



MOUNTAINEERS
OUTDOOR EXPERT

series



STAND UP PADDLING

Flatwater to Surf and Rivers

Rob Casey

Foreword by Dave Kalama



THE MOUNTAINEERS BOOKS



STAND UP PADDLING

Flatwater to Surf and Rivers

Rob Casey

Foreword by Dave Kalama



THE MOUNTAINEERS BOOKS



THE MOUNTAINEERS BOOKS

is the nonprofit publishing arm of The Mountaineers,
an organization founded in 1906 and dedicated to the exploration,
preservation, and enjoyment of outdoor and wilderness areas.

1001 SW Klickitat Way, Suite 201, Seattle, WA 98134

© 2011 by Rob Casey

All rights reserved

First edition: First printing 2011, second printing 2013

No part of this book may be reproduced in any form, or by any electronic, mechanical, or
other means, without permission in writing from the publisher.

Distributed in the United Kingdom by Cordee, www.cordee.co.uk

Manufactured in the United States of America

Copy Editor: Colin Chisholm

Cover, book design, and layout: Peggy Egerdahl

Illustrator: Dennis Arneson

All photographs by author unless otherwise credited.

Photographs on pages 169–179 and 182–184 by Dan Gavare.

Cover photograph: *Tyler Hesse paddling his SUP on Puget Sound off Alki Point* © Rob Casey.

Frontispiece: *Paddler on Lake Washington during the 2009 Round the Rock SUP Race*.

Illustration on page 92 adapted from *Fundamentals of Kayak Navigation* by David Burch,
with permission of the author.

Library of Congress Cataloging-in-Publication Data

Casey, Rob.

Stand up paddling : flatwater to surf and rivers / by Rob Casey. — 1st ed.
p. cm.

Includes index.

ISBN 978-1-59485-253-4 (pbk.)—ISBN 978-1-59485-325-8 (ebook)

1. Sea kayaking. 2. Surfing. I. Title.

GV788.5.C38 2011

797.1'224—dc22

2010036807

ISBN (paperback): 978-1-59485-253-4

ISBN (e-book): 978-1-59485-325-8

CONTENTS

Preface	9
Acknowledgments	11
Foreword by Dave Kalama	13
History of Stand Up Paddling by Corran Addison	17

CHAPTER 1

Get Your Gear On

Stand Up Paddleboards	24
Shaper	28
Paddles	29
Leashes	30
Personal Flotation Devices (PFDs)	31
Gear Storage: Packs and Bags	35
Clothing	38
Renting Equipment	44
Picking Up and Carrying Your Board	46
Transporting Your Board	49

CHAPTER 2

How to Stand and Paddle: Basic and Advanced Strokes

Surfers Learning to Stand Up Paddle	52
Kayakers Learning to Stand Up Paddle	53
Starting out	53
Holding the Paddle	54
Standing Up	55
Basic Strokes	57

Stopping.....	62
Advanced Strokes	62
Mixed Strokes	67
Edging	69

CHAPTER 3

Flatwater Paddling

Advance Planning	74
Predicting Weather	75
Weather Hazards	75
Downwinders	77
Upwind Paddling	79
Paddling in the Lee of the Wind.....	79
Drift	80
Tides.....	80
Training	81
Gear	81
Packing for Trips	83
Night Paddling	88
Paddling with Boats.....	90
Sailing.....	97

CHAPTER 4

Surfing

Where Do Waves Come From?	100
Types of Waves.....	101
Types of Breaks	105
Rip Tides	106
Currents.....	106
Wind	106
How to Predict Surf: Surfing Forecasts.....	108
Surfing Gear for the Novice	111
Learning to Surf	112
Surf Etiquette.....	120
Surf Competitions.....	122
Boat Wake Surfing.....	122

CHAPTER 5

River and Tidal Rapids Paddling

Learning to Paddle Rivers.....	128
Understanding Rivers	128
River Paddling Techniques	137
Gear for River Paddling	143
Trip Planning	148
Water Safety Hand Signals.....	148
Tidal Rapids (Tidal Race)	148
Crossings.....	153
Ranges	153
Using a Compass	153
Tide Rips	155

CHAPTER 6

Racing

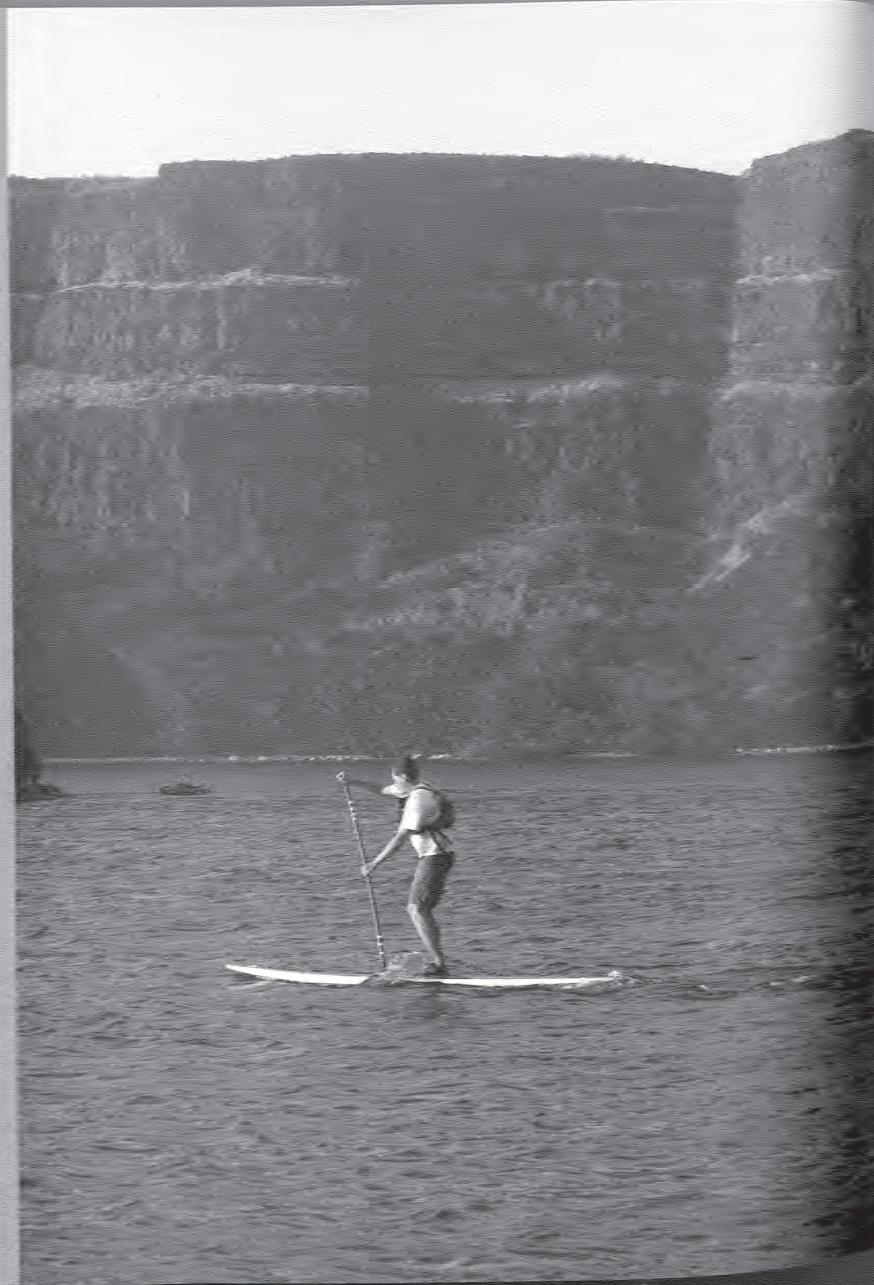
Training	159
Pre-Race Preparation and Hydration	162
Wanna Get into Racing?	165
Clothing for Racing.....	165

CHAPTER 7

SUP Fitness, Injury Prevention, and Cross-Training

by Nikki Gregg, CPT	
Resist Wrist Pain and Fatigue While Stand Up Paddling	168
The 411 On Your Shoulders: Shoulder Mechanics	171
Paddling Technique and Equipment	174
Your Core... What Is It?	181
Cross-Training.....	187

Afterword	189
Glossary	191
Resources	197
Index	201



Preface

A few years ago I was paddling on Puget Sound near my home and saw my first stand up paddler. He seemed slow compared to my kayak, and it appeared to be a lot of work. That same year, after unsuccessfully trying a narrow, unstable stand up paddleboard (SUP) at a resort in Hawaii, I decided that the sport wasn't for me.

A year later, I noticed a second stand up paddler near my home. I decided to try a SUP again, but on a wider board, and this time I had a much better experience.

I had heard friends talk about the superior views from a SUP, and I began to see this for myself. Although I had sea kayaked for nearly a decade in this same part of Puget Sound, from my new higher perspective on the board I saw things I had never seen before. It was mesmerizing to paddle in 1-2 feet of clear water while watching the sandy bottom slowly drop into an abyss. The harbor seals that have followed me

for years in my kayak could now be seen darting directly beneath my board. Another benefit was the ease with which I could slip off the board into the water to snorkel, or simply sit on the board with my feet in the water. I delighted in this newfound freedom.

Over time, I began to see other benefits as well, such as improved strength in my legs. I had heard of the benefits of stand up paddling to body core strength, and was now seeing results. My nagging lower back problem began to dissolve, and my balance and posture improved.

In time I learned to paddle my board so efficiently that I could keep up with my sea kayak friends while paddling our local waters, and I could surf with ease on the coast. I also felt closer to nature, with the water splashing up on my feet with every stroke. Although I still paddle my sea kayak sometimes, more often than not I prefer the SUP.

The author calls this "research." (Photo by Christy Cox)

Meanwhile, the sport has grown leaps and bounds. There are now three stand up paddling magazines, professional stand up paddlers, dozens of companies building boards and paddles, and even a TV show focused on the sport. Stand up paddling is so versatile that people are using SUPs on rivers, in surf, on long expeditions, in races, for fishing, and simply paddling around their home waters. As more and more people recognize the joys of this unique sport, stand up paddleboards are bound to become a common sight on waterways around the world.

ECOLOGICAL AWARENESS

Stand up paddling, by its very nature, will bring you into intimate contact with the natural world. You'll be crossing beaches,

skimming over the water, and, like it or not, falling in the water. Respect these environments in every way you can: tread lightly; pick up trash; carry out whatever you bring with you; and be sensitive to the needs of wildlife.

Do not harass sea life, and stay clear of larger marine mammals, such as whales. Our curiosity about such animals also endangers them. I once saw a large sailboat approaching within a foot of a buoy in order to give the passengers closer photographs of California sea lions resting on it. In another incident, I came across a child with a harbor seal pup in his arms, posing for his mother's photograph.

As stewards of the environment, it is our responsibility to take care of the places where we live and play. If you see any kind of toxic spill, such as oil, report it. Join local clubs or groups that work to maintain and preserve your beaches and waterways.

