

SURFING SANCTUARIES

Maverick's, Waimea Bay, Pipeline. The names evoke images of the raw beauty of ocean swells exploding on solid reefs, and crowds gathered to watch in awe as expert surfers take on world-class waves. These places are some of the most revered surf spots on Earth, but there's another thing they have in common, something that few people realize: they are all found within national marine sanctuaries. Read on to learn just what makes surfing in your National Marine Sanctuary System so special.

- National marine sanctuary boundaries
- National marine sanctuaries with surfing
- Three of the world's best surfing locations
 - Pipeline, O'ahu (Hawaii)
 - Maverick's, California
 - Pe'ahi/Jaws, Maui (Hawaii)



ANATOMY OF A WAVE

- WHITewater**
Aerated water that foams and bubbles powerfully as the wave breaks
- PEAK**
The highest point of the wave
- LIP**
The leading edge of the breaking wave
- FACE**
The smooth, unbroken section of the wave
- POCKET**
The steep section of the wave just ahead of the whitewater
- TROUGH**
The lowest point between two waves
- SHOULDER**
The part of the wave that has not yet broken

BARREL OR TUBE
The hollow area of a breaking wave

Once the surfer has caught the wave (A), she can either slow down and tuck into the "barrel" (B), use her momentum to propel herself back to the shoulder of the wave for more tricks (C), or continue to leisurely ride the wave.

To **tailslide (C)**, the surfer slides the tail of her surfboard above and across the wave lip. The key is getting the fins free of the wave by shifting the body's weight from the back foot to the front foot.

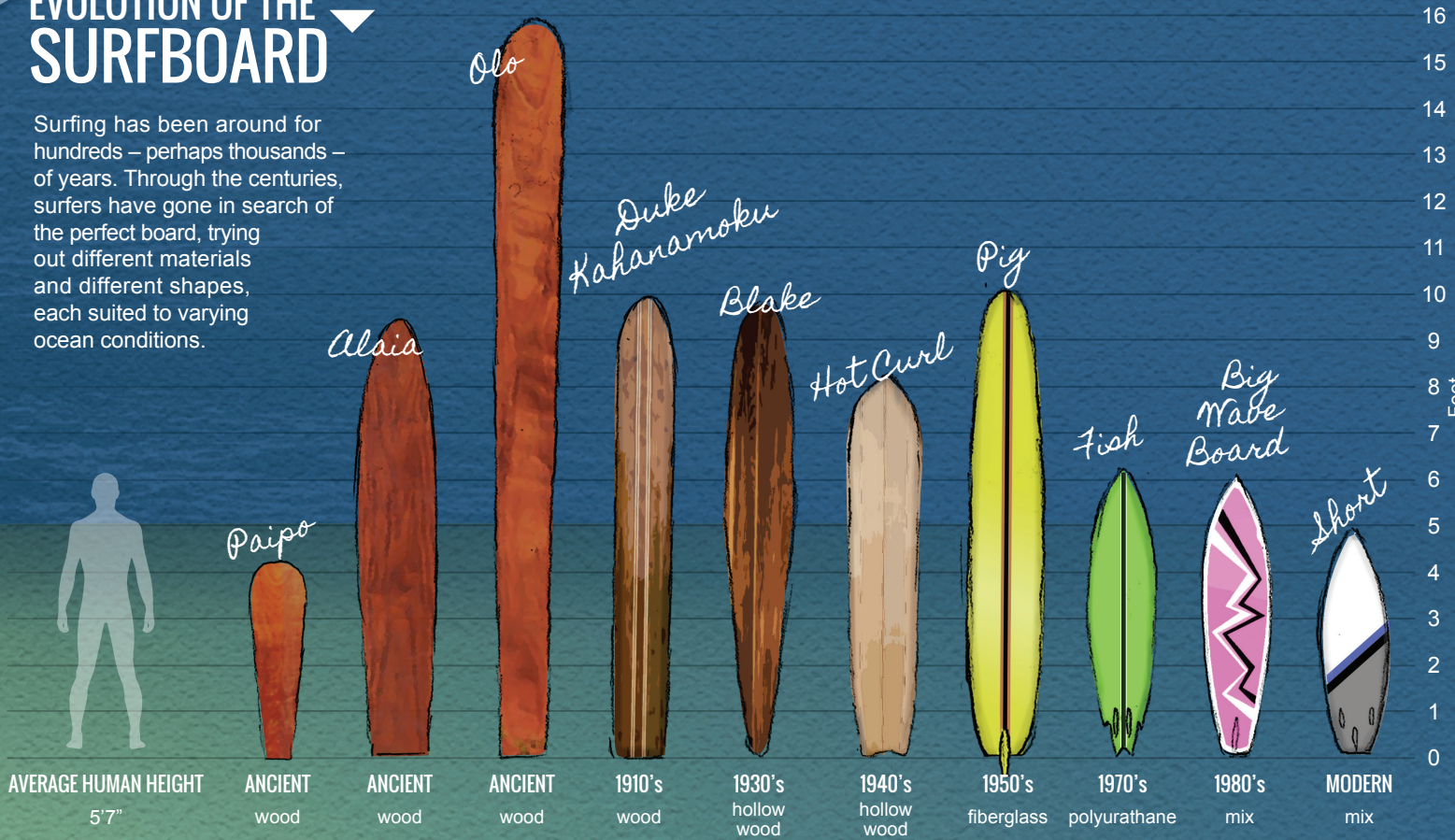
To perform skateboard-inspired **aerials (D)**, the surfer launches off the crest, flies above the wave, then lands back on the wave face.



