A Big Trip for the Smallest Bear

By:

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**Abstract:** In October 2011, I traveled to Sabah, Malaysia to work with the rescued sun bears at the Bornean Sun Bear Conservation Center to learn about their captive management and to establish an animal training program with the staff. Over the course of a month I combined a lecture series with hands-on training. The two keepers speak English as a second language so I encountered a handful of unexpected challenges in the course of the training series. We focused on basic behaviors since the keepers were new to training. The ultimate goal is to be able to have them train more complex behaviors such as injection training and vaginal swab collection training on the females. Since little is known about this species, utilizing this captive group will help us expand our knowledge on their natural reproductive history. This knowledge is critical in maximizing our captive management of this species and in understanding their wild counterparts in an effort to preserve the species. In addition the training program enriches the bears by giving them new challenges to work on and it allows the keepers to manage their bears more easily and monitor their health more effectively.
This trip allowed me to sharpen my training skills and to experience firsthand what is happening to the ecosystem in this area. My passion re-ignited, I came back ready to share my experiences and raise awareness about the plight of the smallest bear and it's habitat.

**Introduction:** The two subspecies of the smallest bear are found throughout South East Asia in Bangladesh, Brunei Darussalam, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Thailand and Vietnam. The Malaysian sun bear, *Helarctos malayanus malayanus*, is the mainland subspecies and inhabits seasonal tropical rainforests. *Helarctos malayanus euryspilus*, the Bornean sun bear occupies the island of Borneo (Malaysia, Indonesia and Brunei) in an aseasonal tropical rainforest. The sun bear is an opportunistic omnivore as are other bears and play an important role in the forest ecosystem. Extremely arboreal in nature, this agile bear species collects dipterocarp fruits, termites and ants from the canopy of the trees as a main source of their diet. They have an incredibly long tongue, up to 18 inches long, that aide them in extracting honey, another favorite treat. The species gets their name from a unique half orange/gold sun or crest on their chest. Each marking is unique to the individual and varies in shapes, sizes and color. Little is known about natural reproductive history or social behavior and there is still not a definitive answer on their lifespan. Although most wild bears are estimated to live up to 15 years, there are captive bears that have lived up to 39.

Bornean sun bears continue to be threatened by forest degradation and habitat loss, illegal hunting for bear parts and to protect crops, and poaching to obtain young cubs for the pet trade.  As a result of these threats, many young sun bears are living in unnatural and solitary captive conditions throughout Sabah, with no access to outdoor areas. The Bornean Sun Bear Conservation Center was founded in part to address these issues.

The captive population in North America is comprised of some these rescued bears. In 1996 and in 2000, 20 bears made their way to new homes throughout the country. Keepers were tasked with managing a new population of bears that were not only riddled with stereotypic behaviors but with which came no specific information on successful captive breeding practices. Pioneering exhibit requirements, vaginal swab techniques and furthering our understanding of reproductive natural history and biology, Cheryl Fredrerick from The Woodland Park Zoo facilitated crucial development in bringing us closer to understanding these animals. It is now a critical point in captive sun bear management. After years of attempts with several matches all over the country it became clear that many of these rescued animals had compatibility, reproductive and behavioral issues. To date there has only been one successful breeding pair in North America, Marcella and Dibu. Both bears were housed at The San Diego Zoo and produced four cubs, two males and two females, two of those cubs being twins. As the captive population ages there are only a few possible matches left. There has been some mild success with those new pairings but no cubs that have been born have lived past a few months. In response to the lack of breeding success and aging breeding population, the sun bear SSP was disbanded and the bear TAG has decided to focus their effort on other bear species. As the population in the wild dwindles, it becomes increasingly important that we learn all we can about these animals and continue to raise awareness about their plight to better their lives in captivity and more importantly preserve them as a species.

**Study Area**: The Bornean Sun Bear Conservation Center was founded in 2008 by Siew Te Wong. Wong has been a dedicated sun bear biologist for about 14 years. He founded The BSBCC in response to conditions that rescued sun bears were being kept and in addition to address the lack of awareness that surround this species. In conjunction with the Sabah Wildlife Department, the Sabah Forestry Department and Land Empowerment Animals People, the BSBCC has made incredible strides in the last 4 years. The BSBCC functions as a rescue, rehabilitation, education, and research center for the sun bear. The goal is to promote sun bear conservation by (1) creating the capacity to confiscate, rehabilitate and release suitable orphaned and ex-captive bears back into the wild; (2) providing an improved long-term living environment for captive bears welfare that cannot be released; and (3) educating the public and raising awareness about this little known species through visitor and education outreach programs, and (4) conduct research on both captives and wild sun bears.

