

An aerial photograph of a beach with turquoise water. Several small boats are visible in the water, and a sandy beach is visible on the left. The title 'Safety Beach' is overlaid in large white text.

Safety Beach

MD. Massayu Engkapisakorn (Maritime Medicine)

Risk assessment of beach

1. Area Survey : Extended and description of the area
2. Area usages and activities : include all area to be zoned
3. Emergency services assessment : Ease of access to Emergency service
4. Public rescue equipment : Any available rescue equipment by public
5. Signage for warnings : Viability of appropriate signage
6. Safety information boards : appropriate information
7. Hazard and risk : identify classified remove and minimize
8. Lifeguard provisions : appropriate provisions

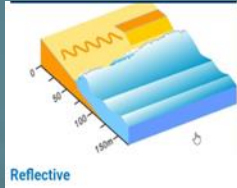
Area Survey

ลักษณะของชายหาด 3 กลุ่มใหญ่ แบ่งได้ 13 แบบย่อย

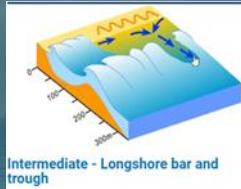
- Wave-dominated
- Tide-modified
- Tide-dominated



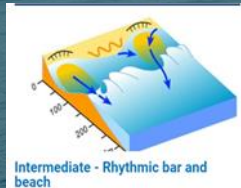
Wave-dominated



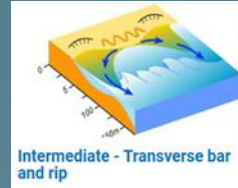
- Reflective



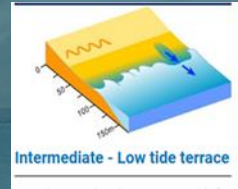
- Intermediate - Longshore bar and trough



