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 ingeneering 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

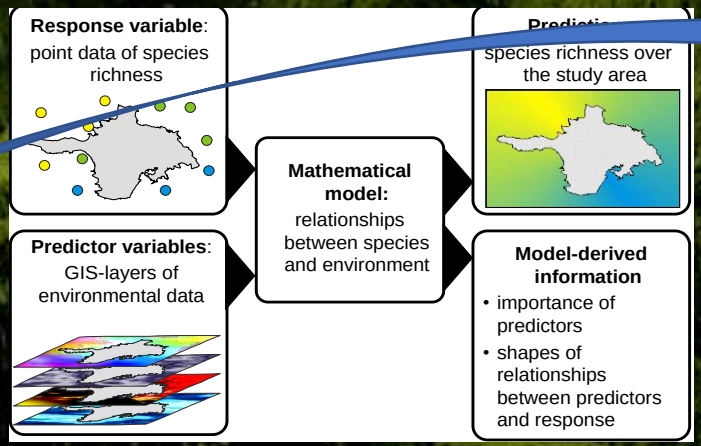
2. Other project activity outputs of Workpackage 1 by the end of September 2021
2. Другие практические результаты проекта по Рабочему пакету 1 к концу сентября 2021

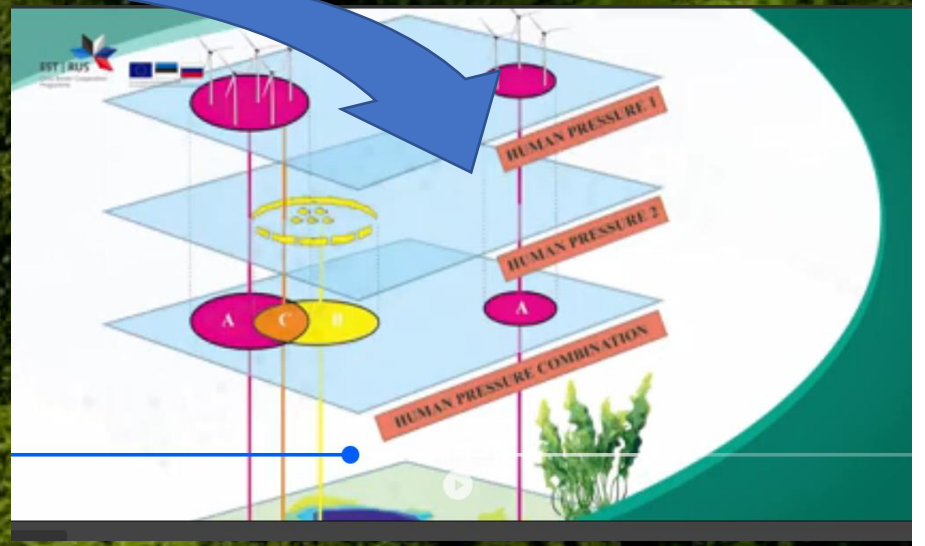
3. Perspectives of use of project outputs and experience
3. Перспективы использования результатов и опыта проекта

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»)

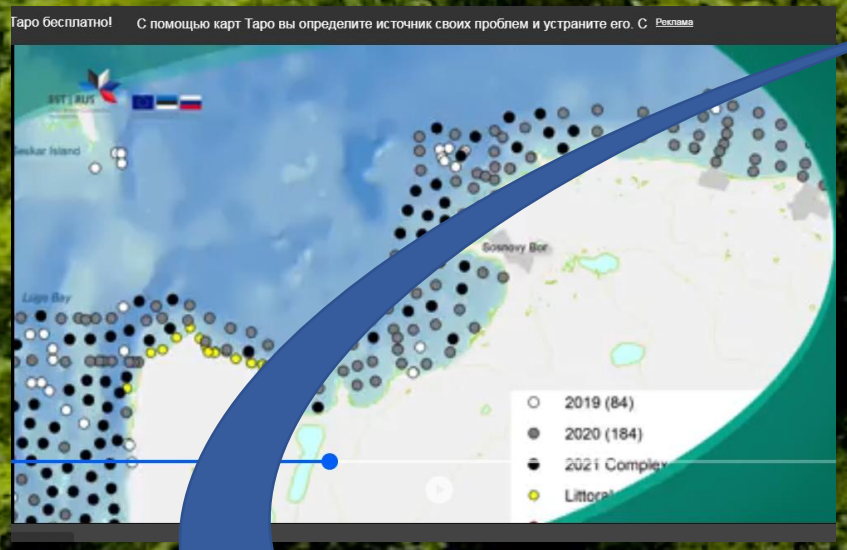
1. Targeted fieldwork carried out with harmonized approach in the coastal zone in order to valuating biodiversity along with collection of habitat data – the source of primary information on current state of environment and effects of pressures and natural driving forces onto an ecosystem formation,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

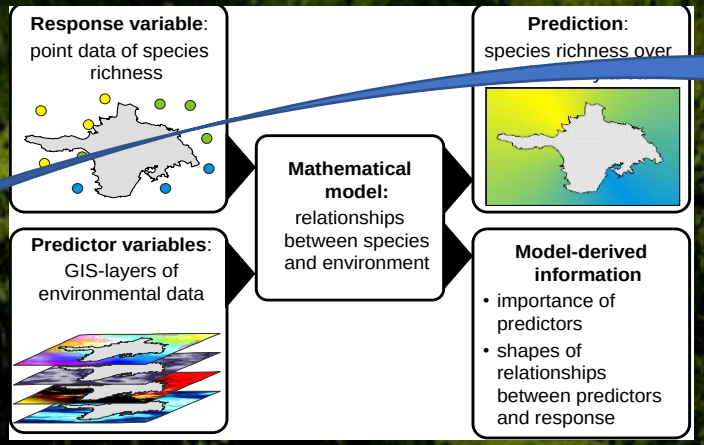


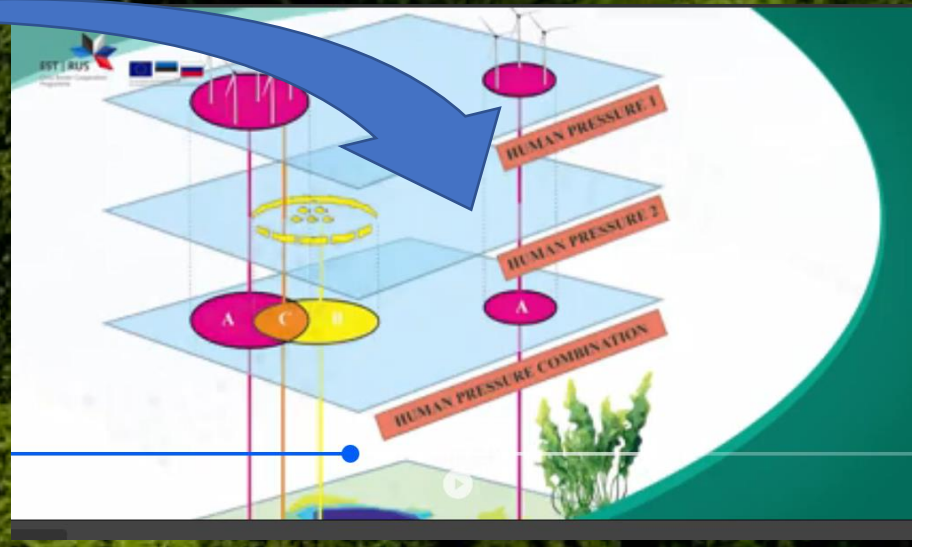


Observations and research at representative net of observational localities provide data for (1) transboundary map layers of key environmental variables (biotic and abiotic) and sea uses as well as data for (2) modelling on how multiple human uses affect the marine biota and the associated ecosystem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