A NOTE ABOUT SAFETY

Safety is an important concern in all outdoor activities. No book can alert you to every hazard or anticipate the limitations of every reader. The descriptions of techniques and procedures in this book are intended to provide general information. This is not a complete text on stand up paddling technique. Nothing substitutes for formal instruction, routine practice, and plenty of experience. When you follow any of the procedures described here, you assume responsibility for your own safety. Use this book as a general guide to further information.

—The Mountaineers Books

Acknowledgments

The following people and organizations were instrumental in helping me to write this book: Corran Addison, Imagine Surfboards; Patrick Aio; Elliott Almond; Candice Appleby; Bobby Arzadon, Perfect Wave Surf Shop; Bill Babcock; Brandi Baksic; John Beausang; Steve Boehne, Infinity Surfboards; David Burch, Starpath Publications; Fletcher Burton; Ken Campbell, Azimuth Expeditions; Krista Carlson; Dave Collins; Ken and Ellen DeBondt; Clay Feeter, Publisher, *Stand Up Paddle Journal*; Dan Gavere, professional stand up paddler; David Gimlett; Nikki Gregg, fitness professional; George and Barbara Gronseth, The Kayak Academy; Lars L.E. Hansen; Gregg Hoesterey; Ken Hoeve, Surftech; Dan Hogg; Reid Inouye, Publisher, *Stand Up Paddle Magazine*; Shawn Jennings; Dennis Judsen, Santa Cruz Surf

Kayak Festival; David Kalama; Jennifer Kalmbach; Fox Lach, Managing Editor, *Stand Up Paddle Magazine*; Reg Lake; Paul Langer, Flow Paddleboards; Wade Lawson; Evan Lloyd, Tomahawk Boards; John Lull; Bob McDermott; William Mattos; Herbie and John Meyer, Northwest Outdoor Center, Seattle; Jim Miller, Werner Paddles; Andre Niemeyer; Chuck Patterson; David Schleifer; Vince Shay; Dave Shively, Jeff Moag, and Joe Carberry, *SUP Magazine*; Surf Ballard, Seattle; Tom Swetish; Todd Switzer; Calvin Tom, BoardFisher.com; Jeff Underwood and Dan Eberhardt, NW Paddle Surfers; Urban Surf, Seattle; Michael Vaughan; and Beau Whitehead.

I'd also like to thank and dedicate this book to my partner Christy Cox, who wrote the profiles that appear throughout the book, and to my parents.



Foreword

While it might seem like a new sport in your home waters, stand up paddling has been around for quite some time. The Peruvians can lay claim to the sport's origins with their "totora" reed paddle boats, ancient predecessors to our current boards. Another early boat-board hybrid was the Arabic "hasake," most likely used for fishing in the same way as the totora vessels.

But in my heart, I firmly believe that the Hawaiians were the ones to develop the sport that most closely relates to today's stand up paddling. And, no, Laird Hamilton and I are not the ones that created stand up, though perhaps you could say we helped turn the spotlight on this incredible sport. To really give credit where credit is due, however, I would start with Duke Kahanamoku and John Zapotocky. Most of us know that the Duke is considered the

father of modern surfing; John Zapotocky was a gentleman from the mainland who found himself living in Waikiki. As the story goes, he saw the Duke doing stand up one day and decided that it looked like his type of surfing. The Duke was just using a standard canoe paddle; at the time, canoe paddles were much longer than they are now, though still not as long as today's SUP gear. As he watched, John thought that a longer rowboat oar would make the perfect paddle for the stand-up experience. So on one of his trips to the mainland he purchased several oak rowing oars. He went on to do stand up exclusively for many years but the sport never quite took off, in part because Duke, one of the greatest athletes and surfers at the time, was pushing hard to share prone-style surfing with the world instead.

Dave Kalama on a downwinder off Maui, Hawaii (Photo by Darryl Wong)

It's interesting that, while stand up paddling has been around in one form or another for ages, the stars have aligned only now in the 21st century to make it popular. Why? I think the general enthusiasm that people have to be outside is stronger these days. People want to be immersed in nature, commune with the elements, turn off electronic distractions, and get away from it all, if only for a little while.

I can only think of a couple of sports that offer the diversity that stand up provides. Cycling or some forms of boating may also offer the wide variety of applications you can find with stand up. Small wave riding, large wave riding, downwinders, rivers,

channel crossings, flatwater, exploration paddling, racing, cruising, fishing, exercise—even taking the dog for a ride—it's all possible on a stand up paddle board. Whatever application attracts you to this sport, it uses the same ingredients: just a board and a paddle. It's amazing to me that two very common items can be combined to create endless possibilities for all of us to explore. That simple combination takes any body of water and transforms it into a playground or exercise gym or therapy for balancing our minds and bodies.

The first time you try standing on a board, it can feel like the relationship you've had with the earth, for however

Commune with the elements and your friends while stand up paddling.



many years, has just been shattered. You feel like a newborn moose trying to find its balance on wobbly legs. At least that's how a lot of us felt the first time we stood up! But very quickly your subconscious goes to work and, like the baby moose, you are on your feet and moving in no time.

In fact, one of the contributing factors to stand up's recent popularity is the ease with which you can enter the sport. Beginner boards are now so stable and user-friendly that success is within everyone's reach soon after starting. A protected bay or calm lake provides the first-timer with a very controlled situation that enables him or her to feel confident right from the start. Yet at the same time, the seasoned adrenaline junkie can get his or her fix, too: Try paddling to some outer reef on a 20- to 40-foot day and *not* come in buzzing from excitement. It's impossible! (But the river action some guys are doing now? Well, it's just plain crazy.) There is a level of SUP adventure that can accommodate everyone—as well as push you ever so gently toward your limits.

I've seen firsthand how this sport transforms 65-year-old men who felt their best days were behind them into frothing little grommets who can't wait to ride their next wave. You can see a renewed zest for life that only comes with true passion.

I've also seen 30-something women who have never gone more than knee-deep in the water paddle miles on their stand up boards. I've even seen some of the hardest-core surfers unwillingly allow themselves to become so addicted to SUP that they sell all their prone boards and only ride stand up boards now. While quite simple in its demeanor, this sport has a way of becoming so damn much fun it changes your perspective on things you know well, just enough to make them seem brand new again.

You can think of this book and author Rob Casey's instruction as a key of sorts. It will unlock a door of possibilities limited only by your imagination and personal goals. It will let you into a sport that connects you with people who have a robust passion for being. It's a key to feeling truly alive by simply getting your skin wet, and by enjoying a shared smile from a fellow paddler.

I hope that stand up paddling provides you with all of the fun and adventure with which it has blessed me, as well as the renewed health and fulfillment it allows me to experience on a daily basis.

Aloha,
Dave Kalama
Kula, Hawaii



History of Stand Up Paddling by Corran Addison

Many people mistakenly believe that big wave surfers Laird Hamilton and Dave Kalama invented stand up paddling; however, the roots of the sport run much deeper. For 3,000 years Peruvian fishermen used a small, unstable reed-woven craft called a *caballitos de totora*. To propel the craft, the fisherman used a long bamboo shaft shaped like a kayak paddle. They would surf back to shore after a day of fishing. In Africa, warriors stood on dugout-type canoes called pirogues to silently approach enemy positions, using their spears as paddles.

In 1778, Captain James Cook sailed into the Hawaiian Islands and became the first European to witness the Hawaiian people surfing. The village chief had the biggest

board, sometimes as big as 5 meters long, while the lesser villagers were content with smaller 2-3 meter boards. Hawaiian natives commonly paddled out and onto the waves. Surfboards and canoes were ritually carved from the Koa tree. *Hoe he'e nalu* is the Hawaiian phrase for stand up paddle surfing, while *he'e nalu* means surfing without a paddle.

In 1886, photographer Peter Henry Emerson captured a photo of a man stand up paddling through the marshes of England's East Anglia. Possibly the first photograph ever taken of the sport, the image is called "Quanting the Marsh Hay." A more commonly recognized incarnation of stand up paddling are the gondoliers of Venice, Italy, who actually use a paddle

Nikki Gregg and her dog, Nui, enjoy a calm paddle.



Quanting the Marsh Hay
(Photo by P.H. Emerson)

rather than a pole to propel the gondolas through the narrow canals of the city.

In Tel Aviv, Israel, lifeguards have been using a stand up board called a *hassakeh* since the first decades of the twentieth century, an idea borrowed from fishermen that dates back hundreds of years. Using a board almost 5 feet wide and a double-bladed paddle, the lifeguard can paddle quickly to a distressed person and haul him on board. The standing position gives the lifeguard a better vantage point. In the late 1930s, two Brazilian surfers, Osmar Goncalves and Joao Roberto Hafers, rode a stand up board called a *tabua havaiana* (Hawaiian plank), shaped by Julio Putz.

In the 1940s in Waikiki Beach, Hawaii, legendary surfer, lifeguard, and Olympian

Duke Kahanamoku and surf instructor Leroy AhChoy would sometimes use paddles to help them stand on their boards to get a better view of the surfers in the water and of incoming swells. Occasionally they used the paddles to steer while surfing. Leroy's brother Bobby, injured in a car accident and unable to swim or even kneel, would paddle into the surf zone shouting hints to others with his cigarettes lashed to his arm and a camera around his neck. The two brothers also introduced the sport to their father, as well as to John Zapotocky, who is often credited as the father of modern stand up paddle surfing.

Lured from Pennsylvania to Waikiki for its warmth and a military job at Pearl Harbor in 1940, John Zapotocky became interested in stand up paddling after watching Duke and the AhChoys from the beach. John made himself at home in the warm waters of Hawaii and was active in swimming, diving, paddleboarding, and canoe racing. He became known as "Pearl Diver" for driving the front of his board into waves. He has kept his board on a rack on Waikiki Beach for more than sixty years. With the help of younger surfers who carry his board to the water, John still surfs his stand up board. Duke, John, and the AhChoys are known as the original "Beachboys" of Waikiki.

Despite the post-Gidget boom of the 1960s and then again in the 1980s, stand up paddling never stuck with surfers. It took modern pioneers such as Fletcher Burton and Dave Kalama to integrate the lessons of history with modern technology and style.



CORRAN ADDISON

Paddling since the age of eight, South African Corran Addison has competed in the Olympics as a whitewater slalom kayaker, won several world freestyle kayaking titles, and held the world record for ten years for kayaking off a 101-foot waterfall. An innovative designer, he started several leading kayak companies such as Savage, Riot, and Dagarossi and designed the first planing-hulled whitewater kayak.

In 1992, he started Imagine Surfboards in Montreal. In 2007, he discovered stand up paddling and found the perfect blend for his many water-based interests. Many of his SUP designs are the first of their kind, including rotomolded river boards and a SUP with a hatch that can be paddled as a sit-on-top kayak.

A perpetual traveller, Corran has surfed on every continent except Antarctica. He's most often found dropping into the huge bombs on the North Shore of Hawaii, running waterfalls on a SUP, and surfing the river wave, Habit 67, in Montreal. Corran lives in Dana Point, CA. Find out more about Corran on his website: www.imaginesurfboards.com.



