Wildlife Trafficking and Biofact Literature Scan

for Minnesota Zoo

INFORM
EVALUATION & RESEARCH

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Project Background

The Minnesota Zoo is implementing a grant-funded project designed to build empathy for animals through the use of biofacts in programs. These programs are designed to address the conservation issue of wildlife trafficking and to be culturally responsive, inclusive, and accessible. Inform Evaluation & Research (Inform) completed a review of both peer-reviewed and gray literature (e.g., non-peer-reviewed, more practitioner-based) about best practices in using biofacts for learning in zoos and aquariums, best practices in wildlife trafficking education, and culturally responsive approaches for both.

Evaluation Questions

The Inform team collaborated with Minnesota Zoo staff to identify the following questions of interest:

1) What are the best practices in wildlife trafficking education/messaging?
    a) How can wildlife trafficking messaging be approached from a culturally responsive perspective?
2) How can biofacts best be utilized in support of wildlife trafficking education?

While the wider project covers empathy, given that Minnesota Zoo has already completed a literature review focused on empathy, this literature scan does not include publications focused on empathy. Whenever relevant, empathy is mentioned in the context of the other evaluation questions, but we did not pursue literature solely about empathy as a separate evaluation question.

Methods

We completed a review of both peer-reviewed and gray literature (e.g., non-peer-reviewed, more practitioner-based) about best practices in wildlife trafficking education and messaging in zoos and aquariums, and the use of biofacts to support wildlife trafficking education.

We did not carry out a traditional, systematic academic review but rather a scan using sources readily accessible to our team. Keyword searches were carried out in Google Scholar, Google, EBSCO, and the informalscience.org research repository to find relevant literature.

Search terms for the first evaluation question included "wildlife trafficking" plus "education," and "wildlife trafficking" plus "messaging." Search terms for the second evaluation question included "biofact." We found very limited information available related to best practices using biofacts, and as such, "taxidermy" and "education" were also utilized as keywords. While the body of available literature was quite small, the final content included research papers, industry white papers, gray literature, and relevant websites.

Findings

Illegal Wildlife Trafficking Messaging

Illegal Wildlife Trafficking (IWT) Messaging Key Takeaways

1. **No single approach:** There is not a one-size-fits-all approach to IWT messaging and education. Context and audience are important to keep in mind when designing an intervention.
2. **Address misconceptions:** When communicating about IWT, it is critical to understand and address frequent IWT misconceptions.
3. **Build relationships:** Establish rapport by using words and language that the target audience would use, finding shared values, and celebrating past successes.
4. **Emphasize benefits:** When providing messaging, show the audience the problems associated with existing behaviors and the benefits of alternative behaviors.
5. **Make the desired action clear:** Messaging needs to focus on how an action will impact an individual, utilize social norms, and align action with identity by making it personally relevant.
6. **Be aware of the limits of conservation knowledge:** Conservation-related knowledge plays a minor role in predicting if someone will take conservation action.

Framing IWT Messaging

The importance of education as a preventive measure for wildlife trafficking was threaded throughout much of the literature. The theory of change provided by the U.S. Agency for International Development (2023) noted the importance of raising awareness and changing behaviors of the target audiences, especially related to consumer choices and reporting of illegal products and markets, along with increasing community conservation action to combat poaching. Some of their proposed learning activities in support of these strategic approaches include supporting forums to increase dialogue and creating training resources.

Another U.S. Agency for International Development report (2022) detailed the findings from the wildlife trafficking learning group. The authors found that messaging needs to be tailored to the target audience and context.

In a study at the Cleveland Metroparks Zoo (Nageotte et al., 2022), researchers investigated the values of the target zoo audience to develop effective messaging about IWT. Four primary values emerged from their study: moral, protection, human-centric, and ethical. Of those values, moral and protection values were important to most participants, and the authors recommended incorporating them into IWT messaging. In the implications for practices, the authors also stated "conservation educators can anticipate that audiences are coming with favorable predispositions toward conservation efforts" and that interpreters should speak to people with the assumption that they care and want to help (p. 107). Rank et al. (2023) also discussed the

topic of values in messaging, stating one way to effectively frame information about IWT is through the use of values. "A listener is more likely to tune into the conversation about a potentially controversial topic when the speaker leads with a commonly held value" (p. 319).

