

Ecolinc 2023 Annual Report



Bringing the environment and sustainability to life
Engage Discover Inspire



Contents

| | Page |
|--|--------|
| Message from the Director | 3 |
| Victoria’s Science & Mathematics Specialist Centre Network | 4 |
| Our Profile | 5 |
| Our Staff | 6 |
| Participation | 7 |
| Onsite | 8 |
| Outreach (Incursions, Virtual & Online) | 9 – 11 |
| Victorian Challenge & Enrichment Series | 12-13 |
| Coastcare Program | 14 |
| Curriculum Support Program | 15 |
| Women in STEM Program | 16 |
| The Aark Program & National Science Week | 17 |
| Deep Creek & Hobsons Bay Wetland Centre | 18 |
| Our Partners | 19 |
| Governance & Financial Accountability | 20 |



From the Director

This year's Annual Report highlights Ecolinc's capacity to lift STEM participation and achievement through the power of collaboration.

Highlights include:

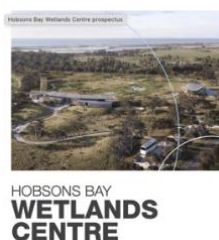
- The auspicing of a range of video conference programs from renowned Australian and International providers to increase the suite of offerings for schools. These providers include: Reef HQ (Queensland), Museum of Australian Democracy (NSW), Sydney Living Museum (NSW), Liberty Science Center (USA), Alaska Sea-life Center (Alaska), Ann Arbor Museum (USA), and Royal Tyrrell Museum (Canada).
- Engaging a range of STEM experts in the STEMex VC series. Key presenters have included Dr Tristan Reid (CSIRO), Dr Mariana Pinto (University of NSW), Chelsea Long (Australian Antarctic Division), Mary Slayo (RMIT) and Dr Nasim Amiralian (Australian Institute for Bioengineering & Nanotechnology).
- The development of key partnerships to enhance the credibility and quality of program content.
- Partnering with PrimeSci in the delivery of STEM programs at Deep Creek, Pakenham.
- Being a lead partner in the Hobsons Bay Wetland Centre project.
- Engaging with a vast array of STEM superheroes in the delivery of special programs including the Women in STEM programs (May & September) for Year 9-10 students, The Ark program for Year 7's and Superheroes Against Extinction for Year 5-6 students.
- Delivering a range of programs for high ability students as part of the DoE's Victorian Challenge and Enrichment Series.
- Partnering with DEECA to design, develop and deliver a range of programs, resources and professional development for the Coastcare Victoria Schools Kit.
- Participating in 3 Outreach road trips to Horsham, Bendigo and Warrnambool.
- Developing an ongoing connection with South Geelong PS and Ocean Grove PS who were part of 2023 Curriculum Support Program.

(More detailed information about each of the above can be found in the subsequent pages of this report).

I am immensely proud of the Ecolinc team and their capacity to innovate, collaborate and develop new knowledge, skills and connections to deliver remarkable STEM outcomes for the students who have engaged with us in 2023 and I would like to thank them for their work and continued commitment.

I would also like to take this opportunity to thank our partners, and the students and teachers who have engaged in our programs throughout the year.

Linda Flynn
Ecolinc Director



Victoria's Science and Mathematics Specialist Centres Network

Victoria's network of Science and Mathematics Specialist Centres aims to improve student engagement and achievement in science and mathematics by providing innovative learning programs that encompass new and emerging scientific thinking, state of the art facilities and cutting edge technologies.

Ecolinc is one of Victoria's six Science and Mathematics Specialist Centres established by the Department of Education (DoE).



The centres provide specialised programs that are accessible to all Victorian students with an equity focus for rural and disadvantaged metropolitan schools. The development of partnerships with local organisations, industry and universities is also a focus for the centres.

Each centre is hosted by a government secondary school. The centres each have an area of specialisation, while operating collectively as a state-wide network. Ecolinc's area of specialisation is on the environment, sustainability and conservation.

The Science and Mathematics Specialist Centres' Network proudly operates under the following Governance Principles:

- **Excellence** through innovation, research, partnerships and contemporary pedagogy.
- **Integrity** underpinned by ethical practice.
- **Transparency** through a culture with clearly defined processes and protocols.
- **Equity and Access** for all Victorian students.
- **Accountability** through sound management of finances and resources.

About Ecolinc

Ecolinc opened in 2005 and is hosted by Bacchus Marsh College. The Ecolinc logo is a stylised Growling Grass Frog (*Litoria raniformis*), a threatened Victorian species which was first observed in the Ecolinc stormwater wetland in 2007. The wetland provides habitat for a range of native flora and fauna, including a variety of vertebrates and invertebrates and is used extensively as part of our programs.



The name Ecolinc refers to the links between the Centre, schools, tertiary institutions, related government and environmental organisations and the community, in relation to the environment and sustainability.

Ecolinc provides onsite, online and outreach programs as well as field trips in the surrounding areas. We utilise innovative technologies, the building's ecologically sustainable design elements and the natural resources of the surrounding area to provide a wide range of educational programs for F-12 students, teachers and the community. All programs are aligned to the Victorian Curriculum and VCE and provide engaging, unique and 'hands on' learning experiences based around 5 key themes:

- *Life*
- *Water*
- *Air*
- *Energy*
- *Earth*



Our Profile

Ecolinc is co-located at Bacchus Marsh College and delivers programs to students from Foundation to Year 12. The Centre has positioned itself as a leader in STEM (Science, Technology, Engineering and Mathematics) Education, particularly in the environment and sustainability areas.

Our Vision:

Bringing the environment and sustainability to life

Our Mission:

To provide students with unique, innovative STEM learning opportunities that will allow them to develop the knowledge and skills to succeed and adapt to a changing world.

Our Values:

Engage, Discover, Inspire

Our Purpose:

- To demonstrate excellence and innovation in science education in the areas of environment and sustainability.
- To provide unique and exciting opportunities for students in the Science, Technology, Engineering and Mathematics (STEM) areas that will encourage students to pursue career pathways in these areas.
- To provide high quality professional development in STEM in order to build collective capacity.
- To develop and sustain strategic partnerships that will provide significant additional value to the learning & teaching experience.

