

**ER 55 _2019-2021
TO FIELD RESULTS AND ADRIENNE
CURRENT PROJECT OUTPUTS**

**К РЕЗУЛЬТАТАМ ПОЛЕВЫХ РАБОТ И
ИМЕЮЩИМСЯ НА ДАННЫЙ МОМЕНТ
ПРАКТИЧЕСКИМ ВЫХОДАМ ПРОЕКТА
АДРИЕННЕ**



**Project Meeting
September 28, 2021**

Marina Orlova et al.

COASTAL ZONE – interface between sea and land, space of contacts nature values and nature uses, space of transboundary co-operation.....



Gulf of Finland coastal zone is affected :

- Eutrophication (numerous sources) and natural increase of trophic status;
- Climate changes + thermal pollution;
- Shipping and seaport infrastructure;
- Other large-scale hydrotechnical projects accompanied with dredging
- Invasions by habitat engineering alien species
- Etc., etc., etc

ER55 Core Workpackage 1:

- Harmonizing approaches in mapping, modelling and valuing the biota
- Including Common understanding of joint habitat types, ecosystem functions and associated services in the programme area as a prerequisite for sustainable transboundary management of the Gulf of Finland area

Content/Содержание

- 1. Project fieldwork in coastal zone of the Gulf of Finland as it is and its “side effects”**
1. Полевые работы в прибрежной зоне, как оно есть, и «побочные» эффекты

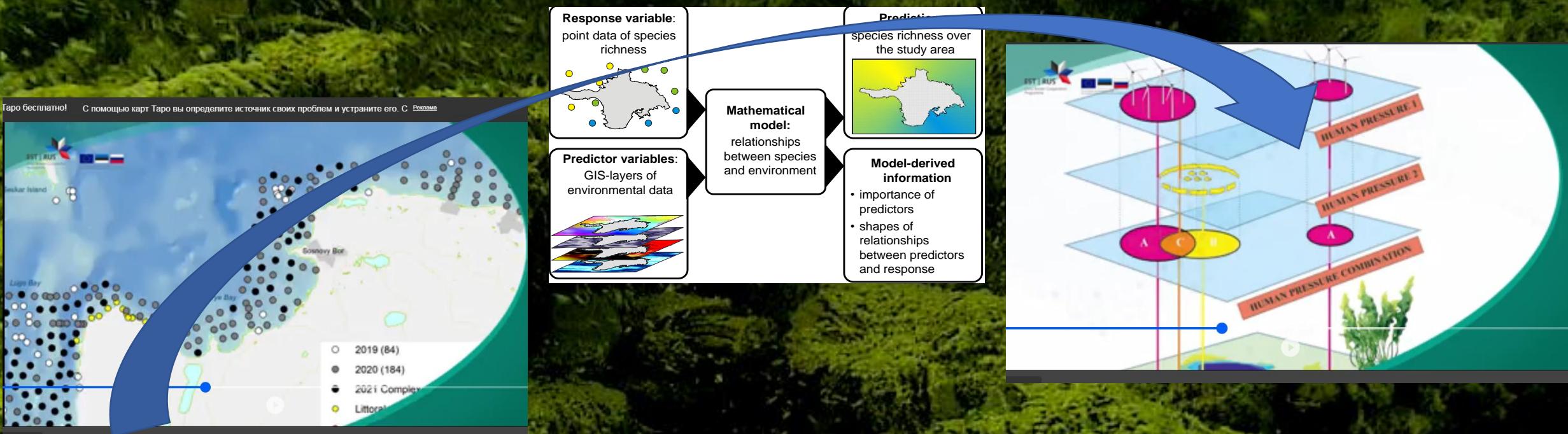
- 2. Other project activity outputs of Workpackage 1 by the end of September 2021**
2. Другие практические результаты проекта по Рабочему пакету 1 к концу сентября 2021

- 3. Perspectives of use of project outputs and experience**
3. Перспективы использования результатов и опыта проекта

- 4. Perspective express methods approbation**
4. Апробация перспективных экспресс-методов

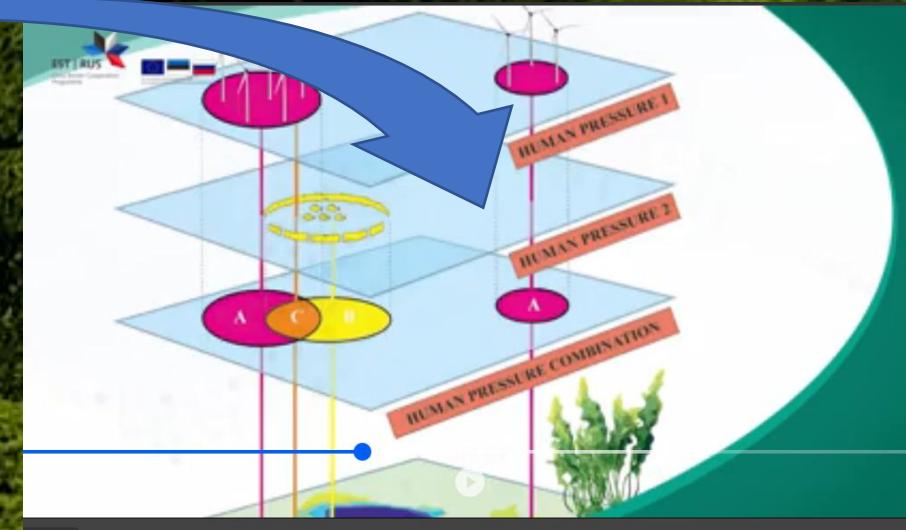
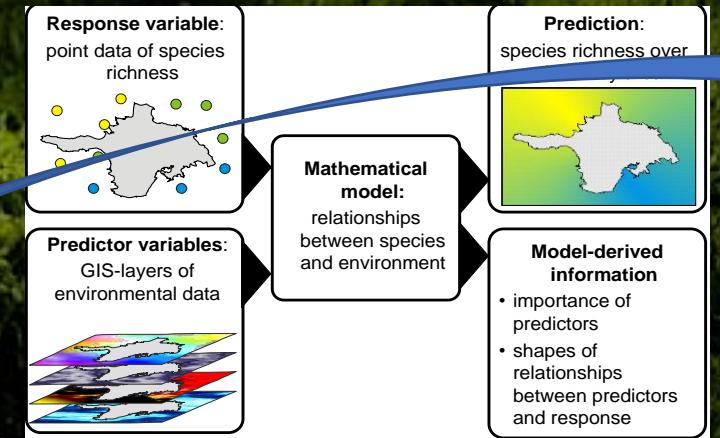
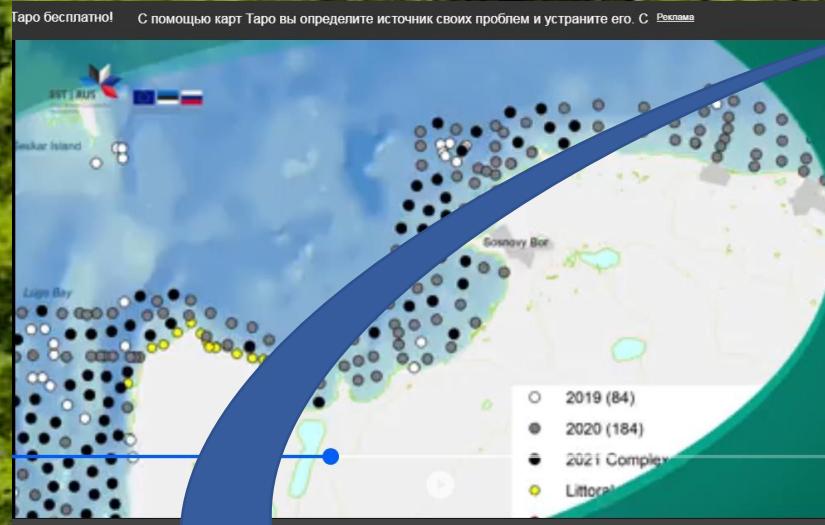
- 5. Scientific publications of project participants (WP C)**
5. Научные публикации участников проекта (Рабочий пакет «Коммуникации»)