The BSBCC is located in Sandakan, Sabah, Malaysia. It is in one of the most bio diverse areas in the world. The Bornean rainforest is 30 million years old, making it the oldest in the world. In this threatened rainforest sun bears are not the only species that suffer. This diverse habitat also supports Sumatran rhinos, Bornean elephants, both Bornean and Sumatran orangutans and eight species of hornbills. Indonesia is home to 12% of all mammal species; 16% of amphibian and reptile species and 17% of bird species. Borneo is home to 15,000 species of flowering plants, 3,000 species of trees, 221 species of terrestrial mammals and 420 species of birds. The World Wildlife Foundation has stated that 361 new plant and animal species have been discovered in Borneo since 1996 and with the rainforest disappearing at an alarming rate, no one knows how many species we have already lost.

How are we losing the rainforest? As we grow exponentially as a species, the world we inhabit continues to degrade. In countries like Indonesia and Malaysia one of the growing threats to the primary rainforest is the plantation industry, specifically the oil palm plantation industry. Timber used to be the primary export of both these countries but as new environmental laws were passed it became harder to continue logging on a large scale. This combined with an increase in demand for the world’s new favorite preservative, fueled the explosion of the industry. Palm oil is used in many things from cosmetics to snack foods and even as a biofuel. This industry makes up 5-6% of Malaysia’s gross domestic product, generates over $16 billion dollars a year and employs 6 million people worldwide. Two out of every five people in Indonesia are employed in the palm oil industry. Even though palm oil plantations exist in 43 different countries, Malaysia and Indonesia contribute to 90% of global palm oil. Many companies not only clear cut primary rainforest to make way for new plantations but also destroy wildlife found on plantation land, populations of orangutans among them.

In response to the horrifying changes happening in this area new solutions are being put forward. Since the industry is so large and supports so many people’s livelihoods, not using palm oil is no longer an option. In 2004 the WWF spearheaded The Roundtable for Sustainable Palm Oil (RSPO). This group unites stake holders from the seven sections of the oil palm industry: oil palm producers, palm oil processors, consumer goods, manufacturers, retailers, banks and investors, environmental or nature conservation NGO’s and social and developmental NGO’s with the goal to make existing plantations sustainable. In 2008, the RSPO included 17 certified mills in just 2 countries; today there are 29 grower companies with 135 certified mills in 6 countries, an increase of approximately 8 times over a three year period. In an effort to continue to support the forward conservation momentum, many zoos and other conservation organizations around the world are joining the RSPO. With help from organizations like The BSBCC and The RSPO there may be a new and brighter future forming in Borneo.

**Methods**: In addition to learning as much as I could about the management of the population at the BSBCC, I was also asked to establish an animal training program for the project manager and the keepers at the facility. By combining a series of lectures and hands on lessons I was able to lay a solid foundation. Throughout the month I was faced with a handful of challenges as I developed my curriculum.

The first challenge I encountered was mainly cultural. Not only did both of the keepers speak English as a second language but they also had very different experiences with zoos and overall captive management of exotic animals outside of the BSBCC. In their experience, zoos serve only as a source of public entertainment and the animals at such facilities are poorly treated and inadequately housed. I began my first lecture by describing what The San Diego Zoo and others like it in the country strive for. After explaining our focus on enrichment, training and conservation it was much easier to establish some credibility and begin building a good relationship. The language barrier was initially a huge hurdle but I learned how to teach them with very simplified nomenclature and before I knew it they were picking up the concepts. It was crucial to have the hands on experience as well to help solidify the lectures and isolate any misunderstandings they might have had. I asked each of the keepers to choose a bear that they wanted to work with and to think of some basic behaviors they wanted to train. After they put together their ideas I worked with them on developing the specifics.

The other major challenge I faced was all too familiar, where to find the time? As any keeper knows it is a challenge to fit in training time. The BSBCC houses 25 sun bears in 2 different buildings, some groups of bears having day access to outdoor enclosures. The total staff including Wong, is four people. The majority of the time, Wong is doing fundraising and giving talks all over the world so his time there is limited. The two main keepers are in charge of basic husbandry and enrichment of all these animals every day. As the initial excitement of learning about the details of training started to wane, it was a challenge to convince them that they could indeed fit some short sessions in throughout the day. I worked alongside them cleaning and feeding so I could truly evaluate what was reasonable to ask of their time. Once I was trained, I was able to free up some of their time on days when we had a lecture and training sessions or on days when they wanted to spend some more time actually training. A second part to this dilemma was how to make enrichment that the bears would spend a decent amount of time on that was not very time consuming for the keepers to clean up. After brainstorming for a while, I was able to take some ideas home to use with my bears as well. This combination of adjustments allowed them to fit in at least one training session a day once all the details were worked out.

 The last piece of curriculum we worked on was record keeping. Fortunately, they had experience with taking behavioral observations. In order to prepare the bears being released to their outdoor enclosure for the first time, the bears were de-sensitized to the hot wire in a special room and observations were taken during this process. The jump to writing down their training goals and logs wasn’t too difficult as they were familiar with the detailed nature of recording behaviors.

