

Making Connections Using the Power of Interpretive Signage

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Introduction

Carolina Raptor Center (CRC) was founded as a raptor rehabilitation center in 1984 and was located in the basement of the biology building at the University of North Carolina-Charlotte. Today, CRC sits on approximately fifty acres with over ninety ambassador birds. While we still have a strong raptor rehabilitation program, our focus has shifted from rehabilitation to education with the goal of inspiring visitors to conserve the natural world. CRC sees an average of 366,000 visitors a year and we reach a quarter of a million people through our onsite programming, offsite education programs, festivals, and other community events. We accomplish this with only five full-time bird care staff members and one full-time Community Engagement Coordinator. We are a small non-profit organization with limited staffing and funding, but we set high goals for all aspects of our organization.

CRC is in the process of completing a goal of building a brand new campus. Our new facility has been 10 years in the making and we are thankful for the opportunity for a fresh start. We have partnered with our local Parks and Recreation Department to share a new building called Quest that will give visitors a well-rounded outdoor experience. Building Quest has given us a chance to reevaluate and improve all aspects of our organization including enclosure design, amphitheater, becoming more accessible to a wider audience, and new interpretive signage. The promotion of conservation behavior change using interpretive species signs is important to accomplish these goals. We will discuss the art of interpretation, fundamentals of creating interpretive signage, formation of a Sign Committee, and survey results of our new signs. To achieve our goals, we will discuss how we used our skills as bird trainers to shape the behavior of our human visitors.

Interpretation

CRC's messaging has drastically evolved over the years. As a rehabilitation centric center we focused on individual birds and why they were deemed non-releasable. About five years ago, we began to theorize that our visitors were not leaving our center inspired and empowered to conserve the natural world. In 2015, we conducted a survey project called "Measuring Wonder." The survey asked visitors what they remembered most, their favorite part of the day, and any feelings they had. The results confirmed our fears; visitors left our center feeling sad, remembering the injuries of the birds, and thinking about what to eat for lunch. Unintentionally, our messaging was decreasing the likelihood of them revisiting our center or participating in conservation actions. It was going to take a major overhaul to update our programs, bird shows, encounters and every interpretive interaction that we had with our visitors.

When creating new interpretive content, we found Baba Dioum's from 1968 quote to be very inspirational: "In the end, we will conserve only what we love, we will love what we understand; and we will understand only what we are taught." Our new goal became to create

educational and interpretive programming to spark inspiration, love and appreciation of our birds. We realized we truly needed to understand the basics of interpretation to best reach our guests.

“Interpretation in an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply communicating factual resources” (Tilden 1957). Our day to day visitors come to CRC for recreation; they do not come for formal education lectures. Interpretation is a great way to provide information in an engaging way that requires minimal effort from our visitors. One of our favorite quotes is by Freeman Tilden when he said: “Information is not interpretation. Interpretation is revelation based on information.” It is our job to connect visitors to our animals and we decided to accomplish this by using the Six Principles of Interpretation.

Relate Principle: As interpreters, we need to relate to the experience of our visitors. We must present facts in an engaging way that allows people to understand and make connections. Each interpretive program audience is different and our program content should be adjusted to relate to different groups of people.

Reveal Principle: Revealing meaning as opposed to sharing just facts. Presenting information in an interactive way will help our visitors gain a deeper understanding of material.

Art Principle: Interpreters should think outside of the box when it comes to presenting the program itself. Being animated and inviting will hold people’s attention longer.

Provoke Principle: Instead of strictly telling people what to do, it is better to provide unique demonstrations that provoke the visitor’s thoughts on their own. They will be more motivated to act if they are able to come up with conservation ideas.

Whole Principle: Paints a whole picture rather than focusing on just part of an issue or topic. The whole picture does not have to be on a huge scale, it can be just big enough to pair tangible resources (the birds) with intangible meanings (family, growth, hunger, death, etc.). Visitors are more likely to remember facts when they are paired with intangible meanings rather than just a group of facts.

Children’s Principle: Gauge your audience and base your presentation on the development stage of the children present.

