

# On the Water Front

Rocky Mountain Water Quality Analysts Association

Second Quarter 2011

## Take Action Against Invasive Species - Stay Clean!

by Leah Elwell, Program Director,  
Center for Aquatic Nuisance Species

Invasive species are one of those topics that make us groan uncomfortably and nod appreciatively, but often just plain avoid like the plague. It is important to realize that the threats aquatic invasive species pose to our lakes, rivers and oceans are real. But more important is that there is still time for us to do something, get involved and prevent their spread.

Whether its lake-choking Eurasian watermilfoil, heart-thudding colossal Asian carp, or aggressive microscopic parasites, invasive species have settled into new waters with little hesitation. Aquatic invasive species can be plants, animals or microbes, and unfortunately once established they are very difficult to control.

There are a variety of ways that invasive species have been spread to new waters. These introductions happen on both global and local scales as well as by intentional and unintentional actions. On a global scale, large trans-oceanic shipping vessels have been blamed for extensive introduction



*Aquatic invasive species can take on many different forms such as the Asian carp and Eurasian Watermilfoil.*

of species from release of their ballast water. Many of the problems in the Great Lakes region and major shipping ports on the Atlantic, Pacific and Gulf coastlines are linked directly to the release of ballast water.

It is easy to see how the international transportation industry has played a pivotal role in moving species among countries, what becomes less understandable is the role of individuals in the spread of aquatic invaders overland. There are some obvious activities that we know are linked to the spread of invasives – recreation activities like boating and angling facilitate the movement of water, sediment or plants on dirty boats or equipment like waders or boots. This movement of dirty equipment can carry invasive species between local streams, across state boundaries and even around the world. People have become globetrotters with the ability to travel from central Colorado to New Zealand or Chile in 24 hours.

Don't assume boaters and anglers are the only cause of moving invasive species.

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RMWQAA 1

In fact, all sorts of recreation activities like hunting, hiking, mountain biking, horse-back riding and ATV riding can all move invasive species. Any activity that moves water around (even in small amounts) has the potential to spread invasive species. A few examples might be field biologists stream-side, contractors working in or near water with large equipment, and irrigators moving equipment between water sources.

Our ability to move invasive species so easily makes prevention efforts critical in protecting our water resources. The best defense we have in protecting our waters is to prevent invasive species from ever being introduced or established in the first place. Prevention is completely achievable; it just takes a little know-how.

There are three simple steps to guide you – *Inspect, Clean and Dry*. After every outing in the water whether for work or play, each of us must inspect our gear for mud, plants or other debris clinging to it and remove them before you leave the water. Then thoroughly rinse your gear in the water. If you cannot clean on-site, you can clean your gear with your garden hose upon arrival; just make sure it drains onto the



lawn not a storm drain or to an open water source. Finally, dry your gear in the sun. The sun's rays damage many aquatic invaders that might be clinging to our gear. The *Inspect, Clean and Dry* steps are simple, inexpensive and available to all.

The Center for Aquatic Nuisance Species created the Clean Angling Coalition to help get the angling community which includes anglers, manufacturers, media partners and agencies, engaged in the issue of invasive species. The Clean Angling Coalition focuses on providing consistent cleaning methods to the public and works to promote actions designed to prevent the spread of invasive species.

The bottom line is aquatic invasive species are bad news for our lakes and streams as well as the local economies. Unfortunately, these invaders are here to stay. Prevention is our best tool. All it takes is a few minutes of our day to clean off our gear now to protect our water resources for the future. Thanks for taking the time.

If you would like to learn more about cleaning techniques and cleaning efforts, check out our program The Clean Angling Coalition at [www.cleanangling.org](http://www.cleanangling.org) 

Asian carp photo from: <http://www.mlive.com/>

Eurasian Watermilfoil photo from: [www.niemeyerstone.com](http://www.niemeyerstone.com)



[www.cleanangling.org](http://www.cleanangling.org)

## Earth Day 2011

With Earth Day fast approaching, we thought we'd share some interesting facts about consumption and the Earth...Enjoy!

