

The Certified Environmental Professional The Newsletter of the Academy of Board Certified Environmental Professionals

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President's Message

Lately, I've been thinking a lot about how as we live our daily lives, each of us not only has an impact on the planet earth, but also that each of us has the chance to make a difference in offsetting or lessening the degree of impact we have.

Being CEPs or CEP-ITs, we are all super smart people and can easily figure out ways each of us can make a difference:

- When traveling to the airport, bring an empty water bottle and fill it up when you get past security.
- When traveling in your car, bring a coffee cup and bring it in to get your coffee. You can also do this with your water bottle.
- Use plastic containers instead of plastic baggies.
- ♦ Carpool, use mass transit, walk or ride your bike to work.
- Ride your bike to do simple errands.
- Wear clothes that don't require dry cleaning.

The list goes on and on. The point is, we can each make tiny changes in our daily lives that will add up to a positive change and we don't really have to give up anything. What a great feeling it is that what you do every day, makes a difference! In a way, it's how I feel when I come to work every day and try to make a positive difference in the environmental profession by making smart choices that lend to environmental protection.

Speaking of making a difference, another way to give back professionally is to be a ABCEP Mentor. If you are interested in becoming one, let me know.

Next Month, the Board of Trustees meets in New Jersey with Bower Management for our in person meeting. I'll share the highlights in my next message.

Here are some upcoming events where ABCEP will be present!

- ♦ October 2017 Tallahassee FAEP
- November 2017 METRA
- March 2018 NAEP (Tacoma WA)

Until Next Time!

Elizabeth R. Johnson, CEP, PWS ABCEP President Liz.johnson@ocfl.net/407-836-1511



Elizabeth R. Johnson ABCEP President

Inside:

- Call for Articles Inland Lakes and Rivers - DUE OCTOBER 20
- Upcoming Newsletter Topics take the survey to let us know your thoughts
- Article Negative Hudson River Superfund remediation effectiveness: clamshell dredging massively mobilized sediments, increasing PCB contamination
- Ecosystem Trivia test your understanding
- Accepting nominations for 2018 Emerging Environmental Professional and Kramer Awards

September 2017

CALL FOR ARTICLES on Inland Lakes and Rivers

The Certified Environmental Professional the Newsletter of the Academy of Board Certified Environmental Professionals

The September edition of *The Certified Environmental Professional* will showcase articles on issues associated with INLAND LAKES and RIVERS.

Whether you see them as a source of drinking water, a haven for wildlife and recreation, or a breathtaking view, inland lakes and rivers play an important role in the sustainability of the environment.

We welcome a variety of perspectives on this topic.

Deadline for submission is October 20, 2017, to scannonmackey@burnsmcd.com

Articles should be submitted in Word, with all graphics/photos provided in either tif or jpg formats. Do not send PDFs. All exhibits/figures/photos must have sources documented and all permissions to use obtained by the author of the article prior to publication. For questions, please contact Shari Cannon-Mackey, CEP, ENV, SP, Editor at 512-872-7132 or by email to scannonmackey@burnsmcd.com

NEWSLETTER TOPICS

We have chosen to highlight an area of practice or interest to CEPs in each newsletter; but articles on any topic are welcome at any time. Pssssst...you don't have to be a CEP or CEP-IT to submit an article - we welcome input from the entire community! Pass this and future issues along to your colleagues - you never know who may have an interest.

> Shari Cannon-Mackey, CEP, ENV SP; Editor scannonmackey@burnsmcd.com

OCTOBER - Inland Lakes and Rivers (due October 20, 2017)

NOVEMBER - Remediation (due November 17, 2017)

DECEMBER - CEPs in the Construction Sector (due December 15, 2017)

WE WANT YOUR INPUT!

Help us identify what you want to read about, and more importantly, what you will contribute your thoughts, experience, and efforts to.

Please take the survey at:

https://www.surveymonkey.com/r/HNXYBMR

Survey available October 1-31, 2017

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Negative Hudson River Superfund remediation effectiveness: clamshell dredging massively mobilized sediments, increasing PCB contamination

Comments on US EPA's Proposed Second Five-Year Review

Robert A. Michaels, PhD, CEP; and Uriel M. Oko, PhD, PE

This article is derived from our 30-August public comments submitted to EPA:

Michaels, Robert A.; and Uriel M. Oko. Negative Hudson River Superfund remediation effectiveness: clamshell dredging massively mobilized sediments, *increasing* PCB contamination. Comments on US EPA's Proposed Second Five-Year Review, 69 pages including appendices, 30 August 2017.

