

## RRWPC

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### Russian River Watershed Protection Committee

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Brenda Adelman: Chair



July 2, 2012

Jeanine Townsend, Clerk to the Board  
State Water Resources Control Board  
1001 I Street, 24<sup>th</sup> floor  
Sacramento, CA 95814

**RE: Comment letter: Amendment to Recycled Water Policy**

Send Via Email to: [commentletters@waterboards.ca.gov](mailto:commentletters@waterboards.ca.gov)

Dear Chairman Hoppin and State Water Board Members:

***About our group...***

RRWPC is a nonprofit public benefit organization incorporated in the State of California since 1980. Our supporters include property and business owners, residents, recreationists, and other concerned citizens in the lower river area from Healdsburg to Jenner. They utilize the Russian River for recreation, fishing, swimming, artistic expression, spiritual well being, and exercise for themselves, family, friends and pets. Many own property in the Russian River area for their summer enjoyment, but reside and work in the greater Bay Area and beyond. RRWPC' s major goal is to protect these beneficial uses from toxic discharges that deteriorate water quality and deny or degrade enjoyment of the river and harm the environment.

***RRWPC' s history with and concerns about Recycled Water Policy....***

RRWPC submitted lengthy comments to your Board on the Recycled Water Policy on October 26, 2007, September 1, 2008, and December 22, 2008. In those comment letters, we indicated significant concern about the 'incidental runoff' issue. Furthermore, we also submitted extensive comments on the same issue to the Regional Board for both their MS4 permit review and revised permit review processes, in addition to their Basin Plan Amendment for low threat discharges.

We provided verbal testimony at hearings as well, yet for the most part, our concerns went unaddressed.

At all times, our concerns were the same: we consistently expressed trepidations about tertiary wastewater runoff, especially into impaired water bodies (in our case the Laguna de Santa Rosa and the Russian River). Furthermore, the runoff would carry with it the herbicides and pesticides (endocrine disruptors) and added soil amendments applied to landscape when creek flows are low and assimilation of toxins poor.

The situation is complicated by the temporary authorization by your Board to lower minimum flows in the Russian River. The Sonoma County Water Agency has applied for permanent lowering of flows in response to a Biological Opinion that was never vetted for environmental impacts. On the one hand justification for expanded irrigation with wastewater is viewed partially as a way to save fish suffering from too little flow, and on the other supposedly improving habitat by lowering the flows in the river to expand and deepen a lagoon at the mouth.

This has all been done with minimal concern for the lower Russian River and its water quality, its recreation and tourism, and its aquatic habitat and wildlife. Ironically the North Coast Regional Board has written a lengthy scoping letter enumerating extensive concern about potential water quality impacts resulting from anticipated permanent low flows. If water quality is further exacerbated by irrigation runoff, vacationers will be swimming in a toxic stew. We implore you to not let this happen.

***Even the best irrigation systems fail...***

RRWPC filed two complaints with the Regional Board in 2010 and 2012 about irrigation runoff in Rohnert Park and Santa Rosa, including many pictures of the multiple incidents and locations. (Story and pictures of the Santa Rosa runoff can be viewed at our website on home page at [www.rrwpc.org](http://www.rrwpc.org)) These were repetitive events occurring over about three weeks, and occurred in spite of the fact that the City of Santa Rosa has produced a great deal of information to irrigators about proper application of the wastewater. Furthermore, they claimed to have spent a great deal of time working with irrigators to teach them the proper way to apply wastewater. We believe that some irrigators just want to use the water and don't want to be bothered with the regulations. Regulatory enforcement must be a strong component of this policy.

***Incidental runoff and AB 2398...***

The definition of “ incidental runoff” in the Recycled Water Policy is, in our view, rather weak. RRWPC recently provided extensive comments on AB 3298, legislation crafted to implement the Policy and assist in meeting the State’ s goal of irrigating 2.5 million acre feet a year of wastewater by 2030. This Bill, which cleared the Assembly with flying colors but went nowhere in the Senate and is now dead for the year, declassified tertiary wastewater as a waste. (We are concerned that the Bill will be back again next year in a similar form.)

The legislation seriously downgraded the meaning of ‘ incidental runoff’ in the legislation. Our comments about AB 2398, contained in a letter to Senator Noreen Evans states (page 4: [http:// www.rrwpc.org/ ?page\\_id=3368](http://www.rrwpc.org/?page_id=3368) ):

“ Similarly, the following statement is made on page 32 under (m): “ *The recycling of water, the supply, storage, or use of recycled water in accordance with the requirements of this division shall not be considered a discharge of waste or sewage for purposes of Section 13264 or 13271, or a nuisance, as defined in subdivision (m) of Section 13050.*” (Our reading of these sections implies that because irrigated water is not considered waste, it doesn’ t fall under the regulations governing runoff. So by simply declaring something is NOT a waste, with no burdon of proof to demonstrate that fact, enormous environmental harm can occur by allowing large amounts of runoff.)

Put another way, it defines sewage as (adequately) treated wastewater, but then states that this sewage/ treated wastewater does not include recycled water. Put another way, Section 13050 of the Water Code it states (n): “ *Recycled Water*” means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore a considered a valuable resource.”

**The question remains, how can “ recycled water” be treated differently than treated sewage (wastewater) when the definition, based on treatment methodology is the same for both? And, because the treated sewage is designated as recycled water, which is a high use, therefore it is safe.”**

In addition, there are inconsistencies regarding reporting limit triggers, which include the following:

- Report any runoff that occurs as soon as it is known,
- Report 1000 gallons or more of runoff,
- OR report after 50,000 gallons have run off.

(RRWPC letter to Senator Evans provides more detailed information on these triggers.) These are problems that should be cleared up in the Policy.

### ***Recycled Water Policy Amendments...***

The principal subject for discussion here is the proposed amendments to this

policy. For the most part, these amendments are based on findings by the Scientific Panel established under the Recycled Water Policy to make recommendations on the monitoring of Contaminants of Emerging Concern (CEC' s). They concluded that “ *...monitoring of individual CECs is not proposed for recycled water used for landscape irrigation, although monitoring of some parameters is proposed.*” (page 2 of State notice on this amendment)

The Panel' s Report on CECs was released on June 25, 2010. A hearing on its findings was held on December 15, 2010. RRWPC looked at the report and sadly found it way beyond our expertise to comment on. Similarly, we did not submit comments and/ or attend the hearing either for the same reason. We had been following articles on the risks of endocrine disruption for both humans and wildlife, but did not feel we could address the highly technical findings of the Report.

Yet we have followed the extensive comments of Linda Sheehan of California Coastkeeper Alliance and others on this issue. We have been extremely impressed with her characterization of the problem and are in total agreement with her concerns. On January 10, 2011 she submitted a letter to your Board on the CEC Monitoring for Recycled Water. We especially share her concerns about the general lack of addressing impacts to wildlife in these policies (AB 2398 also shared the same weakness.) She expresses the following important concerns:

- Extremely limited set of monitoring proxies
- Concern about deference to CDPH
- Public' s relative ignorance about far reaching impacts of these chemicals
- Monitoring major focus on human health impacts

Ms. Sheehan calls for development of standardized interim list of CECs to be monitored that includes treatment plant efforts to identify appropriate CECs for freshwater eco-toxicological concerns. With this we fully agree. In regard to the monitoring recommended in the Study, she states on page 4 of her comments,

*“ However, the final Panel recommendations are completely inappropriate in light of the data and fail to meet the requirements or goals of the Recycled Water Policy. For example, the Panel did not expressly acknowledge the fact that discharge of recycled water to receiving waters occurs on a daily basis, .....or that many northern California streams that may receive recycled water effluent interact regularly and closely with groundwater. As such, the importance of including monitoring recommendations for those CECs that potentially pose a risk to aquatic life and ecosystems is absolutely critical. By failing to recommend a robust monitoring program even in the short-term in light of this dearth of data, the Report will only delay the increased, safe use of recycled water that California needs to ensure a sustainable water future.”* She goes on to

recommend specific additional monitoring which we support.

***New information should be considered in this process....***

RRWPC learned about AB 2398 on March 15<sup>th</sup>, 2012. We quickly read the proposed legislation and back up materials and submitted comments as to our concerns about the far reaching implications of the Bill. About this time, we also learned about a new scientific study that had recently been released that justifies revisiting the basic assumptions behind this Panel's Report. These incorrect assumptions form the basis not only for this Recycled Water Policy Amendment, but for AB 2398 as well. We submitted comments and a copy of the study to the Assembly Committee on Water, Parks, and Wildlife at their hearing in Sacramento on March 20, 2012.

The study is entitled **Hormones and Endocrine-Disrupting Chemicals: Low-Dose Effects and Nonmonotonic Dose Responses**, developed and written by Laura N. Vandenberg, Theo Colborn, Tyrone B. Hayes, Jerrold J. Heindel, David R. Jacobs, Jr., Duk-Hee Lee, Toshi Shioda, Ana M. Soto, Frederick S. von Saal, Wade V. Welshones, R. Thomas Zoeller, and John Peterson Myers, to the Assembly committee. We were later told that the Study could not be entered into the record because of copy write requirements. We have since received authorization from Tasha McKenzie of The Endocrine Society to reproduce this document. We attached the email granting permission to this comment letter. It also contains the name and contact email of the person granting the permission in case you want further documentation on this.

**The Scientific Panel failed to address the issue of low dose responses to endocrine disrupting chemicals.** While this study had been released in March of this year, many/ most of the authors listed above have been working on these problems for many years. In particular, Theo Colborn's and Tyrone Hayes's works have been extensively publicized in the media for a very long time. (RRWPC held an all day conference on the issue in May, 1995 where Dr. Colborn appeared and made a presentation.)

