Surf Tourism & Resource Sustainability



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Thailand



Surfing In Phuket



Kalim Reef

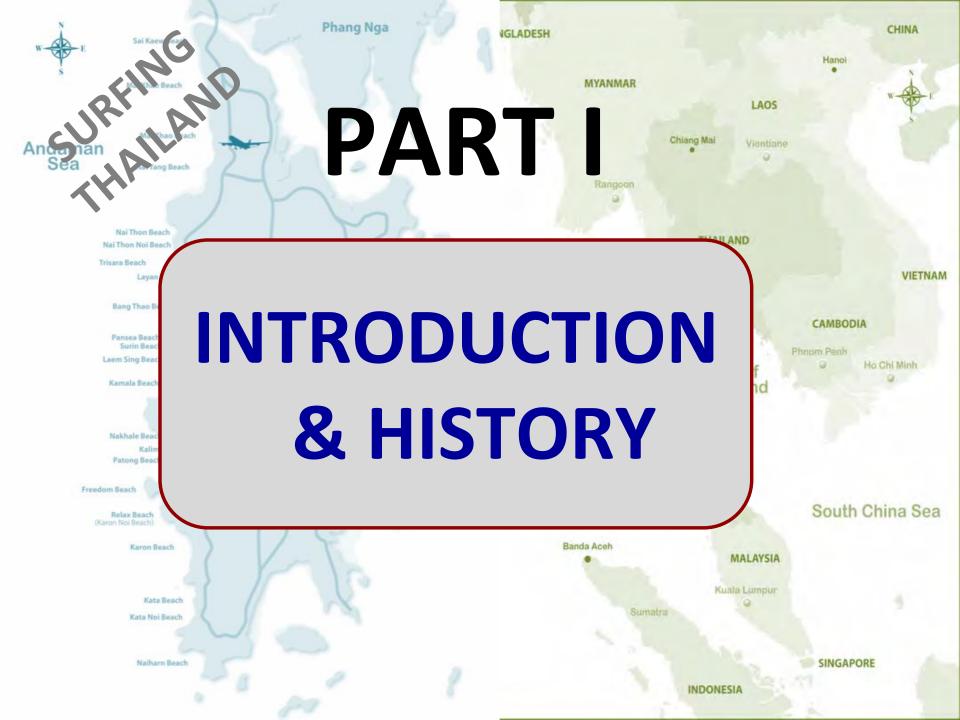


Phuket

Chalong Tanus



The First Thai Surf Champion 1999

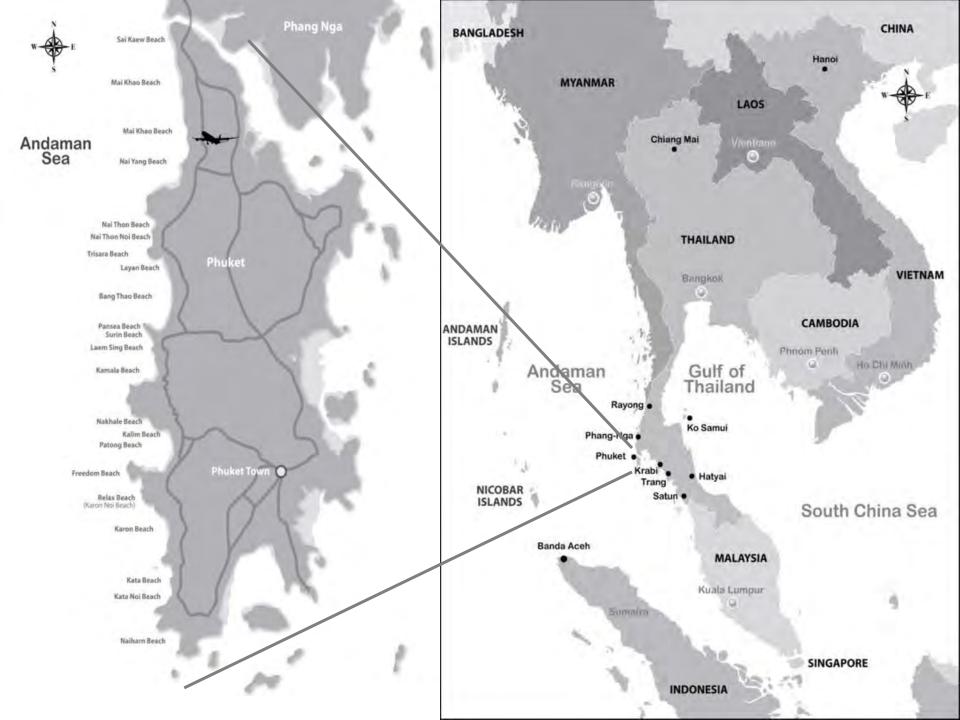






"Instant Surf Tourism" Just add waves!







The first 'Surf Bar' at Patong Beach c. 1980



Photo: Paul King



Relax Beach, Phuket c.1987