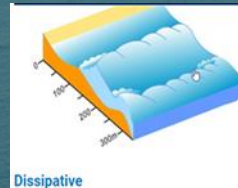
- Intermediate - Rhythmic bar and beach



- Intermediate - Transverse bar and rip

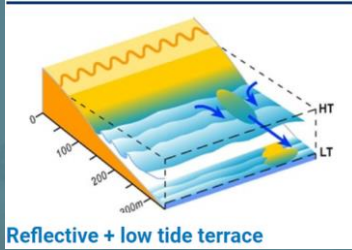


- Intermediate - Low tide terrace

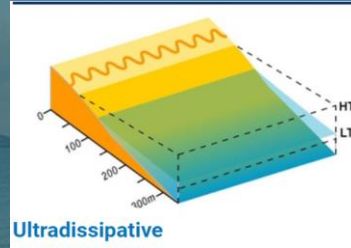


- Dissipative

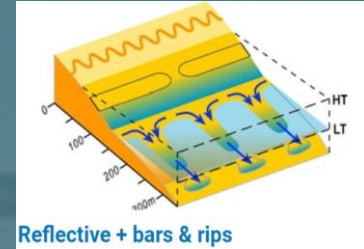
Tide-modified



Reflective + low tide terrace

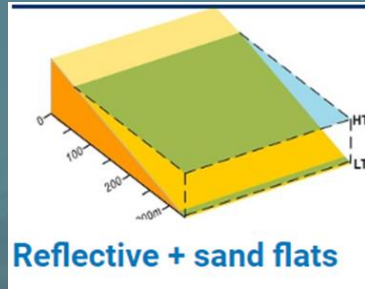


Ultradissipative

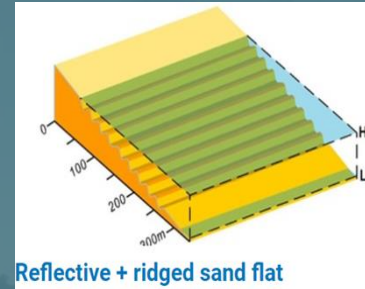


Reflective + bars and rips

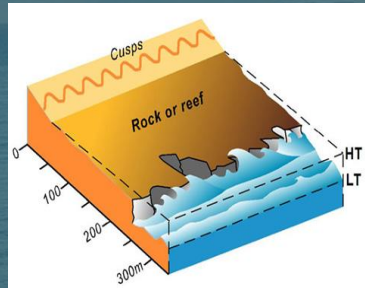
Tide-dominated



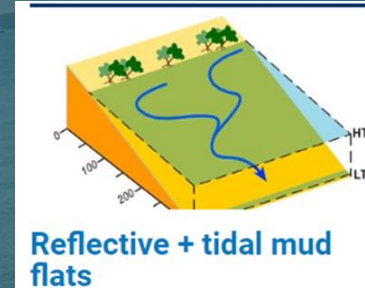
- Reflective + sand flats



- Reflective + tidal mud flats



- Reflective + sand ridges



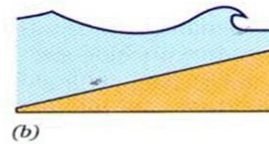
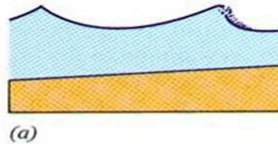
- Reflective + rock flats