Fletcher Burton stand up surfing his wave ski in Hawaii

Radical surfer-turned-wave-ski-surfer Fletcher Burton paddled into waves back in the late 1990s seated on an 8-foot-long wave ski. Once on the wave he would jump to his feet and surf like advanced stand up paddle surfers do today. However, negative stigma attached to seated surfers meant that no surfer was likely to take note of his style and ability to ride different kinds of waves. Had Burton been taken seriously, stand up paddle surfing might be ten years ahead of where it is now.

Perhaps it was the bigger names in surfing that finally gave stand up paddling some legitimacy. One day in 1995, big wave

surfer Dave Kalama grabbed a short OC-1 (outrigger) paddle to try with his board. With such a short paddle, Dave and friend Laird Hamilton found themselves bent over in order to use the short paddles. Laird came back the next day with longer paddles he had built specifically, and the two began to see the benefits of stand up paddling. Shortly thereafter, other Hawaiian surfers such as Brian Keaulana, Rick Thomas, and Archie Kalepa, found stand up paddling to be effective training while the surf was down. As the years went by, these surfers found themselves entering events such as the Moloka'i to O'ahu Paddleboard Race and

the Makaha Big Board Surfing Classic. With its growing popularity at Makaha Beach, Brian Keaulana decided to add "Beachboy Surfing" to the world recognized "Buffalo Big Board Contest" in 2004. The response was overwhelming, with more than forty-nine participants entering the stand-up division, including many of Hawaii's elite watermen. A photo of Laird Hamilton was snatched up by the surfing media, and in a matter of months the first stand up paddle surfing boom had begun.

Despite stand up paddling's roots in South American fishing cultures and in various Middle Eastern and African countries—as well as the modern spin-offs used for lifeguard rescue and other practical purposes—the modern version of Beach Boy paddle surfing remained a Hawaiian phenomenon until Vietnam veteran Rick Thomas brought a paddleboard back to California in 2000. It caught on instantly. Bob Long, from Mission Surf, has suggested that there are six degrees of separation between any California stand up paddler and Rick Thomas.

Stand up paddling has been a much needed breath of fresh air into an industry stuck in its 1960s glory days. Stolid, stale, and elitist, surfing had become a highly commercialized multimillion

dollar machine. Everyone from Kansas to California was wearing surfing clothing and using surf lingo, while out on the waves newbies were not welcome in the surf lineup. To this day anyone not born within a 5-mile radius of any given break is shunned by "locals." Beginners are branded as "kooks" and are often driven from the beaches.

Stand up paddle surfing had instant appeal to all kinds of surfers. It allowed one to paddle to far away, little-known breaks, thus increasing the number of waves each surfer could have and the range of conditions that could be surfed. In fact, very quickly stand up paddlers realized that the "surf" could be taken out of it, and recreational and racing stand up paddling became sports unto themselves. All across the USA, Europe, and Australia, landlocked people started using SUPs as replacements for canoes or kayaks. By 2009 stand up paddleboarding was the fastest growing paddle sport in North America.

As a true indication that stand up paddling has "arrived," as of October 3, 2008, the US Coast Guard has classified SUPs as vessels, like canoes or kayaks. As a result, SUP riders are required to wear a personal flotation device (PFD) when paddling in certain areas outside of the surf zone.



CHAPTER 1

SUP boards on shore



GET YOUR GEAR ON

Like most sports, stand up paddling requires a fair amount of gear. As you begin your search for equipment that will meet your specific needs, you'll be met by a dizzying array of options. It's worth taking some time to figure out which gear is the best for you, because the right equipment will translate to more fun on the water.

STAND UP PADDLEBOARDS

The majority of stand up paddleboards (SUPs) are made from fiberglass and epoxy wrapped over a foam core. Inflatable, wood, plastic, and hollow fiberglass boards are also available. The boards have fins, like traditional surfboards, and a leash so the paddler won't lose the board in the water. The front of the board is called the

nose, the rear is called the tail, the top is the deck, and the sides are referred to as the rails. The bottom is either the hull, or just the bottom.

BOTTOM OR HULL

The bottom shape of a stand up board helps determine stability and glide. Like surfboards, many SUPs come with a flat planing bottom. A V-bottom feels less stable but helps the board turn easier, and is ultimately more stable in rough water. This is called secondary stability. Some boards have V in the tail or only in the middle but flatten out to a planing hull. Some boards are now being built with a round-bottomed displacement hull similar to some kayaks or the very fast surf skis and paddleboards. Displacement hulls are faster than planing hulls because there's less surface area in the water, but they can be tippy if they are built narrow for racing.

NOSE

The nose is either pointy or round on stand up paddleboards. Round noses provide more surface area, thus more stability, but are often slower because the wider width pushes more surface area through the water in order to move forward. Pointy noses are often found on racing or touring boards with a displacement hull. The combination of the pointy nose and displacement hull creates what's called a knife-edged bow, or plum bow, which cuts through rather than over waves, or a sweeping bow, which extends over the water and floats over or above waves or choppy water. Pointy noses can also be found on boards called guns, allowing greater speed and less wind resistance when dropping in on fast, big waves.

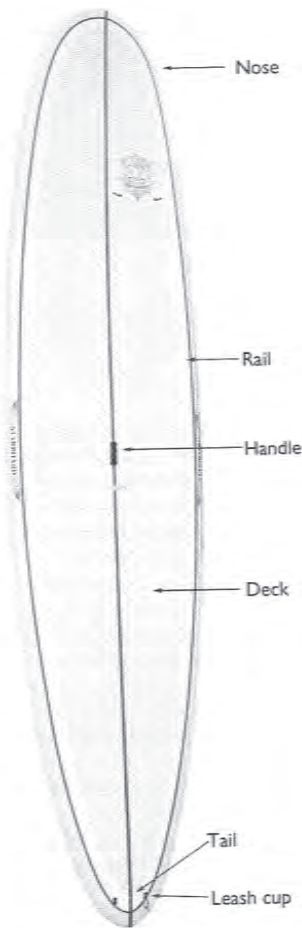
RAILS

Rails are the sides of the board. Rails help determine stability in a variety of water. A

downturned rail comes to an edge at the bottom of the board and will feel tippy, but will help turn the board more easily while moving or in surf. A round, rolled, or egg rail will be stable and forgiving, but slower to turn in moving water.

TAILS

There are four basic tails on stand up boards. The pin, often seen in racing boards, comes to a point in the center. A deep swallow, also referred to as a split pin, is used in "fish" surfboards. The swallow has a fish-tail shape, which makes it easier to turn than the pin and gives it lift and stability. It is most often used in surf to make fast, quick turns. Square tail boards are easy to turn and offer the most surface area. They are best in head-high surf and are the most common tail on SUPs. Another tail shape is the wing, which is actually on the rail. The wing reduces surface area in



Stand up board features

the tail, making it easier to turn. Wings resemble a jagged edge cut in the rail 1-2 feet from the tail. Other types of tails include the diamond, rounded squashtail, and baby swallowtail.

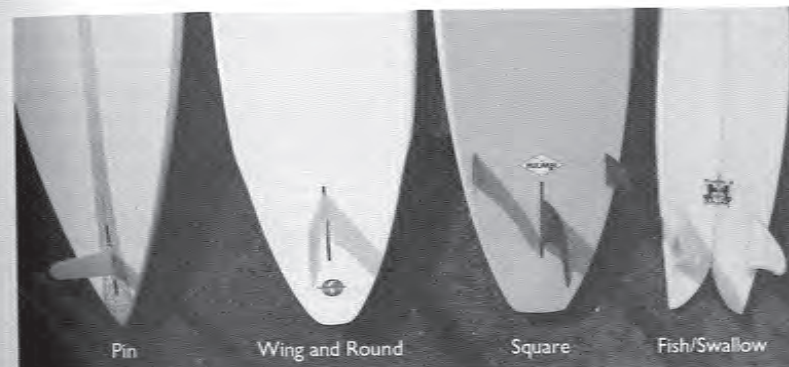
DESIGN FEATURES

Stand up paddleboards are usually 4-5 inches thick. Thickness or volume determines how much flotation the board has. Too thick and it will be unstable due to a higher center of gravity; too thin and it will sink under your weight. Some boards (usually race boards) have carved out decks that lower your center of gravity.

Rocker is the amount of curve from tail to nose, as seen from the side. The more rocker a board has the more easily it will turn, but it will be slower in flatwater. In flatwater, a higher nose will glide more easily over rough water. Less tail rocker helps the board track straighter, while more rocker in the tail helps it turn easier.

Foil is the change in thickness from the nose to the tail of the board. Many surf specific boards are now being made thicker in the tail to provide more flotation for turning the board on a wave. Most touring boards have the same thickness from nose to tail for greater stability.

Many boards are built with a combination of the above characteristics in order to achieve a specific function. For example, a board might have a pointy nose with a displacement hull in the front portion of the board, a planing bottom under the middle, a V in the tail, egg rails, and a deep swallow tail. There are dozens of surfboard shapers



The four basic tail shapes: pin, round, square, and swallow

regularly creating new and innovative designs.

Stand up paddleboards are available in a variety of sizes and designs. You must consider your height and weight, your skill level, and the type of water in which you plan to paddle in order to select the right one for you. But SUPs are also quite versatile, so it's possible to own one board for use in a variety of conditions, from flatwater to surf to rivers.

Stand up paddleboards are thicker and wider than traditional surfboards, allowing you to stand on the board without sinking it. The most common boards are between 10-12 feet long, 4-5 inches thick, and about 31 inches wide.

Boards made specifically for river use tend to be shorter to allow for quick turns through rapids and boulders. River boards are often rotomolded plastic or hard shell

inflatables to protect the rails (sides) against rocks. Racing boards are narrower and range from 12-feet, 6-inches to 18-feet in length, and they are most often made from carbon fiber. There are also 6- to 10-foot boards that allow for more flexibility in the surf. Due to their shorter length, these boards tend to be very wide and thick. Boards for fishing are very wide and stable. There are even a few boards that allow for a mast attachment and tiller for sailing or wind surfing.

During the initial years when the sport began gaining public interest, boards resembled large surfboards with a planing or flat bottom. Recently, board designers have begun to design SUPs with displacement hulls (round bottom) and a pointed, raised nose similar to kayaks for greater stability, more speed, and for cutting through rough water. The sport has grown so fast in recent



Installing a fin in a board

years that new board designs are coming out monthly.

FINS

Fins are attached under the tail and sometimes in the middle of the board to help the board track straight. Fins also add control and balance to a board.

The fin setup you use depends on the type of water you're paddling. Many SUPs have a single fin, which is often best for flatwater or small surf. The longer the fin,

the better the board tracks. Surfers use different fin arrangements depending on the type of waves they're surfing or the type of response they want from the board. Some river boards have rubber or retractable fins, to avoid breakage or entrapment between rocks. Some flatwater boards are being made with fins closer to the middle where the paddler stands; this displaces most of the paddler's weight for better control. Manufacturers are now making fins specifically for racing as well as kelp fins that are designed to avoid getting caught in kelp or weeds in a lake.

