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SUSTAINABILITY IN DESIGN: THE EXPLORATION OF USING DIGITAL DESIGN AS A TOOL TO PROMOTE ENVIRONMENTAL CONSERVATION AND SUSTAINABLE PRACTICE

by

Kaitlyn Maxwell

Submitted in Partial Fulfillment of the Requirements for the Degree of Master of

Arts in

Art and Design Emphasis Graphic Design

at

Lindenwood University

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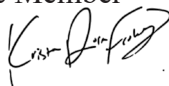
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SUSTAINABILITY IN DESIGN: THE EXPLORATION OF USING DIGITAL DESIGN AS A
TOOL TO PROMOTE ENVIRONMENTAL CONSERVATION AND SUSTAINABLE
PRACTICE

A Project Report Submitted to the Faculty of the College of Arts and Humanities
in Partial Fulfillment of the Requirements for the
Degree of Master of Arts
at
Lindenwood University

By

Kaitlyn Maxwell

Saint Charles, Missouri

March 2022

ABSTRACT

Title of Thesis: Sustainability in Design: The Exploration of Using Digital Design as a Tool to Promote Environmental Conservation and Sustainable Practice

Kaitlyn Maxwell, Master of Arts/Art and Design with Graphic Design Emphasis, 2022

Thesis Directed by: Justin Kussman, Instructor, Interactive Media and Web Design

The final website deliverable functions not only as a means of presentation, but as a jumping off point for digital designers to build off of, using the carefully curated resources and informational findings that are included in, and crafted specifically for, this project. By focusing on three main aspects of how to answer the research question 1) creating awareness, 2) making a case for caring, and 3) effective messaging methods, a framework has been created that the audience can expand upon without being overwhelmed by a question with many potential routes to travel down. A digital designer can promote sustainable efforts and ideas in many ways, but the website deliverable provides project examples and serves as a tool to outline how they can do so by using design to create awareness, contribute to an audience's inclination to care, and effectively convey crucial messages. The content should ignite a creative spark for digital designers who care about the natural world, and encourage a deeper appreciation for an urgent goal for those who are not as familiar with its importance.

Acknowledgements

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I am thankful for the kind representatives from the Missouri Department of Conservation that allowed me to share in their experiences from a unique perspective, and obtain valuable data from their insights, Erin Shank, Urban Wildlife Biologist, and Dan Zarlenga, Media Specialist.

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Introduction

This thesis project investigates how a digital designer can use their role to promote sustainable practice and environmental conservation. Sustainable design can be defined through this project not as something that has been designed sustainably, but rather, a design that promotes sustainability. Sustainable design, as it relates to digital design, can further be differentiated as relating to production or manufacturing, or to the design itself. In order to effectively promote environmental conservation in their role, digital designers must consider both of the aforementioned differentiations.

In addition to research relating to design, background research for this thesis project explored the role of messaging through scrutiny of current, peer-reviewed articles, and the facilitation of interviews. In design, it is important to make sure that the right messages are being distributed and that they are being interpreted correctly by the audience. The focus of the “Meaningful Messages” film project within this thesis was to explore how a local Missouri conservation organization uses messaging tactics to achieve community impact. Qualitative interviews were conducted with conservation experts from the Missouri Department of Conservation. To gain different perspectives within the organization, the interviews were conducted with an urban wildlife biologist and a media specialist. The successes, challenges, and impact of the programs these organizations produce for the community were examined as a potential model for national and international organizations that might be interested in carrying out similar programs. The takeaway themes and insights from these interviews are included in the research methodology later in this work.

This exploration of effective messaging methods helps designers understand that their work must go beyond being visually appealing to become engaging as well. Research explored

to create this thesis project has shown why a digital designer should promote environmental conservation, and going forward, will be shown how. The findings from this initial line of inquiry, *how can a digital designer promote environmental conservation and sustainable practice*, are presented as a thesis project in a website package. Speaking directly to a digital designer peer group allows for a wider impact for a specific audience, rather than a less effective impact on a wider audience. Messaging tips include: a) find ways to engage with your audience, b) use multiple methods and mixed media for the widest appeal, c) messages should inspire and audience, not intimidate or disconnect them, and d) knowing audience specifics, like demographics, logistics, financial brackets, can help narrow down effective messaging methods.

The interview film built a foundation for the project website that showcases all of the carefully curated research information that has been gathered and created since the initial inquiry was outlined. Another section of this research journey explored the relationship of digital design to promote sustainability through graphic design and digital photographic images. The short film referenced showcases strategies used to promote sustainable efforts within a local community. The messaging methods are presented in a way that might serve as a model for others, nationally and internationally. Care was taken to implement clear messaging to the audience, using strategies developed through qualitative research. Though digital design utilization was discussed in the expert interviews, the primary design aspect of the film project was to use design as communication, rather than as research that directly discusses design. The messaging role that design plays was considered, as well as the role that design plays into message delivery. The desired results of the messaging throughout this project are impactful, inspiring, and uplifting. Hopefully, through this work, designers will be inspired to incorporate their skills in an effort to promote sustainability.

The project, “Meaningful Messages: Using Digital Design as a Tool to Promote Messaging Strategies Related to Environmental Conservation,” is a film piece highlighting the messaging methods used by the Missouri Department of Conservation to promote efforts and engage their surrounding communities. The goal of this work was to uplift a local conservation organization and provide them with promotional content, while creating material that contributes to the final thesis project. Past research deliverables that contributed to earlier pieces of this thesis project focused on conveying messages about sustainability and conservation efforts, and were, admittedly, somewhat dismal in nature. Feedback from the viewers of these project elements guided a pursuit of adding positive and uplifting messages to inspire, rather than depress, the viewer going forward. The film portion still explores the relationship of a digital designer’s contribution to sustainability efforts through an additional presentation medium. By undertaking this project to showcase local conservation partners, the goal was to encourage others to discover and partner with their own local resources to make a difference. The film is located within the messaging section of the thesis project website, as a presentation of research findings through digital design.

Through the lens of a digital designer, the impact of positive messages as a means to promote existing conservation efforts, while inspiring continued and expanded sustainability work, were inspected in this research. Messaging is an important part of how research findings are presented, and a designer should desire the messaging in their work to be as impactful as possible. Based on interpretation of the literature reviewed on this subject, it can be said that a message in itself is not the deciding factor in how an audience receives it (Barnett et al., 2019). An important element that plays into message perception is the presentation, both in framing and messenger. Attitudes are also impactful in an individual’s reception and perception of a message.

The message may be positive, but if the receiver has a negative view of the messenger, the message may not be positively received. The audience's relationship or perceived relationship with the message sender can play into whether the message is effective (He et al., 2019). The messaging created in the film project was derived from a combination of narrator and text over footage, to remove potential viewer biases based on a particular messenger. The narration strives to keep an element of engagement with the audience through tone and cadence.