The wave was permanently changed when *Le Meridien Hotel* relocated the mouth of the local stream

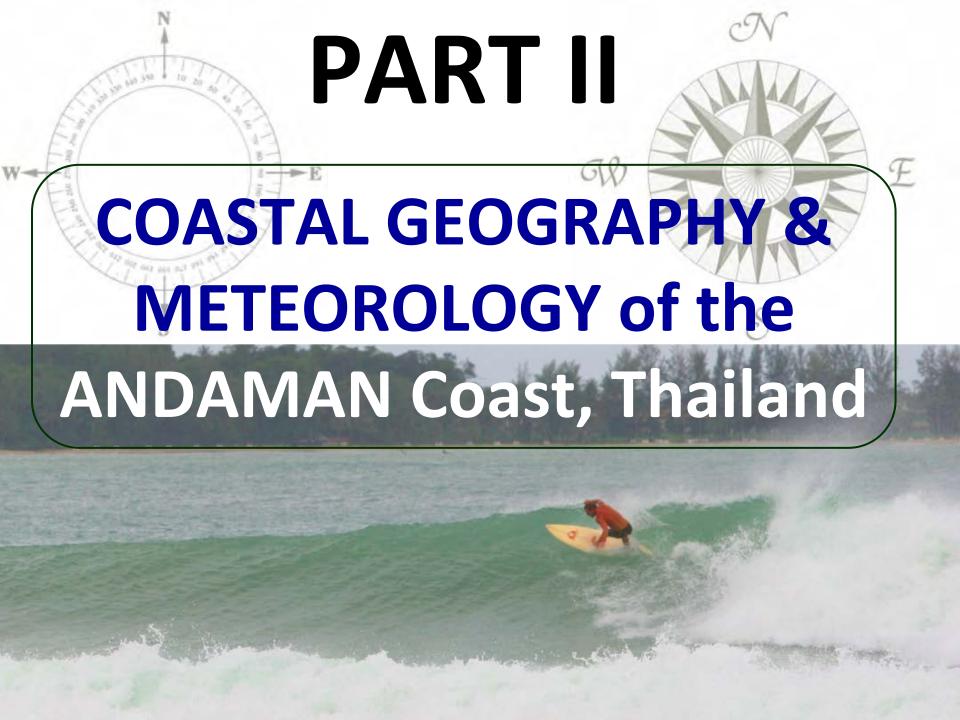


Thailand's First Surfer Girl

"Everyone that knew her was touched by Gae's zest for life, the surf, and love of everyone. Wish I could be more like her... Take each day and enjoy

Gae 1972 – 1997





ANDAMAN COAST

60+ Areas currently documented

60+ Sites

739+ km and over 50 islands (6 provinces)