Our Intent:

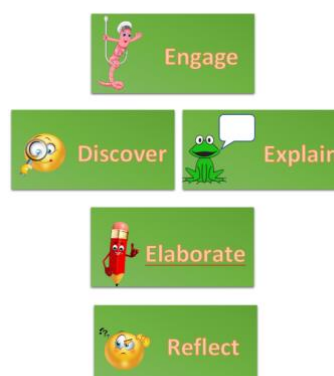
At Ecolinc we strive to achieve the following attributes of excellence:

- **Passion** – Intense enthusiasm and a compelling desire to make a difference.
- **Excellence** – Being extraordinary at what and how we do it. We set high standards and endeavor to do our best at everything we do.
- **Innovation** – To be excellent demands innovation. We incorporate new ideas, latest techniques, contemporary pedagogy and scientific advances in the programs we deliver.
- **Knowledge** – Attaining an in depth understanding of the content we teach.
- **Resilience** – Involves effort and commitment. Coming back after a failure or setback is critical to an excellent outcome. We endeavor to be tough, have grit, not to take “no” for an answer.
- **Communication** – Demonstrate outstanding communication skills.

Our Instructional Model:





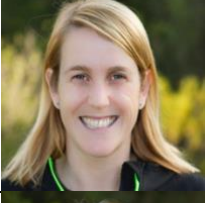






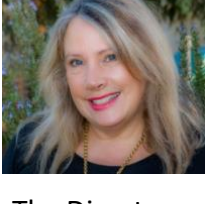


The Centre has developed a pedagogical framework for the development and delivery of curriculum linked to the Department of Education’s Framework for Improving Student Outcomes (FISO). It is a flexible model that aims to improve the learning outcomes of all students who participate in an Ecolinc program (onsite, outreach, video conference or online).

Ecolinc Instructional Model



Our Staff

The integrity of a Specialist Science and Mathematics Centre and its ability to deliver high quality learning and professional development programs is reliant on its capacity to attract, employ and retain suitably qualified and experienced staff. Ecolinc staff are highly skilled practitioners and education support staff who deliver programs that cannot be replicated in the 'normal' classroom. In 2023, Ecolinc employed 10.8 Equivalent Full Time (EFT) staff, plus one Outreach Officer on a casual basis.

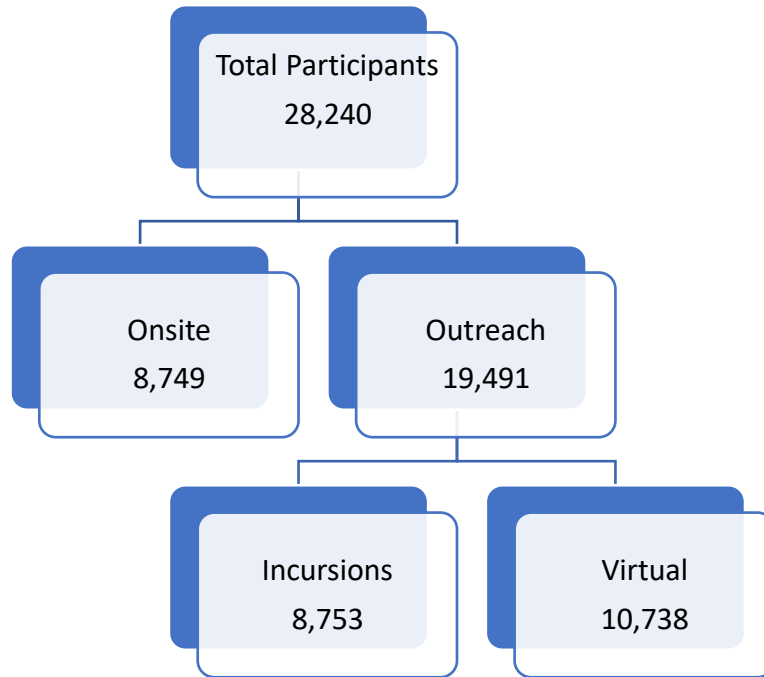
| | Role | Staff | | Role | Staff |
|---|--------------------|------------------------------|---|--|--------------------------------|
|  | Director | Linda Flynn (1.0) |  | Admin Officer | Julie Gogeff (1.0) |
|  | Assistant Director | David Tait (1.0) |  | Horticultural Technician | Jacson Brennan (0.6) |
|  | Assistant Director | Nicole Mason (1.0) |  | IT Technician | Son Do (1.0) |
|  | Education Officers | Carolanne Glynne (0.8) |  | Lab Technician | Patrice Kennedy (1.0) |
|  | | Anthony Fernando (1.0) |  | Assistant Lab Technician & Animal Technician | Jo Mangion (0.8) |
|  | | Amy Hampson (1.0) |  | Video Conference & Special Programs | Jo Tate (Externally funded) |
|  | | Natasha Ward (0.6) | | | |
|  | Outreach Officer | Ainsley Bellette (Casual) | | | |

The Director and all the Education Officers are qualified teachers who design, develop and deliver onsite, online, outreach and video conference programs. This is often carried out in collaboration with education and STEM experts to ensure contemporary and effective STEM and education practices are applied. Our education and support staff have rich and diverse backgrounds and demonstrate a strong commitment to improving student learning outcomes.