Though desensitization of impact is still possible with positive messages, it is less likely to occur than when viewing negative messages with dismal images. For example, a viewer might feel empowered to embark on their own efforts for change after hearing uplifting efforts that are being done to conserve the natural environment by specific community participants and facilitators. Conversely, seeing dismal images of wildfire destruction or deceased animals, along with a more state-of-affairs message, may make the viewer less inclined to take action with each subsequent view, as they become resigned to the image and accepting of the message as unchangeable reality.

Literature Review

The state of graphic design is competitive (Yoshinaga, 2010). Graphic design is also behind other design fields in the embracement of sustainable efforts and practices (Graham, 2012). Graphic designers, especially in branding and packaging, will benefit from promoting sustainability efforts in their work, to set themselves apart from industry competition (Yoshinaga, 2010) and keep up with the direction that other design industries are going (Graham, 2012). Graphic designers need to follow parallel industry leaders to make sustainable practices a priority. Graham explains that, "design industries such as architecture, interior design, and landscape architecture have coded what sustainability means by developing certification

organizations and guidelines” (Graham, 2012). Though other design industries have paved the way for the field of graphic design to become impactful in sustainability, and have laid out possible rules for graphic designers to follow, there is still much work to be done. A possible theory for this lag in sustainability embracement may stem from graphic designers still needing to discover new ways to implement these practices that differ from the processes put together by other leaders in design industry. Innovation is of key importance to designers in manufacturing companies (Jea et al., 2017). Admittedly an important element in design, innovation rarely springs up overnight. Development and implementation of new ideas takes time.

Why should designers be involved in sustainable efforts? An argument could be made that there is a current and potential future demand for graphic designers with sustainability familiarity. “Having talent and being skilled is one thing, but today’s designers have to know how to expand their creative services through positive relationships within the community in order to sustain their career” (Yoshinaga, 2010). To this point, sustainability has primarily referred to an environmental focus, but it is important for designers to keep in mind the intersectionality of social sustainability as well. “The influence of design for innovation can be described as a creative process: its outcome enables a company to increase innovativeness by using the full spectrum of design” (Jea, et al., 2017). Individuals within a profession seek to set themselves apart from competition, and with its growing popularity, graphic design is indeed a competitive industry. By keeping up with and desiring to be included in the current direction of encouraging society to participate in sustainable practices, a designer can stay relevant within their industry (Yoshinaga, 2010).

The project section *Altered Perspectives* explored the perspective of organic objects as seen through water's states of matter. This section served as a parallel of the surreal feeling of

watching our natural environment change, right before our eyes, through climate change. As in the images, the known of our natural landscape is becoming unknown. This rapid alteration should not be a surprise, but rather, expected. As a society, we are resigned to this impending change, desensitized to its inevitability. It is undeniable that a changing natural environment has been set into motion by human impact, and strategies to conserve and sustain must be effectively implemented.

Now, more than ever, individuals have the opportunity to share and collaborate with one another online. The things that are shared in this way should relate to important topics, such as the need for environmental activism (Villanova, 2018). As inhabitants of Earth, we need to become reacquainted with a sense of urgency to halt and reverse our negative impact. A digital platform is one way to consider promoting and conveying this sentiment. Opportunities for collaboration can be provided through overlaps in habitats and species population decline (Riley, et al., 2019). When different types of organizations are conducting research and initiatives that intersect, they find they can accomplish more together.

Community engagement is a key factor in teaching and learning. (Klimt, 2018; Miller & Cardamone, 2021). Different individuals connect with the environment in various ways. Thinking about the natural world through engaging with art is one way to plant a seed of awareness. Individuals can begin to see that they are making a positive impact by taking the time to invest in their own communities and the natural environment around them. This perspective leads to the need for multiple messaging methods, as a wide array of individuals receive content uniquely, just as they exist in the natural environment to varying degrees.

Pairing social intervention with creative practice transforms activism into artivism (Golańska & Kronenberg, 2020). This approach can pair an individual voice with many through

artful practice toward a common goal, though each voice provides its own degree of impact. As evidenced through this piece, art can be used unconventionally to make a statement.

Viewing an image digitally is not an adequate substitute to capture what the eye is able to see in the natural world (Stojković, 2018). An urgent plea for conservation must be understood by all, so that digital means do not become the only way we can view a bygone natural environment. Change and potential are parallel to one another (Glen, 2019). It can be concluded that, with the fluctuating environment, there can be the opportunity to do better: to grow and help restore that which has been eroded. The first step in activism is creating awareness and reawakening an audience to a cause that has been overlooked, due to repetition.

Additionally, the annotated bibliography section below provides additional context on how and why each source was supports the project deliverables.

Methodology

This project track began with a desire to incorporate a passion for graphic design with an enthusiasm for the natural environment. Implementing committee feedback, the final deliverable consists of a website showcasing how a digital designer can be involved in promoting sustainable practice and why they should do so. The goal of the final thesis website project is to inspire digital designers specifically to promote environmental conservation and sustainable practice. This was done by creating content for a viewer to use, outlining effective messaging methods, and giving examples of projects they could create to help organizations engage with their community. For example, similar design work, as shown on the website, could be offered pro bono for the organization if they need content, or as an exploration of skill development if the organization has enough design resources. A digital designer could become involved by offering to take photographs at an event to partner with qualitative researchers and subject matter experts

to better tell their story through visualization. There are so many ways that a digital designer can promote conservation efforts, and the website's aim is to inspire a peer audience to come up with their own creative ways as well.

In previous project research, methods have been explored to grab an audience's attention on this subject with digitally designed posters, as well as messaging presentation paired with digital photography presentation. For additional research insight into a specific digital design field, digital design has also been examined using sustainability and equitable practice as it relates to branding and packaging. The film project highlighted in the effective messaging section of the website entailed advancing skills in video and digital editing by creating a short film highlighting local St. Charles, Missouri conservation efforts in a positive light. Qualitative interviews were conducted, and the utterance data was thematically analyzed using a Constructivist approach to derive meaning from the experiences of the expert interviewees. It is important to include uplifting messages going forward, since the past examination of digital design and sustainability presented a somewhat dismal theme. Research findings through each project deliverable, related to the topic of digital design as a tool to promote sustainability and environmental conservation efforts are outlined in the section below.

Production

- [Page 1: Raising Awareness through Graphic Design \(Posters\)](#)
 - Deliverable showcased: TERRA, AER, AQUA: A Graphic Design Approach to Raising Awareness of Environmental Issues in Land, Air, and Water Habitats
 - The primary goal of this deliverable was to grab the attention of the audience and draw them in to view messages related to environmental conservation.
 - This was done by creating awareness for existence of curated environmental issues across land, air, and water through digital design.