Carolina Raptor Center’s various education programs see over 40,000 kids a year which keeps our five bird care staff members very busy. As a result, daily visitors do not always have an opportunity to speak with a live interpreter. Our interpretive signage is crucial and needs to play a key role in fulfilling our organization’s conservation goals.

Past Signage

The first step in revamping our interpretive media was understanding why our old signs did not attract, inspire, or connect visitors to our birds. We assessed the visual appeal and informational content. One of the major problems we found was the inconsistency of our signs throughout our trail. Our trail is $\frac{3}{4}$ of a mile and there were eight different styles of species signs. Each style had different fonts, colors, themes and overall layouts. Some signs had lengthy paragraphs full of natural history facts while others only had name plates. There was not any cohesiveness that tied our signs and our facility together.

Our old signs were heavily focused on our individual birds. At each enclosure, a picture was displayed of that individual. Many pictures were low resolution images that had to be reduced in size to retain quality. We noticed that visitors focused on the pictures of the birds as opposed to visually connecting with the actual birds in front of them. The signs also included the birds' names in big bold letters with stories of how they got their names. Since most people will only remember 10% of what they read, we found that our visitors were not remembering any unique characteristics of the species as a whole.

According to the "Measuring Wonder" project, we knew that our visitors left the center feeling sad for our birds. Our informational content was a problem. Since 90% of our birds were rehabilitated, non-releasable birds, the majority of signs included a sad story and a detailed description of the birds' injury. Overall our interpretive species signs did not give our visitors a sense of appreciation for our birds.

Creating New Interpretive Signage

To create successful interpretive media, we needed to re-evaluate our end goal. Part of our organization's mission is the conservation of the natural world. We realized that we needed to apply this goal to our signage as well. "Words have weight and power, and the best speakers use them deftly to weave a narrative that captivates an audience and inspires them to act. There is no reason that educational signage cannot aspire to the same goal" (Amy Fennel 2015).

Sign Committee: In order to improve our signs and truly fulfill our goal of behavioral change and conservation it was decided that we needed to form a Sign Committee. In the past, one person was responsible for writing and designing all of our interpretive media. We believe that a team of people are needed to create signage that are up to our facilities' standards. The Sign Committee is made up of five members from the following departments: bird care team, education team, marketing team, executive team and docent team. Each member brings in their own ideas and professional backgrounds in order to collaborate as a team. The goal of the committee is to create cohesive, visually appealing signage along the trail to reach a wide audience connecting visitors to our birds.

Shaping Plan: Conservation and promotion of behavior change in our visitors is not an easy task. As bird trainers, we realized that we are essentially attempting to train a complex behavior in possibly the most complex animals on our planet; human beings. What do bird

trainers do when attempting to train a complex behavior? We realized that we needed to shape our visitors' behavior by using differential reinforcement of successive approximations.

Shaping Plan:

- Final Goal Behavior: Conserve the natural world
- Tentative steps:
 1. Approach signs
 2. Read signs
 3. Appreciate birds
 4. Conserve natural world

Antecedents should be considered before beginning any shaping plan. Antecedents are the stimuli, conditions and events that set the stage for a behavior to occur. "Antecedents should be brilliantly arranged to ensure that the appropriate behavior is facilitated" (Susan Friedman 2001). The antecedents we took into account are sign/text visibility and placement of the sign. In order to arrange the antecedents, we chose the following:

- Panel and text colors to reduce eye strain and glare
- Positioning of signs to avoid detracting attention from the birds
- Placement of signs so that multiple visitors can read without affecting traffic flow
- Accessibility of signs to ensure the height and angle are readable by all visitors

Shaping Plan Step One: Goal Behavior-Approach Signs

We determined to lure/bait visitors to our signs, we needed them to be visually appealing and easy to read. The Fraction of Selection is a key component to creating signs that draw people in. Another important factor is to remember signs are full of CRAP. CRAP stands for: Contrast, Repetition, Alignment, and Proximity.

