



FINAL ACTIVITY REPORT

Guidelines on how to complete the activity report are included in italics. Please include sources of verification as links or annexes.

Remember that this report will be made available on your project page on the GBIF website and therefore should not include email addresses, unless you have permission from all mentioned in the report that their email information can be published.

Contents

1.	Project overview	1
2.	Executive summary	2
3.	Project objectives	3
4.	Project implementation	4
	4.1. Activities completed	4
	4.2. Post-project activities	4
	4.3. Project deliverables – final status.....	4
	4.4. Project calendar	7
	4.5. Project communications and visibility	8
5.	Evaluation: lessons learned and best practices	9
6.	Future plans and sustainability	9
7.	Signature of the project main contact person	10
	Annex 1 – Additional sources of verification	10

1. Project overview

Please insert text in the table

Project title	Usage of the Atlas of Living Australia (ALA) and GBIF data portals: how to prepare your data, and reuse them on national and international platforms (Workshops)	
Project ID	CESP2018-005	
Project period	Start date (dd/mm/yy): 01/06/2018	End date (dd/mm/yy): 31/05/2019
Project lead		
Name of the main contact person	Anne Bruneau	
Name of institution	Institut de recherche en biologie végétale, Université de Montréal	
GBIF Participant represented	Canadensys	
Role(s) in this project	Mentor / Coordinator	

Project partner(s)		
Name and institution of the representative	GBIF Participant represented (if applicable)	Role(s) in the project
Carole Sinou, Université de Montréal	Canadensys	Trainer / Mentor / Coordinator
Cristina Valverde, Katia Cezón, Miguel Vega	GBIF Spain	Mentor
Jeannette Whitton, Wayne Maddison, UBC	Canadensys	Participants / Co-coordinators
Deborah Paul, Florida State University	iDigBio	Trainer / Mentor
Alain Belliveau, Allison Walker, Acadia University	Canadensys	Participants / Co-coordinators
Mary Kennedy	OBIS	Trainer
David Shorthouse, Canadian Museum of Nature	Canadian Museum of Nature	Mentor / Participants
James Macklin, Agriculture and agrifood Canada	CBIF	Mentor / Participants
David Bloom, VertNet	VertNet	Mentor

2. Executive summary

Provide a brief explanation of the project and its implementation, the main capacity enhancement objectives achieved, the approach taken for the final evaluation, lessons learned and conclusions.

The main goal of the project was to share knowledge and protocols about good practices in data publication and data-usage, through a series of workshops at different location in Canada, and the publication of documentation about publication and visualization of data on Canadensys and GBIF. In more detail, the aims of the workshops were to teach participants how to publish their data, how to clean and enrich them through a series of tools (Open Refine, APIs, GBIF tools, Georeferencing tools), how to search and download data from the Canadensys (ALA) or GBIF platforms, and what to do with the Biodiversity data available on these platforms.

Canadensys has recently moved to a new framework build upon the Atlas of Living Australia (ALA) framework, enabling new functionalities and tools to index, visualize and analyze data published on the Canadensys IPT, and other Canadian IPTs. This new framework is more powerful than the previous Explorer available on Canadensys, but is however less intuitive, thus leading to the need for user training.

The three workshops, in Nova Scotia (Acadia University, Wolfville), British Columbia (University of British Columbia, Vancouver) and Québec (University of Montréal, Montréal), have been organized, and material prepared for these workshops have been translated and made available on the Canadensys Community page. The material focuses on data publishing, data-quality enhancement (data-cleaning, data-enrichment, metadata), usage of the ALA Explorer (i.e. Canadensys Explorer) and GBIF Explorer, and data-usage.

The final evaluation is based on the comments and evaluation received from the workshops participants, as well as the number of resources published, updated or in preparation.

Overall, the answers from the community have been good, but the number of participants at each workshop has been less than expected. However, participants are all data holders or data-users and have reported gaining skills and knowledge that will strengthen their capacity to publish and use data from Canadensys and GBIF. We are now more aware of the potential audience of this type of workshop, and the actual limitations preventing participants to attend. This knowledge will be helpful to design other capacity-enhancement projects.

