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NOWPAP



Northwest
Pacific
Action Plan

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**Report on the Activities of NOWPAP Pollution Monitoring Regional
Activity Center (POMRAC) in 2018 and 2019**

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**Regional
Seas**

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List of Acronyms

CEARAC	Special Monitoring and Coastal Environmental Assessment Regional Activity Centre
DINRAC	Data and Information Network Regional Activity Center
EcoQO(s)	Ecological Quality Objective(s)
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
FEFU	Far Eastern Federal University
FP	Focal Point
FPM	Focal Points Meeting
GEF	Global Environment Facility
HAB(s)	Harmful Algal Bloom(s)
ICARM	Integrated Coastal and River Basin Management
IGM	Intergovernmental Meeting
IOC	Intergovernmental Oceanographic Commission of UNESCO
MoU	Memorandum of Understanding
MSU	Marine State University
MTS	Mid-Term Strategy
NSCMB FEBRAS	National Science Center Marine Biology of the Far Eastern Branch of the Russian Academy of Sciences
NOWPAP	Northwest Pacific Action Plan
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PGI FEB RAS	Pacific Geographical Institute of the Far Eastern Branch of the Russian Academy of Sciences
PICES	North Pacific Marine Science Organization
POMRAC	Pollution Monitoring Regional Activity Center
PoW	Programme of Work
RAC(s)	Regional Activity Center
RAP BIO	Regional Action Plan on Marine and Coastal Biodiversity Conservation
RAP MALI	Regional Action Plan on Marine Litter
RCU	Regional Coordination Unit
RDI RO	Regional Overview on River and Direct Inputs of Contaminants into the Marine and Coastal Environment in the NOWPAP Region
SDG(s)	Sustainable Development Goal(s)
SOMER	State of the Marine Environment Report
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEP	United Nations Environment Programme
WESTPAC	IOC Sub-Commission for the Western Pacific
WG	Working Group
YSLME	UNDP GEF Yellow Sea Large Marine Ecosystem Project

1. Introduction

1. The Pollution Monitoring Regional Activity Center (POMRAC) of UNEP Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region (NOWPAP) was established following to the decision of the 4th NOWPAP Intergovernmental Meeting (IGM) (Beijing, China, 6-7 April 1999) on the basis of the Pacific Geographical Institute of the Far Eastern Branch of the Russian Academy of Sciences (Vladivostok, Russia).

2. The overall goal of POMRAC is the coordination of activities and the establishment of regional cooperation in the monitoring of marine and coastal environment of the Northwest Pacific region within the UNEP NOWPAP framework. Following the discussions at the First NOWPAP/3 Coordinating Committee Meeting (Beijing, 21-22 May 2001), the 7th NOWPAP Intergovernmental Meeting (Vladivostok, 20-22 March 2002) approved the decision to share the responsibilities and activities between the Special Monitoring and Coastal Environmental Assessment Regional Activity Centre (CEARAC) and POMRAC as presented in the corresponding IGM proceedings (document UNEP/NOWPAP IG.7/8). POMRAC is fully responsible for the following two working groups:

- WG 1 “Atmospheric Deposition of contaminants to the marine and coastal environment” and
- WG 2 “River and Direct Inputs of contaminants to the marine and coastal environment”.

3. In 2007 it was also decided that POMRAC might later consider focusing on activities related to the Integrated Coastal and River Basin Management (ICARM), which also covers land-based sources of pollution. All activities related to land-based sources of pollution were expected to be implemented in close collaboration with all NOWPAP RACs and with the UNEP/GPA.

4. In the 2018-2019 biennium, based on an agreement with DINRAC, a significant part of the budget of several POMRAC activities related to the payment of the work of national experts and the organization of events outside of Russia was allocated through the additional DINRAC budget (80,000 US\$).

5. The 22nd Intergovernmental Meeting approved the budget of US\$ 114,250 for the 2018-2019 biennium for POMRAC activities (including US\$ 9,250 for RAP MALL implementation).

2. Organization and Staff

6. The POMRAC Secretariat is hosted by the Pacific Geographical Institute of the Far Eastern Branch of the Russian Academy of Sciences (PGI FEB RAS). Day-to-day work is carried out by the following three assigned researchers and technicians from the Pacific Geographical Institute working as volunteers:

Dr. Anatolii Kachur	Director (kachur@tig.dvo.ru)
Mr. Nikolay Kozlovskii	Staff Member (geo@tig.dvo.ru)
Dr. Svetlana Kozhenkova	Staff Member (svetlana@tig.dvo.ru)

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3. Report of POMRAC activities carried out after the 22nd NOWPAP IGM

3.1 Main activities in 2018-2019

7. Following decisions of the 22nd NOWPAP IGM with the budget approved at this meeting, and with the main budget lines of POMRAC activities related to WG 1, WG 2 and WG ICARM, as well as with the directions of the Draft NOWPAP MTS 2018-2023, the following activities were scheduled for 2018-2019:

- A joint activity for WG1, WG2 and ICARM WG in close cooperation with RACs, RCU and relevant organizations (PEMSEA, YSLME, and others): “Development of the regional NOWPAP EcoQO targets aligned with SDG indicators (Phase 1)”, including organizing a regional workshop in 2019
- Assessment of microplastics abundance in the river runoff and coastal waters of the NOWPAP region with a case study in the Russian coastal waters
- A joint activity for WG1, WG2 and ICARM WG with cooperation with RACs: “Assessment of trends in rivers and direct inputs of contaminants to the marine and coastal environment in the NOWPAP region during the last decade”

8. The following POMRAC activities were suggested for the 2018-2019 biennium:

- To organize the 15th and 16th Focal Points Meetings.
- To organize the Regional Workshop “Development of regional NOWPAP EcoQO targets aligned with SDG indicators (Phase 1)” (in cooperation with RCU, RACs, and other relevant organizations).
- Development of the regional NOWPAP EcoQO targets aligned with SDG indicators (Phase 1)”.
- Development of the Report: “Microplastics abundance in river runoff and coastal waters of the NOWPAP region with a case study in the Russian coastal waters”.
- Development of the Regional Overview “Assessment of trends in river and direct Inputs of contaminants to the marine and coastal environment in the NOWPAP region during the last decade”.

3.2. Meetings

3.2.1 The 15th POMRAC Focal Points Meeting

9. The 15th NOWPAP POMRAC Focal Points Meeting (FPM) was held during 4-5 July 2018 in Vladivostok, Russian Federation (Figure 1).

10. The primary objectives of this meeting were as follows:

- Overview of the progress made in the intersessional period after the 14th NOWPAP POMRAC Focal Points Meeting.
- Discussion and adoption of the Workplan and budget for the activity “Development of regional NOWPAP EcoQO targets aligned with SDG indicators, Phase 1”.



Figure 1. 15th FPM in Vladivostok 2018.

- Discussion and adoption of the Workplan and budget for the activity “Assessment of trends in river and direct inputs of contaminants to the marine and coastal environment in the NOWPAP region during the last decade”.
- Discussion and adoption of the Workplan and budget for the activity ‘Microplastics abundance in river runoff and coastal waters of the NOWPAP region with a case study in the Russian part of NOWPAP area’.
- Review the progress in the implementation of the abovementioned POMRAC activities. Nomination of experts for the preparation of national inputs and elaboration of the structure of the inputs are the main intermediate results.
- Workplan and budget of POMRAC activities for the 2018-2019 biennium.
- Other matters:
 - Development of RAP BIO: The role of POMRAC
 - NOWPAP follow up and review of SDG 14.1.

3.2.2 The 16th POMRAC Focal Points Meetings

11. The 16th NOWPAP POMRAC Focal Points Meeting was held on 30 October – 1 November 2019 in Beijing, China (Figure 2).

12. The primary objectives of the 16th Focal Points Meeting were as follows:

- Overview of the progress made in the intersessional period after the 15th NOWPAP POMRAC Focal Points Meeting.
- Discussion of the results of work on key POMRAC activities:
 - “Microplastics abundance in the river runoff and coastal waters of the NOWPAP region with a case study in the Russian part of NOWPAP area”,

- “Development of regional NOWPAP EcoQO targets aligned with SDG indicators, Phase 1”,
- “Assessment of trends in rivers and direct inputs of contaminants to the marine and coastal environment in the NOWPAP region during the last decade”.



Figure 2. 16th FPM in Beijing 30 October – 1 November 2019

- Review the developments of the abovementioned POMRAC activities to be followed by discussions. As a result, the meeting approved the results of these activities.
- Work plan and budget of POMRAC activities for the 2020-2021 biennium. After the discussion, the meeting agreed on the work plan and budget of POMRAC for 2020-2021.

3.3. Joint Activity for WG1, WG2 and ICARM WG in collaboration with other RACs, RCU, and relevant organizations.

3.3.1. Activity 1. Development of regional NOWPAP EcoQO targets aligned with SDG indicators, Phase 1

13. The 22nd NOWPAP Intergovernmental Meeting (IGM) approved the Programme of Work (PoW) for 2018-2019 biennium, including the following POMRAC activity: “Development of Regional EcoQO Targets Aligned (where possible) with SDG Indicators, Phase 1”. During the implementation of a EcoQOs activity in 2016-2017, national experts agreed that the following six NOWPAP EcoQO indicators could be applied in the NOWPAP countries:

- Nutrients concentration in the water column (possible SDG indicator 14.1.1).
- Nutrient ratios (silica, nitrogen, and phosphorus).
- Chlorophyll a concentration in the water column (possible SDG indicator 14.1.1).