1. Targeted fieldwork carried out with harmonized approach in the coastal zone in order to valuating biodiversity along with collection of habitat data – the source of primary information on current state of environment and effects of pressures and natural driving forces onto an ecosystem formation, functioning and services



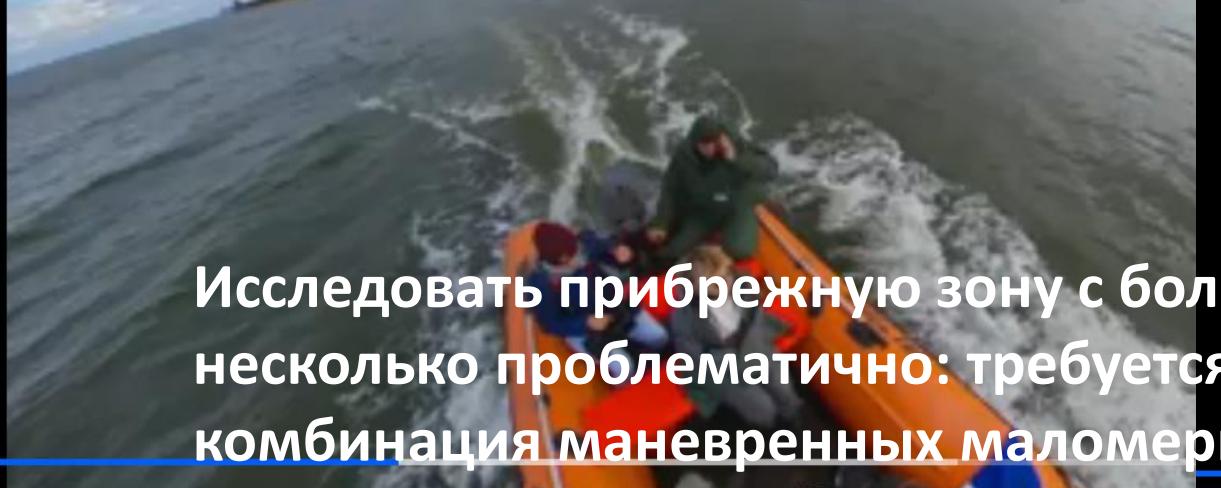
Observations and research at representative net of observational localities provide data for (1) transboundary map layers of key environmental variables (biotic and abiotic) and sea uses as well as data for (2) modelling on how multiple human uses affect the marine biota and the associated ecosystem services; (3) filling in the geoportal with factual material

1. To say briefly: Real world and peoples are beneath all IT-based constructions

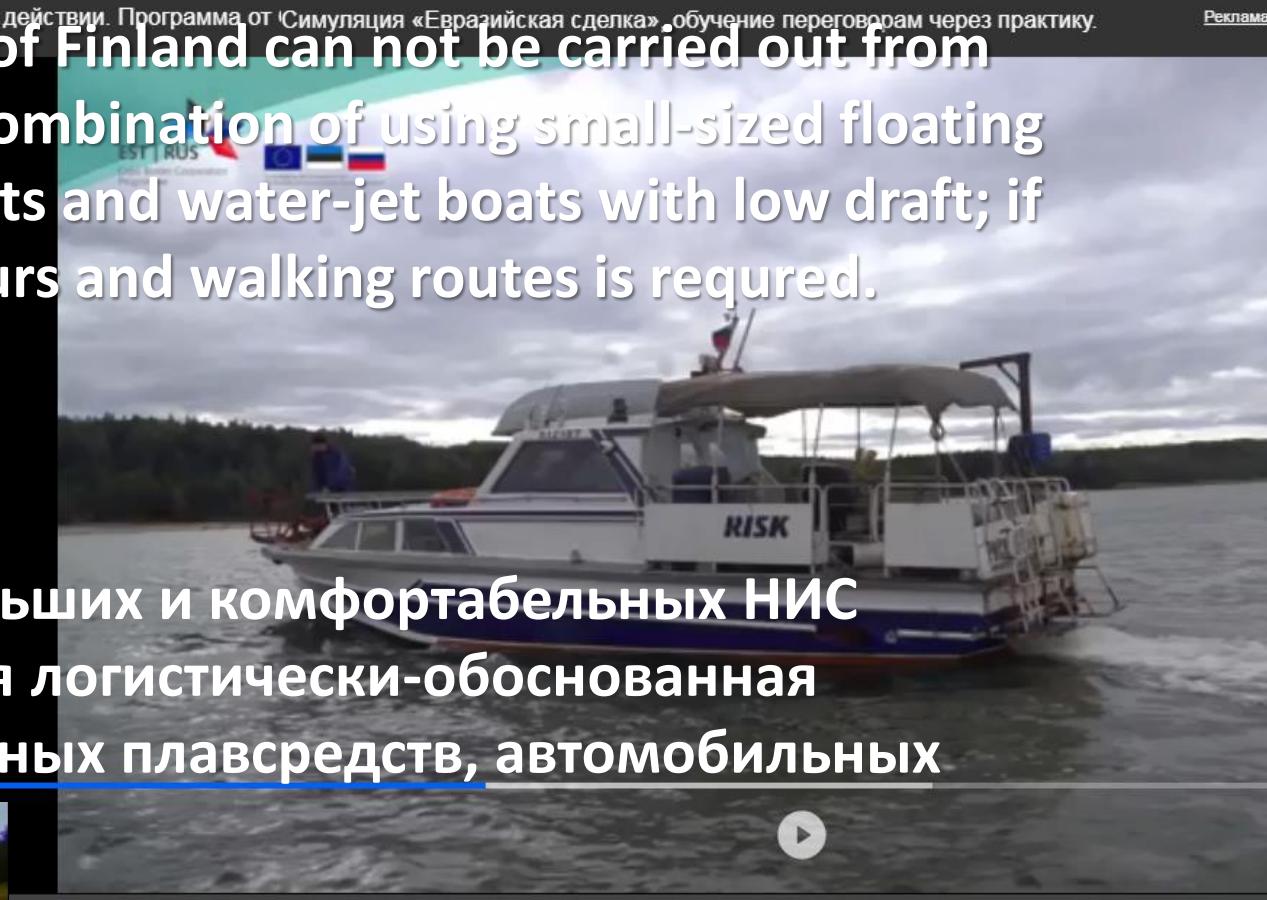


Если коротко, то в основе всех конструкций, построенных с использованием информационных технологий – реальный (объектный) мир и конкретные люди

1. Fieldwork in the coastal zone of the Gulf of Finland can not be carried out from regular research vessel. Logistically-based combination of using small-sized floating craft - mobile and maneuverable motor boats and water-jet boats with low draft; if necessary, of carry out alongshore car detours and walking routes is required.



Исследовать прибрежную зону с больших и комфортабельных НИС несколько проблематично: требуется логистически-обоснованная комбинация маневренных маломерных плавсредств, автомобильных объездов и пеших маршрутов



Скачать

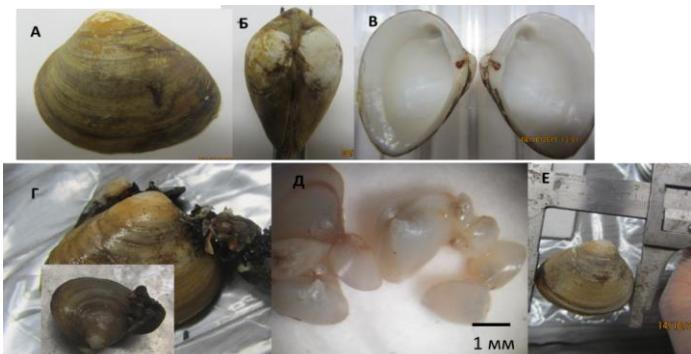
_sbor_ZOO engl.mp4 519 МБ, 20:31

Вакансии

Файлы защищены kaspersky

How does this looks like? Как это выглядит на самом деле?
4-min video about will be presented in English and in Russian

1. 4+4 min video ER 55 Fieldwork in coastal zone - how does this look like ?



