

Rip Education for the Bold & Beautiful swimming group

By Craig Riddington – Director SEA Australia, President Surf Educators International Inc.
Endorsed by the Association of Surf Educators International Inc. and SEA Australia

I would firstly like to take this opportunity to congratulate Julie & Mike on this magnificent initiative to encourage the community into a healthy lifestyle in our most beautiful playground. The bold & beautiful swim squad is a true representation of the Aussie lifestyle and love of the great outdoors

I have been asked by Mike and Jules to write an article about surf safety and in particular rip education/survival – not just to assist you with your surf knowledge – but to pass this knowledge onto the community which will assist us in reducing avoidable drowning

Background - Rips along NSW coastline

The New South Wales coastline has 721 open surf beaches spanning over 1100km. These beaches are characterised by dynamic geographical processes (rips, waves and currents), resulting in an average of around 5000 rescues and 30 drowning each year

Rip currents are responsible for more than 90% of all surf rescues (near drowning) and most drowning. Rip currents are a natural hazard within the surf zones along the whole of the NSW coastline. Rips are generally not understood and can be meters way from safe swimming areas - sometimes indicated by red and yellow swim flags. Most rips along the coastline are not sign posted; they are not permanent and cannot be identified by the majority of the population.

Australian Rip Systems – Friend or Foe?

A. D. Short††Coastal Studies Unit School of Geosciences F09 University of Sydney NSW 2006,
Australia a.shortgeosci.usyd.edu.au

SHORT (1999a) provides a detailed description of rip currents, while SHORT (2006) reported the presence of 13 500 beach rips and 4000 topographic rips operating on a normal day around Australia. Globally tens of thousands of rips will be operating on any given day, wherever waves are breaking across a surf zone. Rips are an intrinsic part of surf zone circulation, particularly on wave-dominated and some tide-modified intermediate beach systems. They are responsible for the return of water seaward and thereby flushing of the surf zone. Because of their often strong velocities they can also move sediment seaward, and therefore play an important role in surf zone sediment transport, particularly offshore sand transport during beach erosion. The strong seaward rip flow in often a deeper rip channel will also transport seaward any buoyant object located in the flow, including flotsam and people. Because of this rips have posed a considerable threat to bathers ever since they started entering the surf zone. In the process these same rips have resulted in the drowning of many thousands of people, and today rip currents are recognised as the major hazards to bathers in Australia, where they are responsible for more than 90% of all surf rescues and most drowning (SHORT, 1999b)

Patrolled beaches enable people to remain safer provided they swim in between a very small flagged area; however statistics show that most surf drowning occurs outside patrolled areas. It is unrealistic to assume that people will always swim between the flags simply because flags are not accessible to a large majority of beach goers in NSW - particularly outside of peak seasons. Of the 721 open surf beaches there are only 129 surf lifesaving clubs and 50% of coastal drowning occurs **more than 5km**

away from a lifesaving service. Drowning occurs randomly at remote beach locations and notably after patrol hours at patrolled beach locations. Although people do attempt to swim within or near patrolled areas - near drowning occurs regularly at every location patrolled by Surf Lifesavers and Lifeguards (this information is contained in Surf Lifesaving NSW and Council reports), New South Wales beaches are mostly unpatrolled throughout the year and signage (mostly ignored) is inadequate with little definition of the dangers of Rip Currents.

Rips and waves

Rips work with waves, a wave is a swell generated out in the ocean - that breaks when it hits shallow water. The broken waves are described as white-water.

What is a rip?

To describe a rip in its simplest form - it is a flow of water generated by the breaking waves, that runs away from the beach. The waves break in the shallower water (sandbanks) and the rips flow in the deeper channels alongside the sandbanks



Rip's dark gaps between white-water (waves on sandbanks)

How to identify a rip

Most rips sit in between sandbanks so it is quite easy to see the deeper water channels between the white-water on the sandbanks. Because the water is deeper it is darker in colour. Most rips have feeder currents that run off the sandbanks along the beach until they flow into the main channel, because it is deeper the waves will not be breaking in these areas. Rips can sometimes be difficult to see when there is a lot of wind, or at high tide when there is not as much water moving



Headland rips – mostly fixed



beach rips – vary always due to conditions



If you look closely enough at the above diagram you will see a rippled effect on the surface, this is due to the water running against the natural flow of the ocean - like a river. You can see the broken waves (white-water) change back to a swell when they hit these channels

Misconceptions about rips and waves?

