Memo
From: Erik Peterson
To: Jennifer Wu
Date: 9/16/14
RE: Does California have forest buffers for any streams? Including, buffers for herbicide application.

State Level

California Forest Practice Rules – Timber Harvest Plans

California Forest Practice Rules include Watercourse and Lake Protection Zones (WLPZs). WPLZs vary between 50 and 150 feet depending on terrain and class of watercourse and are designed to protect vegetation and soils.[1]

There is no mention of "pesticides" or "herbicides" in the California Forest Practice Rules.

Timber operators must complete and submit a Timber Harvest Plan (THP) to CAL FIRE. THP Section IV Cumulative Impacts Assessment includes a "Chemical Contamination Effects" sub-section. In a June 2014 THP from Sierra Pacific Industries (SPI), a large private timber company, there is substantial information on forestry herbicides.

SPI's apparently standard language states that State and County hazardous waste regulations for chemicals shall be adequate. In addition, SPI includes 'further mitigation'. SPI's further mitigation states that, "All required buffers near watercourses and wetlands will be carefully avoided."[2] SPI defines "required buffers" to include all Forest Practice Rule required buffers. "Carefully avoided" means no herbicide will be directly applied in these buffers. SPI's THP goes on to state that "FPR buffers are always significantly greater than the label requirements for stream protection. The State sometimes requires buffers in areas that are outside of FPR required buffers, for example the State designated Pesticide Management Zones which relate to porous soils…we utilize whichever gives the most protection."[3]

On State Forest lands, according to a forester at CAL FIRE, no herbicides are applied within WLPZs.

Additional notes:

- Pesticide plans must be completed by a licensed Pest Control Advisor.
- California Forest Practice Rules limit clearings to 20 acres. Because of this limitation, aerial application of herbicides is limited to larger clearings – such as may result from a wildfire.
- SPI cites Joseph Di Tomaso's paper, "Post-fire herbicide sprays enhance native plant diversity."[4]

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[1] http://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/2b_sma.shtml
[2] See p. 94 at: ftp://thp.fire.ca.gov/THPLibrary/Cascade_Region/THPs2014/2-14-019BUT/20140630_2-14-019BUT_Sec4.App.pdf
[3] *Ibid.*
[4] http://californiaagriculture.ucanr.org/landingpage.cfm?article=ca.v051n01p6&fulltext=yes

- Watersheds with salmon in California have a whole unique set of regulations, these are included in the Forest Practice Rules. No mention of pesticides here.

Water Discharge Requirements – Orders and Conditional Waivers
Regional Water Quality Control Boards in California issue orders and conditional waivers for discharges related to timber harvest activities by landowners and in certain areas. Waiver applications must address concepts like, "Measures that will be employed to assure compliance with the Basin Plan", or, "…pesticides, must not be discharged to surface waters or be deposited in locations where such material may discharge to surface waters…"

At least one waiver includes a General Provision for aerial application of pesticides, "…the Discharger shall submit a Report of Waste Discharge containing, at a minimum, the items listed under the Action Plan for Control of Discharges of Herbicide Wastes From Silvicultural Applications…"[5] This document, the Action Plan for Control of Discharges…, is contained in – for example – the 2011 Water Quality Control Plan for the North Coast Region. Itself a North Coast Regional Water Quality Control Board plan. The Action plan includes requirements for topographic maps with all water course, wells, ponds, irrigation ditches or wet areas.[6]

The Action Plan also includes limits for certain pesticides, and accepts "United States Forest Service Practices 5.8-5.14" as BMPs for water quality protection from aerial herbicide application on Forest Service Lands.[7] This statement accepts USFS controls as adequate for USFS lands.

The North Coast Regional Water Quality Control Board – in the Action Plan - also

> …accepts the practices conducted pursuant to the state pesticide regulatory program and the County Agricultural Commissioner regulatory program as Best Management Practices (BMPs) for water quality protection from aerial herbicide application on private lands within the North Coast Region, and recognizes the mitigation measures developed through permit conditions set by the County Agricultural Commissioners as management practices that best protect water quality.
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> 2. Experience gained over the past several years byprivate forest landowners on implementation of these management practices has led the Regional Water Board to conclude that discharges from aerial spray applications can be controlled such that: (1) past or present standards for protection of water quality are not violated, (2) Basin Plan water quality objectives are met, (3) most (98%) of private landowner spraying applications monitored result in less that 10 ppb of 2,4-D or

[5] http://www.waterboards.ca.gov/northcoast/board_decisions/adopted_orders/pdf/2006/060508_R1-2006-0041_Fresh_WWDRs.pdf
[6] See page 4-33.00 at: http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/083105-bp/basin_plan.pdf
[7] See page 4-34.00 at: http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/083105-bp/basin_plan.pdf

similar herbicides being detected in receiving waters (92% result in less than 2 ppb.)

