing for soil contamination during spraying.

From what I have heard, cities along the Coast whose source of drinking water is in a privately-held forest, have shut down their water-making operations for varying periods of time after post-clear cutting pesticide application is initiated. At the time of the September 2012 pesticide application in the Jetty Creek watershed, no drinking water was made for about 24 hours, but in Neskowin, under similar circumstances, the water treatment plant was shut down for two weeks. In other words, there is no clear understanding of the minimum safe period of time to suspend operations.

Clean Air

One of the probable health and environmental effects of clear cutting and pesticide application and another aspect of industrial forestry that is of concern is the smoke produced by slash burning that occurs after clear cutting. Slash piles are usually ignited with a diesel fire starter so that they will burn hot. The thick, dark smoke tends to mix with the moist coastal air and can remain around for hours.....not always blowing out towards the ocean. ODF has a limited phone notification process, but there is no general public notification. As noted previously, there are residences and schools within a half mile of the recent clear cut logging in the Jetty Creek watershed. Air monitors could be used to determine whether or not this smoke exceeds legal limits. (In 2012, Oregon Resource Management [ORM], one of the landowners of the Jetty Creek watershed, chipped and hauled out their logging detritus, but subsequently they stopped this practice due to the cost.)

Fish Habitat

Clear cutting and pesticide spraying can affect the health and viability of fish. According to Dave Plawman, an Assistant District Fish Biologist at the Tillamook office of the Oregon Dept. of Fish and Wildlife (ODFW), historically Jetty Creek probably had runs of wintering steelhead, Coho, and cutthroat trout. He said the Jetty Creek water treatment plant intake system has created problems for migrating fish. Several weeks ago, Mr. Plawman said "Currently we would expect to only see resident cutthroat trout in Jetty Creek. If fish passage was improved we would also expect to see Coho salmon, winter

steelhead, and sea-run cutthroat trout." In a meeting with the water treatment plant operator, he reported that until approximately four years ago, he would see these migratory fish runs. Last year, the Oregon Dept. of Transportation rebuilt the bridge and removed the Jetty Creek culvert under Highway 101 as a first step toward restoring fish runs. Another step may occur when The Lower Nehalem Watershed Council, working with the City of Rockaway Beach, applies for grants to improve fish passage around the water treatment plant. A retired salmon fish manager for ODFW took a look at the section of Jetty Creek between the water treatment plant and Nehalem Bay and he said that he thinks it could support migrating steelhead, Coho, and cutthroat trout. Coho salmon are a federally listed under the Endangered Species Act. Several weeks ago, in the pre-treatment holding pond of the plant, resident cutthroat trout were seen. There is, of course, still concern that the increased recent logging in the watershed may continue to affect fish habitat by raising stream temperatures and creating above normal turbidity.

On October 31, 2011, Scott Learn, an environmental reporter for The Oregonian, reported that a Federal Court judge backed rules to limit pesticide use near salmon habitat. Mr. Learn wrote the following: "Pesticide manufacturers sought to overturn a 2008 decision by the National Marine Fisheries Service (NMFS) that limited where three organophosphate pesticides....chlorpyrifos, diazinon, and malathion....could be sprayed in Oregon, Washington, Idaho and California. Among other restrictions, NMFS's opinion requires the Environmental Protection Agency to prohibit ground application within 500 feet of salmon habitat and aerial application within 1,000 feet. The manufacturers, including Dow AgroSciences, said the buffers are too large and inflexible, and questioned the scientific basis for concluding that the pesticides harm fish. The Northwest Center for Alternatives to Pesticides and other environmental groups said it's clear the pesticides damage juvenile fish, including 27 species of West Coast salmon and steelhead listed under the Endangered Species Act. These pesticides kill fish directly, the groups said, harm their food supply and habitat, and hinder their ability to navigate back to spawning streams. Maryland U.S. District Court Judge Alexander Williams Jr. ruled against the manufacturers today. NMFS adequately considered the manufacturers' arguments, Williams wrote, noting that the record backing the agency's decision runs to nearly 20,000 pages. The ruling is the latest development in a long-running effort by environmental groups to increase pesticide regulation. It started with a 2001 lawsuit that accused the EPA of failing to adequately regulate 54 pesticides that potentially affect salmon."