- Harmful algal blooms (HABs).
- The concentration of contaminants in sediments, water and organisms.
- Trends in the amount and composition of litter washed ashore (possible SDG indicator 14.1.1).

14. **The goal** of this activity was to analyze the national numerical targets (where they exist) on the abovementioned NOWPAP EcoQO indicators and suggest (then discuss) possible regional EcoQO targets aligned to the extent possible with the above-mentioned SDGs indicators.

15. **Tasks:** Per the signed MoUs, nominated experts from all NOWPAP countries had to analyze the availability of information and implementation prospective for each indicator taking into account the following aspects:

- Scientific background, including analysis of advantages and limitations of indicator, based on experience within the NOWPAP region and international knowledge.
- Availability of relevant information, including international and national official sources.
- Assessment of the possibility of applying each indicator based on the existing national legislation.

16. POMRAC Secretariat prepared a template for national inputs. The national inputs provided were circulated among the POMRAC Focal points, and, after a notable amendment addressing comments provided, were submitted to an international consultant for the analysis and compilation as a regional synthesis report.

17. The preparation of national inputs with the information on above mentioned three aspects for each of the abovementioned SDG indicators was the core of this project.

18. Progress of the activity was discussed at a **POMRAC Workshop in Vladivostok 20-21 March 2019** (Figure 3): During the workshop, the national inputs were presented by the nominated experts from each of the NOWPAP Member States. Then, experts discussed in detail the suggested targets related to the six EcoQO indicators agreed upon earlier. Experts suggested several designated areas within their respective countries, where preliminary EcoQO targets could be tested during the second phase of POMRAC activity "Development of Regional EcoQO Targets Aligned (where possible) with SDG Indicators". In some cases, experts decided that setting targets on specific EcoQO indicators would be premature or unnecessary.

19. Expected outcomes and future direction: the regional synthesis report prepared after compilation of these national inputs (and preferably after a regional workshop) was the main output of this project. This synthesis report was reviewed by NOWPAP RACs, RCU, NFPs, and circulated between relevant stakeholders.

20. The final version of the Regional Synthesis (UNEP/NOWPAP/POMRAC/FPM 16/Inf.4) has been uploaded at the NOWPAP POMRAC website as a technical report and was published and distributed.



Figure 3. Workshop "Development of regional NOWPAP EcoQO targets aligned with SDG indicators, Phase 1".

3.3.2. Activity 2. Assessment of trends in river and direct Inputs of contaminants to the marine and coastal environment in the NOWPAP region during the last decade

21. Regular assessments of the state of the marine environment is one of the principal goals of UNEP NOWPAP, and NOWPAP POMRAC in particular. The approved new NOWPAP Medium-term Strategy (MTS 2018-2023) also includes regular assessments as a critical activity. River and direct inputs of chemical substances into the environment are essential factors related to many problems in marine and coastal areas. This was the reason to prepare a "Regional Overview of River and Direct Inputs of Contaminants into the Marine and Coastal Environment in the NOWPAP Region" (hereinafter RDI RO) being one of the initial activities of POMRAC. The initial RDI RO was published in 2006 based on the data of 2002-2004. The necessity to update this information was quite evident, especially considering the effects of global changes. With the account of the above, it was critical to carry out a new assessment of trends in rivers and direct inputs of contaminants to the marine and coastal environment in the NOWPAP region covering the last decade. The proposal was suggested at the 14th POMRAC FPM and approved at the 21st IGM in 2017.

22. **The goal** of this project was to compile present (up-to-date) information on the river inputs and direct inputs of chemical substances and to estimate the trends during the last decade. This goal was closely connected with an evaluation of the existing monitoring schemes and methods used in the NOWPAP countries. A comparison of the monitoring schemes and methods, including the environmental standards (used now and those used before 2004), was the second primary goal of this project.

23. **Tasks:** The project was implemented following a detailed analysis and processing of national inputs prepared by experts nominated by POMRAC FPs in accordance with the structure presented at and approved by the 15th POMRAC FPM. A regional overview was prepared by the compilation and synthesis of these national inputs with the same overall structure.

24. Methodology identified features and differences in the river water quality monitoring in all NOWPAP countries, which was reflected in the Regional Overview, along with the assessment of interannual trends in the river runoff of contaminants.

25. As it was found out, direct inputs of contaminants and data on the wastewaters generation and discharge are assessed in the NOWPAP countries by different methods and formats. These features were presented in national inputs and then reflected in the Regional Overview.

26. A Draft of the Regional Overview was compiled by the Russian POMRAC FP and circulated among other POMRAC focal points and experts for their review and comments.

27. After that, an amended Regional Overview was discussed at the 16th POMRAC FPM (UNEP/NOWPAP/POMRAC/FPM 16/Inf.5) and circulated among other RACs and National FPs for comments. After finalization, the Regional Overview was published as a POMRAC technical report and distributed.