As the month came to a close, I quickly found myself wanting more time to develop the program with them but overall they amazed me with how quick they assimilated the information in the lectures into their training sessions.

**Results**: After just one month it was remarkable to see two people who had literally no knowledge of basic animal training start bridging on time and developing their own training goals. WaiPak, the project manager had some experience with training and so he was quick to pick up any of the new things I presented. It turned out that they each picked a male bear to work with. The bears were Julani, Lingam, Bermuda and I chose Om. Julani is a younger bear housed with several younger females. Julani has a skin condition and was chosen by his trainer so they could work up to getting skin scrappings from him to monitor his condition. Lingam is an adult male and was chosen by his trainer due to his incredibly high energy level and propensity to pace and bang on doors. Bermuda is another adult male and had some training and was a good candidate for WaiPak to try some more complicated behaviors. I chose Om, another adult male since he seemed to respond to me the short time I was there. The other benefit to working with the adult males is that they are all housed separately so it was a bit easier for a new trainer to be able to focus on one animal instead of having a group. It was less complicated then having to take extra time to separate an animal from the group. It was also a quick way for them to jump in and try their new techniques without worrying about group dynamics. The exception to this was Julani who was in a small group and easily separated. We adjusted for his separation by rewarding the other bear(s) with something before they were put back together. This alleviated any problems with aggression.

After a month of training, both the bears and keepers were markedly different. Lingam was quick to focus when a session started and was much less grabby. Julanis’ focus also improved. Bermuda learned a series of new behaviors including lying down and holding and presenting his front paws. Julani was just on the cusp of presenting his paws at the end of the month. Om was able to present both front paws, open his mouth and position sideways for a short time by the end of the month. It was also wonderful to watch the trainers realize how smart their bears actually are. When they had “light bulb” moments it was truly heartwarming to watch. It was also incredible to watch the keeper’s confidence and excitement grow with each session and each achieved training approximation.

I learned a great deal about myself through the training process and believe that I left there a stronger trainer then when I arrived. Upon my return back home I decided to share my experiences not just about the training but about the plight of the sun bear and its vanishing habitat. I became re-focused and excited to be involved with a conservation effort directly. Through a series of lectures I presented to my colleagues I was able to build a whole new group of sun bear supporters and continue to develop with hopes to have The San Diego Zoo directly support the BSBCC and give back to the habitat in which I grew and learned so much.

**Discussion**: Overall the trip was successful in many ways. I am encouraged that there is an opportunity to learn more about this charismatic and remarkable bear species. The foundation that the keepers now possess can be utilized to train much more complicated behaviors such as injection training and vaginal swab collection. With such a large population, daunting tasks such as administering vaccinations or performing immobilizations can be done with greater ease and with much less stress for the staff and for the bears. Also, gathering data on a large captive population such as exists at the BSBCC is critical in furthering our understanding of these animals to enhance our management and to preserve them in the wild.

In addition to the training aspect, I found that I expanded my knowledge in a variety of different areas. I was aware of the palm oil crisis before I traveled to Borneo but became more committed to schooling myself on the issue when I saw how desperate of a situation it has become for the flora and fauna of the area. I also became incredibly fascinated with the entire habitat and am looking forward to learning more about the intricacies of the rainforest as an ecosystem.

I am pleased to say that the BSBCC has successfully completed the latest part of their construction, a visitor viewing platform of the sun bear’s outdoor enclosures, with help from the Ministry of Tourism of Malaysia (MOTOUR). This will serve as an education center to raise awareness about the sun bears. Wong continues to travel around the world and present his “forgotten bears” and capture the hearts and imaginations of everyone who hears him. The BSBCC also recently hosted some keepers from the Oakland Zoo who volunteered to come put some enrichment together for the bears and help with some projects as well. It continues to be inspiring how many people are continually getting involved with not only The BSBCC but with many other conservation efforts throughout the world.

As zookeepers we are charged with caring for exotic species that are ambassadors for their wild counterparts. It is important that we share our passion and continue to be directly involved in our changing world. It is easy to get caught up in the day to day function but we must not forget a large part of our job is to give back and educate those that may have not yet found their passion or even their voice.

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**Resources**: The following websites are a few places to find more information on several of the topics touched on in this document.

The BSBCC : [www.sunbears.wildlifedirect.org](http://www.sunbears.wildlifedirect.org)

The Orangutan Foundation International: [www.orangutan.org](http://www.orangutan.org)

The Roundtable for Sustainable Palm Oil: [www.rspo.org](http://www.rspo.org)

The Cheyenne Mountain Zoo (as it pertains to the oil palm crisis): [www.cmzoo.org/conservation.palmoilcrisis](http://www.cmzoo.org/conservation.palmoilcrisis)