

Connecting the Teachers of Victoria with Wildlife Conservation Partners

The Zoo Crew

Caitlin Jung
Sarah Tarantino
Hunter Trautz
Jacob Tutlis

May 13, 2020

<u>Advisors</u>

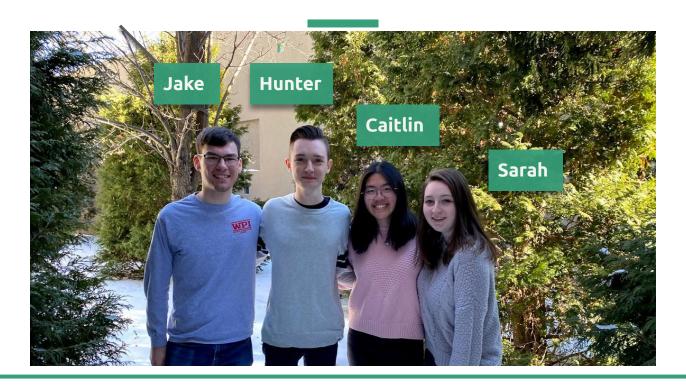
Professor Fabio Carrera Professor Stephen McCauley

Sponsor

Zoos Victoria



Meet the Team





What is an IQP?

- Stands for Interactive QualifyingProject
- Typically completed in the **third** year of university
- Interdisciplinary project that gives every WPI student the experience of working in teams to tackle a problem or need that lies at the intersection of science and society
- We were supposed to travel to Melbourne pre-COVID to complete our IQP



Photo of previous WPI students in Melbourne



Zoos Victoria uses the Connect-Understand-Act framework to teach conservation through Real-world learning



Connect

Provide learners with powerful opportunities that inspire a deep interest in the topic



Understand

Repeated practice transforms working memory to long-term memory



Act

Applying learned skills in real-world contexts



incites a deeper interest in the subject



Where do I start to find information about real-world learning?

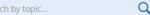
What type of information am I looking for?

Are there resources in my area?



Mission Statement

The goal of this project is to assist Zoos Victoria in raising awareness for wildlife conservation in the state of Victoria by developing a web application that connects teachers with local conservation groups and provides them with real-world learning opportunities.

