

Russia2019\_03

# Chronicles of Nature of Russian Protected Areas: Digitization and Data Mobilization

## FINAL ACTIVITY REPORT

*Guidelines on how to complete the activity report are included in italics. You are welcome to remove the guideline text from the document before you submit the report.*

*Please note that once the activity report has been approved, it will be added to your project page. Therefore, we kindly ask you not to add any contact details of persons in the report unless you have permission from the person to do so.*

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## 1. Executive summary

*Provide a brief explanation of the project and its implementation, the objectives achieved, lessons learned and conclusions.*

Our project supports biodiversity data mobilization of the Chronicles of Nature materials stored in archives of Russian protected areas. Chronicles of Nature are unique archives of annual scientific reports, which collected data of the observations of natural objects in strictly protected areas. The data were collected by professional researchers with standardized methodology and represent long-term data sets on phenological phenomena in the wild nature, abundance and diversity of animals and plants. In many Reserves Chronicles so far remain not-digitized. Some long-term data series have not published in scientific literature and remain unavailable for researchers.

To fill this gap for the European part of Russia, the project aimed at digitalizing and mobilizing data on the different data types stored in Chronicles, as well as expanding of Russian GBIF publishers network. During project implementation period 10 Nature Reserves from European Russia were registered as new GBIF publishers, 9 checklist datasets (total of 3 339 records from European Russia and 6 933 from Far East of Russia) as well as 9 occurrence and sampling event datasets (total of 20 734 occ.) were published through GBIF.org.

The study Guide for Protected Areas staff was developed and available on-line. The Guide Book contains detailed instructions for digitization of different biodiversity data types such as checklist data for species diversity materials, occurrence data for natural history collections and phenological data, as well as sampling event for berry yield data and surveys on (permanent) sampling plots.

The data publishing workshop was held October 1–4 in Vozdvizhenskoe hotel (near the Prioksko-Terrasnyi Biosphere Reserve). 25 participants from 20 Russian protected areas were trained in data mobilization skills. Especially for the course we created training materials with exercises based on different data types presented in Chronicles of Nature.

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## 2. Contact information

*Provide the name, institutional affiliation, role in the project and contact details of the author(s) of the report.*

"Prioksko-Terrasnyi Biosphere Reserve"

Zapovednik, Danki, Serpukhovsky rayon, Moskovskaya oblast, Russian Federation, 142200

Represented by: **Yury Buyvolov** – project manager

Email:

Phone:

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### 3. The project and its objectives

*A brief summary of the project to help readers understand its objectives, including, for example:*

- *The project's start date and expected duration*
- *A list of project participants and description of the main stakeholders*
- *The targeted capacity needs as outlined in the project proposal*
- *The project objectives and expected deliverables as included in the project proposal*

This short-term project (1 February 2019 – 30 November 2019) is aimed at mobilizing Nature Reserves Chronicles data through sharing the experience of the "Prioksko-Terrasnyi Biosphere Reserve" with staff of other Russian protected areas. The project includes (1) Chronicles of Nature data mobilization; (2) training of employees of scientific departments of other institutions under the Minprirody of Russia; (3) preparing of Russian-language guides for Chronicle of Nature data digitization and publishing through GBIF.org. The project is expected to deliver 20,000+ published occurrences and 3000 checklist records from European Russia Protected Areas. In addition to data mobilisation the project to expand Russian GBIF publishers network.

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### 4. Project implementation

*This section should provide readers with a good understanding of the project, from the original plans to the final implementation, highlighting:*

- *The activities that have been completed at the time of writing the report, and those that are ongoing or pending (e.g. longer-term evaluation, follow-up projects/meetings/training events) and your plans for their completion.*
- *How the different partners in the project have contributed to its implementation.*

#### **4.1. Activities completed**

*Describe the activities that have been completed at the time of writing the report. Explain how the different partners in the project have contributed to its implementation.*

The first month of the project was predominantly devoted to the strategic planning and developing of the most efficient practices of data collection and standardization.

The main activity in early project implementation period (February–May 2019) was the preparing of the biodiversity data mobilization training course. We developed the course program Based on BioData training course content and Chronicles of Nature data types. Pre-registration for the course was open. Besides application forms all participants sent metadata about their Chronicles of Nature and another biodiversity data sources.