The January/ February issue of Mother Jones (page 44) carried a lengthy article entitled ***The Frog of War***, about Dr. Tyrone Hayes's work with frogs. He discovered that levels of atrazine in the parts per billion range (below what is considered safe for humans) caused significant alterations in their sexual make up. In other words, male frogs developed ovaries, and females developed aggressive, dominant behavior. (Here's link to article: <http://m.motherjones.com/environment/2011/11/tyrone-hayes-atrazine-syngenta-feud-frog-endangered>)

We have many articles on this topic, but realized that providing your Board with a stack of papers would probably not serve the purpose we hope to accomplish.

So we approached the lead author of the Study, Dr. Laura Vandenburg and told her about the *Notice of the Amendment to the Recycled Water Policy*. She agreed to write a letter about low dose effects and informed me that she has submitted it, along with an article written by herself entitled, “ *Environmental Chemicals, Large Effects from Low Doses*” published in “ *San Francisco Medicine*” June 2012.

Dr. Vandenburg is an academic scientist who has worked on issues related to endocrine disruption for the last nine years. She has published more than 25 peer reviewed studies and has served on expert scientific and risk assessment panel in the US and Europe. The above mentioned study on low dose effects had her working with eleven of the top scientists in the field, who together had published over 1000 studies on environmental chemicals.

The group examined over 800 studies during a three year period and (page 2 of Dr. Vandenburg’ s letter to the Board) “ ***...concluded that there was clear and consistent evidence that a large number of EDCs have effects at low doses...These chemicals include herbicides, insecticides, fungicides, preservatives, industrial chemicals, surfactants, plasticizers, pharmaceuticals, flame retardants, and anti-bacterial agents, among others.***” (emphasis added)

Her comments are powerful. She adds, “ *The concept of low dose effects and non-monotonic dose responses is **not at the fringe of science**. The Endocrine Society, the world’ s largest professional association of clinical and research endocrinologists, has released two recent statements regarding EDCs, and has repeatedly reiterated the conclusion that low doses of EDCs are harmful to humans and wildlife. This conclusion has widespread acceptance in the field of endocrinology due to the strength of the published data.*”

She also expressed these and other views in an article entitled: “ ***Opinion: ‘There are no safe doses for endocrine disruptors***” appearing in the 5/ 26/ 12 issue of Environmental Health News.

<http://www.environmentalhealthnews.org/ehs/news/2012/opinion-endocrine-disruptors-low-level-effects>)

She states, “ *Hundreds of studies have examined people from the general population and found associations between low levels of hormone-altering compounds and infertility, cardiovascular disease, obesity, abnormal bone health, cancer and other diseases.*”

It appears as though the State is considering setting up a new Science Panel to address these issues. We suggest that Dr. Vandenburg be invited to sit on the Panel. In the event she cannot do that, I would suggest that at least one, if not more, of the eleven others who participated in the Low Dose Effects study be invited instead.

In light of this information, the issue of “ incidental runoff” becomes far more significant than what is considered in the Recycled Water Policy. Not only is the

applied wastewater liable to contain at least trace amounts of these chemicals, but the prolific use of weed killers and other toxic applications to landscapes and agricultural areas may be the death knell of many species resulting from allowing runoff into water ways.

***Issue getting widespread attention by media...***

This issue is receiving more and more attention in the main stream media. Only today (July 1, 2012) in the Sunday Press Democrat on page B9, there is an article entitled “*What is stealing childhood years?*” by David Sortino. (<http://www.pressdemocrat.com/article/20120630/OPINION/120629413/1307/opinion?template=printart>) In it he refers to early onset of puberty in young girls. He specifically mentioned hormones used in cattle beef as perhaps being one of the culprits. He also talks about many other environmental toxins which “..act as hormone-disruptors.”

Nickolas D. Kristof, syndicated columnist for the New York Times, whose articles also appear in our local Press Democrat and probably many other California newspapers, wrote “*How Chemicals Affect Us*” <http://www.nytimes.com/2012/05/03/opinion/kristof-how-chemicals-change-us.html> that appeared in the New York Times on May 2, 2012. In that article he talked about multisexual frogs exposed to Atrazine. He makes the powerful observation in his appeal for regulation of these toxins, “*Shouldn’ t our government be as vigilant about threats in our grocery stores as in the mountains of Afghanistan?*”

Nick Kristof had written another column in the June 28, 2009 issue of the New York Times entitled “*It’ s Time to Learn From Frogs*”, [http://www.nytimes.com/2009/06/28/opinion/28kristof.html?\\_r=1](http://www.nytimes.com/2009/06/28/opinion/28kristof.html?_r=1) where he also mentions the trans sexual nature of fish as well as frogs who are exposed to endocrine disrupting chemicals. He also alludes to sexual anomalies in 1% of human male newborns having the birth defect entitled hypospadias, in which, “*..the urethra exits the penis improperly, such as at the base rather than the tip.*” There is a clear, non-technical explanation of this by Dr. Theo Colborn in her video, “*The Male Predicament*” available at her website: <http://www.endocrinedisruption.com/endocrine.male.php>

Dr. Vandenburg mentioned the editorial article by Linda S. Birnbaum, director of the National Institutes of Health, Department of Health and Human Services, entitled *Environmental Chemicals: Evaluating Low-Dose Effects*. [http://ehp03.niehs.nih.gov/article\\_fetchArticle.action?articleURI=info%3Adoi%2F10.1289%2Fehp.1205179](http://ehp03.niehs.nih.gov/article_fetchArticle.action?articleURI=info%3Adoi%2F10.1289%2Fehp.1205179) This editorial was dated March 14, 2012. Dr. Birnbaum is the author of over 700 peer reviewed publications, book chapters,

abstracts, and reports. She states: “ *Thus, human exposures to thousands of environmental chemicals fall in the range of nonnegligible doses that are thought to be safe from a risk assessment perspective. Yet the ever-increasing data from human biomonitoring and epidemiological studies suggests otherwise: Low internal doses of endocrine disruptors found in typical human populations have been linked to obesity, ... infertility, ... neurobehavioral disorders, ....and immune dysfunction, ...among others.*”

Some other recent articles include:

“ ***Low doses, big effects: Scientists seek ‘fundamental changes’ in testing, regulation of hormone-like chemicals***” by Marla Cone, Editor in Chief, Environmental Health News on March 15, 2012.

<http://endocrinedisruption.us2.list-manage.com/track/click?u=10e84a56c4886d1bc606f4725&id=1de66cf02d&e=28a090794e>

She states (after summarizing most of the points made in Dr. Vandenburg’s comment letter): “ *The breast cancer drug tamoxifen “provides an excellent example for how high-dose testing cannot be used to predict the effects of low doses,”* since breast cancer growth is stimulated at low doses and restrained at higher doses. Therefore, for those whose breast cancers are hormone sensitive, the drug is often prescribed for breast cancer patients in high doses.

“ ***Scientists Warn of Low -Dose Risks of Chemical Exposure***”

<http://endocrinedisruption.us2.list-manage.com/track/click?u=10e84a56c4886d1bc606f4725&id=d3dc6fad9f&e=28a090794e>

is an report that appeared in YALE Environment 360 on March 19, 2012 and written by Elizabeth Grossman. She is the author of *Chasing Molecules: Poisonous Products, Human Health, and the Promise of Green Chemistry*, *High Tech Trash: Digital Devices, Hidden Toxics, and Human Health*, and other books. Her work has appeared in *Scientific American*, *Salon*, *The Washington Post*, *The Nation*, *Mother Jones*, *Grist*, and other publications.

She states: “ *Thomas Zoeller, a University of Massachusetts biologist and paper co-author, said that regulatory testing of chemicals for endocrine-disrupting impacts lags behind the growing evidence of the compounds’ health effects, particularly at levels to which people are routinely exposed. “There is a very large disconnect between regulatory toxicology and the modern science of endocrinology that is defining these issues,” said Zoeller.*”

More information on endocrine disrupting chemicals can be found at [www.endocrinedisruption.org](http://www.endocrinedisruption.org) .

There is one final article we will mention entitled “ ***Key Officials Grapple With Ways To***

*Speed Endocrine Science in Decisions*” written by Pete Myers (lead scientist of the 12 authors of the Study) and posted on May 18, 2012 in “ *Inside EPA*” .

(John) “ *Kerry’ s comments suggest he fears a long road remains to finding enough political support for restricting the use of chemicals that a growing number of scientists say mimic and interfere with hormones, creating developmental problems in humans that do not often manifest until later in life and whose potential effects often are missed by traditional toxicological methods.*”

And then: “ *But NIEHS Director (see above) Linda Birnbaum, one of the panelists, told Kerry that endocrine disruption data continue to accumulate and that the absence of perfect knowledge shouldn’ t justify inaction.*” She said, “ *Science is never certain. It’ s constantly advancing and constantly moving forward. If we try to wait until we have 100% certainty, we’ re never going to do anything.*”

Finally, in my own comments to the Water Board on the Recycled Water Policy, written on December 22, 2008, I note numerous other studies (pages 5-9) and articles current at that time 3.5 years ago. I resubmit them here for their historical value.

I will close with a quote from Theo Colborn, the Rachel Carson of our time, which appeared in Elizabeth Grossman’ s article quoted above. In reference to the recent study on low dose effects of endocrine disrupting chemicals, she said:

*“ I hope that this paper opens the door to the realization that the endocrine system is the overarching control system of all other body systems....It controls how we develop, function, and reproduce from the moment we are conceived---in other words, the quality of our lives and our existence.”*

**Please take this information to heart and address these issues as you contemplate the Amendment to the Recycled Water Policy.**

Sincerely,

A handwritten signature in black ink that reads "Brenda Adelman". The signature is written in a cursive, flowing style.