- Examples of digital design incorporated into environmental awareness are important to this field as a way to show other designers how they might become involved in sustainability efforts.
- This project explored the question: How can graphic design be used to create environmental awareness? Digitally designed posters are a way to bring awareness of habitat destruction within North America to the audience. The typeface Forma DJR Deck complements the chosen Swiss/International design style. Asymmetric, abstract elements, and clear wording are incorporated into the design. By using a modern, international design style, and alternate words for water, earth, and air, the intent is to evoke a global feeling toward these national issues.
- Poster 3: Aqua (water related habitats, rivers, streams, oceans)
 - Visuals showcase specific statistics of declining water habitats
- Poster 1: Terra (earth, land-based habitat-forest)
 - Visuals showcase statistics for stylized forest, desert, and mountains.
- Poster 2: Aer (sky and air habitats)
 - Visuals showcase soaring and migratory birds with incorporated statistics
- This project required not only an extensive look into biodiversity resources, but also an examination of graphic design styles and how they can be applied to the visual representation of this topic. Adobe Illustrator skill expansion and additional knowledge were acquired by the creator throughout this project as well.
- This deliverable for Milestone I consisted of three digitally designed posters incorporating environmental statistics through Swiss/International style design

elements. These posters were created with Adobe Illustrator. The scope of Milestone I helped to gain insight into the field of digital design through research. The amount of research on this topic of environmental statistics relating to biodiversity and habitat loss, as well as research into graphic design styles and elements, is reflective of graduate level coursework. Through this research, I was able to discover the importance of thematic elements across my deliverables to convey the fluid relation of ecosystems while giving them unity.

- [Page 2: A Case for Caring \(Photography Narrative\)](#)
 - Deliverable showcased: Altered Perceptions: Creating a case for caring through environmental intrigue, a surrealist image portfolio
 - The goal of this project was to further outline case for caring.
 - This was done by tying environmental issues to a visual narrative.
 - For this project, I used an original photographic technique to transform the known into the unknown. This approach is meant to parallel the currently occurring alteration of the natural environment. Organic elements (plant life, fruit) were the subjects, but they were viewed by the camera through manipulated states of water: liquid, solid, and vapor. I wanted to create a surreal inquiry for the audience of what they were really seeing. I refined my skills as a digital photographer to consider aperture, ISO, and depth of field. I used long exposure to convey motion in some images and quick capture to create crisp ominous digital artifacts for others. My research included considering image portfolios that others had created and what made them impactful.

- Additional global, national, and local research resources were used to create 10+ original digital images. These were showcased through an original Adobe Spark webpage.
- For this project, digital photography was an appropriate method to convey my project goal of directing audience attention to environmental awareness.
- Additional research paper authored to further outline case for caring
 - The Impact of Environmentally Friendly Package Design on Consumer Perception: Why Does It Matter
 - Highlights why everyone that can use digital designs, not just in a specific field, and why they should get on board with broader trend in design of sustainable practice
- [Page 3: The Importance of Message Structure and Delivery](#) & [Page 4: The Value of Collaboration \(Film\)](#)
 - Deliverable showcased: Meaningful Messages: An exploration of uplifting local conservation efforts in Missouri
 - A partnership was established for this deliverable with local conservation resource, Missouri Department of Conservation, to capture their insights and document their efforts toward community messaging and engagement.
 - This Thesis I project still explored the relationship of digital design's contribution to sustainability efforts through film as an additional presentation medium. By undertaking this project to showcase local conservation partners, the hope was to encourage others to discover and partner with their own local resources to make a difference.

- The digitally edited 4-5 minute film highlights work being done to perpetuate conservation efforts, interspersed with positive messaging.
- The short film takes a thematic look at design and messaging experiences of two representatives from the Missouri Department of Conservation.
- Research to develop this film included messaging tactics with a focus on the implementation of positivity surrounding the subject of environmental sustainability.

The following section highlights response themes from qualitative interviews that took place on September 20, 2021 with two representatives from the Missouri Department of Conservation.

When asked about the promotion of conservation, Dan Zarlenga, media specialist for the Missouri Department of Conservation, indicated that community engagement and buy-in is important. One way that community engagement is promoted is through a free magazine called *The Conservationist*. The articles in this magazine relate to habitats, pollinators, and many other topics related to wildlife conservation. This magazine has been running for 80 years, and it has changed to accommodate an audience that engages with media digitally by providing digital delivery and a PDF flip book of the magazine. The magazine has expanded to include a publication for kids, called *Explore*, but adults enjoy it as well!

Promotional methods of Missouri Department of Conservation events include news releases, which are state-wide and regional (focused on a local area). MDC also partners with other agencies for events like environmental cleanup. Individuals are encouraged through these new releases to take a class or do an event. Along with news releases, social media is also used as a way to promote the efforts and event happenings in the field, as well as partner

announcements. The MDC Facebook has half a million followers, and they also use Instagram, Twitter, and YouTube to send information and showcase photos, as well as distribute informational videos about environmental conservation.

In addition to hosting and leading events, MDC plugs into live programs hosted by community and organization partners. An example of this is Prairie Day with Shaw Nature Reserve to educate attendees about the natural prairie. Conservation Educators from MDC reach out to schools to implement Discover Nature curriculum, which considers competing curricula and aligns with grade level learning outcomes.

Popular events promoted and hosted by MDC include nature-based, hands-on crafts, specialty hikes, and engaging events, such as incorporating lasers into compass knowledge. Effectiveness of reaching potential participants for these programs involves a multi-pronged approach. Promotion methods can include print and electronic, like a mailing list or website listing. The previously mentioned news release goes out to 17,500 recipients. While 10-20 individuals may be a sufficient audience for some events, others can require additional signups. The news releases go out to an entire list, regardless of their specific content area, but interested parties can subscribe to text messaging services in their area of interest to receive information only about specific events.

Though no official data has been collected by MDC on the most effective promotion method, spikes in sign-ups for events after the implementation of social media serve as imperial evidence of the success of this method. If workshop or event leaders do not receive their goal amount of sign-ups through traditional channels, additional promotion through social media often yields more response. The MDC communications department is able to obtain some data from the registration platform required to sign up for an event, but there is currently no way to

determine how many individuals attend an event from a news release versus a social media promotion.

The messaging information above can be categorized as an overview of direct communication tools to connect with the community about environmental conservation. The following elements focus on ways that MDC specifically implements community engagement in the promotion of environmental conservation. It was noted that the COVID-19 pandemic had an impact on a format shift for some of these programs. Virtual formats have been successful to reach a wider audience during the pandemic and will likely become a permanent format to provide community engagement. Benefits of virtual events include ability to accommodate more participants than a physical space might be able to, as well as increasing ability for individuals to join that have not been able due to location or accessibility limitations.