Some touring boards use skegs that can be drawn up inside the board and used at different lengths depending on the type of water or wind. A few race and downwinder boards have fins that can be controlled directionally by your feet from the deck of the board, like a rudder.

It is important to avoid paddling in water shallow enough to chip or break the fin. Also, when a fin drags on the bottom or gets caught in kelp or weeds, the board will stop and throw the paddler forward. When paddling in kelp or lake milfoil with a non-bungee leash, pull the extra slack in the leash up on the board and stand on it until you're clear of the obstruction.

SHAPER

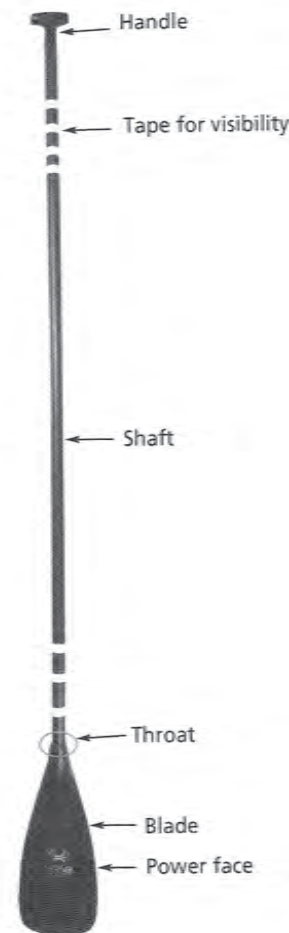
A shaper is a person who designs and builds surfboards. A shaper uses sanding tools to shape a foam block to exact specifications. The shaper will cover the board in

fiberglass and epoxy, then sand the board to create the finished board. To increase productivity, many shapers are now using 3D computer design programs and a CNC cutting machine, which can carve a foam block to precise specifications.

PADDLES

The paddle used with the SUP resembles a very long canoe paddle and should be 8–15 inches taller than the paddler. To determine your paddle length, place the blade on the ground by or on top of your feet, with the handle above your head. Extend your arm above your head and flatten your hand. The paddle handle should fit snug under your palm. The paddle consists of a handle, shaft, blade, and the power face. Paddles are made from a variety of materials, such as carbon fiber, fiberglass, and wood. The paddle shaft is often bent forward just above the blade to provide more forward reach into the water. Some paddle shafts are bent forward in the middle of the shaft as well as the blade to add even more reach, thus extra power to the stroke. Paddle shafts designed for stand up paddling are unique in that they have a stronger build to withstand the longer distance and extra tension from the lower hand to the water. Use SUP-specific paddles to avoid being stranded with a broken paddle.

Some paddles have a raised center or dihedral design on the power face. This feature prevents the blade from fluttering while paddling, making for a cleaner stroke and reducing stress on your wrists and



SUP paddle features



CHAPTER 2

Youthful paddlers on Elliott Bay in Seattle, Washington



HOW TO STAND AND PADDLE: BASIC AND ADVANCED STROKES

Learning to stand up paddle is in some ways easier than a lot of other water sports, but as with any sport, some will pick it up more easily than others depending on athletic ability or experience in other water sports such as kayaking or surfing. Someone once told me you'll learn 70 percent of most stand up paddling skills in your first week of paddling; the rest depends on specific skills needed for surfing, rivers, rough water situations, racing, or long-distance paddling.

SURFERS LEARNING TO STAND UP PADDLE

If you're a surfer, you'll find that SUPs are big, heavy, and difficult to paddle while prone. Stand up paddling also requires more gear. Most surfers have never used a paddle and find that when surfing a SUP they use

the paddle to get out in the water, but forget to use it when surfing in. Learning efficient forward and turning strokes can take time. Surfers tend to approach stand up paddling on flatwater with their guard down, thinking it's easy, thus leaving the leash at home and dressing lighter than usual. Many refuse to wear PFDs. They often try to paddle too far on their first day, only to find that it's harder than expected. Stand up paddling outside of the surf zone is more like sea kayaking in that it requires knowledge of local tides, currents, and weather.

The advantage for surfers is that stand up paddling allows them to see further to spot waves sets, to catch waves much earlier, and to surf much smaller waves. A friend of mine says that stand up paddling gives him the opportunity to surf more often by allowing him to take advantage of local freighter or wind waves in a region where a drive to the coast is three hours

away. SUPs also allow him access to surf breaks that would have required a boat before.

KAYAKERS LEARNING TO STAND UP PADDLE

For those with kayaking experience, stand up paddling shares common paddle strokes such as sweep turns, bow or stern rudders, and the dufek. Kayakers can also apply torso rotation for turns and the forward stroke, brace with the paddle, and edge their board to benefit turning. They will find that stand up paddling is a better core and leg workout. Stand up paddling is also great for improving balance, which is a benefit for kayaking as well.

The flip side is that kayakers' patience will be tested when dealing with an 11- or 12-foot board, which is much slower

than a 17-foot sea kayak. Sea kayakers will have to work harder to paddle the distances they're used to, possibly even shorten their distances until they build their strength. Learning to surf will also be a challenge as SUP surfing is very similar to longboarding, which requires not only basic surf knowledge but also learning how to fall off the board, strong balance skills to be able to carve down wave faces, and good turning skills to avoid hazards such as other surfers.

STARTING OUT

Beginning paddlers should try the widest board possible in order to gain confidence and stability. A 30- to 36-inch-wide by 11- to 12-foot-long board is a good size to start with. Shorter paddlers can use a 10-foot board, which will be easier to manage.



Paddler's box; how to determine hand placement on the paddle

Some boards are very stable, while others might feel a little tippy until you gain your balance, which will come with water time. The first time I tried a board, in Hawaii, it was super tippy. I couldn't stand up, became discouraged, and didn't try again for a while. Later, near my home, I tried a wider, more stable board and stood up immediately.

It's best to learn and practice on flat-water before trying rough conditions. Starting out, you might fall often, so dress for the water temperature. In cold water make sure you're wearing a wet suit or dry suit. Also remember to wear your leash, as

a fall, especially in wind, can push a board away from you very quickly. Always wear a PFD, and never go out in water conditions that are above your skill or comfort level. Avoid going out alone.

HOLDING THE PADDLE

Hold the paddle handle with one hand, and grab the shaft with the other. Your hands should be about 2 feet apart. Then place the paddle on the top of your head with your hands evenly spaced on each side. Your forearms should be vertical with your

elbows bent at 90 degrees, creating what's called the paddler's box.

While paddling, keep the angled blade face facing away from you. Keep a loose grip with both hands, which not only prevents tendonitis but will also focus your energy elsewhere. Paddling is more about finesse than pure power. Rotating your torso slightly will provide power as you stroke.

To prevent tension in your wrists, don't let your hand sag below the handle. Keep the plane of your arm aligned with your knuckles. Keep the wrist of your lower hand straight, in alignment with your arm. (See chapter 7, SUP Fitness, Injury Prevention, and Cross-Training for more info on holding the paddle).

Never let go of your paddle when you fall. If you do, get back on the board first, then retrieve your paddle.

STANDING UP

Start out by placing the board in water deep enough to prevent the fin from hitting the bottom. Attach the leash to your ankle, and while holding the paddle, walk the board into about 4–5 feet of water—deeper water will cushion your body in case of a fall and will protect the fin. Pick a less crowded area to start.

Climb onto the middle of the board, your body facing down. Once on the deck, twist around toward the nose and straddle the board with both legs. Move yourself back and forth down the length of the board until you feel a good balance position. Ideally

you should be in the middle of the board.

If you need to paddle to another location on the water to practice, kneeling or sitting are good positions for beginners and advanced paddlers alike. You can also lie flat on the board with your paddle blade underneath your body and the shaft and handle facing the nose. With both arms over the rails, paddle with your hands to your desired location. Paddling prone can be exhausting if you're not used to it, so don't plan on using this method for long distances unless you have prior experience or are in good shape. Some boards are so wide that you might not be able to reach the water with both hands while lying chest down.

When you're ready to try standing, get on all fours in the middle of the board with your hands flat and evenly spaced and with your paddle in your hands placed horizontally across the deck of the board. Slowly put one foot on the board and then the other, staying low in a squatting position. Your feet should be about a foot apart and facing forward toward the nose of the board.

As you stand up, always keep your knees slightly bent to allow a lower center of gravity and to act as shock absorbers in bumpy water.

TIP: You can practice the method used for standing up on land prior to practicing on water. If on sand, draw an outline of the board. Follow the steps above and repeat a few times until you're comfortable, then try on water.



Standing up



The forward stroke

If you feel a little tippy, widen the distance between your feet, or take a few little strokes. Momentum will help make the board feel more stable. An old saying in kayaking is, "When in doubt, paddle." If you continue to feel unstable, stick with the kneeling or sitting position for a while until you gain your balance and get more comfortable on the board.

BASIC STROKES

Stand up paddleboards are so large that they can be difficult to control without

specific strokes. The following section will teach you several different ways to paddle forward and to turn, while keeping your board balanced in both calm and rough water. Many of the strokes require using your torso and core strength, adding much greater stability, flexibility, and power to your paddling.

THE FORWARD STROKE

With your knees slightly bent, lean forward and dip the paddle in the water on one side about 3 to 4 feet in front of your feet with the angled blade facing away from you. The starting position for your



Sitting and kneeling on the board

stroke is called the catch. Don't pull the blade back until it's in the water. Keeping your lower arm straight, pull the blade gently in a straight line parallel to the board, being careful not to hit the rails. As you pull, your torso should twist slightly, adding power to your stroke. Pull the blade out at your feet. As you move the blade forward to the catch, twist your lower wrist forward to feather the blade, which reduces wind resistance and makes you more efficient. Place the blade back in your starting position again for another stroke. Some paddlers imagine the movement of paddling as pulling the board past the paddle as if the paddle were a stationary object.

TIP: Make sure you remove the paddle a few inches past your feet. Any further and the paddle will lift water like a shovel, thus slowing you down. Also try to reduce splashing on the catch and exit of the blade in the water. Practice slowly first to refine the technique.

After a few strokes on each side you'll notice that the board might want to turn to the opposite side you're paddling on. Switch sides and repeat the stroke on the opposite side.

BRACING

Feeling wobbly? Using the paddle to brace is a great way to regain your balance.

While keeping your feet facing forward,

quickly twist your upper body 90 degrees to the unstable side, and slap either side of the flat part of the blade on the water 2 to 3 feet from your board. You can add pressure to the paddle if needed by pushing down with your lower hand on the paddle shaft. This is called a static brace. Much like an outrigger, this extension of the paddle will help you regain balance. I also use the brace to balance myself while looking around or behind me. You can also use the sweeping brace. In the same body position as used for the static brace, sweep the powerface over the surface of the water to support yourself. This works well while moving.

If you fall despite using a brace, relax and let yourself fall. You can injure your shoulder if you struggle against a forceful brace. Dislocated shoulders from poor bracing are very common, especially in fast-moving current or surf. Remember to hold onto your paddle when falling.

TIP: Dress for the water temperature. You'll have more fun and learn more if you're not afraid to fall into the water.