3. Project objectives

Provide the list of the objectives included in your original project proposal, and a description of how your project activities contributed to meeting them. Also include any additional objectives that were defined during the implementation of the project. In the event of unexpected challenges which prevented you to reach a planned project objective, please provide detailed explanations and indicate how you plan to reach these objectives post project.

Canadensys is now a mature network, after more than 10 years of networking through Canada and internationally. Its major starting objective was to give access to Biodiversity Data curated in Canadian institutions. After 10 years, the main objective remains the same, because important portions of data are still not easily available online, and thus, cannot be used to answer critical questions linked to the loss of Biodiversity.

This objective cannot be achieved by only a single means, but needs to be tackled in several ways:

- Train professors, curators, technicians, students and users on how to publish their data. Any kind of data.
- Train these data providers on how to publish their data in the best way possible. Teach them so that they will become mentors to other people/communities on how to publish clean standardized data.
- Keep the network alive and relevant, listen to the needs of the community and find the best ways to answer to these needs.
- Work hand in hand with other networks in order to have the manpower to solve more difficult or broad biodiversity informatics problems.

These global objectives relate perfectly to the project we developed with the help of the CESP program. Training, teaching, sharing, helping.

The audience reached during our workshops range from undergraduate students, to collection curators, professors, technicians and researchers from different type of institutions. Participants also represent the diversity of life: botanists, entomologists, mycologists, ecologists and zoologists. In that sense, the first objective of the project has been reached, with a diversity of data-provider and data-user profiles.

During the workshops, participants have learned how to clean and enrich biodiversity data using different type of tools, the importance of metadata and data standardization. These new knowledges will be helpful to prepare their data for publication or to efficiently use data already available. Each participant is involved in its community and will be able to act as a mentor for other people, resulting in a much more skilled network. The list of all mentors is also available on the Canadensys Community page, and will hopefully be an important resource for the network. Spending days with the people directly working in the collections have greatly helped building a stronger network, and has been a fantastic opportunity to listen to what users are really expecting from Canadensys.

Furthermore, for the Canadensys team and the participants, it has been a great opportunity to work with other networks, to understand the variability in methodologies and types of data we are working with. We have not solved complex biodiversity informatics problem, we now know where to look or who to reach if we encounter a barrier or an issue in our work.

4. Project 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 their implementation.

The main part of the project was the organisation of three workshops. All workshop have been completed and all material developed for the workshop has been translated in French and is available on our community page. Partners within the Canadensys network have helped organized and advertised the workshop in each institution. Furthermore, Mary Kennedy (OBIS) has acted as trainer during the Wolfville workshop, and Deb Paul (iDigBio), during the Vancouver one. The last workshop was planned to occur in Ottawa, but has been relocated in Montréal for more convenience, and the possibility to reach a larger audience. No relevant trainer from the partner networks were available during that time, but this was not a problem since the group was of reasonable size for only one mentor.

Material has been developed by the Canadensys team based on material developed and kindly shared by the GBIF Secretariat and GBIF Spain. Unfortunately, no recording has been done during the workshops due to technical limitations. The mentoring map is currently under construction, but the list of contact is already available ().

The step-by-step guide, developed in 2012, was in need of small revisions, which has been done during the project. This revised guide is available on our community page, and is available in English and French. New step-by-step guides for data-cleaning and enrichment of dataset are being developed, and will be made available during the summer of 2019.

Since partners from the Living Atlases Community (LA) have led another CESP project (CESP2018-004), including the creation of videos explaining how to use the LA portal, we decided it would be redundant to recreate another set of documentation on the same topic. Canadensys has worked on this project as project partner and has helped during the revision of the videos.

4.2. Post-project activities

Describe post-project activities if any (e.g. longer-term evaluation, follow-up projects/meetings/training events) and your plans for their completion.

Another workshop will be organized in 2019 in Mont-Joli (Gaspésie, QC), following a request from researchers and technicians at Fisheries and Oceans Canada. This workshop will be given in French, and will re-use the material from this project.