Recommended messaging around wildlife trafficking can be incredibly complex and can vary greatly based on the type of illegal wildlife product you are seeking to reduce demand for, whose behavior you are trying to change, and the primary motivation for consumption. Change Wildlife Consumers (n.d.) created an in-depth decision tree that details recommended messaging and walks through the stages of developing and implementating a successful IWT behavior change initiative. It allows the user to specify a target wildlife product, behavior type, audience, and motivation for consumption. The decision tree also provides helpful case studies and expert behavioral science insights.

Culturally Responsive Perspectives in IWT Messaging

Rank et al. (2023) noted that there is not a one-size-fits-all approach to IWT education, and that it is important to keep context and audience in mind. They note that it is essential to maintain open conversations with diverse communities about respectful word choices and ways to talk about the topic.

The importance of cultural context within wildlife trafficking was explored in a Brazilian paper by Santiago et al. (2023). While no specific strategies were given, the authors noted the importance of incorporating both environmental education and human rights education together for effective messaging. Thomas-Walters et al. (2020) also discussed the importance of cultural context. They noted that when people are told what they should think is harmful, unintended consequences can result, including the audience rejecting the message. Motivation and desires, along with social norms and values, are key determinants of behavior change.

Rank et al. (2023) analyzed the work of four different zoos (Cleveland Metroparks Zoo, Fresno Chaffee Zoo, Central Park Zoo, and Woodland Park Zoo) engaging their audience with IWT topics. One theme that emerged was the importance of the words and language used and the sociocultural context of the audience. The term "illegal wildlife trade" confused some participants, with some interpreting it to mean "trade of illegal wildlife" and not "illegal trade of wildlife." The word "wildlife" also meant different things to different people, with confusion about domestication. They state this "led to a discussion of whether the term 'illegal wildlife trade' should continue to be used, or if there should be a switch to a different term such as 'wildlife trafficking'" (p. 318). It is important to understand the cultural context of the audience and use language that aligns. While it can be difficult to choose the best language to use, the authors recommended avoiding the use of a crisis tone or language. "For instance, instead of saying that 'poachers kill elephants for their tusks,' interpreters were encouraged to use less jarring statements like 'people take elephants' tusks" (p. 318).

TRAFFIC has produced a number of resources relevant to culturally responsive approaches to communicating about the illegal wildlife trade (TRAFFIC, n.d.; TRAFFIC, 2019a; TRAFFIC, 2019b). Five key points stand out from their materials:

- **Motivations and barriers:** Their open-access Behavior Change for Conservation course states it is important to consider the insights into the motivations of people conducting the behavior, what barriers and benefits are associated with the behavior, and the social and contextual factors of the target audience, including who influences their behavior.
- **Perceptions of problems:** For a behavior change campaign to be successful, it is crucial to understand how a problem has come to exist and how the people at the heart of the problem experience it. This creates a better understanding of how and why a target audience can be motivated by a call to action.
- **Perceptions of messengers:** In Choosing the Right Messenger, TRAFFIC states that an audience's perception of a messenger will affect how they feel about a message. They recommend establishing rapport by using the same language as the target audience, trying to find shared values, and praising the audience for past successes.
- **Clarity of calls to action:** In Designing Effective Messages, TRAFFIC notes that it is critical to make the desired action clear and provide an alternate behavior. Messaging also needs to focus on the consequences an individual will face as a result of the action, utilize social norms, and align action with identity by making it personally relevant.
- **Benefits to alternate behaviors:** It is important to show the audience the problems associated with existing behavior, the benefits of preferred alternative behaviors, and how difficulties associated with change can be overcome. Common objections to change often include cost, false beliefs about benefits, doubts about claims, and social norms. Consider using narratives, framing, and utilize loss avoidance.

IWT Messaging in AZA Organizations

The Association of Zoos & Aquariums described the work that several AZA-accredited facilities have done to combat illegal wildlife trafficking, including a stop-the-trade day at the Oakland Zoo and a partnership between the Woodland Park Zoo, Point Defiance Zoo & Aquarium, Northwest Trek Wildlife Park, and the Port of Seattle to design an educational exhibit at the Seattle-Tacoma International Airport (Silver, 2022).