STAYING STRAIGHT

The easiest way for beginners to paddle straight ahead is to alternate paddling a few strokes on both sides. When you begin to turn, you can paddle on the opposite side for a few strokes. Looking in the direction you're going, rather than at the board, will help keep the board going straight.

Make sure you hold the paddle shaft as vertically as possible by raising your upper hand over the opposite rail. Lean forward and plant your paddle blade near the nose of your board. Make sure not to curve the blade around the nose. Imagine a straight line in the water extending out from your rail. Bring the blade parallel to and as close to the rail as possible.

Another method is to push down gently with one foot to lower the rail into the water, then paddle on that side only. Try this to find out what happens. Move your stance slightly up and down the board to find the position where this method works best. This is called "adjusting the trim" on the board. If you're too far forward or back, the board will turn harshly instead of going straight. Shorter boards with more rocker are harder to keep straight.

Every board is different, thus each will have a different response in the water. If you try the above methods and the board is still turning sharply, try a larger fin.

TURNING—REVERSE SWEEP STROKE

To turn right, keep your feet facing forward and twist your torso 90 degrees to the right side. Bend your knees even more to lower your center of gravity. Place the paddle in the water behind you and a few feet away from the board.

While keeping your lower arm nearly straight, untwist your torso to pull your arms and paddle in an arcing direction forward through the water. Pull the blade out

TIP: The more your knees are bent, the easier the board will turn. Bending your knees lowers your center of gravity and makes you more stable.

of the water about a foot from your board. This movement will spin the tail of your board away from your paddle, thus turning the nose to the right. Continue this stroke until you have achieved your desired angle. If you watch the blade throughout the entire stroke, you will turn more efficiently.

If you step both feet backwards toward the tail of the board, you'll find that turning is easier, but you may feel less stable. You can also step one foot ahead of the other, which will also feel unsettling at first but will help turn the board. Stepping forward or backward on the board may feel unstable but it's good practice. To practice, turn in a complete circle, and then try from the opposite side.

TURNING—FORWARD SWEEP STROKE

This is the same as the reverse sweep stroke, but instead you start by placing the paddle ahead of you. If you want to turn left, bend your knees and place the paddle on the right side of the board's nose and twist your torso to the right, keeping your lower arm straight, arcing the paddle around you, and removing the paddle by the tail. Keep turning until you reach your desired direction. Try this on both sides. Watch the blade for best results.



The proper stance for the forward and reverse sweep stroke



What are you waiting for? Get out there!

I have also met many new friends and paddling partners.

The intent of this book is to provide a foundation of effective paddling techniques, an understanding and better awareness of personal risk assessment, and a view into the health benefits of the sport. While stand up paddling is in some ways easier

than kayaking, practice and water time is required to become competent. My hope is to provide readers with a solid introduction to the sport that allows them to be safe, to visit beautiful and remote places that enhance their lives, and to be inspired by the wonderful feeling of moving over the magic that is water.

GLOSSARY

acromion process: Outer end of the shoulder blade that extends over the shoulder joint, attaching to the collarbone.

bank: River shore or sandbar in saltwater environments.

bar: Shallow part of river channel, with sand, gravel or small rocks.

beach break: Where waves break on a sandy bottomed beach. Usually sandy beaches are flat so the waves are scattered with little consistent form.

beam seas: Waves created by wind that comes in from the side.

beam wind: A wind blowing against a watercraft from a side direction.

Beaufort Scale: Measure for describing wind speed based mainly on observed sea conditions, created in 1806 by Sir Francis Beaufort, an Irish-born British admiral and hydrographer.

Bimini cap: Baseball cap with fabric covering the neck for sun protection.

bivy sack: Short for "bivouac sack," a lightweight, waterproof shelter that is an alternative to a tent.

blade: Wide, flat part of a paddle used to propel the board through the water.

blown-out: When strong onshore winds flatten waves, making it undesirable to surf.

body armor: Usually motorcross pads or the like used to protect the paddler's body in river or big wave surfing.

boils: When water is pushed to the surface, creating a boiling effect that can upset paddlers.

bony: Shallow, rocky river rapids.

booties: Neoprene shoes used for water sports.

boulder garden: River rapids with many boulders.

bow: Front of watercraft.

bow-angle method: Method used in conjunction with a paddle to determine whether a paddler is on a collision course with an oncoming boat.

brace: Paddle movement that assists the paddler in staying upright.

breaking wave: A standing wave that falls upstream on a river; or, in the ocean, when a wave becomes too large for its own weight and begins to crumble or spill over itself.

breakwater: A barrier that helps diminish the force of incoming waves, usually found in coastal areas to protect a harbor or shore.

bucking the tide: Paddling against the current.

carabiner: Metal clip used for attaching gear to PFDs or boards, or for use in river rescues.

carbon fiber: A very thin graphite fiber fabric used to build ultralight boards and kayaks.

catch: Starting position for a paddle stroke.

CFS: The measure of water flow equivalent to one cubic foot of water passing a given point for one second. It is used to measure the river flow levels in a river.

chute: A narrow and constricted portion of a river.

clean: River route free of obstructions.

CMS: Cubic meters per second. Used to measure the river flow levels in a river.

CNC cutting machine: A precise machine run by a computer to cut foam or wood to make surfboards and kayaks.

confluence: Point where two rivers intersect.

contrary tide: Strong opposing tide that can also create rough water and waves.

core: Power center of your body, made up of muscles that run along the trunk and torso, that initiates and supports most movements you make and the amount of force and speed you generate.

crest: Ridge or top of a wave.

cross bow paddling: A forward stroke or turning technique that allows a paddler to paddle on both sides of the board without switching hands.

crumbling wave: Waves that break gently over themselves.

current: Moving water.

currents table: Shows hourly changes in current speeds and directions.

cuthack: When a surfer performs tight turns on a wave.

dead reckoning: Determining your position based on a previously determined position.

deck: Topside of board.

deck bag: A waterproof bag that can be attached to your board deck.

deltoid muscle: Muscle that forms the rounded contour of the shoulder.

dihedral: A paddle blade with a spooned or cupped face to grab more water.

ding: A puncture or other exterior damage on a fiberglass surfboard.

displacement hull: A round-hulled board. Most often used for stability or for speed.

downstream: The direction the river flows.

downwinder: Paddling downwind long distances on big wind days, in which fetch creates large surfable waves.

drift: Movement due to the force of wind and currents.

drop: Sudden change in level of river bottom.

dropping in: Catching a wave.

dry bag: Waterproof bag, available in various sizes, designed to keep contents dry.

dry suit: Waterproof suit designed to keep paddlers dry by enclosing them in an impermeable layer

of fabric, under which insulating layers of clothing are worn.

dufek: A static side-draw of the paddle that allows you to turn a moving board without taking a stroke. (Originated in whitewater kayaking.)

ebb: Outgoing tide.

eddy: A current of water moving in a direction that is different from the main current, which generally involves a circular motion, and is often found downstream of an obstacle.

eddy line: The interface between the eddy current and the main current, or the interface between a primary downstream current and a secondary upstream current.

edging: Pushing one side or rail of the board into the water to assist in turning, going straight, or in crossing an eddy line.

egg rails: Round-shaped rails or sides of the board.

electrolyte replacement drink: A powder added to water or fluid used to prevent dehydration.

epic: A surfer's term to describe something that is exciting, fantastic, or unbelievably good.

epoxy: A thermosetting polymer formed from the reaction of a polyamine "hardener" that is used as an adhesive or to attach fiberglass to foam in building surfboards. Also known as polyepoxide.

erector spinae: The group of three muscles that run along the neck and back; part of the core.

external obliques: Part of the core located on the sides and front of the abdomen.

EZ plugs: A product used to attach gear to a board using plastic loops glued to the deck.

face: The wall of a wave.

Farmer Jane/John: Sleeveless neoprene wet suit that covers the body and legs.

Fastex buckle: A quick-release buckle that can be used on a waist belt that attaches to a leash on a board.

Feather: To rotate the paddle shaft so that the blade is parallel to the rails while returning to the catch after finishing a stroke. Feathering the paddle decreases resistance when paddling into the wind.

ferry: Using moving current to move a board horizontally across river or channel.

fetch: Effect of wind that has blown over a long distance of water that in turn builds large waves.

fiberglass: A fabric used to build surfboards and paddles.

fin: Fins attach to the bottom tail of the board to assist with keeping the board straight and balanced.

flat: How water is described when there is no surf.

float plan: A plan that includes a description of your board or watercraft, the safety equipment you are carrying, where you expect to be, and when you expect to be there and to return; it is shared with a responsible party before you leave on a trip.

flood: Incoming tide or current. Opposite of an ebb tide or current.

foam: The frothy whitewater part of a breaking wave. Also the material used to build the form for stand up paddleboards.

foil: The thickness of a board from tail to nose.

following seas: Condition created when wind pushes from behind. The condition used for a downwinder paddle.

FUD: Feminine urinary directional device.

garage sale: Term used for a set-up in a situation in which gear (PFD, board, paddle) is pieced together or borrowed from different people.

gradient: A river's descent over a period of distance.

gun: A surfboard specifically designed to catch and ride large waves.

Hawaiian stance: A term describing the stance on a SUP when both feet face toward the nose.

helmet: Used to protect the head from collisions with others or your own gear, and to keep your head warmer in colder climates.

hip adductors: Inner thigh muscles that make up part of the core.

hip flexors: Group of muscles located in front of the pelvis and upper thigh that make up part of the core.

hole: Where water recirculates behind a boulder or rock that obstructs river current. Also called a hydraulic.

hull: The body of the board (or other water craft). It provides the buoyancy that keeps the watercraft from sinking.

humerus: Upper arm bone.

hydration bladder: A container that holds drinking water and can be attached to a PFD, fanny pack, or backpack.

hydraulic: Where water recirculates behind a boulder or rock that obstructs river current. Also called a hole.

hyperthermia: An abnormally high body temperature, usually resulting from exposure to warm water warm temperatures.

hypothermia: An abnormally low body temperature, often caused by prolonged exposure to cold water: occurs when the core body temperature drops below 35°C (95°F).

impact vest: A PFD with a foam core that protects the body in case of a fall on rocks, reef, or in large waves.

impingement syndrome: A condition that occurs when there is inflammation of the rotator cuff tendons and the bursa that surrounds the tendons.

infraspinatus muscle: One of the muscles that externally rotates the shoulder, found in the back of the shoulder joint.

internal oblique: Part of the core under the external obliques; the internal oblique runs diagonally in the opposite direction of the external oblique.

international scale of river difficulty: A standard measurement to describe levels of difficulty in rivers.

jetty: Structure that projects into a body of water to influence the current or tide, or to protect a harbor or shoreline from storms or erosion.

J-stroke: Forward stroke that helps keep the board straight.

knife-edged bow: A kayak-style nose of a board that has a sharp center point, often raised above the rest of the board.

knots: A unit of speed equal to one nautical mile per hour, exactly 1.852 km/h and approximately 1.151 mph.

kooks: A pejorative term used to describe beginners or less skilled surfers.

latissimus dorsi: Back muscle that draws the upper arm downward and backward and rotates it inward.

leash: A plastic line connecting the paddler to the board.

leash plug: A plastic plug inserted into the decking at the tail of a board that has a metal bar for attaching the leash.