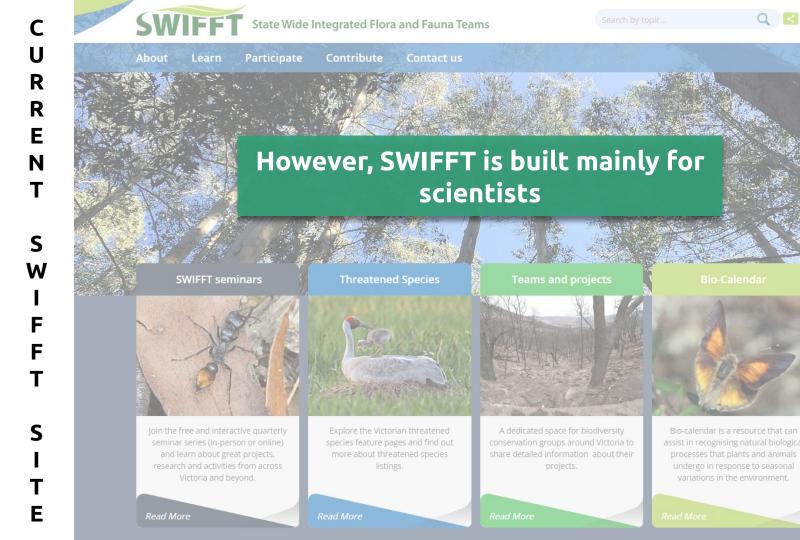


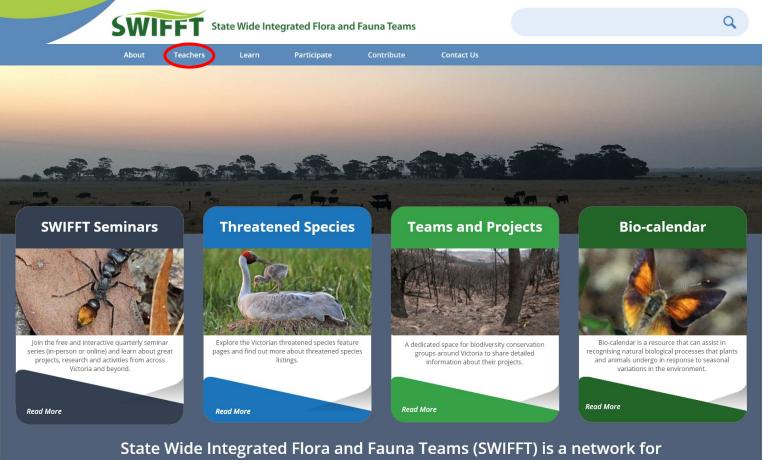


Bio-Calendar

variations in the environment.







knowledge sharing and information exchange that supports conservation and management of threatened species, biodiversity and the natural environment across Victoria.

User Needs Assessment Mockup Development Future Development Mockup Assessment Identifying Resources Goals of the Sponsor Teacher Feedback from Conservation **Additional Features Groups Initial Design** Creating Real-world Incorporate User Specifications from Wildlife Conservation Feedback into **Implementation** Zoos Victoria **Lesson Plans** Mockup Teacher **CeRDI/SWIFFT** Maintenance Plan **Adobe XD Mockup** Questionnaire Engagement

User Needs Assessment

Goals of the Sponsor

Assist busy teachers to understand the species and habitats in their local communities by identifying:

- Relevant partner organisations that are active in their area and could work with them and their students
- Available resources that can help with learning program development
- How to easily build learning and engage with these activities

User Needs Assessment

Goals of the Sponsor

Initial Design Specifications from Zoos Victoria

Education Strategic Team at Zoos Victoria

User Needs Assessment

Goals of the Sponsor

Initial Design
Specifications from
Zoos Victoria

Teacher Questionnaire

- Do you currently use any applications to assist you in creating your curriculum? Likes/Dislikes?
- Do you currently incorporate wildlife conservation topics in the classroom?
- Would you use an application to aid you in this process?

These are the features that teachers desire in an application



Categorise the needs of school teachers



Quick and **easy** access to information and real-world learning opportunities



Creating **relationships** within the community



Identify **local** organizations that offer programs to **engage** students



Sharing information and advice with other teachers



Information about their **local** natural environment and projects

User Needs Assessment

Mockup Development

Goals of the Sponsor

Adobe XD Mockup

Initial Design Specifications from Zoos Victoria

> Teacher Questionnaire

SWIFFT Teacher tab has three main components

Contribute



Participate

Home / Teachers

About

Teachers

Learn

Contact Us





Activities to bring real world experiences into the classroom

My Workspace



Tailored educational resources/ lesson plans based on location and grade level

Community



Connect and share with other teachers

Component 1: Explore Resources Page





Activities to bring real world experiences into the classroom

An area for teachers to search for resources with categories such as:

- Real-world learning opportunities
- Citizen Science Initiatives
- Threatened species information
- Lesson plans
- Classroom activities

Component 2: My Workspace Page





Tailored educational resources/ lesson plans based on location and grade level

A personalized space for teachers to:

- View their favorited resources
- Organize resources into folders

Component 3: Community Page



A community forum for teachers and community members to:

- Ask questions
- Receive feedback
- Collaborate



The Explore Resources page is a place for teachers to find educational resources that fit their classroom needs



Home / Teachers





classroom

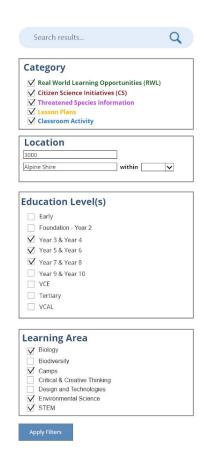


and grade level



Community

The Explore Resources page provides quick and easy access to information and real-world learning opportunities



Want to contribute to this database? Click below to share your resources!

