

The Professional Association Representing the World's Broadcast Meteorology Community

BREAKING NEWS

As we all know, the IABM Executive Committee often struggles to find a time and a place common to as many members as possible, to meet. Well we have seized the opportunity to come together at the "International Forum de la Meteo" in October 2010 in Paris, France as several of our group have been independently invited by the Forum organizers. The Forum annually gathers experts in the field of weather and climate, together with weather presenters from all around the world to discuss weather and climate and the best way to inform the public. They have graciously welcomed us to meet one evening during their meeting, and as such we will have our annual AGM during this time.

http://www.smf.asso.fr/fim10_en.html



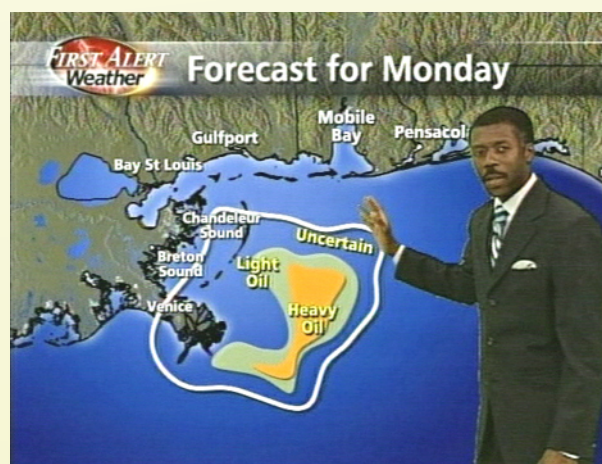
Oil and Weather do Mix

Alan Sealls, Chief Meteorologist, WKRK-TV, Mobile, Alabama

April 20, 2010, the British Petroleum Deepwater Horizon oil rig explosion in the northern Gulf of Mexico kills eleven people. The oil rig was about 100 miles due south of Mobile Bay and the Alabama coast, and about 45 miles southeast of the mouth of the Mississippi River in southeastern Louisiana. According to NOAA there are more than 3,800 oil and gas rigs in the Gulf so an explosion is not unheard of, however this one was different in that the entire oil rig caught on fire and then tumbled into the water. At this location the water depth is about 5,000 feet.

I was on vacation from my TV job as Chief meteorologist at WKRK-TV in Mobile but I was in town so I did not watch much news. I knew of the explosion but didn't give it much thought, even after the rig went into the water. Initial reports from BP were that some oil was leaking but even that didn't seem too much of a problem beyond the loss of life that had occurred.

That changed quickly. Within a few days it became clear that oil had not just spilled, it was leaking and not like a leak from a ship with a fixed amount of oil. This was a leak from a pipe near the sea floor. The source of oil had no limit that was ever presented. Within a month the disaster created the largest oil spill in US history. More correctly it was a leak. BP attempted various methods to stop the leak, slow it, and then finally siphon it. After two months they made some progress but not complete success. At whatever point the leak is totally stopped that comes too late for the beaches and marshes of Louisiana,



Alabama and the Florida Panhandle.

Broadcast TV meteorologists were called into action as "station scientists" to cover a topic that none of us had considered or prepared for. We were expected to deliver daily perspective, satellite views and forecasts of the oil leak, while instantly becoming hydrologists, geologists, oceanographers, and marine scientists. Resources and data were scarce and not routinely available.

I was called in to work extra days and hours, as my weekend meteorologist, was put on duty as a reporter. My TV station quickly set up a special section to our website. One feature was a twice daily update from the weather team on what the oil was doing and likely to do. As the story unfolded we ended up with record visits to our website, far exceeding those during and after hurricane Katrina.

Initial attempts to know and explain what was happening were difficult due to lack of timely "official" information. There was no available routine daily estimate of the

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boundaries and motion of the oil. Trajectory forecasts by NOAA were helpful but not necessarily accurate. Estimates of the oil leaking were suspected as being too low. Every few weeks estimates were raised while many oceanographers and marine specialists still felt they were far too low.

News anchors and meteorologists broadcast assumptions about what was happening and what was expected to happen early on in the disaster. In some cases we drew parallels to tropical storm predictions and motion which turned out to be misleading if not wrong.

Based on the principle that oil and water don't mix and that oil floats on water, I developed in my mind the picture of oil rising straight from the ocean floor and then spreading out on the surface. I assumed thick oil would hold together in a mass with little or no evaporation. I was wrong on both accounts.

Based on available data and images I could only talk about oil on the surface. That is what we media showed until we were able to get subsurface images and videos from researchers and oceanographers. It is entirely possible, and likely in my opinion, that the amount of oil beneath the surface far exceeds what we see on the water. Nonetheless the only available mapping and forecasts of the oil were for surface only.

Much of what I learned in the first month of the oil leak was from deduction. I did make another poor assumption early on and that was that the oil would primarily be moved by wind. Our region's prevailing warm season wind is from the south or southeast due to the Bermuda High. We thought the wind would rapidly push the oil toward us. Day after day we watched as I and my weather team incorporated wind information in our discussions. After about two weeks we noticed that the entire spill area was not moving toward us, it was



actually moving more to the west, approaching the southern Louisiana Coast.

That's when I deduced that a couple of things were occurring. The first was that the oil was being controlled more by ocean currents than by wind. While wind can push ships and sailboats, those sit mainly above the water. Oil is on the water's surface but really in the water's surface. After doing a little research I found a typical water current in the northern Gulf is about 1 mph. If the direction changes a bit every few days that could account for oil not moving toward us, even if the wind is blowing toward us.

I then followed an Internet link to *Oil in the Sea III*, a book compiled by the National Research Council's Committee on Oil in the Sea.

http://www.nap.edu/catalog.php?record_id=10388#toc This book covers many aspects of oil production. I did not read the entire book but glanced over several chapters. The statistic that stood out to me was that 10% of heavy surface crude oil can evaporate within a few days, while 40% of medium crude does so and up to 75% of light crude does so as well.

Gradually, daily projections from NOAA put the threat of oil in my area in the middle of May. For days no oil was sighted but we did begin to smell what later turned out to be oil in the Gulf. The odour is like burning diesel fuel. It was no stronger than sitting in heavy traffic but it was noticeable. I realized that to understand this I had to see for myself what was happening. One month after the spill I went to Dauphin Island, Alabama on my day off to see the State National Guard erecting Hesco brand barriers in a chain around the entire residential barrier island. Hesco barriers are sand-filled cages that are used in warfare to protect fighters from bullets and shrapnel.

I also observed the boom containment systems in the water. My first thought was, "if the boom stops the oil, how is it all then disposed of safely?" My second thought, as I looked offshore at a natural gas rig just a few miles away from a marina was, "how can we not live without oil and gas energy and is there any energy that is truly safe to gather?"

Mobile, Alabama was one of the government "Unified Command



Response" centres for a while. We have a major US Coast Guard Base so this gave me the unique opportunity in the fifth week to fly as a media observer on a US Coast Guard C-144. It's a smaller version of the Hurricane Hunter C-130 but like the C-130 it has a limited number of small windows.

My flight was enlightening personally and professionally. At the time there was no oil near the Alabama or Florida shore. Even though the small windows prevented a true panoramic view, and even though I was busy taking video and still photo images, I could see it was real. We in TV often don't connect with the images on the screen because it's simply TV. But once you are there, there's no question. This was immense. It was still hard to believe that this disaster had occurred and was ongoing.

We flew at 500 feet but given the speed of the plane and my mission to capture images it was difficult to really analyse the oil. The first thing that struck me was that the oil was never solid. There were widespread areas of sheen but the rust-coloured oil was in bands and streaks. It was on the surface and also just beneath the surface. I believe that is why the wind was not so much a factor in motion.

After my flight I reexamined the graphic we used to show projections which was composed of a semi-transparent yellow polygon, with darker orange spots representing heavy oil. I made a template using a rust coloured semi transparent blob with breaks in the colour. It actually looked like what I saw from the air. I had my weather team vote on it. One person liked the old way to maintain consistency and the other person felt it was too scary. My response at that time was, "you mean it's not scary?!" This was weeks before the rust-coloured oil started showing up on our beaches. It was scary

As a team we did a pretty good job of

explaining our graphic, along with the unknowns so I did not change it. I did remove the darker colours for thick oil since those stayed right around the spill source. They were not relevant to our viewers. At least two of our local competitors were using solid dark or bright colour polygons which I felt overdid the situation.

Around this same time our webmaster had been finding many Internet web sites with model projections and got approval for us to use them on-air. I immediately cautioned him and the news department that no one model had been consistently "accurate" and to show models projecting different scenarios could do more harm than good. It is similar to showing the average person a lot of model track forecasts for hurricanes. Most of the web sites with oil models were from university researchers and most of the displays had surface wind vectors superimposed on the oil. Even though I'm sure the model physics put more weight on the water currents than on the wind, the displays would confuse the average person. Many of the displays also had colour tables that were either too ominous or just confusing as to the colours meant. There was one site in particular which had a model and the word "NEW" right next to it. That's not something I wanted to put my faith in. Fortunately my news department followed my advice on this.

Aside from the daily Internet updates we forecasters were pushed forward as science experts by our news department. In most broadcasts we were expected to give information to put the oil in perspective and inform the viewers.