LED light: Tiny light emitting diodes that don't have a filament that will burn out, don't get especially hot, and are good for night paddling.

lee of the wind: An area of water protected by the wind, usually caused by a large land mass.

lineup: Where surfers catch waves. Look for a string of surfers in a straight line.

lip: Crest of a wave.

longshore currents: Ocean currents that run parallel to the shore.

marine chart: A chart or map used to assist boaters in navigation.

mooning the current: A technique used for crossing eddy lines in fast moving current that involves edging the board with the bottom of the board facing the incoming current.

multifidus: A deep muscle of the back that helps extend and rotate the spine. Part of the core.

mylar blanket: A blanket used in emergencies, possibly after prolonged exposure in cold water or weather.

National Oceanic and Atmospheric Administration (NOAA): A federal agency focused on the condition of the oceans and the atmosphere.

northerly: Winds from the north.

nose: Front end of board.

nose rudder: Using the paddle to turn the board while it is moving by placing the paddle at the front of the board.

offshore wind: Winds that blow from the beach out to the sea.

O'Neill Assault Vest: A compact PFD or lifejacket intended to float and protect the paddler or surfer from collisions without being bulky.

onshore wind: Winds that blow to shore from sea.

outrigger: A canoe with a extension on one side attached to a stability bar that makes the canoe more stable.

overhead: A term used to describe surf that is larger than an average-size person.

paddleboarding: A sport in which you lie prone on a paddleboard and paddle with your hands without using a paddle.

paddle shaft: The long section of a paddle.

paddling jacket: A windproof and waterproof jacket with latex wrist and neck seals to keep water out.

pectoral muscles: Muscle that covers your rib cage.

peeling out: A technique allowing the paddler to leave an eddy.

peeling wave: A wave whose crest breaks gently over the wave facing, often rolling down the wave.

PFD: Personal Flotation device, life jacket.

pillow: Current pushing up toward the surface after colliding with a rock. Also called a cushion.

planing hull: A hull designed to lift partially from the water's surface at high speeds.

point break: When waves are refracted around a point and create a fan-shaped surf break, breaking clean from the inside.

port: Left side of a watercraft, when facing the front, or bow. Also port side.

portage: To carry a board, or boat, around a rapid or across a narrow portion of land from one body of water to another. Often used to avoid a dangerous waterfall or hydraulic.

prone paddle: Paddling on your chest.

put-in: Place where you begin a trip.

quartering seas: Wind-driven waves that come at an angle toward your board.

rack: A pair of metal bars on top of a car used to carry your boards.

rail: Edge or side of board.

rapid: Where a river elevation drops, thus creating a rush of water or waves.

rash guard: Article of clothing used for protection against sun and rash.

recirculating hydraulics: Where water pours over an obstruction and recirculates back upstream.

rectus abdominis: Part of the core that extends the length of the front of the abdomen (the "six pack" muscle).

red tide: A brownish-red discoloration of marine waters caused by the presence of enormous numbers of certain microscopic flagellates that can produce a potent neurotoxin.

reef break: When waves break off a shallow coral or rock reef creating a hollow wave or barrel.

reform waves: Smaller waves that form after a large wave has broken and not lost its momentum.

reverse current: When current flows in different directions around an island or similar location.

rhomboids: Muscles associated with the shoulder blade that are primarily responsible for its retraction.

rip: Occurs when water escapes quickly in between sandbars on a beach, creating a flow or current like an underwater river.

river mouth: Where a river enters the ocean.

river signals: A standard method of communicating among paddlers using hand and arm signals.

rocker: Amount of curve from tail to nose of a board, as seen from the side of the board.

rooster tail: A spray of water above the surface created by river current colliding with a submerged rock.

rotator cuff: A group of four tendons that stabilize the shoulder joint, originating from the scapula.

rotomolded plastic: A thick durable plastic manufacturing technique used for many kayaks and boards.

SAM splint: A short rod or stick that can be used to stabilize a broken arm or leg.

sandbar: A sand mound in beaches and rivers that can affect wave types and sizes on the surface.

scapula: The bone that connects the humerus (arm bone) with the clavicle (collar bone). Also called shoulder blade.

scout: Getting off the board and going on shore to look around a blind corner on a river.

sculler: A single rower on a racing shell.

sculling brace: A method of placing the paddle flat and slightly submerged on the surface and rotating the wrist back and forth to help gain stability and support.

set: A group of ocean waves.

shaper: A person who carves a stand up paddleboard shape out of a block of foam and applies fiberglass and epoxy to finish the board.

shipping lane: An established route traversed by ocean shipping.

shore break: Where waves break close to shore in shallow water.

shoulder: The green unbroken section of a wave.

shuttle: When paddlers leave one car at the end of a river or downwind run, and have another car at the top of the run.

side draw: A paddle movement that pulls the board sideways.

sieve: Similar to a strainer, an obstruction in a river that allows only water to pass through it.

skag: A fin or rudder that is attached or can be lowered below a boat or board and used for forward directional control or balance.

Skook: Nickname for large standing tidal rapid called Skookumchuk near Sechart in British Columbia, Canada.

skull cap: A neoprene cap that covers your head and ears, used to stay warm in cold temperatures or while surfing.

slacks: An unsettled or calm period between ebb and flood tides.

snag: A log or branch in the river that can snag or catch a paddler.

southerlies: Wind generated from the south.

southwesterly: Winds from the southwest.

standing wave: A surfable wave that stays in one place. Standing waves are found on rivers, tidal rapids, and tide rips.

starboard: Right side of a watercraft, when facing the front, or bow.

Steamer Lane: A famous surfing wave in Santa Cruz, CA known for its large waves and long rides.

stoke: Term used to described excitement or passion about surfing and paddling.

stopper: A hole or hydraulic in rivers.

strainer: An obstruction, such as a tree, in a river that lets only water pass through, trapping floating objects, including paddlers.

stringer: Strip of strengthening material (often wood) that runs the whole length of a foam board.

SUB: Stand up board, optional term for SUP.

sub-acromial bursa: A sac containing a small amount of lubricating fluid that lies under the roof of the shoulder and can develop into shoulder bursitis.

SUP: Stand up paddleboard.

supraspinatus muscle: Muscle located at the top of the shoulder joint. Its purpose is to help stabilize the shoulder joint and initiate raising the upper arm and moving it away from the body.

surf ski: A long sit-on-top kayak used for racing. Surf skis are very light and fast, and up to 22 feet long.

surfer's ear: A condition caused by excessive cold water in the ear, causing pain and irritation. Also known as exostosis.

swallow tail: A tail shape similar to a flat fish tail.

sweep stroke: A common kayaking stroke used in stand up paddling to turn the board by paddling on one side of the board.

sweeper: Overhanging rock or ledge with water flowing underneath.

swell: Storm-generated waves that travel long distances.

swift water rescue training: A subset of technical rescue that involves the use of specially trained

- personnel, ropes, and mechanical advantage systems. Also called "whitewater rescue."
- Tahitian stroke:** A short, quick forward stroke that is often used in racing, as it can move the board quickly.
- tail:** Back end of board.
- tail rudder:** A method commonly used with canoes, outriggers and kayaks that turns the board and aids in forward tracking, by placing the paddle by the tail while the board is moving.
- take-out:** Place where a trip is ended.
- tendonitis:** An inflammation of the tendon that occurs when the normal smooth gliding motion of the tendon is impaired so that it becomes inflamed and movement painful, commonly caused by overuse.
- teres major:** Muscle that helps in rotation of the arm.
- teres minor muscle:** One of the muscles that externally rotates the shoulder, found in the back of the shoulder joint.
- throw bag:** Bag that holds a long coiled rope, used in rescuing swimmers.
- tidal current chart:** Map of an area showing the direction of the currents through inlets and around islands at either ebb or flood. Some tidal charts list the minimum and maximum current in any certain area for daily tidal exchanges.
- tidal exchange:** The movement of water during the ebb or flood.
- tidal rapids:** Riverlike rapids created in narrow passageways where strong tidal exchanges occur.
- tide:** Alternate rising and falling of the surface of the ocean and of connected bodies of water that occurs twice a day as a result of differing gravitational forces exerted at different parts of the earth by another body (i.e. the moon or sun).
- tide rip:** Results when current in saltwater collides with an undersea obstruction forcing water to the surface, creating sections of rough water and often standing waves.
- tide table:** Shows hourly changes in tidal heights.
- tiller:** The skeg or rudder on a sailboat or sailboard.
- tongue:** The fastest, green water, flowing section of a river in between rapids. Also called a downstream V.
- transverse abdominis:** Deepest muscle of the abdominal muscles; it wraps around the spine for stability and protection and makes up part of the core.
- trapezius:** Muscle that moves the shoulder blade.
- triceps:** Arm muscle that extends or straightens the arm.
- trough:** The lower section in between two waves.
- tube:** Hollow section of a barreling wave where surfers like to surf. Also called the "green room."
- undercut:** Overhanging rock or ledge with water flowing underneath.
- upstream:** Direction opposite of the river flow.
- USGS:** United States Geological Survey; source for maps.
- V-bottom:** V-shaped bottoms on boards create more stability and make the board easier to turn.
- VHF radio:** Very High Frequency radio; band of radio frequencies falling between 30 and 300 megahertz. Channel 16 (156.8 MHz) is the international calling and distress channel.
- volume:** Measure of water in a river in cubic feet or cubic meters.
- wall:** Face of a wave.
- waterfall:** Large vertical drop.
- wave:** Where water falls over itself; created by wind, current, tides, a drop in elevation in rivers, and a decrease in space for an ocean wave to go.
- wave train:** Series of standing waves.
- wet suit:** A neoprene garment designed to keep a paddler or surfer warm when immersed in cold water.
- white water:** Aerated water created by breaking waves.
- whitecaps:** Wind-generated breaking waves.
- wipeout:** Falling off the board when surfing or paddling.
- wood:** A term used in river paddling to describe logs or strainers in a river.
- Z-drag system:** A pulley system used to rescue pinned kayakers; can also be used for rescuing swimmers on rivers.

RESOURCES

GENERAL

- Distressed Mullet, <http://distressedmullet.com>
- My Local Line Up, www.myllocallineup.com
- Salmon Bay Paddle, www.salmonbaypaddle.com
(Check here for instructional videos, additional photos and updates on material in this book.)
- Stand Up Journal, www.standupjournal.com
- Stand Up Paddle Industry Association, www.supindustry.org
- Stand Up Paddle Magazine, www.standuppaddlemagazine.com
- Stand Up Paddlesurf Magazine (online), www.standuppaddlesurf.net
- Stand Up Zone, www.standupzone.com
- SUP Magazine, www.supthemag.com
- SUP Surf Magazine (online), www.supsurfmag.com

EXPEDITIONS,
NAVIGATION, AND SAFETY

- Alderson, Doug. *The Savvy Paddler*. Camden, ME: McGraw Hill, 2001
- Burch, David. *Fundamentals of Kayak Navigation*, 4th edition, Guilford, CT: Falcon Books / Globe Pequot Press, 2008.
- Burch, David. *Modern Marine Weather*. Seattle: Starpath Publications, 2008.
- Burns, Bob and Mike Burns. *Wilderness Navigation*, 2nd edition. Seattle: The Mountaineers Books, 2004.
- Hutchinson, Derek C. *Expedition Kayaking*, 5th Edition. Guilford, CT: Globe Pequot, 1999.
- Jacobs, Michael, and Eric Weiss. *Marine Medicine: A Comprehensive Guide*. 2nd edition. Seattle: The Mountaineers Books, 2012.
- Lull, John. *Sea Kayaking Safety & Rescue*. Berkeley, CA: Wilderness Press, 2002.