3.3.3. Activity 3. 'Microplastics abundance in river runoff and coastal waters of the NOWPAP region with a case study in the Russian part of NOWPAP area'

28. The POMRAC activity "Microplastics abundance in river runoff and coastal waters of the NOWPAP region" was approved by the 21st IGM in 2017 as part of the activities on WG2 – River and Direct inputs of contaminants into the marine environment of the NOWPAP region. Its basic idea was to assess the inflow of microplastic particles with rivers discharging into the marine area of NOWPAP and finding relations with plastic contamination in the adjoining coastal waters.

29. **The goal** of this activity was to obtain the background information on the distribution of different kinds of microplastics in some of the biggest rivers within the Russian part of the NOWPAP region and to trace the possible impact of river runoff on microplastics quantity and composition in the coastal waters within the Russian part of the NOWPAP region.

30. **Tasks:** The following steps were taken to achieve the objectives of this activity:

- To obtain data on the concentrations of microplastics in the rivers of the Russian part of the NOWPAP region and to assess the input of microplastics input to the sea with the river runoff. Collecting similar existing data from other NOWPAP countries might allow the estimation of the role of river runoff in microplastics transport.
- To assess and analyze current methods of sampling microplastics in the seawater and freshwater and sample treatment protocols applied in the NOWPAP countries, considering a possible development in future of general guidelines/recommendations for the microplastic monitoring in the NOWPAP.
- To compare existing data on microplastics quantity and composition in the coastal water within the NOWPAP region, including further collection of the background information on the quantity

and composition of plastic particles in the coastal water of the Russian part of the NOWPAP region.

- To assess the possible impacts of river discharge, urban areas, landfills, tourism, fishery, etc. on contamination of marine ecosystems with microplastics; to share national data and to carry out the related survey in the Russian part of NOWPAP.

31. Activities: Rivers and coastal areas within the Peter the Great area were chosen for the study in this project due to the maximal anthropogenic pressure compared with other NOWPAP areas within Russia. Eight typical rivers, including transboundary Tumen R. and Razdolnaya (Suifen) R., were studied.

32. Seasonal samplings (spring, summer, autumn) were carried out in rivers in 2018-2019 (Figure 4), and the results of previous studies in 2016-2017 were used as well. Methods using a plankton net with 0.1 mm mesh size were effective enough though additional works were needed for the intercalibration purpose.



Figure 4. Sampling sites in the Peter the Great Gulf. Red dots indicate sampling sites in the littoral water, blue dots correspond to samples from coastal water¹.

33. The transboundary rivers, i.e., the Tumen R. and Razdolnaya (Suifen) R., showed the maximal level of microplastic abundance being one order higher than in other rivers (Figure 5). The elevated concentration of microplastic accompanies high water regimes in spring and summer. Two-three fold enrichment of surface layer of river waters compared with the

¹ Red circles with numbers correspond to the areas where selected rivers discharge. 1 – Tumen River, 2 – Tsukanovka River, 3 – Narva River, 4 – Barabashevka River, 5 – Amba River, 6 – Razdolnaya/Suifenhe River, 7 – Artemovka River, 8 – Partizanskaya River.

subsurface layer is the another feature of the spatial-temporal variability of the microplastic quantity within the rivers.

34. Surveys show that river runoff of microplastics is an essential factor in land-based pollution and can be calculated. At the same time, more data is required to make a detailed comparison with the impacts of other land-based sources due to several reasons.

35. Examples of results of the studies of the microplastic content in the waters of rivers of the basin of the Peter the Great Bay are presented in Figure 6 and Figure 7.



Figure 5. Suspected plastic particles in a sample from coastal water near Tumen River estuary²

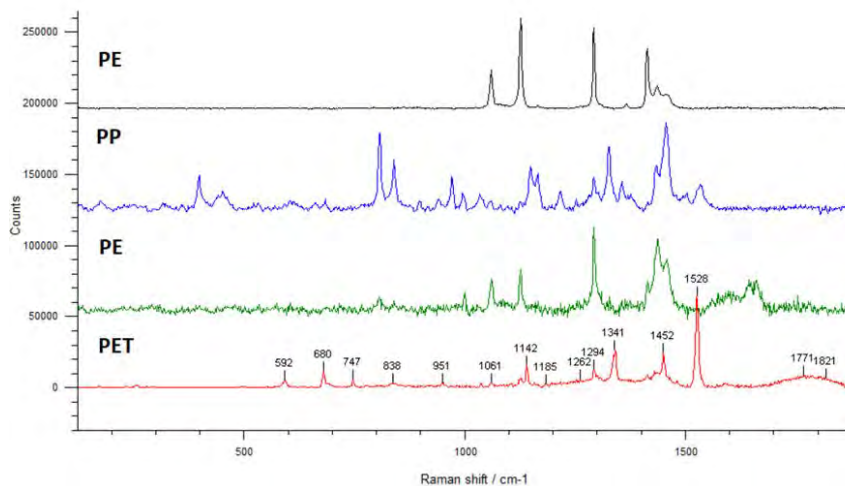


Figure 6. Examples of Raman spectra used for identification of polymer types of suggested microplastics

