

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

Jennifer Stock: You're listening to Ocean Currents, a podcast brought to you by NOAA's Cordell Bank National Marine Sanctuary. This show was originally broadcast on KWMR, on Point Reyes Station, California. Thanks for listening.

And welcome to another edition of Ocean Currents. I'm your host Jennifer Stock. On this show we talk with scientists, educators, explorers, policy makers, ocean enthusiasts, adventurers, authors, and more, all uncovering and learning about the mysterious and vital part of our planet, the blue ocean. I bring this show to you monthly from NOAA's Cordell Bank National Marine Sanctuary, one of four national marine sanctuaries in California, all working to protect unique and biologically diverse ecosystems. Cordell Bank is just off shore of the KWMR listening radius, off the Marine-Sonoma coast, and is a thriving ocean metropolis from seafloor to surface.

So today I'm going to be talking with two authors who are coming to Point Reyes in person on August 22nd, a Saturday, for a meet-the-author reception, and it is a benefit for the Turtle Island Restoration Network. I'll tell you more about that event later, but our two guests are Wallace J. Nichols, who is an ocean advocate sea turtle biologist, and speaker of All Things Blue, and his book is called Blue Mind: The surprising science that shows how being near, in, on, or underwater can make you happier, healthier, more connected, and better at what you do. That was published in 2014, and just came out in paperback. Also joining us will be James Nestor, who is a journalist based in San Francisco, and author of several articles and books, but most recently published Deep: Free Diving, Renegade Science, and what the ocean tells us about ourselves, published in 2014. This is a book that looks at free diving itself, but also deep water exploration in our history as humans probing the deep, which is really, really interesting. So when we come back, we'll get started talking with our guests.

(pause)

And I'm back. This is Jennifer Stock, and you're tuned in to Ocean Currents. On this show today, we're diving into the Blue Mind, and talking a bit about the things about the ocean that we think and feel and experience when we're near or underwater. I'm really excited to bring on our guests today, Wallace J. Nichols, and James Nestor, who I brought up live on the air. You're both live on the air. Are you with us?

Both: Hi there. Thanks.

Jennifer Stock: Great. So, we've got Wallace J. Nichols down in Santa Cruz, and James Nestor of San Francisco. Thank you so much for joining me today on the air, and talking a little bit about these wonderful books that you've written, and about one of my favorite topics, the ocean.

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

J, I want to start with you. You've had a long relationship with the ocean, and as a biologist have worked with sea turtles and fishermen, earlier in your career and to this day. And along the path you drew yourself to explore the effect of water, any body of water, the effect it has on humans, and wrote this book Blue Mind. How did this path come for you, to go from a lot of the biology and working with fishermen to looking more at the cognitive effects of the ocean?

Wallace J. Nichols: Well, I think a lot of people who work for the ocean or for any body of water, or for nature in general, you at some point realize that a big part of the work is about human behavior, and about nudging people towards more sustainable habits and lifestyles, away from the things that wreck the place, and that the hard science in terms of tracking sea turtles or measuring fish populations is useful, but runs its course at a certain point. I noticed that people respond favorably to their experiences with water, whether it's lakes, or rivers, or oceans, and I thought that there would be a book about that in the library, so I went to check it out, and it wasn't there, not because somebody had checked it out, but because nobody had written it yet. And I started looking around for somebody who would be willing to write it, and was unsuccessful in convincing anyone else to write it, so the third piece of the story is I sat down and I started to write it, and it took about five years and a big chunk of my life, but we got it done. And there's a lot of great stories and the work of some fascinating psychologists and neuroscientists who have wrestled with these questions, sometimes tangentially, and sometimes more directly. And the name of the book is Blue Mind, and it's about how water makes us feel and it helps our lives be more interesting. Through that, I got interested in the word and writing of James Nestor, who has become a friend through the process, and his interest in what happens to our bodies when we go underwater, so that nexus, that connection, is a clear one.

Jennifer Stock: Well, I think what's really neat is J—we have a lot of J's on this show, so hopefully I can get these all straight—but J, your book really kind of is about the big picture, water, and I almost kind of view it as near the surface, and being on top of it, and right under it. But James, yours goes deeper. And it's interesting. I'm kind of interested to explore the differences between the surface and the deep with these impacts. But James, coming back to you with your book Deep, which I had a great chance to go through a lot this weekend, and I really can't wait to read the whole thing through, but you as a journalist, you've covered a wide myriad of topics, written several books. And how did you find yourself immersed, literally, in this topic of ocean free diving?