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



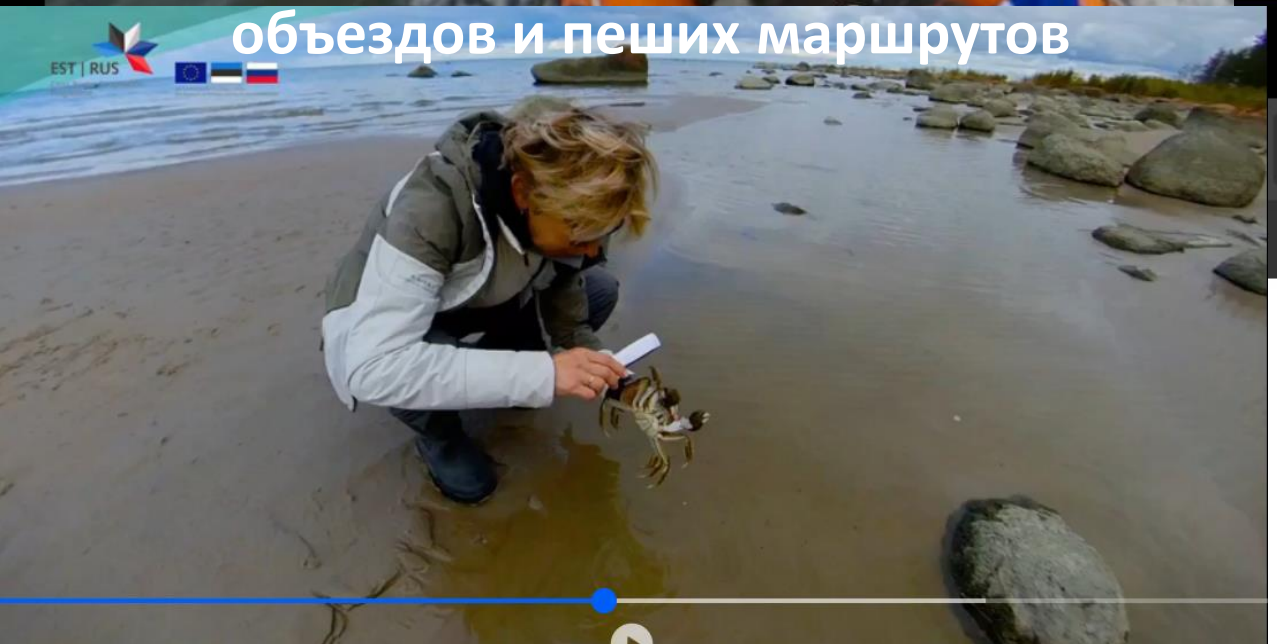


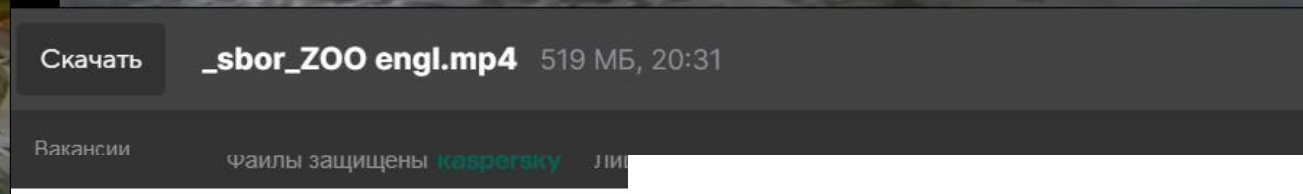


Если коротко, то в основе всех конструкций, построенных с использованием информационных технологий – реальный (объектный) мир и конкретные люди

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 requred.

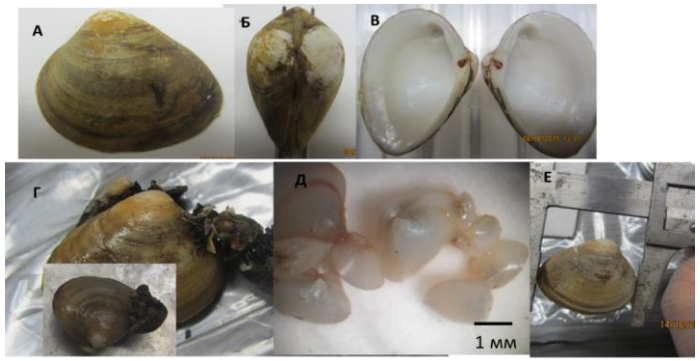
Исследовать прибрежную зону с больших и комфортабельных НИС несколько проблематично: требуется логистически-обоснованная комбинация маневренных маломерных плавсредств, автомобильных объездов и пеших маршрутов

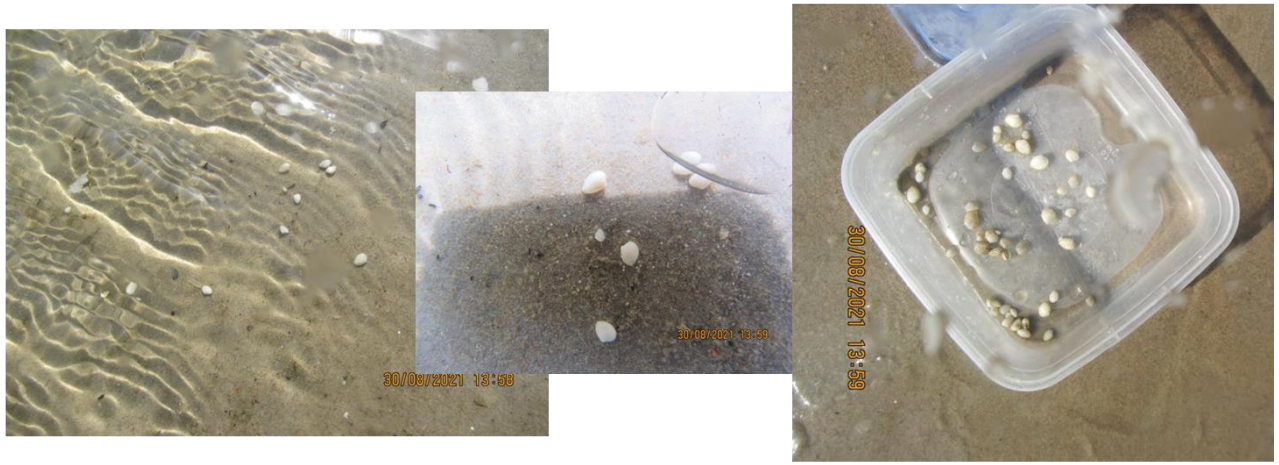




How does this looks like? Как это выглядит на самом деле?
4-min video about will be presented in English and in Russian

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 recods 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 technogeniclly transformed water-bodies (reservoirs), warm water.

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

New findings and evidences of possible effects from habitat disturbance, eutrophication, climate changes and continuous biological invasions. Cyanobacteria

Anabaenopsis cf. circularis (3x10 μm)

Anabaenopsis cf. cunningtonii (3-4x7,5-10 μm)

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

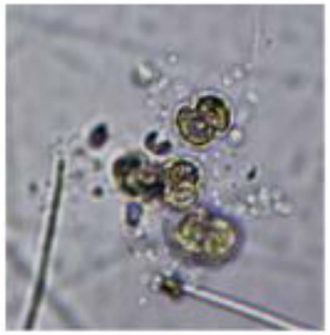


Fig 4 Kerioalinium venificum Can be cryptic species

round information (species sketch) *on Arion lusitanicus*

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

C

al view of slugs identified a (Gural-Sverdlova, Gu

Until the first half of the eninsula, however, most

the middle of the last c 2018 registered in Mosco 2.15), demonstrating thus

ds introduction. Anthrop nts and foods.

gy. There are no natural

Mytilopsis leucophaeata

Mytilus trossulus

100 мкм

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. СПбНЦ РАН

Ключевые слова: терминологический аппарат, фазы протекания процесса, его причины и результаты, значение биологических инвазий для микроэволюции, разнообразие чужеродных видов Финского залива, Финский залив как регион-реципиент и регион донор биологических инвазий, ключевые чужеродные виды, сопряженная 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.