Brenda Adelman

RRWPC

## **RRWPC**

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### **Russian River Watershed Protection Committee**

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Brenda Adelman: Chair

#### **RE: Comment letter: Amendment to Recycled Water Policy: References**

Send Via Email to: [commentletters@waterboards.ca.gov](mailto:commentletters@waterboards.ca.gov) on July 1, 2012

#### **References** (organized by order on page):

(References in red have links to document in body of comments and in these references; others are attached and sent by email.)

##### **Page 2:**

Adelman, Brenda, Letter to Noreen Evans regarding AB 2398: Recycled Water Bill  
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##### **Page 4:**

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<http://m.motherjones.com/environment/2011/11/tyrone-hayes-atrazine-syngenta-feud-frog-endangered>

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Birnbaum, Linda S., *Editorial: Environmental Chemicals: Evaluating Low-Dose Effects*, Environmental Health Perspectives, 120:a143-a144  
<http://www.environmentalhealthnews.org/ehs/news/2012/opinion-endocrine-disruptors-low-level-effects>)

Cone, Marla, “*Low doses, big effects: Scientists seek ‘fundamental changes’ in testing, regulation of hormone-like chemicals*”, Environmental Health News on March 15, 2012.  
<http://endocrinedisruption.us2.list-manage.com/track/click?u=10e84a56c4886d1bc606f4725&id=1de66cf02d&e=28a090794e>

Grossman, Elizabeth, “*Scientists Warn of Low-Dose Risks of Chemical Exposure*”, YALE Environment 360, March 19, 2012  
<http://endocrinedisruption.us2.list-manage.com/track/click?u=10e84a56c4886d1bc606f4725&id=d3dc6fad9f&e=28a090794e>

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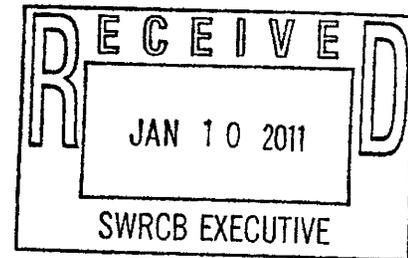
Myers, Peter, *Key Officials Grapple With Ways To Speed Endocrine Science in Decisions*”, Inside EPA

Adelman, Brenda, Comments to Water Board on Recycled Water Policy, December 22, 2008



January 10, 2011

Charlie Hoppin, Chair and Board Members  
State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814  
c/o Jeanine Townsend, Clerk to the Board  
Via Electronic Mail: [commentletters@waterboards.ca.gov](mailto:commentletters@waterboards.ca.gov)



**Re:** Comment Letter: CEC Monitoring for Recycled Water

Dear Chair Hoppin and Members of the Board:

The California Coastkeeper Alliance (CCKA), which represents California's 12 Waterkeeper organizations, and Heal the Bay are Stakeholder Advisors to the "Advisory Panel for CECs in Recycled Water," and were active members of the drafting group for the State Water Resources Control Board's Recycled Water Policy (Policy). On behalf of CCKA and Heal the Bay, we welcome the opportunity to provide these comments on the State Water Resources Control Board's *Staff Report, Constituents of Emerging Concern (CECs) Monitoring for Recycled Water* (November 8, 2010) (Staff Report). Many of these comments also relate the Panel's *Final Report, Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water: Recommendations of a Science Advisory Panel* (June 25, 2010) (Panel Report). We also incorporate by reference our letter submitted to the State Board on May 14, 2010 on the previous draft of the CEC Advisory Panel's Recommendations, (*Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water: Recommendations of a Science Advisory Panel* (April 15, 2010)).

In brief, we disagree with the proposed, extremely limited set of monitoring proxies, which will fail to build the database of information needed to develop sound CEC standards that protect water quality and advance public acceptance of the increased use of recycled water. The Staff Report recommends only four health-based CECs and four different performance-based indicator CECs. While the Panel makes scientific arguments in support of this abbreviated list (as compared with the thousands of CECs potentially being discharged), it ignores the larger policy implications of a short-circuited monitoring program in terms of retarding public good will toward the safe use of recycled water. The list should be expanded, as we have argued consistently, to build scientific credibility and to assuage public concerns.<sup>1</sup>

<sup>1</sup> For example, at least one water district scientist raised questions about the selection of caffeine as a tracer since it is comparatively ubiquitous. (Personal conversation with OCWD Laboratory Director, September 27, 2010.) It was noted that some of the anti-epilepsy medications such as carbamazepine and primidone are particularly stable molecules that do not wax and wane like other markers, and would likely be better selections. *Id.* Gadolinium was also mentioned as a potentially useful tracer for these reasons. *Id.* See also Guo, Y. C. and Krasner, S. W. (2009), "Occurrence of Primidone, Carbamazepine, Caffeine, and Precursors for *N*-Nitrosodimethylamine in Drinking Water Sources Impacted by Wastewater," *JAWRA Journal of the American Water Resources Association*, 45: 58–67. doi: 10.1111/j.1752-1688.2008.00289.x, abstract and full article available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1752-1688.2008.00289.x/abstract>. In this study "[w]astewater impact on drinking water sources was assessed using several approaches, including analysis of three pharmaceuticals and

The Staff Report does propose to accept the list of CECs recommended by CDPH; we support the addition of these monitoring parameters. Recycled Water Policy Section 10.(a)(1) states that “all uses of recycled water must meet conditions set by CDPH.” It is our understanding that the commenters at the December 15<sup>th</sup> raised questions with regard to CDPH support for these additional parameters, and urged that the CDPH-recommended compounds be revisited through the Panel’s risk-based framework. We would argue that the Recycled Water Policy’s deference to CDPH places the burden on those who would weaken the CDPH requirements to provide clear and convincing evidence that such weakening is unsupported by science or policy.

As Recycled Water Policy Section 10.(a)(4) states, “[r]egulating most CECs will require significant work to develop test methods and more specific determinations as to how and at what level CECs impact public health or our environment.” It has been our direct experience that many members of the public care significantly about this issue. They are concerned about the fact that their regulatory agencies appear to be still unaware of the risks of CECs, and that they have been taking little meaningful action to redress these informational and regulatory gaps.<sup>2</sup> While we would of course support additional CDPH information on the reasoning for the choices of the monitoring parameters it recommends, we would oppose eliminating recommendations that better safeguard public health simply on this process issue. If California is to advance recycled water use, the potential impacts of CECs must be tackled assertively. This will not be accomplished by brushing aside the recommendations of CDPH for failure to follow the Panel’s lead, where the CDPH recommendations may be more protective of public health, and more representative of treatment efficacy. Indeed, this runs the risk of moving the state *backward* in its use of recycled water, which is critical to the state’s water supply future. Investment in monitoring now will reap significant dividends in both scientific understanding of CECs and public good will toward recycled water use in the future.

As we have stated repeatedly in the past, we also strongly disagree with the Report’s focus on monitoring solely for the purpose of assessing human health impacts. This approach directly contradicts the Recycled Water Policy’s clear direction to include ecological assessments.<sup>3</sup> The initial list of compounds to be monitored should be expanded to include, at a minimum, those CECs for which ecotoxicity data is currently available. It also contradicts the Policy’s goal of increasing the use of recycled water significantly beyond the current environmental conditions examined by the Panel, making foundational monitoring all the more important.

Severely limiting recommended monitoring as proposed in the Panel Report will reduce, rather than encourage, Californians’ confidence in the use of recycled water. It also will delay effective action to prevent potential public health and ecological impacts, contrary to the goals of the Recycled Water

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personal care products (PPCPs) – primidone, carbamazepine, and caffeine – as indicators,” with the results showing that “measurement of the two pharmaceuticals and NDMAFP tests can be used to evaluate wastewater impact in different watersheds, whereas caffeine results were more variable.” *Id.* (emphasis added).

<sup>2</sup> House Committee on Energy and Commerce Subcommittee on Energy and Environment, “Endocrine Disrupting Chemicals in Drinking Water: Risks to Human Health and the Environment” (Hearing Feb. 25, 2010), information available at: <http://energycommerce.house.gov/hearings/hearingdetail.aspx?NewsID=7673>. See also Bergeson and Campbell, “House Subcommittee Holds Hearing on Endocrine Disrupting Chemicals in Drinking Water” (March 1, 2010), available at: <http://www.lawbc.com/news/2010/03/house-subcommittee-holds-hearing-on-endocrine-disrupting-chemicals-in-drinking-water/> (noting that at the 2010 hearing, the “Subcommittee members criticized the slow pace of EPA’s Endocrine Disruptor Screening Program”).

<sup>3</sup> See, e.g., Recycled Water Policy, Sec. 10(b)(2) (“The panel shall review the scientific literature and, within one year from its appointment, shall submit a report to the State Water Board and CDPH describing the current state of scientific knowledge regarding the risks of emerging constituents to public health *and the environment*”) (emphasis added). See also Recycled Water Policy, Sec. 10(a)(4) (“Regulating most CECs will require significant work to develop test methods and more specific determinations as to how and at what level CECs impact public health or our environment”).

Policy. A monitoring program, particularly when used as a shorter-term regulatory screening tool, necessarily must err on the side of comprehensiveness. The lack of data is no excuse to not include an appropriate constituent at this early stage of CEC monitoring programs. It is the follow-up regulatory effort, and associated longer-term monitoring program, that may be more circumscribed, *if* called for based on sufficiently comprehensive initial monitoring and analysis.