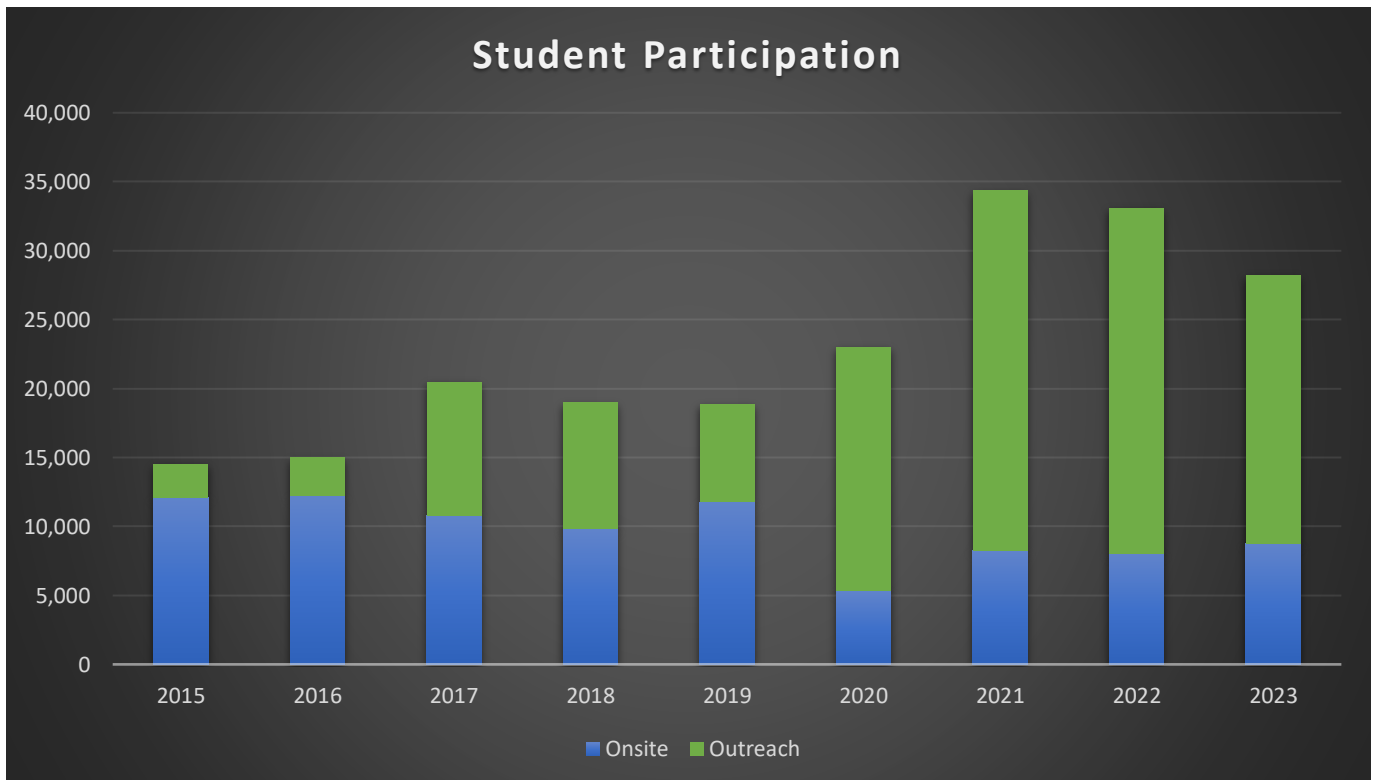
Participation:

28,240 students participated in either an onsite program or an outreach incursion/virtual (video conference) program in 2023.

Figure 1: 2023 Participation Overview:



Graph 1: 2015 – 2023 Student Onsite & Outreach Participation



Note: Students were learning from home for the majority of 2020 & 2021, due to Victorian Government Covid 19 restrictions. Outreach figures above include online learning including video conferences.

Onsite: In 2023 Ecolinc offered the following programs for students from Prep to Year 12:

Table 1: 2023 Onsite Programs

| Primary Programs | | |
|---------------------------------|--------------------------------|--------------------------------|
| Year P-2 | Year 3-4 | Year 5-6 |
| Dinos & Beasts | A Plant's World | Adaptations for Survival |
| Fascinating Frogs | Digging up the Diprotodon | Saving Energy |
| Introduction to a Plant's World | Indigenous Plants | Seeds from Schools |
| Minibeasts | Lifecycles | Space Junk |
| Reduce, Reuse, Recycle | Waste Warriors | Superheroes Against Extinction |
| Watching the Weather | | |
| Secondary Programs | | |
| Year 7-8 | Year 9-10 | VCE |
| Classifying Living Things | Be a DNA Detective | Biology |
| Exploring Wetland Ecosystems | Experimental Design | Chemistry |
| Renewable Energy | Exploring Grassland Ecosystems | Environmental Science |
| The Aark | How Healthy is the Habitat | |
| What's Under the Microscope | | |

Table 2: 2015 – 2023 Student Participation by category

| Type | | Student Participation | | | | | | | | |
|------------------------------|----------------------------|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
| Total Onsite | | 14,511 | 14,967 | 20,464 | 18,973 | 18,854 | 22,982 | 34,382 | 33,095 | 28,240 |
| School Type | Primary | 56% | 50% | 52% | 74% | 47% | | | | |
| | Secondary | 21% | 23% | 22% | 12% | 25% | | | | |
| | VCE | 23% | 27% | 26% | 14% | 28% | | | | |
| School Sector | Government | 79.07% | 81.60% | 82.64% | 84.42% | 87.07% | 91.54% | 89.51% | 87.23% | 89.27% |
| | Non-government | 20.93% | 18.40% | 17.36% | 15.58% | 12.93% | 8.46% | 10.49% | 12.77% | 10.73% |
| School Classification | Metro Disadvantaged | 34.40% | 42.61% | 46.04% | 36.24% | 51.10% | 54.20% | 49.90% | 49.05% | 54.44% |
| | Rural | 42.42% | 34.01% | 33.46% | 46.85% | 34.02% | 29.35% | 38.32% | 37.22% | 33.18% |
| | Standard Rate | 23.18% | 23.38% | 20.50% | 16.91% | 14.88% | 16.45% | 11.78% | 13.84% | 12.38% |
| Program Type | Onsite | 83.45% | 81.59% | 52.72% | 51.80% | 62.44% | 23.16% | 24.06% | 24.28% | 30.98% |
| | Outreach | 16.55% | 18.41% | 47.28% | 48.20% | 37.56% | 76.84% | 74.94% | 75.72% | 69.02% |

Note: Students were learning from home for the majority of 2020 & 2021, due to Victorian Government Covid 19 restrictions.

Note: Standard Rate as defined by Specialist Centres Funding Model includes schools in the Moorabool LGA.