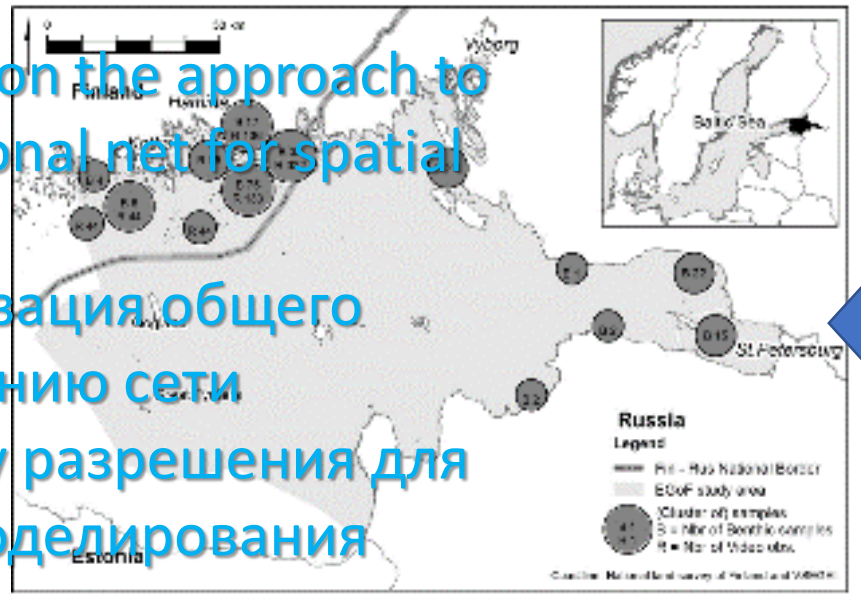
M.I. Orlova. SPbRC RAS

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

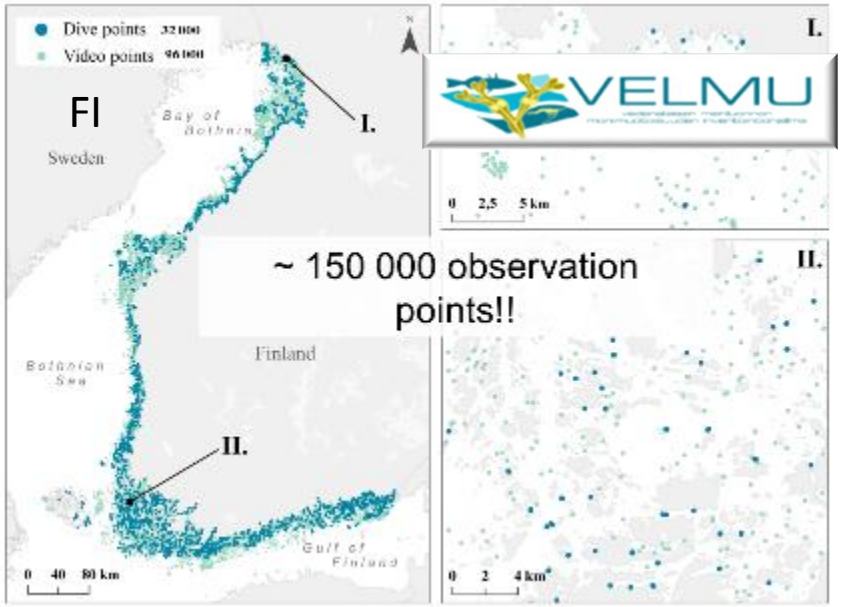
In-process Harmonization the approach to formation of observational net for spatial modelling

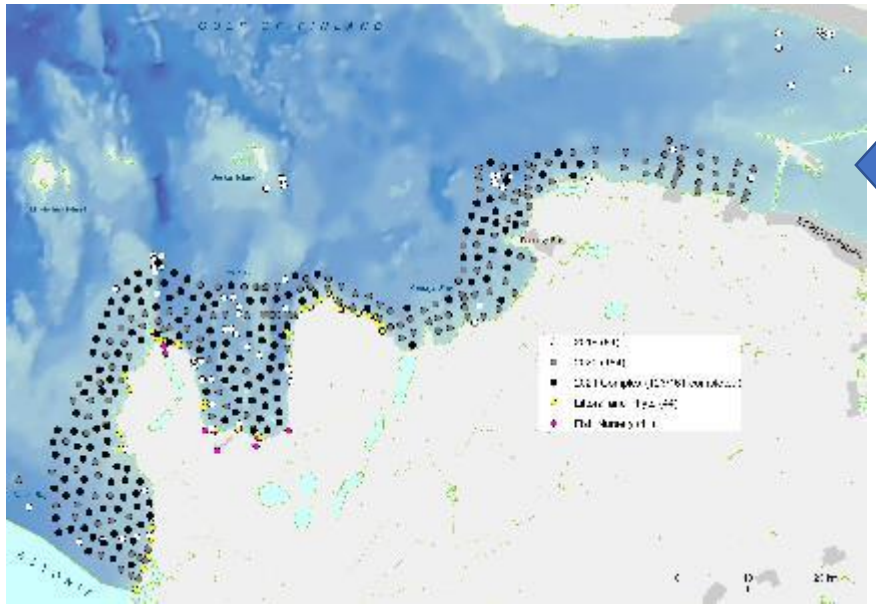
в процессе - гармонизация общего подхода к формированию сети наблюдений и выбору разрешения для пространственного моделирования



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)

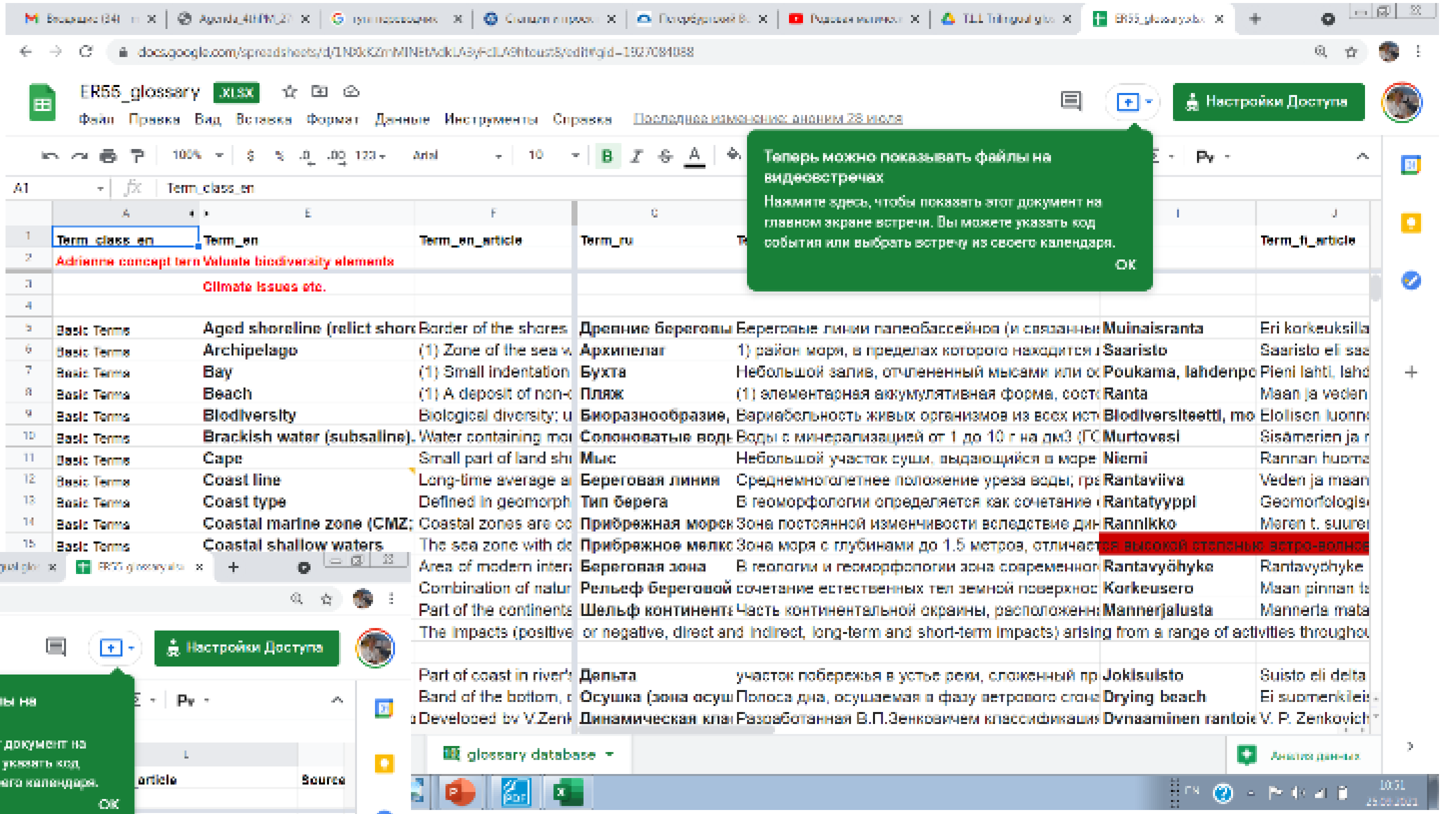
2. “identifying environmental values and associated ecosystem services”