During mid-term period (June–September 2019) new GBIF publishers from European Russia were registered (see List 1 below), new data were published through GBIF.org (see Table 1 and 2 below). The preview version of the Guide book was prepared. Training materials and the final program of the data publishing workshop were developed.

During the final period of our project (October–November 2019) the data publishing workshop was held, and the final version of the Guide book was prepared.

**List 1. Expanding of Russian GBIF publishers network: new GBIF publishers registered during project implementation**

1. [State Nature Reserve "Belogorye"](#)
2. [Federal state budgetary institution "Visimskiy state reserve"](#)
3. [FGBU GPZ Kologrivskij Les name after M.G. Sinicin](#)
4. [Pinezhsky State Nature Reserve](#)
5. [Yugyd Va National Park](#)
6. [Bryansk Forest Nature Reserve](#)
7. [Pinezhsky State Nature Reserve](#)
8. [Central Forest State Nature Biosphere Reserve](#)
9. [National Park Bashkirija](#)
10. [Federal state budgetary institution "Visimskiy state reserve"](#)
11. [Rostovsky Biosphere Reserve](#)

**Table 1. Published Phenological Observations and Another Materials of the Chronicles of Nature Monitoring Program**

Shashkov M, Bobrovsky M, Smirnova O (2019). Earthworms population in old-growth taiga forests of Pechoro-Ilych State Nature Reserve. Pechora-Ilych state nature biosphere reserve. Sampling event dataset <a href="https://doi.org/10.15468/htk68l">https://doi.org/10.15468/htk68l</a> accessed via GBIF.org on 2019-09-12.	34 occurrences
Lapshina E, Ganasevich G, Vasina A, Filippova N (2019). Vegetation releves of rich fens of Malaya Sosva Nature Reserve. Version 1.3. Malaya Sosva State Nature Reserve. Sampling event dataset <a href="https://doi.org/10.15468/hpjiw9">https://doi.org/10.15468/hpjiw9</a> accessed via GBIF.org on 2019-09-12.	1,427 occurrences
Zablotskaya M M, Shishkin V, Dem'yanetc S, Buyvolov Y (2019). Bird	3,397 occurrences

survey at the permanent sample plots in the Prioksko-Terrasnyi Biosphere Reserve recorded in Chronicles of Nature. Version 1.4. Prioksko-Terrasnyi Biosphere Reserve. Sampling event dataset <a href="https://doi.org/10.15468/jryqih">https://doi.org/10.15468/jryqih</a> accessed via GBIF.org on 2019-09-12.	
Evstigneev O. Chronicle of Nature - Phenology of Plants of Bryansk Forest Nature Reserve (plot based). Bryansk Forest Nature Reserve. Occurrence dataset <a href="https://doi.org/10.15468/6y6wrg">https://doi.org/10.15468/6y6wrg</a> accessed via GBIF.org on 2019-09-12.	14,084 occurrences
Kossenko S. Chronicle of Nature - Phenology of Birds of Bryansk Forest Nature Reserve. Bryansk Forest Nature Reserve. Occurrence dataset <a href="https://doi.org/10.15468/6n2h3u">https://doi.org/10.15468/6n2h3u</a> accessed via GBIF.org on 2019-09-12.	934 occurrences
Evstigneev O. Chronicle of Nature - Phenology of Plants of Bryansk Forest Nature Reserve. Bryansk Forest Nature Reserve. Occurrence dataset <a href="https://doi.org/10.15468/gyh2mw">https://doi.org/10.15468/gyh2mw</a> accessed via GBIF.org on 2019-09-12.	382 occurrences
Kruglikov S. Chronicle of Nature - Phenology of Insects of Bryansk Forest Nature Reserve. Bryansk Forest Nature Reserve. Occurrence dataset <a href="https://doi.org/10.15468/y6bdmw">https://doi.org/10.15468/y6bdmw</a> accessed via GBIF.org on 2019-09-12.	157 occurrences
Bryansk Forest Nature Reserve. Chronicle of Nature - Phenology of Mushrooms of Bryansk Forest Nature Reserve. Occurrence dataset <a href="https://doi.org/10.15468/rrtqtg">https://doi.org/10.15468/rrtqtg</a> accessed via GBIF.org on 2019-09-12.	78 occurrences
Kruglikov S. Chronicle of Nature - Phenology of Arachnids of Bryansk Forest Nature Reserve. Bryansk Forest Nature Reserve. Occurrence dataset <a href="https://doi.org/10.15468/qrotzy">https://doi.org/10.15468/qrotzy</a> accessed via GBIF.org on 2019-09-12.	11 occurrences
Buyvolov Y, Sycheva T (2019). Data assessment of the annual berries yields in the Prioksko-Terrasnyi Biosphere Reserve recorded in Chronicles of Nature. Prioksko-Terrasnyi Biosphere Reserve. Sampling event dataset <a href="https://doi.org/10.15468/e4xgg9">https://doi.org/10.15468/e4xgg9</a> accessed via GBIF.org on 2019-09-20.	230 occurrences
TOTAL OF	20,734 occurrences