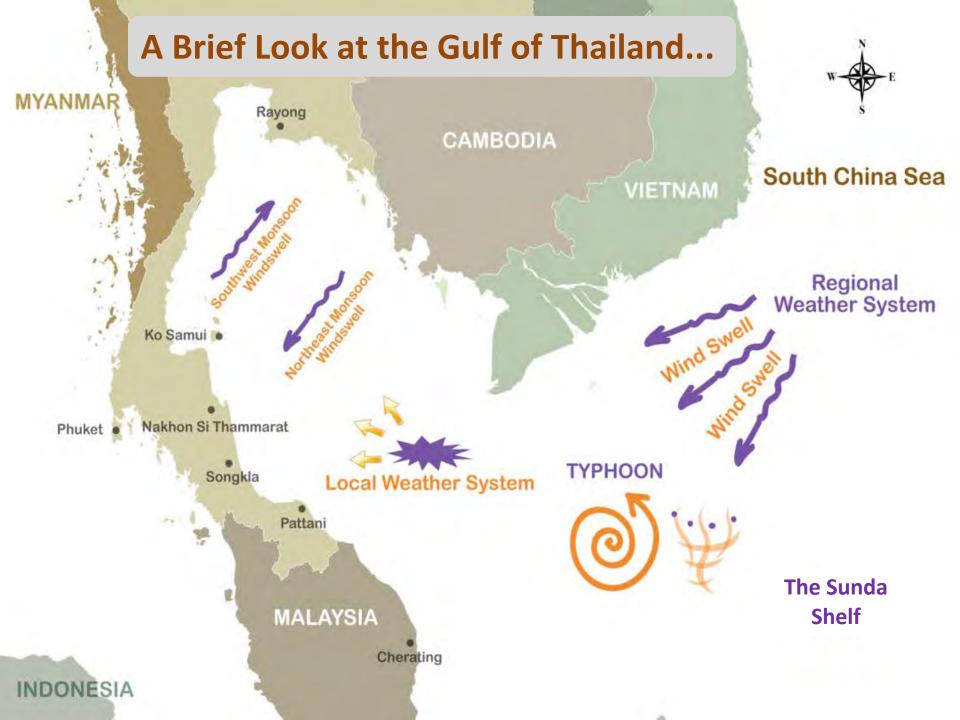
GULF COAST

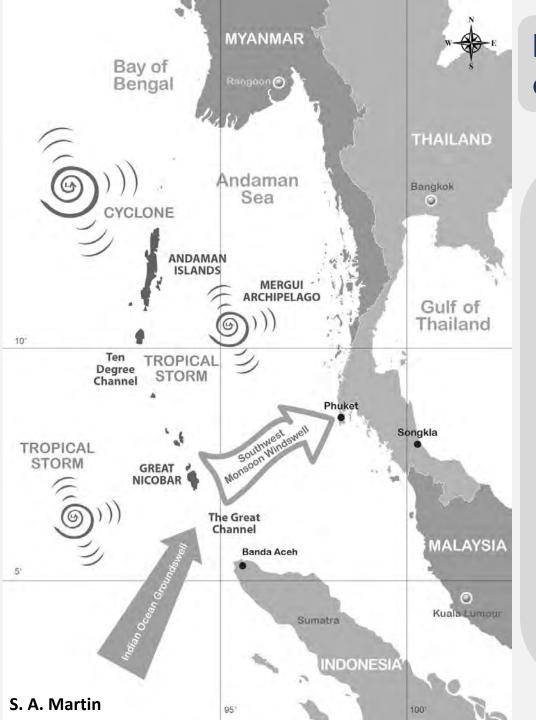
30+ Areas documented through exploratory research

70+ Sites

1874+ km and over 50 islands (17 provinces)