ลักษณะคลื่น

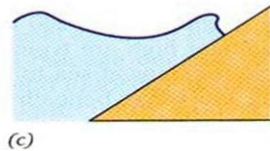
Types of Breakers

3. The type of breaker (wave) depends on the **slope of the shoreline**.

Spilling waves break when the shoreline **slope is gentle**

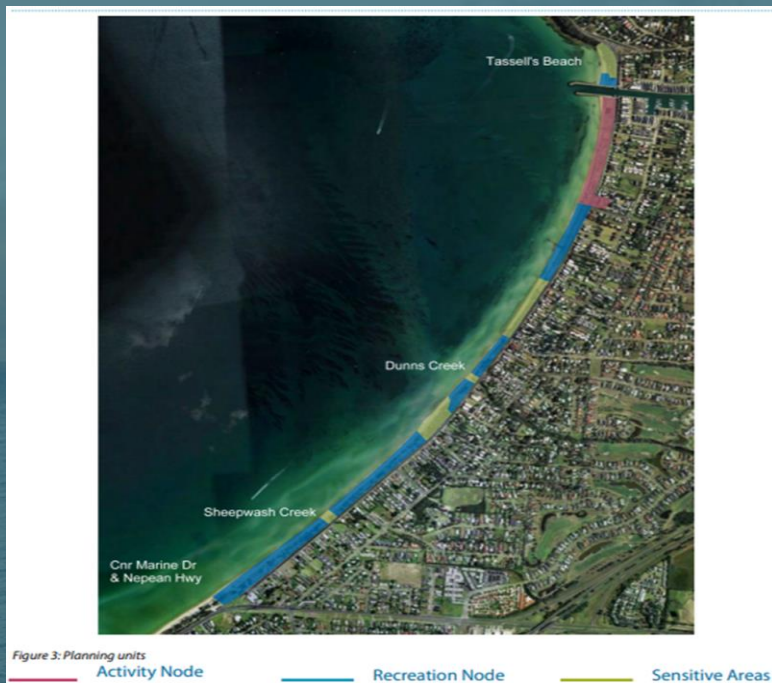


Plunging waves break when the shoreline **slope is moderate**



Surging Waves break when the shoreline **slope is steep**

Area usages and activities



แบ่งพื้นที่เป็น 3 แบบ

1

Activity area

2

Recreational area

3

sensitivity area

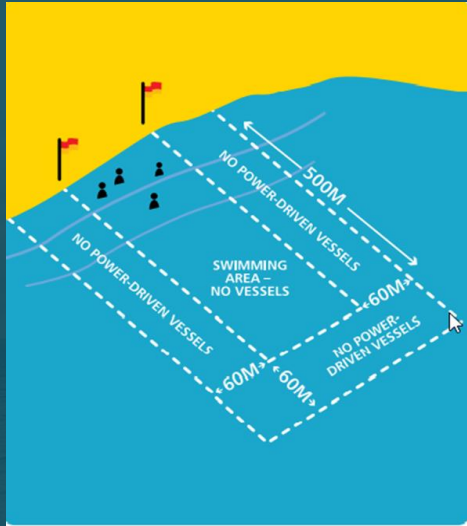
Activity area



Recreational area



Sensitivity area Zone



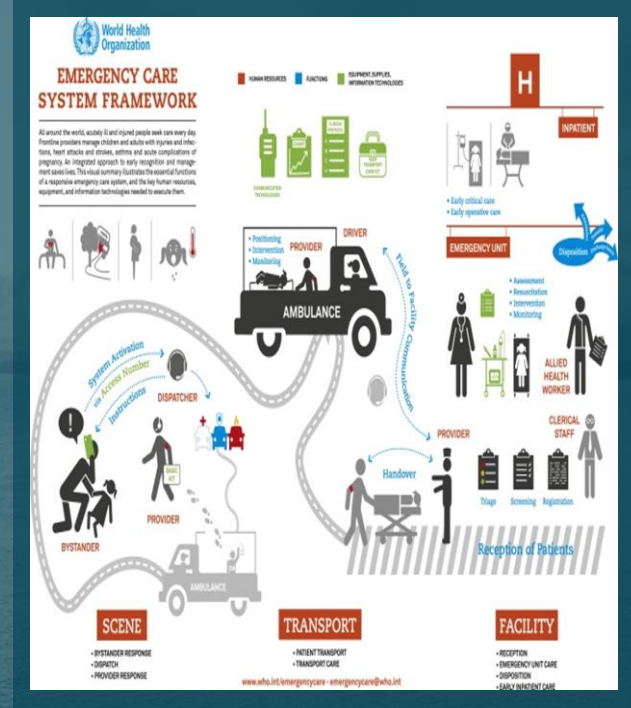
A designated swimming area in a surf zone extends 500m from the shore between surf patrol flags or signs.



A swimming area extends 60m from the shore between signs for swimmers.



Divers can be up to 100m from their float or flag.



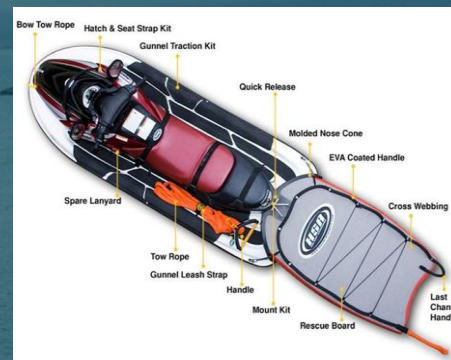
Public rescue equipment





This is what it takes to save lives.





Signage for warnings





Attention



Deep shelving beach



Deep water



Diving



Inflatables



Kite surfing



Large surf or high breaking waves



Motorised craft



Parasailing



Personal water craft



Quicksand



Sailing



Sand yachting



Shallow water



Slipway



Strong undercurrents



Strong wind



Submerged objects



Sudden drop



Surfing



Tides



Windsurfing

Prohibition



Do not dive



Do not use inflatables



Do not jump



Do not kite surf



Do not use motorised craft



Do not parasail



Do not use personal water craft



Do not sand yacht



Do not surf



Do not swim



Do not windsurf

Public Information



Diving



First aid



Kite surfing



Life belt



Motorised craft



Parasailing



Personal water
craft



Sailing



Sand yachting



Snorkelling



Swimming



Windsurfing

Table 1 – Types of Beach Safety and Information Flags

Beach Flag	Safety	Colour	Meaning	Pantone (PMS)	Shape
		Yellow	Medium hazard	PMS – 124	Rectangle
		Red	High hazard	PMS – 186	Rectangle
		Red over Red	Water closed to public use	PMS – 186	Rectangles
		Purple	Marine pests present	PMS – 266	Rectangle
		Red over Yellow	Recommended swimming area with lifeguard supervision	PMS – 186 PMS – 124	Rectangle with equal, parallel halves.
		Black and White (Quartered)	Watercraft area	PMS – 6 (black)	Rectangular flag with four equal rectangular quarters. Black upper left and lower right. White upper right and lower left.
		Yellow flag with Black ball	Watercraft use prohibited (e.g. no surfboards)	PMS – 124 (yellow) PMS – 6 (black)	Rectangular yellow flag with central black ball shape, 500mm diameter.
		Orange windsock	Offshore winds present, inflatable's should not be used	PMS – 166	Cone shape 500mm at the hoist-tapering to 300mm x 1500mm long
		Red and White (Quartered)	Emergency Evacuation	PMS – 186 (Red)	Rectangular flag with four equal rectangular quarters. Red upper left and lower right. White upper right and lower left.