Share







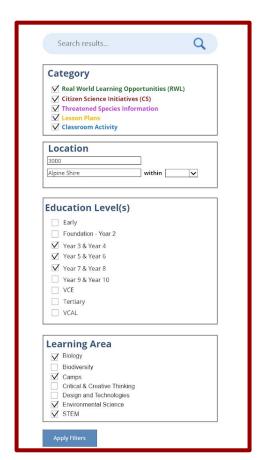


Get involved in Zoos Victoria's Love Your Locals campaign with this specially designed Teacher Resource Pack. With access to a range of unique resources and classroom ideas, this pack will help you guide students through an integrated curriculum...

Shared by Califul Juno

The Explore Resources page provides quick and easy access to information and real-world learning opportunities

Want to contribute to this database? Click below to share your resources!



Citizen Science - General
Wictoria, AUS | All Ages

Explore SWIFFT's database of Citizen Science initiatives in Victoria, Australia.

Links to Victorian Curriculum levels 3-4 Geography and Science and Intercultural Capabilities

Citizen Science - General
Victoria, AUS | All Ages

CS

Explore SWIFFT's database of Citizen Science initiatives in Victoria, Australia.

Links to SWIFFT - Participate - Citizen Science

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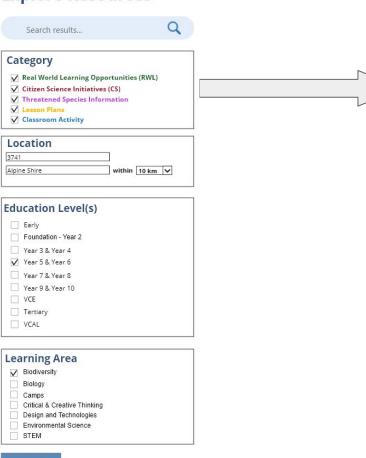




Categorized with filters

needs of teachers

Explore Resources

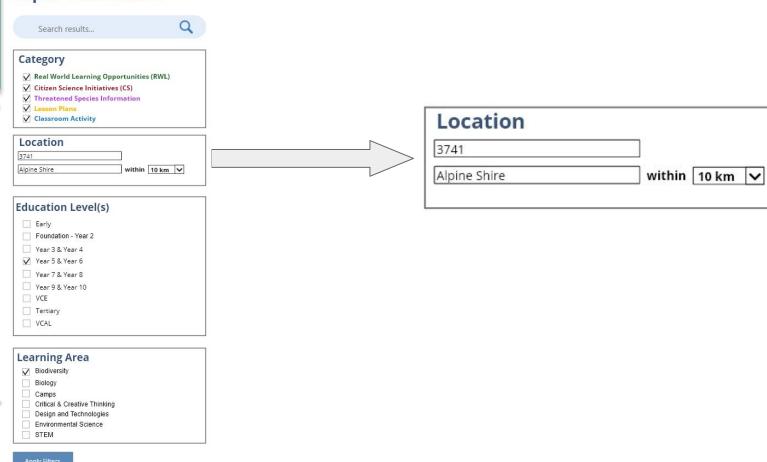


Category

- ✓ Real World Learning Opportunities (RWL)
- **✓** Citizen Science Initiatives (CS)
- **✓** Threatened Species Information
- ✓ Lesson Plans
- **✓** Classroom Activity

