



Oso  
Bär  
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Beer  
Shash  
Beruang  
Karhu  
Bear

# International Bear News

*Quarterly Newsletter of the  
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Bear-Human conflicts are escalating on the Tibetan Plateau.  
To learn what researchers are doing to address them, see page 15.

*IBA websites: [www.bearbiology.org](http://www.bearbiology.org) [www.bearbiology.com](http://www.bearbiology.com)  
Ursus website: [www.ursusjournal.com](http://www.ursusjournal.com)*

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## Trial Use of Electric Fencing to Prevent Intrusions by Tibetan Brown Bear

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### Introduction

The recent rapid increase of human-wildlife conflict (HWC) on the Qinghai-Tibetan Plateau – particularly

between local herders and Tibetan brown bear, *Ursus arctos pruinosus* – already has been reported by Foggin (2002), Tsering (2008), Willms et al. (2006), Worthy & Foggin (2008) and others.

According to local herders, one of the most likely reasons for increased conflict with brown bear is a reduction in its prey species, most notably plateau pika (*Ochotona curzoniae*) due to a recent, multi-year, large-scale pika eradication policy (Hao 2008). Around 70 percent of the brown bear diet is comprised of pika (Xu et al. 2006). Even partial removal of pika from the grassland ecosystem would likely have serious impact on brown bear, leading to a forced shift in diet intake. Brown bear may thus have begun to search more widely for alternative sources of food, including entry into local herders' homes. Numerous other species also are affected by eradication of plateau pika, a keystone species of the plateau (Smith & Foggin 1999). An alternative reason why conflict with brown bear may have increased over the past few years is that they have increased in number, a possibility consistent with the removal of guns from herders around the turn of the millennium. Yet another reason for increased conflict could be that brown bear have learned and adapted their



House destroyed by Tibetan brown bear

© Dr Fiona Worthy, Plateau Perspectives



Window broken by Tibetan brown bear

behavior over the past decade or so, taking advantage of the occasional but significant food returns that can be obtained by breaking into herders' homes, i.e. 'warehouses' that did not exist before the government began to subsidize construction of winter homes (Foggin 2008).

However, all three of these hypotheses still lack sufficient data to properly assess and select between them. Other possibilities may also exist that have exacerbated the problem.

We have noted that HWC in southwest Qinghai Province has increased most dramatically since circa summer 2007 – before then, relatively few instances of bear intrusions into the homes of local herders were noted. In order to maintain the support of local communities for wildlife conservation – as well as to assist with socio-economic development, through mitigation of financial losses incurred by the destructive activity of the brown bear – we set out in 2006 to determine how best to assist

herders with regard to this emerging conflict. In December 2008 and April 2009, we installed on a trial basis, solar-powered electric fencing (SPEF) at two sites (homes) in Zhiduo County.

One of the two trials undertaken failed due to inadequate training on the proper installation and use of the new SPEF technology. However the second trial was extremely successful, due

mainly to joint installation and regular monitoring of the fence by one of the authors (JR). We now plan to expand the number of trials, and to test several additional SPEF products, in 2010.

The homes under consideration are single story buildings, between 50-80 m<sup>2</sup> in area, with walls made from mud bricks, with metal or wood doors



Wall broken by Tibetan brown bear

and window frames, and with roofs made of wooden beams, straw sheeting, plastic sheeting and dirt. Nearly all the bear intrusions to date have occurred when homes were empty – with the herders pasturing their livestock in distant alpine grasslands, living in tents away from their permanent winter homes. Food is sometimes but not always stored in these homes, which may be an attractant to the bears. When a bear raid occurs, damage inflicted may include the breaking down of doors, windows and walls, as well as the destruction of furniture, stove, utensils, etc. The economic cost of such attacks has been estimated by local herders between 500 and 5,000 Chinese yuan (CNY), with an average around 1,000 CNY per incident. Annual average losses incurred due to bear attacks may amount to 10,000 CNY or higher, a large proportion of herders' available income (1 USD is approximately 7 CNY)

## Method Used

The equipment used in the successful trial was the Zareba SP10B, which is a 10-mile range, low impedance solar powered electric fence controller. The key product specifications are: 0.33 stored joules, 0.15 joule output, 6 volt, 10 amp battery, pulsed DC output (1-sec intervals) (see <http://www.zarebasystems.com>). The electric fence was installed with powered wires alternating with neutral (grounded) wires, up to a height of 1.5 metres, thus blocking the front side of the house only. The power in the electrified lines was between 5,000 and 8,000 Volts.