Key areas to include:
Ko Samui/Ko Phangan & Ko Chang/Ko Kut





Meteorology & Wave Types of the Andaman Sea

The Southwesterly Monsoon

May through October

Southwest - West Windswell

Indian Ocean Groundswell

Quality Waves

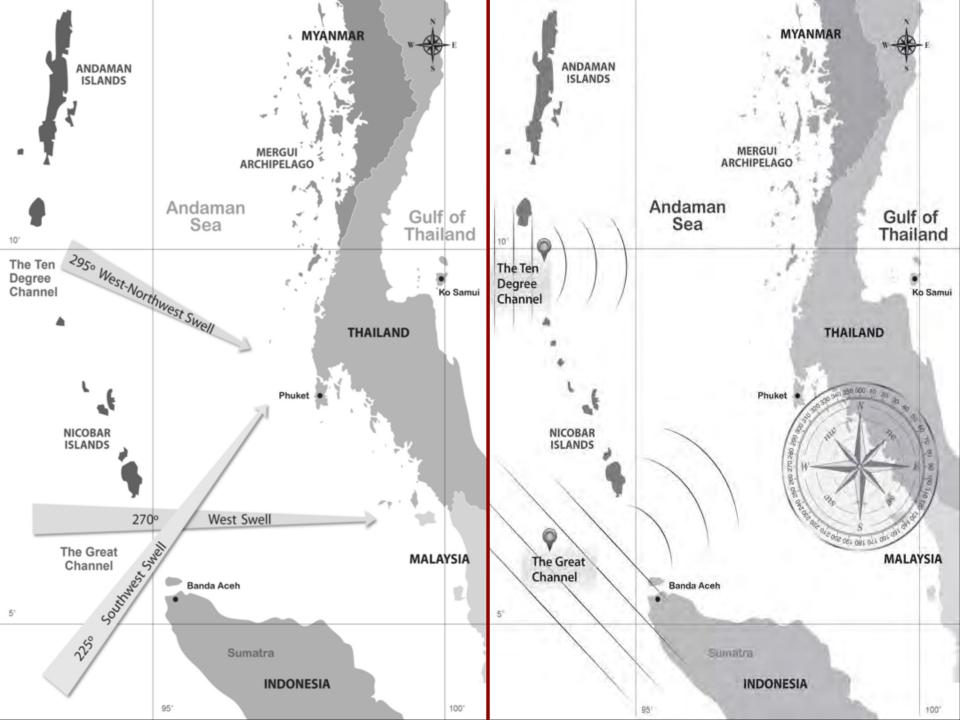
Potential To Arrive Year-round

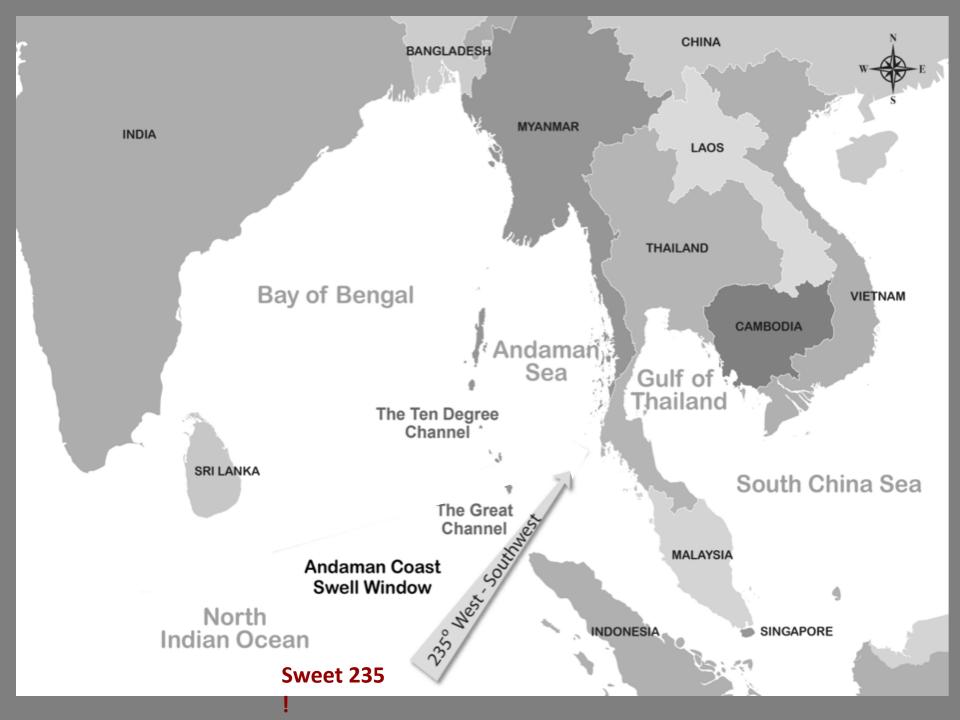
Cyclonic activity

Depressions, Tropical Storms &

Cyclones

Potential for BIG







Bathymetry of the Andaman Coast

Bathymetry varies at different latitudes along Thailand's Andaman Coast, affecting wave speeds and heights