- Garbage in a landfill can stay there for about 30 years
- Each person throws away about four pounds of trash a day
- We each use about 12,000 gallons of water every year
- The energy we save from recycling one glass bottle can light an incandescent light bulb for four hours.
- Every ton of paper recycled saves 17 trees
- 84% of all household waste can be recycled
- Five billion aluminum cans are used each year
- Used batteries constitute 88% of the mercury and 54% of the cadmium in our landfills
- 33% of all water used in the home is used to flush the toilet
- 75% of the Earth's surface is covered in water; 98% of that is salt water, and 1.7% is bound in ice caps, leaving less than 1% available for human use
- If all glaciers melted today, the seas would rise 230 feet



Fun facts from: <http://www.planetpals.com/fastfacts.html> & <http://ga.water.usgs.gov/edu/watercycleice.html>

## Congratulations!

We are happy to announce a new family member for Sue MacDonald of the City and County of Broomfield. Below is a photo of their 14-year-old son, Angus, with 17-month-old Stephanie, who was recently adopted from Guangzhou China (Guangdong Province).

What an adventure. Congratulations Sue!



### Zooplankton Workshop I, May 13th

Hosted by CLRMA the Colorado Lake & Reservoir Management Association

Because the algae workshop series was such a great success last year, CLRMA is moving up the food web to zooplankton in 2011. The first workshop will be on May 13th.

More information about this workshop and registration will be out soon at:

[www.clrma.org](http://www.clrma.org)

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## Nonylphenol: What's the Scoopula?

By Michelle Ryerson, Metro Wastewater

Last year RMWQAA conducted a short survey asking what labs are doing about nonylphenol (NP) in wastewater. Some had never even heard of it. Others were just beginning to talk about it, and a small few were faced with new permits that already included nonylphenol. This article attempts to sum up the issues and explain the current status of this slippery substance.

For anyone unfamiliar, nonylphenol is a compound resulting from the breaking down of nonylphenol ethoxylate (NPEO). Nonylphenol is manufactured and used to make NPEO, which is an ingredient used mainly in surfactants or other cleaning agents like laundry detergents. The NPEO breaks down in the environment as well as in anaerobic conditions created in wastewater treatment facilities. The break down of NPEO forms nonylphenol in many different isomer forms. The constant and continuous breakdown along with the numerous isomers makes accurate detection difficult.

The main health concern associated with NP is its estrogenic properties. It can act as an endocrine disruptor and be toxic to aquatic life and human health. Due to this

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potential risk, Canada and many European countries have banned the product.

In December 2007, Colorado's Water Quality Control Commission (WQCC) considered and revised new organic chemical standards for inclusion in Regulation 31. This included acute and chronic water quality standards for NP which were based on EPA's 304(a) criteria. Because NP is an endocrine-disrupting chemical, the WQCC set these new standards for the protection of aquatic life with a delayed effective date of July 1, 2010. This delayed date allowed time for the development of a nonylphenol method as well as data collection by interested parties. The delayed effective date was subsequently modified in October 2009 to January 1, 2011.

At the June, 2010 hearing, the Wastewater Utility Council proposed an additional delay in the effective date until January 1, 2017, due mainly to the lack of an approved method for nonylphenol analysis. The WQCC rejected the proposal and thus the January 1, 2011 date went into effect. What this means is that Publicly Owned Treatment Works (POTW) National Pollutant Discharge Elimination System (NPDES) permits coming up for renewal after January 1, 2011 can

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# Rocky Mountain Water Quality Analysts Association