## Results

Prior to installation of the SPEF system on 13 May 2009, Bazhuo (i.e., owner of the house at trial site) had already had his house broken into on two occasions in late April 2009. However, after installation of the system, no further entries or attempted entries were made while the system remained in place – for 4 months in total. In



Workshop with local herders and nature reserve field staff on use and installation of solar-powered electric fencing (SPEF) and camera traps, 28 October 2009

contrast, during the same period, another house around 30 metres away was damaged by brown bear on at least two separate occasions. Likewise, according to the village leader, all 26 families in the village who had moved with their livestock to their summer pastures, leaving their homes unattended, also had their property damaged by bear while they were away (the village is comprised of 58 families in total). Damage to herders' homes by brown bear occurred throughout the village area between April and October 2009, with the exception of the trial home protected by electric fencing.

## Discussion

Preliminary results have shown SPEF technology to be a potentially viable solution to help mitigate the observed recent increase in HWC with Tibetan brown bear in Zhiduo County and neighboring counties, i.e. throughout the source areas (headwaters) of the Yangtze and Mekong Rivers and HWC in general in the Tibetan plateau region. Other mitigation options, including non-electric fences, had been tried by local communities in the project area as well as northwest Sichuan Province

(Worthy & Foggin 2008) and northern Tibet Autonomous Region (Tsering et al. 2006) – but most local attempts had failed. Several other methods have already been tried but with limited success.; solar-powered electric fencing (SPEF) is more portable and versatile, and could be extended to address other HWC issues as well. It could also be used for a variety of livestock management purposes.

The entire trial SPEF system cost approx. 5,000 CNY (including purchase cost plus shipping from the manufacturer in Minnesota, USA). This amount was not considered too expensive by most herders, based on their own cost-benefit analyses; the main challenge they expressed was the amount of funds needed at the outset, i.e. initial purchase cost. If most materials were purchased locally (e.g., posts, wire, insulation, etc.) and only the charger imported, then SPEF systems could become even more affordable and accessible to Tibetan herders.

We welcome and encourage feedback from readers, especially with specific advice or recommendations for future work. Many thanks are extended in advance for such assistance.

## Acknowledgements

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Trial installation of solar-powered electric fencing (SPEF) technology in Lari Village, Zhiduo County, in 2009

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## Bornean Sun Bear Conservation Centre in Malaysian Borneo

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### Introduction

The Bornean Sun Bear Conservation Centre (BSBCC) is a new facility being developed in Sandakan city, Sabah, Malaysian Borneo. In Sabah, these 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, there are over thirty young sun bears currently living in unnatural captive conditions throughout Sabah, with no access to outdoor areas. The goal of the new BSBCC is to promote Malayan 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 that cannot be released; and (3) educating the public and raising awareness about this little known species through visitor programs, outreach and support for further research.

### Project Background

The BSBCC was established as a Malaysian NGO in 2008. The first stage of the project is to build a bear rescue facility to house and rehabilitate rescued bears in their natural habitat. This Centre will be located directly adjacent to the world-renowned Sepilok Orang Utan Rehabilitation Centre (SOURC), on land donated by Sabah Wildlife Department and several hectares of adjacent forest donated by the Sabah Forestry Department. The BSBCC will contain

large forest enclosures in existing primary forest in order to provide a natural environment better suited to



the needs and welfare of the bears and to facilitate the rehabilitation, training and return of individuals to the wild. The Centre also aims to provide critical outreach, information and educational materials about the sun bear to promote knowledge and awareness of this little known species locally, regionally and internationally, and serve as a base for continued sun bear research in Sabah. Once the Centre is up and running, a reintroduction facility will be set up in a protected forest area to allow soft-release of suitable rehabilitated bears back into the wild.

The construction of the BSBCC facility has been broken up into three phases to expedite completion of at least one new bear house and outdoor area. Phase I is the construction of a 20-bear house and fenced enclosures. Phase II is the renovation of the existing bear building to include office space, a visitor center, and quarantine and kitchen area, refurbishment of boardwalks, and construction of a viewing platform and educational exhibits. Phase III is the construction of a second bear house and fencing for 16 additional bears.

### Project Status

BSBCC took over operations and care for 11 captive bears living in the existing indoor rescue facility on the BSBCC site in early 2009. Staff provide focused enrichment to relieve stress and boredom and to begin teaching important sun bear skills. Three indoor play/exercise areas were created and filled with enrichment items to mimic the bears' natural habitat, including woods, logs, a rock pool, a water tank, dried leaves, and