A wildlife trafficking educational display was set up at the Seattle-Tacoma International Airport, and Friese et al. (2023) carried out an evaluation of its impact. They found the overall number of people who viewed the display was only 0.8% of people who passed by, but the content of the display appeared to increase "viewers' knowledge about wildlife trafficking, confidence that they could spot a product made from endangered wildlife and belief that their actions can help endangered animals" (p. 67). The authors felt the location at an airport impacted the low number of people who viewed the display and suggested that a different location or playing this information on the television screen in the gate hold could be more impactful. They also pointed

out that conservation-related knowledge plays a minor role in predicting if someone will undertake conservation actions, and intentions do not translate into actual actions.

Culturally Responsive Perspectives in Museums

There is limited research completed on how to teach about illegal wildlife trafficking in a culturally responsive way. Given this context, additional research on culturally responsive teaching within museums and zoos is included below.

The importance of considering culturally relevant exhibitions was explored by MacMahon (2010). She encouraged readers to consider the inclusion of community stakeholders in exhibit or program development. The article also encouraged readers to consider whose voice will guide the story and how the cultural context might influence the design. "Rather than simply overlay our practices onto another culture's story, can we strive to look through the lens of that culture to inspire and inform our work?" (p. 13).

The Researching the Value of Educator Actions for Learning (REVEAL) project studied the impact of science center staff facilitation strategies at math exhibits, with a focus on culturally responsive teaching. The key focus of this project was developing a facilitation approach that worked for different families. This facilitation approach incorporated three interrelated visitor experience goals (i.e., satisfaction, intergenerational communication, mathematical reasoning), outlined the cycle of responsive facilitation (i.e., observe, support, reflect) that educators used to support these goals, and highlighted the physical, personal, and social factors that influenced the nature and outcomes of the interactions (Pattison et al., 2016). The study found that it is critical to include those influencing factors in facilitation and "be mindful of how the contextual factors within the community where the museum is located can affect relationships between educators and visitors" (Gontan et al., 2016).

Figure 1. REVEAL Facilitation Model
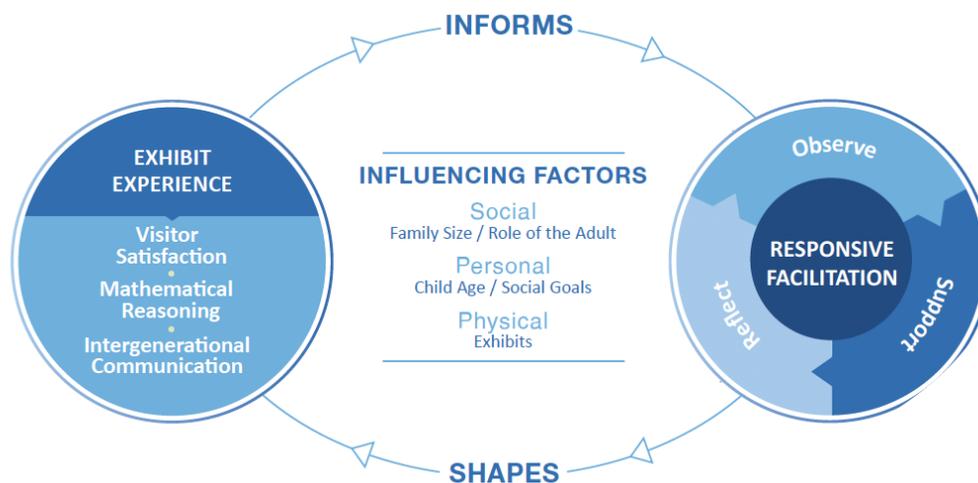
Biofacts

Biofact Key Takeaways
1. **Benefits of biofact usage:** Research on the effectiveness of biofacts in educational programs suggests they can enhance satisfaction, engagement, and learning.
2. **Focus on authenticity:** Make it clear to visitors that they are interacting with a real authentic biofact. However, presenting visitors with a real biofact along with a representation of that animal can increase engagement and can help children highlight perceptual/sensory differences between both.
3. **Use existing frameworks:** The Visual Thinking Strategies in Science (VTSS) framework can help frame interactions and guide questions to support an educator's confidence and ability to inspire empathy for animals.