Categorized needs of teachers with filters

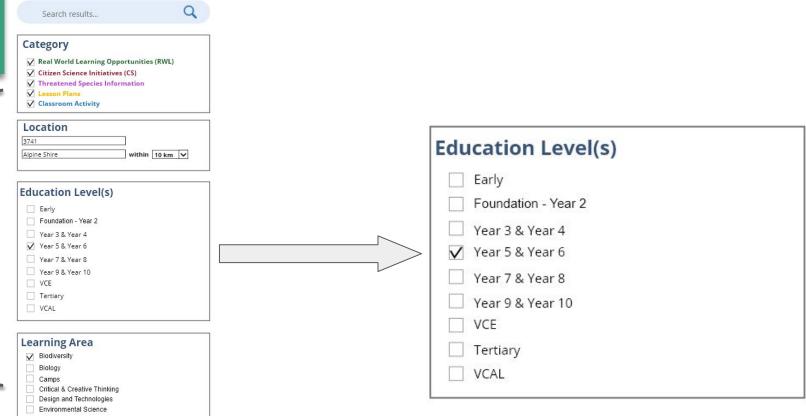




Categorized needs of teachers with filters

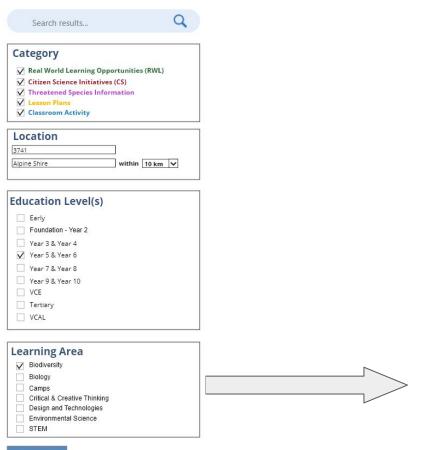


Explore Resources



Categorized needs of teachers with filters







Search results...



Category ✓ Real World Learning Opportunities (RWL)

Citizen Science Initiatives (CS)

✓ Threatened Species Information

✓ Lesson Plans

✓ Classroom Activity

Location		
3000		
Alpine Shire	within	~

Edu	cation Level(s)
	Early
	Foundation - Year 2
\checkmark	Year 3 & Year 4
\checkmark	Year 5 & Year 6
\checkmark	Year 7 & Year 8
	Year 9 & Year 10
	VCE
	Tertiary
	VCAL

Lea	arning Area
V	Biology
	Biodiversity
\checkmark	Camps
	Critical & Creative Thinking
	Design and Technologies
\checkmark	Environmental Science
\checkmark	STEM

Want to contribute to this database? Click below to share your resources!

Share



Citizen Science - General Victoria, AUS | All Ages CS

Explore SWIFFT's database of Citizen Science initiatives in Victoria. Australia.

Links to SWIFFT - Participate - Citizen Science

Links to Victorian Curriculum levels 3-4 Geography and Science and Intercultural



Threatened Fauna Alpine Shire

Alpine Shire, AUS | All Ages

SPECIES

Learn more about the threatened fauna found in the Alpine Shire

Links to SWIFFT - Threatened Fauna by Local Government Species - Threatened Fauna Alpine Shire



iNaturalist Lesson Plan

Primary/Secondary | Year 5, Year 6

LESSON 📽



Get involved in Zoos Victoria's Love Your Locals campaign with this specially designed Teacher Resource Pack. With access to a range of unique resources and classroom ideas, this pack will help you guide students through an integrated curriculum...

Shared by Caitlin Jung



Identify local organizations that offer programs to engage students



Local Legends

Melbourne Zoo | Year 3, Year 4





In this new version of the Local Legends program, students will discover animals that are Local Legends and learn how they can become a hero in the lives of these unique creatures.

Links to Victorian Curriculum levels 3-4 Geography and Science and Intercultural Capabilities

Search results...



Category

Real World Learning Opportunities (RWL)

Citizen Science Initiatives (CS)

▼ Threatened Species Information

✓ Lesson Plans

✓ Classroom Activity

Location

Alpine Shire within

Education Level(s)

Early

Foundation - Year 2

V Year 3 & Year 4

✓ Year 5 & Year 6

✓ Year 7 & Year 8

Year 9 & Year 10

VCE

Tertiary ☐ VCAL

Learning Area

✓ Biology

Biodiversity

✓ Camps

Critical & Creative Thinking

Design and Technologies

▼ Environmental Science

✓ STEM

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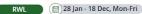
Share



Local Legends

Fauna Alpine Shire

Melbourne Zoo | Year 3, Year 4



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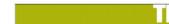
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Alpine Shire, AUS | All Ages

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Information about the local environment and projects

Search results...