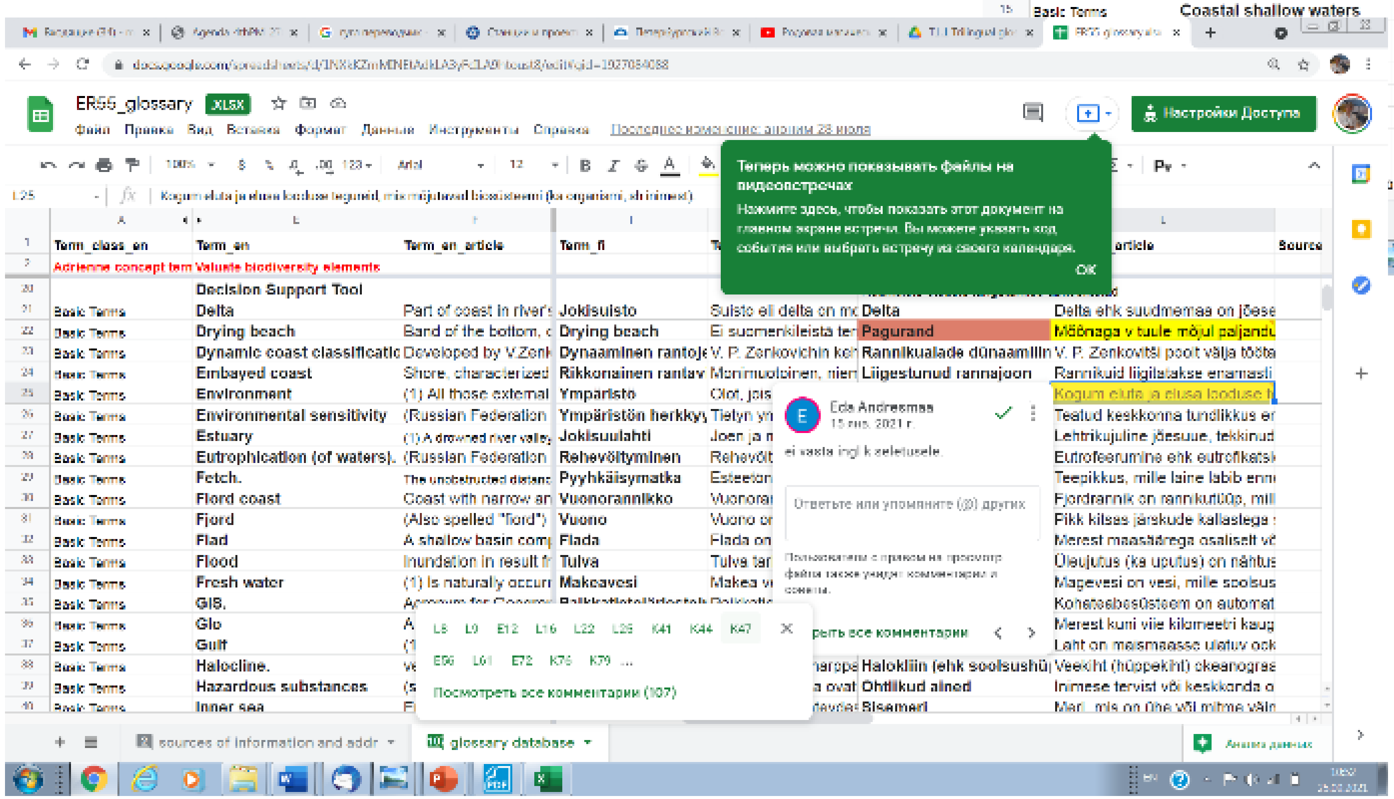
Three 5th RP Activity T1.1 Outputs-

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
Файл Правка Вид Вставка Формат Данные Инструменты Справка
Настройки Доступа
Теперь можно показывать файлы на видеовстречах
Нажмите здесь, чтобы показать этот документ на главном экране встречи. Вы можете указать код события или выбрать встречу из своего календаря.
OK
Term_class_en
Term_en
Term_en_article
Term_ru
Term_fi_article
Adrienne concept term
Valuate biodiversity elements
Climate issues etc.
Basic Terms
Aged shoreline (relict shore
Archipelago
Bay
Beach
Biodiversity
Brackish water (subsaline).
Cape
Coast line
Coast type
Coastal marine zone (CMZ;
Coastal shallow waters
Древние береговы
Архипелаг
Бухта
Пляж
Биоразнообразие,
Солоноватые воды
Мыс
Береговая линия
Тип берега
Прибрежная морск
Прибрежное мелко
Береговая зона
Рельеф береговой
Шельф континента
Дельта
Осушка (зона осуш
Динамическая кла
Muinaisranta
Saaristo
Poukama, lahdenpo
Ranta
Biodiversiteetti, mo
Murtovesi
Niemi
Rantaviiva
Rantatyyppi
Rannikko
Rantavyöhyke
Korkeusero
Mannerjalusta
Jokisuisto
Drying beach
Dynaaminen rantoje
glossary database
Анализ данных


ER55_glossary
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Настройки Доступа
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Нажмите здесь, чтобы показать этот документ на главном экране встречи. Вы можете указать код события или выбрать встречу из своего календаря.
OK
Term_class_en
Term_en
Term_en_article
Term_fi
Source
Adrienne concept term
Valuate biodiversity elements
Decision Support Tool
Basic Terms
Delta
Drying beach
Dynamic coast classificatio
Embayed coast
Environment
Environmental sensitivity
Estuary
Eutrophication (of waters).
Fetch.
Fiord coast
Fjord
Flad
Flood
Fresh water
GIS.
Glo
Gulf
Halocline.
Hazardous substances
Inner sea
Jokisuisto
Drying beach
Dynaaminen rantoje
Rikkonainen rantav
Ympäristö
Ympäristön herkkyy
Jokisuulahti
Rehevöityminen
Pyyhkäisymatka
Vuonorannikko
Vuono
Flada
Tulva
Makeavesi
Delta
Pagurand
Rannikualade dünaamilin
Liigestunud rannajoon
Haloklün (ehk soolsushü
Ohtlikud ained
Sisemeri
Delta ehk suudmemaa on jõese
Mõõnaga v tuule mõjul paljandu
Kogum eluta ja elusa looduse t
Eda Andresmaa
Ответьте или упомяните (@) других
Посмотреть все комментарии (107)
sources of information and addr
glossary database
Анализ данных

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

Activity Output T1.2.1

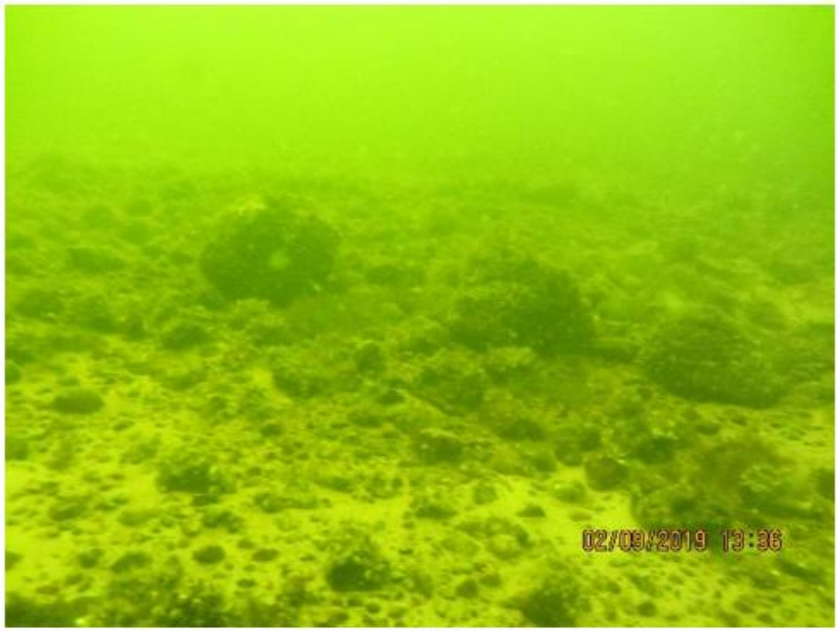
Kotta Jonne, Herkül Kristjan, Kõivupuu Anneliis, Orlova Marina, Zuyev Yuriy, Leontiev Filipp.

