



## Notes from Nancy

### From the Editor

Nancy Meilahn Fowler

It's not often in this field that we get to indulge in creative writing (although some, upon reading various reports, might argue that point), so once in a while I have a hard time getting this column started. Such was the case this quarter. The problem stems more from too much to say than too little, however. Where to start? What's most important? What will you, the reader, care about?



Hopefully you care about the upcoming ACE in Calgary, which will get its own special bulletin again this year. Laurie Bates-Frymel gives a bit of intel for Calgary later in this edition.

Monica Sandoval, our News Committee Vice-Chair, pulled together an article on the recent environmental release in the Gulf of Mexico. Whether you are a North American citizen or not, this is one story to watch (especially if you like shrimp!). Please let us know what else you care about or would like to read about in future issues at [YPAC@awma.org](mailto:YPAC@awma.org).

### Don't forget to Vote! A&WMA's 2011 Board of Directors Election

It's time to vote for your 2011 Board of Directors. Cast your votes to have a say in your leadership! **The Board of Directors election closes May 15, 2010 so [vote](#) today!**



All A&WMA members are eligible to vote. Members should have received their voter validation number in the mail. Have your number ready and login to your membership account to cast your votes. Please exercise your right as a member to vote for our Association's highest leadership positions. Your support is important to the future of the Air & Waste Management Association and the profession.

## Message from the President

Although the A&WMA president serves only a one year term as President, it is a minimum three year commitment to the organization, entailing a year of service as President-Elect, and a year as Past President.

Additionally, you have to have served on the Board for at least a year to be nominated, so ... it's a big commitment! Gwen Eklund is this year's President, and she wanted to say a few words to the YPs. So, without further ado...

### 2010 – Lessons Learned from YPAC in the First Quarter

By Gwen Eklund, A&WMA President



In A&WMA, one challenge for us is our fractionated demographic diversity and how best to simultaneously serve the needs of professionals who are at vastly different stages of their careers. But this also provides an opportunity to demonstrate our adaptability and sustainability. I appreciate your efforts to create and implement programs to meet the challenges faced by our Young Professionals. Thank you for helping A&WMA by contributing your ideas and invigorating the Association with your zeal for leadership and your dedication to volunteer. I also appreciate your patience with our longer-term members who are coming to understand **just how much you have to offer**. Please keep volunteering and please keep smiling. You've made substantive progress this past year in A&WMA and while it may seem to you sometimes that it is too little too slow, you are making a difference.

Recently, I was attending an environmental association's annual conference, similar to A&WMA's. At their Board meeting, they discussed the difficult time they were having with getting Young Professionals (YPs) to join. They had tried different strategies to engage YPs for the past few years, but none had been successful. I must have been smirking because one of their Board members asked what I was thinking. I told him that I was beginning to learn a lot from the YPs in A&WMA, and I thought perhaps their Board could, too. So, they asked me to tell them what I had learned from A&WMA YPs. My response was something along these lines:

#### Advice to Other Environmental Organizations:

1. If you listen to Young Professionals (YPs), they will tell you what they need in an environmental organization to make their participation worthwhile. Generally, they want meaningful careers, balanced

lives and most importantly, a *good return on their investment in association membership.*

- Just because YPs are young (i.e., young enough to be my grandchildren in some cases) doesn't mean they aren't qualified LEADERS, INNOVATORS, and HARD-WORKING volunteers. Granted, some YPs may be more engaged as members *electronically* than face-to-face, especially now when travel money is so hard to come by.
- YPs aren't necessarily joining your environmental association to spend **all** their time with people who look like YOU; i.e., when it comes to 'social networks' at professional events, YPs may want to spend some 'alone time' with other YPs.

Sometimes people ask for advice, but then don't take it (I'm sometimes guilty of that myself). At that organization, after I had gotten out lesson #3 above, another fellow said, "*Young people should pay membership and be satisfied to attend, LISTEN and LEARN; they aren't qualified leaders yet – they think that paying their lower fee affords them instant entitlement into the highest leadership positions. They need to respect the people who have built this organization and wait their turn.*" Which I translated to mean: so you really don't want YPs to be an active part of this group, you just want to be supported and respected by YPs? It made me glad that A&WMA takes a different approach; that other organization will likely figure out eventually how to engage YPs, but it may be a slow process for them.