James Nestor: Well, just like J, it was kind of like a happy accident for me. I've been a journalist for a long time writing magazine stories, and I was sent by *Outside Magazine*, two years ago, to cover something called the World Free Diving Championship in Kalamata, Greece. And I didn't know too much about free diving, I had never done it, didn't know anyone who did

August 3, 2015, oc080315.mp3
Blue Mind
Jennifer Stock, Wallace J. Nichols, James Nestor

do it, and I was out there watching the first day of this championship and just absolutely had my mind blown. These guys on a single breath were diving down 350 feet on dives that lasted 4 minutes. And it was just absolutely stunning to me that the human body was capable of this. So I came back home to San Francisco and started researching, and it turned out that we not only have these mammalian dive reflexes, the amphibious abilities, but also many other abilities we share with oceanic animals. So, one thing led to the other and the next thing I knew, I was writing the book Deep, and just sort of took me on this journey through many different places through different depths—starts at the surface and goes to the very bottom of the ocean, and it's quite a whirlwind trip, but very fun.

Jennifer Stock: Were you much of a water person prior to this assignment?

James Nestor: Yeah, I spent my life at the ocean surface, surfing and body surfing, swimming, and that's just such a huge part of my life. But I never had really explored what happened beneath the surface, both to the mind and to the body. So this was really my first voyage into this whole other universe below, and our connection to it.

Jennifer Stock: Wonderful. And you actually spent quite a bit of time learning how to free dive throughout the process of this book, I believe.

James Nestor: Yeah. Well, my entrée to free diving was at this competition, and I don't know if too many people out there know about free diving competitions, but people basically dare one another to see how deep they can dive on a single breath, and if that sounds dangerous, it's because it really is. It was the craziest, most awe-inspiring but completely crazy, what these people were doing. And a lot of them didn't make the dive, they came up unconscious, or bloody, or worse. And that part completely freaked me out. I thought it was kind of a shame that these people would hone their bodies to do this incredible thing were only using it to get a little plastic medal at the end of a competition. So, luckily, I learned a different kind of free diving, people who accept it more as a meditation, or as a yogic practice. And it's with those people that I learned how to dive, and it's that discipline that I focused on in the book. So it took me a long time, not physically, because we can all do this, anyone in decent health can go down 100, 200 feet no problem, but mentally I just had those pictures of people coming up not making their dive through my head, and had to replace those with better ones. That took a few months.

Jennifer Stock: It's kind of interesting there's quite a nexus there in terms of the two different fields of free diving, the competitive one that's maybe quite the opposite use of the brain and the one that's looking to experience underwater. How do those two come together? It seems like one is like hardcore, competitive, the other one more Zen. I'm kind of curious about that nexus.

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

James Nestor: Well, the Japanese divers, the *Ama*, have been doing this for 2000 years, and they use it to harvest food from the seafloor, be it abalone, oysters, whatever. And there's no record—the records are actually pretty thorough—of them ever having an accident, ever having a problem, and I was able to find these Japanese divers who really respect their place and their bodies in the ocean—respect of the ocean is a very powerful thing—and dove with them. One of them was 83 years old, she had been diving every day since she was 15. So to me this kind of proved that this could be a safe, great way of exploring the ocean, as long as you approach it in a safe and respectful manner. I think Westerners, we're very competitive, just about ridiculous things. So we just kind of appropriated this beautiful, meditative process, and just tried to see how far we could go and not die. And unfortunately a lot of competitive divers do die, because they push their bodies way past the limit that we're supposed to go. So, again, the competitive part of free diving didn't appeal to me too much. I really focused on the other side of free diving for Deep.

Jennifer Stock: All right, well, that's great. With Blue Mind, J, I'm curious. You know, a lot of us think very intrinsically, we go to the sea, we calm ourselves, it's very much a relaxing thing. And your questions we're really looking at "Why? Why is that happening?" and I'm curious if you can shed some light on some of the neurological findings that you've discovered through the process of writing your book about the effect of the water on our brains.