Cause-based organizations are successful partners in community engagement with conservation. Missouri Stream Teams are one example of a cause-based organization that act as stewards of our waterways by impacting certain locations to clean up trash, investigate levels of invertebrate diversity, and promote public advocacy. Missouri Master Naturalists also act as a cosponsor with MDC. As part of this ongoing program, participants are required to engage in volunteer hours while giving back to the community. These organizations and their programs are also promoted by MDC through news releases and Facebook. Interviews are also sometimes conducted with these organizations and shared through broadcast media as a form of promotion.

The types of messages that MDC sends out to its audience include native plant promotion with the removal of invasive species, clean water promotion, the promotion of sustainable hunting and fishing, and also, environmental challenges that the community is facing, such as chronic wasting disease that affects deer, and feral hogs outcompeting native species. It can

sometimes be challenging to send a message to the community if it could be perceived as contrary to a previously sent message. The feral hogs, for example, are recommended to be reported, rather than hunted, to avoid a self-sustaining cycle and potential self-serving market of those who release these animals and contribute to the problem initially. Incorrect intervention from the public can also result in an interference with eradication tactics. MDC needs to trap whole groups to help contain the feral hogs, but hunting a few of them can scatter the group and thwart invasive species removal efforts. There is a reason that guidance is being provided by the MDC, but if their audience does not understand the reasoning, it can be difficult to get them to comply. Another challenge that goes along with this example can be overcoming generational ideas. Repeated messaging is crucial, and giving the messages time to connect with their audience is important, too.

Messages fall to a wide variety of audiences and can fall differently, according to diversity. This adds to communication challenges, with a specific example of those who utilize English as a second language. Not only language barriers must be considered, but cultural differences as well. An example of this would be fishing regulations and quantity restrictions. When a message recipient does not necessarily understand from a cultural background why these restrictions are in place, they may be less likely to comply with them. At this point in sending messages, it is the responsibility of field agents to utilize in-person communication to ensure that messages of environmental conservation are received and adhered to. Everyone at every level of the MDC is involved in the communication process and contributes to the tone and distribution.

Though every message conveyed by the MDC is different, they are promoted in a positive way as best as possible. Messages focus on the persuasion of the value of conservation. Sometimes, statistics are necessary, but the goal is to communicate with the audience in an

impactful way. Thinking about social media in terms of message, rather than event promotion, the popularity of each post is largely unpredictable and hard to anticipate. Sometimes, experts within an organization have difficulty framing a message for their audience. It can be easy to use technical terms to describe something, but this language will not necessarily resonate with an average audience. It is of note to be relatable and consider messaging through the minds of the audience and use terms that they can connect with (D. Zarlenga, phone interview, September 20, 2021).

Erin Shank, urban wildlife biologist for the Missouri Department of Conservation, shared her experience through an interview conversation. She was drawn to her field by studying conservation biology and animal behavior and began this career path through research in urban deer management. Her time with the Missouri Department of Conservation has given her a unique perspective of the messaging methods that are needed to convey the importance of conservation to the community.

The Missouri Department of Conservation practices community engagement daily by training teachers and working with partners and also in a more periodic frequency, ensuring regulatory compliance, having conversational style workshops and events, and presenting information on how individuals can become a conservation partner.

The in-person events that were offered prior to the COVID-19 pandemic were not necessarily well attended, but it is difficult to predict community interest for all events. These events are promoted through the website calendar. Event attendance could be due to a variety of factors, but the user-friendliness of the website that the events are located on is seen as a barrier to potential attendees. Erin mentioned the newsletters and magazines that are distributed by the MDC but noted that these typically focus on topics, rather than specific events.

Thinking about digital design and other visual elements as a promotion tool, the “triangle,” MDC’s logo, is used frequently and remains unaltered. This graphic features a raccoon, a fish, and a leaf arranged in a geometric way to convey the biodiversity and interconnected species that MDC seeks to protect. Photographs and illustrations are used frequently in the promotion of and during events as an effective communication method. Talented photographers and those in media roles are willing to share their photographs for this cause. One example of an illustration that is used is the “Root Systems of Prairie Plants” to show a variety of complex concepts through one infographic. Images like this are valuable educational tools because they can be used over again to explain a wide range of concepts.

Messages that are uplifting are preferred. MDC hopes that through community engagement, they can convey the value of conservation and the point that it matters. Conservation is relevant to an individual’s quality of life and matters, whether they believe that it does or not. MDC strives not just to show the relevance of conservation within a community but presents it as an investment and asks for something back from individuals. Messages that are simple yet effective work best (trees work, discover nature). Technical workshops, like Green Infrastructure, are the most effective types of educational events. These events are typically attended by Public Works staff and are as much about relationship building as they are about presenting educational material.

Advice given to those trying to begin a similar workshop in their own community would be to partner with speakers that are experts, yet also inspire, engage, and are experienced with implementation. Those interested in starting a similar program are also advised to network with entities that have the ability to network, with a goal of gaining agency in audience. Sometimes, a general audience will be necessary a few times, but the most valuable participants are those who

can bring about change. Approachable experts impact the success of their message. Public policy liaisons sometimes act in this role with the subject experts, but finding an expert who can work well with an audience is desired.

There is a priority of promoting community engagement in environmental conservation. No longer are conservation organizations primarily concerned with technical preservation work; now, they recognize that their surrounding community must engage in buy-in to their efforts and ideals if they are to be successful. The discussion in these interviews reinforced the need for strengthening the relationship between sender and receiver for important conservation-related messaging (E. Shank, virtual Zoom interview, September 20, 2021).

A partnership was initiated with a local conservation group to document their efforts toward conservation. An author-edited four minute film presenting these findings highlights positive messaging derived from work being done to perpetuate conservation efforts. This project challenged a refinement of digital editing skills through Adobe After Effects. Footage was obtained of relevant subject matter to the response themes outlined in the above qualitative interview information. This footage includes pollinators, messaging methods, regulatory and compliance signage in outdoor spaces, as well as additional b-roll elements. Interview data was obtained and synthesized for themes. The film script is located below.

Narration Script:

How do you reach an audience? It depends on the message that you are trying to convey. Billboards and business marquees can reach a large number of people, but they are physical methods, and require the viewer to not only be in the same vicinity but to notice and reflect on them as well. This type of messaging typically consists of advertisement and is important to get across for the business or brand.

What if the message that you wanted to convey was bigger than a brand, bigger than a business, and was important to the entire world? This is the message of environmental conservation. This concept is important to everyone, whether they are directly aware of it or not. Everyone that lives on the earth is dependent on the ecosystems that surround us. A message this important requires mixed media methods, repetition, time, and in-person communication to be effective.

One organization that focuses on communicating this message is the Missouri Department of Conservation. The MDC must consider the cultural, generational, and logistical individualities of their audience members to effectively engage with their communities. By being aware of potential differences in those receiving their messages, they can implement strategies to bring about positive change, as well as adherence to laws that protect the environment and biodiversity.