Early on in the process that information consisted mainly of saying where the oil was and converting things like barrels of oil to gallons of oil. I took that a step further to convert it to tanker truckloads of oil since that's something people can relate too.

I and we talked daily about the



uncertainties and unknowns. We later included offshore wind and wave forecasts to give a sense as to whether cleanup mitigation attempts could occur. That was followed by air quality data. I tried to make the analogy that the odour of oil was similar to sitting in traffic by talking about how much gas the average driver burns in a day and a year. One viewer called and accused me of making a political statement on global warming!

As we moved through the end of May and seasonal hurricane forecasts came out for an above normal season the questions started coming from the viewers of what would happen if a hurricane got in the Gulf. There was national speculation that oil might lessen evaporation and reduce a hurricane threat but locally the fear was more of what would storm surge do to oil and would oil fall in the rain. I began to address these questions every other day. It was helpful that NOAA put out a "fact sheet" on various scenarios of a hurricane and the oil spill. I made that a permanent part of our website, even though one viewer emailed that I was passing on government propaganda and I didn't check my facts. I responded, detailing my background and experience and the fact that the article was clearly attributed to NOAA. I also reminded him that when NOAA issues Watches and Warnings there's no question as to the motivation of NOAA. Since this was an article of speculation based on solid science I would have written it the same way. He never responded!

By week 7, I got the sense from family and friends elsewhere in the country that national media was maybe broad brushing what was happening, not intentionally but more by lack of local detail. There actually was one wrong Associated Press report of ankle deep oil near a restaurant on one of our beaches. The restaurant owner immediately called us after we broadcast that and said it was not true.

My brother in Washington DC said he didn't want to bring his young sons to visit later this summer because of the air quality here. I told him that it was actually healthier than the air where he lives but he didn't want to take a chance. He's a natural worrier about his kids. Some days the actual odour is immediately noticeable outside but on most days it's subtle and after being outside for a while you don't even notice.

The Mobile Market serves an area where the overwhelming majority of the viewers



live within 50 miles of the coast. For most of us the oil threat is not something we can see but it's there. By the second week of June it was on our beaches and in some of the marshes. It's had a huge negative impact on our tourism and fishing industries. While some tourists cancel plans to visit to avoid a hazard I suspect others cancel from the unknowns but also in part because I believe the average person is not strong in geography and lumps our entire region together.

At two months after the explosion my station continues to devote the majority of our news time and resources to the oil both on-air and on our website wkrg.com/gulf_oil_spill. Viewers regularly email daily photos of the oil, suggestions on how to stop the leak, and questions on how they can get to the right person or agency to get their lives back in order. I get maybe one direct question from a viewer each week, usually a "what if..." type question regarding oil and hurricanes, oil and air quality, and oil and lightning. Everyone now is more environmentally aware.

The event is incredible but not in a positive way. Even now I find it hard to grasp the magnitude the impact the oil will have on our food chain, sea life, the beauty of our coastline, and the local and regional economy. It's like a slow motion hurricane that takes forever to get here, and lingers for an unknown period where you can't begin to plan recovery until all the damage is done. With the oil still leaking, and the amount beneath the surface of the Gulf unknown or not admitted to, the impact will be years, and maybe even multiple decades.

Alan Sealls, Chief Meteorologist, WKRG-TV, Mobile, Alabama

Climate scepticism 'on the rise'

The number of British people who are sceptical about climate change is rising, a poll for BBC News suggests.

The Populus poll of 1,001 adults found 25% did not think global warming was happening, an increase of 10% since a similar poll was conducted in November.

The percentage of respondents who said climate change was a reality had fallen from 83% in November to 75% this month.

And only 26% of those asked believed climate change was happening and "now established as largely man-made".

The findings are based on interviews carried out on 3-4 February.

In November 2009, a similar poll by Populus - commissioned by the Times newspaper - showed that 41% agreed that climate change was happening and it was largely the result of human activities.

"It is very unusual indeed to see such a dramatic shift in opinion in such a short period," Populus managing director Michael Simmonds told BBC News.

"The British public are sceptical about man's contribution to climate change - and becoming more so," he added.

"More people are now doubters than firm believers."

The Department for Environment, Food and Rural Affairs' (Defra) chief scientific adviser, Professor Bob Watson, called the findings "very disappointing".

"The fact that there has been a very significant drop in the number of people that believe that we humans are changing the Earth's climate is serious," he told BBC News.

"Action is urgently needed," Professor Watson warned.

"We need the public to understand that climate change is serious so they will change their habits and help us move towards a low carbon economy."

'Exaggerated risks'

Of the 75% of respondents who agreed that climate change was happening, one-in-three people felt that the potential consequences of living in a warming world had been exaggerated, up from one-in-five people in November.

The number of people who felt the risks of climate change had been understated dropped from 38% in November to 25% in the latest poll.

During the intervening period between the two polls, there was a series of high profile climate-related stories, some of which made grim reading for climate scientists and policymakers.

In November, the contents of emails stolen from a leading climate science unit led to accusations that a number of researchers had manipulated data.

And in January, the Intergovernmental Panel on Climate Change (IPCC) admitted that it had made a mistake in asserting that Himalayan glaciers could disappear by 2035.

All of this happened against the backdrop of many parts of the northern hemisphere being gripped by a prolonged period of sub-zero temperatures.

However, 73% of the people who said that they were aware of the "science flaws" stories stated that the media coverage had not changed their views about the risks of climate change.

"People tend to make judgements over time based on a whole range of different sources," Mr Simmonds explained.

He added that it was very unusual for single events to have a dramatic impact on public opinion.

"Normally, people make their minds up over a longer period and are influenced by all the voices they hear, what they read and what people they know are talking about."

Story from BBC NEWS:

VIEW FROM THE CHAIR



Claire-The-Chair

Claire Martin

Chief Meteorologist, CBC News:
Weather Centre

Have you noticed something new in the air over climate change? And not just ever-increasing amounts of greenhouse gases?!

A new resolve.. coming from climate scientists and who are finally starting to speak out strongly against those who deny or distort the science of climate change.

It's about time.

In Canada, scientists are publishing calls to arm in professional journals such as the Bulletin for the Canadian Meteorological and Oceanographic Society, where author Geoff Strong -- an adjunct professor at the University of Alberta -- points out climate-change sceptics do not perform any of their own original scientific research but "promote an ideology" and he argues the "failure of the scientific community to effectively counteract this ideology through the same public media has unintentionally contributed to the sceptics' cause."

He urges scientists to use all means possible -- including the media -- and their expertise to educate the public while challenging the climate sceptics and "their disingenuous tactics."

I couldn't agree more.

And while I'm on the subject of "airing out" some issues -- hands up those that were caught in the volcanic-ash induced collapse of air transport over Europe these past few months? Yeh -- me too! Aside

from spending a few hours on a rather dismal end of a London, Heathrow runway, it did however give me the opportunity to read various grossly inaccurate news wire stories on the forecasting of volcanic ash plumes.

If nothing else I always see a misleading news weather/science story as an opportunity to educate. So I spent the next week back on air explaining volcanic ash forecasting, debris trajectories and great circles to my viewers. I encourage all our members to do the same.. remember that for the most part, on a day-to-day basis, we are often the only unbiased scientists and science disseminators that the general public pays attention to.

Finally, what have we been up to in the last few months? Well our "umbrella" community continues to grow in the southern hemisphere. We are thrilled then to see the evolution of the Latin American Association of Broadcast Meteorology, and look forward to getting some great contributions from our latest members in the coming Up Front editions. Gerald Fleming led a small group to Shanghai for the opening of the World Expo, and Tomas Molina and myself were able to meet very briefly in Geneva in April.

As an international organization it is still incredibly difficult for us to get together as a group -- but much like the new resolve we see coming from our climatologists, we will not stop trying..

Among Weathercaster's, Doubt on Warming By LESLIE KAUFMAN

New York Times March 29, 2010

The debate over global warming has created predictable adversaries, pitting environmentalists against industry and coal-state Democrats against coastal liberals.

But it has also created tensions between two groups that might be expected to agree on the issue: climate scientists and meteorologists, especially those who serve as television weather forecasters.

Climatologist, who study weather patterns over time, almost universally endorse the view that the earth is warming and that humans have contributed to climate change. There is less of a consensus among meteorologists, who predict short-term weather patterns.

Joe Bastardi, for example, a senior forecaster and meteorologist with AccuWeather, maintains that it is more likely that the planet is cooling, and he distrusts the data put forward by climate scientists as evidence for rising global temperatures.

"There is a great deal of consternation among a lot of us over the readjustment of data that is going on and some of the portrayals that we are seeing," Mr. Bastardi said in a video segment posted recently on AccuWeather's Web site.

Such scepticism appears to be widespread among TV forecasters, about half of whom have a degree in meteorology. A study released on Monday by researchers at George Mason University and the University of Texas at Austin found that only about half of the 571 television weathercasters surveyed believed that global warming was occurring and fewer than a

third believed that climate change was "caused mostly by human activities."

More than a quarter of the weathercasters in the survey agreed with the statement "Global warming is a scam," the researchers found.