Wallace J. Nichols: Yeah, sure. I mean the idea is very intuitive, and I think it's an ancient idea. Look through art, through poetry, and prose of thousands of years, and you'll find references to what I would describe as *Blue Mind*, that going to the edge of the water is a place to calm yourself, to experience reverence, to boost your creativity, to get closer to those you care about, and the question about "why?" is less well known. But to best understand *Blue Mind*, it's probably good to understand what we refer to as *Red Mind*, which is the agitated, stimulated information-rich existence that we're all increasingly a part of, where you wake up and the morning and the first thing you do is reach for your smartphone, and the last thing you do at the end of a busy day is putting down your smartphone and close your eyes, and your day is full of deadlines, and maybe traffic, and e-mails and types and text messages. Just full of information coming at you. And when you step away from that, and you put down the devices and the screens, and walk towards the water, and even as we have this conversation, you can probably start to imagine it, and it may even express the way you feel, and while you're listening, you start to give up all the languid input and all the visual stimulation. When you get to the edge of the water, the sound that's coming into your brain is simplified: the sound of water, rather than the sound of voices and honking horns. Visually, the input is simplified. It's the horizon, and it's the surface of the water. So your visual sensors, your auditory sensors, get a break. Now when you get into the water, assuming the water is comfortable and safe, you also give up gravity, and your

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

brain is doing a lot of work all day long to position yourself relative to gravity in a useful orientation, using hundreds of muscles to do that. And you really don't think about that very much, but it takes brain capacity. So now you've given up gravity, you've given up the visual input, you've given up the auditory input—at least simplified it—and your brain has all this capacity to do something different, and it doesn't turn off, it switches to what's referred to as the default mode, or the default mode network, which is much better at insight at calm, contemplative thinking. For some it's the place of innovation, it's the "Aha!" moments. Mind wandering or daydreaming occurs in this mode. And so that's what you're feeling. That's stepping away from the office, stepping out of the car, away from your device, and getting out to the edge of the water. Now you can turn your Red Mind back on, maybe you entered into a free diving competition, or a big wave surfing competition, or a jet ski competition, and you're on the water, and now you're back into Red Mind hyper stimulation mode. And so the two kind of go back and forth. But that state of Blue Mind, which can be activated by any kind of water, is a big part of our lives from beginning to end, and the recognition that it's not just a touchy, feely, woo-woo kind of Santa Cruz-y thing, it's neurochemistry. And if we understand it better, we can harness it as a force for good, as a force for creativity, as something that brings us closer to those we care about, and improves our health.

Jennifer Stock: That's great. For those tuning in, this is Ocean Currents, and I'm speaking with two authors, J. Nichols, author of Blue Mind, and James Nestor, and we are talking about the effects of the water on us. And I wanted to just take a moment here to share some voices of folks. I wanted to ask my community members what they feel like when they're underwater, and they shared some perspectives, a little bit of blue and a little bit of red. So I'm going to play this track really quick, so you can all hear what we all think of being underwater.

(Interviews)

Jennifer Stock: How do you feel when you're underwater?

Interviewee 1: Peaceful.

Interviewee 2: Nervous.

Interviewee 3: Maybe flying or near-death. One or the other.

Interviewee 4: Blissful.

Interviewee 5: Like I'm floating.

Interviewee 6: Excited.

Interviewee 7: Serene.

August 3, 2015, oc080315.mp3
Blue Mind
Jennifer Stock, Wallace J. Nichols, James Nestor

- Interviewee 8:* I feel like swimming.
- Interviewee 9:* Wet.
- Interviewee 10:* The world is finally still.
- Interviewee 11:* Curious.
- Interviewee 12:* Relaxed.
- Interviewee 13:* Like a shark.
- Interviewee 14:* Depending on quality of water, but if I'm in clean water, I feel great.
- Interviewee 15:* It's just so peaceful, and it feels like flying. I love it.
- Interviewee 16:* I feel like an explorer.
- Interviewee 17:* Peaceful.
- Interviewee 18:* I feel like a fish.
- Interviewee 19:* Swimming.
- Interviewee 20:* At peace.
- Interviewee 21:* Throwing the toy out, and swimming with the teacher to go get it.
- Interviewee 22:* Therapeutic.
- Interviewee 23:* Ready to explore.
- Interviewee 24:* Trapped.
- Interviewee 25:* Out of water.
- Interviewee 26:* I love it.
- Interviewee 27:* Peaceful, if I'm not cold.
- Jennifer Stock:* So that's just a few folks in the neighborhood that were sharing their perspectives on water. It's fun to kind of ask that question and not know what their response is going to be.
- James, how about for you? When we go down deep, in terms of the impacts of the water and the pressure, and going down, what are some of the physiological and psychological things that happen when you go down deep?

