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Nota di contenuto	Introduction -- Natural Radiation Environment -- Man-made Radiation Environment -- Evolution and Implementation of Radiation Protection Policy -- Ionising Radiation Metrology -- Low Dose Radiation Effects in Biological Systems -- Renewed Interest in Nuclear Energy -- Cost Benefit Analysis of Current Radiation Protection Policy -- Lessons from the Major Nuclear Accidents: (Environmental and Radiological Impact) -- Alternative Radiation Protection Policies and Implications -- Radiation Induced Quantum Biology Effects -- New Challenges in Terrestrial and Marine Radioecology -- Assessment of Radionuclide Transfer in Terrestrial Ecosystem -- Transport and Fate of Radioactivity in Aquatic Ecosystem.
Sommario/riassunto	This handbook provides a comprehensive review of radiation present in the environment, its sources, dose measurement techniques, exposures in natural and man-made radiation environments, policies governing radiation safety, societal applications of radiation technology, radiological and nuclear events, preparedness, response, and mitigation of radiation emergencies. It covers natural and man-made

radiation environment with an emphasis on renewed interest in nuclear energy as a clean and green source of power generation. Additionally, it reviews various approaches to understand the fate and behaviour of radionuclides in the terrestrial and aquatic ecosystems. It also presents nuclear technology's diverse applications, from diagnostic and therapeutic nuclear medicine to materials modifications and sustainable waste management strategies and the role of ionizing radiation in ensuring food security and safety. The handbook also highlights the existing (internationally adopted) radiation protection policies, which are originated from linear-no-threshold (LNT) model of dose-response characteristics. The scientific basis of LNT-model and its limitations at low doses prompts a revision of the exiting radiation protection policies for better utilization of the benefits of ionizing radiation. The handbook serves as a comprehensive resource for students, academicians, scientists, engineers, and policymakers interested in seeking an in-depth knowledge of radiation and the multifaceted applications of radiation technology while protecting human health and the environment.