The split between climate scientists and meteorologists is gaining attention in political and academic circles because polls show that public scepticism about global warming is increasing, and weather forecasters — especially those on television — dominate communications channels to the public. A study released this year by researchers at Yale and George Mason found that 56 percent of Americans trusted weathercasters to tell them about global warming far more than they trusted other news media or public figures like former Vice President Al Gore or Sarah Palin, the former vice-presidential candidate.

The George Mason-Texas survey found that about half of the weathercasters said they had discussed global warming on their broadcasts during chats with anchors, and nearly 90 percent said they had talked about climate change at live appearances at Kiwanis Club-type events.

Several well-known forecasters — including John Coleman in San Diego and Anthony Watts, a retired Chico, Calif., weatherman who now has a popular blog — have been vociferous in their critiques of global warming.

The dissent has been heightened by recent challenges to climate science, including the discovery of errors in the 2007 report by the United Nations' Intergovernmental Panel on Climate Change and the unauthorized release of e-mail messages from a British climate research centre last fall that

sceptics say show that climate scientists had tried to suppress data.

"In a sense the question is who owns the atmosphere: the people who predict it every day or the people who predict it for the next 50 years?" said Bob Henson, a science writer for the University Corporation for Atmospheric Research, who trained as a meteorologist and has followed the divide between the two groups.

Mr. Henson added, "And the level of tension has really spiked in recent months."

The reasons behind the divergence in views are complex. The American Meteorological Society, which confers its coveted seal of approval on qualified weather forecasters, has affirmed the conclusion of the United Nations' climate panel that warming is occurring and that human activities are very likely the cause. In a statement sent to Congress in 2009, the meteorological society warned that the buildup of heat-trapping gases like carbon dioxide in the atmosphere would lead to "major negative consequences."

Yet, climate scientists use very different scientific methods from the meteorologists. Heidi Cullen, a climatologist who straddled the two worlds when she worked at the Weather Channel, noted that meteorologists used models that were intensely sensitive to small changes in the atmosphere but had little accuracy more than seven days out. Dr. Cullen said meteorologists are often dubious about the work of climate scientists, who use complex models to estimate the effects of climate trends decades in the future.

But the cynicism, said Dr. Cullen, who now works for Climate Central, a nonprofit

group that works to bring the science of climate change to the public, is in her opinion unwarranted.

"They are not trying to predict the weather for 2050, just generally say that it will be hotter," Dr. Cullen said of climatologists. "And just like I can predict August will be warmer than January, I can predict that."

Three years ago, Dr. Cullen found herself in a dispute with meteorologists after she posted a note on the Weather Channel's Web site suggesting that meteorologists should perhaps not receive certification from the meteorological society if they "can't speak to the fundamental science of climate change."

Resentment may also play a role in the divide. Climatologist are almost always affiliated with universities or research institutions where a doctoral degree is required. Most meteorologists, however, can get jobs as weather forecasters with a college degree.

"There is a little bit of elitist-versus-populist tensions," Mr. Henson said. "There are meteorologists who feel, 'Just because I have a bachelor's degree doesn't mean I don't know what's going on.'"

Whatever the reasons, meteorologists are far more likely to question the underlying science of climate change. A study published in the January 2009 newsletter of the American Geophysical Union, the professional association of earth scientists, found that while nearly 90 percent of some 3,000 climatologists who responded agreed that there was evidence of human-driven climate change, 80 percent of all earth scientists and 64 percent of meteorologists agreed with the statement. Only economic geologists who specialized in industrial uses of

materials like oil and coal were more sceptical.

Seeing danger in the divide between climate scientists and meteorologists, a variety of groups concerned with educating the public on climate change — including the National Environmental Education Foundation, a federally financed nonprofit, and Yale — are working to close the gap with

research and educational forums. In 2008, Yale began holding seminars with weathercasters who are unsure about the climate issue and scientists who are leading experts in the field. The Columbia Journalism Review explored the reasons for the split in an article this year.

Conversely, the Heartland Institute, a free-market research

organization sceptical about the causes and severity of climate change, is also making efforts to reach out. At its annual conference to be held in May in Chicago, the institute tried without success to put on a special session for the weather predictors.

“What we've recognized is that the everyday person doesn't come across climatologists, but

they do come across meteorologists,” said Melanie Fitzpatrick, a climate scientist for the Union of Concerned Scientists. “Meteorologists do need to understand more about climate because the public confuses this so much. That is why you see efforts in this turning up.”

Copyright the New York Times

Weather presenters: a trusted source of information about climate change



I believe that most weather broadcasters we have realized from the very beginning of media focusing on climate change issue that our role in communicating and educating is crucial.

This was also recognized at the World Climate Broadcasts Forum (Geneva September 2009). In the outcome we read: “Weather presenters the “faces and voices” of weather, have developed a high degree of credibility with the public; they are trusted, and very popular with the media audience. The community of weather broadcasters are among those best placed to help educate and inform the world’s population about climate change and its effects. Their scientific understanding and deep interest in the atmosphere position them perfectly for this role»

But now there is an American survey (Leiserowitz, A., Maibach, E., Roser-Renouf, C., & Smith, N. (2010) *Climate change in the American Mind: Americans’ global warming beliefs and attitudes in June 2010*. Yale University and George Mason University) that confirms the important role broadcasters play on climate change education.

In this survey one of the questions was:

How much do you trust or distrust the following as a source of information about global warming?

And the answers for “Television weather reporters” were:

	June 2010	Jan 2010
Strongly trust	5%	5%
Somewhat trust	56%	51%
Somewhat distrust	28%	30%
Strongly distrust	11%	14%

To compare: the answers for “The mainstream news media” were:

	June 2010	Jan 2010
Strongly trust	3%	3%
Somewhat trust	42%	33%
Somewhat distrust	34%	35%
Strongly distrust	22%	29%

Definitely this survey remind us the responsibility we have and surely in the difficult economic environment we face there is a long way ahead.

Panos Giannopoulos, Meteorologist (M.Sc.) Weather Presenter ERT



Latin American Association of Broadcast Meteorology

In the last 20 years, weather broadcasting was increasing -slow but steady- their own space in the Argentinean media, especially on TV.

With cable expansion at early 90's, so many news channels were created. They tried to make a difference with their own scope on news, and additionally focusing on new formats of services to the audience.

One of the most valued services for the audience, was the weather.

In 1993 a new cable channel news was born: Todo Noticias - commonly known as TN – adopting the same concept of CNN: 24 hours of news. And the weather was a distinctive service to the audience. In this regard, TN incorporates several meteorologists, making the first weather team in Argentina. This format was taken for most TV Stations.

Nowadays, several TV stations -including some cable channels- and Radio stations, have incorporated weathermen on their Staff: most of them, with a university degree; in other cases, announcers or journalists with some skills in meteorology.

Furthermore, all of them have an element in common: lack of support or interest on their work from National Meteorological Service.

It is widely known that the media is the best way to reach all the audiences; quickly and without misunderstandings in some specific cases. Severe weather is one of them. The Broadcast Meteorologist is the person that

communicates in a virtual "face to face" with the general public, and based on that confidence -built through their daily contact during breakfast, lunch or dinner- will be taken decisions to save life and properties. This work must be considered by National Hydro Meteorological Service (NHMS) as a partner to meet their responsibilities.

Specifically in Argentina, weathermen work with little or no support of NHMS. We have no voice, and we have limited resources for doing our job. We are less considered by our NHMS, despite we are highly regarded and recognized by the audience, by the common people. This situation is the same in other countries of the region.

In this regard, the IABM executive has supported the creation and develop of a "Latin American" group, that can work "under the umbrella and guidelines of the vision of the IABM, but all the while remaining focused on the weather and broadcasting issues pertaining to your region", in words of Claire Martin, IABM Chairman.

In less than two months, 20 weather broadcasters of Argentina, Uruguay and Paraguay joined us. Almost 20 more weather broadcasters of mentioned countries plus Brazil, Chile, Peru and others, expressed their will to be a part of Latin American Association of Broadcast Meteorology (LAABM), the new Latin American branch of IABM.

We have the will to improve and to strengthen the relationships between National Hydro Meteorological Services and all the weather broadcasters, to get and develop resources for



our members, to organize conferences, seminars and training workshops to be better communicators, to inform better and in a clear way.

We want to be well represented, that our voice be heard by the competent bodies; we want to enhance our status; we want to add, we want to be more... Those are the reasons to create LAABM; those are our reasons to belong to IABM

Mauricio Norman SALDIVAR

ENSO 2009/10 FOURTH STRONGEST SINCE 1950

POSADAS CITY, ARGENTINE 10 of May 2010 (www.tiempoclimamisiones.com.ar).

Based on the statistical information contributed by National Center of Environmental Predictions of the United States (NOAA-NCEP), and analyzed by Tiempo&Clima Misiones the Argentine, is possible to indicate that "EL NIÑO" (ENSO) 2009/10 is located in 4th put in the ranking of the strongest phenomena from 1950, that is not much.