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

James Nestor: I think J touched on some of the psychological things, neurophysiological things, and that's why I enjoy his books so much. I had been really struggling with how to describe the experience of free diving, because it was just so absolutely calm and peaceful and all those adjectives everyone was just mentioning in the tape you just played. And then I found scientific reasons for that in J's book, and every single page was like, "Oh, okay, yeah. That makes sense. That makes sense." But what I explore in Deep a little bit, the physiological connections with the water and how our bodies completely transform when we enter the water, and the deeper we go, the more pronounced that transformation becomes. It becomes so pronounced that at very deep depths, we hardly resemble our terrestrial selves. We change that much. It's the most powerful transformation that we can naturally experience. And part of that is the mammalian dive reflex, which allows us to dive for deeper for longer than we would be able to do on land, and the second you splash cold water on your face, your heart rate's going to drop about 25% of its normal resting rate. And so the old tradition of splashing water on your face to calm you down isn't just psychological, it's physiological. The deeper you go, more of these transformations occur. Blood will start rushing in from your extremities into your core, your lungs will engorge the plasma, and all of these things protect our bodies from the crushing pressures of the deep water. If we didn't have these reflexes, we wouldn't be able to dive deep; we would die, we would be crushed. But we share these reflexes with dolphins, and whales, and seals, and other marine mammals. And it's absolutely fascinating when you first start free diving, to see your whole body changing. Everyone is born with these reflexes. We're literally born to do this stuff, and to feel that is to reconnect with the ocean and to who we are, our true human potential, and I think that we've really forgotten that in the past hundred years or so. Free diving was hugely popular around the world for thousands and thousands of years. If you lived near the water, there was a good chance that people were free diving very deep. So it's just really fascinating to me to both learn about that history, learn about our physiology, and then feel all of these reflexes happen in my own body, and then be able to understand what was going on.

Jennifer Stock: I imagine you really need to set your mind at ease to know that your body is going to be able to do this, but for me, I just would think I'd panic. How do you get past that panic?

James Nestor: Well, that is another thing that I really love about free diving. J was talking about how as you walk towards the water, you stop thinking about all the minutia and your day-to-day lives, you start opening yourself up in many different ways, opening your ears to sound, the rushing waves, and that experience happens immediately in the water. And you can't do this stuff if you're stressed out, and that's what I loved about it. It was a forced meditation for me. If you're thinking about a bunch of different things, and you just had a bunch of coffee, and you're stressed out about work, you just can't free that. You won't be able to get down five, ten feet. You really have to empty your mind, really tune in to yourself,

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

and relax. The more we tense up our muscles when we dive, the more oxygen we're going to use up, the less deep we can go. We can't stay under the water very long if we do that, so you have to completely let go and sort of submit to the water, and go with it. That's what I really like about it. I mean, it's one thing to meditate on a cushion in your house, which is something I try to do as often as I can, but it's another thing to have that experience in the water. For me, it was a much more pronounced and profound experience to do in the water.

Jennifer Stock: I understand now why you describe free diving as underwater yoga. It sounds like you can get there.

James Nestor: Same thing, and the breathing technique is exactly the same. That's how you oxygenate your body, through putting *Ama* breath work before you free dive. So, there's so many similarities.

Jennifer Stock: That's so neat. J, I was thinking about when we were talking about the studies of the brain and sight, and one of the things I'm curious about specifically, have there been studies about just smell and the olfactory senses? I know for me, that when I go to the beach, I just learned that the smell I'm smelling is actually dimethyl sulfide, which is just decaying algae. And I just love that smell. It just brings me away to where I want to be. I'm curious if there's been studies just on smell, without sight, or..