Environmental professionals of all ages tend to trust their own experience and personal observations; so, we observe and respect actions that build our organization, regardless of the age of the actor. Your leadership in all four A&WMA Councils, on the international Board of Directors, on the Publications Committee, at international conferences, in workshops and in your local

Sections and Chapters is *not* going unnoticed. I know that you are continuing your efforts to teach fellow YPs about ALL of A&WMA and involve YPs in all areas of the organization and sometimes, *it isn't easy.*

In graduate school, another physical chemist I shared a research lab with had etched into our chalk board: "**Nowhere is it written that life is easy.**" Every time I looked at that, I remembered that my Mother always told her daughters that we could become anything we wanted to, but that it likely would take hard work and lots of patience. Well, unfortunately, I'm not very patient, and one of my goals that we haven't met this year is to see the median A&WMA member age demographic drop far closer to 35 years old, so please encourage your colleagues (who look more like YOU than me) to join A&WMA and bring them to Calgary in June.



## ACE Corner

### Don't Forget to Pick Up the P-ACE

Laurie Bates-Frymel

A friendly reminder -- if you haven't registered for this year's Annual Conference and Exhibition (ACE 2010), the early bird rate deadline is fast approaching. **Register by May 17<sup>th</sup> and you'll save 15%!**



Included with your ACE registration are 19 concurrent technical sessions jam-packed with information about the latest air quality, climate change and waste research, technology, regulations and environmental management strategies. This year will also feature several brand new sessions developed by young professionals:

- "Carbon Capture and Sequestration 101", "Understanding Air Toxics", and "Particulate Matter 101" will provide some context for anyone who is fairly new to the industry or would like a refresher. Many of the presenters are well-known industry experts and textbook authors!
- "The YP's Guide to Getting Involved" will describe the structure of A&WMA and how YPs like you can help shape the Association's future.
- "The Seasoned Professionals Guide to YPs: Critical for Managers" will investigate the differences between baby boomers, generation X and generation Y, and provide tips to improve the effectiveness of multi-generational teams.
- And last, but not least, don't miss "Gizmos for Geezers: Tips and Tricks for the Techno-Challenged"! During this session, tech-savvy YPs will share some of their secrets. Learn about Smartphones, GPS, social networking and how technology can help with your job.

Many thanks to the YPAC's Technical Committee Chair, Holly Krutka, for her leadership, as well as Madhan Selvaraj, Garrett Hoeksema and Wally Qui for helping to organize these sessions!



No way you can make it to ACE 2010? You can still stay connected with what's happening. Just click the links below, and follow along or join the conversation:

[A&WMA Facebook page](#)

[A&WMA YPs LinkedIn Group](#), or

[ACE 2010 Twitter Page!](#)

## Getting to Know the YPAC

We decided to ask members of the YPAC a ten question survey about themselves as an introduction about them.

**Name:** Brandon (Brad) Waldron

**Position:** Vice Chair – Young Professional Council

**Employer:** Novel Geo-Environmental, LLC

**Location:** Moon Township, PA



**What do you do in your current job?** My current job primarily involves organizational management, staffing, financial performance, and daily management of NGE's Pittsburgh office. I am involved in strategic business decisions, line of service changes, and making determinations regarding what types of projects to accept.

**Best part about your job?** The best part of my job is the people I work with on a daily basis. I am lucky to be around such a great group of people. Without them, the stress and demands on my time would certainly be much more difficult to handle.

**Family?** My "non-work" family is made up of my wife and my daughters who are four and six. We have a couple of cats, and, until I can convince someone that they really would make a nice pair of earmuffs, two chinchillas.

**Hobbies?** While my time to pursue hobbies is pretty limited, I try to make the most of it. I enjoy going to the gym, playing golf, biking with my family, traveling, and impromptu parties.

**Three people you would invite to your dinner party?**

To my dinner party, which would likely end up as more of a cookout, I would invite my grandfather for his old-fashioned Maine wisdom and wit, my best friend and adopted brother Jon who still lives in Vermont and I don't see as much as I would like, and, for too many reasons to list, my dad.



