Connecting the Teachers of Victoria with Wildlife Conservation Partners

The Zoo Crew
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Advisors
Professor Fabio Carrera
Professor Stephen McCauley

Sponsor
Zoos Victoria

May 13, 2020
Meet the Team

Jake
Hunter
Caitlin
Sarah
Where We Are
What is an IQP?

- Stands for **Interactive Qualifying Project**
- 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 is dedicated to conservation education

Part of Zoos Victoria’s mission is to deliver profound zoo-based experiences that connect people with wildlife and provide meaningful conservation messages. Zoos Victoria aims to be a part of every Victorian child’s education.
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
Real-world learning provides memorable experiences and incites a deeper interest in the subject.
Effective access to real-world learning is limited by a teacher’s individual knowledge

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.
However, SWIFFT is built mainly for scientists.
State Wide Integrated Flora and Fauna Teams (SWIFFT) is a network for knowledge sharing and information exchange that supports conservation and management of threatened species, biodiversity and the natural environment across Victoria.
Project Development Process

**User Needs Assessment**
- Goals of the Sponsor
- Initial Design Specifications from Zoos Victoria
- Teacher Questionnaire

**Mockup Development**
- Identifying Resources from Conservation Groups
- Creating Real-world Wildlife Conservation Lesson Plans
- Adobe XD Mockup

**Mockup Assessment**
- Teacher Feedback
- Incorporate User Feedback into Mockup
- CeRDI/SWIFFT Engagement

**Future Development**
- Additional Features
- Implementation
- Maintenance Plan
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
Project Development Process

User Needs Assessment

Goals of the Sponsor

Initial Design Specifications from Zoos Victoria

Education Strategic Team at Zoos Victoria
Project Development Process

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
Project Development Process

User Needs Assessment → Mockup Development

Goals of the Sponsor

Initial Design Specifications from Zoos Victoria

Teacher Questionnaire

Adobe XD Mockup

Teacher Questionnaire

Goals of the Sponsor

Initial Design Specifications from Zoos Victoria

Teacher Questionnaire

Adobe XD Mockup
SWIFFT Teacher tab has three main components

- **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
Component 1: Explore Resources Page

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

Activities to bring real world experiences into the classroom
Component 2: My Workspace Page

A personalized space for teachers to:

- View their favorited resources
- Organize resources into folders

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

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 Explore Resources page provides quick and easy access to information and real-world learning opportunities.
The Explore Resources page provides quick and easy access to information and real-world learning opportunities.
Categorized needs of teachers with filters

Explore Resources

<table>
<thead>
<tr>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Real World Learning Opportunities (RWL)</td>
</tr>
<tr>
<td>✓ Citizen Science Initiatives (CS)</td>
</tr>
<tr>
<td>✓ Threatened Species Information</td>
</tr>
<tr>
<td>✓ Lesson Plans</td>
</tr>
<tr>
<td>✓ Classroom Activity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9741</td>
</tr>
<tr>
<td>Alpine Style within 10 km</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education Level(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Year 5 &amp; Year 6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Biodiversity</td>
</tr>
<tr>
<td>✓ Biology</td>
</tr>
<tr>
<td>✓ Critical &amp; Creative Thinking</td>
</tr>
<tr>
<td>✓ Design and Technologists</td>
</tr>
<tr>
<td>✓ Environmental Science</td>
</tr>
<tr>
<td>✓ STEM</td>
</tr>
</tbody>
</table>

Apply Filters
Explore Resources

Categorized needs of teachers with filters

Category
- Real World Learning Opportunities (RWLO)
- Citizen Science Initiatives (CSI)
- Threatened Species Information
- Lesson Plans
- Classroom Activity

Location
- [ ] 37.41
- [ ] Alpine Shire

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

Learning Area
- [ ] Biodiversity
- [ ] Biology
- [ ] Maths
- [ ] Critical & Creative Thinking
- [ ] Design and Technologies
- [ ] Environmental Science
- [ ] STEM