The literature on biofacts is incredibly limited, and our search found no studies on the use of biofacts in wildlife trafficking education.

Effectiveness of Biofacts

There is limited research on the effectiveness of biofacts in educational programs. Silva dos Santos et al. (2020) found that biofacts can provoke participants' emotions and engage participants in programs, even when live animals are not present. They stated that educators can enhance satisfaction, engagement, learning, and emotional attachment to animals by "using biofacts exhibitions, and signs of wildlife (when outdoors) as teaching tools when it is not possible to use live animals" (p. 73). Similarly, Singh (2022) found the presence of biofacts in a reading program allowed students to better relate to the book they were reading, while Johnson and Kassing (2002) found that the use of biofacts allowed children to learn concepts without direct animal contact. Patrick & Tunnicliffe (2013) found that biofacts can impact children's recall of past animal experiences, which simulates affective memory.

Best Practices With Biofacts

We found very few studies on best practices for using biofacts. Bunce (2016a) completed a study at the Oxford University Museum of Natural History (UK) that utilized biofacts (a taxidermied rabbit or rabbit skeleton) during a public program. Four conditions were provided: a taxidermied rabbit inside a case, a touchable taxidermied rabbit, a rabbit skeleton in a case, and a touchable taxidermy presented alongside a realistic soft toy rabbit. The author found that participants who judged the rabbits as real were much more likely to ask a question, stating that it was not object authenticity but visitors' perceptions of authenticity that were associated with increased curiosity and engagement. Bunce recommended that organizations make it clear to visitors that they are interacting with a real authentic biofact.

Bunce (2018) used similar conditions (minus the rabbit skeleton) to determine when visitors felt the taxidermied piece was real. Bunce found there was an association between age and judgment, and as expected the proportion of people who believed a taxidermied piece was real increased with age. The study found that providing a toy in conjunction with taxidermy helped children to "highlight perceptual/sensory differences between the authentic and artificial features of the toy and taxidermy, most notably the quality of the fur" (p. 207).

In another study, Bunce (2016b) used the same conditions as the 2018 study above to test what visitors felt belonged in a museum and if it helped them learn about a rabbit. They found that visitors presented with both a taxidermied rabbit and a soft toy rabbit were more likely to say that it had helped them learn about rabbits and that the taxidermied rabbit belonged in a museum. They also found that the number of people who felt the taxidermied rabbit belonged in a museum increased with visitor age. Overall the author felt that people's judgments about whether a biofact should be in a museum can affect their interpretation of its value.

Finally, in a master's thesis, Stewart (2024a) examined the difficult questions about death and dying that can arise when utilizing biofacts in educational programs. Stewart (2024b) stated the Visual Thinking Strategies in Science (VTS) framework can help frame interactions and guide questions to support an educator's confidence and ability to inspire empathy for animals. However, the author noted that these strategies are "most effective when applied to small group or one-on-one interactions between facilitators and learners" (Stewart, 2024a, p. 2).

The Visual Thinking Strategies framework has previously been utilized primarily within the context of art education, though an IMLS National Leadership grant awarded to the Wild Center in 2014 focused on how to utilize this framework within the context of science museums. The result of this project was the creation of a VTS in Science toolkit and workshops.

The Natural History Museum of Los Angeles County has also utilized VTS strategies within a science education context. Porter (2019) discussed the question framework that was developed to preserve the environment of VTS but allows for its use in the museum setting. The framework starts with the question "what do you notice about this animal?" Then, depending on the answer follow with "what do you see that makes you say that?" or "what might that tell us about the life of this animal?" After paraphrasing, expanding, or adding vocabulary to their response, facilitators follow with "what more can we find?" The LA Museum found overall the use of VTS allowed students to process visual information, make inferences, seek meaning, and engage in shared discourse.