36. Outcomes: POMRAC secretariat had compiled the draft version of the report before the 16th FPM and shared it with Focal Points and experts for their consideration. After compilation,

² Prepared for spectra identification (4x magnification) (left) and suspected plastic particles in a sample from Razdolnaya/Suifenne River prepared for spectra identification (4x magnification) (right).

the document was circulated among POMRAC experts and POMRAC FPs for comments. After the amendment, the document was circulated among RACs and National Focal Points and uploaded to the POMRAC web-site as a technical report.

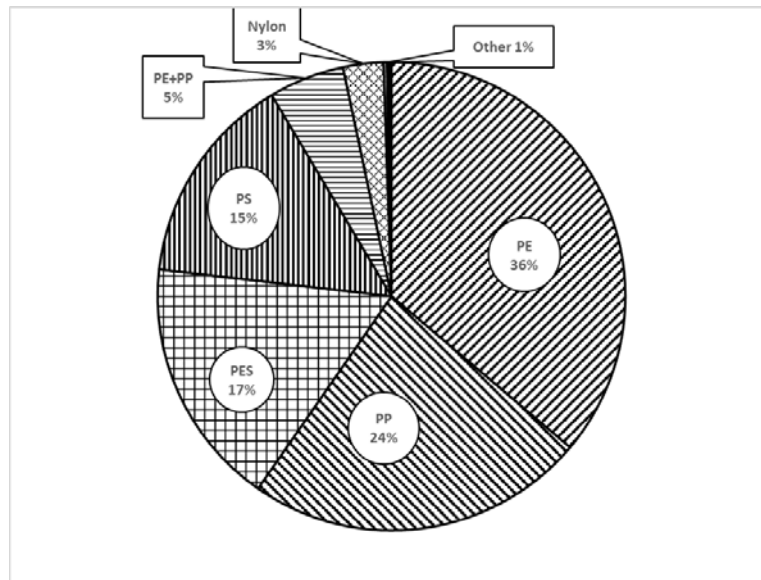


Figure 7. Ratio of basic polymer types detected in all selected rivers

3.4. POMRAC activities related to Implementation of NOWPAP Regional Action Plan on Marine Litter (RAP MALI)

37. Research on microplastics content and migration in the Peter the Great Gulf in support of the implementation of NOWPAP RAP MALI (Joint Activity with MSU (Marine State University) and NSCMB FEBRAS (National Science Center Marine Biology).

38. During the 2018 summer season, 5 sampling cruises were completed, and water samples were collected (Fig. 8). The 2019 season continues with sampling on the same stations.

39. 37. Sampling for studying the distribution of microplastics in the coastal waters of Peter the Great Bay was carried out according to the following procedure, which corresponds to the guidelines for harmonization of microplastics monitoring methods on the sea surface (Y. Michida, S. Chavanich, C.A. Cózar, P. Hagmann, H. Hinata, A. Isobe,

40. P. Kershaw, N. Kozlovskii, D. Li, A.L. Lusher, E. Martí, S.A. Mason, J. Mu, H. Saito, W.J. Shim, A.D.



Figure 8. Network of stations for monitoring the composition of microplastic in the coastal waters of the Peter the Great Bay

Syakti, H. Takada, R. Thompson, T. Tokai, K. Uchida, K. Vasilenko, J. Wang Guidelines for harmonizing ocean surface microplastic monitoring methods, 71 pp. Ministry of the Environment of Japan).

41. Examples of the results of studies on the microplastic content in the waters of the Peter the Great Bay are shown in Figure 9 and Figure 10.