Heather Nelson after her heat in an open coastal SUP race

Marine Weather Service Charts, www.nws.noaa.gov/om/marine/pub.htm
 Moyer, Lee. *Sea Kayak Navigation Simplified*, Mukilteo, WA: Alpenbooks, 2001.
 National Outdoor Leadership School, www.nols.edu
 NOAA Marine Chart Viewer, www.nauticalcharts.noaa.gov/staff/chartspubs.html
 Pardy, Michael, JF Marleau, Andrew Woodford, and Piper Harris. *Navigation, Sea State, and Weather: A Paddler's Manual*. Volume 1. SKILS.

Starpath School of Navigation, www.starpath.com
 Surf Etiquette, www.asudoit.com/kayak_fest/surf_etiquette.html
 US Boating Safety Resource Center, www.uscgboating.org
 US Coast Guard Navigational Center, www.navcen.uscg.gov
 White, Charlie. *Living Off the Sea*. Surrey, BC: Heritage House, 2010.

FISHING

BoardFisher Products, LLC, www.boardfisher.com
 Null, Scott and Joel McBride. *Kayak Fishing, The Ultimate Guide*. Beachburg, Ontario: The Heliconia Press, 2008.

FITNESS

Nikki Gregg, www.nikkigregg.com

GEAR

Infinity Surfboards, www.infinitysurf.com
 Northwest Outdoor Center, Seattle, www.nwoc.com
 NRS, www.nrsweb.com
 Perfect Wave Surf Shop, www.perfectwave.com
 Salamander Paddle Gear, <http://salamanderpaddlegear.com>
 Stoke Harvester, <http://stokeharvester.com>

Urban Surf, Seattle, www.urbansurf.com
 Werner Paddles, www.wernerpaddles.com

INSTRUCTION AND GUIDING

Aspen Kayak Academy, www.riversup.com
 Dan Gavere, Professional Stand Up Paddler & Coach, www.supinstruction.com
 Dave Kalama, www.davidkalama.com
 Lars L.E. Hansen, Professional Watermen, Instructor, & Santa Cruz Search & Rescue, Santa Cruz, CA & Oahu & Maui, www.surfinglessonssantacruz.com
 Marcus, Ben. *The Art of Stand Up Paddling*. Guilford, CT: Globe Pequot, 2012.
 National Outdoor Leadership School (NOLS), www.nols.edu
 Nikki Gregg, Fitness Professional & Professional Stand Up Paddler, <http://nikkigregg.com>
 Norm Hann Expeditions, BC, Canada, <http://normhann.com/expeditions/>
 Salmon Bay Paddle (author's site), www.salmonbaypaddle.com
 West, Steve. *Stand Up Paddle: A Paddler's Guide*. <http://kanuculture.com/>

MARINE TRAILS

American Trails, www.americantrails.org
 The BC Marine Trails Network, www.bcmarinetrails.org

Washington Watertrails Association, www.wwta.org

RACING

Battle of the Paddle, www.battleofthepaddle.com
 Round the Rock, www.roundtherock.com

SURFING

Almond, Elliott. *Surfing: Mastering Waves from Basic to Intermediate*. Seattle: The Mountaineers Books, 2009.
 Experience Nosara Paddlesurf with Dave Boehne, www.experience-nosara.com
 Magic Seaweed (surf forecasting), <http://magicseaweed.com>
 Mattos, Bill. *Kayak Surfing*. Gwynedd, Wales: Pesda Press, 2004.
 Nathanson, Andrew, Clayton Everline, and Mark Renneker. *Surf Survival: The Surfer's Health Handbook*. New York: Skyhorse Publishing, 2011.
 SUP with Wade, www.supwithwade.com
 Surftech Shootout, <http://sup.surftech.com>

WHITEWATER AND RIVERS

American Whitewater, www.americanwhitewater.org
 Bennett, Jeff. *The Essential Whitewater Kayaker*. Camden, ME: McGraw Hill, 1999.
 USGS Water Resources of the United States,

<http://water.usgs.gov>
 USGS River CFS Levels,
<http://waterdata.usgs.gov/nwis>
 Whitewater Stand Up Paddling Champion-
 ship, Glenwood Springs, Colorado,
<http://rockymountainsurffestival.com/>

WEATHER AND TIDE INFORMATION

CANADA

Beaufort Wind Scale, www.spc.noaa.gov/faq/tornado/beaufort.html
 Fisheries & Oceans Canada,
www.waterlevels.gc.ca
 Weatheroffice: www.weatheroffice.gc.ca

USA

Golden, Frank and Michael Tipton, MD.
Essentials of Sea Survival. Champaign, IL:
 Human Kinetics, 2002.
 Mobile Graphics, (tides),
www.mobilegeographics.com
 National Weather Service,
www.weather.gov
 NOAA Current Tables,
<http://tidesandcurrents.noaa.gov>
 NOAA Marine Weather Forecast, www.nws.noaa.gov/os/marine/home.htm
 NOAA, National Data Buoy Center,
www.ndbc.noaa.gov

NOAA Tide Tables,
<http://tidesonline.nos.noaa.gov>
 Saltwater Tides,
www.saltwatertides.com
 USGS Maps, www.usgs.gov/pubprod

MISCELLANEOUS

Beau Whitehead, www.paddlesurfnorthwest.com
 Bob Smith, <http://fatcatmarine.com>
 Dave Collins, www.tierralegre.org
 David Kalama, www.davidkalama.com
 Hamilton, Laird. *Force of Nature: Mind, Body, Soul and, Of Course, Surfing*.
 Emmaus, PA: Rodale Press, 2008.
 Jenny Kalmbach, <http://jennykalmbach.com>
 Ken Campbell/Azimuth Expeditions,
<http://azimuthexpeditions.com>
 Paddle with Riggs, Downwind Surfing,
 Maui, HI, <http://paddlewithriggs.com>
 The Surfrider Foundation,
www.surfrider.org

Index

A

acromion process, 171
 Addison, Corran, 19
 adjusting the trim, 60
 advance planning, 74
 advanced strokes, 62-67
 aerial flares, 33
 AhChoy, Leroy, 18
 Appleby, Candice, 159, 162
 Arzadon, Bobby, 110

B

backpacks, 36, 85, 112
 backwash, 132, 137
 Baksic, Brandi, 160
 balance, 59
 barometer, 75
 barrel waves, 102
 beach break, 104-05
 beach sprint training, 187
 beam seas, 76-77
 Beaufort Wind Scale, 78-79
 bivvy sack, 85
 blanket, 34
 board. See stand up paddleboard
 boat wake surfing, 122-23
 boats, 88, 90-95, 122-23
 body temperature, 45

Boehne, Steve, 39
 boils, 150
 bow-angle method, 92-93
 bracing, 59, 64-65
 breaks, 104-06
 "buck the tide," 151
 Burton, Fletcher, 18, 20

C

camera, 34
 Campbell, Ken, 72, 83-84
 carabiners, 35
 carrying your board, 46-49
 catch, 57
 catching waves, 117-19
 cell phone, 33, 147
 chemical light sticks, 34, 89
 clock, 85
 close-out wave, 101-02
 clothing
 cold water, 38, 41, 86, 111
 dry suits, 41-42
 for racing, 165
 for river paddling, 146
 spare, 86
 warm water, 38, 86, 112
 wet suits, 42-43, 111
 Codman's pendulum, 174-75

cold water, 38, 41, 86, 137
 Collins, Dave, 72-73
 collisions with boats, 92-93
 compass, 34, 153-55
 Cook, Captain James, 17
 core
 description of, 181
 workout for, 181-84
 cross bow paddling, 65, 69
 crossings, 153
 cross-training, 187
 crumbling waves, 102-03, 114
 currents
 crossings, 153
 description of, 75, 106
 longshore, 155

D

dams, 136-37
 dead reckoning, 154
 Deception Pass Dash, 155, 159
 deck bags, 36, 81
 dehydration, 146
 diagonal holes, 132-33
 diagonal wood chop, 183
 displacement hulls, 25, 27, 158
 downstream V, 134
 downwinders, 77, 79

drift, 80
drowning, 41
dry bags, 36
dry suits, 41-42
duffel, 65-66, 68-69
duffel bag, 147
dumping wave, 101-02

E

ear plugs, 35
ear protection, 112
ecological awareness, 10
eddies
 description of, 131-32
 hopping, 142
 peeling in, 141
 peeling out, 140-41
eddy lines
 in rivers, 131-32, 138-39, 141
 in tidal rapids, 150-51
edging, 69, 119, 150
emergency radio channel, 33
Emerson, Peter Henry, 17
energy bars, 33
equipment, 175-76
erector spinae, 181
etiquette, surfing, 120-22
exostosis, 112
external obliques, 181
external rotation exercise, 178

F

falling, 142-43
fanny packs, 35-36, 145
Farmer John/Jane, 42
feminine urinal directional
 device, 41
ferry angle, 153
ferry boats, 95
ferrying, 137-39
fetch, 76, 100
fiberglass paddle, 145
fins, 28, 145
fire starter, 87
first aid kit, 147
fishing, 86, 97, 198

flares, 33
flashlight, 87
flatwater boards, 28
fog, 137
foil, 26
following seas, 77
food, 86
footwear, 43-44
forward stroke, 57, 59, 159, 161
forward sweep stroke, 60-62
frowning holes, 132-33

G

Gavere, Dan, 139, 144
gear. *See also specific gear*
 flatwater paddling, 81-83
 resources, 198-99
 river paddling, 143-47
 storage of, 35-36
gloves, 44, 146
gluteus maximus, 181
gluteus medius, 181
gluteus minimus, 181
Gore-Tex, 41-42
gradient, 130-31
Gregg, Nikki, 142, 144, 185

H

Hamilton, Laird, 17, 20-21
hamstrings, 181
hand placement on paddle, 54-55
hand signals, 148-49
hassakeh, 18
hats, 44
Hawaii, 17-18, 77, 121, 159, 187
Hawaiian stance, 117
hazards, 135-37
headlamp, 147
headwear, 112
headwinds, 79
heat packs, 34, 87
heat stroke, 38
helmets, 44, 111, 143-44
hip adductors, 181
hip flexors, 181
history, 17-21

Hoesterey, Morgan, 72, 89
holes, 132
hoods, 34, 44
hopping, eddy, 142
horizontal holes, 132-33
hulls, 25, 27, 158
hydration, 146, 162
hydration pack, 34
hydraulics, 132
hyperthermia, 38
hypothermia, 41