**Table 2. Published Species Checklists from Nature Reserves**

Alekseev Y, Sycheva T, Denisova L (2019). Vascular plants checklist of Prioksko-Terrasnyi Biosphere Reserve. Version 1.2. Prioksko-Terrasnyi Biosphere Reserve. Checklist dataset <a href="https://doi.org/10.15468/oihrei">https://doi.org/10.15468/oihrei</a> accessed via GBIF.org on 2019-09-12.	990 records
Ignatov M, Ignatova E, Sycheva T (2019). Moss checklist of Prioksko-Terrasnyi Biosphere Reserve, European Russia. Version 1.1. Prioksko-Terrasnyi Biosphere Reserve. Checklist dataset <a href="https://doi.org/10.15468/er5taj">https://doi.org/10.15468/er5taj</a> accessed via GBIF.org on 2019-09-12.	156 records
Lyubvina I V (2019). The list of short-horned flies (Diptera, Brachycera) of the Zhiguli Reserve. Version 1.3. I.I. Sprygin Zhiguli State Nature Biosphere Reserve. Checklist dataset <a href="https://doi.org/10.15468/skqldm">https://doi.org/10.15468/skqldm</a> accessed via GBIF.org on 2019-09-12.	653 records
Lebedeva G P (2019). The List of Bird Species of Samara Oblast. I.I. Sprygin Zhiguli State Nature Biosphere Reserve. Checklist dataset <a href="https://doi.org/10.15468/vcbgh3">https://doi.org/10.15468/vcbgh3</a> accessed via GBIF.org on 2019-09-12.	310 records
*Starodubtseva E (2019). Vascular plants of Voronezhsky Biosphere Reserve. Version 1.3. VORONEZHISKY STATE NATURE BIOSPHERE RESERVE NAMED AFTER V. PESKOV. Checklist dataset <a href="https://doi.org/10.15468/hronv7">https://doi.org/10.15468/hronv7</a> accessed via GBIF.org on 2019-09-12.	1,051 records
Korotkov V, Drovkina S, Samoilo A, Samoilo N (2019). Checklist of fungi of the Onega Pomorie National Park. Federal State Budget Institution KENOZERO National Park. Checklist dataset <a href="https://doi.org/10.15468/atl470">https://doi.org/10.15468/atl470</a> accessed via GBIF.org on 2019-09-21.	29 records
*Starodubtseva E (2019). Vascular plants of forest-steppe depressions (Voronezh Region). VORONEZHISKY STATE NATURE BIOSPHERE RESERVE NAMED AFTER V. PESKOV. Checklist dataset <a href="https://doi.org/10.15468/dpsa1q">https://doi.org/10.15468/dpsa1q</a> accessed via GBIF.org on 2019-11-04.	150 records
TOTAL OF	3,339 records
Extra datasets from the Far East of Russia	
Linnik E, Pirtskhalava-Karpova N, Tikhonova V (2019). FLORA OF THE KURILSKIY NATURE RESERVE. Version 1.1. State Nature Reserve Kurilsky. Checklist dataset <a href="https://doi.org/10.15468/npmkha">https://doi.org/10.15468/npmkha</a> accessed via GBIF.org on 2019-09-12.	1,916 records
Kozlovsky E, Pirtskhalava-Karpova N, Sundukov Y, Tikhonova V (2019).	5,017

FAUNA OF THE KURILSKIY NATURE RESERVE. Version 1.1. State Nature Reserve Kurilsky. Checklist dataset <a href="https://doi.org/10.15468/trkfbu">https://doi.org/10.15468/trkfbu</a> accessed via GBIF.org on 2019-09-21.	records
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\*These datasets don't contain ProjectID due to the bug in IPT. We contacted GBIF helpdesk, restarting our IPT, but has not solved the issue.