Given that our organizations invested heavily in the development of the Policy with the goal of increasing recycled water use *consistent with state and federal water quality laws*, we urge that the Staff Report be revised to recommend an initial screening period of monitoring, over three years, that includes the full list of CECs in Tables 8.1 and 8.2 of the Panel Report (Panel Report at 64, 66), and any additional appropriate contaminants from Table D-1. Monitoring for this list will far better ensure the protection of both human health and the environment, as envisioned by the Policy. Also, it will provide the public with the confidence they need to begin to embrace indirect potable reuse on a statewide basis. Alternatively, a survey of the CEC monitoring sections of all of the NPDES permits in the state would be useful in developing a standardized interim list of CECs to be monitored. These interim lists should be required for both freshwater *and* marine discharges, as the efforts to create a marine CEC monitoring program will not be completed for at least a year,<sup>4</sup> and there are no current plant efforts to identify appropriate CECs for freshwater eco-toxicological concerns. Again, this is flatly inconsistent with the Recycled Water Policy.

These comments are discussed further below, along with additional points.

#### **The Recycled Water Policy Calls for Broad Consideration of Monitoring Needs in the Context of Protecting Human Health and the Environment**

The Recycled Water Policy established the CEC Advisory Panel for the purpose of “describing the current state of scientific knowledge regarding the risks of emerging constituents *to public health and the environment*.” (Emphasis added.) The Recycled Water Policy further called on the Panel’s Report to “recommend actions that the State of California should take to improve our understanding of emerging constituents” because “[r]egulating most CECs will require . . . more specific determinations as to how and at what level CECs impact public health or our environment.” This mandate was directed at an expert Panel because, as the Report notes, “[t]here needs to be additional research . . . to determine *potential environmental and public health impacts*.” (Emphasis added.) This research is further needed to implement the Recycled Water Policy’s direction to agencies to “minimize the likelihood of CECs impacting *human health and the environment* by means of source control and/or pollution prevention programs.” (Emphasis added.)

In the context of these overarching mandates to ensure protection of both human health and the environment, the Recycled Water Policy directed the Panel as follows:

- (4) The panel report shall answer the following questions: What are the appropriate constituents to be monitored in recycled water, including analytical methods and method detection limits? What is the known toxicological information for the above constituents? Would the above lists change based on level of treatment and use? If so, how? What are possible indicators that

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<sup>4</sup> SCCWRP, “Project: Advisory Panel for CECs in Coastal and Marine Ecosystems,” available at: <http://www.sccwrp.org/ResearchAreas/Contaminants/ContaminantsOfEmergingConcern/EcosystemsAdvisoryPanel.aspx> (given that, according to the public schedule, the Panel is scheduled to complete a Final Report by mid-June, widespread state adoption of some or all of its recommendations will take months more, as the current process is demonstrating).

represent a suite of CECs? What levels of CECs should trigger enhanced monitoring of CECs in recycled water, groundwater and/or surface waters?

As noted above, the Panel was charged with answering each of these questions for both human health *and* environmental perspectives, keeping in mind the overarching goal of increased use of recycled water consistent with water quality laws. The dearth of monitoring data to date and lack of consumer confidence in recycled water quality have been impediments to moving forward on recycled water use and development of the associated CEC standards.

The process that the Panel went through to look at the current information on CECs – examining existing monitoring data, analytical methods and risk (toxicity and exposure) in a systematic manner – is a logical approach. The Panel Report serves as a good reference on the state of CEC regulation, human health (though not environmental) risks, and effluent monitoring. Further, the analysis that was completed to develop the final list of CECs may prove to be of value for determining which CECs should be looked at more carefully for regulation in the future.

However, the final Panel recommendations are completely inappropriate in light of the data and fail to meet the requirements or goals of the Recycled Water Policy. For example, the Panel did not expressly acknowledge the fact that discharge of recycled water to receiving waters occurs on a daily basis, that many streams in southern California are effluent-dominated streams with 80-95% of dry weather flows coming from recycled water discharges, or that many northern California streams that may receive recycled water effluent interact regularly and closely with groundwater. As such, the importance of including monitoring recommendations for those CECs that potentially pose a risk to aquatic life and ecosystems is absolutely critical. By failing to recommend a robust monitoring program even in the short-term in light of this dearth of data, the Report will only delay the increased, safe use of recycled water that California needs to ensure a sustainable water future. The State Board should supplement the interim list of CECs to be monitored by looking at available eco-toxicity data. Those constituents that are toxic to aquatic life should be included on an interim CEC monitoring list. These additions will provide water boards with essential new information to better understand the potential aquatic life impacts of CECs. For instance, pyrethroids are notably absent from the Table 1 of the Staff Report, yet they have been shown by SCCWRP to be a predominant cause of toxicity in waterbodies such as Ballona Creek.

### **The State Board Must Provide a Comprehensive Monitoring Strategy That Will Help Guide Future Regulatory Efforts That Protect Both Human and Environmental Health**

The Recycled Water Policy recognized the need for further research to determine “how and at what level CECs impact public health or our environment,” in order to guide future regulation of CECs. The Recycled Water Policy in fact created the Panel with this uncertainty in mind. Given that the Panel reviewed existing information based on ongoing, relatively limited use of recycled water, we strongly disagree with the recommended monitoring regime of only a small set of CECs, particularly given that they were selected based on human health concerns, rather than considering *both* human and ecological health concerns. Such an extremely limited monitoring regime will fail to satisfy the research needs of the regulatory effort referenced in the Policy, will fail to provide the public confidence in the use of recycled water needed to ensure a reliable water supply statewide, and will fail to protect the health of the environment in the event that recycled water is used in the surrounding environment more extensively than examined by the Panel.

As has been repeatedly articulated by our organizations and supported in the scientific literature, CECs are a growing problem in aquatic environments, and will only increase in significance if recycled water is used more widely *unless* appropriate safeguards are put in place. The Panel itself acknowledged that “reuse practices engage conventional and advanced water treatment processes that result in very

different effluent water qualities" (Panel Report at 37), results that could have markedly varying environmental impacts that would go unexamined under the monitoring framework recommended in the Report. Moreover, the Panel acknowledged that it had ignored "[o]ther reuse practices that could result in discharge of recycled water to surface water, estuaries, and the ocean." (Panel Report at 2.) The Panel Report noted, possibly by way of explanation, that "the SWRCB, in collaboration with the Packard Foundation, established another Science Advisory Panel in January 2010 that was charged to address CEC discharge" in ocean and coastal ecosystems. However, the release of future reports related to environmental impacts of CECs is not relevant to the immediate mandate before the Panel and the Water Board to assess the "current state of scientific knowledge regarding the risks of emerging constituents to public health and the environment," and to answer monitoring-related questions that will further such scientific knowledge. Also, the ocean CEC panel's recommendations may not be finalized for another year, and there are no current plans to determine a CEC list for CECs posing toxicological risks to freshwater aquatic life. In the meantime, Regional Water Boards will continue issuing NPDES permits for recycled water discharges to rivers, lakes and coastal waters without needed safeguard. At a minimum, an interim CEC monitoring list for freshwater and marine discharges must accompany the Water Board's "CEC Monitoring for Recycled Water package."

As noted above, the Recycled Water Policy established the Panel to "recommend actions that the State of California should take to improve our understanding of emerging constituents" because "[r]egulating most CECs will require . . . more specific determinations as to how and at what level CECs impact public health or our environment." Increased use of recycled water, which is important to California's water sustainability, requires expedited development of this understanding of the impacts of CECs on public health and the environment, and an appropriate regulatory program based on such information. An initial screening period of three years of comprehensive monitoring is needed to build the foundational baseline to determine which CECs need to be further monitored and regulated – and, importantly, to build public confidence that the science behind recycled water use is sound.

This last point cannot be over-emphasized; the many years of difficulty in increasing the use of recycled water in the face of public concern about its overall safety must be faced with comprehensive and transparent monitoring programs that lead to protective standards. The example of recycled water projects like the LADWP East Valley Project being mothballed because of "toilet to tap" concerns illustrate the importance of consumer confidence. Without the baseline data created by a comprehensive initial screening period, the extremely limited monitoring framework being recommended by the Panel will fail to reassure a concerned public that the health and environmental impacts widely reported as resulting from CECs are being sufficiently studied and, as needed, regulated. More limited monitoring may be instituted after the initial screening period, based on the results of the initial monitoring and in light of the state's recycled water use objectives and environmental and public health protection goals.

The Panel Report itself appears to recognize the limitations of the recommended monitoring framework, noting that "there are a number of activities the State can undertake to improve the quality of future monitoring and toxicological information that feeds into the process that the Panel has identified for this inaugural CEC monitoring effort." (Panel Report at 74.) The inaugural monitoring effort, in fact, should be a baseline, comprehensive monitoring program, not the circumscribed program in the Staff Report, to set up the foundation for later regulation as needed. The Panel Report further notes that the state should "[d]evelop a process to predict likely environmental concentrations of CECs based on production, use, and environmental fate, as a means for prioritizing chemicals on which to focus method development and toxicological investigation." (Panel Report at vi.) Again, this cannot be done without a robust set of initial monitoring information.

We urge the State Board to revise the Staff Report to recommend an initial screening period of monthly effluent monitoring, and at least annual receiving water monitoring, over three years, that

includes the CDPH list, the list of CECs in Tables 8.1 and 8.2 (Panel Report at 64, 66), and any additional appropriate contaminants from Table D-1. These lists are far from a comprehensive compilation of CECs, but we are willing to support them based on the research done to date in developing them. Moreover, we oppose the Staff Report's insistence that "the process for selecting additional health-based CECs for monitoring *would have to be consistent with* the Panel's exposure screening approach (i.e., evaluation of MEX/MTL)" (Page 3, emphasis added). While the Panel's approach could be a floor, we do not view it as a ceiling. The Panel simply has not made the case for eliminating the authority of CDPH or a Regional Board to determine that more protective (from a public health or environmental perspective) monitoring is necessary to ensure that beneficial uses and other standards are met.