1. Field 2019-2021 - new findings during ER55 lasts

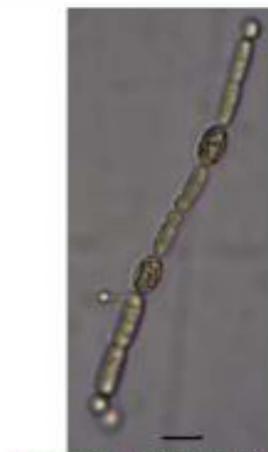
Поле 2019-2021 – новые находки за период действия проекта

- *Laonome* (range extension) (Sabellidae, Polychaeta)
- *Rangia cuneata* (new – 2019 and range extension – 2021) (Mactridae, Bivalvia, **warm water**)
- Spionidae g. sp (*Marenzelleria* sp.) (range extension to riverine habitats or cryptic?) (Polychaeta)
- *Arion lusitanicus* (single records in 2020 and 2021, introduction, range extension or cryptic species?) (road slug, Arionidae, Gastropoda, **low boreal, subtropical**)
- *Mytilopsis leucophaeata* (2020 – range extension outside heated area) (Dreissenidae Bivalvia, **warm water**)
- *Karlodinium veneficum* (2020 - Can be cryptic species) (toxic dinoflagellate)
- New species of cyanobacteria of the genus *Anabaenopsis*. Both are planktonic, common in lacustrine and **technogenicly transformed water-bodies** (reservoirs), **warm water**.

- > 50% are warm water organisms
- > 50% - тепловодные организмы



Dysosmopeltis cf. circinaria (3x10 μm)



dysosmopeltis cf. cyanophorella (3-4x7,5-10 μm)

Fig. 3. New species of cyanobacteria of the genus *Dysosmopeltis*. Both are planktonic, common in lacustrine and technogenically transformed water-bodies (reservoirs), warm water.



Fig. 4 *Karenia brevis* var. *venefica*. Can be cryptic species

Background information (species sketch) on *Arion lusitanicus*

mals (Animalia). Phylum - mollusca (Mollusca). Class - gastropods onata. Family - Arionidae. Species (complex of species) - road slug, *icus* (Fig. on title page and Fig 6)



al view of slugs identified
(Gural-Sverdlova, Gu

Until the first half of the
peninsula, however, most

the middle of the last c
2018 registered in Moscow
(115), demonstrating thus

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*Mytilopsis
leucophaeata*



Mytilus trossulus

100 μm

ФБГУН Санкт-Петербургский научный центр РАН, Программа соседства Эстонии и
России, проект ER 55



Серая книга российского сектора Балтийского моря

Том. 1. Восточная часть Финского залива. Водные беспозвоночные: Hydrozoa, Mollusca,
Polychaeta, Crustacea (Cirripedia), Bryozoa.

М.И. Орлова. СПбГУ РАН

Ключевые слова: терминологический аппарат, фазы протекания процесса, его причины и
результаты, значение биологических инвазий для **Микрофлоры**, разнообразие чужеродных
видов Финского залива, Финский залив как регион-реципиент и регион донор биологических
инвазий, ключевые чужеродные виды, сопротивленная инвазия, потенциальные вселенцы и прогнозы
биологических инвазий, наземные и водные беспозвоночные, первичноводные беспозвоночные и
их пространственное распределение.

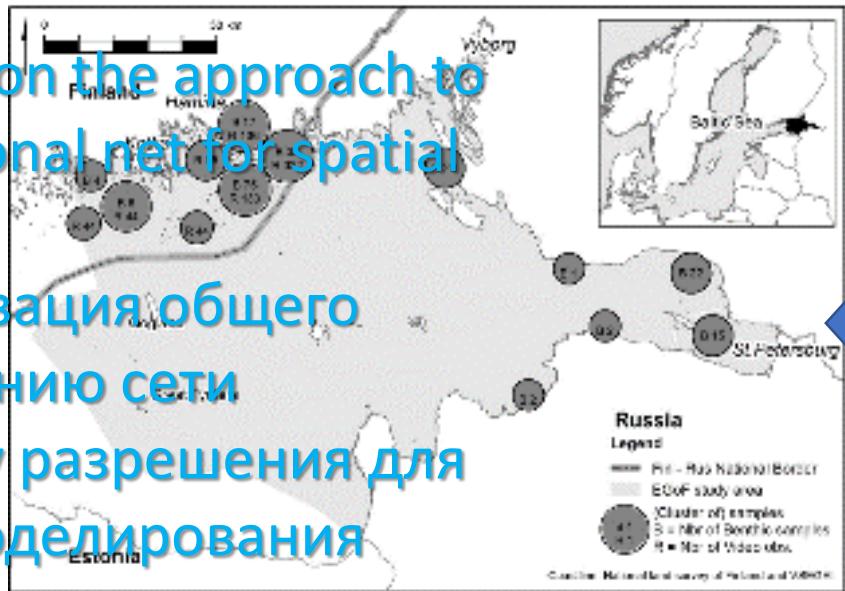
Grey book of the Russian sector of the Baltic Sea

Volume 1. The eastern part of the Gulf of Finland. Benthic aquatic invertebrates: Hydrozoa,
Mollusca, Polychaeta, Crustacea (Cirripedia), Bryozoa.

M.I. Orlova. SPbRC RAS

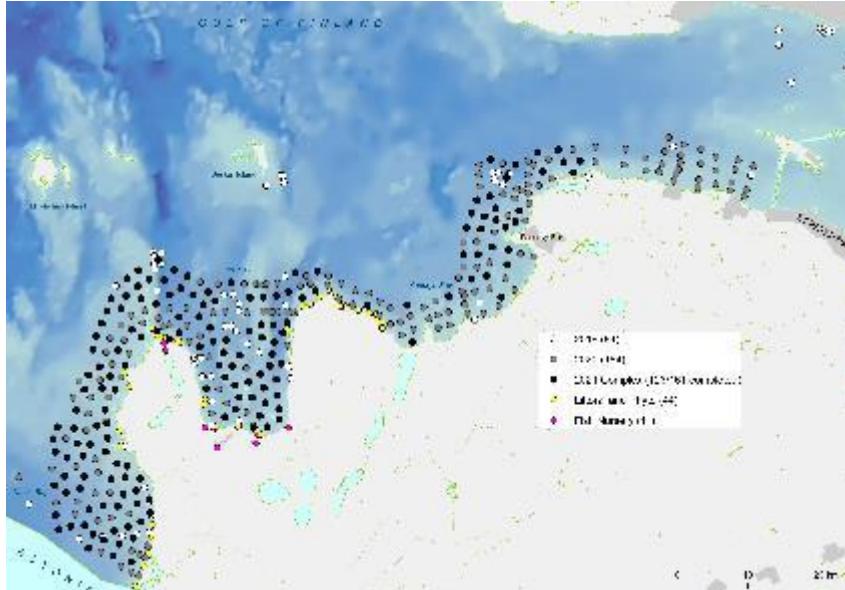
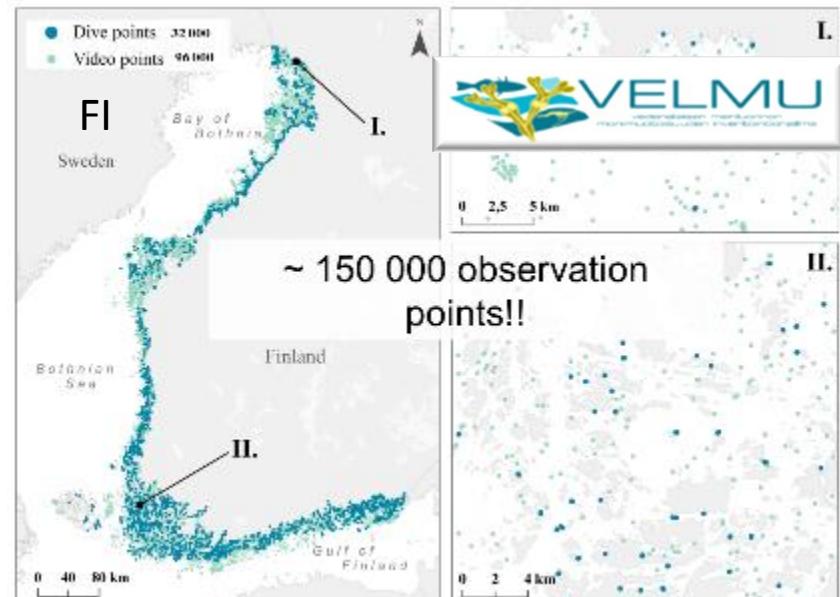
Key words: terminological apparatus, phases of the process, its causes and results, the importance of
biological invasions for microevolution, the diversity of alien species in the Gulf of Finland, the Gulf of
Finland as a recipient region and a donor region of biological invasions, key alien species, invasion

1. Benthic biota data resolution: Initially strongly divergent approach to benthos data collection between EE&Fi and RU



RU Benthos data input for Underwater landscapes modelling.