## **4.2. Ongoing and post-project activities**

*Highlight ongoing or pending activities (e.g. longer-term evaluation, follow-up projects/meetings/training events) and your plans for their completion.*

**Species Checklists from Nature Reserves data publishing.** During pre-course activities we received checklists from 10 Russian Nature Reserves, all data were standardized and cleaned, but data only from 4 Reserves were published through GBIF.org. We will continue to work for these data publishing.

**Metadata collection.** We have received metadata on stored biodiversity data from several protected areas. We will continue to collect and summarize this information during post-project activities.

## 5. Project deliverables

This section should summarize the project activities completed by the end of the project with a description of the associated outputs and deliverables. Please highlight any changes from the original plans provided in the full proposal by filling in the column 'State by final report'. You are welcome to attach deliverables to the report as annexes or to link to them. Make sure to include details of data mobilized through the project and/or re-usable information resources or tools. Should your deliverables include data publication to GBIF, please make sure to include the project ID in the dataset metadata. Also, please comment on the expected milestone for the final reporting as defined in the contract.

### a. Data

Title of dataset	Taxonomic/ geographic/ temporal scope	Approximate number of records	Sampling methodology/protocol used (if relevant)	Geographic accuracy for most records (in m or km, or province, country etc.)	Current state (e.g. undigitized, digitized)	State by final report
Phenological observations from Nature Reserves (NR) (separately for each institution)	vascular plants and mammals/NPA of the Russian Federation/ last 20 (and more) years	20 000	The Chronicles of Nature monitoring program*	1-5 km on routes or permanent plots inside NR's	Digitized and verified	20,734 published occurrences
Species checklists from Nature Reserves (separately for each Reserve)	vascular plants and mammals/NR of the Russian Federation/ present	3 000**	Inventory work part of The Chronicles of Nature programme	inside of the borders of the NR	Digitized, not verified	3,339 published records



## b. Other deliverables

Description	State by final report
<b>Guide book</b> (in electronic publishing only before September, 30)	URL <a href="https://pt-zapovednik.ru/category/lib/">https://pt-zapovednik.ru/category/lib/</a>
<p><b>Data mobilization workshop</b> (before November, 30)</p> <p><b>Place:</b> Moscow oblast, Serpukhovskiy rayon, Prioksko-Terrasny Biosphere Reserve</p> <p><b>Time:</b> 4 days in October or November 2019</p> <p><b>Target Audience:</b> staff of Russian Protected Areas.</p> <p><b>Teachers:</b> GBIF.ru team, including administrators of Russian IPT installations (Natalya Ivanova, Maxim Shashkov, Ivan Chadin, Nina Filippova) and foreign expert in data mobilization (Larissa Smirnova, Royal Museum for Central Africa, Botanic Garden Meise, Belgium).</p>	<p>The data mobilization workshop was held October 1–4, 2019.</p> <p>See details below.</p>

### Expected milestones by final report:

Milestone	Status by final report
<ol style="list-style-type: none"> <li>1. Guidebook to be made available electronically</li> <li>2. Data mobilization workshop to have taken place</li> <li>3. Best practices and lessons learned have been documented</li> </ol>	<ol style="list-style-type: none"> <li>1. The Guide book is completely prepared and available online URL <a href="https://pt-zapovednik.ru/category/lib/">https://pt-zapovednik.ru/category/lib/</a></li> <li>2. The workshop had online and onsite components, both with a strong practical approach. Online part was held during this summer, and aimed for publishing of checklist data, and was carried out through e-mails. Onsite part had a strong focus on the technical aspects of data mobilization — in particular,</li> </ol>

everything related to the data lifecycle: digitization, management and online publishing. The onsite course was held October 1–4 in Vozdvizhenskoe hotel (near the Prioksko-Terrasnyi Biosphere Reserve). 25 participants from 20 Russian protected areas were trained in data mobilization skills. Especially for the course we created training materials with exercises based on different data types presented in Chronicles of Nature. These materials and other educational tools for teaching were available for students during the course as well as after the event. Agenda, presentations, and other training materials available via [google drive](#).

<https://drive.google.com/drive/folders/1wNGE1kY-TvtaBXoFOeGPYSVj3KoOh3z>

3. Best practices and lessons learned have been documented; details are provided in the "Recommendations and lessons learned" section.