We have studied the proposal to dredge, and its implementation, since 2007 (Michaels and Oko, 2007, 2010, 2017a; 2017b, in press). Our contributions regarding reasonably anticipated and actual project effectiveness were ignored in the U. S. Environmental Protection Agency's (EPA's) first five-year review (US EPA 2012) and in its proposed second five-year review (US EPA 2017). Our studies, ignored by EPA, focused on all stages of the dredging project, starting with EPA's *a priori* assumptions (Michaels and Oko 2007). We concluded that EPA's analysis that was used to justify dredging was biased. That conclusion was based upon our findings that critical assumptions made by the Agency were erroneous, and that all identified errors were made in the dredging-friendly direction rather than randomly.

We then studied dredging while in progress, during Phase 1 of the project, and found critical deficiencies in the project and in monitoring programs to document it (Michaels and Oko 2010). Most recently we studied dredging during and after Phase 2 of the dredging project (Michaels and Oko, 2017a; 2017b, in press). We reported *negative* Hudson River Superfund Site remediation effectiveness:

clamshell dredging massively mobilized sediments, *increasing* PCB contamination rather than decreasing it. Our purpose in providing these comments is to motivate EPA to address the serious concerns that we have expressed both publicly and privately regarding the expected and the actual performance of the clamshell dredging project.

Our 2007 and 2010 peer-reviewed Environmental Practice articles (Michaels and Oko 2007, 2010) predicted that primitive clamshell dredging in the Hudson River would massively mobilize buried PCB sediments, and spread them to an expanding area of river ecosystems that include fish and birds. Clamshells basically are floating backhoes that are useful for navigational dredging. Our 2017 articles (Michaels and Oko 2017a; 2017b, in press) analyze the structure of clamshell dredge buckets used in the Hudson River, and the computerized dredge bucket data produced on each closure (the 'bucket files'). We found that 75-80 percent of dredged sediment is returned to the river in mobile form, rather than removed to waiting barges for off-site disposal.

Safe PCB dredging requires more advanced hydraulic (suction) technology to minimize toxic sediment mobilization. That's what environmental advocates have advocated, and that's what environmental advocates have achieved, for example, in the New Bedford Harbor in Massachusetts, the Cumberland Bay in Plattsburgh, New York; and in the Fox River in Green Bay, Wisconsin. That's what a year-long advertising campaign said that GE would do in the Hudson River PCBs Superfund Site, though that plan was abandoned in favor of clamshells.

The New York State Department of Environmental Conservation recently reported to the EPA that GE's sevenyear clamshell dredging project has failed to meet its cleanup goal, to reduce safely and substantially the longterm downstream transport of PCBs. This has resulted,

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most notably, in the project leaving excess PCB levels in fish, which will not abate to acceptable levels for human consumption for most of a century. DEC appropriately called for extensive sampling for PCBs "all the way to New York City," and called on EPA to finish the job and hold GE accountable for cleaning up the Hudson River.

The question of whether remnant PCB-contaminated sediments can be removed via further clamshell dredging, however, depends upon whether PCBs are elevated because dredging remains incomplete, or because dredging was undertaken over a seven-year period. Our research indicates that PCB mobilization constitutes an ecological cost of PCB sediment removal via clamshell dredging. *Mobilization already has far exceeded the minute amounts of PCBs seeping into the river that initially motivated and justified the dredging remedy.*

EPA effectively has obscured this reality by failing to monitor dredge mobilization of PCB sediments, instead focusing on 'resuspension'. As EPA's Peer Review Panel (Peer Review Panel 2012, page 36) informing the Agency's first five-year review wrote:

> "There is a very real need to set an allowable load limit for the Hudson River dredging project, but neither the data nor tools needed to do so currently exist. To that end, the project must develop a set of models that incorporate hydrodynamics, sediment transport, fate and transport of PCBs, and bioaccumulation of PCBs in the Upper Hudson River from Fort Edward to Troy Dam."

'Resuspension'' vs. 'mobilization' might seem like a distinction without a difference... but it makes a huge difference. Massive amounts of dredged sediment fell back to the river bottom rather than being disposed to waiting barges. Only a tiny fraction of this material is detected in 'resuspension monitoring' at great distance from each dredge site. Indeed, even this tiny fraction exceeded EPA's engineering performance standard (EPS) for resuspension, which resulted in EPA changing the standard and the downstream distance of the monitoring location (Michaels and Oko 2010). The massive amounts of sediment dropped back to the river bottom are mobile: they can be and will be moved downstream episodically when storms or other events produce high-flow conditions in the river.