2

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

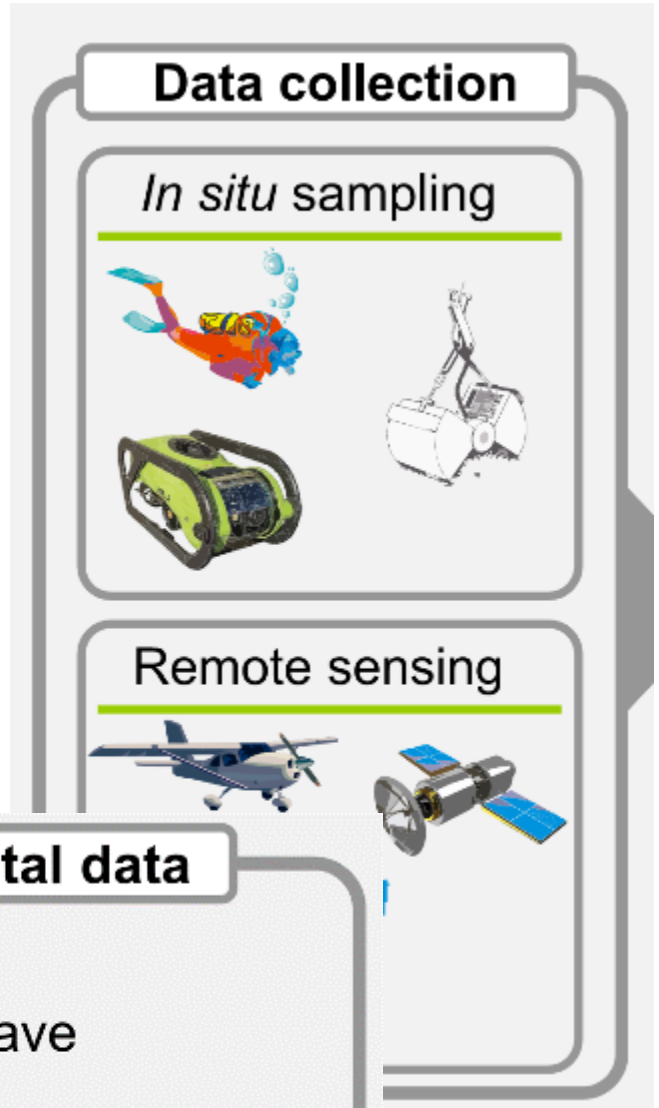
2. Database's elements

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 ди
    зодирования)
  - Photo and video documenting

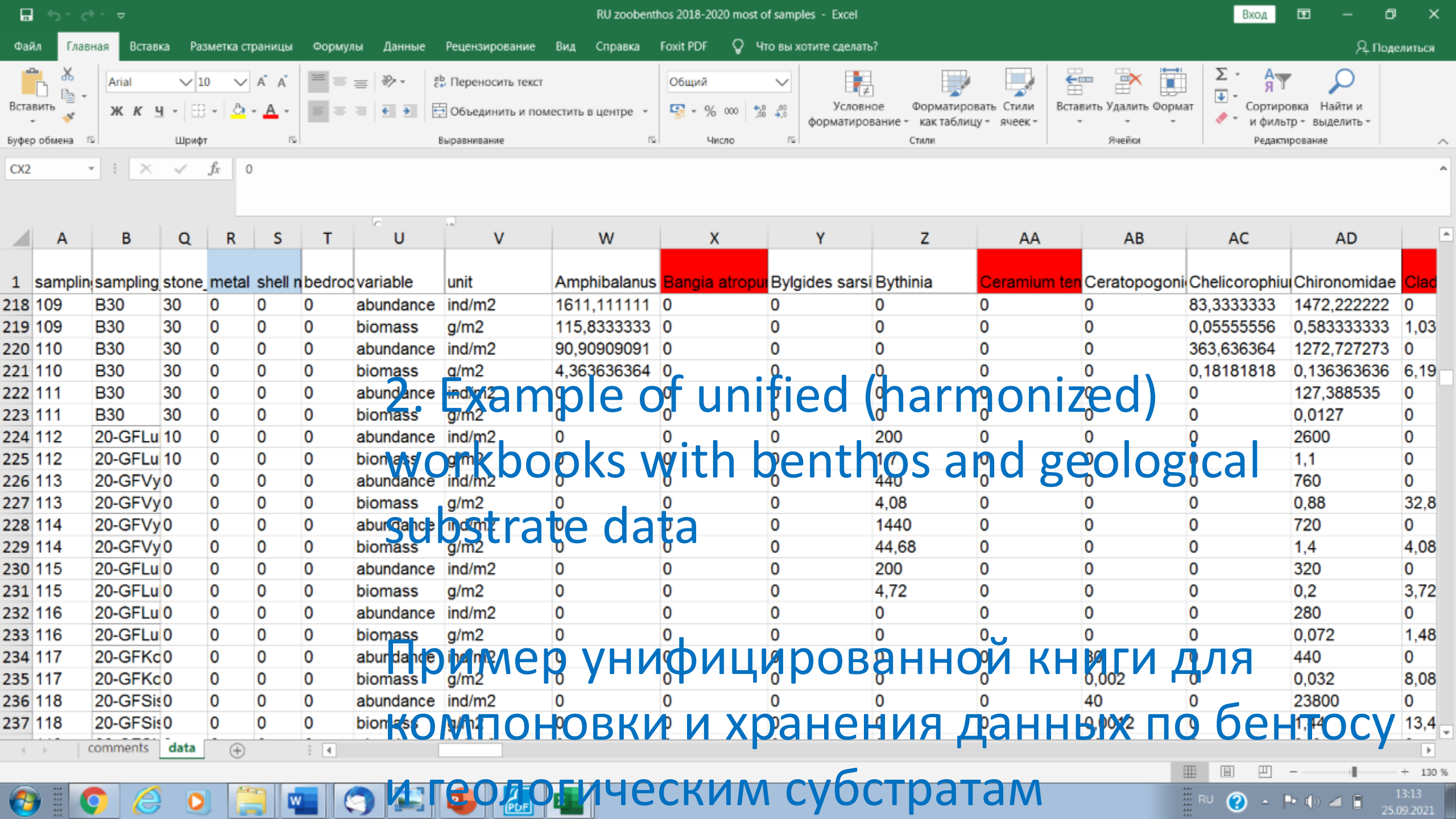
  data (данные фото и видеодокум



Other environmental data

- pathymetric data
- hydrodydamic data: wave exposure, currents
- salinity, currents, temperature etc.