**What are you most grateful for in your life?** I am most grateful for the people in my life, my friends and family. Of all the things that matter in life's journey, nothing is more important than the people making the trip with you.

**Favorite musician?** That's the most difficult question on this list. There is no way I could limit that to one person, or even one group. Maybe I could restrict it to a couple dozen...

**What qualities do you most value in your friends?** I'm not certain there are any qualities I actively seek. But from looking at the people closest to me and their

qualities, it appears that I value integrity, personality, a sense of identity, sincerity, and ambition.

**Any heroes?** I have two heroes. They were both invited to dinner.

**Where do you want to be in 25 years?** I don't mean this to sound like I'm avoiding the question, but I don't really believe in setting long term goals like that. I am proud of the things I have accomplished so far in my life, and I hope that my decisions over the next 25 years won't change that.

## What is the YPAC Anyway?

### What is YPAC Technical Committee and How to Get Involved with It

*By Ali Farnoud, PhD, Trinity Consultants*

Following the global awareness of the environmental problems that are threatening our planet, more and more people are joining the growing environmental field. The Bureau of Labor Statistics (BLS) estimates that the growth in the field of environmental engineering is currently much faster than average. Such growth is typically associated with an increase in the number of "young professionals". A young professional (YP) is defined by the Air & Waste Management Association (A&WMA) as an individual 35 years or younger working in the environmental profession.

A&WMA specifically focused on supporting this group by forming the Young Professional Advisory Council (YPAC). The YPAC advises the A&WMA Board and other Councils regarding effective engagement of young professionals. The Technical Committee is the technical and scientific arm of YPAC, in accomplishing this goal. The YPAC Technical Committee strives to augment the scientific contribution of the young professionals through two main channels within A&WMA: conferences and journals.

Although the YPAC Technical Committee has only recently been formed, it has quickly become active in the organization. For example, the Technical Committee is responsible for organizing the YP technical sessions at the annual conference. At ACE 2010, there will be more YP sessions than ever before.

Many of these sessions are introductory in nature, geared towards bringing in YPs or anyone else who is interested in learning more about a particular field.

Another goal of the Technical Committee is to integrate young professionals into the workings of the A&WMA technical committees. For many of the YP technical



sessions young professionals are gaining experience in program planning and working with the Technical Coordinating Committees (TCCs). In addition, many of the YP technical sessions are being co-sponsored by TCCs and the co-chairs are often long-time A&WMA members. It is hoped that such relationships will smooth the transition from YP membership to regular membership and keep members active.

In addition to conferences, another goal of the YPAC Technical Committee is to work with the editorial boards for the A&WMA publications, EM and the A&WMA Journal. The YP Technical Committee is currently evaluating different options to increase YP submissions to the A&WMA publications. If you would like learn more or get involved with the YPAC Technical Committee please contact the Technical Committee Chair, Holly Krutka ([hollyk@adaes.com](mailto:hollyk@adaes.com)). Any experience you may have planning or presenting at conferences, or publishing in scientific journals, can help YPAC Technical Committee move toward its goal of increasing the involvement of YPs in A&WMA.

### Section/Chapter YP Activities

Is your Section or Chapter holding YP-oriented events? Be sure to let us know and we'll profile them in upcoming newsletters!



#### Lake Michigan States Section

The LM A&WMA has had a few very successful YP events this year already. In February had a bowling event. This was the first time planning a bowling event. The members requested it last year, and we made it happen with some great volunteers from our section. Erin Galbraith lead this very successful event. We had 5-6 lanes at a local bowling alley and everyone had a blast.

In March we celebrated St. Paddy's Day with some food and beverages at the local Irish Pub. This is always a big event. This is the third year in a row and everyone tries to attend this one. Thanks to efforts from Meredith Cywinski, we had the largest crowd ever.



The following are the upcoming events of 2010:

May 13th: Happy Hour at local bar/grill. Dean Apostolopoulos is the contact for the next two events this summer.

July 26th: Third Annual White Sox Game

Late summer/early fall: Happy Hour at local bar/grill.