We termed this the 'sediment mobilization discrepancy'. It represents more than merely a difference between a predicted vs. a measured parameter value. It represents a fundamental inconsistency in EPA's past justification of the need to dredge versus EPA's current characterization of the performance of the dredging project. The need for dredging was justified by the observed, persistent mobility of PCB sediments requiring, according to EPA, their removal via dredging. In contrast, in the new context of actual dredging, EPA dramatically has altered its concept of mobility. Mobility in the dredging project is newly quantified by the miniscule fraction of mobilized ('resuspended') PCB that is detected at significant distance downstream. Thus, EPA has ignored nearly all sediment and PCB mobilization in evaluating compliance with the Engineering Performance Standard for resuspension. In ignoring mobility of PCB-containing dredge-mobilized sediments for gauging compliance with the resuspension EPS, EPA has ignored a much larger degree of PCB sediment mobility than that which constituted EPA's most essential basis for requiring, in 2007, remediation of the Hudson River PCBs Superfund Site via dredging.

Additional clamshell dredging demanded by many in the environmental community would do more damage. Political correctness cannot change the reality that clamshell dredging was and remains a bad idea for the Hudson River. Its PCB-sensitive species including endangered sturgeon and American eagles already have had more than enough PCB exposure due to clamshell dredging.

Long-term remediation projects undertaken under the Federal Superfund Act or its state equivalents are subject to five-year reviews. As dredging Hudson River PCBs was mandated in 2007, the first five-year review of the project was undertaken as required in 2012 (US EPA 2012). Accordingly, one of us (Michaels) informed EPA of the emerging link between PCBs and possible causation of autism and, in a public comment, suggested that the scheduled five-year review address this issue relative to numerous river communities alongside the path of the dredging project. The five-year review (US EPA 2012), however, neither addressed this issue substantively, nor alluded to it. Indeed, the word 'autism' was absent from the 82-page report. Given the high and increasing prevalence of autism, and its seriousness, cost, and apparent linkage to environmental agents that may include maternal exposure to PCBs during pregnancy, extending the

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dredging project should be predicated upon satisfactory consideration of this emerging public health issue.

The next five-year review of the dredging project is underway. On 31 May 2017, EPA released the proposed *"Second Five-Year Review"* for public comment. As with the first review, the second neither addresses the autism issue nor alludes to it. Indeed, the word 'autism' as before is absent from the 81-page report, notwithstanding several reports in the literature that were cited and considered in Michaels and Oko (2010, 2017a, b). Both published papers predate release of EPA's proposed *"Second Five-Year Review."*

The issues of whether EPA should consider the autism association, and whether the officially completed GE Hudson River dredging project should be extended to remediate remnant PCBs, both must be viewed in the context of EPA's longstanding special mandate regarding children's health, embodied by EPA's *Children's Health Risk Initiative* (US EPA 2001). In 1997 the Office of Children's Health Protection was instituted within EPA. Its mission was and remains "to make children's health protection a fundamental goal of public health and environmental protection… [by] ensuring strong standards that protect children's health…" In short, EPA must be conservative, not only in protecting the scientific knowledge base, but in protecting public health, including children's health (Michaels 2017).

All three of our already-published papers (Michaels and Oko 2007, 2010, 2017a), which are critical of EPA's dredging project methods and effectiveness, are excluded from citation and from consideration by EPA's proposed "Second Five-Year Review," just as in 2012 EPA excluded from its first five-year review our two then-existing peerreviewed published papers. We respectfully call upon EPA to respond to our comments in its upcoming response document, and consider our reports in the final version of the Agency's "Second Five-Year Review."

Literature Cited:

Michaels, Robert A. Confidence in courts: a delicate balance. Science, 357(6353):764, Letters, DOI: 10.1126/ science.aao3967, 25 August 2017

Michaels, Robert A.; and Uriel M. Oko. Bias in the US Envi- NY; umoko@nycap.rr.com. ronmental Protection Agency's Health Risk Assessment Supporting the Decision to Require Dredging PCB-Bearing Sediments from the Hudson River. Environmental Practice (Cambridge University Press), 9:96-111, 2007

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US EPA. Proposed Second Five-Year Review Report for Hudson River PCBs Superfund Site. New York City, U. S. Environmental Protection Agency, Region 2, Emergency and Remedial Response Division; 81 pages plus 15 Appendices, <u>https://www.epa.gov/ny/second-five-year-review-</u> report-hudson-river-pcbs-superfund-site-report-textappendices-0, 31 May 2017

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ECOSYSTEM TRIVIA - test your understanding!