In addressing the issues mentioned above, it also should be noted that this coastal area provides a flight path for migratory songbirds. A longtime resident and marina owner of the Jetty Creek area told me that he has walked through the watershed for decades. He said he used to hear many songbirds, but in the last few years, after a series of clear cut logging activities, the area seems quiet to him. After clear cutting, the land is typically sprayed at least twice with pesticides to facilitate the growth of new trees. I spoke to the forester from Oregon Resource Management (ORM), one of the landowners, and, he said something to the effect that after pesticide spraying "he did not want to see even one blade of grass growing until the new conifers are established." This means that all the native plants are sprayed and subsequently may be toxic to bees, birds, and other wildlife. When I asked the ORM forester about

working together to protect our watershed, he stated that this is investment forestry and that would not be in the best interest of the investors. The ORM forester did, however, suggest we contact Cannon Beach, since they own their watershed, and also the Lower Nehalem Watershed Council.

Summary

Thirty residents of Rockaway Beach and Nedonna Beach have formed a group called Citizens for Watershed Protection, of which I am a member. We have contacted local and state agencies as well as private entities regarding the above-mentioned issues. Most of the people from the agencies contacted agree that we have valid concerns; however, meaningful action seems to be made difficult by limitations in funding, manpower, the inadequacy of current regulations, or the fact that the land is privately owned for the purposes of industrial forestry. There does seem to be broad community interest in this subject as evidenced by the fact that a public meeting regarding pesticide use on lands that provide municipal drinking water, organized by Bob Rees from the North Coast State Forest Coalition and held at the Rockaway Beach City Hall on May 6, 2013, drew about sixty people. At that meeting presentations were made by the following people: Lori Pillsbury, Toxics Monitoring Program Coordinator for the Oregon Dept. of Environmental Quality (DEQ); York Johnson, North Coast Basin Coordinator for DEQ; Joshua Seeds from DEQ; Curtis Cude, Interim Section Manager in the Public Health Division of the Oregon Health Authority; and Dave Farrer, Toxicologist with the Oregon Health Authority.

Many of us in Rockaway Beach are concerned about the long-term safety and availability of the City's municipal water. Other coastal communities, whose source of water is within privately-held, industrial forest land, face similar problems. Is it possible to modify the Oregon Forest Practices Act to better protect watersheds? As mentioned previously, these types of natural resource protections are weaker in Oregon than any other place on the West Coast including Canada. How can we obtain reliable testing of our water, soil, and air to determine their safety? The public has a right to know.

As concerned citizens living near a spray area, we would like to see spray permits in watersheds and near residential areas revoked until a formal environmental and health study is completed.

Is there a way that the City of Rockaway Beach can become the steward of its watershed? Privately-held timber companies' goals of maximizing profit seem to inherently conflict with managing a forested watershed to ensure the best water quality and wildlife habitat protection. Luke Shepard, the Public Works Director for the City of Rockaway Beach, supports the concept of the City having stewardship of its watershed. Three possible paths to stewardship are as follows:

- 1) Purchase of the Jetty Creek watershed by the City of Rockaway Beach. (Sometime in the future the City could receive some income from selective logging as the trees mature. Cannon Beach, Astoria, and Forest Grove all own and control their watersheds.) Since most of the watershed has already been logged, the value of it can be expected to be quite a bit less; however, it would

still be costly, given its size. Rockaway Beach is a small community with existing economic problems. As an example of this, the two public schools in town have a large percentage of students who qualify for the school lunch program based on income guidelines. So how Rockaway Beach would be able to buy the watershed is not clear.

- 2) a land trade between the Bureau of Land Management and the current private landholders in which the BLM would restore and manage the Jetty Creek watershed for drinking water and wildlife protection. (BLM has experience managing watersheds.)
- 3) Establishment of easements that would at least provide for protection of the most sensitive parts of Jetty Creek. This would need to be legally and financially worked out with the current landowners.

If it is not possible to create stewardship of the watershed through any of the three methods described above, possibly the best alternate would be to establish a monitoring plan so that the City or concerned citizens could act as "watchdogs."

Many users of Rockaway Beach water have expressed concerns about the challenges of providing clean and safe water that is not impacted by industrial forestry practices. But even though it will be difficult to accomplish these goals, it is possible. As evidenced by a number of experts on fish habitat, Coho, steelhead, and cutthroat trout migratory runs could be restored. A future with a healthy forest watershed that provides sparkling clean water, viable habitat for wildlife, and recreational opportunities for the community and visitors alike would be a great benefit to everyone.

In order to accomplish these goals, support from both private and public entities as well as the local community is critical.

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Nancy Webster
P.O. Box 1291
Rockaway Beach OR 97136
nancywebster@gtcinternet.com
503-355-2516



2004 (above) Jetty Creek Watershed 2013 (below)