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## 6. Project communications

*Report on the way the results of your project have been communicated and shared with the project stakeholders and broader GBIF community . Please also review the page describing your project available from <https://www.gbif.org/project/sXNwwgP5NsFN5kxfdqnVq/chronicles-of-nature-of-russian-protected-areas-digitization-and-data-mobilization>. Highlight any additional documents, events, news items or links that you would like to add to your page.*

The project was presented by Yu. Buyvolov in presentation "International cooperation of Russian Biosphere Reserves in the researches and environmental monitoring on the example of the Prioksko-Terrasnyi BR" on the EuroMAB conference (2-5 April 2019, Dublin, Ireland) on workshop "Developing research forums/platforms & courses/qualifications to improve links between biospheres & research institutes: Developing platforms/forums for sharing research, showcasing Ecobroker. WikiMAB and the Biosphere Journal, and opportunities for Biosphere specific courses/ qualifications/ work placements.

Information about the project activities was communicated among colleagues through the following sources:

- E-mail communication
- Google drive for sharing training materials
- Google forms for feedback
- Institutional web pages and gbif.ru
- Social media (e.g. Facebook, VK, Одноклассники)
- Personal communication during data mobilization workshop
- Project page on GBIF.org

For more information, see the 'Sources of verification' section.

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## 7. Evaluation: findings and conclusions

*An assesement of the overall outcomes and impacts of your project, including strengths and weaknesses in its implementation and results. Try to identify clear conclusions from your experience during the implementation of the project. If any changes have been made to the project plans please clearly indicate this in the report and the reasons for this. Also report on any feedback on the project's relevance from the partners and stakeholders*

Overall, 20,734 occurrences and 3,339 checklist records were extracted from different data sources and formats, standardized and published through GBIF. Russian GBIF community was expanded by new GBIF publishers and volunteers. The data mobilization workshop, individual consultations, and the guide book that were organised or developed during the project implementation helped in promoting open science principles among staff of Russian protected areas. Thus, our project contributed to filling gap in global biodiversity map for European Russia and dissemination of FAIR principles among Russian researchers.

### Data mobilization workshop: analysis of feedback

Attendees evaluated the event by filling out an anonymous online form to which a link was provided during the last session. It included quick assessments of key topics and of the course sessions, choice questions, and free-text questions. 21 out of 23 participants completed and submitted the form.

#### Key topics

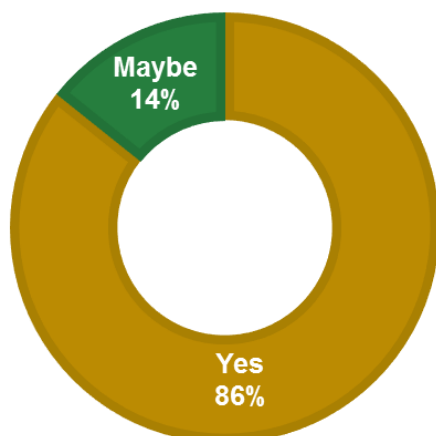
The table below includes the course features that the participants were asked to rate from 1 (very dissatisfied) to 5 (very satisfied).

Topic	AVG score	Min score	Max score
Course contents	4.8	4	5
Slides	4.5	3	5
Training materials	4.6	3	5
Trainers	4.9	3	5
Mentors	4.7	3	5

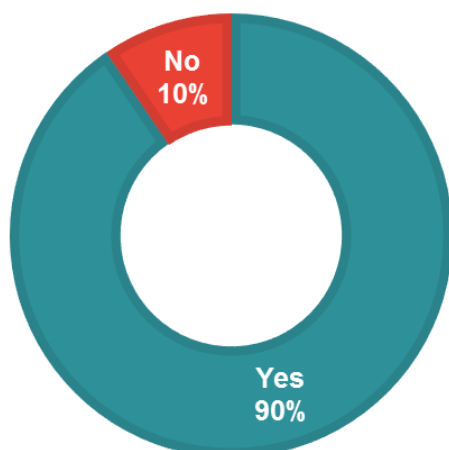
All scores were very high (only two under 4.5 out of 5). Attendees valued the quality of the trainers, the course contents, and mentors. The slides and training materials scored were lower, although still in the upper range of the scoring. The lower scores for the slides are likely because different slides were created by different persons with different background.

### Choice questions

Will you use your new skills and studied topics in your daily work?



Do you need technical support for your data standardization and publishing?