Category

Real World Learning Opportunities (RWL)

Citizen Science Initiatives (CS)

▼ Threatened Species Information

✓ Lesson Plans

✓ Classroom Activity

Location

Alpine Shire

within

Education Level(s)

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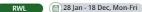
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Melbourne Zoo | Year 3, Year 4





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iNaturalist Lesson Plan

Primary/Secondary | Year 5, Year 6



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Find lesson plans created by other users



iNaturalist Lesson Plan

Primary/Secondary | Year 5, Year 6





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Explore Resources

Search results... Category ✓ Real World Learning Opportunities (RWL) ✓ Citizen Science Initiatives (CS) ▼ Threatened Species Information **✓** Lesson Plans ✓ Classroom Activity

Location 3000 Alpine Shire within

Education Level(s) Early Foundation - Year 2 V Year 3 & Year 4 ✓ Year 5 & Year 6 ✓ Year 7 & Year 8 Year 9 & Year 10 ☐ VCE Tertiary VCAL

Learning Area ✓ Biology Biodiversity ✓ Camps Critical & Creative Thinking Design and Technologies ▼ Environmental Science **✓** STEM

Results

Want to contribute to this database? Click below to share your resources!

Share



Share resources

with other

Local Legends

Melbourne Zoo | Year 3, Year 4 RWL 28 Jan - 18 Dec, Mon-Fri

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The My Workspace Page allows teachers to view and organize their favorite resources



State Wide Integrated Flora and Fauna Teams

About

Teachers

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Participate

Contribute

Contact Us

Home / Teachers

Login/Sign Up



Explore Resources



Activities to bring real world experiences into the classroom

My Workspace



Tailored educational resources/ lesson plans based on location and grade level

Community



Connect and share with other teachers

The My Workspace Page enables quick and easy access to information

Home / Teachers / My Workspace

My Workspace



- Add New
- Local Species Unit
- Zoos Victoria Campaigns
- Outdoor Activities
- Reptiles

Real World Learning Opportunities		^	
Caring for Animals Terms 1 and 2 2020 Equip your students with new STEM skills and knowledge whilst designing solutions for Zoo animals.	<u> </u>	ь	☆
Saving Endangered Species Terms 1 and 2 2020 Explore Healesville Sanctuary, meeting our unique, endangered wildlife and learn what you can do to help fight extinction. Are you up for the challenge?	<u> </u>	b	☆
Eat or be Eaten In the wild it's a case of eat, or be eaten. Animals are specially adapted to digest their favourite food and avoid being eaten themselves.	<u> </u>	ь	☆
Local Legends In this new version of the Local Legends program, students will discover animals that are Local Legends and learn how they can become a hero in the lives of these unique creatures.	<u> </u>	ь	☆
Lesson Plans			~
Citizen Science Websites			~
Community Forum Posts			~

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My Workspace

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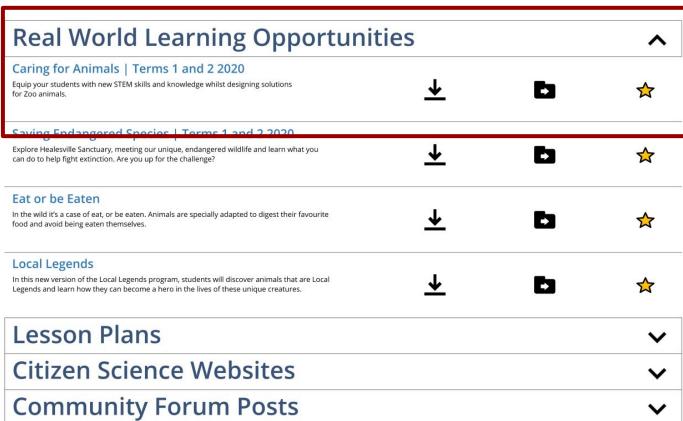
Teachers can create and view folders

- Add New
- Biodiversity Unit
- Local Species Unit
- Outdoor Activities
- Potential Class Activities



My Workspace

- Add New
- Local Species Unit
- Zoos Victoria Campaigns
- Outdoor Activities
- Reptiles



Teachers can quickly download, organize, and favorite resources

Real World Learning Opportunities



Caring for Animals | Terms 1 and 2 2020

Equip your students with new STEM skills and knowledge whilst designing solutions for Zoo animals.







