



photo: Conservatory Pond, Central Park—Autumn 2010
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Of mice and men: The ecological disasters— Deepwater Horizon and the Dust Bowls

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The best laid schemes of mice and men

Go often askew

And leave us nothing but grief and pain,

For promised joy

From the Scots poem by Robert Burns, 1785, *To a Mouse, on Turning Her Up in Her Nest with a Plough*

For almost two decades, there has never been a spill of any sizeable magnitude in the United States. The Exxon Valdez disaster, a heart-wrenching event way back, passed on as another historical trivia for



many our younger generation. The “Battle of the Rigs,” as I call it, during the ‘safe no-spill years,’ was not as much about oil spills, but about the eye sore that oil rigs represented near shore. Taking the train a few weeks ago from Los Angeles to Santa Barbara brought that aesthetic concern to a more personal level. For the very first time I gazed on the miles and miles of oil rigs dotting the Pacific horizon, against the beautiful backdrop of the ocean and the California beaches. The environmentalists lost that battle against the expedient necessity of supplying our country’s insatiable need for oil. And, I supposed people just got used to looking at it, the same way that a bunch of oil tankers and cargo vessels anchored out in the horizon barely get a second look.

The prospect of oil spills was so remote during this “safe period” that the industry magazine *Spill Science & Technology Bulletin*, edited by my friend, Michael Champ, closed down because of not enough readership. . Also, during this period of ‘tranquility’, much of the research and development associated with oil spill



response technology winded down. Hardly any research was conducted on oil spill in general, let alone in deep ocean, even as companies ramp up to build deeper sub-sea oil exploration platforms. There was either so much confidence on newfangled technologies or everyone just became so complacent because the memory of Exxon Valdez was so far into the “ancient period,” as my daughters would call those years before they were born. (They have also a second, even worse, category

called the “dinosaur years”—anytime before 1970). Given that twenty years is quite *ancient* for politicians and corporate executives too and without any disasters in recent memory, there was simply no room for the “what if scenarios” of a disaster.

Even as I was writing an article early this year for *Asia Pacific Coatings Journal* on our subsea testing of marine coatings, oil spill was farthest from my mind. Ironically, I wrote my concern about the *Deepwater Horizon*, not of any potential for an oil spill disaster of this magnitude, but on corrosion damage that may arise over the years from fouling by living things in the deep that attach to the pipelines.

The article went into print soon after the Gulf of Mexico (GoM) disaster. Now, the *Deepwater Horizon* oil rig explosion yanked America back to a new reality, debunking the myth of the super safe oil platforms. With this event, comes re-introduction of old terms (tarball, tarmats) and of new ones, to me at least (top kill, dispersants, risers, containment domes)— an array of new terms to learn before those too pass on as another historical footnote to join the list of earth's man-made ecological disasters.

Surprisingly, the BP oil spill does not rank as the worst man-made ecological disasters in the United States, at least for now, although last week it surpassed the volume of the *Ixtoc I* Oil Spill of 1979 in the GoM. The all-time winner so far was the ecological disaster called the *Dust Bowl* of 1930-1940. Often called the *Dirty Thirties*, this was the period when over 500,000 Americans were left homeless and when 2.5 million Americans took the painful exodus from their homes, away from the Plains States of Kansas, Oklahoma, Texas, New Mexico and Colorado. Compared to this, the BP oil spill seemed like a walk in the park. The *Dust Bowl* was triggered by extensive farming practices in the absence of crop rotations to prevent erosion. Combined with the start of a decade long drought, the virgin topsoil, deeply plowed by farmers for years, killed the natural grasses that held moisture. Over 100 million acres of top soil dried up, creating dust storms that blackened the skies all the way to New York City. Farmlands became unproductive wastelands and herds of cattle died in the fallow field. Foreclosures followed, then hunger and famine, diseases; untold thousands likely died indirectly. And, to make matters even worse, the *Great Depression* of the '30s sealed the fate of millions of people within that unfortunate decade. It was all because of poor knowledge about best farming practices, lax government regulations, and unbridled greed to take as much out of the land as possible, using new mechanized technologies of agriculture. Sounds like a familiar story, a typical recipe for all the usual disasters waiting to happen.

How did the government come to the rescue? It was slow at first. It was just an unbelievable event in America's *Bible Belt*, almost an act of God, punishing sinners for a life badly lived. But, common sense followed. President Franklin Delano Roosevelt started reforms quickly. The government began buying up cattle in designated emergency counties; those unfit for consumption were destroyed. Those that were fit went to the Federal Surplus Relief Corporation that then supplied the meat to poor families affected by the disaster and by the *Great Depression*. The cattle buying program helped scores of cattle owners avoid the

foreclosures on their grazing lands. Roosevelt ordered the planting of 200 million trees, from the Canadian to the Mexican border, as wind breakers and to hold the soil to the ground. The government made the important step of educating the farmers on new methods of crop rotation, soil conservation, anti-erosion and terracing methods. And, farmers were paid for every acre they were able to conserve. This gargantuan effort by the 8th year reduced the dust bowl by 65%, just in time for the new rainfall that followed to lift the region back to productivity.