Outreach: In 2023 Ecolinc offered the following Outreach program options:

1. Outreach Incursion (Local, Rural/Remote and Deep Creek - see below)
2. Virtual (STEMlinc, STEMex and Ecolinc Learn Online – see page 10)

1. Outreach Incursions:

Table 3: 2023 Outreach Incursion Programs

| a. Local outreach incursions | b. Rural/Remote outreach incursions | c. Deep Creek incursions |
|---|--|---|
| These are available to eligible government rural and metro-disadvantaged primary schools within a 1 ½ hour radius of Ecolinc and are conducted by an Ecolinc Education Officer as either a pre or post visit to Ecolinc, or as a stand-alone program. | Each year Ecolinc visits 2-3 rural centres. Ecolinc Education Officers provide an outreach experience to schools in and around these rural centres. In 2023, these rural centres included Horsham, Bendigo and Warrnambool. The focus of the outreach program was Animal features, lifecycles and adaptations. | Ecolinc has partnered with PrimeSci based at Swinburne University to deliver programs from the Deep Creek site every Tuesday. |

Aussie Dinosaurs (F-2)
Be a Meteorologist (F-2)

Frogs Up Close (F-2)
Investigating Minibeast Parts (F-2)
Circle of Life (3-4)
Fur, Feathers, Scales & Skin (3-4)
Indigenous Food & Fibre (3-4)
Making Recycled Paper (3-4)
Megabugs (3-4)
Peter Pan’s Seeds (3-4)
Sphero – Pollinators (3-4)
Sphero – Lifecycles (3-4)
Amazing Adaptations (5-6)
Birds & Beaks (5-6)
How Healthy is your Waterway? (5-6)
Life Under the Microscope (5-6)
Solar Houses (5-6)
Sphero Design Thinking Challenge (5-6)
Sphero – Threatened Species (5-6)

Dinosaurs & Megafauna (3-6)
Animal Features, Lifecycles and Adaptations (F-6)
Green Science (3-6)

Chemistry (F-2)
Physics (F-2)
Fascinating Frogs at DC (3-4)
The Life of Plants (3-4)
How Healthy is the DC Wetland (5-6)
Uncovering Adaptations at DC (5-6)
Healthy Rivers, Healthy Bay (F-6)

Table 4: 2023 Total Outreach/Incursion Participants by term.

| Duration | Term 1 | | | | Term 2 | | | |
|---------------------------|-------------|-------------------------|--------------|--------------|----------------|-------------------------|-------------|--------------|
| | Rural (R) | Metro Disadvantage (MD) | Metro (SR) | Non-Gov (SR) | Rural (R) | Metro Disadvantage (MD) | Metro (SR) | Non-Gov (SR) |
| Full Day | 423 | 553 | 0 | 0 | 963 | 435 | 0 | 0 |
| Half Day | 93 | 0 | 0 | 0 | 436 | 0 | 0 | 0 |
| Quarter Day | 2582 | 793 | 61 | 0 | 2601 | 451 | 25 | 0 |
| Total Participants | 3098 | 1346 | 61 | 0 | 4000 | 886 | 25 | 0 |
| Total FTE | 1115 | 751.25 | 15.25 | 0 | 1831.25 | 547.75 | 6.25 | 0 |

| Duration | Term 3 | | | | Term 4 | | | |
|---------------------------|-------------|-------------------------|------------|--------------|----------------|-------------------------|------------|--------------|
| | Rural (R) | Metro Disadvantage (MD) | Metro (SR) | Non-Gov (SR) | Rural (R) | Metro Disadvantage (MD) | Metro (SR) | Non-Gov (SR) |
| Full Day | 120 | 464 | 0 | 14 | 969 | 1015 | 0 | 0 |
| Half Day | 0 | 71 | 0 | 0 | 53 | 0 | 0 | 0 |
| Quarter Day | 1048 | 281 | 0 | 0 | 4429 | 1611 | 0 | 0 |
| Total Participants | 1168 | 816 | 0 | 14 | 5451 | 2626 | 0 | 0 |
| Total FTE | 382 | 569.75 | 0 | 14 | 2102.75 | 1417.75 | 0 | 0 |

Note: Ecolinc STEMlinc & STEMex video conference participant numbers are included in Outreach numbers.

Note: Ecolinc Learn Online participant numbers are not included in Outreach numbers.

2. Virtual:

Table 5: 2023 Virtual Programs

| a. STEMLinc (Video Conferencing) | b. STEMex (Video Conferencing) | c. Ecolinc Learn Online (Online LMS program) |
|---|---|---|
| A variety of video conferenced events are scheduled each term and either delivered by Ecolinc Education Officers or auspiced from other environmental organisations locally, nationally and internationally. In 2023, these synchronous programs were once again very heavily booked. | STEMex provides a video conference program for students lead by an expert guest speaker. Run on a fortnightly basis, STEMex takes the form of a short powerful talk on a popular topic or issue, followed by a Q & A session with the expert. | A range of online outreach programs and resources are available on the Ecolinc website and through Ecolinc Learn Online (Learning Management System - LMS). |