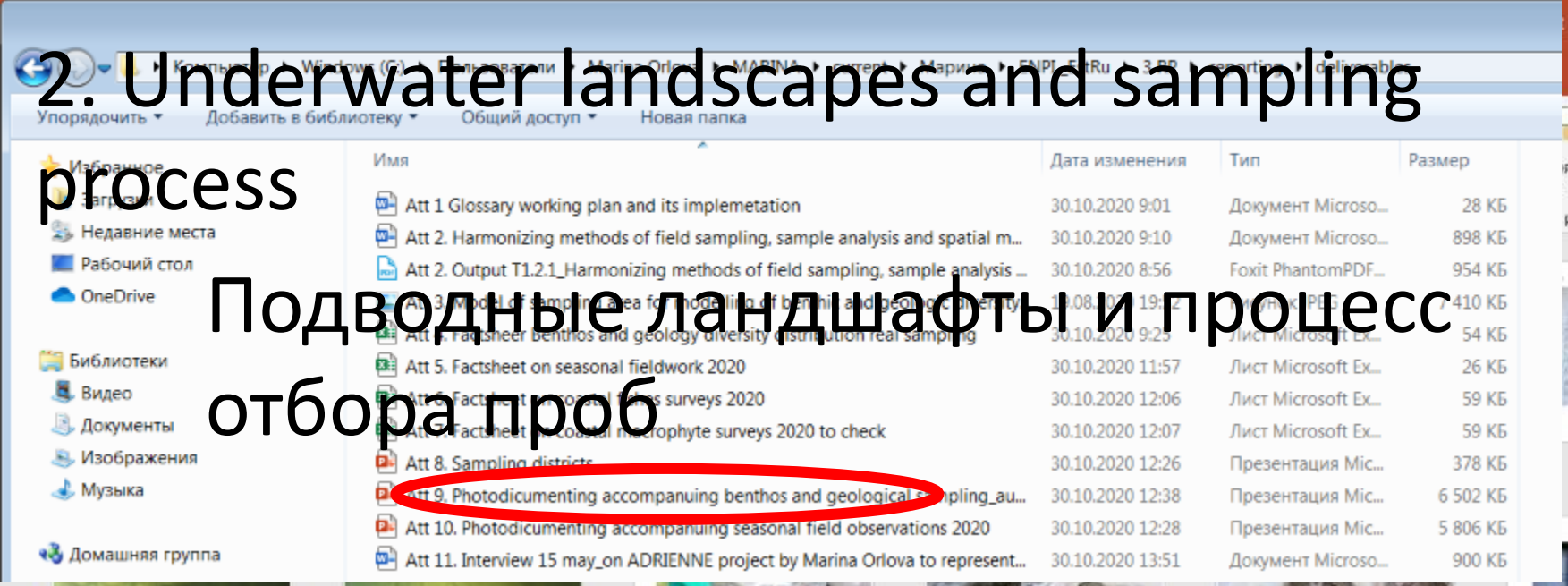
K. Herkul, J/ Kotta, kich-off 29042019



	A	B	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	
1	samplin	sampling	stone_	metal	shell n	bedroc	variable	unit	Amphibalanus	Bangia atropu	Bylgides sarsi	Bythinia	Ceramium ten	Ceratopogoni	Chelicorophiu	Chironomidae	Clad
218	109	B30	30	0	0	0	abundance	ind/m2	1611,111111	0	0	0	0	0	83,3333333	1472,222222	0
219	109	B30	30	0	0	0	biomass	g/m2	115,8333333	0	0	0	0	0	0,05555556	0,583333333	1,03
220	110	B30	30	0	0	0	abundance	ind/m2	90,90909091	0	0	0	0	0	363,636364	1272,727273	0
221	110	B30	30	0	0	0	biomass	g/m2	4,363636364	0	0	0	0	0	0,18181818	0,136363636	6,19
222	111	B30	30	0	0	0	abundance	ind/m2	0	0	0	0	0	0	0	127,388535	0
223	111	B30	30	0	0	0	biomass	g/m2	0	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	0	2600	0
225	112	20-GFLu	10	0	0	0	biomass	g/m2	0	0	0	1,1	0	0	0	1,1	0
226	113	20-GFVy	0	0	0	0	abundance	ind/m2	0	0	0	440	0	0	0	760	0
227	113	20-GFVy	0	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	0	abundance	ind/m2	0	0	0	1440	0	0	0	720	0
229	114	20-GFVy	0	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	0	abundance	ind/m2	0	0	0	200	0	0	0	320	0
231	115	20-GFLu	0	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	0	abundance	ind/m2	0	0	0	0	0	0	0	280	0
233	116	20-GFLu	0	0	0	0	biomass	g/m2	0	0	0	0	0	0	0	0,072	1,48
234	117	20-GFKc	0	0	0	0	abundance	ind/m2	0	0	0	0	0	80	0	440	0
235	117	20-GFKc	0	0	0	0	biomass	g/m2	0	0	0	0	0	0,002	0	0,032	8,08
236	118	20-GFSis	0	0	0	0	abundance	ind/m2	0	0	0	0	0	40	0	23800	0
237	118	20-GFSis	0	0	0	0	biomass	g/m2	0	0	0	0	0	0,002	0	1,14	13,4

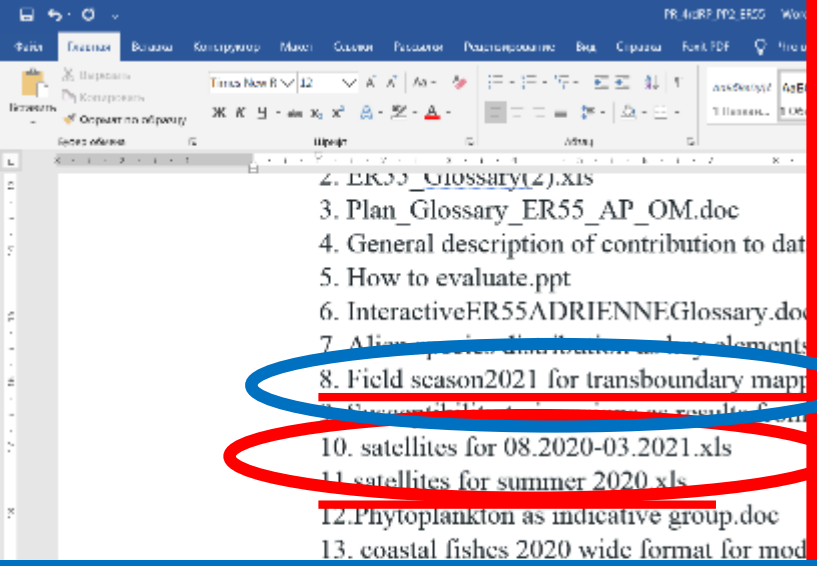
2. Underwater landscapes and sampling process

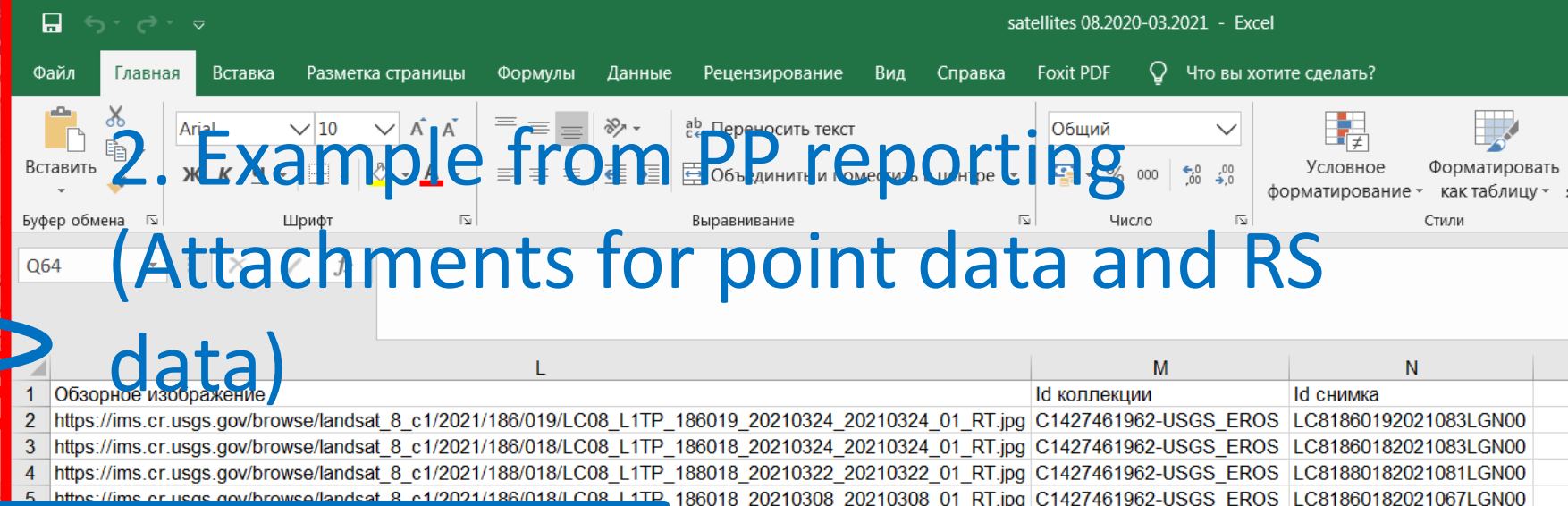
Подводные ландшафты и процесс отбора проб



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	Id снимка
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
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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
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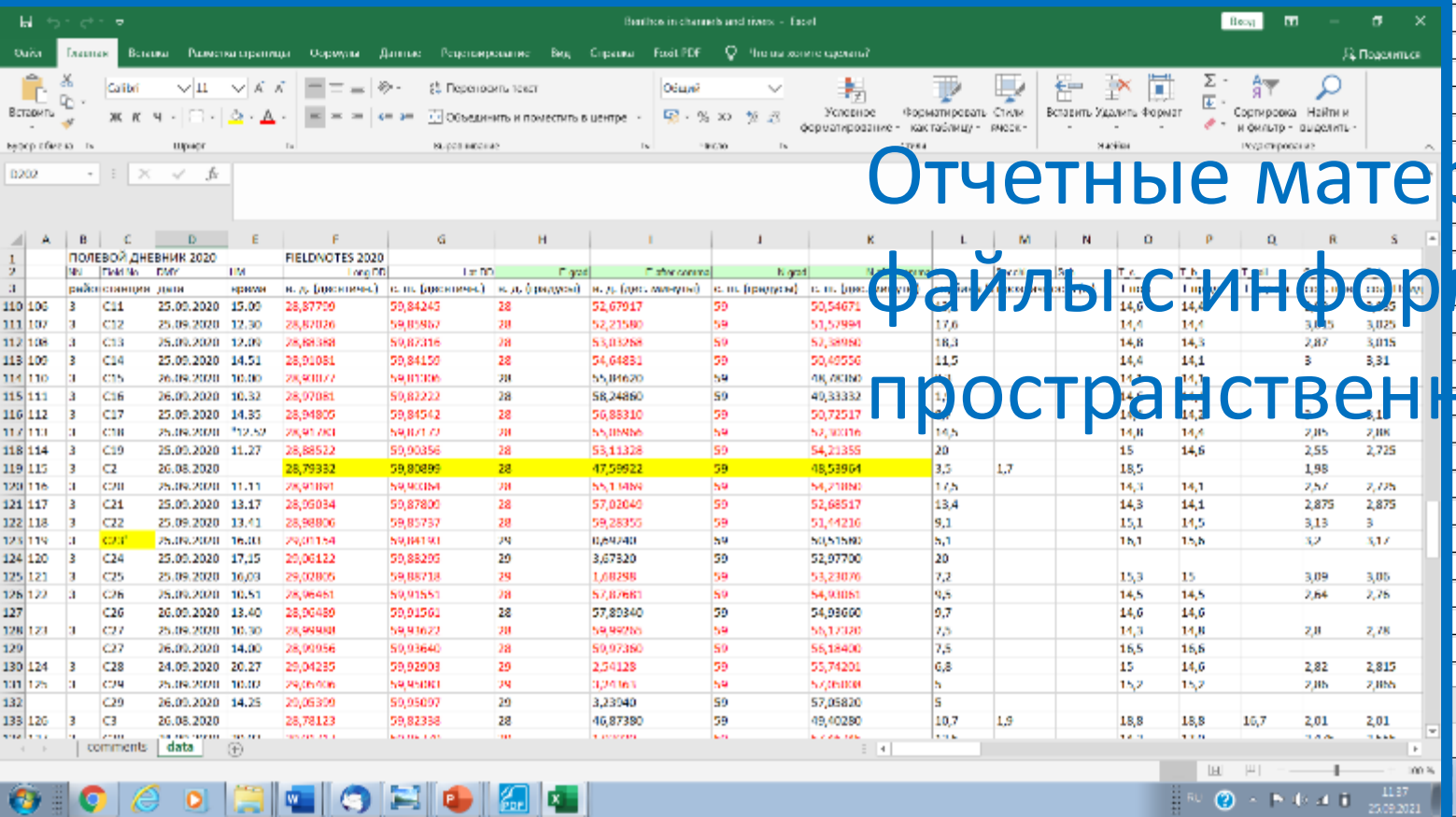
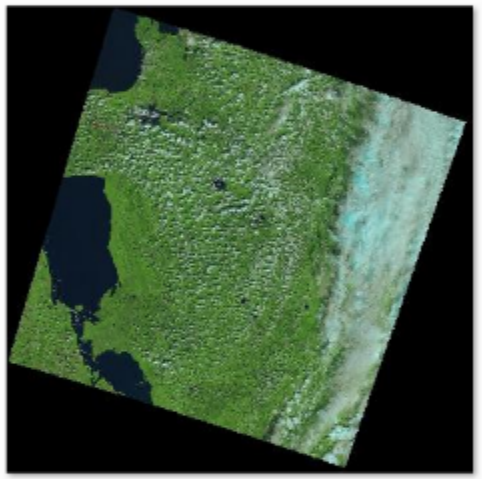