See below for my sense that there appear to be no county level standard forestry herbicide buffers.

Department of Food and Agriculture
DFA is the lead agency for regulating pesticide use in California. I did not contact DFA or review DFA related pesticide regulations for forestry herbicide regulations. I did not contact DFA because the SPI THP sub-section on chemical effects makes no mention of DFA related requirements. I do not believe that there are DFA administered standard state-wide buffers for forestry herbicides.

There are standard buffers for forestry herbicides in California red-legged frog habitat
From EPA's website…
"The injunction prohibits use in and around certain habitat areas within general critical habitat areas and within specified non-critical habitat sections. Standard buffers apply to these areas. Following are the standard buffer provisions:

> (1) Within the general critical habitat areas shown on county maps -- All areas described by the U.S. Fish and Wildlife Service as aquatic breeding critical habitat, non-breeding aquatic critical habitat, or upland critical habitat for the California red-legged frog, and in buffer zones (***60 feet for ground application or 200 feet for aerial applications)*** measured from the edge of the aquatic breeding, non-breeding aquatic, or upland critical habitat; or Within non-critical habitat sections shown on county maps -- All aquatic features and upland habitats and in buffer zones ***(60 feet for ground application or 200 feet for aerial applications***) measured from the edge of the aquatic feature or upland habitat."[8]

County Level
It appears unlikely that California counties have buffers for herbicides/pesticides
Shasta, Siskiyou, Lassen, Trinity, Tehama, Butte and El Dorado counties collectively accounted for 72% of the pesticide use on private forest lands in California in 2010.

Siskiyou, Lassen, Tehama, Butte and El Dorado county codes do not appear to mention pesticides or herbicides. I believe it is very unlikely that these counties have any pesticide or herbicide related requirements.

Trinity County Code includes an Article on Herbicides and Pesticides.[9] Applicators are required to obtain a permit from the county health department and the county agriculture commissioner. Forestry is not mentioned in the Article. The Article does not include any buffers or explicit controls, such as specific wind speed limits to control drift.

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[8] http://www.epa.gov/oppfead1/endanger/litstatus/redleg-frog/steps-info.htm
[9] https://library.municode.com/index.aspx?clientId=16662

Shasta County Code mentions herbicides and pesticides in the standardized Real Estate Disclosure Statement, "If you live near an agricultural/forested area you should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in a county with a strong rural character and an active agricultural sector."[10] I think it is unlikely that Shasta County would have this type of language in their code – which follows a paragraph including pesticides as a potential "inconvenience" - as well as additional pesticide requirements.

According to CAL FIRE some counties keep track of herbicide use, require reports.

Other Notes

Potentially useful facts and citations from a California Environmental Impact Report[11]

- "Although surveys conducted by USGS found that trace levels of agricultural pesticides were commonly found in ground and surface water samples, concentrations rarely were in excess of standards for drinking-water (U.S. Geological Survey, 1999). Few forest herbicides have been found in these surveys (Shepard et al., 2004)."
- "For the most part herbicides were not detectable or plant material was no longer available after 80 weeks (CDPR, 2002). There was minimal detection of off-site movement of herbicides and most residues were detected within 70 feet from the edge of the treatment area (Ando et al., 2002)."
- In 2010 forestry herbicides were applied to a total of 122,509 acres in California. Unknown how much was aerial application.
- "At the county level, the majority of the pesticide use on forest lands occurs in just a few counties. Shasta, Siskiyou, Lassen, Trinity, Tehama, Butte and El Dorado counties collectively account for 72% of the pesticide use on private forest lands in 2010."

[10] http://www.co.shasta.ca.us/docs/COB/county-codes/Title_18.pdf?sfvrsn=0

[11] http://bofdata.fire.ca.gov/board_committees/resource_protection_committee/current_projects/vegetation_treatment_program_environmental_impact_report_(vtpeir)/pdfs/VTPEIR%20Ch%204.17.pdf