Marine Science and Technology for Sustainable Development: Abstracts of the 26th International Conference of Pacific Congress on Marine Science and Technology (PACON-2019), July 16…

Book · September 2019

CITATIONS
0

READS
350

2 authors:

Vyacheslav B. Lobanov
V.I. Il'ichev Pacific Oceanological Institute
105 PUBLICATIONS **729** CITATIONS
SEE PROFILE

Olga Trusenkova
V.I. Il'ichev Pacific Oceanological Institute
38 PUBLICATIONS **76** CITATIONS
SEE PROFILE

PACON INTERNATIONAL

Pacific Congress
on Marine Science and Technology

Marine Science and Technology for Sustainable Development

26th International Conference of Pacific Congress on Marine Science and Technology (PACON-2019)

July 16-19, 2019 Vladivostok, Russia

Abstracts

Vladivostok
2019

Organizers:

Far Eastern Branch of Russian Academy of Scineces

Far Eastern Federal University

V.I.Il'ichev Pacific Oceanological Institute

Sponsors:

Ministry of Science and Higher Education
of The Russian Federation

Russian Foundation for Basic Research

North Pacific Marine Science Organization

Office of Naval Research Science and Technology

Федеральное государственное бюджетное учреждение науки
Тихоокеанский океанологический институт им. В.И. Ильичева
Дальневосточного отделения Российской академии наук

V.I. Il'ichev Pacific Oceanological Institute
Far Eastern Branch
Russian Academy of Sciences

МОРСКИЕ НАУКИ И СОВРЕМЕННЫЕ ТЕХНОЛОГИИ ДЛЯ УСТОЙЧИВОГО РАЗВИТИЯ

26-я международная конференция
Тихоокеанского конгресса морских наук и технологий
(PACON-2019)

16–19 июля 2019 г., Владивосток, Россия

Тезисы докладов

MARINE SCIENCE AND TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT

The 26th International Conference
of Pacific Congress on Marine Science and Technology
(PACON-2019)

July 16–19, 2019, Vladivostok, Russia

Abstracts

Владивосток
2019

УДК 551.468

Морские науки и современные технологии для устойчивого развития: тезисы докладов 26-й международной конференции Тихоокеанского конгресса морских наук и технологий (PACON-2019), 16–19 июля 2019 г., Владивосток, Россия. – Владивосток : ТОИ ДВО РАН, 2019. – 366 с.
ISBN 978-5-6043211-0-2

Научные конференции некоммерческой научной организации Тихоокеанского конгресса морских наук и технологий (PACON International) в течение 35 лет служат площадками, на которых ученые и инженеры обмениваются результатами исследований, технических и коммерческих разработок в области морских наук и технологий. На 26-й конференции PACON-2019, впервые проводимой во Владивостоке на базе ДВФУ, будут обсуждаться проблемы динамики океана, изменений глобального климата и их проявлений в Азиатско-тихоокеанском регионе и Восточной Арктике, исследования и прогнозирования морских опасных явлений, морской окружающей среды и экосистем, рыболовства и аквакультуры, морской геологии, морского инжиниринга и строительства, возобновляемой энергии, разработки подводных аппаратов и роботизированных устройств, акустики океана, разработки подводных аппаратов и роботизированных устройств, технологии морских измерений, экономические, общественно-политические и юридические аспекты освоения океана и морских побережий.

Проводится при финансовой поддержке Министерства науки и высшего образования РФ, РФФИ (проект № 19-05-20099), Всемирного бюро по военно-морским исследованиям (ONRG) и Северо-тихоокеанской организации по морским наукам (PICES).

Редакторы: к.г.н. В.Б. Лобанов, к.т.н. О.О. Трусенкова

Marine Science and Technology for Sustainable Development: Abstracts of the 26th International Conference of Pacific Congress on Marine Science and Technology (PACON-2019), July 16–19, 2019, Vladivostok, Russia. – Vladivostok : POI FEB RAS, 2019. – 366 p.

Regular conferences of Pacific Congress on Marine Science and Technology (PACON International Inc.) serve as forums for scientists and engineers for sharing state-of-the-art findings of research, engineering, and commercial developments in the field of marine science and technology. The 26th International Conference «Marine Science and Technology for Sustainable Development» to be held on 16-19 July, 2019, in the new campus of the Far Eastern Federal University, Vladivostok, Russia, will cover the themes of ocean dynamics, climate and hazards, marine geology and geological resources in the ocean, ocean environment, ecosystem, fisheries and aquaculture, polar ocean research and explorations, ocean engineering, marine constructions and renewable energy, undersea vehicles, robotics, acoustics, ocean observation technologies, sustainable economy, ocean policy making and education.

With financial support from the Ministry of Science and Higher Education of the Russian Federation, Russian Fund for Basic Research, ONR Global – Office of Naval Research, North Pacific Marine Science Organization (PICES).

Edited by Vyacheslav B. Lobanov, PhD, and Olga O. Trusenkova, PhD
ISBN 978-5-6043211-0-2

CONTENT

Marine litter and its influence on marine ecosystem

Ya. Blinovskaya
Far Eastern Federal University.8 Sukhanova Str., Vladivostook, Russia, 690003
e-mail: blinovskaya@hotmail.com

Background. Marine litter also known as marine debris is human-created waste that has deliberately or accidentally become afloat in a sea. Marine litter tends to accumulate on coastlines. Some forms of marine litter such as wood, food waste and other decomposes in sea water but most marine litter forms don‘t biodegrade especially it concern as plastic. Waterborne plastic poses a serious threat to fish, seabirds, marine mammals and other animals and its habitat including acidification processes. Ocean dumping, accidental container spillages, litter washed into storm drains, and wind-blown landfill waste are all contributing to this problem.

Material and methods. The researches have demonstrated that despite the shared severity of the problem throughout, the sources of pollutant introduction into the marine coastal environment of Japan, Korea, China, and Russia are quite different. In the Russian Far East the ―land originated" litter is prevailing. It is mainly coming from the enterprises and companies doing their business on the coast, as well as tourism, represented as a rule by unmanaged tourist camps. Along with traditional plastic waste it is a so-called microplastic that is of interest. Russia is no exception in this respect. Active research into microplastics in southern Russian Far East marine environment has been done since 2014. There are 13 monitoring stations within the Peter the Great Gulf waters (Sea of Japan) to include recreational and industrial areas differing in hydrodynamic behavior, at five of which plastic items are encountered on a regular basis.

Results. In samples taken from the Bosporus of the East Strait and Golden Horn Bay microplastic particles of approximately 2-3 mm in size are regularly observed. Quality analysis of all the samples collected was carried out using spectrophotometric method and that of infrared microscopy. It has been found that the chemical constitution of the samples studied is represented mostly by polyethene, polypropylene, particles of polystyrene and polyvinylchloride. Coastal samples frequently contain cellulose. A certain amount of methylaniline, formaldehydes, and monocarbozides was detected.

Conclutions. Monitoring results analysis shows: an increase in the amounts of plastics and other waste entering coastal marine zone, connected, in particular, with plastics production growth; presence of toxic chemicals, including persistent organic pollutants, within the composition of plastics entering marine waters; particular impact of microplastics, both of primary origin (e.g. microparticles incorporated into detergents and cosmetic products), and of secondary one (generated through macroplastics destruction) on coastal marine ecosystems.

Key words
Marine litter, microplastic, monitoring