I

impact vests, 112
impingement syndrome, 171
indicator, 117
inflatable board, 83, 145
internal obliques, 181
internal rotation exercise, 179

J

jetty break, 105-06

K

Kahanamoku, Duke, 18
Kalama, Dave, 17-18, 20, 161
Kalmbach, Jenny, 72, 89
kayakers, 53
kayaking lifejackets, 32
Keaulana, Brian, 21
"keeper hole," 132
kelp, 28
knee to elbow stretch, 184
kneeling, 58, 150

L

land sprint training, 187
laser pointer, 35
leashes, 30-31, 111, 145
LED light, 33, 88, 90
lee, 79-80
lifejackets, 32, 112, 144
lightning, 76

lineup, 115-17
logjams, 135-36
longshore currents, 155
lowhead dams, 136-37

M

maps, 147
marine trails, 199
metal signal mirror, 34
mixed strokes, 67-69
monocular, 87
"mooning the current," 141
multifidus, 181
multi-tool, 34
mylar blanket, 34

N

natural range, 153
navigation gear, 87
Nelson, Heather, 198
neoprene, 34, 42
night paddling, 88-90
nose, 24-25
nose plugs, 147
nose rudder, 63-64, 68

O

offshore winds, 108
one-arm shoulder flexor stretch,
 172-73
O'Neill Assault Vest, 32
onshore winds, 108
overfall, 155

P

packing for trips, 83-87
paddle
 blades on, 29-30, 176
 distance paddling, 63
 features of, 29-30
 holding of, 54-55
 pretzel stretch using, 173
 racing, 158

river paddling, 145-46
 shaft of, 29, 170, 175
 shoulder mechanics affected
 by, 175-76
 surf paddling, 111
 paddle carrying technique, 48
 paddleboard. *See stand up
 paddleboard*
 paddling out, 114-15
 paddling pants, 43
 Patterson, Chuck, 118
 peeling in, 141
 peeling out, 140-41
 peeling wave, 101-02
 personal flotation devices
 contents of, 32-35
 purposes of, 31
 requirement to wear, 21, 31
 river paddling, 144-45
 Type 2, 31-32
 piers, 106
 pillow (gear), 83
 pillow (river), 133-34
 piriformis, 181
 pivot turn, 66-67
 plank, 182-84
 planning, 74, 148
 point break, 104-05
 polarized sunglasses, 34, 38
 popularity, 15
 posterior shoulder stretch, 174
 powerboats, 88, 91, 95, 123
 pretzel stretch, 173-74
 pry, 65
 push-up, 184

Q

Quanting the Marsh Hay, 17-18
quartering seas, 77
quick release strap, 145

R

racing
 boards for, 27, 158-59
 clothing for, 165
 getting started in, 165

growth of, 158
hydration before, 162
paddles for, 158
preparation before, 162
resources, 199
 strokes for, 159, 161
 training for, 159, 162
radio, 32-33, 74, 86
raft plugs, 81, 83
rails, 25
rain gear, 87
ranges, 153-54
rectus abdominis, 181
reefs, 105-06
reform waves, 114
rental boards, 44-46
resources, 197-200
reverse sweep stroke, 60-62, 119
rip tides
 in ocean, 106-07
 in rivers, 155-56
river(s)
 difficulty scale for, 127-29
 features of, 131-35
 flow of, 130
 gradient, 130-31
 hazards on, 135-37
 holes, 132-33
 pillows, 133-34
 resources, 199
 selecting of, 129
 size of, 130
 volume of, 130
river boards, 27
river break, 105-06
river kayaking, 126
river paddling
 board for, 145
 clothing for, 146
 description of, 126
 ferrying, 137-39
 gear for, 143-47
 hazards, 135-37
 learning about, 128
 paddle for, 145-46
 peeling in, 141
 peeling out, 140-41

techniques for, 137-43
trip planning, 148
rocker, 26
rocks, 134
rooster tails, 134
rotator cuff
 internal rotation exercise
 for, 179
stretches for, 172-75
tears of, 172
tendonitis of, 171

S

safety, 10, 197-98
sailboats, 88
sailing, 97
sculling brace, 64-65
sculling draw, 65
secondary stability, 25
Seid, Kevin, 175
shaper, 28-29
shin pads, 146
shipping lanes, 95, 122
short leashing, 119
shoulder(s)
 abduction exercises, 176-77
 anatomy of, 171
 external rotation exercise, 178
 impingement syndrome of,
 171, 175
 injuries to, 171
 internal rotation exercise, 179
strengthening exercises for,
 176-79
stretches for, 172-75
shoulder carrying technique, 47
side draw, 63
side winds, 76, 81
sitting, 58
skegs, 28
Skookumchuck, 148, 150
skull caps, 34, 44
sleeping bag, 83-84
smiling holes, 132
solar chargers, 85

spine protectors, 146
sprint training, 187
stability, 67
stance, 117
stand up paddleboard
 bottom of, 25
 carrying of, 46-49
 composition of, 24
 design features of, 26-27
 inflatable, 83, 145
 length of, 82-83
 loading of, 81-82
 racing, 27, 158-59
 renting of, 44-46
 river paddling, 27, 145
surf paddling, 111
 thickness of, 26-27
 transporting of, 49
 width of, 53-54
standing up, 55-57, 117
standing waves, 134-35
static brace, 59
staying warm, 45
Sticky Wheel, 48
stopping, 62, 119-20
stove, 85
straight, 59-60
strainers, 135-36
strengthening exercises, 176-79
stretches, 172-75
strokes
 advanced, 62-67
 forward, 57, 59, 159, 161
 forward sweep, 60-62
 J-stroke, 62-63
 mixed, 67-69
 nose rudder, 63-64
 racing, 159, 161
 reverse sweep, 60-62, 119
 side draw, 63
 for staying straight, 59-60
 Tahitian, 62, 161
 for turning, 60-62
 subacromial bursa, 171
sun block, 34, 38
sunglasses, 34, 38

surfboards, 100
surfers, 52-53
surfer's ear, 112
surfing
 boat wake, 122-23
 catching waves, 117-19
 description of, 100
 etiquette, 120-22
 forecasts for, 108-11
 gear for, 111-12
 learning to surf, 112-20
 paddling out, 114-15
 resources, 199
 waves, 100-03, 114
surfing competitions, 122
sweepers, 136
sweeping brace, 59
swell, 100, 155
Swetish, Tom, 151
Swiftwater Rescue Training class,
 128
swimming, 142-43, 187

T

Tahitian stroke, 62, 161
tail
 description of, 25-27
 lift technique using, 46-47
tail rudder, 65, 68-69, 119
tarp, 85
tent, 85
Thomas, Rick, 21
throw bag, 145
tidal rapids
 characteristics of, 150
 description of, 148, 150
 eddy lines in, 150-51
 paddling in, 150
 timing of, 151-53
tide(s)
 description of, 80-81
 resources about, 200
 rip, 106-07
tide rips, 155
tie downs, 38

toiletries, 85
tongues, 134
towel poncho, 146
training
 cross-training, 187
 description of, 81
 for racing, 159, 162
"transits," 153
transporting of board, 49
transverse abdominis, 181
tubes, 102
tug boats, 88, 122-23
turning, 60-63, 65-66
Type 2 personal flotation devices,
 31-32

U

underwater rock running, 187
upwellings, 150, 155
upwind paddling, 79
U.S. Coast Guard, 21, 31

V

V-bottom, 24
Venice, 17
VHF radio, 32-33, 74, 86
visibility, 95

W

warm water, 38, 86, 112
water purifier, 84
water safety hand signals, 148-49
water storage, 84-85, 146
waterproof LED light, 33, 88, 90
wave(s)
 catching, 117-19
 river, 134-35
 types of, 100-03, 114
wave train, 135
weather, 75-77, 200
weirs, 137
wet suits, 42-43, 111
wheels, 48-49

whirlpools, 151
whistle, 33
Whitehead, Beau, 162-63, 166
whitewater, 200
wind
 Beaufort Scale, 78-79
 high, 75-76
 lee of, 79-80
 offshore, 108
 onshore, 108
 river paddling, 137
 surf affected by, 106, 108
wiping out, 120
wrist angles, 170-71
wrist pain, 168-71

Z

Zapotocky, John, 18, 189

About the Author

A Seattle native, Rob Casey has been paddling sea and surf kayaks since the late 1990s. He first tried stand up paddling on a vacation to the Big Island in Hawaii in 2007. Intrigued by the simplicity of paddling a SUP, he began to see the versatility of paddling boards on various types of water. He paddles his SUP several days a week, but still finds time to kayak.

Rob has been a commercial and fine art photographer for twenty years and specializes in outdoor adventure and lifestyle images. His images are represented by Getty Images and Corbis. He has contributed his writing and images to numerous magazines including *Men's Journal*, *Canoe & Kayak*, and *Stand Up Paddle Journal*. He is the Northwest contributor to *SUP Magazine*.



Rob teaches stand up paddling and kayaking through his business, Salmon Bay Paddle.

THE MOUNTAINEERS, founded in 1906, is a nonprofit outdoor activity and conservation organization based in Seattle, Washington. The Mountaineers' mission is "To enrich the community by helping people explore, conserve, learn about, and enjoy the lands and waters of the Pacific Northwest."

The Mountaineers sponsors classes and year-round outdoor activities, including hiking, mountain climbing, backpacking, skiing, snowboarding, snowshoeing, bicycling, camping, kayaking and canoeing, nature study, photography, sailing, and adventure travel; these classes and activities are open to both members and the general public. The Mountaineers conservation efforts support environmental causes through educational activities and programming, and through its publishing division. All activities are led by skilled, experienced volunteers, who are dedicated to promoting safe and responsible enjoyment and preservation of the outdoors. If you would like more information on programs or membership, please write to The Mountaineers Program Center, 7700 Sand Point Way NE, Seattle, WA 98115-3996; phone 206-521-6001; visit www.mountaineers.org; or e-mail clubmail@mountaineers.org.

The Mountaineers Books, the nonprofit publishing division of The Mountaineers, produces guidebooks, instructional texts, historical works, natural history guides, and, through partnership with Braided River, works on environmental conservation. Books are aimed at fulfilling the mission of The Mountaineers. For more information please visit www.mountaineersbooks.org and www.BraidedRiver.org.



The Mountaineers Books
1001 SW Klickitat Way, Suite 201
Seattle, WA 98134
800-553-4453

mbooks@mountaineersbooks.org
www.mountaineersbooks.org



The Mountaineers Books is proud to be a corporate sponsor of the Leave No Trace Center for Outdoor Ethics, whose mission is to promote and inspire responsible outdoor recreation through education, research, and partnerships. The Leave No Trace program is focused specifically on human-powered (nonmotorized) recreation.

Leave No Trace strives to educate visitors about the nature of their recreational impacts, as well as offer techniques to prevent and minimize such impacts. Leave No Trace is best understood as an educational and ethical program, not as a set of rules and regulations.

For more information, visit www.lnt.org, or call 800-332-4100.