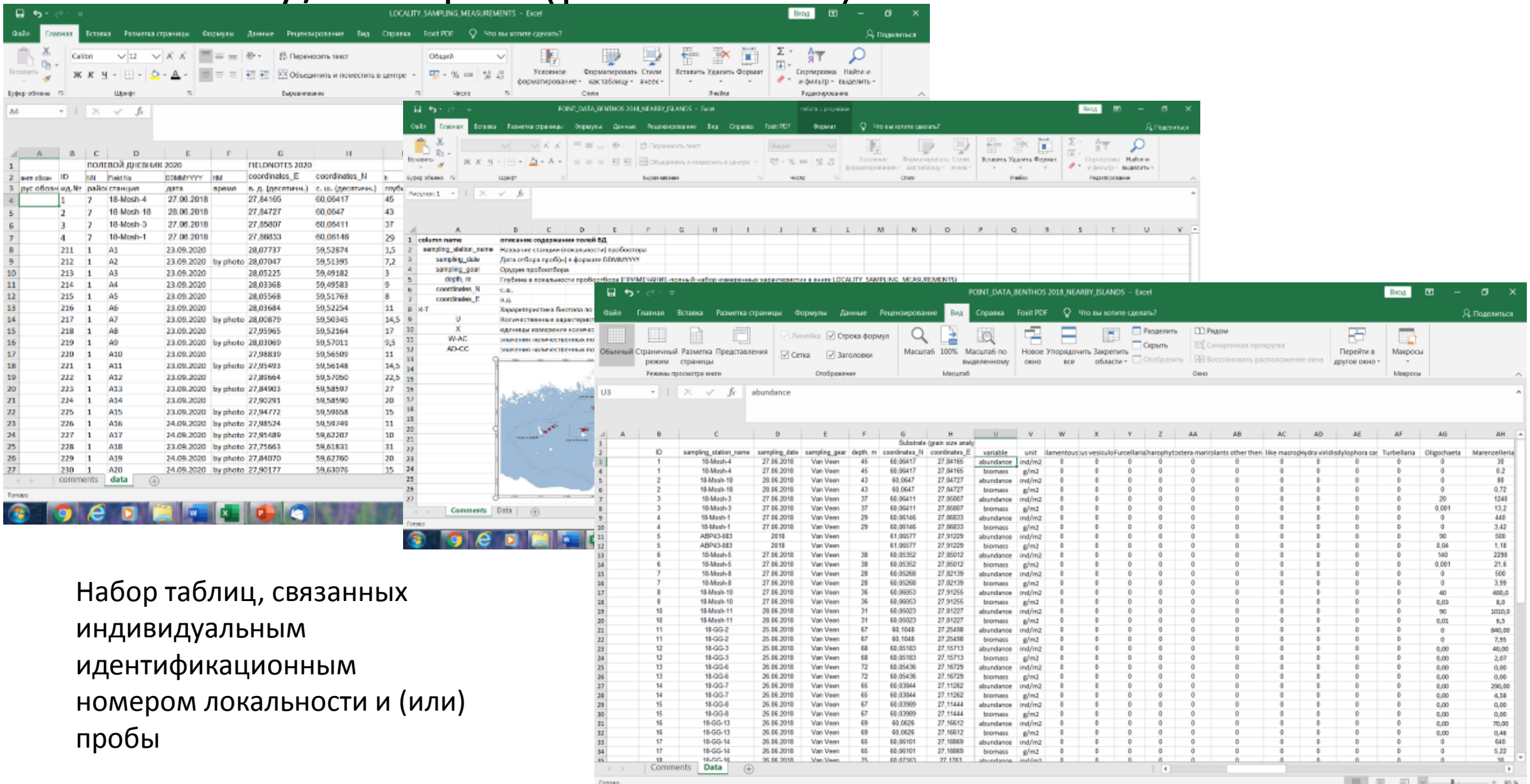
2. directory with miniatures of fragments and RS specific files



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

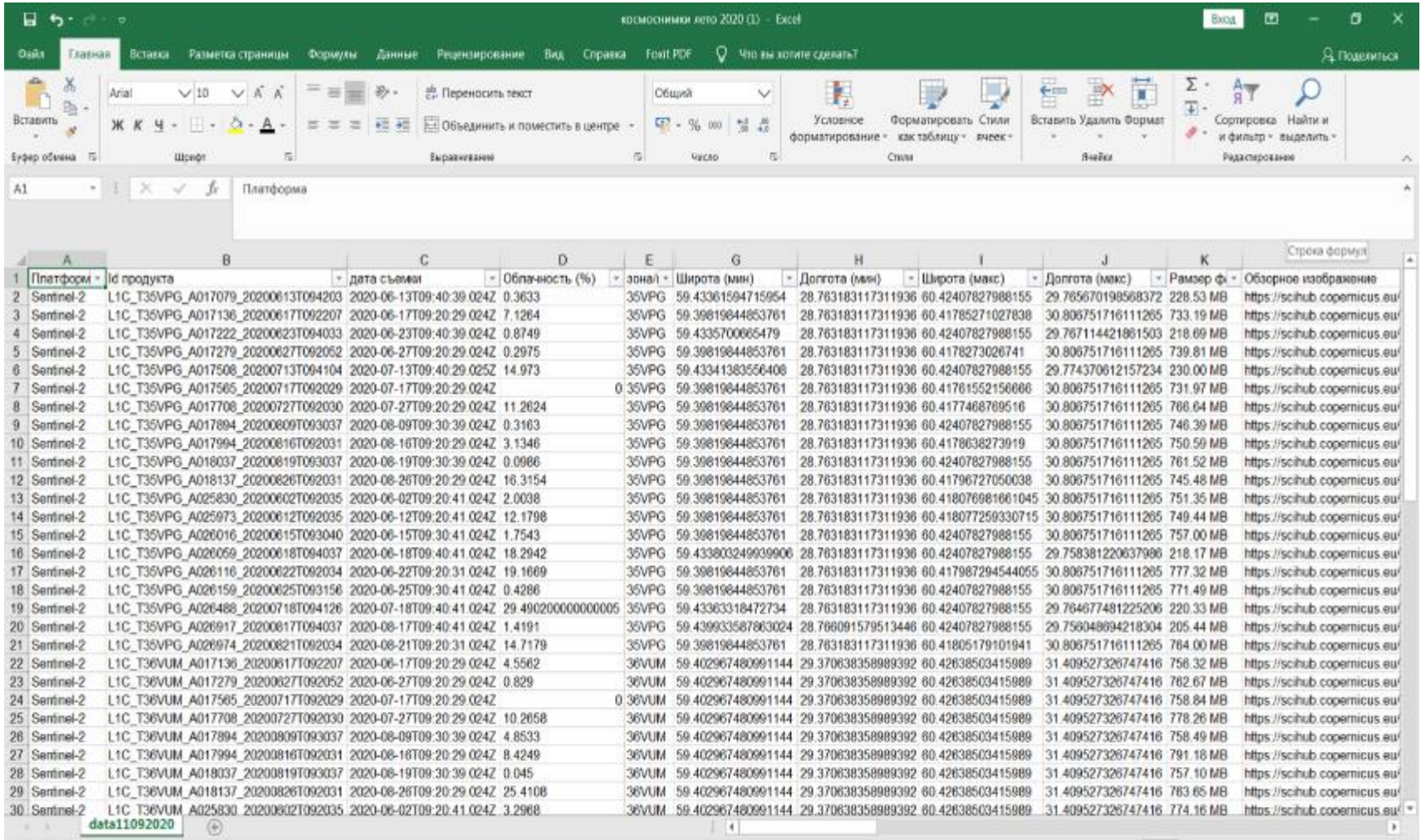
3. Set of tables linked to each other with ID of locality/sample (point data)