Messages that are simple, yet effective, work best. Some examples of this include partnering with other organizations and learning communities to launch campaigns like “Trees Work” and “Discover Nature.” Giving the audience a memorable mantra as a framework can boost the program’s effectiveness. Positive and uplifting messages also work well in communicating with the community because they inspire change in an attainable way. Specific examples of how to contribute to conservation, like inviting pollinators with native plants, help make a difference.

By seeing examples of what others are doing to promote and engage in environmental conservation, individuals see the value and are more likely to engage in buy-in. Steps that others might take that are looking to share similar messages include initiating partnerships with cause-based organizations, like MDC does with the Stream Team and Missouri Naturalists. Both of

these organizations provide opportunities for community service and engagement. For those thinking about starting technical workshops to inform those in the community about specific causes and environmental issues, ensure that those in attendance possess agency. While networking can be a tool to spread an important message, those in the network should be able to affect change.

The above film project has been incorporated into the final thesis project deliverable website, which is outlined in more detail below. The website's purpose is to serve as an example of an action plan for digital designers to promote sustainable practice. All research findings, project deliverables (posters, photography, film), and additional graphic assets are packaged together as an action plan and presented together within a website. Environmental conservation research findings that pertain to messaging and local efforts are packaged in a website that is visually appealing, user friendly, and informative. Deliverables, photos, image, and text are interspersed to lead viewers to tips and examples of how they can begin to make a difference in their community as a positive change for environmental conservation.

Included are author-created digital design elements, along with global, national, and local resource links indicating how an audience can get involved in promoting these efforts. Upon opening the homepage and viewing the layout and sections, the audience should understand that this website serves as an inspirational tool and resource bank. The resources and examples showcased here can be used by other designers to create their own design projects promoting sustainability and environmental conservation. This was accomplished by taking on the perspective of the potential user to get them to understand, as quickly as possible, what the website was for without having to click around to multiple pages to locate a possible purpose.

Though the website page sections showcase the project deliverables of the poster project, photography project, and film project, they also include additional information on the purpose in an “About” page. In this page, the sentiment is conveyed that this website can be used as a tool to inform and as a resource to create. Purpose statement: *This website is meant to outline the importance of promoting sustainability and environmental conservation in all work, but especially the work of digital designers. While all graphic designers could use any elements or information presented, this content may be particularly useful to digital designers working in marketing and branding. The content is meant to be ignite a creative spark for digital designers who care about the natural world and encourage a deeper appreciation for an urgent goal for those who are not as familiar with its importance.* After navigating through the content of all website pages, the intent is that the user will be inspired to use messaging methods and sustainable design elements in their own work, remixing presented elements through their own unique perspective to continue this mission.

Another page the viewer can navigate to is for graphic assets to be utilized as open resources. Provided in this section are examples of projects that digital designers can create and resources that they can use to promote sustainability, such as photographs and color palettes. External resource links include: sustainable ink, paper, recycled materials, as well as some examples of resources and organizations to get involved efforts at all logistical levels. The efforts of local conservation resources can serve as an example of possible national and global action through technology and, not necessarily, travel. Individuals offering to partner with local resources is a great jumping off point to get involved with promoting environmental awareness.

Conclusions

Digital design can be an impactful tool to promote and highlight environmental conservation efforts, but it must be used as part of a larger messaging system. Everyone in every role of a conservation organization plays a part in communicating this important message. As the audience is varied, effective communication requires mixed methods to reach it. A combination of tactics, repetition, time, and on occasion, in-person communication must be used to be effective. A digital designer can use the world as a resource to learn more about how to implement sustainable practice in their field.

It is not typical that a designer would function both as the subject matter expert and designer, so it is important for a designer to know how to communicate important messages effectively to an audience on behalf of the expert. Effectively is the key word in communication. Without first defining effective strategies for communication, a message runs the risk of being sent but not received. Another aspect of effectiveness is that the audience understands the message. Receiving a message does not ensure an individual or group will be able to interpret its meaning, so it must be carefully crafted for this goal. To become an effective catalyst for change, a message must be strategically sent, as well as understood by an audience. Once an audience has successfully received a message about environmental conservation and understood its importance, the next step is to inspire positive change. Examples are important in this step, so that the audience can see what others have done and consider what they can do in favor of this effort.

The website project, along with links to the related social media account to continue the project's mission, can be viewed at <https://sustainabilityindesign.myportfolio.com/>. In addition to the Literature Review section, an Annotated Bibliography is included below to speak to how sources were used in each smaller project deliverable.

Annotated Bibliography

Almond, R.E.A., Grooten M. and Petersen, T. (Eds) (2020). Living planet report 2020: Bending the curve of biodiversity loss. *World Wide Fund for Nature*.

<https://www.zsl.org/sites/default/files/LPR%202020%20Full%20report.pdf>

This report was compiled by many experts in their respective scientific fields and offers diverse perspectives on the topic of biodiversity loss. As this report was written for a broad audience, there is a plethora of easy to understand information, as well as environmental statistics presented throughout. This was a primary source applied in the poster project “TERRA, AER, AQUA: A Graphic Design Approach to Raising Awareness of Environmental Issues in Land, Air, and Water Habitats,” showcasing environmental statistics, particularly relating to biodiversity loss. The report indicates the current state of global biodiversity, specific indicators of this state, factors that play into how the state occurred, and what can be done to rectify the diversity damage going forward. The report addresses not only how people impact the environment but also nature’s contribution to people. This approach reinforces the symbiotic relationship between society and the natural world. This source and the way it was utilized in the poster project helps people to think about the natural environment as something that benefits them and that they should care about it, not only for the seemingly arbitrary betterment of Earth’s inhabitants, but that they will be negatively affected should it be harmed. This focus on the importance of current environmental events, coupled with hope for the future, is meaningful. This source was also very helpful to incorporate into an applied project, as it was published in 2020 and addresses statistics in the same year as the posters were created.

Barnett, M. D., Archuleta, W. P., & Cantu, C. (2019). Politics, concern for future generations, and the environment: Generativity mediates political conservatism and environmental attitudes. *Journal of Applied Social Psychology, 49*(10), 647–654.

<https://doi.org/10.1111/jasp.12624>

Generational attitudes play into how a message is perceived. There may not be a possibility of a “general audience,” since each audience is comprised of individuals who each hold their own values, perceptions, attitudes, and beliefs for a variety of reasons.

This source will be used to add another viewpoint to how messages can be received and provide further insight into the concept of an audience.

Brown, C. J., Tulloch, V. J. D., Jupiter, S. D., Mangubhai, S., Albert, S., Anthony, K. R. N., Anthony, K. R. N., Klein, C. J. (May 01, 2019). A guide to modelling priorities for managing land-based impacts on coastal ecosystems. *Journal of Applied Ecology, 56*(5), 1106-1116. <https://doi.org/10.1111/1365-2664.13331>

Written by conservation and biology professionals from Australia to the United States, this source offers multiple insights on ecosystems from around the globe. This article ties together the land and water-based ecosystems and outlines their impact on one another.