Apply filters

Education Level(s)
- [ ] Early
- [ ] Foundation - Year 2
- [ ] Year 3 & Year 4
- [ ] Year 5 & Year 6
- [ ] Year 7 & Year 8
- [ ] Year 9 & Year 10
- [ ] VCE
- [ ] Tertiary
- [ ] VCAL
Explore Resources

Categorized needs of teachers with filters

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

Location
- [ ] 10 km
- [ ] within 10 km

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

Learning Area
- [ ] Biodiversity
- [ ] Biology
- [ ] Camps
- [ ] Critical & Creative Thinking
- [ ] Design and Technologies
- [ ] Environmental Science
- [ ] STEM

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

**Local Legends**
Melbourne Zoo | Year 3, Year 4

- **Category**: RWL
- **Location**: Alpine Shire
- **Education Level(s)**: Year 3 & Year 4
- **Learning Area**: Biology

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.

**Citizen Science - General**
Victoria, AUS | All Ages

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

Links to SWiFT - Participate - Citizen Science.

**Threatened Fauna Alpine Shire**
Alpine Shire, AUS | All Ages

- **Category**: Conservation
- **Location**: Alpine Reserves
- **Education Level(s)**: Year 5 & Year 6
- **Learning Area**: Biology

Learn more about the threatened fauna found in the Alpine Shire.

Links to SWiFT - Threatened Fauna by Local Government Species - Threatened Fauna Alpine Shire.

**iNaturalist Lesson Plan**
Primary/Secondary | Year 5, Year 6

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: Collins Johnson
Identify local organizations that offer programs to engage students

Local Legends
Melbourne Zoo | Year 3, Year 4

RWL  28 Jan - 18 Dec, Mon-Fri

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
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Local Legends
Melbourne Zoo | Year 3, Year 4
Real World Learning Opportunities (RWL) 28 Jan - 18 Dec, Mon-Fri
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

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Victoria, AUS | All Ages
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Links to SWIFFT - Participate - Citizen Science

Threatened Fauna Alpine Shire
Alpine Shire, AUS | All Ages
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
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 Colin Jung
Information about the local environment and projects

Citizen Science - General
Victoria, AUS | All Ages

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Links to SWIFFT - Participate - Citizen Science

Threatened Fauna Alpine Shire
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Threatened Fauna Alpine Shire
Alpine Shire, AUS | All Ages

Learn more about the threatened fauna found in the Alpine Shire.

Links to SWIFIT - Threatened Fauna by Local Government Species - Threatened Fauna Alpine Shire
Find lesson plans created by other users

iNaturalist Lesson Plan
Primary/Secondary | Year 5, Year 6

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
Explore Resources

Share resources with other teachers

Results

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

Share

Local Legends
Melbourne Zoo | Year 3, Year 4

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 3-6 Geography and Science and Intercultural Capabilities

Citizen Science - General
Victoria, AUS | All Ages

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

Links to SWIFFT - Participate - Citizen Science

Threatened Fauna Alpine Shire
Alpine Shire, AUS | All Ages

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Primary/Secondary | Year 5, Year 6

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Shared by Collins

iNaturalist - Explore Swifft's database of Citizen Science initiatives in Victoria, Australia.

Local Legends - A program where students discover animals that are Local Legends and learn how they can become a hero in the lives of these unique creatures.

Threatened Fauna Alpine Shire - Information about the threatened fauna found in the Alpine Shire.

iNaturalist Lesson Plan - A resource pack for Zoos Victoria’s Love Your Locals campaign, providing unique resources and classroom ideas.
The My Workspace Page allows teachers to view and organize their favorite resources.
The My Workspace Page enables quick and easy access to information.
The My Workspace Page enables quick and easy access to information

My Workspace

My Folders
- 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.

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?

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.

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.