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



	A	B	C	D	E	G	H	I	J	K
1	Платформ	Id продукта	дата съемки	Облачность (%)	зона/п	Широта (мин)	Долгота (мин)	Широта (макс)	Долгота (макс)	Размер ф	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	59.39819644853761	28.763183117311936	60.41785271027838	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	59.4335700665479	28.763183117311936	60.42407827988155	29.767114421861503	218.69 MB	https://scihub.copernicus.eu/
5	Sentinel-2	L1C_T35VPG_A017279_20200627T092052	2020-06-27T09:20:29.024Z	0.2975	35VPG	59.39819644853761	28.763183117311936	60.4178273026741	30.806751716111265	739.81 MB	https://scihub.copernicus.eu/
6	Sentinel-2	L1C_T35VPG_A017508_20200713T094104	2020-07-13T09:40:29.025Z	14.973	35VPG	59.43341383556406	28.763183117311936	60.42407827988155	29.774370612157234	230.00 MB	https://scihub.copernicus.eu/
7	Sentinel-2	L1C_T35VPG_A017565_20200717T092029	2020-07-17T09:20:29.024Z	0	35VPG	59.39819644853761	28.763183117311936	60.41761552156666	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	59.39819644853761	28.763183117311936	60.4177468769516	30.806751716111265	766.64 MB	https://scihub.copernicus.eu/
9	Sentinel-2	L1C_T35VPG_A017894_20200809T093037	2020-08-09T09:30:39.024Z	0.3163	35VPG	59.39819644853761	28.763183117311936	60.42407827988155	30.806751716111265	746.39 MB	https://scihub.copernicus.eu/
10	Sentinel-2	L1C_T35VPG_A017994_20200816T092031	2020-08-16T09:20:29.024Z	3.1346	35VPG	59.39819644853761	28.763183117311936	60.4178638273919	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	59.39819644853761	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	59.39819644853761	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	59.39819644853761	28.763183117311936	60.4180769816610 45	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	59.39819644853761	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	59.39819644853761	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	59.433803249939906	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	59.39819644853761	28.763183117311936	60.417987294544055	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	59.39819644853761	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	29.490200000000005	35VPG	59.43363318472734	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	59.43993358786 3024	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	59.39819644853761	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	29.370638358989392	60.42638503415989	31.409527326747416	756.32 MB	https://scihub.copernicus.eu/
23	Sentinel-2	L1C_T36VUM_A017279_20200627T092052	2020-06-27T09:20:29.024Z	0.829	36VUM	59.402967480991144	29.370638358989392	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	29.370638358989392	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	29.370638358989392	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	29.370638358989392	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	29.370638358989392	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	29.370638358989392	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	29.370638358989392	60.42638503415989	31.409527326747416	763.65 MB	https://scihub.copernicus.eu/
30	Sentinel-2	L1C_T36VUM_A025830_20200602T092035	2020-06-02T09:20:41.024Z	3.2968	36VUM	59.402967480991144	29.370638358989392	60.42638503415989	31.409527326747416	774.16 MB	https://scihub.copernicus.eu/

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

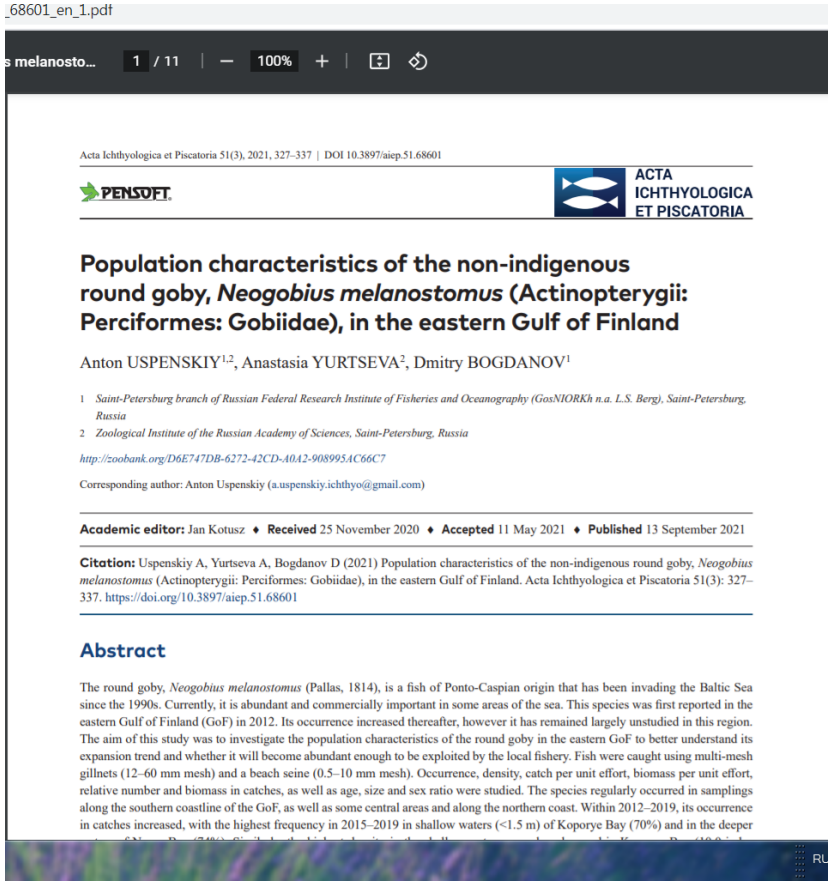
обация применения экспресс методов робиологического анализа к оценке рекреационных можностей и потенциала безопасности для конструктивных материалов

а) б) в) г)

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.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PENSOFT

ACTA ICHTHYOLOGICA ET PISCATORIA

Population characteristics of the non-indigenous round goby, *Neogobius melanostomus* (Actinopterygii: Perciformes: Gobiidae), in the eastern Gulf of Finland

Anton USPENSKIY[1,2], Anastasia YURTSEVA[2], Dmitry BOGDANOV[1]

1 *Saint-Petersburg branch of Russian Federal Research Institute of Fisheries and Oceanography (GosNIORKh n.a. L.S. Berg), Saint-Petersburg, Russia*

2 *Zoological Institute of the Russian Academy of Sciences, Saint-Petersburg, Russia*

http://zoobank.org/D6E747DB-6272-42CD-A0A2-908995AC66C7

Corresponding author: Anton Uspenskiy (a.uspenskiy.ichthyo@gmail.com)

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Abstract

The round goby, *Neogobius melanostomus* (Pallas, 1814), is a fish of Ponto-Caspian origin that has been invading the Baltic Sea since the 1990s. Currently, it is abundant and commercially important in some areas of the sea. This species was first reported in the eastern Gulf of Finland (GoF) in 2012. Its occurrence increased thereafter, however it has remained largely unstudied in this region. The aim of this study was to investigate the population characteristics of the round goby in the eastern GoF to better understand its expansion trend and whether it will become abundant enough to be exploited by the local fishery. Fish were caught using multi-mesh gillnets (12–60 mm mesh) and a beach seine (0.5–10 mm mesh). Occurrence, density, catch per unit effort, biomass per unit effort, relative number and biomass in catches, as well as age, size and sex ratio were studied. The species regularly occurred in samplings along the southern coastline of the GoF, as well as some central areas and along the northern coast. Within 2012–2019, its occurrence in catches increased, with the highest frequency in 2015–2019 in shallow waters (<1.5 m) of Koporye Bay (70%) and in the deeper


Thank you for your attention!
Благодарю за внимание!