The Coastal Shelf

110 km wide in the north Ranong and Phang Nga

25 km near Phuket

The deepest water on Thailand's Andaman Coast

130 km in the south

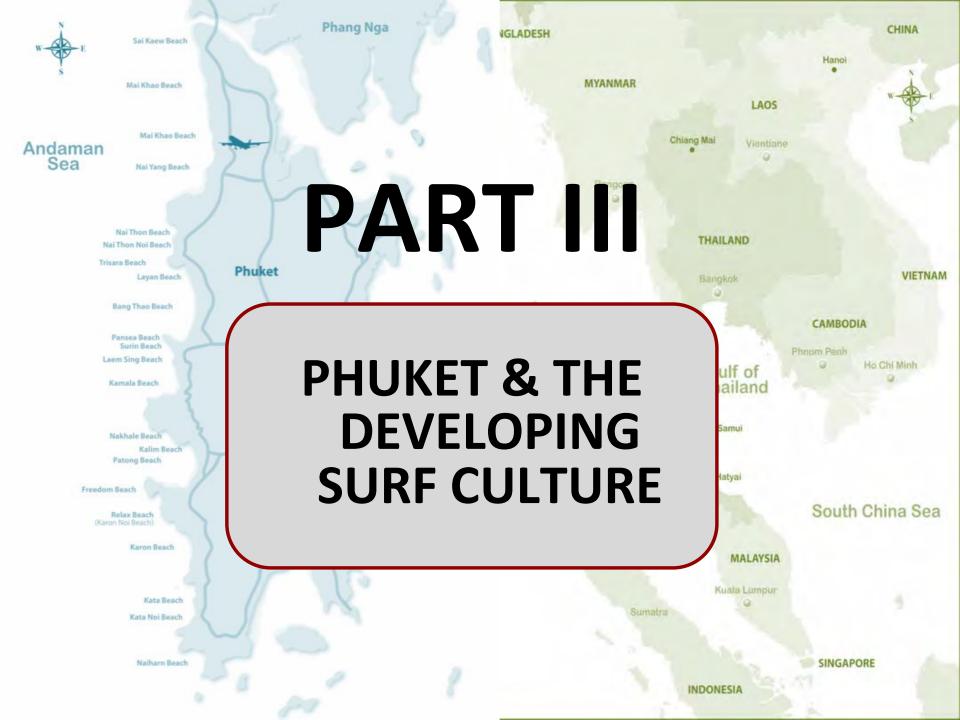
Krabi, Trang & Satun



Key Surf Beaches of Phuket

(approximately 30 sites)

- □ Nai Yang Beaches & Reefs
- ☐ Surin Beach
- □ Bang Tao Beach
- ☐ Kamala Beach
- □ Kalim Reef
- ☐ Kata Yai Beach
- Kata Noi Beach
- Nai Harn Beach















The **2011** Phuket International Surfing Contest, Patong Beach



The First Phuket Surfing Contest was in 1999 at Kata Beach



Surf's up, drownings down

Phuket water safety expert uncovers the island's unsung lifesaving heroes.

N RECENT years Phuket beaches have been plagued by drownings, which remain La leading cause of death among tourists, especially those from abroad.

Lifeguard services have been precarious in recent years. Simply put, sometimes there are lifeguards, sometimes not. Throughout the current high season which began last November and which is now drawing to a close, there have been no lifeguards on the island's beaches, although the Phuket Provincial Administration Organization is expected to announce a new service provider by the time this issue is published.

But even with new lifeguards patrolling beaches, it seems inevitable that the death toll will continue to rise until something is done to address the dangerous combination of factors that lead so many foreign tourists into treacherous surf with fatal results.