Just 80 years later, United States' next biggest man-made disaster unfolded with all the same drama. Like the *Dust Bowl*, there was little planning for the 'what if' scenario in the *Deepwater Horizon* incident. There have been a couple of major offshore oil platform spills in the US: Santa Barbara, California (January, 1969), and the *Ixtoc I* Oil Spill (June, 1979) in the Gulf of Mexico. Both were in relatively shallow water. The *Ixtoc I* exploratory well disaster (at 160 ft depth) was an oil spill that lasted until March, 1980. It was recognized as the second largest oil spill and the largest accidental marine spill in history until this 4th July when it was surpassed by *Deepwater Horizon*. Robert Campbell's June 14th chronicle of what went wrong is more accurate and more comprehensive than what I can hope to give here (see link below). And when one compares this with the *Dust Bowl*, all the basic ingredients of a disaster were there in *Deepwater Horizon*, if one looks retrospectively as an armchair observer. The Internet and the news media are replete with stories of who is to blame, how it happened, who is affected, what is being done to solve the issue, what animals are dying, the people suffering, businesses lost, bad weather, and the usual doom and gloom of any disastrous event in our modern times.

At least the *Dust Bowl* was an inspiration to two great novels by John Steinbeck, one of which won the Pulitzer Prize and both became great classic movies— *Grapes of Wrath* and *Of Mice and Men*. I am sure after the tarballs have gone away the *Deepwater Horizon* will spawn some novels, although I am doubtful of great movies will come out of it.

What is there left to say?

I asked this question because everything bad has been said and hardly anything good to mention. In Steinbeck's novels, the disaster of his time was the backdrop to illustrate the triumph of the human spirit. Maybe, this is the one remaining item never mentioned in the unrelenting daily coverage of the BP Oil spill drama. And this also applies to all of the other disasters that have confronted mankind, from floods,

earthquakes, landslides, wars, hurricanes and tidal waves. We always overcome. Short of a 10-mile wide asteroid hitting earth, mankind will make it. We always do and we always will because, as a species, we are resilient and inventive. grounds do not always come hand in hand with caution.

But, we have short collective memories; so little appreciation of our past mistakes. We invent. We create new ideas. Our creativity oftentimes goes too far ahead of common sense. The exhilaration of inventing and breaking new grounds do not always come hand in hand with caution.

This oil spill will be just a bump in the road of history. When the oil spill is collected, dispersed and degraded, we will simply write a few novels, a few action and dramatic movies, millions of pages of scientific papers and reams of new regulations. And, after the fines have been levied, after someone goes to jail, companies get renamed and new politicians get elected, life moves onward, heading to the next disaster, whose early warnings anticipated by a few and ignored by the many and for which we will again be thoroughly unprepared for.

But that's us. That's how we are as a species. Despite the hardships and heartaches of this current disaster, we can always have the consolation that we are survivors, that we will overcome and we will continue. And mother Earth re-adjusts.

What's in a name?

I can't seem to leave this topic on a banal historical note and on an idealistic, philosophical tone. It needs something else, a little irreverence perhaps. So, I began thinking about the name of oil rigs. Not that I know many, actually I know of only two—*Ixtoc I* and *Deepwater Horizon*. I can never find the origins of *Ixtoc*. One website mentions it as a Mayan god protecting the harvest of maize. In his June 15th blog, Robert Paterson cleverly juxtaposed *Ixtoc* to come up with Toxic. Uncanny, but seems appropriate.

Non-English names, especially Mayan, are definitely more exotic. It is never easy to create the same a sense of "exoticness" with English words. But, I thought *Deepwater Horizon* is sexy. It seemed to give a deeper, mysteriously hopeful, adventurous meaning. *Deepwater Horizon*, I thought would have been great name, not for an ugly oil rig, but for a submarine or an ocean going research vessel or even one of those great sailing ships. I would have wanted to name my first, if ever, yacht like that, if I thought of it sooner. Now, *Deepwater Horizon* just reminds me of another science horror movie made in 1997—*Event*

Horizon—the story of spaceship entering the boundary of spacetime at the edge of a black hole. In that movie, all the astronauts went mad and started murdering each other. Seems like a good analogy for the political wrangling within the current drama of the oil spill.

Unfortunately, *Deepwater Horizon* will go down in history the way of *Ixtoc I* to mean nothing more than another name for a disaster; such a waste of a sexy name. When I chose my company name, Poseidon Sciences, most people don't recognize it as the mighty Greek god of the seas (renamed by the Romans as *Neptune*), but the cruise ship that overturned after getting in the way of a monstrous rogue wave. The only good thing is that it was only a movie—*Poseidon Adventure*— and not a true man-made disaster.

www.poseidonsciences.com

[http://en.wikipedia.org/wiki/Event_Horizon_\(film\)](http://en.wikipedia.org/wiki/Event_Horizon_(film))
http://en.wikipedia.org/wiki/Event_horizon

Robert Campbell, Reuters (June 14 2010) Special Report: Deep water spills and short attention span.

<http://www.reuters.com/article/idUSTRE65D3Z220100614>
<http://fohboh.com/profiles/blogs/floating-adrift-somewhere-in>

The poem, *To a Mouse*, by Robert Burns.

<http://www.electricscotland.com/burns/mouse.html>

http://en.wikipedia.org/wiki/Of_Mice_and_Men