The episodes the "EL NIÑO" are evaluated according to the average of temperatures of the surface of the Equatorial Pacific Ocean of the 3 hotter months. The major or minor temperature, is what the magnitude of the phenomenon of the NIÑO grants. These averages are compared with temperatures that consider the normal ones and it is obtained there that the waters for example, are + 2,5º over the normal thing. We see then the ranking of the 10 strong "NIÑOS" (in Spanish) but realised by Tiempo&Clima Misiones:

RANKING ENSO SINCE 1950

1º POSITION.... NIÑO 97/98	2,5º	STRONG...	Tornado of Santo Tomé. Floods
2º POSITION.... NINO 82/83	2,3º	STRONG	Serious floods. Intense rains
3º POSITION.... NIÑO 72/73	2,1º	STRONG	Floods.
4º POSITION.... NIÑO 91/92	1,8º	STRONG	Floods.
4º POSITION....NIÑO 09/10	1,8º	STRONG	Tornado of San Pedro. Intense rains.
5º POSITIONNIÑO 57/58	1,7º	STRONG	
6º POSITIONNIÑO 65/66	1,6º	MODERATE	
6º POSITIONNIÑO 86/88	1,6º	MODERATE	the prolonged episode more. Almost 2 years.
7º POSITIONNIÑO 02/03	1,5º	MODERATE	

8º POSITIONNIÑO 94/95	1,3º	MODERATE
9º POSITIONNIÑO 06/07	1,1º	MODERATE
10º POSITION...NIÑO 68/69	1,0º	MODERATE

That 3 ENSO took place in the decade of the 90, 3 in the decade of the 2000, 2 in 60 and 2 in the 80, and 1 for the decade of the 70 and another one for 50 .The are the reading that must become of this statistic: the first moderate and strong episodes cause negative consequences in the climatic behavior. Secondly, we see a safe influence of the Global Heating in the greater frequency of the NIÑO as of the decade of the 90. The NIÑO and NIÑA phenomenon to affect east Argentina with rain intensive and drought respectively, both to cause damage important economic.



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Vancouver Olympics 2010 – My Perspective

For 17 days in February, my hometown hosted the biggest winter sporting event in the world. In the week leading up to the 2010 Olympic games, patriotism reached fever pitch in Canada - Team Canada hockey jerseys became the uniform of the streets for both residents and visitors alike!

By February 12th the crowds had arrived, the athletes were primed, and the venues were ready; all that was needed was for someone to yell “game on” and let Mother Nature do her bit – bring us our usual dose of crappy, cool, cloudy wet Spring weather with some snow in the mountains. Little did we know that Mother Nature had her own game plan.

Firstly, for those of you that don’t know the area, here is a quick look at the local geography with descriptions of the specific venue locations. I have paraphrased the following information from the Environment Canada web site http://www.weatheroffice.gc.ca/2010/climate/climate_e.html.

Here’s a map of the region. The outdoor events were split between the four sites clustered around Whistler Village, and Cypress Mountain – a local skill hill visible from downtown Vancouver.



Courtesy: Environment Canada

Climate at the Venues

Vancouver

Vancouver airport (CYVR) sits at 4 metres above sea-level and has a Feb12-28 (Olympic period) daily average mean temperature of +4.8 deg C, sees an average 4 cm of snow during the same time period,

and 64 mm of rain. Along the North Shore mountains (in the background of the photograph below), roughly 30 km north of the airport, average February precipitation amounts nearly triple.



A view of BC Place and the North Shore mountains. Photo courtesy VANOC/COVAN

Cypress Mountain

At the Cypress ski area (930 m ASL) 25 km north of the airport in the North Shore Mountains, about half the precipitation falls as snow. Sub-freezing overnight temperatures persist through March. The daily mean average temperature for this venue for the Olympic period is 0.1 deg C, and there are on average 7 days with measurable snowfall. That’s the good news, the bad news is that this site also – on average during the same time period – gets 5 days with rain, and receives 99 mm of the wet stuff.

A view of Bowen Island from Cypress. Photo



courtesy Tourism BC

Whistler Village

Whistler Village (658 m ASL) lies in a valley about 100 km north of Vancouver. The inland location and higher elevation shields the valley from the moderating and warming influence of the Pacific Ocean. The mountains trap colder continental air and restrict the inland flow of warm Pacific air. Strong winds blow up Howe Sound behind storms and will often force warmer marine air into the valley but from February through March well over 50% of precipitation falls as snow. The village snow base during the Olympic period averages about 63 centimetres.



The Sliding Centre just above Whistler Village. Photo courtesy VANOC/COVAN

Whistler Creekside

At the Whistler Creekside, the alpine area (elevation 1835m) lies 200 metres above the top of the Olympic downhill course, the daily temperature averages minus 5.2°C. Almost all (95 per cent) of the precipitation falls as snow and it snows about every second day. Total snowfall averages over 3 metres and the snow base averages 2.5 metres. Pacific storms bring very strong winds to the highest peaks (2000m+) sometimes gusting up to 150 km/h.



The Whistler Creekside downhill course. Photo courtesy VANOC/COVAN

Whistler Olympic/Paralympic Park

Whistler Olympic/Paralympic Park is in the Callaghan Valley (860m) and was the site for the biathlon, the ski jumping and the cross country ski

events. The valley is surrounded by steep mountains except at the south entrance and is known for heavy snowfalls and light winds. The area is a little colder than the village and receives 25 to 50 per cent more snow.



Callaghan Valley from the top of the ski jump located at Whistler Olympic/Paralympic Park. Photo courtesy Bill Scott, Environment Canada

Ok, so that gives you a lay of the land. In all honesty, from day one, most Vancouverites knew that Cypress Mountain was a “marginal” location for the Olympics, but that Whistler would/should be fine.

Whistler started the winter season with its snowiest month ever, getting 560 cm in November 2009. Cypress equally started the season quite nicely, and by the end of December had a very respectable mid mountain base of around 280 cm.

Then in December 2009, El Nino strengthened from a weakly positive state to a moderate state with subsurface temperature anomalies exceeding +2 deg C across much of the equatorial Pacific. Forecasts from the US Climate Prediction Center stated that this particular El Nino event would remain “significant” through the Jan-Feb 2010 period.

They weren’t kidding.

In Vancouver January 2010 roared in like spring! Vancouver International Airport (CYVR) registered its warmest January on record - with an average mean temperature for the month a full 4 degrees above the usual 6.1 deg C. Local and national TV stations started doing weather stories on the warming being seen around the Olympic venues and the state of the various snow packs. The countdown was on, but so too was the heat!

The snow at Cypress started to melt, and melt and then melt some more. And on TV, the weather story grew and grew and grew some more.

In one single 24-hour period in late January Cypress lost 97 cm off the base (you do the math’s). Suddenly this one Olympic venue was beginning to look a little bedraggled! A Herculeaneum effort from the folks based on the mountain occurred to keep whatever snow they did have, covered under massive tarps, all the while literally hand shoveling clean snow in from the closest higher surrounding slopes. Dry ice machines were placed under the snowboard jumps to keep them from melting away. Snow was trucked and flown in from the surrounding higher peaks, and hay bales were used to stabilize the

underside of the moguls. The weather story grew locally, nationally and then internationally. In the final six weeks leading up to the Olympics, most major media outlets across Canada led at least one nightly newscast per week with our mountain weather conditions and vast loss of snow pack.



Courtesy: Rob Kuhn – Environment Canada

Welcome to the Great White North, eh!

As the games were just about to begin, the warm, oftentimes wet, sometimes-sunny weather continued. Environment Canada did some creative calculating, amalgamating the data from two close sites (Vancouver International Airport 1937-to date, and Steveston the original Vancouver weather site 1896-1937) and discovered that if you looked at any 31 consecutive days in winter for both sites, the period ending on Feb 9th, 2010 was the warmest “winter period” in history. The departure from normal for this period, was +4.02 deg C.

The meteorological synopsis for the Olympics was as follows: we started the period with a large, broad area of low pressure roughly centered 200 km west of Vancouver Island. Warm, wet weather systems were slingshot at us from around the base of the low for the first few days. By the 17th the low had gradually filled and slid south and was replaced with a Rex block situation (High sitting directly over BC over a Low at most sigma levels 500 hPa to surface). Through the next week, the situation gradually evolved into an Omega block. We therefore saw clear skies and warm weather for 7 straight days. On the 23rd, the blocking pattern finally broke, cloud spilled through the Lower Mainland, and showers developed as a more zonal 500 hPa pattern set up. Showery weather lingered throughout the remaining Olympic period.



Courtesy: Richard Klyne. (Note: the lack of snow except on the top peaks of the mountains.)

Afternoon freezing levels on the day of this shot averaged around the 1800 m mark. Freezing levels peaked around the 21st at 2400 m locally. The ski hill visible front and center is Grouse Mountain – not an Olympic venue. Cypress Mountain is on the far left of the shot, in the branches of the foreground tree.)

Whistler faired quite well, compared to Cypress Mountain, at the beginning of the games. Daytime temperatures consistently remained below the freezing mark. But from Feb 9th to the morning of Feb 14th some 80+ cm of fresh snow fell at the top of the Alpine runs. Unlike the rest of us, downhill racing Olympians do not want powder; they want hard, icy, fast runs. That 80+ cm was therefore manually scraped off the hill, and at night water was sprinkled on the top of the runs, before grooming, to keep them as hard and icy as possible.

