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# Climate Change and the Environment in Thailand

## What's Going on with the Weather?

Text and photos by S. A. Martin—Prince of Songkla University

### Indeed it has been a strange and interesting high season!

Whether we agree or not with the ambiguous concept of 'global warming' or the more down to earth term 'climate change', there is change underway—under our noses and before our very eyes—across the land, in the sky, and on the water. Let's consider monsoonal winds and surf raking havoc during the King's Cup, blustery rain storms from the west in December and January almost every day, **surf in the high season**, massive floods in Hat Yai and other areas, and unprecedented impacts felt across Phuket's diving industry due to unpredictable weather coupled with national park closures from overly warm waters and coral bleaching. Is it a 1 in a 100-year fluke? Or are we seeing the effects of climate change? Hmmm.

If we listen to the scientists, there is a better-than-not chance that our weather is changing, and if indeed this is the case, the Hospitality and Tourism Industry, and the economy of Phuket (and certainly all Thailand) are eminently at risk.

At a recent conference hosted by Mahidol University's Faculty of Environmental and Resource Studies (**The Changing Environment and Challenges to Society**), scientists from around the world gathered in Bangkok to address global environmental issues, especially the impact that they have on Thailand. A key point brought out in the discussions is that Thailand, the heart of continental South East Asia, will be among the hardest hit locations on the entire earth by climate change.

Objectives of the conference included the sharing of research and management experience amongst the university, the Thai government, and environmental organizations in order to stimulate development of collaborative research on environmental issues in the region; it served to promote public awareness and understanding of environmental science and environmental issues.

From the scientists attending the Mahidol conference comes any number of issues and warnings for Thailand.



*Waves blast the coast Ban Na San, north of Songkla where a beach once existed*

### Across the Land

Changes include altered patterns of rainfall, localized flooding, a reduction in rice harvest, an increase in mosquito-borne diseases, and a new type of refugees—not from Myanmar—rather from the environment! The predicted wave of the future is environmental refugees, those who flee natural disasters, especially in coastal areas. This is already taking place in the Mekon Delta.

A recent article in the Bangkok Post identified that a Chulalongkorn University researcher (Jarupongsakul, 2010) found that sand erosion could cause Pattaya Beach to vanish in the next five years and the situation is critical.

Research on coastal erosion and related affects on surfing areas has yet to be conducted in Thailand.

*High Season Shorebreak in Phuket*

## In the Sky

Seemingly unusual winds and weather this high season have affected the dive industry and the maritime enthusiasts, such as the recent events of damages during the King's Cup Regatta from unanticipated high and westerly winds.

Khumar et al. (2008, 2010) studied weather patterns in the Bay of Bengal occurring over the previous century, and have been monitoring weather events of the past several decades. Their research findings are amazingly clear: less cyclonic weather activity (less cyclones annually); yet they are increasing in size, intensity, and destruction to life and property when they make landfall.

## On the Water

Coral bleaching this high season is front-page news with reports on the drastic decline in the health of coral reefs in the Andaman Sea, followed by quick action to close and limit access to dive sites in coral reef areas in various national parks (search for news articles in the Phuket Gazette and Phuket Wan for a number of related stories). This is not good for surfers—surfers' like reefs. Shuman and Hodgson (2009) suggest "Reef = Barrels" and that the health of coral reefs are highly relevant to surfing—naturally occurring reefs effectively cause high-quality waves to break.

Perhaps this past low season (May-Sept.) we saw a lessening in short-period Southwest Monsoon surf activity—but we were able to see (and surf) the long-period groundswell activity which is usually masked by the messy windswell of the monsoon. The sweet and sour of it was less consistent windswell activity offset by fewer disturbances to the clean and perfect long-travelling groundswell.

On a strangely positive note, if the surf season annualizes, we will have wider shoulder seasons, and more swell, including windswell in the high season (good for surfers--bad for divers)

*Coastal Pollution and Erosion in Thailand*

(comparatively, the dive industry is big business/big money and surf tourism is negligible).

Surf during the high season isn't without consequences. For example, surf-related drownings in the high season are a new twist to long-standing discussion on Andaman coast water safety. This has already been the case during the 2011 high season. Further implications include an increased potential for near shore drowning, dive accidents, and boating mishaps.

High season surf at local beaches results in waves breaking very close to shore as the sandbars have shifted closer to shore. From a safety standpoint, this means plunging breakers unloading onto the dry sand of the beach. This type of shorebreak can result in neck and spinal injuries when unsuspecting tourists standing in shallow water get hit by the wave.



# Surfing and the Changing Environment



*Once a Thai beach, now a mess of slop-chop, backwash and turbid water*

When examining and comparing social and environmental issues related to surfing in Thailand, this research, which began in 2007, indicates that environmental impacts and change are a leading issue in the discussion of quality of experience and surf break conservation.

Indeed, environmental degradation may overshadow the social argument (namely the carrying capacity of surfing areas in a social context) depending on how we view time and space. This is to say that nearly every surfer interviewed over the past 4 years has expressed that the increase in the popularity of surfing in Thailand is a leading point of contention (namely an invasion of personal surfing space by other 'less local' surfers).

Conversely, the research indicates that issues related to the physical surfing environment may in fact have a higher level of impact on the overall surfing space and experience, especially when considering the issues of climate change, water pollution, rubbish in the water, coastal engineering projects, and the overall health of coral reefs. Worthy of note is that generally speaking, surfers, while waiting for and riding the waves, have a very low to zero negative effect on the actual surf site, and essentially the waves are renewable resources. Considerably, the physical environment is the arena in which we interact with nature and each other; it is the substance by which our sport is sustained. While both social and physical issues are relative and relevant to the surfer's surfing experience—if the environment deteriorates and surfing areas degenerate, then the environmental argument can easily be weighed against the social argument. Conceptually, the social argument is short term (today, tomorrow, next year, our life), while the physical argument encompasses our time (our life) and the eternal future.

Increasingly, surfers are at the source of environmentalism and have become integral to the conservation of surfing areas. In this way, sharing and acknowledging the value of surfing areas and the threats against them can actually have a positive effect on surf site access, protection and conservation.



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Please share your comments, ideas, and questions with Ajarn Steve at: **phuketoceansafety@gmail.com**

The International Conference on the Environment and Natural Resources 2010 (INCER) was sponsored to discuss pertinent environmental issues with a regional focus, and to stimulate future collaboration in order to adapt to our changing world. The conference featured a presentation and discussion on the conservation of surf beaches in Thailand. To learn more about the conference and related research in Thailand, please link to:

<http://www.en.mahidol.ac.th/conference2010/index.html>