As an alternative to the above monitoring recommendation, the State Board could obtain the list of CECs that are being monitored by dischargers in all the regions and develop an interim list with appropriate detection limits. Throughout the state, NPDES permits have moved forward that include monitoring requirements for a variety of different CECs. For instance the Tapia Water Reclamation Facility NPDES Permit adopted on September 2, 2010 includes a special study for CEC monitoring of 26 constituents. The bottom line is that California needs meaningful CEC monitoring for all permits moving forward. Currently, some Regional Boards require CEC monitoring while others do not, and there is no consistency on the CEC lists or the minimum detection limits. In addition, the full CEC monitoring list itself should be revisited on a biennial basis initially, since the science and number of new chemicals and pharmaceuticals coming on the market are changing so rapidly. Review of the monitoring list can move as appropriate to a triennial basis.

With respect to timing, the Staff Report recommends quarterly monitoring of CECs for the first year and biannual monitoring for baseline operations. This is too infrequent. Instead, we urge the State Board to recommend initial monthly monitoring. Although some may argue that monthly monitoring may be cost prohibitive, the State Board must not lose sight of one of the main purposes of the screening effort: to provide consumer confidence that recycled water poses negligible human and aquatic life health risks. A monthly monitoring program for three years would capture any variability in plant performance and seasonal influent water quality and provide a more solid base of information to present to the public. The state needs to build a robust database on the issue quickly, and it needs to provide adequate information to the public on the effluent water quality discharged from various different levels of water recycling treatment. Some technologies like MF/RO may do a good job of removing many CECs to below detection levels, and other treatment technologies will hopefully be effective at CEC removal as well. But the state needs to collect and publicly present this data to a skeptical public, *and* demonstrate its understanding of the impacts of the discharges to receiving waters, in order to make the scientific and policy case for a larger strategy to increase statewide water recycling. Again, effluent monitoring can be reduced in the longer term based on the results of this initial screening process, but this must be done consistent with an initial, comprehensive review of effluent concentrations and receiving water impacts.

Adequate monitoring during this initial period will reassure the public that the science is being developed fully, and it will produce the information necessary to make a more informed decision about which parameters to include and exclude in a longer-term monitoring and regulatory framework. Monitoring should be required for all constituents both in the effluent and in the receiving waters, to build the database that the CEC Advisory Panel recognized is needed to "predict likely environmental concentrations of CECs based on production, use and environmental fate, as a means for prioritizing chemicals on which to focus method development and toxicological investigation." Of note, the Staff Report does not provide recommendations for receiving water monitoring other than for groundwater recharge/reuse, which is a major short-coming. To ensure fate and transport is readily understood, receiving water monitoring should be conducted at least annually, with a trigger of increased frequency to quarterly if any CECs on the list are detected in the effluent more than once in a 90-day period.

Finally, the State Board should ensure that recommendations are made based on the need for monitoring, not the current availability of analytical methods, and that research on analytical methods moves forward. The Staff Report lists the CEC Advisory Panel's recommendations for additional research, including the development of robust and reproducible analytical methods to measure CECs in recycled water. However, it states that these research topics may be funded at the discretion of the State Board. This research is critical. Discounting the need for analytical methods based solely on the fact that they are currently unavailable will assuredly continue the status quo of their unavailability. Requiring necessary contaminant monitoring and a reasonable timeframe for method development is a sounder course to achieve the Policy's goals and directions.

### **Surrogate Parameters Should Not Be Used in Lieu of CEC Monitoring**

The Staff Report proposes "...monitoring for the presence of selected CECs *and/or* monitoring operational surrogate parameters and constituents to evaluate treatment unit and overall treatment process performance" (Page 4, emphasis added). It appears from this language that the State Board is proposing that certain dischargers may only monitor surrogate parameters. We would strongly oppose such a direction, which is inappropriate and would reduce, rather than encourage, consumer confidence in the use of recycled water. Under no circumstances should surrogate monitoring replace CEC monitoring.

\* \* \*

Consistent with our organizations' support for the increased, safe use of recycled water consistent with state and federal water quality controls, we must oppose broad implementation of a recycled water program based solely on monitoring for an extremely circumscribed set of potential proxies for human health impacts, and *no* consideration of ecological impacts. The proposed program of CEC Monitoring for Recycled Water must be expanded to be consistent with the Recycled Water Policy and with the state's need to increase recycled water use safely.

Thank you for the opportunity to provide these comments on an issue critical to the health and well-being of Californians and their environment. If you have any questions, please do not hesitate to contact us.

Regards,



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Mark Gordon, Director, CDPH

Begin forwarded message:

**From:** Pete Myers <jpmyers@ehsic.org>  
**Date:** May 23, 2012 11:09:10 AM PDT  
**To:** CHE Science listserv <chescience@lists.healthandenvironment.org>  
**Subject:** [chescience] from Inside EPA (no public URL)  
**Reply-To:** Pete Myers <jpmyers@ehsic.org>

## Key Officials Grapple With Ways To Speed Endocrine Science In Decisions

Posted: May 18, 2012

As EPA continues to struggle to advance its Endocrine Disruptor Screening Program (EDSP), key policymakers are grappling with ways to speed scientific research showing the harmful endocrine disrupting effects of chemicals and use the data in regulatory decisions.

At a May 8 discussion hosted by the H. John Heinz III Center, an environmental nonprofit in Washington, DC, Sen. John Kerry (D-MA), who is sponsoring stalled legislation to create a new endocrine research program at the National Institute for Environmental Health Sciences (NIEHS), cautioned that future regulation of chemicals could face immense backlash from industry if regulators are unable to demonstrate a cause-and-effect linkage between endocrine disruptors and the human health harms has been firmly established.

"I'm not sure that the cause-and-effect is as dispositive as clearly our intuition and instinct and sort of common-sense tells us it is," Kerry asked panelists. "So where are we, and how fast can we get to the point that there is a definitive cause-and-effect linkage to these diseases and process to refute what will be an onslaught by the 80,000 chemical producers' expenditures to prevent us from doing anything?"

Kerry's comments suggest he fears a long road remains to finding enough political support for restricting the use of chemicals that a growing number of scientists say mimic and interfere with hormones, creating developmental problems in humans that do not often manifest until later in life and whose potential effects often are missed by traditional toxicological methods.

But NIEHS Director Linda Birnbaum, one of the panelists, told Kerry that endocrine disruption data continues to accumulate and that the absence of perfect knowledge shouldn't justify inaction. "Science is never certain. It's constantly advancing and constantly moving forward. If we try to wait until we have 100 percent certainty, we're never going to do anything," Birnbaum told Kerry.

**While Congress in 1996 authorized EPA to create its EDSP program to assess potential endocrine risks, the program has been slow to get off the ground. The agency has so far only approved one list of 67 chemicals -- all pesticides -- that must undergo Tier I screening to determine whether they pose risks. While the agency proposed a second list in 2010, it is still**

not final as officials are struggling to improve the program's management and address a host of science policy questions.

Last month, officials issued an action plan to correct management and other deficiencies that the Inspector General (IG) identified in a highly critical report issued last year, including calls for the agency to provide clear criteria for how it selects chemicals for screening and other issues. The agency has set a June 30 deadline for issuing the management plan, and Sept. 30 target for the prioritization tool, according to the April 10 action plan sent to the IG.

While the agency is slowly strengthening its program, scientists and other advocates are stepping up their calls for policymakers to do more to assess and address endocrine disruptor risks. A paper recently published in the journal *Endocrine Reviews* by a well-known group of endocrine scientists called for a new regulatory testing regime because current regulatory testing -- which doses laboratory animals with high amounts of the substance of interest and then extrapolates from those results to what is anticipated to occur at lower levels of exposure found in the environment -- does not accurately consider the risks of endocrine disrupting compounds (EDCs). That is because EDCs have nonmonotonic, or U-shaped, dose-response curves that do not follow the predictable upward slope of most chemicals' dose-response curves. An agency official said recently that risk assessors are aware of the paper and are reviewing it.

### **Kerry Legislation**

Some policymakers, like Kerry, have tried to address the issue. Kerry, for example, in July 2011 introduced legislation, S. 1361, Endocrine-Disrupting Chemicals Exposure Elimination Act of 2011, **that would create an entirely new endocrine-disruptor screening program stationed at NIEHS** and then subject those found to harm public health to a ban, according to the senator's website. But some in industry are strongly opposed to the Kerry legislation. One industry source says the senator's approach is "outrageously expensive and starting from scratch."

"That doesn't mean that can't be good to do, but we should be looking at what's in place already instead of reinventing the wheel," the source says.

Kerry acknowledged more scientific progress might be needed to convince some skeptics and translate into the needed political support. But he said in an interview that there is little hope that the current Congress will take up the matter. "But it's something we can build support for. This is how you begin to do that," Kerry said of the panel discussion.

**Lynn Goldman, who was the head of EPA's toxics office during the Clinton Administration when Congress authorized the program, echoed calls for federal officials to step up their efforts. Since EDSP was created, "there's a lot that's happened in the science over that time" and the program as it currently stands fails to incorporate many of the new discoveries, she told the Heinz Center event during a question-and-answer session.**

**Fifteen years and several missed deadlines later for EDSP, questions remain on whether agencies have the ability to bring the newer sciences into the regulatory environment, Goldman said.**

"I don't have the answer beyond trying to go back to Congress or in other ways to try to actually require that it be done," Goldman, now dean of the George Washington University School of Public Health and Health Services, said in posing the argument to the panel.