Note: Scale and colour of flags are not exact. Refer to Design specifications, pantone (PMS) etc.



DANGER
No swimming



Lifeguard
on duty



CAUTION
Seek advice



Surfing area
No swimming



Safe to swim



Diving in
progress



You can familiarise yourself with the colour-coded flag system here:



GREEN FLAG



BLACK FLAG



RED FLAG



WHITE FLAG

A red flag – The most serious of all beach warning flags, red flags warn swimmers of serious hazards in the water. One red flag means that the surf is high or there are dangerous currents, or both. Though you can still swim if there is a red flag, you should use extreme caution and go in the water only if you're a strong swimmer.

A green flag means that the spotting conditions are good and no sharks have been seen.

A black flag means that the spotting conditions are poor, but no sharks have been seen.

A white flag with a black shark diagram means that a shark is currently near the beach, and beach users must get out of the water. A siren is sounded and the white flag is raised.

Comparison of ILS standard beach safety flags with the draft ISO beach safety flag standard.

	ILS flag	Meaning	ISO flag (draft)	Meaning
1	Red/Yellow – (halved) red over yellow	Recommended swimming area with lifeguard supervision	Red/Yellow – (red half at the top)	Lifeguard patrolled swimming zone
2	Yellow	Medium hazard	Yellow	General warning flag
3	Red	High hazard	Red	Do not enter the water
4	Purple	Marine pests present	Not included	None
5	Black/White (quartered)	Watercraft area	Black/White (quartered)	Surfboard and other watercraft boundary
6	Not included	None	Red/White (quartered)	Emergency Evacuation
7	Yellow flag with central Black ball	Watercraft use prohibited (e.g. no surfboards)	Not included	None
8	Orange – cone shaped windsock	Offshore winds present, inflatables should not be used	Orange – truncated cone	No inflatable to be used on the water
9	Red over Red	Water closed to public use	Not included	None

Safety information boards



สัตว์ทะเลมีพิษพบได้ทั่วโลก รวมทั้งแมงกะพรุน ทั้งแมงกะพรุนชนิดที่มีพิษรุนแรงพบได้น้อย แต่เราใส่ใจในความปลอดภัยของนักท่องเที่ยว และคำนึงถึงมาตรฐานสากล กำหนดเล่นน้ำทะเลแล้วสงสัยว่าถูกแมงกะพรุนพิษ ให้ทำตามขั้นตอนดังต่อไปนี้

ขั้นตอนการปฐมพยาบาล ผู้ที่สงสัยว่าถูกแมงกะพรุนพิษ

1. เรียกให้คนช่วย หรือ เรียกรถพยาบาล (โทร 1669)
2. ให้นุ้บาดเจ็บอยู่นิ่งๆ เพื่อลดการยิ่งพิษจากแมงกะพรุน
3. ห้ามขีดถู บริเวณที่ถูกแมงกะพรุน
4. ราดน้ำส้มสายชูให้ทั่วบริเวณที่ถูกแมงกะพรุน นานอย่างน้อย 30 วินาที (ห้ามราดด้วยน้ำจืดหรือน้ำเปล่า)
5. ในกรณีหมดสติไม่หายใจ ให้ช่วยหายใจ ถ้าไม่มีชีพจร ให้นึ้บหัวใจ ก่อนราดน้ำส้มสายชู

คณะแพทยศาสตร์ มหาวิทยาลัยเชียงใหม่ กระทรวงศึกษาธิการ
สำนักโรคผิวหนัง กรมควบคุมโรค กระทรวงสาธารณสุข
สถาบันวิจัยและพัฒนาทรัพยากรทางทะเล ชายฝั่งทะเล และป่าชายเลน
กรมทรัพยากรทางทะเลและชายฝั่ง กระทรวงทรัพยากรธรรมชาติและสิ่งแวดล้อม