Lesson Plans
Citizen Science Websites
Community Forum Posts
Teachers can create and view folders

My Folders

- Add New
- Biodiversity Unit
- Local Species Unit
- Outdoor Activities
- Potential Class Activities
Real World Learning Opportunities

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Lesson Plans
Citizen Science Websites
Community Forum Posts
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

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

**Supporting Local Wildlife** posted 3 hours ago by Mr. Fritzke

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

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

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.

**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?

**Big Cat Activities?** posted 2 days ago by Gørste Baskin

Has anyone had any good experiences with real world big cat activities around the Melbourne area? I'm also looking for in class activities if y'all have any.

**VCAA has released updated VCE study** posted 3 days ago by KostisCover

It looks like subjects have generally had a reduction in the number or complexity of tasks in Unit 4, with the Unit result being marked out of 70 or 75 rather than 100, and Unit 3 having greater weighting than...
The Community Page allows teachers to get feedback from experienced community members.
Teachers can sort and filter the posts to easily find relevant posts.
Supporting Local Wildlife posted 8 hours ago by Ms. Fitzie

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

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VCAA has released updated VCE study posted 3 days ago by Koala Love

It looks like subjects have generally had a reduction in the number or complexity of tasks in Unit 4, with the Unit result being marked out of 70 or 75 rather than 100, and Unit 3 having greater weighting than...
Citizen Science for Biodiversity posted seconds ago by Charlotte Smith

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...

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?

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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?

Big Cat Lesson Plan Feedback posted 1 day ago by Carole Baskin

Hey y'all! I created a nice lesson plan about cats and I was wondering if I could get some feedback on it. I'm starting the lesson with a cat activity where the students draw their favorite cat on a piece of...
Direct communication between teachers and community members.
Project Development Process

User Needs Assessment → Mockup Development → Mockup Assessment

- **Goals of the Sponsor**
- **Initial Design Specifications from Zoos Victoria**
- **Adobe XD Mockup**
- **Teacher Questionnaire**
- **Teacher Feedback**
The **nine** 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

- User Needs Assessment
- Mockup Development
- Mockup Assessment

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- Incorporate User Feedback into Mockup
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- CeRDI/SWIFFT Engagement

Teacher Questionnaire

52
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

Mockup Assessment

Future Development

Goals of the Sponsor

Adobe XD Mockup

Teacher Feedback

Implementation

Initial Design Specifications from Zoos Victoria

Incorporate User Feedback into Mockup

Teacher Questionnaire

CeRDI/SWIFFT Engagement
An Implementation Plan for the Application was Developed

- Proposed Design
- Mockup Manual
- Integrate in stages to elicit more user feedback
The features will be implemented in stages

1. **Explore Resources**
   - Activities to bring real world experiences into the classroom

2. **My Workspace**
   - Tailored educational resources/lesson plans based on location and grade level

3. **Community**
   - Connect and share with other teachers

- Will lack the ability to favorite
- No accounts
Project Development Process

User Needs Assessment

Mockup Development

Mockup Assessment

Future Development

Goals of the Sponsor

Adobe XD Mockup

Teacher Feedback

Implementation

Initial Design Specifications from Zoos Victoria

Incorporate User Feedback into Mockup

Maintenance Plan

Teacher Questionnaire

CeRDI/SWIFFT Engagement

Teacher Questionnaire

Incorporate User Feedback into Mockup

CeRDI/SWIFFT Engagement

Teacher Questionnaire

Incorporate User Feedback into Mockup

CeRDI/SWIFFT Engagement
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

User Needs Assessment | Mockup Development | Mockup Assessment | Future Development

- Goals of the Sponsor
- Adobe XD Mockup
- Teacher Feedback
- Implementation
- Initial Design Specifications from Zoos Victoria
- Incorporate User Feedback into Mockup
- Maintenance Plan
- Teacher Questionnaire
- CeRDI/SWIFFT Engagement
- Additional Features
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.
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