Wallace J. Nichols: Yeah, there's certainly a fascinating research on brain on smell, and how the human brain responds to different kinds of smells. I think it's important also to understand that there's a biological component, there's our neurological and genetic response to the world around us. Then there's also the cultural component that's the stage, and there's also an important way to describe how we respond to water. And then the third part is our own experience. So there's your personal component. And so if you have a positive experience with a certain smell, then that smell is important within the cultural environment, and biologically your body is having a positive response to it. And that's going to be a pretty important stimuli throughout your life. For some people, they associate the smell of the ocean with something negative, and I feel pretty sad for that because when they go to the beach and they smell it, they're not reigned in, they want to go away. So this is kind of subjective, while there is a neurological basis too, the sense of smell. That's really important.

Jennifer Stock: That's a good point about the building of memory with all those different components as part of that. You know, you brought up something there that was one of my questions, because many years ago with some environmental education we were working on, we were interviewing people about their experiences with the ocean. And I didn't complete these interviews, but some other folks did, and some of them were very painful, because their ancestors had travelled on a boat and experienced loss, or there's just a lot of people out there that don't have the beautiful experiences that we do. And I'm wondering, is there a way to reverse

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

that in our minds, to become a little bit safer in their mind with the ocean?

Wallace J. Nichols: Absolutely. It takes time though. When you understand, the behavior change is often a slow rewiring, literally, of the neurological pathways, you can do it better. So if your goal is to help people fall in love with the ocean, and they're beginning from a place of deep-seated fear that's been supported through the way they've grown up and what people around them had said through imagery, even through personal experiences, you need to unpack all of that and start slowly, and maybe begin with learning to swim, and maybe begin with an urban waterway or domesticated waterways, such as a swimming pool or a tub. I imagine James has had this experience, and taking the book *Blue Mind* around this past year, I've asked vast groups of people if there's anybody in the room who's never been underwater. And I'm surprised that there are, and sometimes quite a few people who have never ever been submerged outside of their bathroom. And that's part of the process. If you've never been underwater, then you probably don't know how to swim. If you don't know how to swim, the ocean can seem pretty scary. Rivers and lakes seem kind of daunting. So falling in love with the ocean may begin with simply putting your feet in it, learning to swim at a public pool, getting comfortable with the feeling of putting your face underwater, at all, and holding your breath just for a few seconds, and then working from there. So I think our work for the ocean, we should lock arms and hands with those who are simply helping people get from maybe their urban or suburban existence out to the water, and to touch it, maybe for the first time. That's an important part of the process.

Jennifer Stock: Along those lines, you've written many stories in your book about helping people that are in chronic pain, or they have loss of limbs, working with veterans, and I'm wondering if you can share a story or two of some folks that you've worked with, where they come to the ocean to experience some therapy, and get some pleasure.

Wallace J. Nichols: Yeah, many people experience their wild waters therapeutically in many different ways. One of the stories I told in the book about a man named Bobby Lane, who joined James and I at a conference in Washington DC this spring, a *Blue Mind* conference, Bobby came in and told his story. He served as a marine in Afghanistan and experienced I.E.Ds, bombs at close range several times, and returned from duty with pretty severe post-traumatic stress. He lives in Texas, wasn't really interested in continuing his life. It was that difficult, and he couldn't sleep, hadn't slept in a very long time, was trying all kinds of other medications, prescriptions, self medicating with drugs and alcohol, and his life was kind of falling apart. And he got hooked up with an organization called Operation S.E.R.V.E. that brought him out to Santa Cruz, with a group of people, and he went through surf lessons, and caught his third wave, and from that vantage on his surfboard at Cowells, he decided he wanted to live and had his "Aha!" moment. And he decided he wanted to help people experience the feeling he was experiencing in that mo-

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

ment, and still is in Texas, but makes trips to California, speaks on behalf of these kinds of programs. And when we were in DC together, he said, "I'm trained as a warrior. I'm trained very well by the US government to be a warrior, and now I'm an ocean warrior, and I'm the guy you want on your team, because I can literally blow through walls" So it reminded me that we need to expand our conversation to be more inclusive, to invite people with all kinds of abilities and backgrounds, to engage with the ocean, engage with the water waves, and invite them to be part of the team that works and fights for their protection and restoration. He's an inspiring guy, and quite brave in ways that I think he didn't imagine that he would be. So people like Bobby are now on the ocean team.

Jennifer Stock: That's great. James, I wanted to explore —there's a little bit of background noise, I think

James Nestor: Yeah, that's a guy in my backyard deciding to redo his house right now. I'm going to run upstairs, but I will stay on this line and try to talk and walk at the same time and see what happens.