The Community Page fosters relationships among Teachers

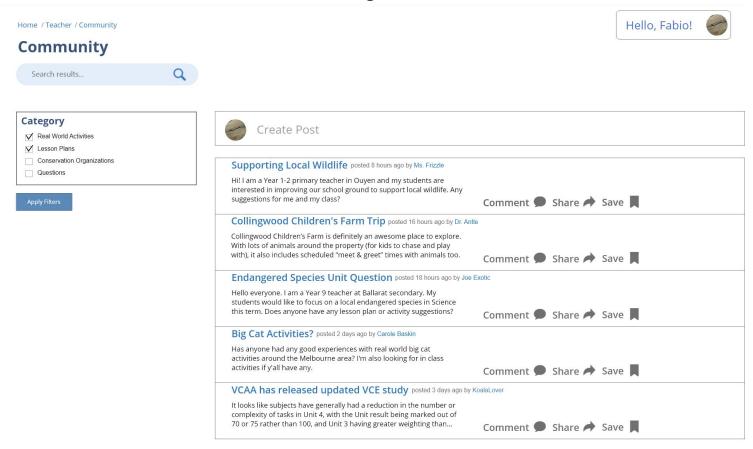




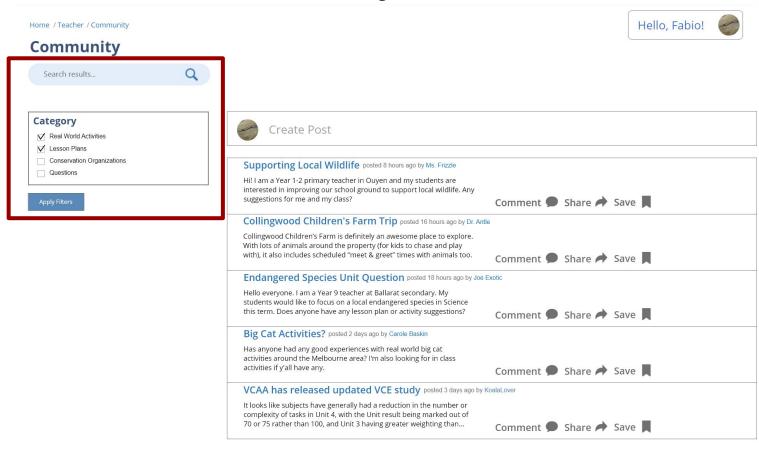
Activities to bring real world experiences into the classroom



The Community Page allows teachers to get feedback from experienced community members



The Community Page allows teachers to get feedback from experienced community members



Teachers can sort and filter the posts to easily find relevant posts

Community

Search results...



Category

- Real World Activities
- Lesson Plans
- Conservation Organizations
- Questions

Apply Filters

Community

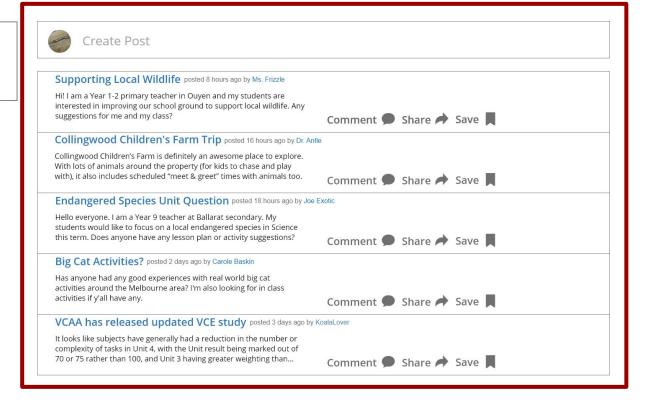
Search results...



Category

- Real World Activities
- ✓ Lesson Plans
- Conservation Organizations
- Questions

Apply Filters





Share ideas and advice with other teachers

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Hi everyone! I'm looking for citizen science initiatives specifically pertaining to biodiversity. I want to get my students more interested in biodiversity by providing them with real-world learning opportunities...