## 2011 Water Quality Symposium

Hilton Fort Collins - Salon I and II

Friday, May 6, 2011

8:00 am — 3:30 pm

8:00 a.m. – 8:30 a.m.	<b>Registration Continental Breakfast and Visit with Vendors</b>
8:30 a.m. – 8:35 a.m.	<i>Welcome</i> - Stephen Ellis - RMWQAA President
8:35 a.m. – 9:25 a.m.	<i>Whole Effluent Toxicity (WET) Testing and You: Unraveling the Ever Changing Landscape of Effluent Limitations and Monitoring Requirements</i> Shannon Phelps, SeaCrest Group
9:25 a.m. – 09:55 a.m.	<i>Effects of Development on Groundwater Quality in the Denver Basin, Colorado</i> Suzanne Paschke, USGS
09:55 a.m. – 10:35a.m.	<b>Break - Visit with Vendors</b>
10:35 a.m. – 11:15 a.m.	<i>Aspects of Aquatic Habitat in Colorado Plains Rivers</i> Jim Dorsch, MWRD
11:15 a.m. – 12:00 p.m.	<i>Maximizing Laboratory Productivity &amp; Efficiency</i> Laurie Peterson-Wright, CDPHE
12:00 p.m. – 1:30 p.m.	<b>Lunch in the Atrium Visit Vendors &amp; Vendor Prizes 'Analyst of the Year' Award</b>
1:30 p.m. – 2:00 p.m.	<i>Prairie Waters Project- A Multiple Barrier Approach</i> Kevin Linder, City of Aurora
2:00 p.m. – 2:40 p.m.	<i>Wastewater Permits and Discharge Monitoring reports (DMRs)</i> Jackie Whelan, CDPHE
2:40 p.m.- 2:50 p.m.	<b>Break - Visit with Vendors</b>
2:50 p.m. – 3:20 p.m.	<i>From the Field, Through the Lab, and Into the Deliverable...What's Data to a Limnologist?</i> Craig Wolf, GEI Consultants, Inc.
3:20 p.m. – 3:30 p.m.	<b>Closing - RMWQAA Grand Prize Drawing</b>

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# Rocky Mountain Water Quality Analysts Association

## 2011 Water Quality Symposium

Hilton Fort Collins - Salon I and II

425 West Prospect Road

Fort Collins, CO 80526

May 6, 2011

8:00 am — 3:30 pm

**Please Submit a Separate Registration Form for Each Attendee**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

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Title/Position: \_\_\_\_\_

Check the Appropriate Registration:

- \$15 membership only
- \$60 member symposium registration
- \$75 non-member symposium registration (\$15 membership + \$60 symposium registration)
- \$75 member renewal & symposium registration
- \$10 late fee (REQUIRED if registering after May 5, 2011)

**Make checks payable to RMWQAA and include with registration form.**

**The day will include giveaway prizes, games, lunch, snacks, and tons of educational fun!**

Look for updated Conference information on our website at [www.RMWQAA.org](http://www.RMWQAA.org)

**Register By Mail:**

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PO Box 29407

Thornton, CO 80229-0407

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Total Coliform	Regs, Fecal Coliform
Metals by ICP-MS & AA	DMROA Participant

expect to include either monitoring or “report” requirements for nonylphenol.

Although no limits will be enforced, POTWs will be required to sample, analyze, and report nonylphenol numbers regularly. Once the permit cycle comes around again, the data will be used to determine if there is “Reasonable Potential” for nonylphenol to cause or contribute to exceedances of the water quality standards. If so, enforceable limits will be included in the permit, as is the case with other parameters.

Currently some POTWs are required to monitor and report NP values, so the big question is how will they do this? What methods are approved and who will do the analysis? Since there is not an EPA approved method, Colorado has approved the use of ASTM Methods D7065 and D7485 within the draft permits they have already written. Both methods measure nonylphenol (NP), nonylphenol ethoxylate (NP1EO), nonylphenol diethoxylate (NP2EO), and octylphenol (OP). D7065 also measures bisphenol A (BPA). Since no statewide Practical Quantitation Limit (PQL) exists yet for nonylphenol, the State has instructed permittees to use a default PQL or develop a site-specific PQL. Site-specific approvals, method approvals and monitoring frequency would be written into a renewal permit and could vary at the discretion of the permit writer.

Of the two available methods, ASTM D7065 has the higher approved PQL of 10ug/L and is run by traditional GC/MS. After calling many labs in and out of state, Columbia Analytical in Washington, and Axys Analytical in British Columbia,

Canada are two of the only labs found who are running commercial samples with ASTM D7065. Depending on your lab contract, expect to pay between \$300 and \$350 per sample.

The Metro Wastewater District laboratory has been running D7065 for some time and is working on a new cleanup method for influent samples. They recently purchased a new LC/MS/MS instrument and are developing D7485 method which has a lower PQL. Once the method is up and running, the Metro District plans to offer this analytical service to other POTWs and governmental agencies only. They do not run samples for private parties and are not considered a true contract lab. ACZ in Steamboat Springs has expressed interest in setting up a method and Accutest in Golden is also working on a method for NP. Now that NP has become a permit requirement, more labs will likely develop methods.

What happens when numeric limits go into the next round of permits? Well, that’s anyone’s guess. Let’s just hope we have some more information on the quantities we are dealing with, the rates of conversion in wastewater plants, and some possible ways to control those rates and/or treat the compounds. Best of luck. 💧

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