People have been told and continue to be told that rips go 'out to sea' meaning that a swimmer caught in a rip will stop at nothing to get back to the beach, including swimming against a rip until drowning occurs.

Rips go off the beach not "out to sea"; approximately 90% angle toward the breaking waves and end up returning swiftly to a sandbank. From here the water moves back toward the beach with the waves. Less than 10% of rips go out past the surf break, these usually in larger unmanageable surf conditions





Experiment with DR Rob Brander - dye reaches sandbank and heads back with the waves



Experiment with DR Rob Brander - dye reaches sandbank and heads back with the waves

Some people think that rips are associated with an undertow, and fear getting taken underwater.

This is not the case - rips do not drag a floating object under water

People think that waves are dangerous and are the cause of drowning. This is also one of the reasons why victims may choose to swim in the perceived calmer water of a rip, and why they may try to swim away from the waves when rips turn onto the sandbank.

Waves are enormous amounts of water travelling into the beach, a large breaking wave can be turbulent at first, however it is difficult for most swimmers to get to this area without using a rip. Once a rip connects back into the wave area the water will push swimmers back towards the beach.



Swimming area, with rip to the side

Rips are not killers, they are just a flow of water, and it is the action that a human takes that ultimately leads to drowning through swimming, panic and fatigue.

Take out the fear factor - "if you can float you should not drown" instead of "if you get caught in a rip you will drown" Most drowning in the surf occurs when the surf is no more than 3 ft, and the drowning occurs just metres off the shoreline, not out past the surf break

To survive a rip

The simplest method to survive a rip is to float, do whatever you have to stay afloat, don't panic, don't fight the rip. Allow the rip to take you in most cases to the sandbank (where the waves are breaking) where you will reach safety. If you are near others - wave your arms and/or yell for help, if you are alone conserve all energy.

If you decide to try and swim out of a rip, don't! Instead - move with the current at an easy pace to conserve energy. Follow the rip to where the waves are breaking and once there - allow the waves to push you back to the beach, or even walk back if the sandbank is shallow.

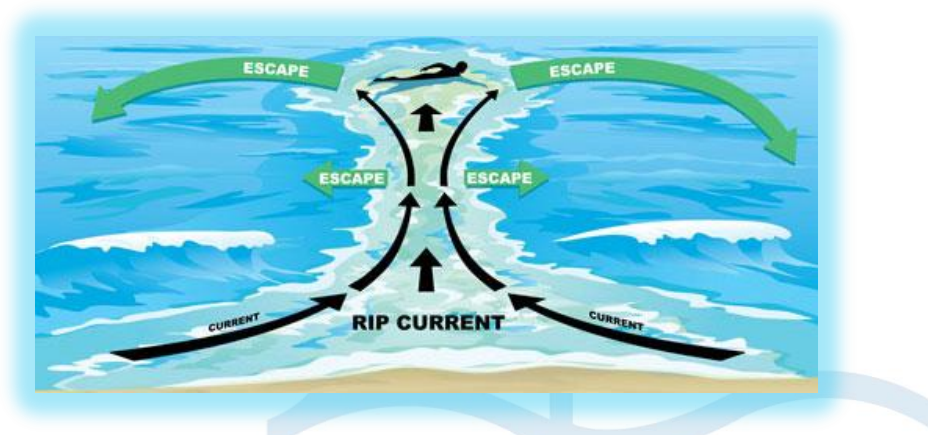
Make sure you follow the shallowest water back to the beach to avoid falling off the sand bank - back into the rip. Allow the white-water to hit you in the back to push you back to the beach; don't dive under the waves as the water under the waves travels out (more about this in my surf tips)

The key is to reduce the potential for panic by encouraging swimmers caught in rips to stay calm, stay afloat, and signal for help.

Floating is the best way to keep our heads above water for longer. The word float is generally associated with pleasant, relaxation, calmness, and energy conservation.

Why I think that the "swim parallel to the beach" message is flawed

This message is based on very old rip diagrams (below) based on theory only, that show rips traveling straight through the surf zone and way out to sea, with a mushroom shaped head dispersing in all directions and carrying turbulent sand with it. The diagram is not consistent with recent scientific experiments, findings, pictures, diagrams and video footage. I do note that some rips can exit just past the surf break.