Jennifer Stock: Oh, okay. Well, I actually wanted to ask you another question about how your research about free diving led you to a topic of what you call renegade science. I was wondering if you could explain that a little bit with us. What type of renegade science is happening?

James Nestor: Well, yeah, that was one of the really neat things I discovered early on, before I even decided to write the book. It was that people were not only using free diving for just recreational purposes to explore the ocean, to explore their connection to the ocean, but they were using it to study animals in the ocean. And by free diving they were able to get closer than anyone else had really been able to get with these animals. If you look at something like a whale, a sperm whale, a blue whale, dolphins, even sharks, these animals are extremely shy. They swim away from SCUBA, they hate submarines, they don't like robots, but when you free dive with them, something amazing happens: This whole paradigm shift occurs where instead of swimming away from you, they swim towards you, and often they'll envelope you within their pods for hours and hours and hours. So this turns out to be an amazing way of conducting research on animals, especially sperm whales and dolphins, because what happens sometimes when they're in their pods is they start sending out their not only echolocation clicks, but communication clicks. In essence, I know this sounds like some crazy new age dream, but this all true stuff. They're introducing themselves to us. And we have this all recorded, 40 hours of video of these experiences, and no one really has been able to have these experiences because no other researchers have dared to free dive with their subject.

Jennifer Stock: Wow.

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

James Nestor: So that ended up taking up a lot of my time and that was sort of the chalice of free diving that kept me inspired to do it, not only because I loved it, but I really wanted to free dive with sperm whales and be clicked with their communication clicks. And not to give away the book, but something does happen, similar to that, in the book.

Jennifer Stock: That's amazing. For folks tuning in, you're listening to KWMR Ocean Currents, talking with J. Nichols, author of Blue Mind, and James Nestor, author of Deep. And with echolocation, I can't imagine being in the water with sperm whales. I've been in the water and dolphins have swam by and I've felt the echolocation in my neck, and it was amazing. And I mean a sperm whale, so much bigger! And do you feel it? Do you hear it? How is it different? Because they're so much bigger.

James Nestor: Well, their clicks, I think they're about 100 times louder than dolphin clicks. So they can be heard and they can hear each other literally hundreds of miles away in the ocean. These clicks, if they decided to, they could not only blow out our eardrums, but vibrate our bodies to death. But again, it's all about that letting go process. These are extremely intelligent animals, if they wanted to kill us they could come up and chomp us with their 8-inch long teeth at any time. But instead, these things are 60 feet long, they weigh around 150,000 pounds, that whole process, that whole paradigm shift I mentioned a little while ago, you feel that happening. They are extremely gentle when they approach, they start clicking you, and to answer your question, you can certainly feel it. Your chest vibrates, after a while it feels like your body is heating up. It's just like a CT scan. With their echolocation, they're able to actually not only peer the outside of our bodies, but it pierces inside of your body. So they can actually, literally have x-ray vision of you. And that's why we think they're so gentle and so curious around humans. They see our large brain, they see that we have lungs, we have this weird stuff called hair that they have never seen in the ocean. So that's why they let us into their little groups.

Jennifer Stock: That's amazing! So you got to dive in the water them, which you write about in the book.

James Nestor: Yup. I had to train for a long time, and we went out to Sri Lanka, and finally had the experience out there. And I just heard from one of the main scientists, and he just had a 4-hour long interaction in Mauritius and documented the whole thing. I didn't just drop this research once I finished this book and move on to something else. I'm more in it right now than I've ever been, including free diving and the free diving science. And they're making this incredible progress with trying to translate these communication clicks and understand what they're saying.

Jennifer Stock: Amazing. Well, let's talk a little bit about some of the application of this in the bigger picture. You both touched on this a little bit, but J, what are you feeling about and thinking about in terms of the application of these

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

findings towards helping to be part of the movement for change to improve our world?