One man's study

In a recent study conducted by Phuket resident Steven Martin, he



consuming alcohol.

make Phuket's west coast beaches

more dangerous than they may ap-

pear to the layman during the

monsoon season that runs from

May to October, said Mr Martin,

Man on a mission

STEVEN Martin has 30 years of water safety experience, including five years service as County Water Safety Officer in his native Hawaii and 10 years volunteer service with the American Red Cross. Currently in his third year as an instructor at Prince of Songkla University's Phuket campus, the 50-year-old is an avid surfer.

cites unfamiliarity with local Monsoon season surf in beaches, poor swimming skills, Phuket is characterized by a wave language barriers and the disphenomenon known as "shortorientation of being in a foreign period swell", which means that environment as part of the deadly waves arrive relatively close equation - one made even worse together and propagate propwhen tourists enter the surf after ortionately strong currents including rip tides - even if the Several physical factors waves themselves don't appear

particularly large or dangerous. Short-period swells allow swimmers and surfers very little time to recover between waves. For example, a swell period of six

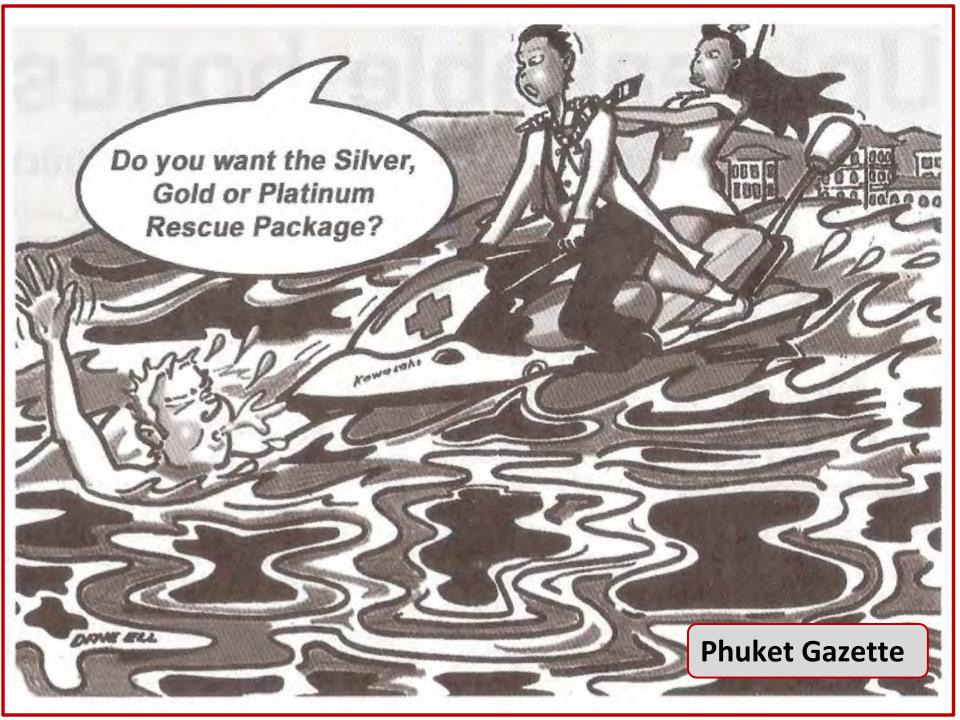


There are NO LIFESAVING CLUBS

SURFERS regularly make RESCUES

More people drown in Phuket during the monsoon season than in the entire state of Hawaii in a year!