Figure 2. Natural History Museum of LA County VTS Question Model
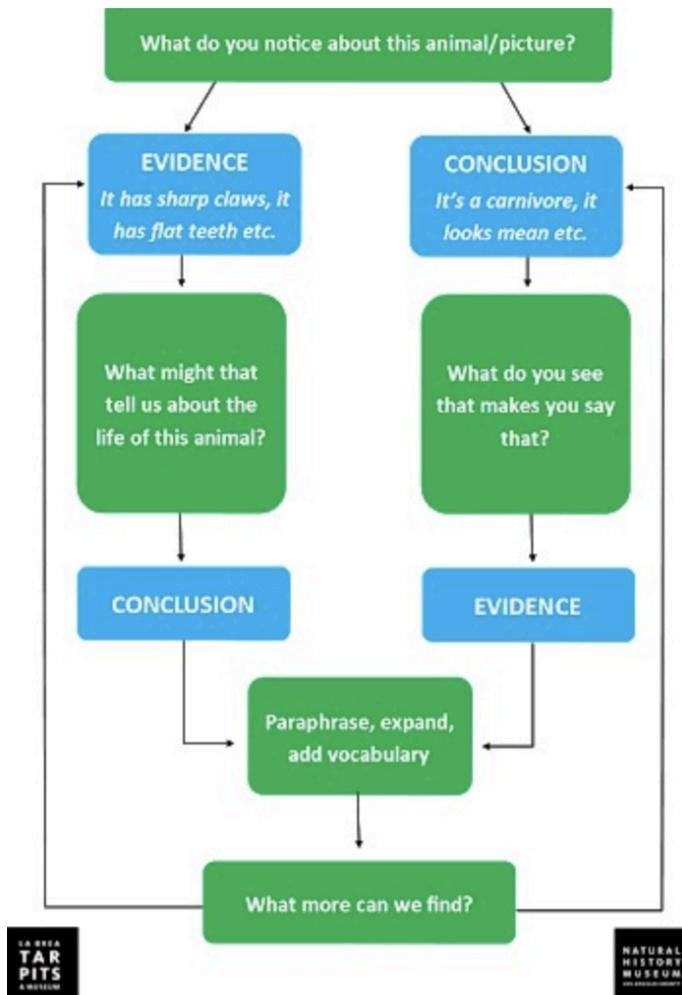
Annotated Bibliography

Annotated Bibliography

Behaviour change decision tree. Change Wildlife Consumer Behaviour. (n.d.).
　　　　https://changewildlifeconsumers.org/change/behaviour-change-decision-tree.

The Change Wildlife Consumer Behaviour Change Decision Tree walks the user through the various stages necessary for the development and implementation of a successful behavioral change initiative. It allows users to specify the target wildlife product, behavior type, audience, motivation for consumption, and more, providing helpful case studies and expert behavioral science insights throughout.

Bunce, L. (2016a). Appreciation of authenticity promotes curiosity: Implications for
　　　　object-based learning in museums. *Journal of Museum Education*, 41(3), 230–239.
　　　　https://doi.org/10.1080/10598650.2016.1193312.

Bunce explored the use of authentic taxidermied objects in a natural history museum setting. This study supports the assumption that authentic objects are associated with increased curiosity and engagement but to be effective museum professionals need to ensure that visitors know when they are interacting with an authentic object.

Bunce, L. (2016b). Dead ringer? Visitors' understanding of taxidermy as authentic and
　　　　educational museum exhibits. *Visitor Studies*, *19*(2), 178–192.
　　　　https://doi.org/10.1080/10645578.2016.1220189.

In an extension to the previous study, Bunce used three different conditions to determine when visitors felt the taxidermied rabbit belonged in the museum and helped them learn about rabbits. Bunce found the number of visitors who thought the taxidermied rabbit belonged in a museum and could help visitors learn about rabbits increased with age and was greater when the authentic object was presented alongside the toy rabbit.

Bunce, L. (2018). Still life? children's understanding of the reality status of museum taxidermy.
　　　　Journal of Experimental Child Psychology, *177*, 197–210.
　　　　https://doi.org/10.1016/j.jecp.2018.08.007.

The focus of this study was examining 4-10-year-old children's and adults' understanding of a taxidermied rabbit's former status as a living animal and its current status as an authentic piece of natural history. It revealed approximately two-thirds of adults categorized museum taxidermy as real owing to its authentic physical features. In contrast, the number of children who made this judgment increased with age from approximately one-quarter of 4- and 5-year-olds to one-half of 8–10-year-olds. They also found there were no effects related to pet ownership or gender.

Friese, B., Sandar, A., & Rodriguez, B. (2023). Evaluation of the impact of a wildlife trafficking educational display at Seattle-Tacoma International Airport. *Journal of Airport Management*, *18*(1), 60. https://doi.org/10.69554/anqe5191.