Rip diagram dated back to early 1900's, not based on evidence, research or surf expertise

- Swimming is not the best way to ensure a safe exit from a rip, psychologically the word swim is generally associated with - extreme use of energy, racing, fast and thoughtless movements, effort, strain, panic, if I can't swim - I'm in trouble. This leads to a decreased ability to stay afloat
- Most rip currents in Australia do not flow straight offshore. They flow at inconsistent angles to the beach in one direction only, which means that a person swimming parallel to the beach may actually end up swimming against the current.
- Much of the water entering rips enters from the side, either from feeder currents along the beach or from draining off of adjacent sand bars. Swimmers may again end up swimming against the current.
- It assumes people can swim well enough to escape a rip, which is often not the case.
- It assumes people have an understanding that they are caught in a rip. Studies have shown that 60% of Australians do not know what a rip is. This does not include overseas tourists.
- It promotes people to take immediate action which may contribute to panic. Panic is the main cause of rip current drowning.
- If you don't swim – chances are you will quickly be deposited to a safe sandbank in little time with minimal energy consumed

For videos of rip school with kids negotiating the surf using rips at Manly and Dee Why go to <http://www.seaaustralia.com.au/Escape%20a%20Rip%20in%20Rip%20School.php>

RIPS

FLOAT, RELAX and SAVE YOUR LIFE.

- A rip is a current that flows away from the beach, mostly in a circular motion within the surf break.
- To survive - STOP swimming, STOP fighting the rip, float with the rip toward the waves.



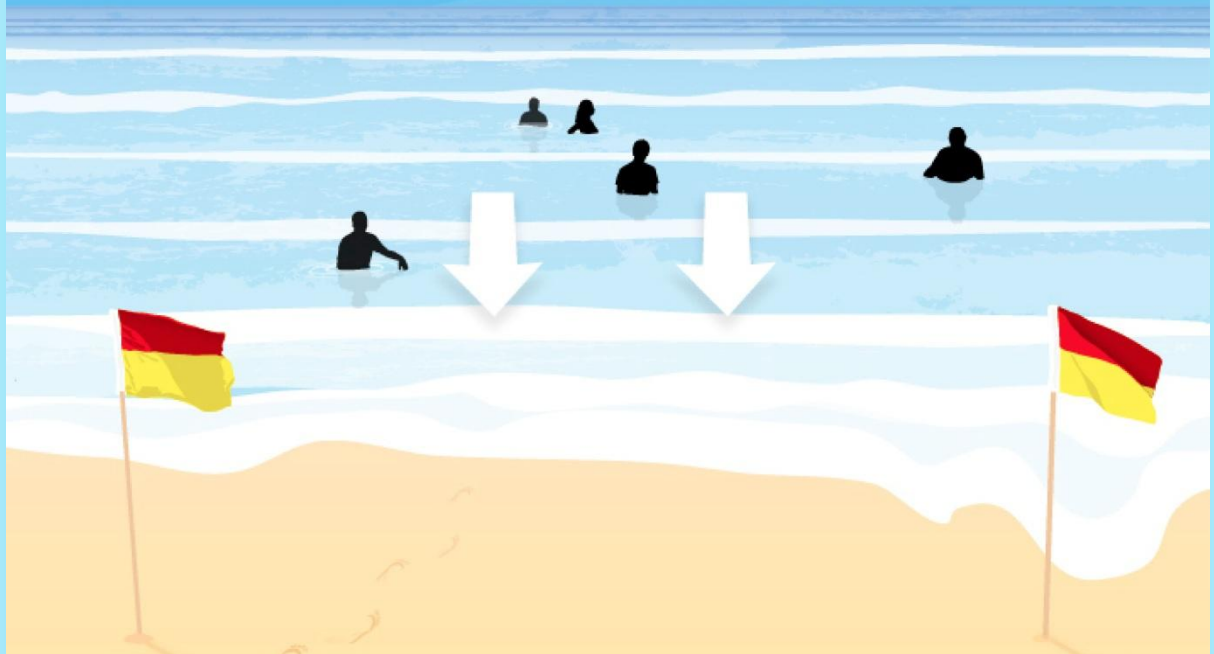
SPOT A RIP - You will usually find rips in deeper water channels running near the shore and circulating back to a shallower sandbank where the waves are breaking toward the beach. Rips are often used by surfers to paddle out to the waves but can be challenging for inexperienced surf swimmers.

SURVIVE - Panic and swimming against the rip is exhausting and causes drowning. Keep your head above water and float with the rip, you should end up in the waves that will push you back toward the beach. If you require help - call and wave, but always conserve your energy especially if there is no assistance.