Wallace J. Nichols: One of the I think the most immediate and easiest ways to apply Blue Mind ideas in this conversation is in all of the great programs that we're already doing. So we move a lot of kids to the coast, to the ocean, to the lakes and the rivers, and we teach them a lot of amazing things about what lives in the tide pools, and who eats the limpets, and what the limpets eat, and how the tides work, and basic ocean ecology. And then we move them back to their urban or their terrestrial, dry locations, and we forget to talk to them about themselves. We forget to mention that that experience at the ocean can be incredibly transformative, that it can shift their brain into a different mode, and that that can be useful for them as students, as artists, as musicians, as engineers and scientists, as leaders, as lovers, as citizens. We forget to mention that going and sitting by the water could help them stay in school, and in some cases help them stay out of jail, stay or get into a relationship, help them keep their job, help them excel at their job, if they use it that way, and we don't mention that hardly ever in our programs. So at no additional cost, we could offer that basic Blue Mind 101 information to all of these outdoor environmental educators in the state, across the country, around the world, and help them add that to their teaching. And I think that would go a long way towards creating a bigger, broader, more diverse movement of people who fall more deeply in love with their oceans and waters, and understand what's going on on a completely different level.

And to kind of bring that home, we did a short film with the musician Pharrell Williams about the ocean, and he starts off saying "I owe my music, I owe my creativity, I owe my rhythm to the ocean". He grew up in Virginia Beach by the ocean, and would go to the ocean to get inspired to fall in love, to get creative. And he says he owes his career as a musician. His song *Happy* kind of comes from the ocean in a way. That's a good place to start with kids in particular, because they know him, they know his style, they know he's cool, they know his songs. And then you say wow, he says he owes that career to going to the edge of the water and listening. So I think that's a real simple application, for educators to bring on board some neuropsychology, some Blue Mind 101, to have it interact with their students, and then send them out. So we're going to be doing that a lot in 2016. Doing workshops around the country, various regions, with educators, and in particular the educators who educate educators. It's a scaling effect that's really useful when you're trying to reach everybody.

Jennifer Stock: Yeah. And James, how about you? It sounds like you've gotten the diving bug, and you're learning more and diving into more. What are you working on now?

James Nestor: Well, realizing that even though I think people should do this, they probably aren't going to free dive with sperm whales any time soon,

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

we're right now trying to capture these experiences in full-on virtual reality 360, and that's what one of the researchers was doing out in Mauritius. And we've got a documentary that's coming around, and basically it's more education through these mediums. We want to take people into this world and most importantly, not only show them about their human connections with the ocean, but also about these incredible animals which have not been studied up close before. These guys are really the first to do it. Now once you have that experience, it's funny, so many people have gone diving with sperm whales saying "It's like a near-death experience!" "My life before that experience, and my life after that", and it really is that way. And so we want to capture that in a way that's very accessible for people to both understand and experience, and we feel that that route will be the best way of doing it. So we're going to be documenting in 360 all of these communication experiments that we're going to be doing in these next two years, essentially, trying to capture these communication clicks, process them, and then send them back to the animals.

Jennifer Stock: Amazing. I can't wait to see that. I know, that's one of the amazing things about media, and the different cameras we have now, there's so many ways we can bring the ocean to people on land and have an experience, even if it's just on a wall. I find it has a similar effect. It may not be the smell and touch, but it does have very amazing visual effect. I guess my last question for you both is, what does the ocean tell us about ourselves?

Wallace J. Nichols: I think our silence in the wake of that question says a lot, but for each of us I think it's an opportunity to go deeper as I think our books imply. And for each of us it's going to be kind of a different thing. I think that there's a long list of cognitive, emotional, psychological, social and spiritual benefits that healthy oceans provide, and I guess my hope is that each of us will figure out what those are, admit that they are as real as anything, that they have a physical and chemical signature, that they're not imagined, that they're significant and worthy of protection, alongside all the other services, ecosystem services and diversity, that the ocean gives us. And that that broadens out our relationship with our waterways. And that's a very personal journey for each person. Each of us will have a slightly different answer to that question, whether it's the three of us that are here, or our moms and dads, or kids around the world. So I guess I'm just saying, figure that one out. See the water, touch it, get in it, and if you're so inclined get under it, if you're adventurous get a little further under it, and figure that one out, what that really does for you. And then when you're back on land, put that into play, and put it into motion in your life. And then fight for that feeling so that you can always go back and safely access water.

Jennifer Stock: Thank you. How about you, James?

