

The Impact of the Census of Marine Life on our Perspectives of the Ocean

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When I was a little boy, I watched the moon in the sky at night in the summer, imagining the old stories: there are many white rabbits, graceful young girls, a magnificent palace and emperor. When human landed on the moon, we found nothing except rock. Our beautiful legends and stories disappeared. The new science and technology broke our old dreams.

Another old story is about the ocean: there is a dragon king living in the deep sea who governs all the crabs and shrimps as his generals and soldiers, and there is a flourishing animal world. When I studied marine biology at university, I learned that there are many plants and animals living in the ocean. But how many animals lived in the ocean was an enigma. It seemed impossible to know how many of them lived there.

The Census of Marine Life (CoML) has revealed a new world to us in the last ten years. We know much more about marine life than before. We have organized the information on known species and identified where they live in the ocean, collected new ones, explored the unknown, and recognized the unknowable. After the ten years of exploration, thousands of unknown animals have become known. In this case the new science and technology expanded our old dreams.

We know more especially about the deep sea. It is unbelievable that there are so many living things in the abyss, on seamounts, around vents, along oceanic ridges and in the bottom of the Arctic and Southern oceans, where many new species have been recorded.

The CoML showed people fresh ways to study the biodiversity of the ocean. Many new instruments and methods were used in the CoML program. Remotely operated vehicles (ROVs) with a high resolution camera and sample collection system, DNA barcoding, and other techniques let us recognize and record more living things than ever before.

The sum of the discoveries of the CoML offers us a new map of the structure and composition of life in the ocean, and defines problems to work on to understand the function of the composition and the structure. The CoML gave us a lot of very beautiful photos of the life of the ocean. The next step is to form a movie that will let us know the changes of the life in the ocean and help us understand what causes the changes.

As the climate changes, some tropical species will move to areas where there were cold waters. We can expect changes in the biodiversity of the cold areas, perhaps higher than before, but also with fishery resources changed in both quality and quantity. Further research will reveal relationships between the biodiversity and the variations of fisheries and other biological resources.

The evolving pattern will also depend on changes in currents and water masses. How will all the global changes affect the species composition, biomass, and distribution pattern of the more than two hundred thousand known forms of marine life?

CoML has also helped us understand that we know too little about the biodiversity of the ocean, even though we know more about it. There still so many things we do not know that the Census will inspire more people to explore the oceans.

Biodiversity matters because it can represent the condition of the ocean and the changing of the ocean. From biodiversity variation, we will interpret the changing ocean, and the future of the ocean. First of all, we should know the current status of it, and the CoML has given new life to our old stories. So, the Census of Marine Life changes our perspectives of the ocean.