Check out the local LMAWMA [website](#) or contact [Laura Mammoser](#) for more details.

#### East Michigan Chapter

The YPs from the East Michigan A&WMA Chapter recently held their Spring 2010 social on March 23rd. The YPs gathered at a local brewery for some hometown brew and food. The venue provided a perfect atmosphere for sharing information about the A&WMA with new members and encouraging them to become involved with other local YP events. A wonderful mix of professionals attended the event and shared ideas and experiences. Based on the success of the Spring social, the chapter is planning to hold another social during the Fall of 2010.

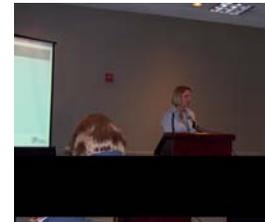
### Webinar Events

#### Webinar: Young Professionals – Is Professional Licensing Right for You?

Date: Thursday, May 27, 2010

Time: 2 – 4 pm EST

Young professionals in the environmental field are faced with many decisions as to which path would result in the greatest potential for career advancement. One of these decisions is how much time to invest in pursuing an environmental professional credential or certification. Once a decision is made, choosing which credential can also be a difficult task.



This webinar will help participants:

- Determine whether or not an environmental professional credential is significantly beneficial for their chosen career track
- Identify which credential options are available and what is required to obtain and maintain them
- Learn how to get the most out of a professional certification once it is received

The webinar will discuss the different environmental career paths and how important professional licensing is to each path. The environmental career paths that will be discussed include:

- Consulting
  - Compliance/Permitting
  - Sustainability
  - Construction
- Industry
  - Product
  - Operations
- Government
  - Research
  - Regulator



The webinar will briefly discuss some of the environmental professional licenses that are available, including the following:



- CCM – Certified Construction Manager
- CCM – Certified Consulting Meteorologist
- CHMM – Certified Hazardous Materials Manager
- CIH – Certified Industrial Hygienist
- CPEA – Certified Professional Environmental Auditor
- CSP – Certified Safety Professional
- CWO – Certified Water Treatment Plant Operator
- LEED-AP – Leadership in Energy and Environmental Design
- PE – Professional Engineer
- PG – Professional Geologist
- PLS – Professional Land Surveyor
- PMP – Project Management Professional
- PWS – Professional Wetlands Specialist
- SSBB – Six Sigma Black Belt
- QEP – Qualified Environmental Professional

Presenters:

- Fawn Bergen, PE; AWMA YPAC Professional Development Committee Chair/Golder Associates Inc., Fort Collins, CO
- Stephen Hinton, Managing Director of Hinton Human Capital, Autell, GA
- Stephen R. Andersen, Associate Air Quality Meteorologist; Golder Associates Inc., Fort Collins, CO
- Brad Waldron, QEP, CHMM; Vice President of NGE

The presentation will be followed by a question and answer session.

Click [HERE](#) to register!

**Ahead of the Curve: Voluntary GHG and Sustainability Reporting Initiatives**

Date: July 22, 2010  
Time: 2 – 4 pm EST

An overview of greenhouse gas and sustainability reporting initiatives in the United States and elsewhere, including:

- a. Not-for-profit reporting programs;

- b. Combined reporting and emissions reduction commitments; and
- c. Major corporate sustainability initiatives.

Reporting requirements, boundaries, thresholds, and targets will be discussed for all of the above cases, as appropriate.

Click [HERE](#) to register!

**Carbon: Sustainability, Strategy, and Solutions**

Date: August 26, 2010  
Time: 2 – 4 pm EST

A discussion of the multi-dimensional perspective required to address carbon within a governance context; including:

- a. Leveraging existing governance structures to address carbon;
- b. Integrating sustainability into corporate strategy; and
- c. Aligning your operating model to ensure success.



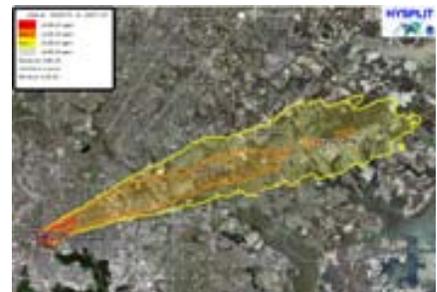
Click [HERE](#) to register!