The Fraction of Selection is a formula utilized for determining which form of mass media an individual would select. A High Fraction of Selection will increase the expectation of reward and decrease the effort required from the visitor. The sign should encourage access to the interpretive message. In other words, signs should be simple to read, easy to navigate, and increase the expectation of reward, while requiring little effort from our visitors. We applied these concepts by creating the same layout on each species sign to help visitors easily pinpoint the information that interests them. We kept the sign face simple and uncluttered, while maintaining open space on the margins. We also used simplified language to introduce concepts that our youngest visitors could understand by incorporating symbols, graphics, and short messages. We carefully selected content that we thought would help our visitors connect to our birds.

Contrast is one of the most effective ways to catch a visitor's eye. In order to be successful, the contrast must be strong and noticeable. Some of the elements to contrast are: big text and little text, warm colors and cool colors, horizontal elements and vertical elements, and small graphics and large graphics. Contrast helps organize the sign and allows visitors to

find information with ease. In order to create contrast in our new signs, we applied a few of the elements previously listed:

- Large, bold font for species name and section headers with small text used for the information
- Blue (cool) and orange (warm) is the main color scheme to grab visitor's attention
- Informational text and pictures that are presented in both vertical and horizontal format
- High resolution photos of different sizes

Repetition is another key element to visual appeal. When creating a series of signs along a trail, certain aspects should be repeated to create cohesion. Font style and size, layout, color, and headlines should be carried over from sign to sign. Any of these elements can change to emphasize new topics, but everything else should stay consistent. In our case, we chose to keep the layout of each species sign the same, while the species information changes between each bird. Once we begin writing different types of signs, we will keep the same font style and size, layout, and headline style but use different colors. Our visitors will easily be able to recognize that there is a new topic to learn about.

Alignment is important to ensure every element of the sign has a place. "Nothing should be placed on the page arbitrarily. Every item should have a visual connection with something on the page" (Williams 2008). When grouping multiple items on a page, it is necessary that they are aligned with each other. Aligning baselines, edges and corners are great ways to create visual ease and flow. You can also align text and images with the edge of the page. We were able to enhance our signs by aligning the text, pictures, and page edges.

Proximity is known as spacing and grouping related items together. Physical closeness always implies a relationship. Grouping related items is a great way to organize material and will require significantly less effort on the reader to gain and find information. Preserving white space is often underutilized when designing signs. Every inch of the sign does not need to be filled with pictures and/or text. White space breaks up sections and helps direct the eye. We grouped range maps with Fast Facts, species identification picture with the species name, and a Fun Fact with a picture demonstrating the fun fact.

Shaping Plan Step 2: Goal Behavior-Read Signs

We knew that the act of approaching our signs was not enough, we wanted people to actually read our signs. To accomplish this step, we used the 3-30-3 Rule. The 3-30-3 Rule has been widely used as an effective method to reach as many people as possible. The rule categorizes people into three different types of readers: 3 second readers, 30 second reader and 3 minute readers. The 3 second readers are the visitors that quickly glance at signs to read titles and look at the pictures. In 3 seconds, our visitors should be able to easily find the name of the species, which is in big bold font at the top of the sign. We also included three high resolution images; a species identification picture, a range map, and a picture illustrating the Fun Fact about the species. To engage the 30 second readers, we made a Fast Facts section that answers frequently asked questions in bullet points that are short and easy to read. The 3 minute readers tend to read everything on the sign. We also took into consideration that it would take

no longer than 3 minutes to read each species sign in entirety to make sure we did not lose visitor's attention either.

Shaping Plan Step 3: Goal Behavior-Appreciate Birds

Ideally, visitors are now approaching and reading our signs. Our next goal is for visitors to start feeling a sense of appreciation and connection with our birds and the natural world. It has been studied that Americans encounter a number of society-wide forces disconnecting them from nature. "Americans face competing priorities for their time, attention, and money. They live in places that often have more concrete than green space" (Kellert et al. 2013). It is our job as avian trainers and educators to restore the connection of humans to nature. We believe that if we are able to connect our visitors to our birds, they will in turn begin to appreciate them. Appreciation is the first step in conservation. The goal behavior in this step of the shaping plan is based on creating an emotional response in our visitors. The definition of appreciation is the recognition and enjoyment of the good qualities of someone or something. Interpretation is an art form that chooses which information to share to provide meaning to our visitors. Meanings develop when visitors are connected both intellectually and emotionally. The Six Principles of Interpretation played a key role when choosing informational content for our signs.