Callaghan Valley – home of the biathlon, cross-country skiing and ski jumping – by the 18th through to the 20th saw valley bottom temperatures of +10 to +13.8 deg C. These temperatures are especially hot for the cross-country competitors, raising hydration issues for many of the athletes, and an upslope afternoon breeze of around 10-12 km/h affected the accuracy of the biathletes in the mid-afternoon shooting.

On the 18th, one of the new automatic weather stations being used by Environment Canada registered a whopping 17.0 deg C (CVOT – Whistler Timing Flats, elevation 804 m), making it the hot spot in Canada for the day. Upon inspection however, it was discovered later that evening, that the main temperature sensor and bracket had fallen out their housing tripod and landed directly on the stations black roof. This sensor was duly removed from the network!

The following is a day-by-day breakdown of daily high temperatures in Vancouver – at CYVR. It should be noted that this airport is stuck out on a peninsula, southwest of the downtown core, and due to the close proximity and hence moderating influence of the ocean, often reads anywhere from 5-10 deg C colder than the city itself. Abbotsford (CYXX) is 72 km due SE of CYVR, and far more continental in nature, and hence gets warmer readings that are often much more representative of the city.

Day 1: Feb 12th Cloudy with heavy rain showers. High 11.5 deg C. Normal 7.7 deg C

Day 2: Feb 13th Cloudy with heavy rain showers. High 9.9 deg C. Normal 7.8 deg C.

Day 3: Feb 14th. Am showers, Pm sunshine. High 12.4 deg C. Normal 8.0 deg C

Day 4: Feb 15th Partly cloudy day. Heavy rain overnight. High 10.2 deg. Normal 8 deg C.

Day 5: Feb 16th Dense fog on Cypress to mid pm, then sunshine. High 11.7 deg C.

Day 6: Feb 17th. Hot and sunny. Record CYXX of 14.0 deg C. CYVR 8.2 deg C.

Day 7: Feb 18th. Hot and sunny. Cypress morning low -0.2 deg C. High 9.1 deg C

Day 8: Feb 19th. Hot and sunny. High 10.0 deg C. Normal 8.5 deg C.

“THE HEAT IS ON - CLIMATE CHANGE AND THE MEDIA”

Deutsche Welle Global Media Forum

During the last year, mainly due to Copenhagen Conference, global warming was high on the media's agenda. But now the disappointing outcome of this Conference, the financial crisis, and also some errors in some of the IPCC reports have reduced public interest and to some extent even belief in climate change. So again the role and the responsibility of the media in communicating the issue is even more important.

For that reason this year Deutsche Welle (Germany's international Broadcaster) organized in Bonn (21-23 June 2010) a global Media Forum:

“The Heat is On – Climate Change and the Media”

The event incorporated podium discussions, workshops, interactive presentations, and exhibitions. It brought together from 95 countries more than 1500 media users and producers, scientists, energy industry experts, policy makers as well as representatives from international, grassroots and non governmental organizations .

Erik Bettermann Deutsche Welle's Director General pointed out at the opening ceremony the media's role as "chroniclers and interpreters of the fight against climate change". "I am convinced" he said "that we need a climate change in the heads of journalists as well. Reporting needs to be about more than just the day's news. It needs to drive people to action, while showing deficits, solutions and different perspectives."

Some very interesting workshops in which really there were some "hot" discussions are listed:

- "Sex, catastrophe, climate change?" How to get attention of a media-sated public
- Too dry, too technical, not prestigious – How to inspire excellence in climate change coverage

- It's about attitudes: Understanding and reporting the psychology of climate change
 - Public, scientific and media understanding of climate change - How can media professionals communicate climate change?
 - Climate change: A problem of our lifestyles?!
 - Millennium Development Goals, climate change and the role of the media
 - Media-ting change - Shifting societal awareness from climate change to global change
 - How to professionally deal with climate skepticism
 - Moving towards COP 16 in Cancun – A "Climate Pioneer Group" is necessary
 - Climate change - A hot topic for media training?
 - Seeing is believing - Audiovisual motivation for change
 - Picturing climate change – Is there a conflict sensitive approach?
 - The heat is on – Climate change, social advertising and campaigning
 - Religion, climate change and the media
 - Coverage vs. advocacy. Does the media guide or reflect cultural shift?
 - Reaching out for the people – Climate change in social media

I had the opportunity to attend the conference in which many times the communication gap between scientists and the public was highlighted. I believe that we all agree that weather presenters can perfectly bridge this gap.

Panos Giannopoulos, Meteorologist (M.Sc.) Weather Presenter ERT



- Day 9: Feb 20th. Hot and sunny. High 9.7 deg C. Record high CYXX 16.1 deg C.
- Day 10: Feb 21st. Hot and sunny. High 10.2 deg C. Normal 8.6 deg C.
- Day 11: Feb 22nd. Hot and sunny. High 10.9 deg C. Normal 8.6 deg C.
- Day 12: Feb 23rd. Cloudy. Pm showers. High 9.2 deg C. Heavy wet snow at Cypress.
- Day 13: Feb 24th. Cloudy with scattered showers. High 8 deg C. Normal 8.7 deg C.
- Day 14: Feb 25th. Cloudy with scattered showers. High 12.2 deg C.
- Day 15: Feb 26th. Cloudy with frequent showers. High 10 deg C.
- Day 16: Feb 27th. Cloudy with rain. High 10.5 deg C.
- Day 17: Feb 28th Am showers, Pm sunshine. High 12.8 deg C.

Courtesy: Dave Bryson

My station – located in the heart of downtown Vancouver – was not, for the first time in 16 years, the host broadcaster of the Games. So we had decided to cover “the party” instead. So for the entire period, we took the news shows out of the studios and broadcast nightly from outside of our building. Crowds surrounded us the entire time. They were loud, exuberant completely chaotic fun filled shows. It is entirely different to do a weathercast with a live audience – I highly recommend having a go at it at least once in your career!

In Summary

So the weather, not surprisingly, was one of the biggest sidebar stories of the Games. Mother Nature in tandem with El Nino almost stole the show. But the ridiculously warm weather provided me with an exceptional opportunity to explain this global weather phenomenon and the full extent of its effect, almost nightly to our viewers. It should also be noted that I am truly beginning to comprehend the pitiful contextual help that climate data now gives when it comes to fully comprehending various weather scenarios. Furthermore – we simply do not have enough previous El Nino events to tally up and extrapolate trends from.

Finally, it was encouraging – even if it came a bit late – to hear Jacques Rogge, the International Olympic Committee president, confirming that future Olympic evaluation committees would be asked to take a closer look at weather data when they examined future candidates for host cities.

But, quite frankly, in my humble opinion, it needs to be a determining factor.

Meanwhile, here’s hoping our 2014 Olympians get more snow than rain in Sochi, Russia, a city, by the way, found on the Black Sea and much better known as a summer resort than a winter one.

I would also like to take the opportunity to congratulate Chief Forecaster, Chris Doyle and all the staff that manned the Olympic weather office stationed on Cypress Mountain. After years of practice and simulations, they provided timely, accurate forecasts for all the venues under huge pressure as the snow literally melted from under their feet.

The biggest operational hurdle for me came from my weather-graphics package provider, WSI. This is a company based in the US that mass-produced Olympic weather graphics for all of its customers. Needless to say wide views of the Pacific Northwest, with “CANADA” clearly labeled were not what I was after!

With all that being said, I have to say that my personal Olympic experience was breathlessly fantastic! Vancouver was transformed with euphoric crowds, adorned with maple leaves and my days were filled noisy and chaotic TV shows. Most of us worked an average 14-16 hours a day, 7 days a week for 21 days straight. And I wouldn’t have missed it for the world.

Claire Martin



Extremwetterkongress

Inge Niedek Reports

Extremwetterkongress – 3 days March 4th -6th 2010 - extremely good organized, extremely well visited (visitor record of 800 people including general public, scientists and school-children), accompanied by extreme weather (again snowfall for most parts of Germany and very low temperatures slightly above 0° C.)

The facility where the congress took place was the “Klimahaus”, in Bremerhaven, a brand new facility worth visiting, where one can learn everything about climate in a very attractive environment with five climate zones. They can be experienced by a journey starting and ending in Bremerhaven: through realistic and authentic reconstructions of diverse climate zones from the refreshing coolness on the alp in Switzerland, through the scorching heat of the Sahel, short visit to the islands of Samoa, endangered by the rise of the sea-level – finally to the “deep-freezing” Antarctic back to the unsettled weather in Northern Germany.

Interactive exhibits help visitors to easily understand even complex interdependencies in the climatic system of the Earth. The settings and geographical impressions are faithful re-

creations or artistic inspirations of original locations. A very good environment for such a conference! The days have been filled with a lot of interesting themes from which I will briefly touch a few.

Climate Issues

There has been a general consensus on the fact that climate change takes place, despite controversial discussions about IPCC-results. They don’t turn down the global temperature curve! For many especially the public a little bit difficult to understand, because of the extremely cold winter weather in bigger parts of Europe. But as we know this is only a “piece” of the global image.

There has also been a presentation of the NIPCC, the “Non Governmental IPCC”, which is an anti-organization to IPCC, consisting of climate scientists, criticizing the method of IPCC-work and requesting more transparency in scientific discussion. I will not comment on this, because it requires a broader insight.