**Upcoming Events – Courses**

**CALPUFF/CALMET General and Advanced Modeling Courses**

Canadian Prairie and Northern Section  
Southern Alberta Institute of Technology (SAIT)  
1,301 – 16th Ave NW, Calgary, Alberta  
**June 28th – July 2nd, 2010**

Instructed by Joseph Scire of the Atmospheric Study Group (ASG) at TRC Companies Inc.



The course will be broken into two main parts, including:

**Part 1: CALPUFF General Modelling Course (June 28th – June 30th)**

**Part 2: CALMET Advanced Modelling Course (July 1st – July 2nd).**

Registrants can participate in either one or both of the courses.

Concepts that will be covered in **Part 1: CALPUFF General Modelling Course** may include the following:

- Introduction to the CALPUFF Modeling System
- Major features of the CALPUFF Modeling System
- Geophysical and Meteorological Pre-processors
- Meteorological Modeling (including MM5)
- Dispersion Modeling
- Post-processing and Display
- Advantages of the Puff Approach
- CALMET/CALPUFF Model Inputs
- CALVIEW and Model Outputs
- Hands-on Computer Exercises
- Installation of Software
- Overview of Graphical User Interface (GUI)
- Test Case Simulations



Concepts that will be covered in the **Part 2: CALMET Advanced Modeling Course** may include the following:

- Technical Description of CALMET Features
- Wind Fields
- Boundary Layer Modules
- Surface Friction Velocity
- Monin-Obukhov Length
- Convective Velocity Scale
- Mixing Height
- Stability Class
- Temperature Field
- Precipitation Interpolation
- CALMET Parameter Files
- Hands-on Computer Exercises

The most recent Versions of CALPUFF General and CALMET Advanced sessions will include both technical instruction (through graphical presentation of theory and

associated discussions) and hands-on computer exercises (~50% of the time) in which course participants will work with the various components of the CALPUFF modelling system.

Register at <http://www.cpans.org/> or at <http://www.cpans.org/articles/100403115245.pdf>

## Upcoming Events – Conferences

### **Leapfrogging Opportunities for Air Quality Improvement**

*A&WMA International Specialty Conference*

*May 10-14, 2010*

*Xi'an, Shaanxi Province China*

China and other Asian countries need to balance rapid economic growth with environmental preservation. Asian air quality management strategies often follow



the patterns set by Europe and North America, even though more effective methods have been proposed and demonstrated. Leapfrogging opportunities abound in the areas of multi-pollutant standard setting, emissions characterization, air quality monitoring, source, and receptor modeling, quantifying and valuing adverse effects, emission reduction technologies, and implementation strategies.

This conference brings together scientists, regulators, and industrialists with worldwide experience in different aspects of air quality assessment and management. These delegates will share their experiences and ideas in plenary addresses, platform sessions, and poster presentations, with an emphasis on how their information might be used for leapfrogging ahead of standard practices. Posters will be keyed to platform sessions, with a brief summary presented at a corresponding session. Dedicated poster and vendor exhibition times will be provided for interaction with each presenter

Major Topics will include,

- Methods for regional and urban emission inventories
- Ambient and source characterization techniques
- Air quality modeling applications
- Transboundary transport
- Clean energy and fuels
- Clean transportation options
- Emission control technologies
- Air pollution and health effects

- Adverse effects on visibility, materials, and ecosystems
- Climate change and sustainable development
- Cost and benefit analyses for air quality management
- Science/policy linkages and community outreach
- Optimizing multipollutant regional and urban air quality management strategies and accountability for improvement.

Click [HERE](#) to register.

### **International Conference on Thermal Treatment Technologies and Hazardous Waste Combustors**

San Francisco, CA

May 17-20, 2010

Thermal technologies play a key role in energy recovery, resource conservation, and waste treatment around the world. Now in its third decade, the [International Conference on Thermal Treatment Technologies and Hazardous Waste Combustors](#) invites thermal treatment professionals and academicians working in all aspects of the industry to join globally-recognized experts from research and development, and pilot and full scale thermal technologies in operation, public policy, and regulation to solve difficult waste management, resource conservation, and energy recovery challenges.