Comment Share Save

Supporting Local Wildlife posted 8 hours ago by Ms. Frizzle

Hi! I am a Year 1-2 primary teacher in Ouyen and my students are interested in improving our school ground to support local wildlife. Any suggestions for me and my class?

Comment Share Save

Collingwood Children's Farm Trip posted 16 hours ago by Dr. Antle

Collingwood Children's Farm is definitely an awesome place to explore. With lots of animals around the property (for kids to chase and play with), it also includes scheduled "meet & greet" times with animals too.

Comment Share Save

Endangered Species Unit Question posted 18 hours ago by Joe Exotic

Hello everyone. I am a Year 9 teacher at Ballarat secondary. My students would like to focus on a local endangered species in Science this term. Does anyone have any lesson plan or activity suggestions?

Comment Share Save

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Direct communication between teachers and community members

Project Development Process

User Needs Assessment

Mockup Development

Mockup Assessment

Goals of the Sponsor

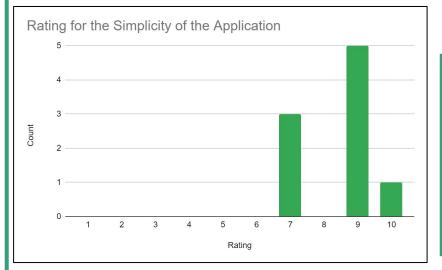
Adobe XD Mockup

Teacher Feedback

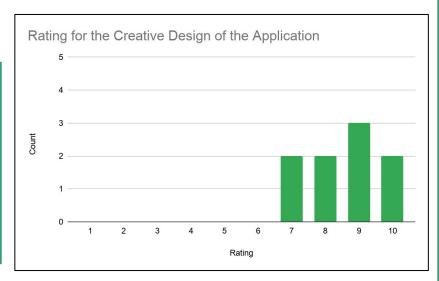
Initial Design Specifications from Zoos Victoria

> Teacher Questionnaire

The <u>nine</u> participants of the feedback form generally believed that the mockup was simple and creative



Simplicity of the Application Average: 8.44



Creative Design of the Application Average: 8.56

Project Development Process

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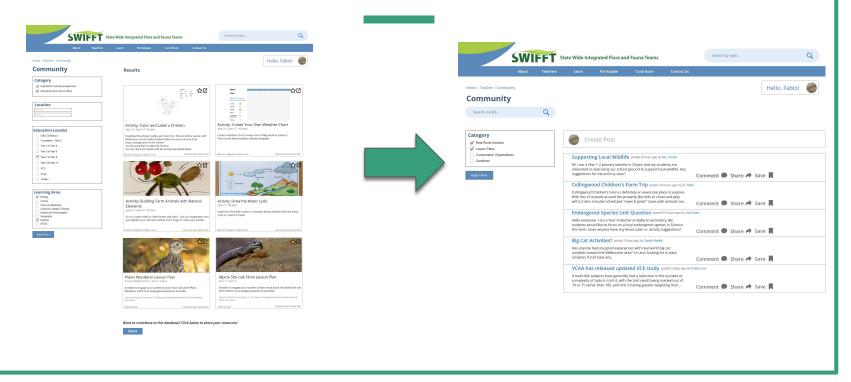
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Incorporate User Feedback into Mockup

CeRDI/SWIFFT Engagement

The Community page became a forum and the resources from this page moved to the Explore Resources page

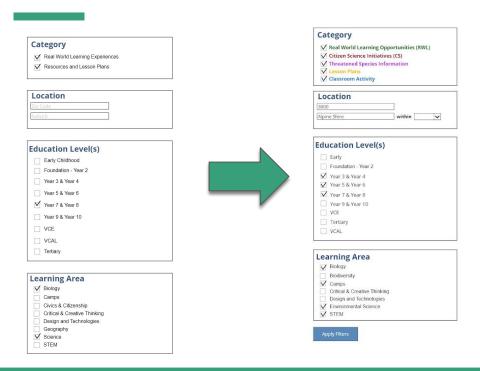


Points of confusion on the Explore Resources Page were changed

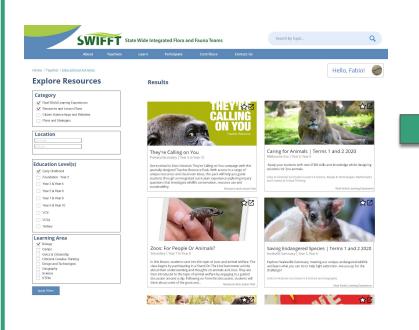
Added a search bar for more advanced filter options