### Free-text responses

In the second section of the evaluation form the students had the opportunity to provide more detailed feedback in free-text responses. The questions and a summary of the responses follow below:

#### Your main impression of the course

All the participants noted that the course was useful for their daily work and the practical organization was very well. Many participants pointed out friendly atmosphere and good interaction between students and mentors.

### That you would have added to this course?

- ✓ Different data stored in protected areas and their data publishing (2 people)
- ✓ Special tools for different tasks (especially data cleaning) (2 people)
- ✓ Work with real student's data (2 people)
- ✓ More practical activities (2 people)
- ✓ Sampling event data standardization and publishing
- ✓ Digitization of Entomological Collections
- ✓ Phenology data and GBIF (2 people)

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## 8. Recommendations and lessons learned

*This section should be addressed to others preparing similar projects in the future. Try to identify your experiences that could help others to design and implement projects more effectively, including the best practices to adopt and the pitfalls to avoid.*

### 8.1 Data publishing workshop

Develop training materials. The development of a new training materials targeted at the staff of protected areas was successful. We recommend the continued development of additional themed training materials.

Reserve time for individual work with student's datasets. We understand, it is not a simply task, because usually the course agenda is very intensive, but recommend if possible include this activity in course contents.

During our workshop one real dataset was published through GBIF.org:

Starodubtseva E (2019). [Vascular plants of forest-steppe depressions \(Voronezh Region\)](#). VORONEZHISKY STATE NATURE BIOSPHERE RESERVE NAMED AFTER V. PESKOV. Checklist dataset <https://doi.org/10.15468/dpsa1q> accessed via GBIF.org on 2019-11-04.

### 8.2 Guide book in local language

Unfortunately, the language barrier is very relevant for Russian researchers. Therefore, Russian-language guidelines and training materials developed earlier and during our project implementation were very important for the success of the project and future activities. But, the total translation of all GBIF content into the local language is bad practice.

In our opinion, only the basic concepts and foundations of biodiversity informatics should be translated into the local language.

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## 9. Future plans

*A description of how the partners involved will build on the results of this project in their future work. This could include future collaborative activities, such as plans to complete any unfinished project activities and how the future impact of the project could be monitored or measured.*

### Chronicles of Nature data mobilization

Prioksko-Terrasnyi Biosphere Reserve continues to collaborate with GBIF.ru team (Institute of Mathematical Problems in Biology in Pushchino, Moscow region) in Chronicles of Nature data mobilization. Next year we will focused in soil fauna monitoring data. Soil zoology investigations in the Reserve are carried out during many years, but by now there are long term data (about 30 years) are still disunited. Another our activity will have aimed for update existing dataset “Phenological observations of biota on the territory of Prioksko-Terrasnyi biosphere reserve” published in 2017 (DOI10.15468/2txjmp). New phenological observations produced during 2016-2019 will standardized, cleaned and published through GBIF.org.

### Improving of the Guide Book

For evaluation of our efforts in the Guide Book preparing we plan to develop online form for users (via google form). Over the next year, we will accept feedback, comments, and suggestions for improving of the Guide Book. Based on these data, a new version will be compiled.

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## 10. Annex – Sources of verification

*Sources of verification are for example links to relevant digital documents, news/newsletters, brochures, copies of agreements with data holding institutions, workshop related documents, pictures, etc.*

### About the project

[Проблемы биосферного резервата — общие для всех](#)

[ЕвроМАБ 2019 — с гордостью делимся опытом участия](#)

## Data publishing workshop

[Course training materials](#) via [google drive](#)

[Course page on gbif.ru](#)

[Оцифровка и публикация данных Летописи природы и биологических коллекций заповедников и национальных парков России](#)

[News from official website of Prioksko-Terrasnyi Biosphere Reserve](#)

[От томов летописей природы – к глобальным исследованиям биоразнообразия](#)

[GBIF и программа МАБ — две стороны одной работы](#)

[Одноклассники](#)

[Impressions of the course participants](#)

[Государственный природный заповедник «Малая Сосьва»](#), [facebook](#)

[Заповедник «Белогорье»](#)

[Кенозерский национальный парк](#)

Висимский биосферный заповедник: [facebook](#), [VK](#)

[Газета «Пушинская среда»](#)

#GBIF\_PTZ (see Facebook)

[iNaturalist bio blitz](#): 22 observers, 272 observations (180 RG), 146 species