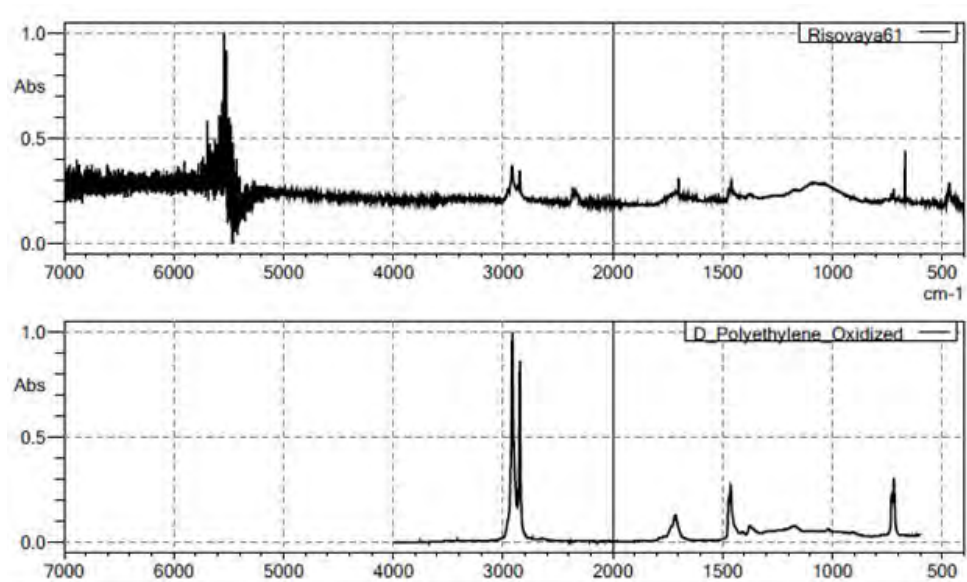


Figure 9. The spectrum of samples obtained in one of the bays of Peter the Great Bay in 2018 (fragment)

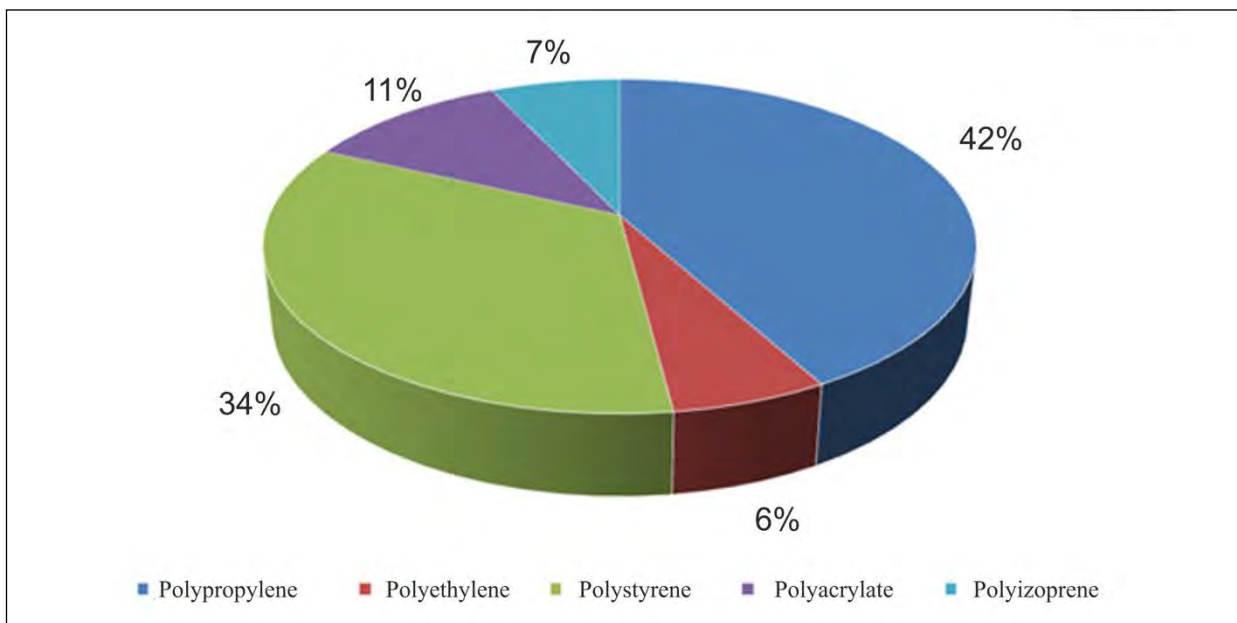


Figure 10. The ratio of polymers in the Amur Bay

3.5. Other POMRAC activities in 2018-2019 after 23rd IGM.

42. During 2018-2019, POMRAC staff members were actively involved in the meetings organized by NOWPAP RACs, WESTPAC, PICES, and other organizations.

43. Besides, POMRAC employees participated in several scientific and other events with a presentation on the activities of NOWPAP:

- NOWPAP RCU and RACs Meeting, 1-2 April 2019, Busan, Dr. Shulkin, Presentation of the possible structure of SOMER-3 prepared by POMRAC Secretariat along with the same prepared by NOWPAP RCU.
- Regional Workshop NOWPAP POMRAC – 21 March 2019, Vladivostok, Dr. Shulkin, Presentation results of the implementation of the activity "Development of regional NOWPAP EcoQO targets aligned with SDG indicators".
- CEARAC Expert Meeting on Eutrophication Assessment in the NOWPAP Region – 22 March 2019, Vladivostok, Dr. Shulkin, Presentation results of eutrophication assessment in the Peter the Great Bay, Russia. Signs of eutrophication were observed in northern parts of the Amursky and Usurysky Bays, areas close to the Tumen River and coastal areas adjoining to Vladivostok city.
- NOWPAP CEARAC FPM, 9-10 September 2019, Toyama, Dr. Shulkin presented a probable scheme of collaboration between NOWPAP RACs on the preparation of SOMER-3.
- United Nations Decade of Ocean Science for Sustainable Development (2021-2030). The conference "Marine specially protected natural territories of the World", devoted to the 120th anniversary of the foundation of the Far Eastern Federal University (FEFU). 26-30 September 2019, Vladivostok, Russia. Dr. Kachur. MARINE PROTECTED AREAS (AREAS) OF THE NORTH-WEST PACIFIC (current status, management plans and development strategies).
- The 1st Meeting of the Northeastern Asia Water Research Council ('tentative'). 23-24 May 2019, Daejeon, Republic of Korea, Dr. Kachur "Problems of use of water resources of the Russian Far East".
- 1st Technical Workshop on the preparation of the Regional Seas Programme SDG 14 Outlook Report 25-27 November 2019, Helsinki, Finland, Dr. Kachur as representative of NOWPAP.