The long-term evaluation of the project includes statistics about the datasets published on Canadensys by institutions that have participated in one of the workshop. This evaluation will be done in 6 months (November 2019) and one year after the end of this project (June 2020).

4.3. Project deliverables – final status

Provide updates on the status of the planned deliverables at the time of final reporting, listing the activities related to these and providing explanatory notes.

For any deliverables that have not yet been completed, please provide detailed explanatory notes and indicate planned completion date after the end of the project.

In the event of any additional deliverables having being completed during the implementation of the project, please add rows as required.

Please provide links to any documents or webpages in the “Sources of verification” column. Add as many rows as needed. Alternatively the deliverables can be attached to the report in the Annex.

Deliverable	Related activity	Status of deliverable at final reporting Completed? Yes/No	Explanatory notes, inc. planned completion date if necessary.	Sources of verification
<p>Workshop documentation and other materials (theory and practical exercises) about:</p> <ul style="list-style-type: none"> • ALA framework (based on the Canadensys portal) and IPT <ul style="list-style-type: none"> ○ Step-by-step: how to publish data (Darwin Core, IPT, metadata) ○ How to use the new Canadensys Explorer (or other ALA portal). • GBIF Portal <ul style="list-style-type: none"> ○ For users: Search for specific taxa, or regions and download data. Use of the GBIF backbone. ○ For Data Managers: usage of GBIF metrics and Data Validation Tools to assess data quality. • Tools <ul style="list-style-type: none"> ○ OpenRefine (API) ○ Data Cleaning with R ○ GBIF Species matching 	<p>Workshops in: Wolfville (Acadia University, 15-17 October 2018), Vancouver (University of British Columbia, 7-9 November 2018), Montréal (Université de Montréal, 16-18 April 2019)</p>	<p>yes</p>	<p>Third workshop previously planned in Ottawa has been moved to Montréal, for organisational reasons</p>	<p>Workshop advertisement: https://community.canadensys.net/blog</p> <p>Workshop material: https://drive.google.com/drive/folders/1MpO6vN68jjFV67dyYxfq2tDkbv0O9D3?usp=sharing</p> <p>Article giving access to the workshop material (+ list of tools and documentation): Blog post with access to workshop material as well as a list of tools and documentation: https://community.canadensys.net/2019/data-cleaning-publication-reuse</p>
<p>Translation of material in</p>	<p>Workshops</p>	<p>Yes/No</p>	<p>The material has</p>	<p>Workshop material</p>

Deliverable	Related activity	Status of deliverable at final reporting Completed? Yes/No	Explanatory notes, inc. planned completion date if necessary.	Sources of verification
French and Spanish, possibly Portuguese	listed above		been translated in French but not in Spanish (not because of GBIF Spain, but due to last minute changes in the material from Canadensys)	in French: https://drive.google.com/drive/folders/1MpO6vN68jjFV67dyYxfg_2tDkbv0O9D3?usp=sharing
Publication of the presentation (PDF) and recording of the workshops (on Canadensys community page, Living Atlases community page, partner networks, i.e. GBIF Spain, iDigBio, VertNet, etc.)	Workshops listed above	Yes/No	The recording of the workshop has not been made, due to technical limitations. The presentations in PDF version are available on the Canadensys Blog , as well as the Living Atlases and iDigBio webpages	Workshop material: https://drive.google.com/drive/folders/1MpO6vN68jjFV67dyYxfg_2tDkbv0O9D3?usp=sharing Canadensys webpage Living Atlases webpage iDigBio webpage
Publication of a 'mentoring-map' in the Canadensys network, with contact information of the new mentors trained (participants at the workshops), thus enhancing the spread of knowledge within the community	Workshops listed above	No	The map will be available soon. Currently, only the list of contact is available.	
Development or update of step-by-step PDF guides, complementary to the videos developed during the CESP2018-004 project, in French, English and Spanish, about: <ul style="list-style-type: none"> • How to search the ALA portals. • How to clean data. What are the best tools and ways to do this. • How to use OpenRefine 		Yes/No	Step-by-step guide is published, but other guides are still under preparation.	Step-by-step guide: https://community.canadensys.net/publication/data-publication-guide

