Depending who you talk to – and which threat you’re discussing – the challenges facing Earth’s oceans are either among the most daunting or the most solvable.

Overfishing and depleted fish stocks? The answers are relatively clear, and in many places, we’re already headed in the right direction.

Marine pollution and plastics? Trickier, and we’re far farther from enacting solutions.

Warming seas and increased acidification? Complex, daunting, and impossible to solve without addressing climate change itself.

This week, the United Nations is hosting its first-ever Ocean Conference, dedicated to addressing these and other challenges for the seas. Some 5,000 people – including several heads of state, prime ministers, and other top officials from the 193 UN-participating countries – will converge on New York to share ideas, make voluntary commitments, participate in dialogues, and issue a “call for action.”

Ocean advocates say such a visible and high-level conference is an opportunity to bring attention to a critical and often overlooked conservation issue. But beyond raising awareness, it’s also likely to be a forum for important policy changes and announcements about new protected zones or other significant measures.

“Is it the final word? No, but it is a great launching point to move forward with the global community to recognize that the health of the ocean is critical to everyone,” says Karen Sack, managing director of Ocean Unite, an advocacy group for ocean issues.

Oceans, say advocates, are often considered an “orphaned” environmental issue – away from most people, out of our sight, largely outside of national borders. Yet increasingly, scientists are aware of just how much the changes in oceans affect humanity, and buzzwords like “blue economy” – using the sea sustainably – are getting tossed about with increased frequency.

“Every second breath you take comes from ocean-produced oxygen. Without a healthy ocean, we’re in deep trouble. Whether it’s food, whether it’s our climate, we have to have integrity for the ocean, the source of life,” said Peter Thomson, president of the UN General Assembly, at a press conference Thursday.

A focus on fisheries

One of the issues getting a lot of attention this week will be fisheries. Fish are a critical food source for much of the world’s population, especially in developing countries, and about 80 percent of the world’s fish stocks are reported as being fished at unsustainable levels. Illegal and unregulated fishing is rampant in many areas.

At the same time, there have been success stories, including a comeback for US fisheries. Scientists say solutions are relatively clear, and fish populations rebound on a short time scale when given a chance to recover.
“The fisheries problem is not a wicked problem,” says Daniel Pauly, a marine biologist and fisheries expert at the University of British Columbia in Vancouver, referring to the public-policy term for problems that are impossible to solve.

With decent national fisheries management, stocks can rebound fairly quickly, as they have with some US fish stocks, like mid-Atlantic bluefish, New England scallops, and albacore in the North Atlantic. Since 2000, 41 US fish stocks have been rebuilt, according to the latest report by the National Oceanic and Atmospheric Administration (NOAA).

“For the narrowly defined fisheries problem, I’m a potential optimist,” says Pauly. “They’re fixable, and where you decide to fix them, you can fix them.”

What’s needed: scientifically set quotas, protected nursery and spawning habitats, and reduced bycatch (unwanted fish caught unintentionally). “It works anywhere you do it,” says Andy Sharpless, the chief executive of Oceana, a nonprofit that works to protect oceans and combat overfishing. “And in five to 10 years, very often you see big rebounds.”

Small successes bring big gains

While much of the focus at this week’s conference will be on high-profile partnership dialogues and national-scale commitments, many of the voluntary commitments recorded (currently more than 700, with the number expected to rise through the week) are from nonprofits and smaller communities.

And those community-level actions can play an important role in solutions, say experts, particularly when it comes to solutions in developing countries that help protect oceans even as they improve people’s livelihoods and alleviate poverty.


Nearly 500 villages in Fiji – together managing about 80 percent of the country’s fishing areas – now have similar local management systems, and the model has been replicated in 20 countries.

“This tiny story of how one community conserved an area in one remote area of Fiji is reaching the world,” says Dr. Ervin. Her program is bringing representatives from that project, along with representatives from 13 other communities who have made significant progress on oceans contribution, to the conference this week, and giving them communications training and a platform to share their stories.

“These appear to be local, artisanal, boutique, but when you start to advocate for them, you realize how much power they have,” says Ervin.

Plastic pollution: A more persistent problem

Still, if the attitude this week is one of optimism and solutions, oceans advocates say that some of the problems the seas are facing are deep-seated and intractable.

Pollution and trash – most of it plastics – is rapidly filling up the oceans, with more than 8 million metric tons of plastic going in each year. Recent photos showed the trash-strewn beaches of a tiny, remote, uninhabited island in the Pacific that has the highest recorded density of trash anywhere in the world. The waste threatens and kills marine mammals, seabirds, turtles, and fish.

Dealing with the issue, say conservationists, will necessitate major changes on the part of both companies and consumers.

And oceans are also one of the parts of the world most intricately linked to climate change: They absorb about 30 percent of human carbon dioxide emissions and the vast majority of the Earth’s excess heat energy. Sea-level rise – threatening numerous coastal cities and communities – is one of the biggest likely consequences of climate change in the coming century. And steadily warming and acidifying waters, both direct results of climate change, are having big effects on marine life and coral reefs, many of which are rapidly dying.

“We can fix overfishing,” says Mr. Sharpless of Oceana. “We can even beat some big polluters. But we have not come up with an independent solution to the damage that is being done to the oceans from climate change.”
Dr. Pauly, the fisheries biologist, also views those challenges as massive and daunting, but says that asking about optimism or pessimism is the wrong way to frame the question.

“We fight against these things not because we know we’re going to win, but because we have no alternative,” he says, citing other seemingly “lost causes,” like the Civil Rights movement or the harm inflicted by Big Tobacco. “One day, if you’re lucky, you win.”