Added more categories for each resource

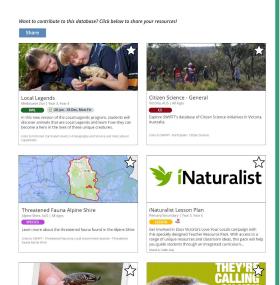
Replaced "vague" learning areas with more specific ones



Resources are color coded and sorted by their category and date







Miscellaneous results from the teacher feedback form that were incorporated into the mock-up

Larger text for better readability

Hover animations for a more interactive user experience

Changed the wording of phrases to avoid confusion



Project Development Process

User Needs Assessment Mockup Development Future Development Goals of the Sponsor Teacher Feedback **Adobe XD Mockup Implementation** Incorporate User **Initial Design** Feedback into Specifications from Mockup Zoos Victoria CeRDI/SWIFFT Teacher Engagement Questionnaire

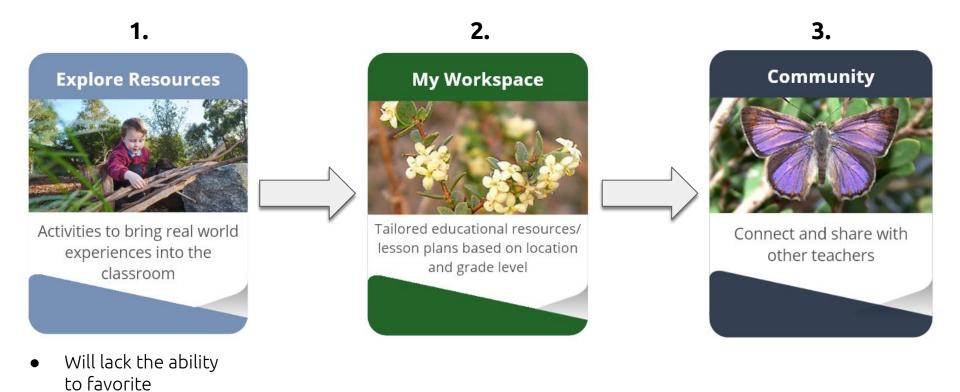
An Implementation Plan for the Application was Developed







The features will be implemented in stages



No accounts

Project Development Process

User Needs Assessment Mockup Development Future Development Goals of the Sponsor Teacher Feedback **Adobe XD Mockup** Incorporate User **Initial Design** Feedback into Maintenance Plan Specifications from Mockup Zoos Victoria **CeRDI/SWIFFT** Teacher Engagement Questionnaire

Maintenance Plan for Future Development of the Website



CeRDI manages the SWIFFT site



Little to no additional storage should be necessary for resources



Account management via school emails



Ensuring that resources are keep up to date with Content Builder

Project Development Process

Future Development User Needs Assessment Mockup Development Mockup Assessment Goals of the Sponsor Teacher Feedback **Adobe XD Mockup** Incorporate User **Initial Design** Feedback into Specifications from Mockup Zoos Victoria **CeRDI/SWIFFT Additional Features** Teacher Engagement Questionnaire

Based on the results from the feedback form, these are future improvements that could be made to the mockup



Space for video integration



Viewing other teachers' profile pages



Adding more images



Student access for feedback from members of the conservation community

Demo

Deliverables



Adobe XD Mockup



Project Booklet



Real-world Learning Lesson Plans



Implementation and Maintenance Plans

We hope this is a first step to incorporating wildlife conservation in the classroom through real-world learning opportunities



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Thank you!

Special thanks to:

Professor Carrera and Professor McCauley
Project Advisors

Mel Wyatt Zoos Victoria

Rob Milne and Paul Feely
Cerdi

If you have any questions or feedback, please feel free to email us at:

mpc.zood20@gmail.com