4. POMRAC Budget and Expenditure for 2018-2019

Table 1. Budget 2018-2019 from Trust fund of NOWPAP

Budget	
Results/Outputs	Total Cost (USD)
Activity 1 – Develop the regional overview of NOWPAP Ecological Quality Objectives (EcoQO) targets aligned with SDG indicators (Phase 1)	
Finalizing and printing of the National Inputs and Regional overview of the NOWPAP EcoQO targets aligned with SDG indicators (Phase 1)	4,000
Report of the regional workshop “Development of the Regional Overview “Development of regional NOWPAP EcoQO targets aligned with SDG indicators (Phase 1)”	18,000
Sub-total	22,000
Activity 2 – Prepare Assessment of trends in river and direct inputs of contaminants to the marine and coastal environment in the NOWPAP region	
Finalizing and printing of the regional assessment of trends in river and direct inputs of contaminants to the marine and coastal environment in the NOWPAP region	4,000
Sub-total	4,000
Activity 3 - Prepare the Regional Report on microplastics abundance in river runoff and coastal waters of the NOWPAP region with a case study in the Russian coastal waters	
Regular sampling trips (surveys) to the selected sites of rivers downstream and sea coasts	7,200
Processing of samples for microplastic concentration	1,800
Analysis of quantity and quality of microplastic particles by FTIR, Raman SC and other methods	15,000
Preparation of the report on microplastic quality and abundance in the Russian rivers and coastal waters	9,000
Sub-total	33,000
Activity 4 - Strengthen regional capacity on pollution monitoring through knowledge and information sharing and capacity building	
Organization and participation in the 15 th and 16 th Focal Points Meetings	22,000
Preparation of meeting reports	6,000
Communication expenses	2,000
Inputs to NOWPAP RAC activities and technical reports, contributions to national, regional and global meetings and processes	10,000
Sub-total	40,000
Activity 5 - Update, maintain and enrich POMRAC website	
A new design of the website	400
Maintenance and regular updates of the website	1,600
Sub-total	2,000

Budget	
Results/Outputs	Total Cost (USD)
Activity 6 - Research on microplastics content and migration in the Peter the Great Gulf in support of the implementation of NOWPAP RAP MALI (Joint Activity with MSU (Marine State University) and NSCMB FEBRAS (National Science Center Marine Biology))	
Sampling surveys at the selected coastal areas	4,000
Processing of samples	950
Analysis of microplastic by FTIR, Raman SC	7,500
Field report on the surveys on microplastics content and migration in the Peter the Great Gulf, Russia	800
Sub-total	13,250
Total Cost	114,250

Table 2. POMRAC Expenditure for 2018-2019

Activity	Original Budget (USD)	Expenditures in (2018) (USD)	Expenditures incurred in (2019) (USD)	Total Expenditures (USD)
Activity 1				
Joint activity of WG1, WG2, ICARM WG: Development of the Regional Overview "Targets and indicators for Ecological Quality Objectives used in the NOWPAP Member States."	22,000	2,000	8,000	22,000
The regional workshop "Development of the Regional Overview "Development of regional NOWPAP EcoQO targets aligned with SDG indicators (Phase 1)"			12,000	
Sub-total	22,000	2,000	20,000	22,000
Activity 2				
Prepare Assessment of trends in river and direct inputs of contaminants to the marine and coastal environment in the NOWPAP region	4,000	0	4,000	4,000
Sub-total	4,000	0	4,000	4,000
Activity 3				
Prepare the Regional Report on microplastics abundance in river runoff and coastal waters of the NOWPAP region with a case study in the Russian coastal waters	33,000	22,000	11,000	33,000
Sub-total	33,000	22,000	11,000	33,000
Activity 4				