Birnbaum told Goldman that she believes federal agencies have started taking newer science methods pertaining endocrine disruption into account. She pointed to the **federal government's interagency ToxCast computational toxicology programs, for instance, which uses high-throughput screening.** "I think they're beginning to figure out to learn how to use new

information," Birnbaum said.

EPA's IG report response details how the agency will use its high-throughput and computational toxicology program to define the universe of chemicals in need of testing. **EPA officials have hinted in recent months that assays have been developed to perform Tier I EDSP screening through ToxCast, with one official in March saying it would likely start happening "sooner rather than later."**

While industry and environmentalists largely support the development of computational toxicology, which will be faster and cheaper than traditional animal-based testing, **concern remains over whether scientists and decision makers can take ToxCast's outputs and tie them to particular human endpoints.**

### **Safer Alternatives**

Meanwhile, John Peterson Myers, a Heinz Center board member who moderated the May 8 meeting, said that a group of independent and government scientists are slated in the coming months to release **a new model that chemists can use to identify EDCs before they go into consumer products and to find possible safer alternatives.**

Myers, who is CEO and chief scientist for Environmental Health Sciences and has helped develop the model, said it will avoid the regulatory and policy process altogether in an attempt to accomplish some of what EDSP has failed to achieve. The new process isn't meant to replace EDSP, Myers said in a follow-up interview on May 10, adding that the process the team will unveil seeks to spur economic innovation in the development of consumer products and other applications involving potentially hazardous chemicals. Still, he acknowledged the process may have the coincidental benefit of helping inform EDSP on chemical assessment methods that he said the program and others have failed to use -- though EDSP differs in that it screens for already existing chemicals.

"They can look at what we've done and say that does or doesn't make sense and decide whether what we've done helps them move forward faster," Myers said. -- *Puneet Kollipara* ( [pkollipara@iwppnews.com](mailto:pkollipara@iwppnews.com) This e-mail address is being protected from spambots. You need JavaScript enabled to view it )

**RRWPC**  
**Russian River Watershed Protection Committee**

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December 22, 2008

Via Electronic Mail: [commentletters@waterboards.ca.gov](mailto:commentletters@waterboards.ca.gov)

Jeanine Townsend  
Clerk to the Board, Executive Office  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100

**Re: State Water Recycling Policy**

Dear Ms. Townsend:

***About RRWPC...***

I am writing on behalf of Russian River Watershed Protection Committee (RRWPC), a California nonprofit corporation in existence since 1980. We represent property owners, tourists, recreationists, business people, and most others who love the Russian River, 80 miles north of San Francisco. We have about 1500 people on our mailing list, and have also experienced extensive support from numerous others who love and cherish our river and its ecosystem.

RRWPC has tracked wastewater and water quality issues in the lower Russian River and its tributaries for all those years. We have especially focused on Santa Rosa's wastewater system and its impact on the Laguna de Santa Rosa and Russian River since its huge illegal 800 million gallon spill of 1985. We have watched the Laguna de Santa Rosa degrade extensively over that period, even while the City greatly upgraded and improved their treatment and discharge systems.

We recognize that the degradation is not solely caused by Santa Rosa's wastewater, but most is caused by discharges in conjunction with upstream urban activities in (and runoff from) Santa Rosa, Rohnert Park, and Cotati. There are also dairies and some natural causes contributing to the problems.

Over the years, RRWPC played a significant role in the listing of the Laguna on the 303(d) list for its impairment by numerous pollutants including dissolved oxygen, nitrogen, phosphorus, temperature, sediments, and mercury. We are not scientists or lawyers, but rather persistent citizen advocates who have won

extensive acknowledgment for our work and have joined forces at one time or another with most Sonoma County environmental groups concerned about water issues.

### ***Santa Rosa's interest in Recycled Water Policy...***

We have provided a significant amount of commentary to the Regional Board and discussed our concerns with them about this issue. We know that the City of Santa Rosa has been putting extensive pressure on the State to come up with a Basin Plan Amendment that allows for "incidental runoff".

Santa Rosa has been planning an urban recycled water project for about six years now and have stated numerous times that they won't offset potable water supplies without the Basin Plan "incidental runoff" provision. The City has paid State Lobbyist, Craig Johns, about \$1,000,000 over the last six years or so to help them to accomplish this goal. The proposed North Coast Basin Plan Amendment, which alters the Summer Discharge Prohibition by allowing "incidental runoff" is now out for public review. We will be commenting extensively on that as well.

The City has written a detailed plan for managing wastewater irrigation. There are many specific protections contained in it. But there are enormous limitations as well. For example, they will not institute significant penalties for repeat offenders or cut them off from the wastewater supply. We have heard some city water users brag that they use 70,000 gallons a month and they are willing to pay the price. To our knowledge, the City takes their money.

When push comes to shove, the City has been upfront about admitting that they know over-irrigation will occur, and they don't want to be subject to the possibility of citizen lawsuits because of it. This is an outright admission that they can't control the problem and they want to function with impunity since no one is going to file a lawsuit over a broken sprinkler head. In addition we are extremely skeptical that the promoted controls will be carefully monitored and that "accidents" will probably be a common occurrence. Regional Board staff will not have the time to carefully monitor and the "fox will be guarding the chicken house". (One City staffer admitted to me privately that the business park across from Santa Rosa's Utility Building over-irrigates all the time.)

We recommend that this reuse policy, should it move forward, require the establishment of an independent "water cop" monitoring program wherever "incidental runoff" is allowed and that severe penalties, including cut offs, be established for repeat offenders. This program can be self-supporting with graduating penalties, separate from water charges, imposed on water wasters. Most citizens didn't mind the program and even called in with "tips" about people who were careless. We also recommend that generous set backs from creeks and streams of 200' be established to assure most runoff incidents won't make it to the surface water.

### ***Lack of Adequate "incidental runoff" Definition....***

One of our greatest concerns is the lack of adequate specificity in defining "incidental runoff". The refusal to state a specific amount in the definition, or the method of determining that amount is very problematic. The North Coast Board's proposed MS4 Permit suggests that 100 gallons is the point where a minor spill becomes a significant one and comes under different guidelines.

Nowhere is such an amount suggested here. In light of people's propensity to carelessness, including wastewater managers themselves, we can't imagine how this policy is going to work in the real world.

This policy also makes no attempt to define the cumulative impacts of multiple runoff incidents. Who will make the determination as to whether a spill is truly incidental and what would prevent those responsible from miss-communicating the extent of the problem? I don't believe this program would work without an independent program of water "cops".

### ***Alternatives to Policy....***

RRWPC has major concerns about implementation of the Water Recycling Policy. We recognize the very hard times the State is experiencing in regards to adequate water supply and that this policy is an attempt to develop a standardized approach to address that concern. The policy clearly conveys the urgency with which the State views this need and we sympathize with those communities that are facing the greatest shortfalls. Nevertheless, we believe that the implementation of widespread reuse of wastewater, with what we believe are inadequate protections of all beneficial uses, is a grave mistake.

We appreciate that Regional Boards have been given the authority to impose more stringent requirements on local, site-specific projects. Nevertheless, we are concerned that the North Coast Regional Board lost about 50 staff people in the last few years and their budget has been cut to the bone. We seriously doubt that they can accomplish all the protections of beneficial uses that are promised in this Policy. We are also very concerned that this policy nurtures the idea, through the renaming of wastewater as recycled water, thereby conveying the impression that wastewater is entirely safe.

In 2007, Sonoma County water supplies were so low that the Sonoma County Water Agency called for stringent conservation efforts. They were particularly concerned about the irrigation issue and strongly pushed conventional conservation goals (i.e. water in early morning and late afternoon, do not waste water with over-irrigation, repair leaks, etc.). People began noticing who had the super green lawns. There was a call to use drought resistant landscaping. Water cops turned people in. Enormous savings occurred. The impetus of strict conservation should be promoted as an everyday value and not something that only happens in an emergency.

Soon things went back to normal. On various occasions we have even seen irrigation puddles in front of the administration building of the wastewater treatment plant and in front of their Utilities Offices. We have pictures of extensive over-irrigation in front of the North Coast Regional Board. We discussed this situation and others extensively in our letter to the Board on September 1, 2008. We resubmit that letter here for the record and would like it responded to as part of these comments.

### ***Water Recycling Alternatives...***

We believe that there are other options and alternatives that can and should be more fully pursued before you allow "incidental runoff" and cause widespread wastewater irrigation use to be pursued with great vigor. We wonder why the State doesn't get a handle on agricultural water use, including over-use? We

question why rural property owners don't have to pay for the use of the water and the restoration of habitat that should be partly their responsibility? Why doesn't the State regulate all water use, including groundwater, and stop the massive illegal appropriations that are said to occur? While it may seem as though the recycling of wastewater is a good idea when we know so little about its effects, how much wiser would we be to use what we have much more judiciously in the first place?

In our earlier comments we described one alternative that, to our knowledge, no one has ever proposed. Significant water savings can be realized by fixing leaky sewer pipes. RRWPC examined the flow records of eight wastewater dischargers in the Russian River and discovered that there is a wide disparity between summer and winter flows indicating a great deal of infiltration and inflow into treatment systems. We studied the data between 1995 and 2007 of these dischargers and discovered that an average of 1.5 billion gallons of rain water a year leaks into Santa Rosa's wastewater system alone, forcing them to treat and dispose of the wastewater at great monetary expense, great energy usage, as well as damage to the environment from known and unknown pollutants.