Deliverable	Related activity	Status of deliverable at final reporting Completed? Yes/No	Explanatory notes, inc. planned completion date if necessary.	Sources of verification
to prepare and clean data. <ul style="list-style-type: none"> Revision of the Canadensys 7-step-guide to data publication. 				
Publication of new datasets on Canadensys and GBIF	Workshops listed above	Yes/No	Some datasets are under preparation, but the publication process is started. Updates of pre-existing datasets have been done or are in preparation.	Canadensys IPT: https://data.canadensys.net/ipt/ https://data.canadensys.net/ipt/

4.4. Project calendar

The calendar should be updated from the status at mid-term to reflect the project implementation at the project's close. Please provide justifications for any changes in the notes column.

Activity	2018							2019					Notes
	J	J	A	S	O	N	D	J	F	M	A	M	
Preparation of the workshop material	X	X	X										
Planning of the workshops	X	X	X	X	X	X				X			
8-10 August 2018: Workshop #1 (Ottawa, ON)			X								X		Workshop has been moved from Ottawa to Montréal
24-26 September 2018: Workshop #2 (Wolfville, NS)				X	X								
7-9 November 2018: Workshop #3 (Vancouver, BC)						X							
Revision of the workshop material					X		X			X	X		
Deadline for mid-term reporting						X	X						
Writing of									X	X	X	X	

Activity	2018							2019					Notes
	J	J	A	S	O	N	D	J	F	M	A	M	
documentation													
Translation of material and documentation in French and Spanish											X	X	
Publication of material and documentation online												X	
Final evaluation survey + analyses of the answers												X	
Deadline for final reporting												X	

4.5. Project communications and visibility

Describe the way the results of your project have been and will continue to be 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/programme/82219/capacity-enhancement-support-programme#projects>. Highlight any additional documents, events, news items or links that you would like to add to your page and provide links/attachment in the Annex.

The project has been advertised on our Community Page, where material is also available, and via social networks such as Twitter and Facebook. Detailed of the project is also available on the project page on the GBIF website. Information about the workshops has been relayed in several other networks (iDigBio, QCBS, Canadian Universities, Canadian Museum of Nature, etc.).

All documentation produced during or in marge of this project will be published and advertised in the same ways. The Canadensys Community Page acts as the main repositories for the documentation produced by the team.

For the project page on GBIF website, it would be great to add this information:

- Blog post about the last workshop (<https://community.canadensys.net/2019/how-to-prepare-your-data-for-publication-and-what-to-do-with-open-data-montreal-workshop>), even if it's already finished.
- Blog post with access to workshop material as well as a list of tools and documentation: <https://community.canadensys.net/2019/data-cleaning-publication-reuse>
- Revised step-by-step guide (<https://community.canadensys.net/publication/data-publication-guide>)
- Material produced for the workshop (https://drive.google.com/open?id=1MpO6vN68jjFV67dyYxfg_2tDkbv0O9D3)
- Documents produced during the project (https://drive.google.com/open?id=1MpO6vN68jjFV67dyYxfg_2tDkbv0O9D3)

5. Evaluation: lessons learned and best practices

An assessment of the overall outcomes and impacts of your project, including strengths and weaknesses in its implementation and results. 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.

The overall outcome of this project is positive, even if it has revealed some weaknesses present in our network. The positive aspects are the fact that we have reached new collections and data managers, leading to new datasets in preparation for publication on Canadensys and GBIF. We have also been able to reach different audiences, from university professor, to undergrad students, research professional or technicians. All participants note that they are more skilled after the workshop, and that they will apply what they learned to prepare their data for publication. Sharing that knowledge is helping the network and the collections in being more independent in the publication process, including a large part of data-cleaning and data-enrichment. However, this project reveals the difficulty to reach the widely dispersed actors in the Canadian biodiversity community, due to the limited funds allocated to travel to this type of events, the lack of available time for several partners working on multiple project at a time. Organizing this type of workshop only reach people from the nearby institutions, not representing the true potential and interest for such workshops. In the future, we will also develop this type of project as webinars, even if it limits the one-to-one interaction possible during a workshop.