First we created a Fast Fact section that answers common questions we receive during programs to help our visitors connect to each species. Our Fast Facts include diet, habitat, nesting, and wingspan. In the next section we wrote a fun fact that described various adaptations and behaviors that were unique to each species in our collection. The goal was to create a sense of wonder and fascination for our birds. In the last section of text, we asked a question that drew our visitors attention back to the bird in the enclosure. The question is always related to the fun fact and the goal is to spark interest and curiosity while visually connecting them back to the bird.

Shaping Plan Step 4: Goal Behavior- Conserve the Natural World.

Our final step of the shaping plan is the most complex of all behaviors. Conservation is the act of protecting the Earth's natural resources. "Appreciation and gratitude are cognitive affective states associated with the perception that one has received a valuable personal benefit" (Emmons and McCullough 2003). In other words, if visitors appreciate our birds, they will value them. When an animal sees value in something tangible, they will want to protect it. Protection of valued resources (our birds) will directly lead to conservation actions. Since conservation is a complex behavior and is dependent on many different factors, it will be difficult to truly determine if our signs were successful.

Evaluation of the Final Behavior

We attempted to reach a wide audience and use positive reinforcement in each step of our shaping plan to promote behavior change. It was important for us to remember that our human learners are individuals. It is always a study of one. Motivational factors and reinforcement is unique to each individual human being. "Motivation is created by a history of consequences, outcomes, and effects that give animals a reason to behave" (Steve Martin 2015). To help measure whether our signs were successful we created a survey. We used a

small sample of six signs and placed them in close proximity. Using Ipads, we asked five questions to 87 visitors:

- **What is your age?** 42% of the visitors were between the ages of eleven and seventeen. 27% were adults with children. These results did not surprise us, the majority of our visitors are families with school aged children and our signs are appropriate for children.
- **Was this your first visit to Carolina Raptor Center?** 68% of the visitors said yes. We love having new visitors, however we have few visitors that revisit on a regular basis.
- **Did you feel more connected to the birds after reading the signs?** 76% answered yes, definitely and 18% chose kind of. We were very excited by these results because that was Step 3 in our Shaping Plan: appreciation of our birds.
- **Were the signs informational, entertaining, or both?** 68% responded both. Again, we were very happy with these results because we want the visitors to learn in a way that is fun and entertaining.
- **Were you able to find the special characteristic about each bird?** 49% replied yes, 24% selected sometimes, and 8% said no. These numbers were encouraging because 81% of our visitors viewed our birds for a longer period of time.

We are very happy with how our species signs turned out, however we are currently experiencing a new hurdle. We have been tasked with creating bilingual signage with interpretive content for a diverse group of people. As a whole, the Sign Committee agrees our signs should be accessible to visitors whose first language is not English. We have discussed many ways to reach this goal; agreeing on one solution is still a work in progress. We are also planning to create conservation based signs and deciding on topics and layouts may also prove to be a challenge. We feel that as a committee we can overcome these hurdles and inspire our visitors of all backgrounds to make a difference.

Conclusion

The final step in the shaping plan is giving our visitors control and empower them to take steps toward conserving the natural world. We acknowledge and understand that visitors will go home and partake in varying levels of conservation. We are here to inspire change and that looks different for everyone. If we discover conservation actions are not increasing, we may need to go back to the drawing board as a committee and find a solution. As trainers and interpreters, we must be flexible and constantly adjust to our human visitors. “We should be willing to throw out our training plan when it is time to change course” (Chris Jenkins 2019). As always, we will continue to learn as much as we can in order to best create an appreciation of the natural world and inspire visitors to want to make a positive impact for conservation.

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