The 5 T_s of SURF SITE DEGRADATION in PHUKET

☐ TIN MINING

Reef destruction and mine tailings

☐ TRASH

Beach litter & Marine debris

■ TOURISM

Tourist impacts, construction, pollution

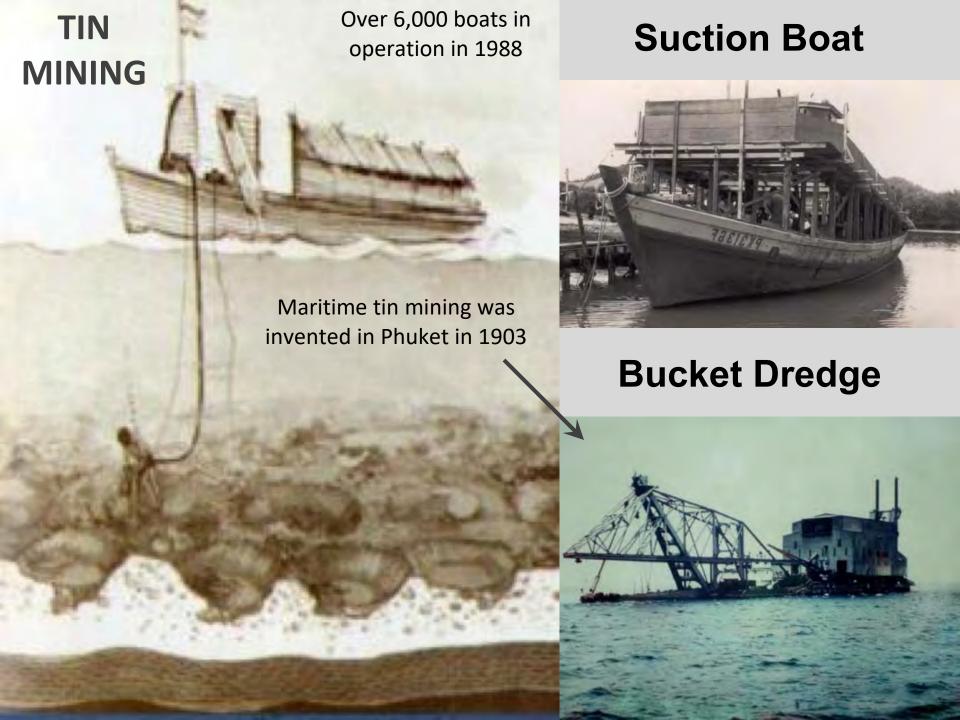
☐ TEMPERATURE

Coral Bleaching

☐ TSUNAMI

Coral destruction and salt invasion







1960s Bucket dredge operating at 22-meters depth in Phuket

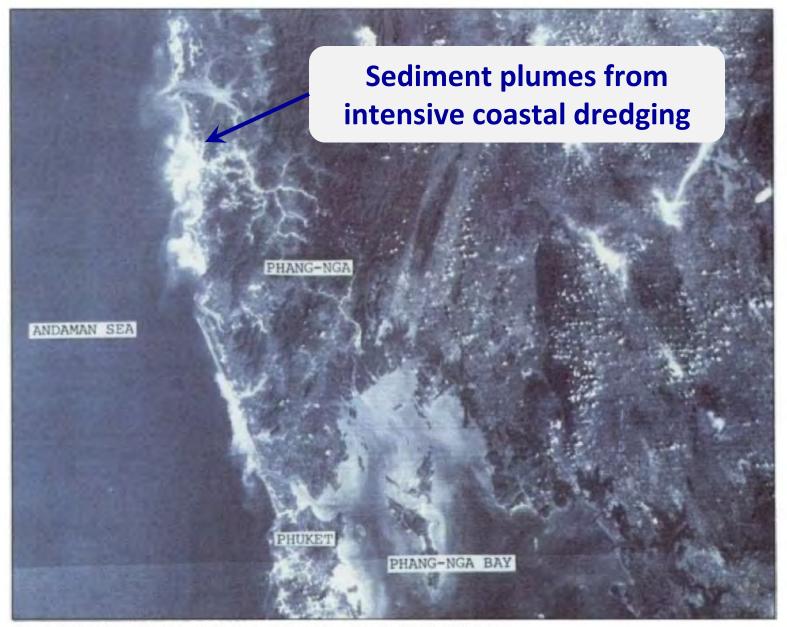


Figure 2. Landsat photo taken January 1979 showing Andaman Sea coast of Thailand. The sediment plumes were generated by intensive dredging activities within a depth of 20 meters along the Phang-nga coast. More limited plume distribution on northern parts of the west coast of Phuket Island was also detected. Suspended loads from land-based mines are visible as turbid streams (white lines on land) discharging into the coastal waters. Photo: NASA.