Modelling future climate of cities

The German National Weather Service has shown results of a study that in bigger cities in Germany during summer, the number of summer days and hot days (with more 30°C) will rise, especially in

heavy populated areas. This will cause heat-stress-symptoms which will pose a threat to health conditions. These developments will be accompanied by more heavy rain-events and more heavy thunderstorms due to accumulated humidity in the atmosphere. As basics for further research, the German Weather service will use a city-climate-model “MUKLIMO_3” together with regional climate projections. Similar climatological developments could be foreseen for other cities in the heart of Europe and worldwide although with different particular climate characteristics. These models are important because even nowadays more than half of the world’s population is living in cities. In the future cities will even attract more and more people with this development. Additionally the problem of Megacities with more than 10 Million inhabitants will rise in the future. In 1800 3% of the world’s population lived in cities, by 2030 the number will increase to 65 %!

Arcitic Ice Melt

Extensive research of the ice retreat in the Arctic by the Hamburg Institut für Meereskunde shows that the melting-process is developing quicker than expected by climate models. Modelling 3000 years in the past shows that the probability of nature causing changing ice-conditions in the Arctic is so insignificant that only human behaviour could be

seen as a cause.

Understanding of weather-reports in television

A problem which all weather-broadcasters tend to share around the world, of course in a very distinctive native sociological environment: Most of our customers, the viewers would simply like to know if they really need an umbrella, a jacket or not.

However extreme weather events not too far away in the past, have shown, that communication between meteorology-media- user is not always functioning in perfect manner.

Weather reports nowadays range from comedy to scientific lectures but very often forget the information-transfer about the "real weather". Working in the media the main task is to find out a sensitive way to present the information in an understandable manner. Even when media is guided a press-release of doubtful source to push a "potential" weather-event like a storm some days before its "secured" occurrence (by meteorological model-data) to a heavy storm the news will spread throughout the media, facing serious media-meteorologists with the phenomenon that before the storm even has developed, it is already a "media-storm" and we all have to cope with the problem to bring media back to the "real" happening, and at the same time to find satisfying words informing the public about accompanying "real" dangers or not. A problem of communication.

Research in this specific communication problem is not extensive, but there are very good approaches in the US, e.g. the Societal Impacts program of Boulder University in Colorado. They publish regularly results of studies dealing with the

understanding of weather-prediction in our society. I think a task we never should forget!!!

Development of damages by weather induced natural disasters

Prof. Peter Höpfe, director of GeoRisikoForschung Munich RE, commented the development of extreme weather events, one of the major issues in the security branch. Since more than 35 years scientists of Munich Re have been analyzing worldwide damages caused by natural hazards.

During the past years there have been natural hazards with records in intensity and damage.

Examples are the Elbeflut in 2002, the summer 2003 with record heat in the middle of Europe causing the death of about 70.000 people. The greatest single occurrence causing the most extensive damage has been Hurrikan Katrina in 2005.

All these occurrences have been documented in the database of NatCatSERVICE of MunichRe, consisting of 27.000 single occurrences. Analysis shows more frequent natural hazards combined with rising amount of damages. The number of bigger natural disasters (with thousands of people dead and /or damages worth billions of Euro) shows a rise from 3 per year in the 50ies to 8 per year nowadays.

Economic losses from weather-related natural catastrophes in the period since 1980 totalled approximately US\$ 1,600bn (in original values).

In particular, the trend towards an increase in weather-related catastrophes continues, whilst there has fundamentally been no change in the risk of geophysical events such as earthquakes, Tsunamis or eruptions of volcanoes. This leads to the conclusion that changes in the Atmosphere in general, climate change specifically are playing a

major role in this trend. More and more studies support this trend (one of the many is the IPCC-report 2007). Some trends are considered to be very likely already: frequency and intensification of extreme weather-events, more heat-waves during the last ten years, heavy precipitation events, droughts and stronger storms. With continuing climate change this development will intensify in the future.

A considerable number of further issues have been touched, showing that climate change has so many challenges to work on – measures to prevent Co2 emissions, looking for ways to produce alternative energy, possibly coming from the desert. A first look at the huge project **"Desertec" has been presented:** concentrating solar power systems, photovoltaic systems and wind parks in the Sahara Desert producing electricity to be transmitted to European and African countries by a super grid of high-voltage direct current cables. It would provide continental Europe with 15% of its electricity.

Another theme: detailed research of the process of glacier-melting and chances of developing methods to stop melting or even to built glaciers.

Professor Dr. Claudia Kemfert, from Deutsches Institut für Wirtschaftsforschung (DIW) talked about initiatives for everyone, every city, or community to engage against climate change with saving energy in public buildings , propagating public transport, Co2-free inner parts of big cities through propagation of electric-mobility, programmes and initiatives of renewable energies but also education and information of advisers and policy-makers.

Inge Niedek, April 2010

Climate sceptics rally to expose 'myth'

By Roger Harrabin , Environment analyst, BBC News

In the Grand Ballroom Of Chicago's Magnificent Mile Hotel, dinner was over.

Beef, of course. A great pink hunk of it from the American Mid-West.

At the world's biggest gathering of climate change sceptics, organised by the right-wing Heartland Institute, vegetarians were an endangered species.

Wine flowed and blood coursed during a rousing address from Heartland's libertarian president Joseph Bast. Climate change is being used by governments to oppress the people, he believes.

After years of opposing government rules on smoking and the environment, Mr Bast now aims to forge a global movement of climate sceptics to end the "myth" that humans are endangering the atmosphere.

He urged the audience to spread the word among their families, friends and work colleagues that climate science is too uncertain to guide government

policy, and that plans for climate laws in the US would bankrupt the nation.

"We just didn't realise in those days how important and controversial this would all become"

Professor Roy Spencer University of Alabama

In turn, he introduced an all-American hero, Harrison Schmitt, one of the last people to walk on the Moon and still going strong.

Mr Schmitt trained as a geologist and like some other geologists believes that climate change is part of a natural fluctuation. He's also a former Republican Senator and he made the case that the American constitution contains no powers for government to legislate CO2.

The audience, containing some international faces, but mostly American libertarians and Republicans, loved the small-government message.

They cheered when a member of the audience demanded that the "Climategate criminals" - the scientists

behind the University of East Anglia (UEA) hacked emails - should be jailed for fraud.

'Anti-climax'

And the fervour reached a peak when the reluctant hero, Steve McIntyre, shambled on to the stage.

Mr McIntyre is the retired mining engineer who started enquiring into climate statistics as a hobby and whose requests for raw data from the UEA led to a chain of events which have thrown climate science into turmoil.

The crowd rose to applaud him to the stage in recognition of his extraordinary statistical battle to disprove the "Hockey Stick" graph that had become an emblem of man-made global warming.

There was a moment of anticipation as Mr McIntyre stood nervously before the podium - a lugubrious bear of a man resembling a character from Garrison Keillor's Lake Wobegon.

"I'm not used to speaking in front of such big crowds," he mumbled. And he winced a little when one emotional

admirer blurted that he had travelled 10,000 miles from South Africa for the thrill of hearing him speak.

But then came a sudden and unexpected anti-climax. Mr McIntyre urged the audience to support the battle for open source data on climate change - but then he counselled them to stop clamouring for the blood of the e-mailers. McIntyre does not want them jailed, or even punished. He just wants them to say they are sorry.

The audience disappointment was tangible - like a houndpack denied the kill.

Mr McIntyre then advised sceptics to stop insisting that the Hockey Stick is a fraud. It is understandable for scientists to present their data in a graphic way to "sell" their message, he said. He understood why they had done it. But their motives were irrelevant.

The standard of evidence required to prove fraud over the Hockey Stick was needlessly high, he said. All that was needed was an acknowledgement by the science authorities that the Hockey Stick

was wrong.

Political associations

This was clearly not the sort of emollient message the sceptics expected from one of their heavy hitters. And the speech slipped further into climate pacifism when Mr McIntyre confessed that he did not share the libertarian tendencies of many in the ballroom.

As a Canadian, he said, he was brought up to believe that governments should govern on behalf of the people - so if CO2 were reckoned to be dangerous, it would be the duty of politicians to make laws to cut emissions.

The quiet man said he thought that the work of his climate-statistical website was probably done. He sat down to one-handed applause.

Not so much of a call to arms as a whispered advice to the adversary to lay down his weapons and depart the battlefield.

His message of climate conciliation was reinforced by Tom Harris, founder of the International Climate Science Coalition.

He says he's not a right-winger, and he told the conference that many scientists sharing his political views had misgivings about establishment climate theory, but would not speak out for fear of being associated with their political opponents or with the fossil fuel industry.

Indeed some moderate climate sceptics told me they have shunned this conference for fear of being publicly associated with a highly-politicised group.

And Sonia Boehmer Christiansen, the British-based climate agnostic (her term), brought to a juddering halt an impassioned anti-government breakfast discussion with a warning to libertarians that they would never win the policy argument on climate unless they could carry people from the Left with them.

Governments needed taxes, she said - and energy taxes - were an efficient way of gathering them.

Cloud effect

Even some right-wingers agreed the need to review the language of scam and fraud. Professor Roy Spencer, for instance, is a climate sceptic scientist from the University of Alabama in Huntsville.