2012-2014 quantitative samples used for large (mezzo) scale modelling in Kaskela et al., 2017



Current state: quantitative sampling localities, investigated in 2019-2021; since 2020 in accordance with modelling WS (March 2020)

2. “identifying environmental values and associated ecosystem services”

Three 5th RP Activity T1.1 Outputs-

T1.1.1 Harmonized trilingual (indeed tetralingual) glossary on the common understanding of basic terminology and concepts concerning ecosystem structure, services and legislation. – **Formalizes agreements of the three involved countries in the holistic assessment framework terminology**

T1.1.2 Guidelines how to valuate biodiversity elements – **Regulates targeted fieldwork, resolution of data collection along with T1.2.1; harmonizes datasets collected *de novo* between partners in terms of requirements of modeling and mapping, estimation/calculation of ecosystem services values)**

T1.1.3 Database for joint habitats, biota and Associated ecosystem services obtained from targeted field works and previously available databases - **Provides data for (1) transboundary map layers of key environmental variables (biotic and abiotic) and sea uses as well as data for (2) modelling on how multiple human uses affect the marine biota and the associated ecosystem services)**

ER55_glossary.xlsx

Файл Правка Вид Вставка Формат Данные Инструменты Справка Настройки Доступа

1 Term_class_en Term_en Term_en_article Term_ru

2 Adrienne concept term Value of biodiversity elements

3 Climate Issues etc.

4

5 Basic Terms Aged shoreline (relict shore) Border of the shores Древние береговы Berеговые линии палеобассейнов (и связанные Muinalsranta Eri korkeuksilla

6 Basic Terms Archipelago (1) Zone of the sea w. Archipelago Архипелаг 1) район моря, в пределах которого находится Saaristo Saaristo eli saa

7 Basic Terms Bay (1) Small indentation Бухта Небольшой залив, отчененный мысами или о Poukama, lahdenvuori, lähde, Isth Maan ja veden

8 Basic Terms Beach (1) A deposit of non-clastic material Пляж (1) элементарная аккумулятивная форма, сост: Ranta Barioon ja veden

9 Basic Terms Biodiversity Biological diversity: u. Biodiversity Biorodoon, Barioboloostykyysuus, Barioon ja veden

10 Basic Terms Brackish water (subsaline) Water containing more than 0.5‰ salt Солоноватые воды Воды с минерализацией от 1 до 10 г на лм3 (TC Murtovesi Sisämerien ja r

11 Basic Terms Cape Small part of land sticking into the sea Мыс Небольшой участок суши, выдающийся в море Niemi Rannan huoma

12 Basic Terms Coast line Long-term average sea level береговая линия Среднемноголетнее положение уровня воды, гр Rantavuiva Veden ja maan

13 Basic Terms Coast type Defined in geomorphology Тип берега В геоморфологии определяется как сочетание Rantatyypit Geomorfologinen

14 Basic Terms Coastal marine zone (CMZ) Coastal zones are coastal areas The sea zone with depth up to 200 m Прибрежная морская зона постоянной изменчивости вследствие длины Rannikko Meren ja suuret

15 Basic Terms Coastal shallow waters The sea zone with depth up to 1.5 m Прибрежное мелкое Зона моря с глубинами до 1.5 метров, отличается от зоны стабильных астро-волн Rantavyhyke Rantavyhyke

16 Basic Terms Decision Support Tool Area of modern interest Береговая зона В геологии и геоморфологии зона современного Rantavyhyke Maan pinnan ja Mannermaata

17 Basic Terms Delta Band of the bottom, c. Drying beach Jokisulisto Sulsto ell delta on my Delta Delta etik sudmemearaa (Jesse Mäenpää ja vuoteen mäjäjä paljastui)

18 Basic Terms Drying beach Band of the bottom, c. Drying beach El suomenkielista ter. Pagurand Mäenpää ja vuoteen mäjäjä paljastui

19 Basic Terms Dynamic coast classification Developed by V.Zenk Rantaamisen rantoja V. P. Zenkovichin keh. Rannikualade dönaamilllin V. P. Zenkovits poolt välja töötatud

20 Basic Terms Embayed coast Shore, characterized by Rikkonainen rannav. Monimutoinen, niemi Liigestunud rannajoon Rannikuid ligilätkasse emaslasti

21 Basic Terms Environment (1) All those external factors which affect the environment Ympäristö Odot, joita Kogum ei ole ja clusa looduslike

22 Basic Terms Environmental sensitivity (Russian Federation) Ympäristön herkkyys Tielty yli Edas Andreevaa 15.05.2021

23 Basic Terms Estuary (1) A drowned river valley, Jokisuuvalti Joen ja v. Teatud keskkonna tundlikkus er Lehtrikujuline jõesuuve, tekinud

24 Basic Terms Eutrophication (of waters) (Russian Federation) Rehevõitumine Rehevõlt ei vasta ingl kielesele

25 Basic Terms Fetch. The unobstructed distance Pyrykkisymästä Eestel on Vuonon Pikk kites järskude kallastelega

26 Basic Terms Fjord Coast with narrow arm Vuororannikk Vuono or Flada on Pikk kites järskude kallastelega

27 Basic Terms Flad A shallow basin compared to a fjord Flada on Pikk kites järskude kallastelega

28 Basic Terms Flood Inundation in result of Tulva Tulva tar Merest maaastikku osaliselt v

29 Basic Terms Fresh water (1) Is naturally occurring Makaivesi Maka vei Olevutus (ka uputus) on nähtus

30 Basic Terms GIB, Aagoon for Cleanwater Makaivesi on vesi, mille soolisus Magevesi on vesi, mille soolisus

31 Basic Terms Glo A L8 L9 L12 L16 L22 L25 K41 K44 K47 Konetelbestõsteem on automati

32 Basic Terms Gulf (1) L8 L9 L12 L16 L22 L25 K41 K44 K47 Merest kuni viisi kilomeetri kaug Laht on maaastikku osatiselt v

33 Basic Terms Halocline. vs E96 L61 E72 K76 K79 ... Halokliini (ehk soolsushü) Veekihl (hüppelikihl) okeanograafia a ovaat. Ohtlikud alned Inimese terist viki keskkonda o

34 Basic Terms Hazardous substances (s) E96 L61 E72 K76 K79 ...

35 Basic Terms Inner sea Biomat

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Report on the harmonizing methods of field sampling, sample analysis and spatial modelling

Activity Output T1.2.1

Kotta Jonne, Herkül Kristjan, Kõivupuu Anneliis, Orlova Marina,
Zuyev Yuriy, Leontiev Filipp.