James Nestor: I think to me it's always reminded me of how much we've forgotten, both about ourselves and about our connections to the ocean. And

August 3, 2015, oc080315.mp3

Blue Mind

Jennifer Stock, Wallace J. Nichols, James Nestor

that's something that very much became apparent in the last couple years in which I was writing Deep. All of these senses, these reflexes, that are all within us that 99% of us will never feel those things or sense them, and these are extremely powerful feelings that affect us emotionally, physically, psychologically, and all that. So, to me, going back in the ocean, that's where we all came from, it's just a way of returning to our home, essentially.

Jennifer Stock: Wonderful. Well, I want to thank you both for taking time today to talk with me here on Ocean Currents, and I sure hope to make it to the reception on August 22nd, which I'll give some details on shortly. But thanks again so much. Are there websites where people can follow you, and learn more about what you're both doing?

Wallace J. Nichols: I just put everything I'm doing with wallacejnichols.org. It kind of links out to different projects, but I'm involved with some kind of the simplest sites to go to.

Jennifer Stock: Okay, wallacejnichols.org. And James, how about you?

James Nestor: Mine is mrjamesnestor.com, not as though I wanted that URL, but jamesnestor was taken, so its mrjamesnestor.com, and everything I'm doing is on that site.

Jennifer Stock: Fantastic. Well, thank you again, and I hope you get out to the water today.

Both: Thank you.
Thank you very much, I appreciate it.
I'm in the cruise harbor right now, so I'm getting ready to hit it.

Jennifer Stock: Nice. Thanks again. Thanks again for calling in.
For folks tuning in, this has been Ocean Currents, and we've been talking with Wallace J. Nichols and James Nestor, authors of two amazing books about being in, near, and under the water, and all the amazing things that it can do for us. And I want to let you know that they're going to be in person here in Point Reyes on Saturday, August 22nd, for a benefit reception for the Sea Turtle Restoration Network, and this is at 6pm. Two parts of this event: there is a benefit reception where there will be some light drinks and some food, and then the book talk starts at 7:30pm. It's at the Dance Palace, and it does require registration and tickets. So you want to go to seaturtles.org/bluemindevent, or call 415-663-8590-101, and these two authors, Wallace J. Nichols and James Nestor, will be in conversation with another author, Jamal Yogi, another ocean writer, ocean advocate. It's sure to be a very, very rich event, talking about some wonderful things about the importance of this healthy ocean and benefitting our lives as humans beyond just the ecosystem services. Again, this is the Blue Mind Reception, a benefit for Turtle Island Restoration Network's work to save endangered salmon, sea turtles, and other marine wildlife, on Saturday, August 22nd, and

August 3, 2015, oc080315.mp3
Blue Mind
Jennifer Stock, Wallace J. Nichols, James Nestor

there's a reception that starts at 6, book talk at 7:30, at the Dance Palace and it requires tickets and registration. So go to sea-turtles.org/bluemindevent for more information. I'm going to take a quick break, I have one or two more announcements to share with you when I come back.

(pause)

That is a song written by my good friend Buttercup Bill, and you probably can't tell but my voice is way in the back there in the chorus. But that's the *Bags of Water Song*, and Buttercup Bill has written a great CD of wonderful environmental education songs, you should check it out. Just Google Buttercup Bill. I love hearing from listeners, so please feel free to e-mail me, jennifer.stock@noaa.gov. Next month I'll be enjoying the Labor Day holiday, getting whaled myself on Catalina Island, and we'll be back in October. And in October we'll be talking with Eric Wagner, who is a biologist and a scientific writer, and we'll be talking about beaked whales. Very interesting article that he just wrote about a very mysterious species. And we'll also be getting an update on the illusive or non-so-illusive El Niño that appears to be shaping up very strongly for the Easter Pacific.

So, thank you so much for listening today to Ocean Currents. Please get out, enjoy the ocean, bay, or whatever body of water you can get into safely. Have a great afternoon.

Thank you for listening to Ocean Currents. This show was brought to you by NOAA's Cordell Bank National Marine Sanctuary, on West Marin Community Radio, KWMR. Views expressed by guests on this program may or may not be that of the National Oceanic and Atmospheric Administration, and are meant to be educational in nature. To contact the show's host, Jennifer Stock, e-mail me at jennifer.stock@noaa.gov. To learn more about Cordell Bank National Marine Sanctuary, go to cordellbank.noaa.gov.