When examining each ecosystem for the applied poster project, they were thought of as separate entities at first. After examining this particular source, one can better understand the intersectionality of water, land, and air ecosystems. Each poster presentation can instead be seen as an extension of each other. Perhaps a circular display would be the best way to represent this idea. It would appear from source scrutiny that no natural environment exists in a vacuum. Everything in the natural world is interconnected. This interconnectivity was showcased through the posters with the use of similar design

elements throughout. Not only was this incorporation visually pleasing, but it was a meaningful way to reiterate the circular way that ecosystems are presented in this article.

Byrne, M. K., Wigington, P. S., Losch, J. A., Pollard, K., Riera, S. K., Vazquez, G. M., Noe, R. S., & Preacely, N. D. (2019). Tips and tools to get your environmental health message across. *Journal of Environmental Health*, 82(4), 40–42.

<https://www.neha.org/node/61096>

This source helped as a starting point to develop qualitative interview questions about effective messaging in the film project. It outlines effective messaging methods, such as starting with important information and using data visualization, to help individuals understand how they impact the environmental health of their community and beyond.

Carlson, A. (2018). Environmental aesthetics, ethics, and ecoaesthetics. *Journal of Aesthetics & Art Criticism*, 76(4), 399–410. <https://doi.org/10.1111/jaac.12586>

This article, written by a Canadian philosopher, provides a link between how an environment looks and ethical considerations that must be taken. The philosophical approach taken by the author differs from the hands-on methods that other articles take in regards to the same subject. Carlson considers human-created and human-influenced environments, along with the perspective of Western and Eastern versions of ecoaesthetics. The author uses a global approach to establish a connection between how an environment looks and what it means for natural resources. This resource was used to develop the line of thinking when creating images for the photography project to try and make the photographic work as universal as possible. Aligned with the recommendations in this source, the language used in the photography deliverable is free of idioms that could be lost in translation as possible, to speak to a potentially global audience.

Celhay, F., Magnier, L., & Schoormans, J. (2020). Hip and authentic. Defining neo-retro style in package design. *International Journal of Design*, 14(1), 35–49.

<http://www.ijdesign.org/index.php/IJDesign/article/view/3499/889>

The ideas and qualitative study findings represented in this article are from international authors who conducted their research in a fairly large sample group. The multiple methods they used in their study design, allowed for participant creativity in expressing their feedback throughout the study. The authors argue that design plays an important role in purchase. Though it refers specifically to graphic design elements in packaging, the findings translate to audience preference. The authors found through qualitative study that consumers prefer more contemporary design styles for product packaging and also note that this could lead to a notion of associating value with style. This notion was applied in the visual representation of environmental statistics in the poster project to help the viewer of the posters see value in the information through the contemporary style that it is presented.

Choi, Y., Hyun, K. H., & Lee, J.-H. (2020). Image-based tactile emojis: Improved interpretation of message intention and subtle nuance for visually impaired individuals. *Human-Computer Interaction*, 35(1), 40–69. <https://doi.org/10.1080/07370024.2017.1324305>

This article adds accessibility as an important aspect of message reception. Those with visual impairments need to be able to experience messages that are presented, and the inability to do so will certainly affect their perception (or lack of) the message. This notion was reinforced through the lack of highlighted, or visual emphasis on text with color in the website deliverable.

Dean, K. P., & Bertling, J. G. (2020). Eco-visualizations: Facilitating ecological relationships and raising environmental awareness. *Art Education*, 73(3), 54–61.

<https://doi.org/10.1080/00043125.2020.1717823>

The authors, both a graduate student and assistant professor in Art Education, seek to find feasible ways to transfer their findings to a wide audience through this article. They highlight different ways that stories and environmental data have been passed down through cultures and societies over time. The examples that they give encourage one to continue contribution to this vast topic of the natural world and conservation. They emphasize the importance of data visualization for maximum impact to broad audiences. This sentiment is applicable in digital design to ensure that data is able to be shared in a way that is easiest for the masses to understand, and reinforced the idea for the translation of environmental statistics to digitally designed posters.

Dunn, M. E., Mills, M., & Veríssimo, D. (2020). Evaluating the impact of the documentary series Blue Planet II on viewers' plastic consumption behaviors. *Conservation Science & Practice*, 2(10), 1–10. <https://doi.org/10.1111/csp2.280>

This article explores the impact of consumer behavior in relation to a conservation documentary. It is the hope that conservation films will connect in an impactful way with their audience to inspire the viewer to take action by seeing why it is important to do so and seeing examples of what others are doing as conservation efforts. This source reinforced the decision to use the film project as an effective tool to get the message out about environmental conservation.

Glen, F. (2019). Eco-visionaries: Confronting a planet in a state of emergency, Gonzalo Herrero Delicado and Rose Thompson, Royal Academy of Arts, London, 23 November 2019–23

February 2020. *Art & the Public Sphere*, 8(2), 267–272.

https://doi.org/10.1386/aps_00026_5

This article resonates another perception from art in higher education. The idea of emergency is prominent in this article concerning the current state of our natural world. The author explains that change and potential are parallel to one another. One can conclude, that with the changing environment, there can be the opportunity to do better—to grow and help restore that which has been eroded. This article also speaks to environmental activism and that drastic times call for drastic action where our planet is concerned.

Golańska, D., & Kronenberg, A. K. (2020). Creative practice for sustainability: A new materialist perspective on activist production of eco-sensitive knowledges. *International Journal of Education through Art*, 16(3), 303–318. https://doi.org/10.1386/eta_00035_1

These authors give another global perspective, specifically from Poland. It is important to gain insight into a topic outside of the Western perspective with a goal of making sure that global voices are heard in regards to a subject as important as the natural environment in which all humankind resides. The idea of activism, or activism through art, is inspiring. It makes an individual feel as though they can make an impact to a greater purpose and have their voice heard. These authors marry the idea of social intervention with creative practice. They seek to produce knowledge through qualitative means. By gaining this understanding from their audience, they can seek to implement additional perspectives in their work and discover a more universal conclusion.

Graham, L. M. (2012). Towards a More Sustainable Graphic Design Philosophy. *International Journal of the Arts in Society*, 6(5), 169–176. <https://doi.org/10.18848/1833-1866/CGP/v06i05/36081>

This source is used to support evidence that graphic design is behind the rest of the design industry to incorporate and promote sustainable practice.