But when I asked him about the future of Professor Phil Jones, the man of the heart of the UEA e-mail affair, he said he had some sympathy.

"He says he's not very organised. I'm not very organised myself," said Professor Spencer. "If you asked me to find original data from 20 years ago I'd have great difficulty too.

"We just didn't realise in those days how important and controversial this would all become - now it would just all be stored on computer. Phil Jones has been looking at climate records for a very long time. Frankly our data set agrees with his, so unless we are all making the same mistake we're not likely to find out anything new from the data anyway."

Professor Spencer admits that he is regarded by orthodox climate scientists as a renegade. But as a very conservative Christian he is at home here, and his views carry weight at this meeting.

Like most climate sceptic scientists, he accepts that CO2 is a warming gas - this is basic physics, he says, and very hard to dispute.

But he says his studies on incoming and outgoing Earth radiation measured by satellites suggest that changes in cloudiness are mitigating warming caused by CO2.

He thinks all the world's climate modellers are wrong to assume that the Earth's natural systems will augment warming from CO2, and he hopes that a forthcoming paper will prove his case.

He admits that he has been wrong often enough to know it's easy to be wrong on a subject as complex as the climate. But he says that means the modellers can all be wrong, too.

The key question for the future, he said, was the one that has been asked for the past 30 years with inconclusive answers - how sensitive will the climate be to a doubling of CO2?

'Climate resilience'

The godfather of climate scepticism Richard Lindzen, professor of meteorology at Massachusetts Institute of Technology (MIT), has been pre-occupied with this question for decades.

He is a member of the US National Academy of Sciences and a former lead author for the IPCC. But he is immensely controversial and his views run directly counter to those of his institute, which, he says, is looking forward to his retirement.

He has been accused of ignoring recent developments in science.

He believes CO2 is probably keeping the Earth warmer than it would otherwise be, but says he is more convinced than ever that the climate will prove increasingly resilient to extra CO2.

He thinks that this greenhouse gas will not increase temperature much more than 1C in total because the positive feedbacks predicted by computer models will not occur.

The final word of this conference - part counter-orthodox science brainstorm, part political rally - was left to a man who is not a scientist at all, Christopher Monckton, former adviser to Mrs Thatcher, now the darling of climate sceptics worldwide.

In a bravura performance he had the audience roaring at his mocking impersonation of "railway engineer Rajendra Pachauri - the Casey Jones of climate change"; hissing with pantomime fury at the "scandal" of Climategate, then emotionally applauding the American troops who have given their lives for the freedom that their political masters are surrendering to the global socialist tyranny of global warming.

His closing words were delivered in a weeping whisper, a soft prayer of praise to the American constitution and individual liberty.

As the ecstatic crowd filtered out I pointed one delegate to a copy of the Wall Street Journal on the table. A front page paragraph noted that April had been the warmest on record.

"So what?" he shrugged. "So what?"

Story from BBC NEWS:

Indexing the weather

with Bill Giles OBE



The saying that old weathermen never die they just go into reverse like a back-bent occlusion.

So it was, ten years last January, that I hung up my

barometer and threw away my earpiece to live, what I thought would be a peaceful quiet retirement from the hustle, bustle and politics of looking after over 30 weather presenters nationwide on the BBC, but how wrong I was.

One week before I was due to leave a man rang completely out of the blue saying that he had an interesting commercial proposition to put to me. This interested me because although the BBC had agreed that I should stay on in a consultancy capacity to continue the development and training of the

present and future weather broadcasters, I knew that it would not be a full time job.

So we met and what we discussed seemed very interesting. It was about developing a way of describing the weather in a series of indices and hence the weather index was born.

The United Kingdom is situated on the eastern side of the Atlantic Ocean which is a breeding ground for rain bearing depressions which sweep in across the country at regular intervals. This is to our advantage in western Europe giving us a temperate climate with regular rainfall that enables us to live in a comfortable environment. However, the downside to this climate is that planning any outdoor activity is very precarious and there is a need to take into account the many different components of the weather. For instance a simple temperature is not enough to give you the

feel of the weather so humidity has to be taken into account and possibly wind speed as well as the likelihood of rain. A temperature, say, of 24 C with a low humidity can be very pleasant but with a humidity of 95% would make it feel very uncomfortable. Comfort indices for high temperatures and humidity are now well established and used as is the wind-chill in the winter.

Ten years ago I decided to take indices to a higher level so as to take out the guess work the general public have to make when deciding whether the weather will be right for their proposed outside activities and I set about devising a set of indices to help with this. When deciding what the weather will be for an outside activity many of the usual weather elements have to be assessed and combined to give an overall picture and using the expertise of the professionals in each discipline the meteorologist is in a



unique position to advise on the overall feel of the weather. The aim was to provide valuable weather information that can be used quickly and easily to add value to decision making, planning and risk management processes.

My Index system is empirical with changing formulae depending on the activity in question. It usually uses the main weather elements of temperature, humidity, wind, rain, cloud and sunshine but the weighting given to each of them will depend on how important they are for the specific activity. For instance, in a sailing index the wind strength is far more important than, say, the humidity or indeed sunshine, but if looking at an index for astronomers, cloud amounts would be the most important with wind speed having little or no effect.

The deeper I got into this the more intriguing and exciting it became. The object of the exercise was to end up with a single figure from 1 to 100 where the higher the number the better the weather would be for that activity.

When considering an index for walking in the countryside it is quite simple with rain, temperature and humidity, sunshine and wind being the main constituents in descending order of importance, but when looking at something like a sailing index to help dingy sailors to decide whether to go or stay at home, it becomes much more complex.

After taking advice from the Royal Yachting Association I looked at the weather elements that the sailor would need to access and assess before deciding to sail or not and they included wind speed, visibility, state of sea

as well as whether it would be wet and what the temperature range would be. In other words elements that directly affected the sailing but also those elements that affected the comfort of the crew.

The three main elements have their own index as shown below.

Wind Speed (knots)	Index	Visibility (metres)	Index	State of Sea	Index
00 - 01	0	0 - 200	0	Smooth	100
02 - 05	30	201 - 500	5	Slight	75
06 - 07	50	501 - 700	10	Moderate	50
08 - 10	70	701 - 1000	15	Rough	25
11 - 13	90	1001 - 1200	20	Very Rough	00
14 - 17	100	1201 - 1500	30		
18 - 20	75	1501 - 1700	35		
21 - 24	55	1701 - 2000	40		
25 - 30	30	2001 - 3000	50		
31 - 35	20	3001 - 5000	60		
>35	0	5001 - 7000	70		
		7001 - 1000	90		
		>10000	100		

My formula for sailing in the open water was

$$4 \times \text{wind speed index} + 4 \times \text{visibility index} + 2 \times \text{state of sea index} \text{ all divided by } 10$$

Adding the comfort factor was done by multiplying the index by 0.9 if rain was forecast and by a similar amount with temperatures between 10C and 15C, by 0.8

for temperatures between 5C and 10C and 0.75 if below 5C.

For example if the forecast was for a 15kt wind, a visibility of 4,000m and a moderate state of sea the index would be

$$4 \times 100 + 4 \times 60 + 2 \times 50 / 10 = 74$$

If rain was in the forecast it would drop to 67

If it was dry but the temperature was 9C the index would be 59. If it was both raining and temperature 9C the index would drop to 54

And with these indices advice can given as to what index is safe for each individual sailor depending on boat and experience. For example a novice sailor should not go out unless the overall index was about 60 whereas an experienced sailor would be perfectly safe with an index much lower than that.

By giving a single number index it enables the professional meteorologist to give the customer an assessment of the likely weather conditions rather than them having to juggle with all the relevant elements themselves.

I then went on to look at indices for Golf Clubs thinking this would be quite a simple one to develop, and so it was when just considering one for the Green Keeper cutting the grass but looking deeper they wanted one for Top dressing and at least two for fertilising, one for dry matter and one for liquid! I did it, but that's another story.

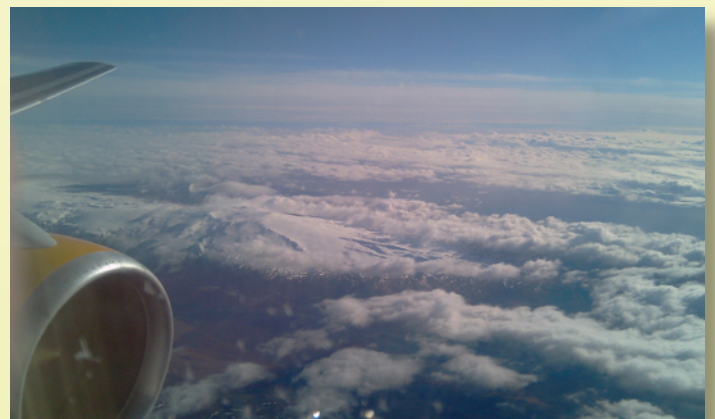
Bill Giles OBE

Eyjafjallajökull

I've a yellow yokel. Well, I haven't really, but Iceland has. Or, at least, it has Eyjafjallajökull, THAT volcano which intruded into all of our lives to such an extent in April and May 2010. Over the past while we learned more than most of us ever cared to know about volcanic ash, and the effects it can have on air transport.