a. STEMLinc



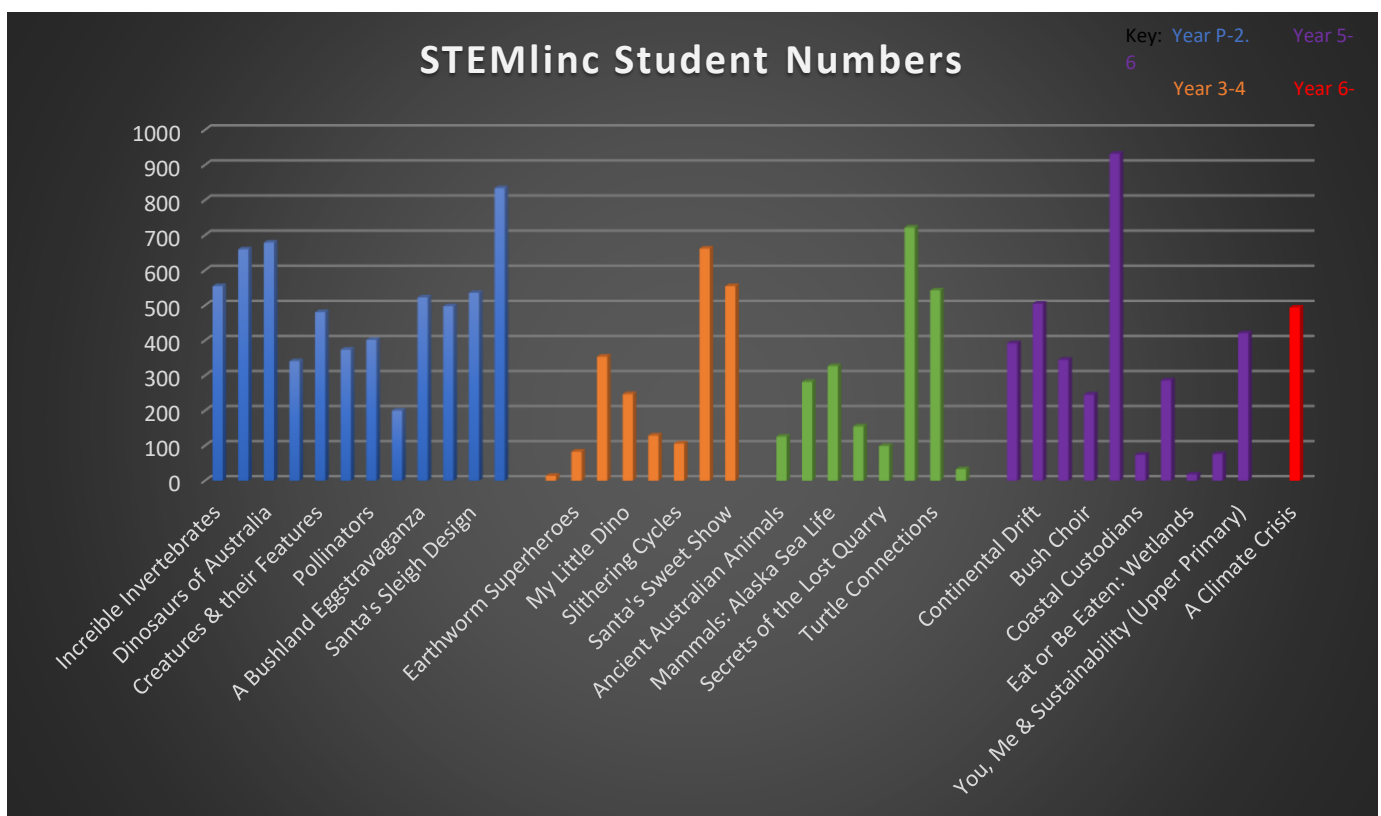
A wide range of synchronous video conference sessions were offered to schools throughout 2023 and these were once again incredibly popular.

The video conference sessions were either delivered by Ecolinc or auspiced from organisations such as Questacon, Reef HQ, Australian Environment Education, Sydney Living Museum, Ann Arbor Hands-On Museum (USA), Liberty Science Centre (USA), the Alaska Sea Life Centre and the Royal Tyrrell Museum.

All the video conferences are designed to be interactive with lots of games, activities and experiments. For many of the STEMLinc programs, schools received a 'STEM in a box' kit with materials so that they could conduct the experiment or undertake a STEM activity (with instructions) in their classroom while the video conference was taking place.

Ecolinc offered 39 different video conference programs which were scheduled throughout the year.

Graph 2: Number of student participants in STEMLinc Video Conferences in 2023





b. STEMex

Ecolinc's STEMex program provided primary school students the opportunity to connect with STEM experts via video conference. Run on a fortnightly basis, STEMex takes the form of a short powerful talk by a leading STEM expert as they share their knowledge and expertise on an issue or topic, followed by a Q & A session. A range of popular topics provided a unique opportunity for students to develop a deeper understanding of the significance of STEM in their world. The aim of the STEMex program is to build a community of inspired thinkers empowered to make a difference.

A total of 810 students participated in a STEMex session in 2023. Some of the featured STEMex presenters included:



Karen Player
'Life in our oceans'



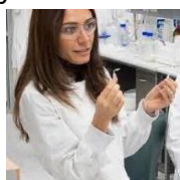
Dr Mariana Pinto
'Living seawalls'



Mary Slayo
'Your brain & junk food'



Chelsea Long
'Ice Cores'



Dr Nasim Amiralian
'Consequences of plastic pollution on our environment'



Dr Erin Hahn
'Wildlife Extinction'



Dr Tristan Reid
'Bats, Rats & you'



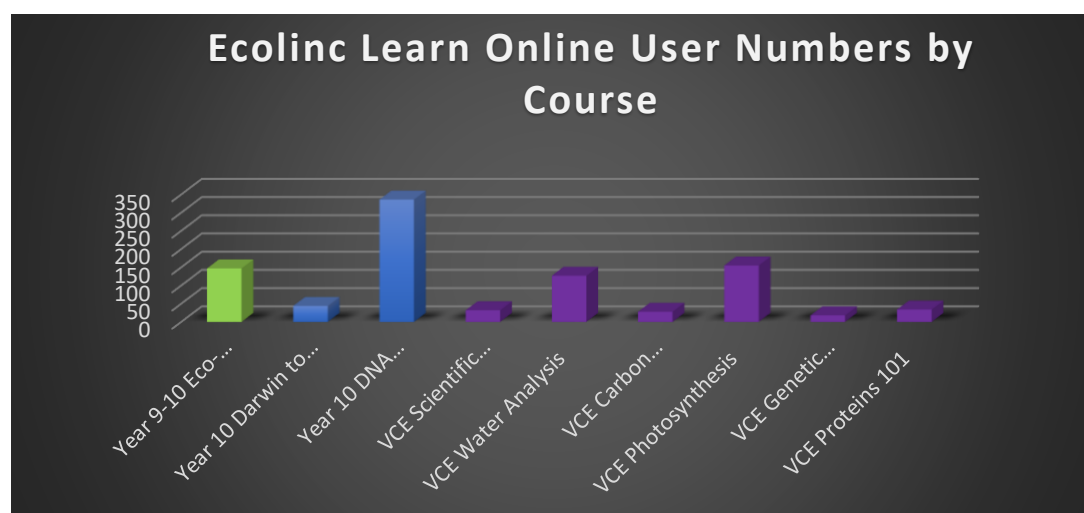
Dr Phoebe Readford
'You can do anything!'

c. Ecolinc Learn Online (LMS program)



Ecolinc's Learn Online Learning Management System (LMS) provides teachers and students with either pre, post or stand-alone courses. The programs are aligned to the Victorian Curriculum/VCE and contain interactives, videos and other useful resources.