SURF SAFETY TIPS

If you swim at a surf beach where waves are breaking, always swim between the "red & yellow flags" within view of lifeguards.
If you choose to swim at a surf beach outside of the "red & yellow" flags or at an unpatrolled location – **YOU ARE TAKING A RISK.**

If you take this risk, please consider the following: You are in great danger if you are unable to float well enough to survive, or if there are no surfers in the area to assist should you get in trouble. Find a location that looks like (or resembles) this diagram.



Waves break in shallow water becoming whitewater. Where whitewater is traveling all the way to the beach – this will also push swimmers back to the shore. If waves are breaking in a consistent manner (the whitewater is parallel, it continues until it reaches the shoreline, and there are no deeper holes where the whitewater stops), then there are no visible rips traveling back out. **This area will be the best option to swim safely.**

Surf Tips

Why do we swim in between the red and yellow flags?

- The lifeguards will find a large sand bank, which will indicate where to put up the red and yellow flags each day.
- To identify the sandbank, they will look the area where the waves are breaking evenly and parallel to the shore. At low tide particularly, the waves and white-water will determine the sandbank. The sandy bottom will also be more prominent in this area.
- The white-water should carry all the way to the beach, making it the safest area. If this is not the case, the lifeguards should look for the next best area - ensuring the flagged area is not close to any major rips.

How do we identify a rip?

- You'll find rips in between the sand banks - mainly indicated by a deeper, darker section of water. These will be easier to identify at low tide, as the sandbanks on either sides of the rip become shallower and the differences in colour shades will be more obvious.
- There will be no breaking waves or consistent white water in the main part of the rip, any waves that reach this area will be affected by the deeper water and an immediate

transformation will occur. You will also notice ripples on the surface - indicating the strongest part of the rip and the seaward movement of the water. This area is only to be used by experienced Surfers.

- Rips are all different shapes and sizes and can change within a matter of minutes depending on the change of tides, wind intensity & direction, and surf conditions. Water will move off the sandbanks into the rips, so make sure when you're swimming on the sandbank - to constantly look at the surrounding area.

How do we know where the rips will take us?

- Rips move off the beach quite fast, but 90% of rips will not take you beyond the surf break. Instead, these rips will move off the shoreline and then travel toward a sand bank within the surf break. The larger the surf - the bigger & faster the rips move. A rip will not take you under the water, therefore is not the cause of drowning.
- Very few rips go further out than the outside of the surf break; normally these occur in bigger surf.

What if I'm caught in a rip?

- If you can't float comfortably - do not swim in the surf anywhere except patrolled beaches and in between the "red & yellow flags" (see surf tip 1) because rips will take you out of your depth.
- If you can float and get caught in a rip – if you've been taken out of your depth, you should take time to feel which way the current is taking you. Float with the current towards the sand bank - which is indicated by the waves and the white water. The most important thing you can do is to stay afloat by conserving energy...if you feel you must swim, move within your comfort zone with the current at an easy pace to conserve energy.
- The rip should carry you over to the shallow sand bank where you can walk back to shore, or be carried by the waves. If you are scared, put up your hand and yell for help, never swim back toward the beach, as you will not get back. Remember you are the only thing that can make yourself drown. If you cannot float - see a lifeguard or lifesaver before you go in the water.

How do I know when I've escaped a rip?

- At low tide - the rips move quite quickly and they will travel more directly over to the sand bank. When you reach the waves you will notice your direction will change and you will be pushed toward the shore by the water flow.
- At low tide you should be able to stand up and walk back to shore. If this is the case - follow the white water back to the beach, otherwise, if the white-water stops - you could end up in deeper water and back in the rip.
- If it is high tide, the water will move slower, you may not be able to stand when you reach the waves, so face the shore and let the waves push you back to where you can stand. Remember - do whatever you have to, to stay afloat, and don't try to swim away from the waves, as they will most surely save your life.

Should I swim at unpatrolled beaches?

- It is advised not to swim at unpatrolled surf beaches; however a lot of people do - because beaches in remote areas aren't patrolled or patrols aren't on at the times they wish to swim. If you must swim at an unpatrolled beach, make sure there are other people in the water – particularly surf board riders. Make sure you find the largest available sand bank - indicated by the broken waves or white-water. The waves should be parallel to each other and to the beach, and the white-water should travel all the way to the shoreline. This will indicate the sand bank is even right through to the shore and shallow enough to be safe, all the water is pushing toward the beach. If the white-water stops at any point this indicates the water has become deeper and may be moving in another direction.
- Keep to the middle of the sand bank away from any rips, which will exist on either side.