The conference will feature state-of-the-art technical papers on a broad range of topics, opportunities for discussions with equipment providers and technical service firms, and technical tours of area waste management and recycling

facilities. There will be ample networking opportunities with potential customers from industry and academia, and social events where participants can mingle and enjoy the San Francisco area.

For questions about IT3, please contact Lisa Breese at [lbreese@awma.org](mailto:lbreese@awma.org) or 412-904-6004. For questions about the exhibit, please contact Alison Lizzi at [alizzi@awma.org](mailto:alizzi@awma.org) or 412-904-6003. Click [here](#) to register.

### **Vapor Intrusion 2010**

Chicago, IL

September 29-30, 2010

Join the Air & Waste Management Association (A&WMA) and leading scientists, engineers, regulators, and attorneys for Vapor Intrusion 2010 to discuss the latest developments and innovations in regulatory policy, sampling, analysis, and vapor intrusion (VI) pathway control, and the complex technical, legal, and public relations challenges posed by VI.

Defined by the U.S. Environmental Protection Agency (EPA) as the “migration of volatile chemicals from the subsurface into overlying buildings,” the VI pathway is an ongoing concern of the regulatory and environmental professional community. Each year technical knowledge and guidance evolve, putting investigators and risk assessors one step closer to analyzing whether a complete pathway exists, or if an environmental liability stands in the way.



Discover the latest regulations and developments on VI during A&WMA’s fifth specialty conference on this issue.

For more information on the conference, please contact Lisa Breese at A&WMA ([lbreese@awma.org](mailto:lbreese@awma.org)) or one of the conference co-chairs: [Bart Eklund](#), URS; [Gina Plantz](#), Haley & Aldrich; or [Matt Traister](#), O’Brien & Gere. Register online [here](#)!

### **Upcoming Events – Affiliated Events**

#### **Power Plant Air Pollutant Control "MEGA" Symposium**

Baltimore, MD – August 30-September 2, 2010  
Baltimore Marriott Waterfront



The internationally renowned MEGA Symposium returns in 2010 to address issues related to power plant air emissions through the combined efforts of four key industry players—the Electric Power Research Institute, the U.S. Environmental Protection Agency, the U.S. Department of Energy, and the Air & Waste Management Association.

The eighth MEGA Symposium will showcase the latest development and operational experience with air pollution controls from fossil-fired power plants in light of the evolving environmental regulatory directions, and will examine state-of-the-art methods for reducing SO<sub>x</sub>, NO<sub>x</sub>, CO<sub>2</sub>, particulate, mercury, and other hazardous air pollutant emissions.

The MEGA 2010 Technical Program will feature over 100 presentations that will cover issues related to power plant air emissions and will discuss state-of-the-art methods for reducing SO<sub>x</sub>, NO<sub>x</sub>, CO<sub>2</sub>, particulate, mercury, and other hazardous air pollutant emissions.

This page will be updated as the program is finalized. Check back for the latest technical program details.

For questions about Technical Program, please contact Lisa Breese at [lbreese@awma.org](mailto:lbreese@awma.org) or 412-904-6004.

Register Now for MEGA. Download the MEGA [registration form](#) or [click here](#) to register Online.

### 15<sup>th</sup> IUAPPA World Clean Air Congress

September 12-16, 2010

Westin Bayshore Conference Centre  
Vancouver, British Columbia, Canada.

We encourage you to attend the 15th International Union of Air Pollution Prevention and Environmental Protection Associations' (IUAPPA) World Clean Air Congress from September 12-16, 2010 in spectacular Vancouver, British Columbia.



The 2010 IUAPPA Congress theme of "Achieving Environmental Sustainability in a Resource Hungry World" recognizes the need for holistic management approaches to effectively mitigate potential water, food, energy, and environmental challenges. This Congress will bring together specialists from academia, industry, consulting, environmental advocacy groups, and government to present innovative ways to improve air quality, reduce greenhouse gas emissions, and minimize environmental impacts. The program will examine international, national and local-scale issues facing both emerging and developed economies.

