

# PROTECTING OUR MARINE ENVIRONMENT

Human well-being and prosperity depend upon healthy oceans and seas. Much of the oxygen we breathe is generated by marine life, while ocean currents transfer heat, playing an important role in maintaining a moderate climate.



Nuclear and isotopic techniques make an important contribution to improving our understanding of the challenges that threaten the health of our oceans.

However, the marine ecosystems that keep the oceans healthy are subject to increasing stress. Many of the stress factors are either caused, or worsened, by human activities on land. As we burn more fossil fuels, more carbon dioxide is emitted, trapping heat that warms the oceans. Ocean waters absorb about a quarter of that carbon dioxide, which dissolves and increases ocean water acidity.

Physical and biological conditions in the oceans are deteriorating due to pollution. Coastal habitats are under threat from unsustainable development and resource exploitation.

Nuclear and isotopic techniques make an important contribution to improving our understanding of the challenges that threaten the health of our oceans. This issue of the IAEA Bulletin is published in conjunction with the

2013 IAEA Scientific Forum, entitled The Blue Planet — Nuclear Applications for a Sustainable Marine Environment.

The Scientific Forum focuses on the IAEA's work with Member States and international partners in monitoring and evaluating the challenges facing our oceans, and in seeking solutions.

Scientists at the IAEA Environment Laboratories in Monaco study biological processes to understand how marine organisms react to acidification and warming. They use isotopes to track the sources of pollution and its dispersion. The IAEA trains researchers from developing countries to use nuclear techniques to monitor pressures on the marine environment. It makes available precise and cost-effective tools to help both developed and developing countries to acquire the data needed to adapt strategies that mitigate pressures on the oceans.

I hope that the 2013 IAEA Scientific Forum will help to strengthen new cooperation between experts and policy-makers to protect and preserve the ecological balance that is vital for the survival of the marine environment.

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