Report on Guidelines how to valuate biodiversity elements
Activity Output T1.1.2

List of authors is opened



(the very first draft)

Prepared by Marina Orlova

2. Database's elements

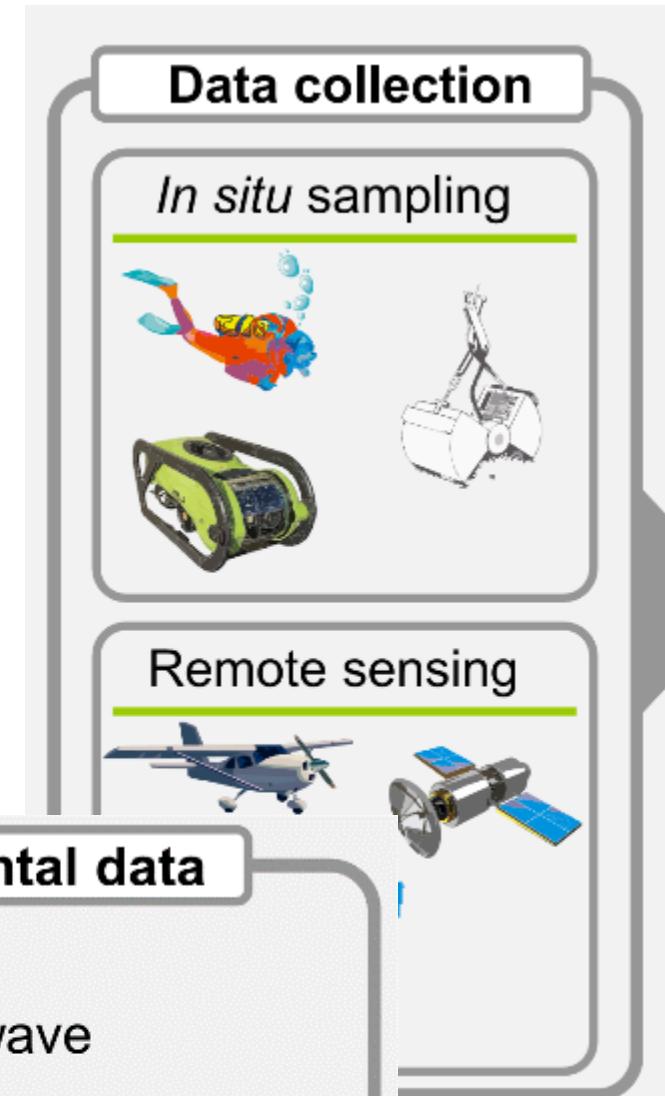
Content (exists or in state of update) as set of tables (MS Excell) with data corresponding to minimum requirement – wrapping to geographical coordinates:

Минимальное требование к данным в части пригодности для пространственного моделирования – привязка к координатам.

- Point data (точечные данные) ;
- Spatial data (пространственные данные)
 - Remote sensing data (данные дистанционного зондирования)
 - Photo and video documenting data (данные фото и видеодокументации)

Other environmental data

- bathymetric data
- hydrodynamic data: wave exposure, currents
- salinity, currents, temperature etc.



Файл Главная Вставка Разметка страницы Формулы Данные Рецензирование Вид Справка Foxit PDF Что вы хотите сделать?

Вставить Сортировка и фильтр

Шрифт Сортировка и фильтр

Выравнивание Сортировка и фильтр

Число Сортировка и фильтр

Стили Сортировка и фильтр

Ячейки Сортировка и фильтр

Редактирование Сортировка и фильтр

	A	B	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
1	sampling	sampling	stone	metal	shell	nbedrock	variable	unit	Amphibalanus	Bangia atropurpurea	Bylgides sarsi	Bythinia	Ceramium tenerum	Ceratopogonidae	Chelicorophium	Chironomidae
218	109	B30	30	0	0	0	abundance	ind/m2	1611,111111	0	0	0	0	0	83,3333333	1472,222222
219	109	B30	30	0	0	0	biomass	g/m2	115,8333333	0	0	0	0	0	0,05555556	0,583333333
220	110	B30	30	0	0	0	abundance	ind/m2	90,90909091	0	0	0	0	0	363,636364	1272,727273
221	110	B30	30	0	0	0	biomass	g/m2	4,363636364	0	0	0	0	0	0,18181818	0,136363636
222	111	B30	30	0	0	0	abundance	ind/m2	0	0	0	0	0	0	0	127,388535
223	111	B30	30	0	0	0	biomass	g/m2	0	0	0	0	0	0	0,0127	0
224	112	20-GFLu	10	0	0	0	abundance	ind/m2	0	0	0	200	0	0	2600	0
225	112	20-GFLu	10	0	0	0	biomass	g/m2	0	0	0	0	0	0	1,1	0
226	113	20-GFVy	0	0	0	abundance	ind/m2	0	0	0	440	0	0	0	760	0
227	113	20-GFVy	0	0	0	biomass	g/m2	0	0	0	4,08	0	0	0	0,88	32,8
228	114	20-GFVy	0	0	0	abundance	ind/m2	0	0	0	1440	0	0	0	720	0
229	114	20-GFVy	0	0	0	biomass	g/m2	0	0	0	44,68	0	0	0	1,4	4,08
230	115	20-GFLu	0	0	0	abundance	ind/m2	0	0	0	200	0	0	0	320	0
231	115	20-GFLu	0	0	0	biomass	g/m2	0	0	0	4,72	0	0	0	0,2	3,72
232	116	20-GFLu	0	0	0	abundance	ind/m2	0	0	0	0	0	0	0	280	0
233	116	20-GFLu	0	0	0	biomass	g/m2	0	0	0	0	0	0	0	0,072	1,48
234	117	20-GFKc	0	0	0	abundance	ind/m2	0	0	0	0	0	0	0	440	0
235	117	20-GFKc	0	0	0	biomass	g/m2	0	0	0	0	0	0,002	0	0,032	8,08
236	118	20-GFSi	0	0	0	abundance	ind/m2	0	0	0	0	0	40	0	23800	0
237	118	20-GFSi	0	0	0	biomass	g/m2	0	0	0	0	0	0,0012	0	1,14	13,4

2. Example of unified (harmonized) workbooks with benthos and geological substrate data

Пример унифицированной книги для компоновки и хранения данных по бентосу и геологическим субстратам

2. Underwater landscapes and sampling process

Подводные ландшафты и процесс отбора проб



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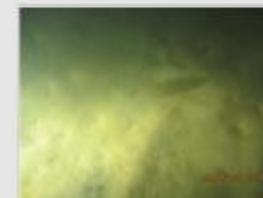
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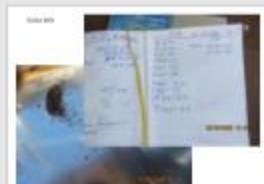
19



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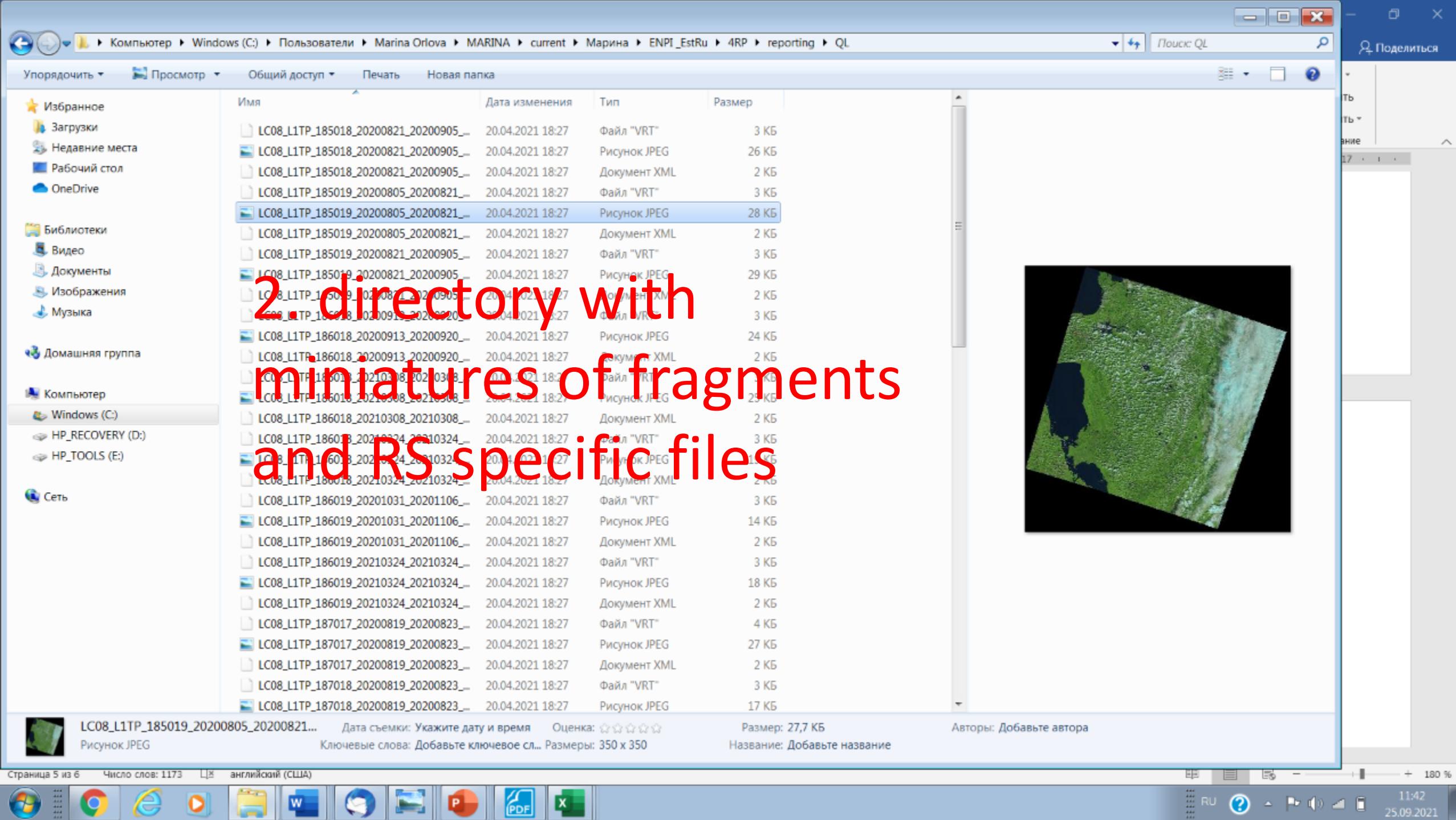
21