If the surfer continues her ride after any maneuver that changes her direction and loses momentum, like a tail slide, she'll need to re-gain speed by turning back into the direction of the breaking wave (E).

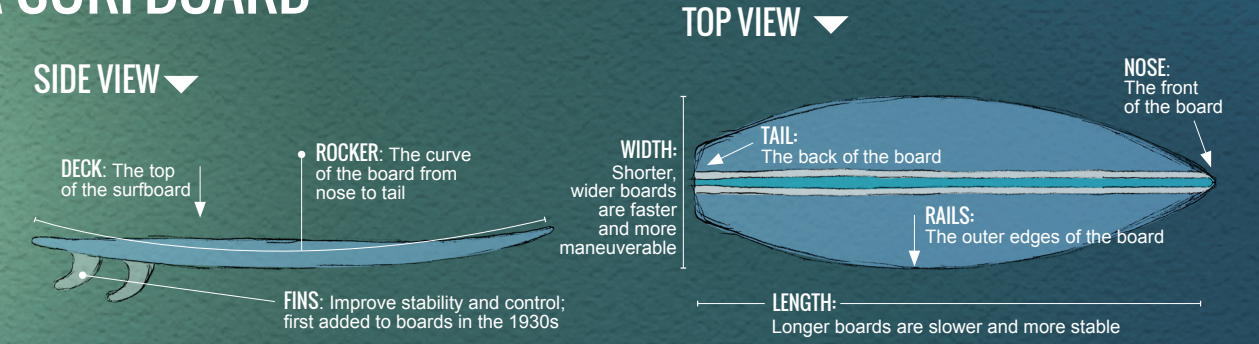
EVOLUTION OF THE SURFBOARD

Surfing has been around for hundreds – perhaps thousands – of years. Through the centuries, surfers have gone in search of the perfect board, trying out different materials and different shapes, each suited to varying ocean conditions.