Activity	Original Budget (USD)	Expenditures in (2018) (USD)	Expenditures incurred in (2019) (USD)	Total Expenditures (USD)
Organization of 15 th and 16 th POMRAC Focal Points meetings	40,000	33,750	6,250	40,000
Sub-total	40,000	33,750	6,250	40,000
Activity 5				
Update, maintenance and enrichment of POMRAC Website	2,000	1,000	1,000	2,000
Sub-total	2,000	1,000	1,000	2,000
Activity 6				
Research on microplastics content and migration in the Peter the Great Gulf in support of the implementation of NOWPAP RAP MALI	13,250	10,250	3,000	13,250
Sub-total	13,250	10,250	3,000	13,250
Total	114,250	69,000	44,250	114,250

5. Workplan and Budget of POMRAC for 2020-2021 as approved at the 16th POMRAC FPM (Beijing, China 2019)

44. 40. Taking into consideration the output and outcomes of the past activities on fields of WG 1, WG 2 and WG ICARM as well as the directions of the NOWPAP MTS 2018-2023, and taking into account the responsibilities and activities of POMRAC in 2020-2021 POMRAC should focus on the following issues:

- Joint Activity for WG1, WG2 and ICARM WG with cooperation with RACs, RCU and relevant organizations (OSPAR, PEMSEA, PICES, WESTPAC, YSLME, and others): "Development of NOWPAP EcoQO targets aligned (where possible) with SDG indicators, phase 2" with a joint regional POMRAC-CEARAC workshop (priority area of MTS a and b).
- Activity for WG2 Microplastics abundance in river runoff of the NOWPAP region with a case study in the Russian coastal zone (priority area of MTS b).
- Joint Activity for WG1, WG2 and ICARM WG with cooperation with RACs: the development of SOMER-3 – "The integrated assessment of environmental problems, status, and trends related to existing and changing natural and socio-economic conditions in the NOWPAP region" with a Workshop in the second half 2020 for the final discussion and approval of SOMER-3 contents and structure (priority area of MTS a).

45. The following POMRAC activities are suggested for the 2020-2021 biennium:

- To organize the 17th and 18th Focal Points Meetings.
- To organize the Regional Workshop "Development of NOWPAP EcoQO targets aligned (where possible) with SDG indicators, phase 2" (in cooperation with RCU, RACs and other relevant organizations).
- Development of NOWPAP EcoQO targets aligned (where possible) with SDG indicators, phase 2)".
- Preparation of SOMER-3 with the aim of integrated assessment of environmental problems, status and trends related to existing and changing natural and socio-economic conditions in the NOWPAP region.
- To organize Regional Workshop in 2020 for the final discussion and approval of SOMER-3 contents and structure (in cooperation with RCU, RACs, and other relevant organizations).
- Development of the Regional Overview "Microplastics abundance in river runoff of the NOWPAP region" (joint activities from Russian side with Far Eastern Federal University, Marine state University and National Science Center Marine Biology).

Table 3. Workplan and Budget 2020-2021 from Trust fund of NOWPAP

Budget	
Results/Outputs	Total Cost (USD)
Activity 1 Development of NOWPAP EcoQO targets aligned (where possible) with SDG indicators, phase 2)";	
Preparation national inputs for RO	22,000
Compilation of National Inputs and preparation of draft regional synthesis report	5,000
Finalizing and printing of the National Development of NOWPAP EcoQO targets aligned (where possible) with SDG indicators, phase 2)";	2,000
Report of the regional workshop "• Development of NOWPAP EcoQO targets aligned (where possible) with SDG indicators, phase 2)";"	18,000
Sub-total	47,000
Activity 2 – The preparation of SOMER-3 (phase 1)– The integrated assessment of environmental problems, status and trends related to existing and changing natural and socio-economic conditions in the NOWPAP region	
Workshop on SOMER-3 structure	18,000
Preparation Draft of SOMER-3 (phase 1)– The integrated assessment of environmental problems, status and trends related to existing and changing natural and socio-economic conditions in the NOWPAP region	30,000
Finalizing and printing of SOMER 3 in 2022 (phase 2)	
Sub-total	48,000
Activity 3 - Prepare the Regional Overview 'Microplastics abundance in river runoff and coastal waters of the NOWPAP region' for the biennium of 2020-2021	
Preparation of and draft RO and finalization National Inputs on the river runoff of microplastics to the marine and coastal environment of the NOWPAP region	21,000
Seasonal survey of microplastic runoff with river NOWPAP region RF include Amur/Heilong	7,000
Finalization and publication of the regional Overview	4,000
Sub-total	32,000
Activity 4 - Strengthen regional capacity on pollution monitoring through knowledge and information sharing and capacity building	
to organize the 17th and 18th Focal Points Meeting	36,000
Preparation of meeting reports	6,000
Communication expenses	5,000
Inputs to NOWPAP RAC activities and technical reports, contributions to national, regional and global meetings and processes	9,000
Sub-total	56,000
Activity 5 - Update, maintain and enrich the POMRAC website.	
A new design of the website	1,000
Maintenance and regular updates of the website	1,000
Sub-total	2,000
Total	185,000