Graph 3: Number of Ecolinc Learn Online Registered Users in 2023



Key:
Year 9-10
Year 10
VCE



Victorian Challenge & Enrichment Series

Ecolinc was once again successful in obtaining a grant from DoE Student Excellence Branch to deliver activities as part of the Victorian Challenge and Enrichment Series (VCES).

The VCES program provides enrichment opportunities across the curriculum to extend high-ability students from prep to Year 12 in Victorian government schools so that they are better supported to excel and reach their full potential.

Ecolinc's proposal called '**STEAM Ahead**' is specifically designed to engage a range of STEM experts to inspire students to investigate and interpret scientific phenomena and global environmental issues. The programs are either delivered via video conference (accompanied by a STEM-in-the-box' kit of resources and materials) or in person with a particular emphasis on engaging students from rural/remote schools.

In 2023, Ecolinc offered the following 'STEAM Ahead' programs:

1. Pterosaurs – Dragonstem: April 3rd

Guest Speaker: Tim Richards, Palaeontologist, Dino Lab, University of Queensland

Focus: Comparing the features of pterosaurs with the mythical dragon

Mode of delivery: 2 hour presentation, Q & A session and workshop via video conference

336 Year 3-4 students participated across 14 schools



2. Insectivores Us: April 4th



Guest Speaker: Shasta Henry, Entomologist, University of Tasmania

Focus: To explore the potential of insects as the superfood of the future

Mode of delivery: 2 hour presentation, Q & A session and workshop via video conference

186 Year 5-6 students participated across 11 schools

3. Space Junk & Salvaging Satellites: May 15th & 16th



Guest Speaker: Professor Brett Carter, Space Scientist, RMIT

Focus: How can we salvage old satellites so that they do not add to the issue of space debris

Mode of delivery: 2 hour presentation, Q & A session and workshop via video conference

352 Year 5-6 students participated across 17 schools

4. Secrets of Eromanga & Drawing Fossils: August 23rd

Guest Speaker: Tim Richards, Palaeontologist, Dino Lab, University of Queensland

Focus: Exploring the hidden secrets of the Eromanga Sea and learning how to draw a Trilobite

Mode of delivery: 2 hour presentation, Q & A session and workshop via video conference

279 Year 3-4 students participated across 10 schools



5. Dinosaur Dynamics & Dinosaur Locomotion: August 24th



Guest Speaker: Tim Richards, Palaeontologist, Dino Lab, University of Queensland

Focus: How palaeontologists can use fossil evidence to determine how dinosaurs moved

Mode of delivery: 2 hour presentation, Q & A session and workshop via video conference

233 Year 5-6 students participated across 13 schools

6. A Plastic Ocean: November 14th & 15th

This was a 2 day onsite program delivered in partnership with ACMI consisting of a range of information sessions and workshops.

At Ecolinc: Students participated in a range of workshops exploring the structure of plastics, microplastics and how they impact our environment

At ACMI: Students explored how film techniques can be used to help deliver environmental messages.

186 Year 5-6 students across 11 schools



Testimonials

I firstly wanted to thank you for yesterday. Our students were absolutely enthralled and were disappointed it was just the one day- they were hoping it was going to be for a few weeks! The materials made it really special too. I just wanted to let you know, that the student who asked you about how studying fossils and dinosaurs helps humanity, was a last-minute addition by his teacher as despite his keen interest in science and dinosaurs he is not a high-achiever (in fact, he struggles with literacy) and she was reluctant to put him in that environment. We had quite a few discussions before settling on him.

He was a shining star yesterday, I had never seen him so engaged in anything, and his listening skills and following instructions were outstanding. It was so wonderful to see this side of him, and his teacher was just rapt to get the positive feedback. (Teacher - Pascoe Vale PS)

It was so much fun! The experiments were cool and really made you think about the world and how we damage the environment. (Student)

This was really fun and informational. I LOVE IT! I really love animals and bugs and find them really interesting so this was my heaven, I learnt so much thank u! (Student)

This was so much fun! And I didn't get bored at all! I am really looking forward for the next session, I can't wait! Also eating the corn chips was really yummy and fun! (Student)

Coastcare Program

The Coastcare Victoria Schools Kit is an online education resource that aims to engage young people in caring for marine and coastal environments. The Schools Kit is designed for years 5-8 and is a flexible resource adaptable to younger and older audiences. The Kit includes short videos, lesson plans including activities and worksheets and reference materials for teachers such as teachers guide and PowerPoint presentations. The Kit covers the following marine and coastal topics:

1. Sea and Sanctuaries: Ricketts Point
2. Seaweeds and Sustainable Solutions
3. Ecosystems and Edible Urchins
4. Volunteering for Threatened Flora
5. Action and Innovation: Litter Stopper

The project targets include:

- A minimum of five professional development events, to increase the number of educators able to deliver the Schools Kit educational resources (estimate 200 teachers)
- Deliver a minimum of five excursions/incursions to 250 students, at five locations (South West Victoria, Surf Coast/Bellarine, Port Phillip Bay, South Gippsland and East Gippsland), to increase the number of schools connecting with coastal volunteering opportunities
- Develop two new lessons and supporting materials (lesson plans, teacher guide, worksheets, etc) for two new educational videos on Gabo Island and Barwon Heads Bluff
- Evaluate the project, including recommendations to inform future development and expansion of the Kit

Ecolinc commenced the 18 month project mid 2023. In term 3 and 4 2023, Ecolinc completed the following targets:

- One onsite PD in Geelong (Surf Coast/Bellarine) – four teachers participated
- One incursion in Geelong (Surf Coast/Bellarine) at St Leonards PS – 50 students participated. Topic 4: Volunteering for Threatened Flora
- Outlined the two new lessons and supporting materials