**2. Example from PP reporting
(Attachments for point data and RS data)**

Отчетные материалы (вложенные файлы с информацией о точечных и пространственных данных)

L	M	N
1 Обзорное изображение		Id коллекции
2 https://ims.cr.usgs.gov/browse/landsat_8_c1/2021/186/019/LC08_L1TP_186019_20210324_20210324_01_RT.jpg	C1427461962-USGS_EROS	LC81860192021083LGN00
3 https://ims.cr.usgs.gov/browse/landsat_8_c1/2021/186/018/LC08_L1TP_186018_20210324_20210324_01_RT.jpg	C1427461962-USGS_EROS	LC81860182021083LGN00
4 https://ims.cr.usgs.gov/browse/landsat_8_c1/2021/188/018/LC08_L1TP_188018_20210322_20210322_01_RT.jpg	C1427461962-USGS_EROS	LC81880182021081LGN00
5 https://ims.cr.usgs.gov/browse/landsat_8_c1/2021/186/018/LC08_L1TP_186018_20210308_20210308_01_RT.jpg	C1427461962-USGS_EROS	LC81860182021067LGN00
188017_20210218_20210218_01_RT.jpg	C1427461962-USGS_EROS	LC81880172021049LGN00
185019_20210213_20210213_01_RT.jpg	C1427461962-USGS_EROS	LC81850192021044LGN00
187018_20210211_20210211_01_RT.jpg	C1427461962-USGS_EROS	LC81870182021042LGN00
187017_20210211_20210211_01_RT.jpg	C1427461962-USGS_EROS	LC81870172021042LGN00
186019_20210204_20210204_01_RT.jpg	C1427461962-USGS_EROS	LC81860192021035LGN00
186018_20210204_20210204_01_RT.jpg	C1427461962-USGS_EROS	LC81860182021035LGN00
1881_20_1022_20210220_01_RT.jpg	C1427461962-USGS_EROS	LC81880172021033LGN00
185018_20210128_20210128_01_RT.jpg	C1427461962-USGS_EROS	LC81850182021028LGN00
188018_20210117_20210117_01_RT.jpg	C1427461962-USGS_EROS	LC81880182021017LGN00
188017_20210117_20210117_01_RT.jpg	C1427461962-USGS_EROS	LC81880172021017LGN00
188017_20210117_20210117_01_RT.jpg	C1427461962-USGS_EROS	LC81880172021001LGN00
187018_20201209_20201209_01_RT.jpg	C1427461962-USGS_EROS	LC81870182020344LGN00
187017_20201209_20201209_01_RT.jpg	C1427461962-USGS_EROS	LC81870172020344LGN00
186018_20201202_20201217_01_T2.jpg	C1427461962-USGS_EROS	LC81860182020337LGN00
18801_20_1021_20210217_01_T2.jpg	C1427461962-USGS_EROS	LC81880172020335LGN00
185019_20201125_20201211_01_T2.jpg	C1427461962-USGS_EROS	LC81850192020330LGN00
187019_20201123_20201210_01_T2.jpg	C1427461962-USGS_EROS	LC81870192020328LGN00
187018_20201107_20201111_01_T1.jpg	C1427461962-USGS_EROS	LO81870182020312LGN00
186019_20201031_20201106_01_T1.jpg	C1427461962-USGS_EROS	LC81860192020305LGN00
186017_20201015_20201015_01_RT.jpg	C1427461962-USGS_EROS	LC81860172020289LGN00
188018_20200927_20201007_01_T1.jpg	C1427461962-USGS_EROS	LC81880182020271LGN00
187019_20200920_20201006_01_T1.jpg	C1427461962-USGS_EROS	LC81870192020264LGN00
187018_20200920_20201006_01_T1.jpg	C1427461962-USGS_EROS	LC81870182020264LGN00
186018_20200913_20200920_01_T1.jpg	C1427461962-USGS_EROS	LC81860182020257LGN00
189017_20200902_20200906_01_T1.jpg	C1427461962-USGS_EROS	LC81890172020246LGN00



3. Suggestions about further use of the Database's elements concerning building SPBRC RAS geoportal under tentative working title: "Heredity, City, Man and Nature". Example of suggested Workbook with Information on data producers/providers/origin.

В перспективе использование элементов базы данных при разработке портала СПБНЦ РАН под рабочим названием «Наследие. Город. Человек и Природа»

Пример рабочей книги портала, хранящей информацию о держателе данных/их происхождении

3. Set of tables linked to each other with ID of locality/sample (point data)

The screenshot displays three Microsoft Excel workbooks side-by-side, illustrating a database structure for environmental sampling data:

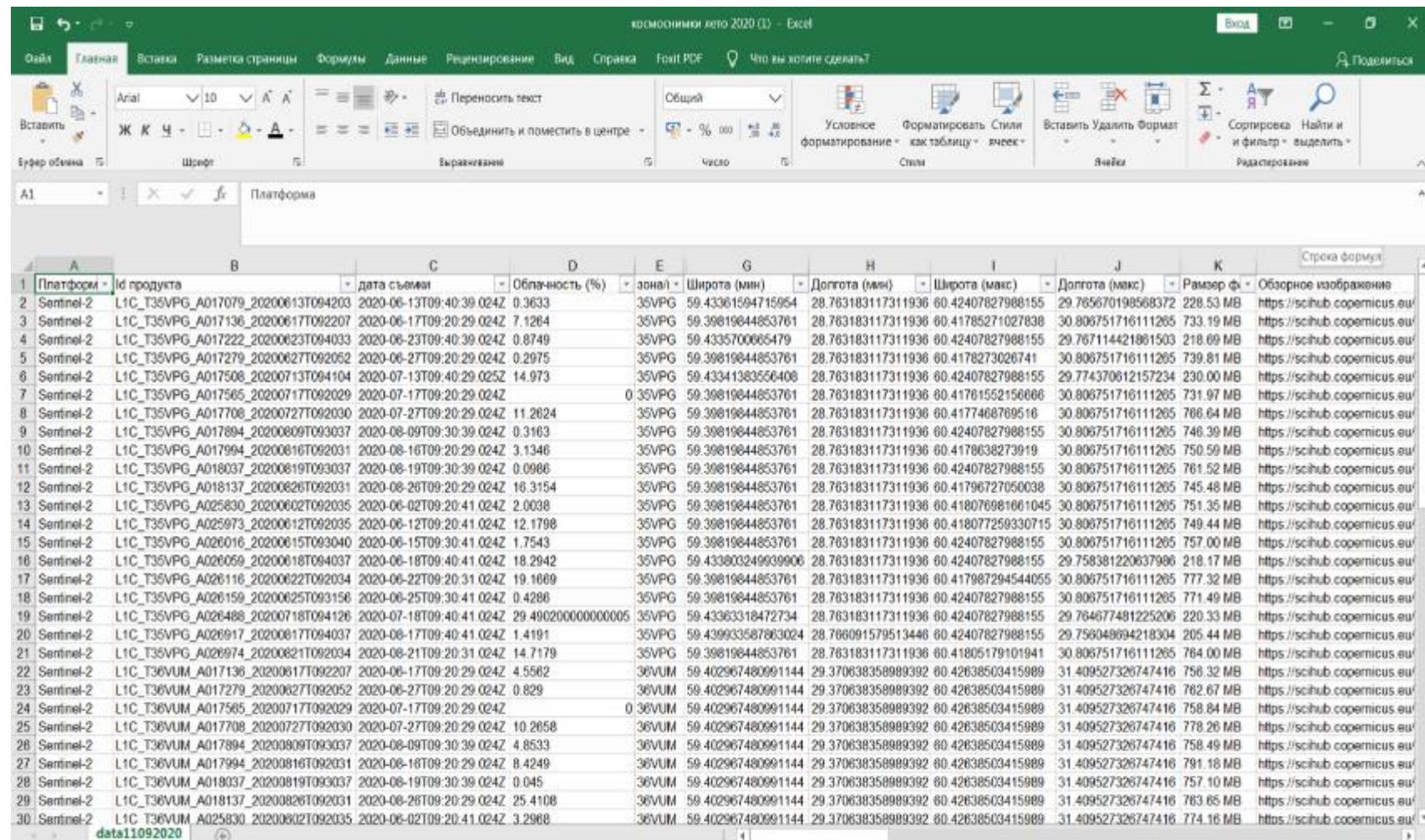
- LOCALITY_SAMPLING_MEASUREMENTS - Excel**: This table links sampling stations to specific dates and locations. It includes columns for ID, sampling_station_name, sampling_date, depth_m, coordinates_N, coordinates_E, and abundance.
- POINT_DATA_BENTHOS 2018_NEARBY_ISLANDS - Excel**: This table provides detailed biological measurements. It includes columns for ID, sampling_station_name, sampling_date, depth_m, coordinates_N, coordinates_E, variable, unit, and various abundance metrics for different taxonomic groups like macrophyta, virdisidyslophora, and Turbellaria.
- POINT_DATA_LINTKOS 2018_NEARBY_ISLANDS - Excel**: This table contains additional measurements such as depth, sampling gear, and photo counts. It includes columns for ID, sampling_station_name, sampling_date, depth_m, coordinates_N, coordinates_E, and abundance.

The workbooks are interconnected through their shared ID column, which serves as a primary key for linking the data across all three tables. A map in the background visualizes the locations of the sampling stations.

Набор таблиц, связанных индивидуальным идентификационным номером локальности и (или) пробы

3. Пример таблицы-каталога для пространственных данных (ДДЗ, подводных и наземных фотодокументов и видеороликов)

В случаях, если фотографии сделаны в моменты пробоотбора, идентификационные номера строк по таким фотографиям должны соответствовать идентификационным номерам в таблицах точечных данных или метаданных



The screenshot shows a Microsoft Excel spreadsheet titled "космонавт лето 2020 (1) - Excel". The ribbon menu includes File, Главная (Home), Вставка (Insert), Разметка страницы (Page Layout), Формулы (Formulas), Данные (Data), Рецензирование (Review), Вид (View), Справка (Help), Font PDF, and Что вы хотите сделать? (What do you want to do?). The Home tab is selected.

The table consists of 30 rows and 12 columns. The columns are labeled A through K. Column A contains the identifier "Платформа" (Platform). Columns B, C, and D contain specific data points. Columns E through K represent geographical coordinates and file details. Column L contains URLs for each entry. The data is as follows:

A	B	C	D	E	G	H	I	J	K	Л	
1	Платформа	Id продукта	дата съемки	Облачность (%)	лонгитудь	Широта (мин)	Долгота (мин)	Широта (макс)	Долгота (макс)	Размер файла	Обзорное изображение
2	Sentinel-2	L1C_T35VPG_A017079_20200613T094203	2020-06-13T09:40:39.024Z	0.3633	35VPG	59.43361594715954	28.763183117311936	60.42407827988155	29.765670198568372	228.53 MB	https://scihub.copernicus.eu/
3	Sentinel-2	L1C_T35VPG_A017136_20200617T092207	2020-06-17T09:20:29.024Z	7.1264	35VPG	59.39819844853761	28.763183117311936	60.41785271027839	30.806751716111265	733.19 MB	https://scihub.copernicus.eu/
4	Sentinel-2	L1C_T35VPG_A017222_20200623T094033	2020-06-23T09:40:39.024Z	0.8749	35VPG	59.4335700065479	28.763183117311936	60.42407827988155	29.767114421881503	218.69 MB	https://scihub.copernicus.eu/
5	Sentinel-2	L1C_T35VPG_A017279_20200627T092052	2020-06-27T09:20:29.024Z	0.2975	35VPG	59.39819844853761	28.763183117311936	60.4182723026741	30.806751716111265	739.81 MB	https://scihub.copernicus.eu/
6	Sentinel-2	L1C_T35VPG_A017506_20200701T094104	2020-07-13T09:40:29.025Z	14.973	35VPG	59.43341360556406	28.763183117311936	60.42407827988155	29.77437061215234	230.00 MB	https://scihub.copernicus.eu/
7	Sentinel-2	L1C_T35VPG_A017565_20200717T092029	2020-07-17T09:20:29.024Z	0	35VPG	59.39819844853761	28.763183117311936	60.41761552150666	30.806751716111265	731.97 MB	https://scihub.copernicus.eu/
8	Sentinel-2	L1C_T35VPG_A017708_20200727T092030	2020-07-27T09:20:29.024Z	11.2624	35VPG	59.39819844853761	28.763183117311936	60.4177468769516	30.806751716111265	768.64 MB	https://scihub.copernicus.eu/
9	Sentinel-2	L1C_T35VPG_A017894_20200807T093037	2020-08-07T09:30:39.024Z	0.3163	35VPG	59.39819844853761	28.763183117311936	60.42407827988155	30.806751716111265	746.39 MB	https://scihub.copernicus.eu/
10	Sentinel-2	L1C_T35VPG_A017994_20200808T092031	2020-08-16T09:20:29.024Z	3.1346	35VPG	59.39819844853761	28.763183117311936	60.417863273919	30.806751716111265	750.59 MB	https://scihub.copernicus.eu/
11	Sentinel-2	L1C_T35VPG_A018037_20200819T093037	2020-08-19T09:30:39.024Z	0.0986	35VPG	59.39819844853761	28.763183117311936	60.42407827988155	30.806751716111265	761.52 MB	https://scihub.copernicus.eu/
12	Sentinel-2	L1C_T35VPG_A018137_20200826T092031	2020-08-26T09:20:29.024Z	16.3154	35VPG	59.39819844853761	28.763183117311936	60.41796727050038	30.806751716111265	745.48 MB	https://scihub.copernicus.eu/
13	Sentinel-2	L1C_T35VPG_A025830_20200602T092035	2020-06-02T09:20:41.024Z	2.0038	35VPG	59.39819844853761	28.763183117311936	60.418076981061045	30.806751716111265	751.35 MB	https://scihub.copernicus.eu/
14	Sentinel-2	L1C_T35VPG_A025973_20200612T092035	2020-06-12T09:20:41.024Z	12.1798	35VPG	59.39819844853761	28.763183117311936	60.418077259330715	30.806751716111265	749.44 MB	https://scihub.copernicus.eu/
15	Sentinel-2	L1C_T35VPG_A026016_20200615T093040	2020-06-15T09:30:41.024Z	1.7543	35VPG	59.39819844853761	28.763183117311936	60.42407827988155	30.806751716111265	757.00 MB	https://scihub.copernicus.eu/
16	Sentinel-2	L1C_T35VPG_A026059_20200618T094037	2020-06-18T09:40:41.024Z	18.2942	35VPG	59.433803249993906	28.763183117311936	60.42407827988155	29.758381220637986	218.17 MB	https://scihub.copernicus.eu/
17	Sentinel-2	L1C_T35VPG_A026116_20200622T092034	2020-06-22T09:20:31.024Z	19.1669	35VPG	59.39819844853761	28.763183117311936	60.41798729454055	30.806751716111265	777.32 MB	https://scihub.copernicus.eu/
18	Sentinel-2	L1C_T35VPG_A026159_20200625T093156	2020-06-25T09:30:41.024Z	0.4286	35VPG	59.39819844853761	28.763183117311936	60.42407827988155	30.806751716111265	771.49 MB	https://scihub.copernicus.eu/
19	Sentinel-2	L1C_T35VPG_A026488_20200718T094126	2020-07-18T09:40:41.024Z	29.4902000000000005	35VPG	59.43363118472734	28.763183117311936	60.42407827988155	29.764677481225206	220.33 MB	https://scihub.copernicus.eu/
20	Sentinel-2	L1C_T35VPG_A026917_20200817T094037	2020-08-17T09:40:41.024Z	1.4191	35VPG	59.439933587803024	28.766091579513446	60.42407827988155	29.756048694218304	205.44 MB	https://scihub.copernicus.eu/
21	Sentinel-2	L1C_T35VPG_A026974_20200821T092034	2020-08-21T09:20:31.024Z	14.7179	35VPG	59.39819844853761	28.763183117311936	60.41805179101941	30.806751716111265	764.00 MB	https://scihub.copernicus.eu/
22	Sentinel-2	L1C_T36VUM_A017136_20200617T092207	2020-06-17T09:20:29.024Z	4.5562	36VUM	59.402967480991144	29.37063835899392	60.42638503415989	31.409527326747416	758.32 MB	https://scihub.copernicus.eu/
23	Sentinel-2	L1C_T36VUM_A017279_20200621T092029	2020-06-21T09:20:29.024Z	0.829	36VUM	59.402967480991144	29.37063835899392	60.42638503415989	31.409527326747416	762.67 MB	https://scihub.copernicus.eu/
24	Sentinel-2	L1C_T36VUM_A017565_20200717T092029	2020-07-17T09:20:29.024Z	0	36VUM	59.402967480991144	29.37063835899392	60.42638503415989	31.409527326747416	758.84 MB	https://scihub.copernicus.eu/
25	Sentinel-2	L1C_T36VUM_A017708_20200727T092030	2020-07-27T09:20:29.024Z	10.2658	36VUM	59.402967480991144	29.37063835899392	60.42638503415989	31.409527326747416	778.26 MB	https://scihub.copernicus.eu/
26	Sentinel-2	L1C_T36VUM_A017894_20200809T093037	2020-08-09T09:30:39.024Z	4.8533	36VUM	59.402967480991144	29.37063835899392	60.42638503415989	31.409527326747416	758.49 MB	https://scihub.copernicus.eu/
27	Sentinel-2	L1C_T36VUM_A017994_20200816T092031	2020-08-16T09:20:29.024Z	8.4249	36VUM	59.402967480991144	29.37063835899392	60.42638503415989	31.409527326747416	791.18 MB	https://scihub.copernicus.eu/
28	Sentinel-2	L1C_T36VUM_A018037_20200819T093037	2020-08-19T09:30:39.024Z	0.045	36VUM	59.402967480991144	29.37063835899392	60.42638503415989	31.409527326747416	757.10 MB	https://scihub.copernicus.eu/
29	Sentinel-2	L1C_T36VUM_A018137_20200826T092031	2020-08-26T09:20:29.024Z	25.4108	36VUM	59.402967480991144	29.37063835899392	60.42638503415989	31.409527326747416	763.65 MB	https://scihub.copernicus.eu/
30	Sentinel-2	L1C_T36VUM_A025830_20200621T092035	2020-06-21T09:20:41.024Z	3.2986	36VUM	59.402967480991144	29.37063835899392	60.42638503415989	31.409527326747416	774.16 MB	https://scihub.copernicus.eu/



