WRITTEN TESTIMONY OF SIGOURNEY WEAVER

HEARING ON THE ENVIRONMENTAL AND ECONOMIC IMPACTS OF OCEAN ACIDIFICATION

BEFORE THE SUBCOMMITTEE ON OCEANS, ATMOSPHERE, FISHERIES, AND COAST GUARD OF THE UNITED STATES SENATE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION

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My name is Sigourney Weaver and I am honored to appear before you today, the 40th Anniversary of Earth Day, to testify about ocean acidification. I am here not as a scientific or policy expert, but as a concerned citizen.

My father was a Navy man and the one requirement he had as I was growing up, in terms of where we lived, is that we had to be within sight of a body of salt water at all times. So I grew up listening to foghorns at night and being chased by crabs by day. And I think like a lot of us, I thought of the oceans as infinite and vast, and certainly infinitely forgiving in terms of what we were doing to them. We now know, of course, that that is not the case.

What I love about our oceans is the *mystery* of marine life. The oceans contain so much life and variety and most of it is hidden from our sight. A lot of it is – if you'll pardon the pun – *alien* to us. And this makes the process of learning about the oceans and what lives in them an unending series of surprises, a constant discovery of treasures.

The ocean is full of organisms that are so unlike anything we know on land that their very existence seems impossible. For instance, there are life-forms that don't need light or what we'd think of as food to survive. They simply consume chemicals, such as hydrogen sulfide, that bubble up from deep sea vents.

These same features that make the ocean so wonderful – its mystery and otherworldliness -- have actually worked to the oceans' disadvantage, because for many of us, the oceans are out-of-sight and out-of-mind. Their inaccessibility has limited our scientific exploration, and their vastness and power have made them seem indestructible, with endlessly renewing resources.

So we tend to forget that the oceans are both finite and vulnerable, and that we all depend on them for our survival, regardless of where we live or what we eat.

Organisms in the oceans generate most of our oxygen, the oceans regulate our climate, and they provide a large portion of the world's population with sustenance. We cannot prosper unless the ocean prospers, too. And the oceans are not prospering.

Unfortunately, one secret the oceans have kept very well is their sensitivity to carbon dioxide pollution. Scientists have known for decades that when CO2 mixes with ocean water it creates an acid; this is textbook chemistry. But only recently did they begin to realize what this growing quantity of acid would mean for ocean life. As you see in the film *Acid Test*: *The Global Challenge of Ocean Acidification*, this new understanding has some of the world's leading ocean scientists deeply concerned.

What they say is this: the oceans are 30 percent more acidic today than they were during pre-industrial times and, if we continue burning fossil fuels as we are now, we will *double* the ocean's acidity by the end of the century.

Now scientists fear many organisms may not survive so radical a shift in chemistry. And some of those organisms – certain plankton and corals, for instance – form the foundation of ocean food webs. If they perish, what happens to the tens of thousands of species further up the chain? What happens to our shellfish—our oysters, clams, mussels—that appear particularly vulnerable to ocean acidification?

Despite scientists' concern, the phenomenon of ocean acidification was, until very recently, little known to the public. That is the reason the film *Acid Test* was made. And it is the reason I joined the project when the Natural Resources Defense Council (NRDC), an organization whose work I have long admired, called.

Despite the seriousness of the threat from ocean acidification, there is still cause for hope. My hope, one shared by millions of Americans, is that you, our legislators, will put aside your differences and enact climate and energy legislation that will move America to a clean energy economy-- an economy based on efficiency and renewable power --that will build a workable future for *all* living things.

In addition, lawmakers must help ocean ecosystems adapt to the changes brought about by a warming climate and acidifying oceans. To make the oceans more resilient to these changes, we need to do a better job of keeping the oceans healthy. That means restoring depleted fish populations, protecting important marine and coastal habitats and reducing pollution, including nutrient pollution, in the coastal zones.

Finally, it is critically important that our nation invest in research that will help us better understand the implications of ocean acidification. We are only beginning to understand the changes that could occur in an increasingly acidic ocean world.

Thank you for the opportunity to share my testimony today.