Friese et al. explored the effectiveness of an educational display at Seattle-Tacoma International Airport that was designed to raise passengers' knowledge and awareness of wildlife trafficking. They found that 0.8% of passengers stopped to view the display and the mean viewing time was 48 seconds. Viewers of the display reported a greater level of confidence they could spot a product made from endangered wildlife.

Gontan, I., Pattison, S., Brandon, S., Rubin, A., Andanen, E., & Benne, M. (2016). REVEALing findings from the field: Experiences developing and implementing a staff facilitation model at two science centers. *Informal Learning Review, May/June 2016*, 15-17.

This article provides an overview of the Researching the Value of Educator Actions for Learning (REVEAL) project, which employs a responsive approach to facilitation in museums.

Johnson, J., & Kassing, S. (2002). Talking bones. *Science & Children*, 20–24.

Johnson and Kassing provided an overview of an educational program at the Saint Louis Zoo that utilizes bones to help children learn how animals move, how big they grow, and what they eat by working with them to make inferences about the bones.

MacMahon, D. (2010). Beyond the pedestal: Creating culturally relevant exhibitions. *Exhibitionist*, *Fall*, 8–13.

MacMahon, a museum-based exhibit director, reflected on creating culturally relevant exhibitions and important questions to consider when working on these types of projects.

Nageotte, N. L., Eagle-Malone, R., & Searles, V. (2022). Uncovering zoo audience values necessary to create effective messaging about illegal wildlife trade. *Journal of Interpretation Research*, *27*(2), 93–112. https://doi.org/10.1177/10925872221130319.

The Cleveland Metroparks Zoo initiated a project to develop effective messaging as a way to help combat IWT. The first step of this project explored the knowledge and values participants hold toward wildlife and IWT. The study found participants had four main values when it came to wildlife and illegal wildlife trade: moral, protection, human-centric, and ethical.

Patrick, P. G., & Tunnicliffe, S. D. (2013). The zoo voice: Zoo education and learning. In *Zoo Talk* (pp. 137-154). Springer, Dordrecht. https://link.springer.com/chapter/10.1007/978-94-007-4863-7_9.

In a chapter of *Zoo Talk*, Patrick and Tunnicliffe state that biofact tables permit children to express their prior experiences when looking at animal artifacts, relying on understanding gained through firsthand experiences.

Pattison, S. A., Benne, M., Rubin, A., Gontan, I., Andanen, E., & Dierking, L. D. (2016). Staff facilitation that supports family learning at exhibits: Findings and recommendations from the REVEAL project. Portland, OR: Oregon Museum of Science and Industry.

This short report includes high-level findings from the REVEAL project along with a diagram of its responsive facilitation model.

Porter, M. (2019, October 8). *VTS at the Natural History Museum of Los Angeles County*.Visual Thinking Strategies. https://vtshome.org/2019/10/08/vts-at-the-natural-history-museum-of-los-angeles-co unty/

Porter explores the usage of the Visual Thinking Strategies framework within the context of the Natural History Museum of Los Angeles County. She provides a framework for questioning for usage within their museum.

Rank, S., Nageotte, N. L., Pletcher, N., & Jackson, M. (2023). Educating the public about illegal wildlife trade: Commonalities in investigating messages for visitors. *Journal of Museum Education*, *48*(3), 315–328. https://doi.org/10.1080/10598650.2023.2166732

This article describes how four zoos across the United States tested different ways to engage with visitors and broader communities regarding the topic of illegal wildlife trafficking. The authors described three commonalities that should be considered in the development of educational tools and messages: semantics and word choices, message framing, and the need for cultural sensitivity and respect when discussing challenging topics.

Santiago, A. S., Monteiro, A. K., & Santiago, A. K. (2023). Reflections on environmental education, from the perspective of human rights education, and its influence on the culture of captivity of wildlife. *Connecting Expertise Multidisciplinary Development for the Future*. https://doi.org/10.56238/connexpemultidisdevolpfut-109.

Santiago et al. explored the relationship between Human Rights Education and Environmental Education in the context of wildlife protection and human health. It specifically examines wildlife trafficking education in Brazil along with cultural, social, and economic contexts.