Teachers from the Geelong region at the Teacher PD

2024 term 1 and 2 targets:

- One online and two onsite PD events (Warrnambool and Port Phillip Bay)
- Incursions at South West Victoria (Warrnambool) and Port Phillip Bay
-

2024 term 3 and 4 targets:

- One online and two onsite PD events (Warrnambool and Port Phillip Bay)
- Incursions at South West Victoria (Warrnambool) and Port Phillip Bay
- Evaluation report delivered at the end of the year



Year 5-6 students from St Leonards PS

Curriculum Support Program

In 2023, we delivered the Curriculum Support Program (CSP). The aim of the CSP is for Ecolinc to work closely with a select number of primary schools to assist and support them in the development of their STEM curriculum. This involved a dedicated Ecolinc Education Officer to work with the teachers at the school, to help plan their STEM curriculum for a specific year level. The Ecolinc Education Officer:

- Provided assistance and support with the development of scope and sequence documentation for a particular year level
- Developed and mapped out an environmental science unit that works in line with the Victorian Curriculum in deliver in 2023, which fitted in the scope and sequence
- Provided various modes of delivery, such as onsite, outreach, online, video conferences and incorporated 'experts'.

The CSP is provided at no cost to the school and priority access is given to rural, and disadvantaged schools.

In 2023, Ecolinc worked with South Geelong Primary School (year 5-6) and Ocean Grove Primary School (year 5). Both schools undertook the same program, 'Palaeontology in Action', which focused on the skills of a palaeontologist and content focusing on Australian dinosaurs.

Overall, 200 students participated in the program.

Over the course of a few weeks, students participated in six sessions. The sessions varied in delivery:

- Outreach: Students undertook a fossil dig, 'visited' a dig site along the Victorian coast using Virtual Reality (VR) goggles, and participated in an 'escape room' to learn about Australian dinosaurs,
- Video conference: Students learnt about the role of an Australian palaeontologist, Professor Tim Richards from the 'Dino Lab' at the University of Queensland, who presented his research on Pterosaurs, then learnt how to interpret fossil evidence to determine how dinosaurs moved, and 'visited' (virtually) the Royal Tyrell Museum in Canada to discover how fossils are formed and found, and how palaeontologists interpret them.

Student undertook a pre and post-test to ascertain their understanding of key STEM concepts presented in the unit of work. A comparison was made between the tests for each student, which highlighted that students achieved learning growth. Students had an improved understanding of the role of palaeontologists and Australian dinosaurs. The following are testimonials from various students:

"This program has been amazing. I have loved every second of it. It was amazing meeting palaeontologists and doing escape rooms. Thank you so much."

"Thank you for bringing the VR and doing the zoom calls."

"I want to be a palaeontologist when I'm older."

"Thank you. I loved learning about Palaeontology."

The teachers appreciated the support and the variety of learning tasks offered.

"The Year 5 students thoroughly enjoyed the palaeontology unit. The content was so engaging and allowed for active engagement and participation from students through the discussions, group work, hands-on activities, and real-world examples. The students enjoyed using their critical thinking and problem-solving skills to find clues in the escape room. The online sessions were amazing too!" (Teacher 1)

"The Palaeontology sessions were amazing. The four sessions we had were very engaging and the students loved every minute of it. The last sessions with Clement from Canada was very very impressive. The VR goggles were an instant hit and the connections throughout the entire four sessions was fantastic. Sign us back up for next year!!!!" (Teacher 2)

This was a highly successful program at determining learning growth to improve student outcomes. The CSP will be offered by Ecolinc again in the future.

Women in STEM Program

Ecolinc hosts two Women in STEM events for students in Years 9-10 each year. The event consists of a Guest Speaker, Workshops and a Careers Speed Dating session where students get to meet with, talk to and learn from a range of women superstars of STEM from diverse fields.

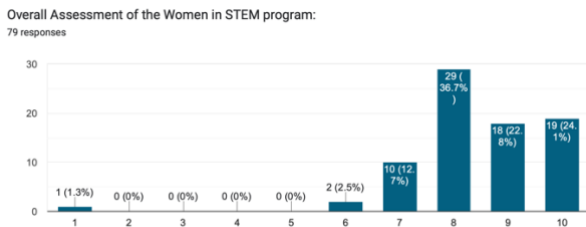


In May 2023, the theme of the event was 'Medical Innovation'. The guest speaker was Stephanie Quattromani, Head of programs & services, Cystic Fibrosis Foundation. Students participated in a workshop called 'Medical Diagnosis' where students learnt about how histopathology is used to diagnose a range of conditions.

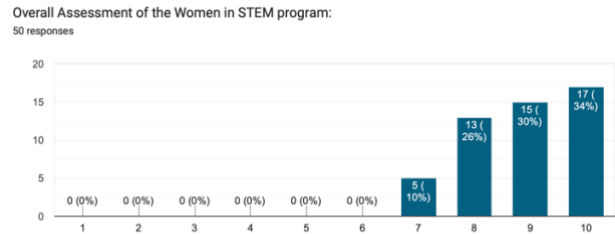
In September 2023, Science Gallery hosted the Ecolinc Women in STEM event. The theme of the event was 'Dark Matters' and the guest speaker was Professor Virginia Kilborn, Swinburne's Chief Space Scientist.



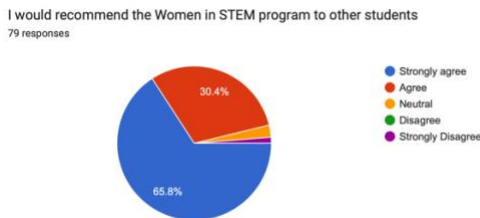
Graph 4: Overall Assessment Women in STEM May 2023



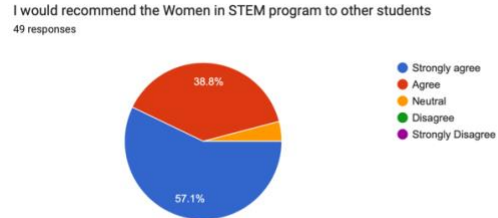
Graph 5: Overall Assessment Women in STEM September 2023

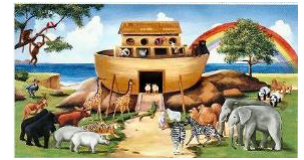


Graph 6: Women in STEM May 2023



Graph 7: Women in STEM September 2023





The Ark Program

72 students from East Loddon P-12 College, Lyndhurst SC and Clyde SC participated in the scenario based program called The Ark, on Monday 21st August 2023.