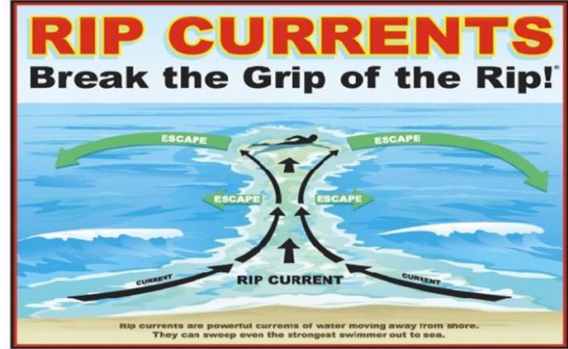


Although stings here are not common, we prefer you to safely enjoy our beautiful beaches and have taken precautionary steps that meet with international standards.
if in the rare event you are stung by toxic jellyfish (i.e. box jellyfish), please follow these steps:

First Aids Steps for Suspected Toxic Jellyfish injury

1. CALL for help or call ambulance (Tel 1669)
2. CALM the injured person
3. DO NOT rub the wound
4. POUR VINEGAR over the wound for at least 30 seconds (Do not use fresh water)
5. IF unconscious and not breathing/beating → start CPR BEFORE POURING VINEGAR

Faculty of Medicine, Chiang Mai University, Ministry of Education
Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health
Phuket Marine Biological Center, Department of Marine Coastal and Resources,
Ministry of Natural Resources and Environment



IF CAUGHT IN A RIP CURRENT

- ◆ Don't fight the current
- ◆ Swim out of the current, then to shore
- ◆ If you can't escape, float or tread water
- ◆ If you need help, call or wave for assistance

SAFETY

- ◆ Know how to swim
- ◆ Never swim alone
- ◆ If in doubt, don't go out

More information about rip currents can be found at the following web sites:

www.ripcurrents.noaa.gov
www.usla.org





Hazard and risk

- Weather : Sun burn / Storms / wind
- Wave and tide : Rip current Undertow etc.
- Marine Animals : Sharks /box jellyfish etc.
- Accidents : water craft / transportation
- Drowning
- Environment : water pollution / poison plants etc.

The purpose of risk assessment is

- Ensure that potential safety problems are properly understood.
- Check whether existing control measures (including emergency plants) are adequate.
- Determine what is necessary to reduce risks to a reasonable level.
- Priorities unacceptable risks identified by the assessment and determine further action.

The key question in any assessment are

- Who is exposed? How often?
- How likely is it that an accident could happen?
- How bad could the consequences be?
- What controls are in place?
- Are any more controls required?

Risk Estimator

1a) A simple risk level estimator

Probability of accidents	Severity of outcome		
	Slightly harmful	Harmful	Extremely harmful
High unlikely	Trivial risk	Tolerable risk	Moderate risk
Unlikely	Tolerable risk	Moderate risk	Substantial risk
Likely	Moderate risk	Substantial risk	Intolerable risk

Risk Management

1b) A simple risk-based control plan

Risk level	Action and timescale
Trivial	No action is required and no documentary records need to be kept.
Tolerable	No additional controls are required. Consideration may be given to a more cost-effective solution or improvement that imposes no additional cost burden.
Moderate	Efforts should be made to reduce the risk, but the costs or prevention should be carefully measured and limited. Risk reduction measures should be implemented within a defined time period. Where the moderate risk is associated with extremely harmful consequences, further assessment may be necessary to establish more precisely the likelihood of harm as a basis for determining the need for improved control measures.
Substantial	Activity should not be started until the risk has been reduced. Considerable resources may have to be allocated to reduce the risk. Where the risk involves activity in progress, urgent action should be taken.
Intolerable	Activity should not be started or continued until the risk has been reduced. If it is not possible to reduce the risk even with unlimited resources, activity has to remain prohibited.

This is what it takes to save lives.



Reference