IUAPPA 2010 will bring together specialists from academia, industry, consulting, environmental advocacy groups, and government to present innovative ways to improve air quality, reduce greenhouse gas emissions, and minimize environmental impacts.

Surrounded by breathtaking natural beauty, Vancouver is recognized as one of the world's most livable cities, renowned for its innovative programs and leadership in



sustainability, accessibility and inclusivity. Visitors will enjoy multi-cultural dining and entertainment, outdoor adventure, world class shopping, spectacular sights and attractions. We also encourage delegates to take pre- or

post- conference day trips to the picturesque Resort Municipality of Whistler or a late season cruise to Alaska.

This will be a Congress to remember. Register [here](#).

## Did You Know?

### New Study Ranks Countries on Environmental Impact

ScienceDaily. Retrieved May 10, 2010, from <http://www.sciencedaily.com/releases/2010/05/100505092006.htm>

A new study led by the University of Adelaide's Environment Institute in Australia has ranked most of the world's countries for their environmental impact. The research uses seven indicators of environmental degradation to form two rankings -- a proportional environmental impact index, where impact is measured against total resource availability, and an absolute environmental impact index measuring total environmental degradation at a global scale.

Led by the Environment Institute's Director of Ecological Modelling Professor Corey Bradshaw, the study has been published in the on-line, peer-reviewed science journal PLoS ONE.

The world's 10 worst environmental performers according to the proportional environmental impact index (relative to resource availability) are: Singapore, Korea, Qatar, Kuwait, Japan, Thailand, Bahrain, Malaysia, Philippines and Netherlands.

In absolute global terms, the 10 countries with the worst environmental impact are (in order, worst first): Brazil, USA, China, Indonesia, Japan, Mexico, India, Russia, Australia and Peru.

The indicators used were natural forest loss, habitat conversion, fisheries and other marine captures, fertiliser use, water pollution, carbon emissions from land use and species threat. "The environmental crises currently gripping the planet are the corollary of excessive human consumption of natural resources," said Professor Bradshaw. "There is considerable and mounting evidence that elevated degradation and loss of habitats and species are compromising ecosystems that sustain the quality of life for billions of people worldwide."

Professor Bradshaw said these indices were robust and comprehensive and, unlike existing rankings, deliberately avoided including human health and economic data - measuring environmental impact only.

The study, in collaboration with the National University of Singapore and Princeton University, found that the total wealth of a country (measured by gross national income) was the most important driver of environmental impact.

"We correlated rankings against three socio-economic variables (human population size, gross national income

and governance quality) and found that total wealth was the most important explanatory variable - the richer a country, the greater its average environmental impact," Professor Bradshaw said.

There was no evidence to support the popular idea that environmental degradation plateaus or declines past a certain threshold of per capital wealth (known as the Kuznets curve hypothesis). "There is a theory that as wealth increases, nations have more access to clean technology and become more environmentally aware so that the environmental impact starts to decline. This wasn't supported," he said

### **Deepwater Horizon – Offshore Incident**

You may have heard news in the last couple of weeks about the Deepwater Horizon drilling rig which caught fire, burned for two days, then sank in 5,000 ft of water in the Gulf of Mexico. There are 11 men missing and not expected to be found.

The rig belongs to Transocean, the world's biggest offshore drilling contractor. The rig was originally contacted through the year 2013 to BP and was working on BP's Macondo exploration well when the fire broke out. The rig cost about \$500,000 per day to contract. The full drilling spread, with helicopters and support vessels and other services, will cost closer to \$1,000,000 per day to operate in the course of drilling for oil and gas. The rig cost about \$350,000,000 to build in 2001 and would cost at least double that to replace today.

The rig represents the cutting edge of drilling technology. It is a floating rig, capable of working in up to 10,000 ft water depth. The rig is not moored; it does not use anchors because it would be too costly and too heavy to suspend this mooring load from the floating structure. Rather, a triply-redundant computer system uses satellite positioning to control powerful thrusters that keep the rig on station within a few feet of its intended location, at all times. This is called Dynamic Positioning.

The rig had apparently just finished cementing steel casing in place at depths exceeding 18,000 ft. The next operation was to suspend the well so that the rig could move to its next drilling location, the idea being that a rig would return to this well later in order to complete the work necessary to bring the well into production.