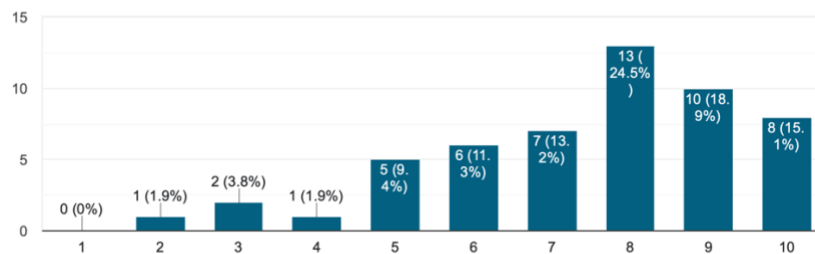
The Ark program posits the scenario that climate change has kicked in in a big way, massive floods are predicted and sea levels are rising rapidly. The Victorian human population have been relocated but the animals have been left behind. The government has put together a rescue plan, a massive ship (the Ark) but there is not enough room for all of the animals to be saved.

So the government has called in the experts (the students) to decide which animals are going to be saved. The students go through a series of selection workshops and decision making processes throughout the day to determine the animals to be saved.

Graph 8: Overall Assessment The Ark Program 2023

Overall Assessment of The Ark program (rate your opinion on a scale of 1-10)

53 responses



National Science Week: Superheroes Against Extinction Program

In this workshop with comic artist, Bernard Caleo, students design a superhero who helps to fight against the extinction of a particular animal species. Bernard works with the students to learn about the classic characteristics of a superhero and how you go about creating a superhero character out of plasticine.

Students conclude the workshop by developing a stop-motion storyboard and video using their superhero character and backdrop they have created.

134 students across 4 schools participated in this program during National Science Week.



'Having a comic genius such as Bernard Caleo part of the program gives this program significant credibility and provides students with a quirky educational experience too.' (Teacher)

Deep Creek

Ecolinc, along with PrimeSci (Swinburne University), co-delivered programs at the Deep Creek Reserve in Pakenham every Tuesday throughout 2023.

1357 primary students participated in a program at Deep Creek last year.

Table 6: 2023 Deep Creek Programs

Year P-2

Chemistry
Physics
Healthy Rivers, Healthy Bay

Year 3-4

Chemistry
Physics
Healthy Rivers, Healthy Bay
Fascinating Frogs at Deep Creek
Life of Plants: Cardinia

Year 5-6

Healthy Rivers, Healthy Bay
How Healthy is the Deep Creek Wetland
Uncovering Adaptations at Deep Creek



Hobson's Bay Wetland Centre

Ecolinc is one of the partner organisations in the new Hobsons Bay Wetland Centre project which is to be built on the HD Graham Reserve in Altona Meadows. The Wetland Centre will be used as an eco-education and research centre for schools and academic researchers, tourists and local visitors, citizen science and environmental groups and will encourage people of all ages to connect with nature. Ecolinc will develop curriculum programs for students to be delivered from the wetland centre once built.



**HOBSONS BAY
WETLANDS CENTRE**

Our Partners

Ecolinc would like to acknowledge and thank our university, industry and school partners and affiliates for their continued support and involvement with Ecolinc:



Department of Education



TOYOTA



HOBSONS BAY WETLANDS CENTRE



Governance and Accountability

The Centre's governance falls under the auspices of the Bacchus Marsh College School Council and complies with the DET's Specialist Science and Mathematics Centres' Memorandum of Understanding and Funding Model. The Director reports to the host school Principal and liaises with the host school Business Manager to ensure there is compliance with DET financial and management accountability protocols.

Financial Statement

The Centre receives approximately 98% of its annual revenue from the DET through the *Science Specialist Centre's Funding Model 2014-2016*. The remaining 2% is derived from additional funding sources (e.g. venue hire, partnerships and non-government and government schools classified as standard rate). The DET Funding Model provides for the staffing (60%) and resources (40%), and has a capped student attendance component. The Centre does not receive funding for teacher professional learning.

The Centre continues to meet the targets as set by the DET Funding Model.

1. 2023 Financial Performance Summary (revenue/expenditure)

| | Revenue |
|------------------------------------|--------------------|
| SRP Cash Funding | \$705114.00 |
| Targeted Funding Reimb. | \$32033.85 |
| Reimbursements/Donation | \$2695.60 |
| Sale furniture/Equipment/M Vehicle | |
| Camps/Excursions/Activities | \$19730.00 |
| Optional | |
| Other Locally Raised Funds | \$1000.00 |
| Total | \$760573.45 |

Figure 2: 2023 Financial Performance Summary: Revenue

| | Expenditure |
|--------------------|--------------------|
| YTD expenditure | \$575073.03 |
| Orders Outstanding | |
| Total | \$575073.03 |

Figure 3: 2023 Financial Performance Summary: Expenditure

2. 2023 Summary of Grants

| | Revenue | Expenditure | Balance |
|---|---------------------|--------------------|---------------------|
| Toyota | | | \$3,094.69 |
| Ecolinc STEM PD Grant | | | \$62,439.00 |
| Victorian Challenge & Enrichment Series | \$176,242.17 | \$63,757.83 | \$112,484.34 |
| Prime Sci Project | \$17,000.00 | \$22,175.00 | - \$5175.00 |
| Total | \$193,242.17 | \$85,932.83 | \$172,843.03 |

Figure 4: 2023 Grants received (revenue & expenditure)

| | |
|-------------------|---------------------|
| 3. Total Revenue | \$760,573.45 |
| Total Expenditure | \$575,073.03 |
| Balance | \$185,500.42 |