Analysis of 1,127 Plastic Food Rappers

Percentage	Language	Potential country of origin
74%	Thai	Thailand
6.5%	Bahasa/others	Indonesia
3.5%	Malay/others	Malaysia
2%	Burmese/others	Myanmar
1.5%	Hindi	India
12.5%	indefinite	indefinite





700 HOTELS ☐ Urban runoff
40,000 ROOMS☐ Construction waste

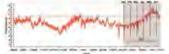
□ Sewage



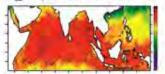


CORAL BLEACHING in Thailand in 2010

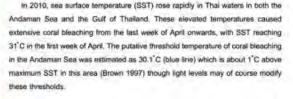
Corals reefs in Thalland have experienced extensive bleaching in 1991, 1995 and 1998. The coral bleaching events in 1998 were particularly severe in the Guill of Thailand, while in the Andaman Sea the enhanced cool upwelling of that year resulted in decreasing the water temperature and a reduction in coral bleaching. Post-1998 mild coral bleaching events in Thailand occurred in 2003, 2005, and 2008.







▲ The SST memistring shows that the central of Bay of Bengal and the Anderman Sea is recently dominated by shomeys warm water, with SST over 31°C. Some regions (sepecially in the Anderman Sea) are shown to haive actionic SST is exceeding 32°C. The extreme SST is well observed by the budy at (IOSE, 12°C), which is one component of FAAMA array developed under the occidentation of QLMMR-GOOS Indian Open Parel.









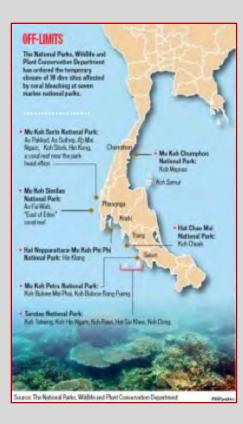
Phuket Marine Biological Center is responsible for the study of the impact of coral bleaching on coral reefs in the Andaman Sea, while the Marine and Coastal Research Centers in the Gulf of Thailand take responsibility for coral reefs in the Gulf. Additional surveys by diving tourists and dive operators also contributed to the database. Roughly, 80% of corals bleached on each reef throughout every province along the Andaman Sea and the Gulf. Mortality rates of between 5 – 40% were already reported at the end of May.

Conclusions from these preliminary surveys are as follows:

- In areas where environmental factors are good and coral diversity is high, with large numbers of colonies, corats are usually partiel bleached. Some normally coloured colonies are found at these sites.
- In the beginning, bleaching is more prevalent on shallow zones of the reef compared to the reef slopes. However later on bleaching spread down to lower slope (30 m).
- 3. In the Andaman Sea, the reefs on the east coast of the islands are more impacted than on the west. On the weal sides of islands, which are subject to internal waves and generally stronger wave action, the reefs may show partial bleaching (or slight paling)
- 4. In turbid areas where the water flow is high, many coral colonies can resist bleaching. This is probably due to the acclimatization and adaptation of corals to extreme environmental conditions. Also, light penetration through the water column is decreased at these sites thus reducing the combined temperature/light stresses that induce bleaching.
 - 5. The reefs which have been subject to human disturbance show more extensive bleaching than those which are less disturbed.
- 6: Very few coral species have been found which resist bleaching, e.g. Pavona decussata, Diptoastrea heliopora and Leptastrea transversa. Pontes lufea colonies frequently show partial bleaching (with apical surfaces being normally coloured while the sides are bleached).

Reference Brown B.E. 1997. Cont Bleaching: causes and consequences: Coral Reefs, 16, Suppl.: \$129-\$138.





Temperature

2010 Saw Extensive Coral Bleaching in Phuket

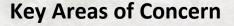






CONCLUDING THOUGHTS

Phuket is developing rapidly and surf tourism is a significant new market during the southwest monsoon season



- Beach & Water Quality
- Beach & Ocean Safety
 - Develop a lifesaving culture
- Surf Site Sustainability & Conservation
 - Adopt the Surfing Reserve approach