What sort of waves should I catch?

- If you are strong enough to get through the surf or educated enough to negotiate a rip - you should be able to manage the waves out the back. Be careful of dumping waves or plunging

waves which break in very shallow water, usually in off shore winds - which blow from the land - out to sea, and make the conditions nice and clean. These waves form what's called a tube or a barrel, which are great waves for experienced surfers, but not for weekend warriors.

Barrelling waves can pick you up and drive you into the bottom, risking neck and back injury.

- Waves that break in onshore winds - blowing from the sea to the land, are safer because they break in deeper water and the wave spills down the face - allowing a nice gentle ride or a less dramatic fall. Taking off on these waves is a lot easier.
- If you are less experienced - become comfortable with surfing in the white-water before you venture out the back.

Should I go to the bottom when I go under a wave to get through the surf break?

- Yes you should, the waves and white water are quite turbulent, but as the water gets deeper this turbulence doesn't reach the bottom, in fact the water underneath the turbulence rotates outward. If you want to get out through the white water - use the bottom to get under the white-water and then the best way to get back to the surface is to push off the bottom. A lot of people are afraid to go to the bottom, but let me assure you that if you are on a sand bank - the only thing to deal with is sand & water.

How do I paddle?

- There are two main components to paddling a surfboard – positioning on the board and body posture. Position yourself on the board so the board is trim in the water. For example the board lies flat in the water and the nose of the board is not pushing under the water. If the nose keeps going under - you will have to move back. If you are too far back your board will stick up in the air and push too much water – you will then need to move forward.
- Good balance comes from good posture and strong core muscles. When you lie on the board you need to lift your chest off the board, keeping your lower back and stomach flexed. Your bottom and hamstring muscles will also be flexed pushing your pelvis into the board; every other muscle should be relaxed.
- Paddle using one arm at a time without wobbling from side to side, keeping the middle of your body stable, and rotating the larger arm, shoulder and upper back muscles. Your arms should be bent and relaxed. Don't try to over extend your stroke - rather keep it compact, fast and powerful on exit.

How do I body surf in white water or a broken wave

- As the wave reaches your body, dive forward at the same speed of the wave - landing on the surface. Keep your head down and hold your breath. Keep your body straight and stretched out from the belly button, but still relaxed. Become part of the wave - by feeling all your weight forward of your stomach and on your hands. When you feel your speed is the same as the wave and you have control out in front, you can then take a breath - by using a quick one armed freestyle stroke or if you are advanced - tilt your head forward, without moving your body weight backwards.

The smaller the wave becomes - as it heads towards the shoreline, the more streamlined you will need to become, by keeping your head down. The most common mistake people make body surfing is to lift their head and their body making a banana shape, which is not the most streamline of positions in the water.

How do I take off on a wave on a surfboard?

- Firstly make sure that you commit to the wave that you want, the more you hesitate the more trouble you will get in. Learn to know when a wave is going to break, and paddle onto the wave accordingly. If you paddle too early you will get dumped by the wave, if you paddle too late you will miss the wave.
- Paddle until you feel you are traveling down the face of the wave. At this point take a couple more quick strokes to make sure you are on the wave - and then quickly position your hands by your ribs. Holding the side of the board - use your arms to adjust your body weight back to avoid a nosedive. If the wave is steeper, you may have to move your body further back. The rule is - the steeper the wave – the faster you will have to move. After you survive the initial

take off - you can adjust your body back up the board. If you can master this, it will become easy to stand up as the board points down the wave on take-off.

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How do I corner a wave on my board and how can I travel all the way to the beach on one wave

- Once you have gotten used to taking off on a wave lying down its time to learn how to corner a wave. Finding the peak of a wave is important; this is the highest part of the wave and usually the first to break. In other words the sand bank will be shallowest at this point.
- If you can catch this part of the wave, you then need to look for a corner, which is a lower part of the wave; it will break across the face from left to right or from right to left. When the surf is like this it is considered good surfing conditions, and the sand banks are a good shape.
- The idea is to follow this part of the wave just beyond the breaking part of the wave or the white-water. At some point the wave will close down and you will need to straighten up your craft. To turn a board lying down or standing up there is no need to dig into the wave with your hands. Just like motor bike riding, leaning into the corners will turn your board, and the faster and the more you lean - the more dramatic or radical your turn will become.
- To take the wave into the beach you need to follow the white-water, so look to the side and follow the strongest part of the white-water by turning your board in. You can also look ahead to see where the white water has died out and avoid this area - as it will be deeper.