Hamilton, A. J. (2020). Land as protagonist. *Art Journal*, 79(4), 6–25. <https://doi.org/10.1080/00043249.2020.1779551>

This source was an important artifact to use for a template in which to create not only the deliverable content of a photography project, but also supported the purpose for doing so. The images within this multidisciplinary artist’s work speak to a dystopian setting for humankind, yet is rich with beauty in organic backgrounds. This can be interpreted as a statement that the natural environment is here to stay, whether human activity subsists or not.

Haran, B. (2020). Documenting an “age-long struggle”: Paul Strand’s time in the American southwest. *Art History*, 43(1), 120–153. <https://doi.org/10.1111/1467-8365.12472>

This resource served as an additional portfolio example when conceptualizing the photography project, as it abounds with textual support for its compiled images. In this piece, the author critiques images, based around the common theme of struggle from an array of photographers. These images are powerful in their absence of color. The contrast of the photographs brings about a feeling of strife and difficult times, as intended by the curator. The images work together as symbols that remind one of the elements necessary to produce a meaningful story within a photograph, as has been done in the photography project.

Harmon, D., & Gauvain, M. (2019). Influence of internet-based messages and personal motivations on water-use decisions. *Basic & Applied Social Psychology*, 41(6), 341–358. <https://doi.org/10.1080/01973533.2019.1654866>

This study explores the relationship between internet-based messages and water use/conservation of the consumer. The results of the study make an important point that while messages about environmental impact can have improve attitudes of a consumer, their behavior might not necessarily change. As reiterated in the film project and associated qualitative interview findings, the goal of sending a positive message about how consumers can assist with sustainability efforts is to change behavior toward an improved environmental impact, not just to get the consumer to positively consider sustainability.

He, H., Fu, J., Li, X., & Guo, R. (2019). The interplay between endorser social status and normative appeals on the endorsement effectiveness of pro-environmental behaviors. *PLoS ONE*, 14(1), 1–17. <https://doi.org/10.1371/journal.pone.0210699>

This source points out the importance of not only the message that is being sent, but who is sending it. Is the messenger to be trusted solely because they are in a position of power? The audience's relationship or perceived relationship with the message sender can play into whether the message is effective. This source was used to help narrow down who should be consulted as the message sender in the film project, which ultimately ended up being experts from the Missouri Department of Conservation.

Heward, T. (1999). Revivalism and cultural shift: British graphic design since 1945. *Design Issues*, 15(3), 17–33. <https://doi.org/10.2307/1511882>

Though this resource is outside of the typical time range for graphic design degree pursuit parameters, it was approved by this project's committee chair. This source was important to incorporate because it gives visual examples of design types and principles. Reviewing these examples was a good starting place in determining the type of design that would be the best choice to represent vital and current environmental statistics. An intriguing idea is cited by Heward (1999): "that abstract and mathematical elements in art align with nature's appearance". This notion was particularly salient in determining the most impactful way to represent habitats and environmental statistics in the poster project. The article looks at the shift in audience preference of graphic design styles over the course of over fifty years. By comparing and contrasting preference similarities over this timeline, one is able to consider how audiences felt about design in the past in the hope of forecasting future preferences.

Hollmann, J. C. (2018). Digital Technology in Research and Documentation of Hunter-Gatherer Rock Art in South Africa. *African Archaeological Review*, 35(2), 157–168.

<https://doi.org/10.1007/s10437-018-9296-0>

The contents of this article were formed as part of a grant research project and provide astute notions of how technology can be used to understand more about design of past civilizations. Through digital design methods, one can seek to uncover similarities and differences in the primitive art expression of global cultures. Art and archeology can now work together. Digital design has a place in history as a means to decipher elements that historically required tedious reproduction. Looking at technology as a way to enhance design, history, and science simultaneously is beneficial for all of these fields. These notions were used to develop element in the photography project.

Hung, J. C., & Wang, C.-C. (2021). Exploring the website object layout of responsive web design: results of eye tracking evaluations. *Journal of Supercomputing*, 77(1), 343–365. <https://doi.org/10.1007/s11227-020-03283-1>

This source provides data on the way that a user navigates website material. This study found that viewer gaze time on website elements remained the same regardless of navigation menu layouts, but image placement altered a viewer's gaze fixation. This information aided with the layout of materials and being able to get in the mind of the end-user of the website resource final project deliverable.

Jea, H. N., Choi, Y., & Harrison, D. (2017). The Design Innovation Spectrum: An Overview of Design Influences on Innovation for Manufacturing Companies. *International Journal of Design*, 11(2), 13-24. <https://search.proquest.com/docview/2170591008?accountid=12104>

This source supports the need for innovation by designers to carry the field over into the future of new ideas and practices.

Judge, M., de Hoog, O., Perlaviciute, G., Contzen, N., & Steg, L. (2021). From toilet to table: Value-tailored messages influence emotional responses to wastewater products. *Biotechnology for Biofuels*, 14(1), 1–12. <https://doi.org/10.1186/s13068-021-01931-z>

This source looks at the emotional response of messages that have been tailored specifically to include value. Emphasizing environmental benefits to using a specific product lead to a positive emotion in the message receiver. This work supports the assumption that an audience reacts optimistically to the presentation of value in a

message. This source also aided the development process of the qualitative interview questions about effective messaging in the film project.

Kaur, S., & Gupta, S. K. (2021). A fuzzy-based framework for evaluation of website design quality index. *International Journal on Digital Libraries*, 22(1), 15–47.

<https://doi.org/10.1007/s00799-020-00292-6>

This source helped to provide a basis for organizing the sections and categorizing the final deliverable website tabs. A framework must be created within a website to house its content in a way that makes sense to both the designer and the user. The quality of content should be considered for a website, as well as the implementation of careful curation as to not overwhelm the user or include superfluous elements.

Klimt, A. C. (2018). New ways of seeing: Enhancing student learning through community-based collaborative photography. *Visual Studies*, 33(2), 127–143.

<https://doi.org/10.1080/1472586X.2018.1495574>

This article is another contributor to the common theme that community engagement is a key factor in learning. Letting students be a part of the creative community helps to give them a stake in the project and process. They get out what they put into collaborative efforts, and this method can inspire passion in community-based work. Making the connection between photographic representation and reality can help a creator shape not only their own reality, but how their audience sees reality through their eyes. Peer-review is also helpful to shape and grow an individual's work and is incorporated into this collaborative project.

Main, M., Davis, R., Blake, D., Mills, H., & Doherty, T. (2020). Human impact overrides bioclimatic drivers of red fox home range size globally. *Diversity and Distributions*, 26(9), 1083-1092. doi:10.2307/26924904

The authors of this biodiversity review are science experts within Edith Cowan University. This source provides international insight into biodiversity problems. Reviewing these issues globally helps frame similar national issues in the visual statistical representation project. Human impact is not just a local issue for any audience; it is part of a much larger problem across the globe. The research done through the study that the article describes was conducted from a range of over half of the existing continents. This sample size reinforces that the issue of biodiversity loss through habitat destruction is a worldwide problem. This source was used to consider the global impact of localized biodiversity loss mentioned in the poster project.