pprobation of application new express methods of
obiological analyses to identification recreational value and
ty potential for hydrotechnical constructions

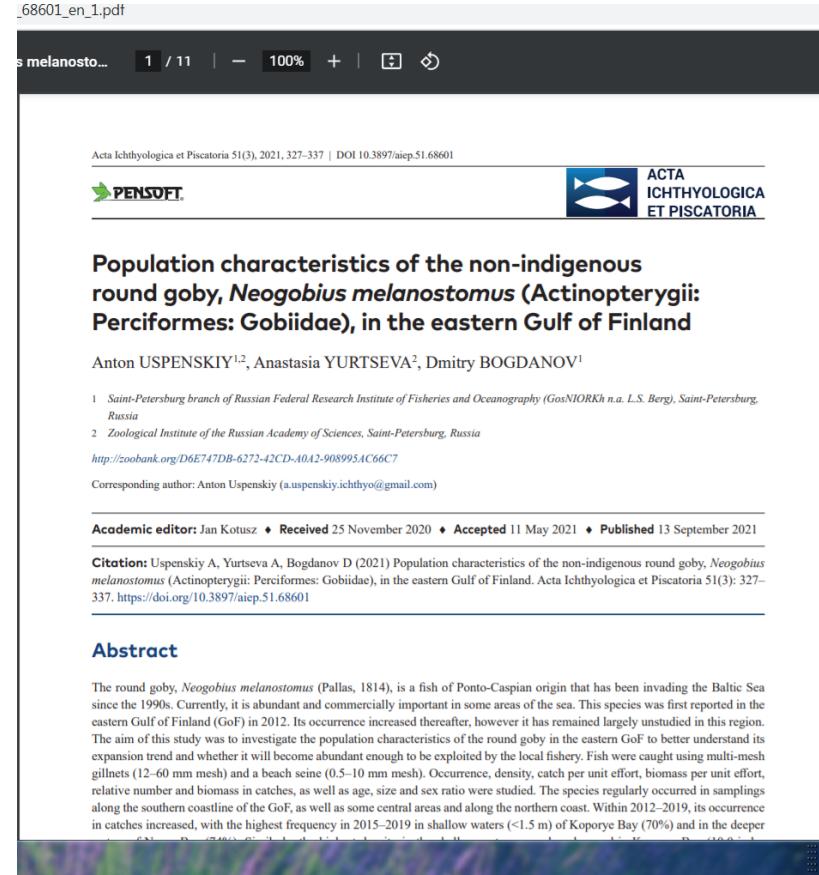
обация применения экспресс методов
робиологического анализа к оценке рекреационных
можностей и потенциала безопасности для конструктивных
материалов



Оценка численности колоний: а) (+) –
единичные колонии микроорганизмов на
лопатке сэмплера; б) (++) – колонии
средней численности, покрывают не более
50% поверхности лопатки сэмплера; в) (+++)
– высокая численность колоний
микроорганизмов, полностью
покрывающих поверхность лопатки, но
между ними сохраняется незначительное
свободное пространство; г) (++++) –
сплошной газон колоний микроорганизмов
на поверхности лопатки сэмплера

5. WP C: Publications (published and submitted) supported by ER 55

- Kotta, J.; Fetissov, M.; Szava-Kovats, R.; Aps, R.; Martin, G. (2021). Online tool to integrate evidence-based knowledge into cumulative effects assessments: Linking human pressures to multiple nature assets. *Environmental Advances*, 2.
- Ojaveer, H.; Kotta, J.; Outinen, O.; Einberg, H.; Zaiko, A.; Lehtiniemi, M. (2021). Meta-analysis on the ecological impacts of widely spread non-indigenous species in the Baltic Sea. *The Science of The Total Environment*, 786, 147375
- Torn, Kaire; Peterson, Anneliis; Herkül, Kristjan. (2020). Predicting the impact of climate change on the distribution of the key habitat-forming species in the NE Baltic Sea. *Journal of Coastal Research*, x-x. DOI: 10.2112/SI95-035.1.





Thank you for your
attention!

Благодарю за внимание!