It is thought that somehow formation fluids – oil/gas – got into the wellbore and were undetected until it was too late to take action. With a floating drill rig setup, because it moves with the waves, currents, and winds, all of the main

pressure control equipment sits on the sealbed – the uppermost unmoving point in the well. The pressure control equipment – the Blowout Preventers, or 'BOP's' as they're called, are controlled with redundant systems from the rig. In the event of a serious emergency, there are multiple Panic Buttons to hit, and even fail-safe Deadman systems that should be automatically engaged when something of this proportion breaks out. None of them were apparently activated suggesting that the blowout especially swift to escalate at the surface. The flames were visible up to about 35 miles away. Not the glow – the flames. They were 200 – 300 ft high.



All of this will be investigated and it will be some months before all of the particulars are known. For now, it is enough to say that this marvel of modern technology, which had been operating with an excellent safety record, has burned up and sunk taking souls with it.

The well still is apparently flowing oil, which is appearing at the surface as a slick. They have been working with remotely operated vehicles, or ROV's which are essentially tethered miniature submarines with manipulator arms and other equipment that can perform work underwater while the operator sits on a vessel. These are what were used to explore the Titanic, among other things. Every floating rig has one on board and they are in constant use. In this case they are developing ROV's from dedicated service vessels. They have been trying to close the well in using a specialized port on the BOP's and a pumping arrangement on their ROV's. They have been unsuccessful so far. Specialized pollution control vessels have been scrambled to start working the spill, skimming the oil up.

In the coming weeks they will move in at least one other rig to drill a fresh well that will intersect the blowing one at its pay zone. They will use technology that is capable of drilling from a floating rig, over 3 miles deep to an exact specific point in the earth – with a target radius of just a few feet plus or minus. Once they intersect their target, a heavy fluid will be pumped that exceeds the formation's pressure, thus causing the flow to cease and rendering the well safe at last. It will take at least a couple of months to get this done, bringing in all the available technology to bear. It will be an ecological disaster if the well flows all the while; optimistically, it could bridge off down hole.

It is a sad day when something like this happens to any rig, but even more so when it happens to something on the cutting edge of our capabilities.

## YPAC Officers

A&WMA provides programs and activities designed and conducted by environmental professionals for environmental professionals. Membership in A&WMA provides access to a worldwide network of more than 8,000 individuals from industry, government, and the consulting, research, academic, and legal communities who engage in the exchange of technical and managerial information. For more information on the benefits of participating in A&WMA and on how to join, contact A&WMA headquarters in Pittsburgh at 1-800-270-3444 or at <http://www.awma.org/join/index.html> .

### Who are Your YP Advisory Council?

YPAC Officer	Position	Chapter	Section
Laurel Peterson	Chair	Oregon Chapter	Pacific Northwest International Section
Brad Waldron	Vice-Chair	N.A.	Allegheny Mountain Section
Laurie Bates-Frymel	Past Chair, also YPAC ACE Committee Chair	B.C./Yukon Chapter	Pacific Northwest International Section
Ferdinand Alido	Council Member at Large, YPAC Professional Development Committee Vice-Chair	N.A.	Lake Michigan States Section
Fawn Bergen	YPAC Professional Development Committee Chair	N.A.	Rocky Mountain States Section
Ye Cao	YPAC Technical Committee Vice-Chair	Research Triangle Park Chapter	South Atlantic States Section
Josh Ellwein	YPAC ACE Committee Vice-Chair	Tampa Bay Chapter	Florida Section
Holly Krutka	YPAC Technical Committee Chair	N.A.	Rocky Mountain States Section
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Jennifer Tullier	YPAC Local Support Committee Chair	N.A.	Louisiana Section
Abhilash Vijayan	YPAC Representative – A&WMA Publications Committee	Mother Lode Chapter	Golden West Section

If you have questions or comments on the YP Newsletter, or would like to submit articles, please send an email with “YP Newsletter” in the subject line to [YPAC@awma.org](mailto:YPAC@awma.org).

***“I'm a great believer in luck, and I find the harder I work the more I have of it.”***

**--Thomas Jefferson**