The smaller towns of Ukiah, Cloverdale, Healdsburg, Windsor, Forestville, and Russian River Area, lost about 7 billion gallons combined over the 12-year period. That comes to about 584 million gallons of water lost by small communities in our area every year. Combined with Santa Rosa, that accounts for a loss of about 2 billion gallons a year of potable water in the area from Ukiah to Guerneville, and represents 25% of the water rights increase sought for the last ten years by the Sonoma County Water Agency. How much water and energy could be saved Statewide if everyone maintained their sewage infrastructure, which they should do anyway? Changing focus this way makes sense from the perspective of water-savings, pollution-prevention, and energy.

We also note that the Policy alludes to leaky water pipe repair. Some of our local small communities lose as much as 15% a year. Has anyone done a study of potential savings that could be realized through an infrastructure repair program? Instead of promoting the reuse of wastewater that may contain numerous unregulated contaminants, it would be wiser to invest in maintenance of existing hardware. That would also save a lot of energy and would be a far more environmentally safe way to stretch our water supplies and avoid the possibility of contamination of our rivers and streams.

Our deep concern about the extensive reuse of wastewater in an urban environment evolves from the burgeoning amounts of information coming forward that indicate widespread species' impairment and even extirpation resulting from unregulated toxins, some of which are known, but many that are not. While there are upwards of 80,000 chemicals available in the market place, and grow in numbers every day, our regulatory process can't keep up. Only 126 toxins are currently regulated in a meaningful way. We have no idea what problems many of these unregulated substances create, at what amounts, or how they bio-accumulate and interact with one another.

## Recent Articles & Studies on Species Loss & Endocrine Disruption:

- Aug. 3, 2008: Three important scientists stated: *"There is growing recognition that the diversity of life on earth, including the variety of genes, species and ecosystems, is an irreplaceable natural heritage crucial to human well-being and sustainable development. There is also clear scientific evidence that we are on the verge of a major biodiversity crisis. Virtually all aspects of biodiversity are in steep decline and a large number of populations and species are likely to become extinct this century."*

And further, *"Scientists estimate that 12% of all birds, 23% of mammals, 24% of conifers, 33% of amphibians and more than half of all palm trees are threatened with imminent extinction. Climate change alone could lead to the further extinction of between 15% and 37% of all species by the end of the century." Finally they say, "Everywhere we look, we are losing the fabric of life, it's a major crisis."*

(G. Mace of UK Institute of Zoology, Robert Watson from the World Bank, and Peter Raven of the Missouri Botanical Garden state, in the publication, "Nature"),

How does this policy protect threatened and endangered species in light of unknown and unregulated chemicals in the wastewater?

- Winter, 2008 issue of "The Drift", put out by Californians for Alternative to Toxics (page 4): *"Seven decades of using pesticides to grow food has devastated populations worldwide of our traditional agricultural helpers, birds, bees, frogs, and bats. Although toxic chemicals have been implicated as a root cause in their slide towards oblivion, the chemicals continue to be pumped into the environment."* Incidental runoff may cause the unintended consequence of allowing lawn chemicals to run off into waterways. What was considered in this regard during the formulation of the Policy? Why not prohibit wastewater irrigation on land that has been treated with pesticides? Also how would chemicals in reused wastewater and chemical applications on lawns interact with one another?
- August 3, 2008: "National Survey Reveals Biodiversity Crisis – Scientific Experts Believe We Are in Midst of Fastest Mass Extinction in Earth's History": "The American Museum of Natural History and Louis Harris and Associates, Inc., in conjunction with the opening of the Museum's new Hall of Biodiversity, developed a nationwide survey titled Biodiversity in the Next Millennium."

Highlights: *"Seven out of ten biologists believe that we are in the midst of a mass extinction of living things, and that this dramatic loss of species poses a major threat to human existence in the next century." "This mass extinction is the fastest in Earth's 4.5 billion-year history and, unlike prior extinctions, is mainly the result of human activity and not of natural phenomena." "Scientists rate biodiversity loss as a more serious environmental problem than the depletion of the ozone layer, global warming, or pollution and contamination."* (emphasis added) Also, one result will be, *"Destruction of the natural systems that purify the world's air and water."* How might

irrigated lands be affected by global warming? Would any chemical changes take place that could impact affected species?

- December, 2008: Chemtrust: *"Effects of Pollutants on the Reproductive Health of Male Vertebrate Wildlife: Males Under Threat"* (page 4), *"Many wildlife species are now reported to be affected by pollutants, and similarities can be seen in the effects recorded. The target sites, which are the focus of this review, include male developmental pathways. It is clear that structural intersex features, including effects on the male reproductive tract, result from exposure before birth. On the other hand, abnormal secretion of the egg yolk precursor protein, VTG, in male fish, birds, and reptiles, can result from later adult-life exposure to feminizing pollutants. VTG is normally produced in females, and when found in males in elevated concentrations it confirms the presence of sex hormone disrupting contaminants in the environment, and indicates feminisation of the male. Reduced reproduction has also been included, although it may result from female or male reproductive impairment, or from lack of viability of the offspring."* Would the State be willing to test for signs of feminization in areas where wastewater is applied? Could the policy be suspended in areas testing positive for endocrine disruption?
- March, 2008: AP Study on drugs in water supplies: (AP story by Jeff Donn, Martha Mendoza, and Justin Pritchard): *"A vast array of pharmaceuticals—including antibiotics, anti-convulsants, mood stabilizers and sex hormones—have been found in the drinking water supplies of at least 41 million Americans, an associate Press investigation shows."* During a five-month inquiry, AP researchers found that drugs were detected in the water supplies of 24 major metropolitan areas.

In response to the question of how drugs get in the water, the article states, *"(it)...is flushed down the toilet. The wastewater is treated before it is discharged into reservoirs, rivers, or lakes. Then, some of the water is cleansed again at drinking water treatment plants and piped to consumers. But most treatments do not remove all drug residue."* It seems as though it would be valuable to test any wastewater to be irrigated for endocrine disruptors and not allow any irrigation with waters testing positive. Would the State be willing to make that part of this policy?

The study found that many water systems do not test for pharmaceuticals; but only a few that tested had negative results. Pharmaceuticals were also found in ground water. *"Some drugs, including widely used cholesterol fighters, tranquilizers and anti-epileptic medications, resist modern drinking water and wastewater treatment processes. Plus, the EPA says there are no sewage treatment systems specifically engineered to remove pharmaceuticals."* At a conference last summer the director of environmental technology for Merck & Co. Inc., Mary Buzby stated, *"There's no doubt about it, pharmaceuticals are being detected in the environment and there is genuine concern that these compounds, in the small concentrations that they're at, could be causing impacts to human health or to aquatic organisms."* (This is particularly meaningful coming from a drug company representative.)

- Feb. 17, 2008: LA Times: "Study finds human medicines altering marine biology", by Kenneth R. Weiss: *"Sewage treatment plants in Southern California are failing to remove hormones and hormone-altering chemicals from water that gets flushed into the coastal ocean waters, according to the results of a study released Saturday." "(The Study) confirms the findings of smaller pilot studies from 2005 that discovered male fish in the ocean were developing female characteristics, and broadened the scope of the earlier studies by looking at an array of man-made contaminants in widespread tests of seawater, seafloor sediment and hundreds of fish caught off Los Angeles, Orange and San Diego counties. The results, outlined by a Southern California toxicologist at a conference in Boston, reveal that a veritable drugstore of pharmaceuticals and beauty products, flame retardants and plastic additives are ending up in the ocean and appear to be working their way up the marine food chain." And scientists add, "Dilution is not the solution for some of these newer compounds, said Steven Bay, a toxicologist...." The big issue is whether endocrine disruptors are ending up in the sediments and being reintroduced into the water column and whether these pollutants are situated in the estuary and ocean as well.*

- July 10, 2007: "Down the Drain: Sources of Hormone-Disrupting Chemicals in San Francisco Bay" Environmental Working Group: *"95% of wastewater samples show widespread use of chemicals" "Advances in technology allow an unprecedented look at chemical contaminants in water bodies throughout the United States. In 2002, the first nationwide study of man-made chemicals and hormones in 139 streams revealed that 80% of streams tested were contaminated. (Kolpin 2002) Several of the chemicals examined are known or suspected of disrupting the hormone systems of animals and people. Of these, only a small fraction have been regulated at all, much less tested for toxicity, persistence in the environment, or other harmful characteristics, such as hormone disruption. Some of the same unregulated, widely-used, hormone-disrupting chemicals have been detected at trace levels in the San Francisco Bay (Oros 2002)" .....*

*"Damage to the reproductive health of vulnerable fish populations may result in detrimental consequences to local fisheries and aquatic ecosystems; in addition, there is concern that people could become further exposed to hormone-disrupting chemicals by eating contaminated fish (Houghton 2007)" "Analysis of 19 wastewater samples for 3 hormone-disrupting substances reveals widespread contamination."*

- Dec. 16. 2008: "Ocean Scientists Urge New Administration and Congress for "Bailout" of Ocean Ecosystems and Economies", (from website: Oceana.org): Summary of main concerns by scientists about ocean conditions included over-fishing, climate change, nutrient and other pollution and synergistic effects. *"Efforts to reduce nutrient pollution in the United States have been only modestly successful, not only because of inadequate controls on emissions but also because degraded ecosystems resist recovery....Although scientists have observed progress in reducing toxic pollution, contaminants from human activities are distributed and persist over wide areas of the ocean, often resulting in subtle but significant effects on marine animals, even in remote polar regions."*

- Dec. 7, 2008: The most shocking to humans and perhaps the most attention getting; "It's Official: Men Really Are the Weaker Sex" by Geoffrey Lean (based on CHEMTrust report by Gwynne Lyons: "EFFECTS OF POLLUTANTS ON THE REPRODUCTIVE HEALTH OF MALE VERTEBRATE WILDLIFE" The Independent (London, U.K.) The article quotes the author as saying, "Males of species from each of the main classes of vertebrate animals (including bony fish, amphibians, reptiles, birds and mammals) have been affected by chemicals in the environment...."