Iceland refers to itself as the land of fire and ice, and while the ice is obvious from its very northerly latitude, the fire comes from the intensely volcanic nature of its landscape. Iceland sits astride the mid-Atlantic ridge, the line (strictly speaking a divergent tectonic plate boundary) along which the Eurasian and North American continental plates separate, one heading east and the other west. Magma wells up through the resultant gap to create volcanic eruptions which have resulted in a (mostly) undersea ridge stretching from Iceland to the Azores and beyond.

Up Front readers of a certain age will remember the island of Surtsey which is one of the newest landmasses on the earth; it came into being in 1963 just off the south coast of Iceland as a result of volcanic activity. Surtsey is one of a group of volcanic islands, close to Eyjafjallajökull, that collectively are known as the Vestmannaeyjar Islands, the Islands of the West Men. These "West Men" were Irish slaves brought to Iceland by Gaelicised Vikings. A number of them murdered the brother-in-law of the Icelandic chieftain, fled to these islands, and were then themselves hunted down and killed. The term "West Men" was the generic Viking name for the Irish, even in Iceland from where, of course, Ireland lies to the east!!



Iceland experiences on average about four major volcanic episodes each decade. Most of these produce flows of lava and very little ash, so they do not have the capacity to trouble those of us living at some remove. A minority of volcanoes, however, are of the ash-producing variety and Eyjafjallajökull is one of these. As a complicating factor, the volcano sits (or, more correctly, sat) under a glacier – the suffix jökull means glacier in

Icelandic. The very hot material rising up from the magma chamber turns the ice into steam and this increases the explosive power of the eruption; this type of behaviour is known as a "Phreatic" eruption.

As is well known by now, the first indications that jet aircraft and volcanic could not peacefully co-exist came in 1982 when a British Airways 747 en route to Australia encountered an ash cloud that had emanated from Mount Galunggung in Indonesia, resulting in the failure of all four engines. The crew eventually managed to re-start the engines after gliding for about 100km and descending to about 13,000 feet, and landed the aircraft safely despite their windscreen having been "sandblasted" to near-opacity by the ash. The passengers and crew of this flight subsequently formed the "Galunggung Gliding Club" as a means of keeping in touch. It is estimated that this aircraft flew into an ash cloud with a concentration of about 2g of ash per cubic metre (m³) of air.

Advice to aircraft following this incident was that ash clouds were to

be avoided completely – turbofan engines had "zero tolerance" of ash. A number of Regional Specialised Meteorological Centres (RSMCs) were established by WMO in the 1990's to assist in the development of forecast guidance for National Met Services in the event of ash contamination of the air. These RSMCs were designated as Volcanic Ash Advisory Centres or VAACs; the relevant Centre in the case of Eyjafjallajökull was the London VAAC (which is actually in Exeter!). Application of the "zero tolerance" rule meant that, when Eyjafjallajökull first erupted and the north-westerly winds carried the ash plume down over western Europe, much of the continental airspace was closed completely. There were catastrophic effect as tens of thousands of Europeans took to trains and boats to try to get to their destinations.

The question of establishing a "safe" level of volcanic ash concentration had been discussed for years but the aircraft engine manufacturers had been reluctant to depart from their "zero tolerance" approach. However,



on this occasion, the pressure from the airlines to get planes back into the sky forced the hand of the aviation industry and a new safe operating limit of 2mg per m³ of volcanic ash was established; one thousandth of the concentration that had caused engine failure on the BA 747 nearly 30 years ago. Subsequently, this limit was doubled to 4mg per m³ for certain engines where the manufacturer was prepared to certify these higher limits.

Despite the setting of non-zero safe concentrations of Volcanic Ash, the

eruptions continued to cause difficulties for Ireland and the UK in particular, and this was partly down to the very unusual weather pattern of the winter/spring which saw High Pressure anchored almost permanently between Ireland and Iceland in the north Atlantic, and a climatologically-unusual preponderance of north-westerly winds. No sooner had the higher limits been established than the volcano become much less active and at the time of writing it is heading for dormancy – although nobody really knows if and when it will rear its ugly head again and spew ash back into the skies.

So with severe cold in the winter just past, bringing widespread snow and ice, then the volcano, it has been an eventful half-year in the Forecast Offices throughout western Europe. A little bit of quiet weather over the summer months would not go amiss...

Gerald Fleming

Global Warming: How to Answer the Tough Questions by Paul Gross

Weather presenters are the public's closest link to the scientific community, and we are who they depend upon for information and explanations about any subject involving science or the environment. Global warming has, obviously, been the most prominent environmental issue for many years now, and it probably will be for the rest of our careers. I receive many questions and statements about global warming from my viewers, and I would like to share those and the scientifically correct responses to help you educate your audience on this subject.

1. "How can we make policy decisions to slow global warming if scientists are in such disagreement on the issue?"

This is one of the public's biggest misconceptions about global warming. The TRUTH is that most of the world's climate scientists are in strong agreement that our planet is warming at a very unusual rate, and that this warming is highly unnatural. The scientists also agree that humans have significantly changed the composition of Earth's atmosphere, and simple physics and thermodynamics show that there must be a thermal response to this.

2. "Isn't the warming caused by changes in solar output?"

Solar output changes may have had a small impact about 100 years ago, but it has NOT been a factor during the especially rapid warming of the past fifty years.

3. "How can you claim that Earth is warming when, in fact, it has been cooling since 1998?"

This is a favourite question from global warming sceptics, and there is a very specific reason they choose 1998: that year we experienced an extremely strong El Nino, which caused very warm global temperatures. Of course, temperatures must go down after that, so sceptics like to only look at the temperature record starting with 1998. It would be like standing on a mountain peak: no matter which direction you walk, you will be going downhill! Any climate scientist will tell you that you cannot focus on only a small slice of the climate record, and that you have to look at trends based upon the entire record. Here is another excellent example: the United States stock market suffered its worst year ever in 2008, but many people

forget that on one day in October of that year, it set a record for the largest single day gain in our stock market's history. If you just look at that one day and claim that 2008 was a very good year, then you would be doing the same thing as sceptics are when they say that the globe has cooled since 1998.

4. "Cities have grown steadily larger over the past century, and this increased urbanization is really the cause for the statistical warming we are seeing."

The IPCC specifically researched this point, and the globally averaged impact from urbanization is only 0.006 degrees Celsius. And remember that there is no urbanization over the oceans, which are experiencing rapid and unnatural warming, too!

5. "This warming is really just another one of Earth's cycles, and there have been similar warm periods in the past."

Those opposed to the IPCC conclusions try to point out that the past warming came first, followed by the greenhouse gas increase (meaning that the increase in greenhouse gases was not the cause of the past warmings, and isn't this time, either). However, the truth is in the rest of the story: the previous significant warm periods started with changes in Earth's orbit, which caused an initial warming. This warming then caused changes on Earth which resulted in the release of greenhouse gases, which accelerated the warming. Our current warming is not caused by changes in Earth's orbit, nor by changes in solar output.

6. "How can you say that the planet is warming, when we had some record cold winters in the mid-1970s?" (This question applies to the United States. I do not know if the rest of you had very harsh winters in the 1970s.)

It is important to understand that our planet's rapid warming is not linear. In other words, global temperatures do not go straight up...they go up and down with an overall trend sharply upward. Global warming does not mean that there will be an end to winter weather. We will still get winter, but we will see fewer extreme cold snaps, and an increase in extreme heat waves. At the present time, record daily maximum temperatures in the United

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How to pay the annual subscription

For an international organisation, it is very difficult to provide ways for members to pay their annual subscriptions and keep down to administrative costs. FeePay, based in Ireland, now makes this simpler.

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Create a new user name and password (unless you have done this before) and follow the instructions on the screen.

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States are occurring twice as often as record daily minimum temperatures.

7. "How can you predict future climate when you cannot predict next week's weather?"

Predicting weather and predicting climate involve very different methods. Our computer climate models are "tested" by inputting past data and seeing how well they "predict" our current warming of the past fifty years. To date, there has not been one climate model...not a single one...that successfully shows our current warming WITHOUT including the human added greenhouse gases to our atmosphere. In fact, if you take the greenhouse gases out of the climate models, they actually show that COOLING should

have taken place over the past few decades, when that clearly has not happened. One of the earliest predictions by climate models was that higher latitudes would experience a greater climatic response to the increase in greenhouse gases, and this is certainly happening.

8. "Why take radical steps now? Let's take more time to research global warming before making any decisions."

We are already seeing dramatic changes on Earth due to the warming. Summer melting of Arctic ice has been at or near record lows for each of the past three years (scientists did not expect this to happen until between 2020 and 2030). Permafrost is starting to melt, which will accelerate the

warming by adding more greenhouse gases to the atmosphere. Global sea levels have risen steadily (2.2 inches / 55 millimeters) since 1992. There has been documented migration of plant and animal species due to the change in climate. So, waiting means that Earth potentially passes critical tipping points...some of which will take hundreds, or even thousands of years to reverse. While we are past the point where we can stop the warming, we do have the ability to slow it down, which would give some species time to adapt. At the present rate of warming, changes are happening too fast, and some species are in danger of becoming extinct.