How do I stand up on my board?

- You can learn the simple techniques of standing up by practicing on the beach, but it is the timing of catching the wave and those take off skills, which will enhance your surfing. Focusing on your stomach muscles, to go from a lying down to a standing up position in one movement will also help.
- When you are catching a wave and in a position to take off - your board is actually pointing downward, so you nearly fall onto your feet. It's the radical distribution of your weight to the back of the board, which actually stops you from nose-diving; this is why those earlier techniques are so important. It will take a few goes to get your feet into the right position, then you will need to get a feel for using bent knees to produce power from your legs - for those radical manoeuvres.

How do I negotiate the surf on my board?

- Getting out the back on your board is tough, that must be why god created rips. Obviously the best way to get out the back on any craft or in any ocean race is by utilising a rip.
- As discussed previously, the majority of rips do not go out past the surf break, so negotiating waves will be a necessity during each journey out to the back of the surf break. There are several techniques to negotiate smaller waves, or waves that are not breaking top to bottom. The first is to paddle hard into the wave, and as you hit the white-water - put your hand to the front of the board to keep streamline, and allow the wave to roll over the top.
- As the waves get bigger you can duck dive a surfboard, which can sink under your weight - by pushing your knee into the board and using it to scoop the board under the white-water. Your body will fall in behind the board - also trying to duck under the impact of the wave. This technique can't be used on foam boards and bigger boards, as they will not sink.
- For these boards - you can sit back as the wave approaches and as the white-water hits - you lean back into your paddling position on the board. The momentum from this movement should bounce you over the wave.
- Lastly for those larger waves, you can eskimo roll. By doing this - keeps the lifted ends of the board away from the impact of the wave - stopping the wave from lifting the board and carrying it toward the shore. Your momentum from your roll and your weight will force the board under the water and away from the heavy white-water. Failing this, some surfers throw their boards away, this can be a nuisance as your board can hit other surfers, and there's always a chance you could snap your leg rope.

About the Association - Surf Educators International (SEI)

Inc. www.surfeducatorsinternational.com.au

- Surf Educators International is an association inviting global membership and affiliation to surf educators and relevant groups.
- Formed in Australia in 2010 due to the great need for consistent Surf Education messages and programs. Surf Educators International is based on the following objects.

SURF EDUCATORS INTERNATIONAL INCORPORATED OBJECTS (March 2010)

1.1 The message:

SEI is an association created to ensure that a valid and credible surf safety message is disseminated in a clear and understandable way to all.

1.2 The expertise:

SEI will act as a conduit and forum for expert discussion from local and international experts to ensure that the most effective message is communicated to all beach and water course users.

1.3 The educational programs:

SEI will utilise skills, knowledge and research findings of SEI members and other experts to develop the appropriate content, delivery methods and educational approaches for preventative, self-survival and rescue/emergency action advice for beach users. SEI will promote the use of these surf safety messages within all publicly available resources and skills programs. The programs are designed to benefit all would-be and actual beach users.

1.4 Accreditation:

SEI encourages best practice in content and delivery of surf safety education resources and programs. Content and delivery methods will be designed to meet general and specific needs of beach user groups and the community. SEI will monitor, assess and review the quality of surf safe publications and programs and recommend improvements and/or accreditation for publications and programs that meet the SEI quality standard.

1.5 Reporting and funding:

SEI will prepare reports for government and non-government agencies to ensure that adequate funding is obtained from public, corporate and government sources for surf safety education resources and programs.

Board

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- [DR Rob Brander – Surf Scientist](#)
- [Let's Go Surfing](#)
- [Maroochydore Surf School](#)
- [Ken Holloway](#)
- [APOLA Lifeguard Training Academy](#)

Summary

I hope this information will give you confidence to conquer your goals in the surf in a safe manner, allowing rips to become your friend rather than a threat. Treat the ocean with respect, and don't fight it - rather go with it.

For more information and in particular our initiatives with SEI - go to our websites
www.surfeducatorsinternational.com.au
www.seaaustralia.com.au

If you are interested in becoming a member of SEI or assisting with our initiatives – please don't hesitate to contact us info@surfeducatorsinternational.com.au

Yours in Surfing



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