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ATTENTION: Reason for Concern - Recent Chlorpyrifos and Diazinon Detections

You may remember that in 2005 two samples taken from the Coon Creek at Striplin Road monitoring site had concentrations of the organophosphorus insecticide, *chlorpyrifos* (trade names: Dursban, Lorsban 4E, Lorsban 4E-HF, Whirlwind, Nufos 4E, Govern 4E, Chlorpyrifos 4E), which exceeded the water quality objective set by the Central Valley Regional Water Quality Control Board (RWB). Application of chlorpyrifos may be by ground or air and is authorized for most tree crops and alfalfa.

As a result, PNSSNS was required to develop a "Chlorpyrifos Management Plan" and monitor for this pesticide for 5 years. We completed the plan with no further chlorpyrifos detections. However, in 2011, chlorpyrifos again exceeded the water quality objective at both monitoring sites - in May 2011 from Coon Creek at Striplin Road (Sutter County) and in August 2011 from Coon Creek at Brewer Road (Placer County). Furthermore, thus far in 2012, chlorpyrifos has been found twice at the Striplin Road site, both times above the laboratory detection limit but below the chronic toxicity objective. In addition, another organophosphorus pesticide, diazinon (Diazinon AG500, Diazinon 50W, etc.) was also detected at Striplin Road in May 2012.

As irrigated agricultural practitioners, ***we cannot afford any more water quality exceedances.***

To keep agricultural water quality issues to a minimum, *if* you must apply these insecticides, respect the law and handle these materials according to their labels. Please do not apply more than is absolutely necessary and use any and all appropriate Best Management Practices (BMPs) to control drift and accidental discharges so as to prevent pesticides from entering runoff or reaching streams. Information on suitable BMPs is available from the UC Cooperative Extension Farm Advisors for Placer and Nevada Counties at 530-889-7385 and Sutter County Ag Commissioner at 530-822-7500.

PLEASE BE AWARE that failure to remedy these recurring water quality issues within Coon Creek WILL result in increased regulation by the RWB. Additional organophosphorous exceedances will force PNSSNS to conduct further pesticide monitoring and expand outreach activities to our members, both of which may lead to increased membership fees. Greater restrictions on local use of chlorpyrifos (and diazinon) are another possibility, as are individual Farm Water Quality Management Plans submitted directly to the Central Valley Water Board.

2012 Water Quality Results to Date for the PNSSNS Lower Coon Creek Monitoring Sites

The PNSSNS Subwatershed group monitors water quality at two locations in the lower Coon Creek watershed. These sites were selected as representative because agriculture is the primary land use in the upgradient drainage area. Field measurements (dissolved oxygen, pH, temperature, salinity) are occurring monthly from February through September at the primary site at Brewer Road (CCBRW). As 2012 is a designated "core" monitoring year, samples are being collected at CCBRW for analysis of nutrients, (nitrate/nitrite-nitrogen, total phosphorus), total organic carbon, sediment (total suspended

sediment, turbidity) and E. coli bacteria (an indicator of pathogens). Further downstream, at the Striplin Road site, field measurements are also occurring monthly but sampling is limited to organophosphorous pesticides (chlorpyrifos, diazinon), sampled five times from January to July. A table presenting the 2012 monitoring results through May is posted on the PNSSNS web site at www.cleanwaters.info. Highlights include:

- Even in mid-winter and early spring, the wide channel, flat gradient, low base flows and/or lack of shading can cause water temperatures in lower Coon Creek during warm weather to rise above optimal levels for coldwater fish habitat (roughly $\geq 21^{\circ}\text{C}$ or 70°F).
- Lack of riffles in the lower reaches means that dissolved oxygen (DO) concentrations drop rapidly as water temperatures rise. On a warm January day, DO at the Striplin Road site was only 2.2 milligrams per liter (mg/L), or 9% of saturation, compared to the 7.0 mg/L objective for optimal coldwater habitat (the July value was 0.54 mg/L).
- Levels of E. coli bacteria, which serve as an indicator of more serious pathogens, have been within the 235 MPN/100 ml regulatory objective at the Brewer Road site except for March 2012, when a large storm event caused runoff to flood the stream and the E. coli concentration exceeded 2400 MPN/100 ml.
- Organophosphorous pesticides were detected in samples from the Striplin Road site in January 2012 (diazinon only) and May 2012 (chlorpyrifos and diazinon). In all cases, concentrations were below regulatory objectives; however, the fact that these materials were detected in the streams at all is of concern.

Good news from the current monitoring effort is that levels of nitrate-nitrogen and total phosphorus have generally been low; salinity, measured as specific conductance or electrical conductivity (EC), has been below the threshold of concern at both sites; and pH, which was previously of concern due to a still-unexplained incident of dumping, has remained well centered in the range of 6.5 to 8.5.

Thank you to the Placer County Fish and Game Commission for sponsoring this flyer.



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