The workshop includes theoretical part and practical exercises, in a well balance dosage, according to the participants. The third day of the workshop was a completely practical day during which participants could work on their own data, giving them the opportunity to ask questions completely related to their type of data, helping them to resolve potential issues and to start the publication process. This balance of theory, practice on both pre-defined exercises as well as dataset brought by participants is important to keep the participants involved and give them relevant skills for their everyday work.

Another point to keep in mind while preparing this type of project is to not reinvent the wheel, trying to re-use the material available, and giving access to the material in order to let other people building from it.

A pre-workshop survey has been sent before each iteration (except the one in Montréal), as well as a post-workshop survey, in order to evaluate the satisfaction of participants and the evolution of their skills and confidence regarding biodiversity data cleaning, publication and usage. The results to these surveys are available here:

- [Wolfville pre and post-survey](#)
- [Vancouver pre and post-survey](#)
- [Montréal post-survey](#)

6. Future plans and sustainability

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.

The partnership between iDigBio and Canadensys, particularly during the workshop in Vancouver, has been really interesting and has open the door to the organization of this type of workshop together, in order to connect institutions from each side of the Canada/USA border. The Canadensys team is also planning another workshop later this year in Québec (Mont-Joli, Gaspésie), in French, based on the same material produced during this project. We hope that this material will be reused for other activities.

The impact of the workshop will be monitored through the number of datasets published or updated on Canadensys and GBIF, as well as the data-quality and completeness within these datasets. For information, currently one new dataset, from a participant of the workshop, has been published on Canadensys, three are being prepared for publication (ressource created), five already published datasets have been updated, and at least three published datasets will be updated soon. The publication of these ressources are a direct result of the workshops.

7. Signature of the project main contact person

Signed on behalf of the project partners

Date

2019-05-31

Annex 1 – Additional sources of verification

Please use this section to provide any additional sources of verification, for example links to relevant digital documents, news/newsletters, brochures, copies of agreements with data holding institutions, workshop related documents, pictures, etc.

Google Drive with all material:

https://drive.google.com/drive/folders/1MpO6vN68jjFV67dyYxfg_2tDkbv0O9D3?usp=sharing

Publications on Twitter advertising the workshops:

- Montréal:
 - o <https://twitter.com/Canadensys/status/1108430603257610248>
 - o <https://twitter.com/Canadensys/status/1108431183216627718>
 - o <https://twitter.com/Canadensys/status/1115336103056355329>
 - o <https://twitter.com/Canadensys/status/1115691429114908672>
 - o https://twitter.com/csbq_qcbs/status/1113524477516832769
 - o <https://twitter.com/MaximLarrivee/status/1115372492988616710>
-
- Vancouver:
 - o <https://twitter.com/Canadensys/status/1045310508201627653>
 - o
- Wolfville:
 - o <https://twitter.com/Canadensys/status/1037399794786951169>
 - o <https://twitter.com/Canadensys/status/1037756555976953856>
 - o <https://twitter.com/Canadensys/status/1042462470311497728>
 - o

Tweets about the workshops:

- Wolfville:
 - o <https://twitter.com/Canadensys/status/1051942542252666881>
-
- Vancouver:
 - o <https://twitter.com/Canadensys/status/1060647107017695232>
 - o <https://twitter.com/JohannaJantzen/status/1061059490299158533>

- <https://twitter.com/jessilynnallen/status/1061133336360321024>
- <https://twitter.com/fhenaodiaz/status/1060309062674305024>
- <https://twitter.com/idbdeb/status/1060215800068366336>
- <https://twitter.com/idbdeb/status/1060230807736860672>
-
- Montréal:
 - https://twitter.com/Adriana_LopezV/status/1118723452469379073
 - <https://twitter.com/MarionLemenager/status/1119002315044868101>
 -
-

Surveys in Google Drive:

https://drive.google.com/drive/folders/1w1-oQ9BqB_tHyeejQz9YuuUVZknm28vL?usp=sharing

Canadensys IPT: <https://data.canadensys.net/ipt/>