An ecosystem includes all of the living things (plants, animals, organisms) in a given area, interacting with each other, and also with the non-living components of their environment (weather, earth, sun, soil, climate, atmosphere).

Question 1 - The Biosphere includes:

- A. the atmosphere and the earth
- B. all living components of the earth
- C. the atmosphere only
- D. none of the above

Question 2 - The Geosphere includes:

- A. the atmosphere and the earth
- B. all living and non-living components of the earth
- C. all the stuff that makes up the crust and core of the earth
- D. none of the above
- Question 3 The complex feeding network of interactions among living organisms is referred to as:
 - A. a food chain
 - B. a symbiosis
 - C. a food web
 - D. a habitat

Question 4 - The study of this considers geography, ecology, technology, economics, politics, and history. A. Human Ecosystem

- B. Environmental Justice
- C. Ecocide
- D. none of the above

Question 5 - In general, ecosystems are broken into two kinds with numerous sub-ecosystems under each. The two main kinds are:

- A. Tropical and Sub-Tropical
- B. Aquatic and Terrestrial
- C. Marine and Montane
- D. Wet and Dry
- **Question 6** The 'variety and variability of life on Earth" is referred to as:
 - A. Biosphere
 - B. Biome
 - C. Ecology
 - D. Biodiversity
- Question 7 Man's greatest impact on the world's ecosystems is:
 - A. pollution
 - B. population growth
 - C. deforestation
 - D. all of the above

Answers shown on Page 10







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Dr. Richard J. Kramer, CEP





NATIONALLY RECOGNIZE EXTRAORDINARY ACHIEVEMENTS, LEADERSHIP, AND SPIRIT OF A CERTIFIED ENVIRONMENTAL PROFESSIONAL

Dr. Kramer's involvement in ABCEP spanned more than two decades. In 1982, he was the 31st person to earn the CEP designation. He served on the Academy's Certification Review Board from 1985 to 1999, when he resigned to become the first President of the Academy. Dick began his career in the environmental profession in 1972. For many years he was head of the environmental planning and NEPA office for the Camp Pendleton Marine Corps Base in California.

The ABCEP Trustees are responsible for selecting the winner of the award. More than one award may be given each year. The award was presented for the first time in 2004, to commemorate the 25th Anniversary of the creation of the Certified Environmental Professional designation by the National Association of Environmental Professionals (NAEP) and the 5th Anniversary of the creation of the ABCEP, which was created in 1999 to oversee the CEP program.

All ABCEP Members are eligible for the Award & must be nominated by an active ABCEP Member.

Nomination Deadline: February of each year

SEND NOMINATIONS TO OFFICE@ABCEP.ORG OR VISIT WWW.ABCEP.ORG/BLOGS/AWARDS



The Certified Environmental Professional

The ABCEP Newsletter is published monthly and is intended to be a:

- Communication vehicle for the Board of Trustees and ABCEP Committees to inform and engage with CEPs and CEP-ITs on current activities within ABCEP and its future direction.
- Forum to report on current and emerging environmental issues, regulation and policy changes, and professional trends.
- Forum to provide professional guidance and advice to expand the professional growth and knowledge of members.
- Means for members to communicate with one another on current accomplishments, interesting projects, or lessons learned on the job with new approaches and successful problem solving solutions.
- Platform to acknowledge, highlight, and welcome active CEPs and CEP-ITs.

All members are encouraged to be active in their profession and affiliated professional organization.

If you have an article or a topic of interest that you would like presented in *The Certified Environmental Professional* newsletter please submit your completed article or topic request to Shari Cannon-Mackey, CEP ENV SP, at scannonmackey@burnsmcd.com; or to Andrea Bower at office@abcep.org .

Thank you,

Shari Cannon-Mackey, CEP, ENV SP Editor

> What are CEPs and CEP-ITs doing in your area? Let us know - no event is too small nor too big! Send your photos and descriptions to Shari Cannon-Mackey at scannonmackey@burnsmcd.com

Answers to Ecosystem Trivia - Page 7 Question 1 - B | Question 2 - C | Question 3 - C | Question 4 - A | Question 5 - B | Question 6 - D | Question 7 - D