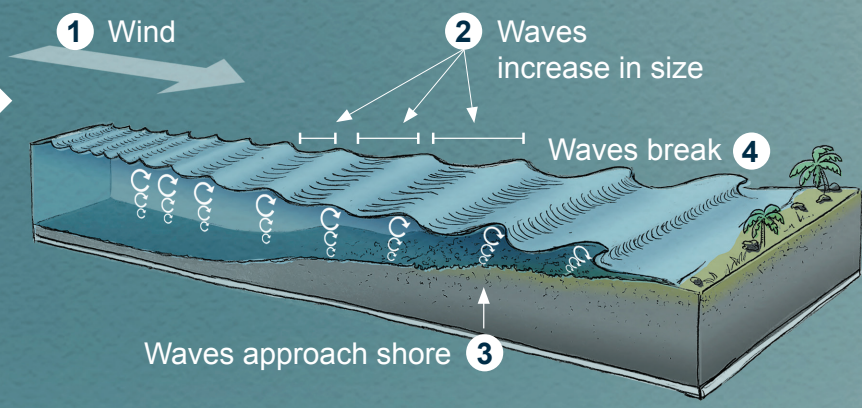


PARTS OF A SURFBOARD

Surfboards come in many different shapes and sizes for different conditions and wave types. However, the basics parts of a surfboard remain the same from board to board.



WHAT MAKES A BIG WAVE?



- Winds blow against the surface of the water, transferring energy to the water.
- Small ripples merge into larger waves and build together into sets called "swells." The wave energy in these swells move in the direction the wind is blowing.
- As the wave energy moves closer to shore, the upper part of the wave starts to move faster than the bottom part, and creates larger, steeper waves.
- When the wave energy reaches an abrupt change in the ocean floor like a reef, it will create a tubing wave; more gradual changes result in rolling waves.

HISTORY OF SURFING

The history of surfing began in Polynesia, in places like Tahiti, Samoa, Tonga, and Hawai'i. As our cultures have become more global, so, too, has surfing, with the sport growing across the world.



Ancient Polynesia
For hundreds or thousands of years, surfing has been an important part of Polynesian culture, treated as an art more than a sport.



Samoa and Hawai'i
The particulars of surfing varied around Polynesia: in places like Hawai'i and Samoa, people surfed on planks and canoes.



Peru
Polynesia wasn't the only place where people rode the waves. In what is now Peru, fishermen rode the surf on small boat-like crafts.



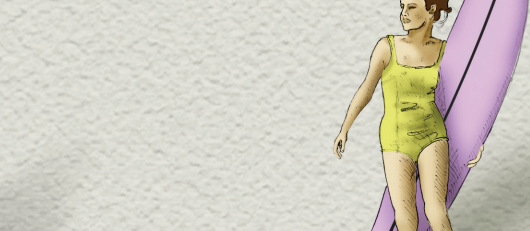
Tahiti
In 1769, during Captain James Cook's first Pacific expedition, crew members observed native Tahitians surfing "in a manner truly surprising." Just a few years later, Cook's crew encountered surfing in Hawai'i.



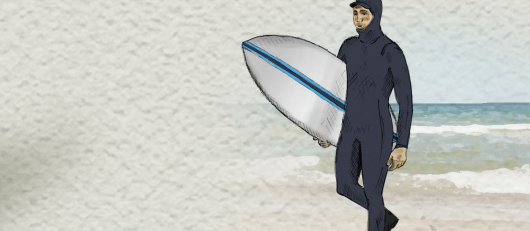
Princes
In 1885, Hawaiian princes David Kawananakoa, Edward Keli'iahonui, and Jonah Kuhio Kalaniana'ole brought surfing to the mainland while students at a military academy in San Mateo, California.



Duke
Decades after surfing was largely halted by Christian missionaries, Duke Kahanamoku launched a resurgence of surfing in Hawai'i and brought the sport to the U.S mainland.



Surf Culture
Surfing gained wide attention in the 1950s after TV shows and movies popularized the activity. By the 1960s, surfing exploded into a full-fledged industry and entered the pop culture imagination.



Big Wave
Big wave surfing took off in the 1980s as surfers went in search of ever larger waves around the world. Some of the world's best waves are found in your national marine sanctuaries.