Miller, W., & Cardamone, A. (2021). Educating Through Art, Ecology, and Ecojustice: A Rain Barrel Project. *Art Education*, 74(1), 40–45.

<https://doi.org/10.1080/00043125.2020.1825595>

Different individuals connect with art in various ways. This approach of allowing the audience to make a personal connection with the cause helped to reinforce their stake in it and its importance. Allowing the art to be created, as well as displayed, can potentially lead to its viewing by a wider and more diverse audience than solely the creator's peers and instructors, thus allowing the artwork to be more impactful and have a chance at connecting with more individuals. This ambitious plan to raise awareness to creator and audience is very inspiring.

Pengnate, S. (Fone), Sarathy, R., & Lee, J. (2019). The Engagement of Website Initial Aesthetic Impressions: An Experimental Investigation. *International Journal of Human-Computer Interaction*, 35(16), 1517–1531. <https://doi.org/10.1080/10447318.2018.1554319>

This source investigates the use of aesthetics in a website and the potential impact that visual aspects has on users. The color palettes should reflect the overall tone of the website content, and remain consistent. This source reinforced the decision to utilize an overall “green” tone for the sustainability website project deliverable.

Reddy, S. M. W., Wardropper, C., Weigel, C., Masuda, Y. J., Harden, S., Ranjan, P., Getson, J. M., Esman, L. A., Ferraro, P., & Prokopy, L. (2020). Conservation behavior and effects of economic and environmental message frames. *Conservation Letters*, 13(6), 1–5. <https://doi.org/10.1111/conl.12750>

This source was used as additional support for understanding the importance of the way a message is framed for the audience in the film project. It provides an alternate result of the framing of environmental messages, since the hypothesis that framed messages would increase desired conservation behavior was not accurate in the findings of this study.

Riley, S. P., Abernethy, R., & Mckenzie, D. F. (2019). Case studies of scalable wildlife conservation in working landscapes. *Wildlife Society Bulletin*, 43(3), 363–371. <https://doi.org/10.1002/wsb.998>

This article conveys the importance of partnerships to reinforce the idea of conservation in a community. It also sheds light on the fact that some natural areas, though not urbanized, are still privately owned and referred to as “working lands.” These areas may not be able to be protected by any environmental regulations, since they are privately

owned; thus, it is important for the owners of the “working lands” to understand and wish to become involved in conservation efforts.

Rose, J., Göbel, H., Cronholm, S., Holgersson, J., Söderström, E., & Hallqvist, C. (2019).

Theory-based design principles for digital service innovation. *E-Service Journal*, 11(1), 1-30. <https://www.jstor.org/stable/10.2979/eservicej.11.1.01>

In this article, design theories are examined and applied to design science by the authors from universities in Sweden. The article’s concept, that the use of technology may be the most significant way to convey an idea, leaves one to wonder the direction of print design. The applied project of environmental posters was intended to be presented through print means at some point post COVID-19, but was instead represented digitally, which may be a more effective means of presentation. An all-digital approach to the representation of information may, in fact, contribute to the very sustainability efforts and practices the applied project is trying to promote. Though implications for other resources must be considered, such as, what is powering all of this technology? It leads one to wonder if society is swapping tangible environmental resource use, leading to habitat destruction, for other resources that are less at the forefront of the mind.

Stojković, J. (2018). Vision without the eye: Following the material of abstract photography. In

Pavoni A., Mandić D., Nirta C., & Philippopoulos-Mihalopoulos A. (Eds.), *See* (pp. 39-70). London: University of Westminster Press. <http://www.jstor.org/stable/j.ctv5vddc3.4>

Based in London, the author gives an art historian’s point of view on abstract photography. An idea is presented that through digital viewing, the eye cannot see what it is able to see in the natural world. Any photographer that has struggled with focusing their subject can verify this line of thinking to be true. Meaning and impact can somewhat

be lost through viewing an image that was taken through a lens on a screen. A case study comparing the light content of two types of images is discussed throughout the article to prove the point of the eye's natural ability to view an image versus the image that results from digital means.

Villanova Biasuz, M. C. (2018). Atmo-Sphere: Art and conscious environmental visualization. *Leonardo*, 51(3), 310–311. https://doi.org/10.1162/LEON_a_01518

The author gives a Brazilian perspective on activism and points out the speed of sharing information that is afforded by internet accessibility. Now, more than ever, individuals have the opportunity to share and collaborate with one another online. It is the opinion of this author that the things that are shared should be important topics, such as the need for environmental activism. “The use and growth of the online possibilities have increased the access to practices that weave the virtual poetics to the ethics of activism... This is point we intend to develop when considering Eco-Activism and Art” (Villanova Biasuz, 2018). Support can be expressed for this sentiment with agreeance that individuals should use their internet platform to spread information for a worthy cause.

Wiesenberger, R., & Resnick, E. (2018). Basel to Boston: An itinerary for modernist typography in America. *Design Issues*, 34(3), 28–41. https://doi.org/10.1162/desi_a_00495

This article focuses on design in MIT and how the Swiss/International design became intertwined with the scientific community. This contemporary style was heavily used to promote, convey, and market scientific efforts. The authors states their intent is to neither define nor celebrate this “MIT style” with this writing, but it instead appears, that through their presentation, they have done both. While they do manage to paint this Americanization of International style in a slightly negative light, aligning it with quick

plagiarism, it is not a significant enough scrutiny to deter from the design style's inherent attractiveness. There is an appealing juxtaposition of presenting difficult to comprehend scientific information in such a simplistic way, using minimalist design elements. The emphasis on the font Helvetica in this style was especially appealing and ultimately resulted in the sans serif font choice of Forma DJR Deck for the applied environmental poster project. A clean and clear way to present important information is essential to this visualization.

Young, L. (2019). Territorial robots. *Architectural Design*, 89(1), 32–35.

<https://doi.org/10.1002/ad.2385>

The initial removal of context from images makes this source somewhat striking. The first impression of each image contained within it is at first abstract and engaging. It is only with contextual definition that the viewer understands the implications of what is being conveyed. “In satellite photography, individuals on Earth are too small to be visible, yet our impact through technology is plain to see” (Young, 2019 p. 34). This approach was an inspiration for a creative way to utilize existing data in the form of images in the photography project to create a message of human influence on the environment.

Yoshinaga, S. (2010). Graphic Design for Cultural Organizations: Educating Students to be a Sustainable Workforce. *Design Principles & Practice: An International Journal*, 4(3), 137–144. <https://doi.org/10.18848/1833-1874/CGP/v04i03/37892>

This source supports the notion that graphic designers need to get on board with promoting and incorporating sustainable practices in order to stay industry-current, as well as innovate toward the future of their field.