Silva dos Santos, M., Kelsey, K. D., Fuhrman, N. E., & Irwin, K. (2020). Animals in environmental education: Assessing individuals' emotional reactions to interactions with wildlife. *Journal of Agricultural Education, 61*(4), 61–77. https://doi.org/10.5032/jae.2020.04061.

This study explores how human-wildlife interactions, including those that utilize biofacts, influence pro-environmental behaviors. The authors found that biofacts could provoke participants' emotions and engage participants in programs, even when live animals were not present.

Silver, K. (2022, October 12). *Putting a stop to wildlife trafficking*. Association of Zoos & Aquariums. https://www.aza.org/connect-stories/stories/putting-a-stop-to-wildlife-trafficking-aza-ending-illegal-trade.

This short article describes the efforts several AZA institutions made to combat wildlife trafficking.

Singh, S. (2022). Engaging young children with science concepts in a community-based book distribution and animal-themed literacy intervention program. *Early Childhood Education Journal*, *51*(6), 1079–1089. https://doi.org/10.1007/s10643-022-01335-0.

Singh presents findings from a two-year research study of a reading intervention program titled *Reading with Animals*. One of the teaching strategies utilized in program implementation is the use of biofacts in support of the animal-themed book.

Stewart, M. (2024a). Hard Questions and Biofact Collections: Educator's Guide to Addressing Sensitive Topics that Arise with Biofact Education Programming (thesis).

This master's thesis, done in collaboration with the Woodland Park Zoo, provides tools to support engaging in conversations about sensitive topics while utilizing biofacts.

Stewart, Makenzie. (2024b). *Hard questions and biofact collections: An educator's guide to addressing sensitive topics that arise with biofact education programming at the Woodland Park Zoo.*

A flier that accompanies and provides a high-level overview of the preceding master's thesis.

Thomas‑Walters, L., Veríssimo, D., Gadsby, E., Roberts, D., & Smith, R. J. (2020). Taking a more nuanced look at behavior change for demand reduction in the illegal wildlife trade. *Conservation Science and Practice*, *2*(9). https://doi.org/10.1111/csp2.248.

Thomas-Walters et al. examined the effectiveness of behavior change interventions and critiqued the current strategies for reducing consumer demand in the illegal wildlife trade. They showed that behavior change is difficult to achieve and interventions may have unintended and undesirable consequences due to unaddressed systemic, cultural, and environmental drivers, and limited resourcing.

TRAFFIC. (n.d.). Behaviour change for conservation.
        https://learning.traffic.org/#/course/97295.

An open-source online course developed to guide anyone looking to develop or implement a behavioral change intervention related to conservation. This course is developed by TRAFFIC, which has a focus on IWT.

TRAFFIC. (2019a, June). Reducing demand for illegal wildlife: Choosing the right messenger.
        Cambridge.

These guidelines identify principles for choosing the right messenger for communications aimed at reducing demand for illegal wildlife products.

TRAFFIC. (2019b, June). Reducing demand for illegal wildlife: Designing effective messages.
        Cambridge.

These guidelines identify principles for designing effective messages aimed at reducing demand for illegal wildlife products.

U.S. Agency for International Development. (2022). *Combating wildlife trafficking learning group: What we have learned* (pp. 1–18). Washington, DC.

The learning agenda provided a theory of change related to combating wildlife trafficking, gave learning questions, and a matrix of activities designed to address the theory and associated questions.

U.S. Agency for International Development. (2023). *Combating wildlife trafficking: Cross-mission learning agenda* (pp. 1–7). Washington, DC.

This short report details the results of a few questions related to effective demand reduction and best practices for community engagement related to wildlife crimes.

Visual thinking strategies with the wild center. The Wild Center. (2023, July 17).
        https://www.wildcenter.org/our-work/visual-thinking-strategies/

The Wild Center received an IMLS National Leadership Grant focused on the development, implementation, and dissemination of the Visual Thinking Strategies in Science program. This website provides an overview of the work done along with links to a relevant Facebook group and page.

VTS in science. Visual Thinking Strategies. (n.d.). https://vtshome.org/science/

The VTS in Science website provides a repository of resources for usage in science education. All of the developed resources are behind a paywall.