*Feminization of the males of numerous vertebrate species is now a widespread occurrence. All vertebrates have similar sex hormone receptors, which have been conserved in evolution. Therefore, observations in one species may serve to highlight pollution issues of concern for other vertebrates, including humans....*

*Fish, it says are particularly affected by pollutants as they are immersed in them when they swim in contaminated water, taking them in not just in their food but through their gills and skin. They were among the first to show widespread gender-bending effects. Half the male fish in British lowland rivers have been found to be developing eggs in their testes....more than three quarters of sewage works have been found also to be discharging demasculinising man-made chemicals." (Note: Europe is way ahead of the USA in testing for these emerging contaminants. In the US, most sewage treatment plants really don't want to know.)*

*And more alarming...."And a study at Rotterdam's Erasmus University showed that boys whose mothers had been exposed to PCBs grew up wanting to play with dolls and tea sets rather than with traditionally male toys."*

- For those who think that tiny amounts won't cause harm....

*May 22, 2007: "Estrogen threatens minnow manhood by Marin Mittelstaedt, "Environmental Reporter" It states, "Exposing fish to tiny doses of the active ingredient in the pill (synthetic estrogen), amounts little more than a whiff of estrogen, started turning male fish into females. Instead of sperm, they started developing eggs. Instead of looking like males, they became indistinguishable from females. Within a year of exposure, the minnow population began to crash. Within a few years, the fish, which at one time teemed in the lake, had practically vanished." The amount of estrogen used was the same amount found in sewage treatment plants in Canada.*

- Finally, Nov. 21, 2008: "SOS: California's Native Fish Crisis, Prepared by Cal Trout and based on report by Dr. Peter B. Moyle, Dr. Joshua A. Israel, and Sabra E. Purdy. The introduction states: "As detailed in the pages that follow, what's been suspected for years we now know for certain---California's native salmon, steelhead and trout are in unprecedented decline and teetering towards the brink of extinction. The collision of climate change with decades of water mismanagement have brought us to where we are today...If present trends continue, 65% of our native salmonid species will be extinct within 50-100 years, with some species—such as coho, chum, pink salmon and summer steelhead—disappearing much sooner." We include the pages describing the status of the three listed salmonid species listed for the Russian River: California Coast Coho Salmon and Chinook Salmon and Steelhead.

One of the solutions provided in this Policy to address the issue of emerging contaminants is to establish an ADVISORY scientific panel. We have had too many experiences with scientists who sell themselves to the establishment willing to provide whatever conclusions the politicians want. If you let a true scientist select the panel; someone who has been working in the field for a very long time and has a spotless reputation (like Lou Guillette), perhaps then it might be a partial and temporary solution. But actually things are degrading so fast, we don't have enough time to wait for new regulations to cure this dire problem. At the very least, we need to not make the problem worse, which this policy is very likely to do. (Sorry to be so harsh, but that's my opinion based on all the information I've received in the last several years. Time is running out!) It would be far more valuable to focus on conservation and infrastructure repair.

### *Title 22 and Section 7 Consultation (low flows)...*

In general, we are very concerned about the reliance on Title 22 for asserting that water quality objectives will be met. There appears to be an underlying assumption that "incidental runoff" will not end up in our rivers and streams although no setback limits are required and few means of assurance are defined. In fact, it is totally unclear what amount of runoff is under consideration here.

Under most circumstances, we find Title 22 very limited for meeting human health needs and totally inadequate for addressing wildlife and aquatic life concerns. It focuses mostly on acute diseases and does little for the rest.

There seems to be a logical disconnect between allowing "incidental runoff" and guaranteeing that runoff won't end up in surface water. We totally support Howard Wiltshire's comments in this regard. We fail to see how this policy is protective (other than through assertion) of all beneficial uses, when in fact, the waterways in proximity to the areas of use are already extremely degraded and are likely to become more so. This policy simply does not demonstrate how those uses will be protected.

If it is assumed that there will be no wastewater discharge (recycled water IS wastewater, not potable water), then it becomes irrelevant to talk about stream flow, but we believe that would be a grave omission. One important issue for the Russian River is the Section 7 Consultation under the Endangered Species Act between the National Marine Fisheries Service and Sonoma County Water Agency and Army Corps of Engineers. A Biological Opinion was recently released and it calls for significant flow changes under Decision 1610, which will come before the State Board sometime in the next two years. The Opinion calls for a permanent lowering of summer Russian River flows of at least a third at the Hacienda Bridge in the lower river (Other flow changes will be proposed as well, but this is the one that has the greatest impact on downstream uses.)

The goal of NMFS is to permanently close the mouth of the river in summer so as to improve breeding habitat in the estuary. We are concerned that the estuary may or has become a sink for all kinds of upstream pollution and will create unanticipated problems for not only fish, but also birds, marine mammals and other species. (The recently released BO can be found at the Sonoma County Water Agency's website.) Already dissolved oxygen and nutrient problems have been noted on the estuary bottom.

So we wonder how possible cumulative "incidental runoff" incidents would fare in streams that have minimal flows? If you add this to the prospect of global warming, it appears we can have a serious problem, even if the "accidents" are small in scale. Many of the studies noted above mentioned that with endocrine disruptors, it doesn't take much to cause toxicity and the conventional wisdom that the "dose makes the poison" does not apply here. Furthermore, as Howard states, *"Little is known of the complex processes of transport and fate of most pollutants in treated wastewater."* I would add that even less is known about what pollutants are picked up by the runoff on its way to wherever it goes.

But wait, this is not all. The Sonoma County Water Agency recently (in the last two weeks) released their 3000 page EIR for their long-range water supply project (also available at their website). We have not had the time to examine it yet, but we ask that whoever responds to these comments examine the interrelationship between this new policy, the Biological Opinion, and the new Water Supply EIR. We are looking at numerous major policy and/or management changes for the Russian River and NO ONE is looking at how they all interact with one another.

### ***Anti-degradation Policy....***

Howard Wiltshire clearly pointed out the weaknesses of the Anti-Degradation portions of this policy, which we strongly support. I recently received a copy of the Environmental Law Foundations over 40 pages of comments on the proposed Revision of the State's Antidegradation Implementation Guidelines dated Dec. 17, 2008, and written on behalf of 25 environmental and other groups. The commentary challenges the decision process of Regional Boards on "best professional judgment" in the absence of standards. It questions the absence of objective standards on which to base decision-making. Such limitations have serious implications for the basic assumptions in the proposed Recycled Water Policy.

It also comments on the fact that "The Guidance Improperly Ignores Cumulative Impacts", a concern we have already raised. Another section deals with, "The Guidance Improperly Allows for a Sliding Water Quality Baseline". In fact, the Laguna de Santa Rosa and its tributaries are one of the most impaired water bodies in the North Coast and subject to all kinds of nutrient and other pollution, partially a result of irrigation practices in the Rohnert Park area. There has been no attempt to control runoff in that area, even while the invasive specie *Ludwegia* is totally blocking the stream channel. Attempts to remove and control the invasive were partially successful for a brief time. When the removal project ran out of funds (after about \$2 million was spent), the problem came back full force and perhaps worse than what it had been before. (see pictures)

There is really nothing in the proposed Policy that assures that things won't get worse under this policy. The Antidegradation Policy is supposed to improve clean water, not provide language that actually allows for exacerbation of the problem. We also wonder how this Policy will interface with the new General Permit, final version not yet released. The Regional Board is now looking at the General Permit, the MS4 Permit that includes non storm water discharges, and the Basin Plan Amendment for "Low Threat" discharges that also includes

"incidental runoff". It is very unclear how these documents will all relate to one another and also the other documents recently released by SCWA.

We have not had a great deal of time to study the Environmental Law Foundation's comments on the Antidegradation Policy, but we hope that you will address all the issues raised there in reference to the proposed Recycled Water Policy. We ask that more time be allowed for everyone to look at all these documents synergistically, so we actually move towards solving our complex water needs, instead of setting future generations up for disaster. We are so concerned that the people writing these policies are sitting in a cubicle somewhere completely out of touch with actual natural processes.

RRWPC strongly supports the comments of Linda Sheehan in her letters of March 27, 2007, Oct. 26, 2007, and June 26, 2008 (on "Statewide General Permit for Landscape Irrigation Uses of Recycled Water"). We also will quote from and include here, the Dec. 17, 2008 letter by the Environmental Law Foundation on the States revision of the "Anti-degradation Implementation Guidelines". Finally, we are in complete agreement with the comments of all of the above and also Howard Wiltshire for PEER and Jane Nielson for SWIG. All of these contributions are brilliant and go far beyond our expertise in identifying the problem of reusing wastewater from a legal and scientific perspective. We urge your Board to thoroughly respond to all contributions.

RRWPC will try to include all attachments with this letter. We will also send you a hard copy of the letter and will include any attachments we could not include electronically.

Sincerely,



Brenda Adelman: Chair

Russian River Watershed Protection Committee

CC: Cat Kuhlman: North Coast Regional Board

PS: I appreciate that the Policy includes a separate section on nutrient/salt policy. In truth, I share Howard Wiltshire's concerns about its adequacy. I have included the Final Report on the Ludwigia Control Project which includes pictures taken after project completion. I have also included a picture of the regrowth this year taken from the same location as the pictures in the Report. As you can see, it's as though the project did not even occur.