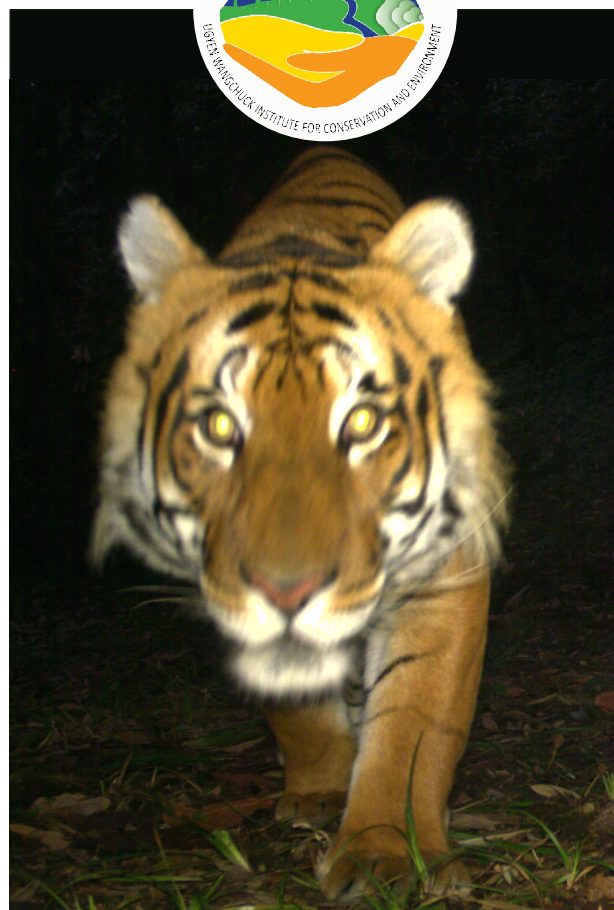


The UWICE Policy Brief's series aims to bring the latest research findings into mainstream policy domain and provides recommendations on key environmental issues.



UWICE (www.uwice.gov.bt) is a government research institute under the Department of Forests and Park Services, Ministry of Agriculture and Forests, Royal Government of Bhutan.

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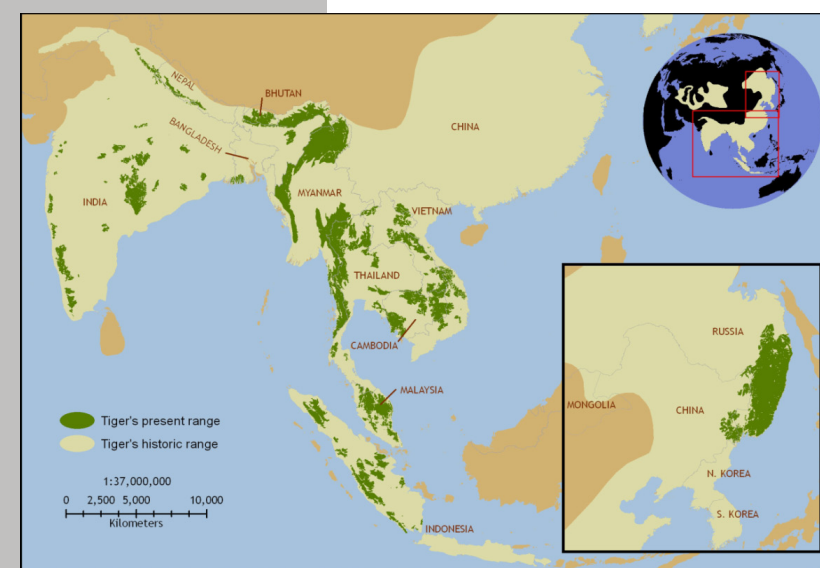


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Current tiger range map in relation to historic distribution (after Dinerstein et al. 2007)

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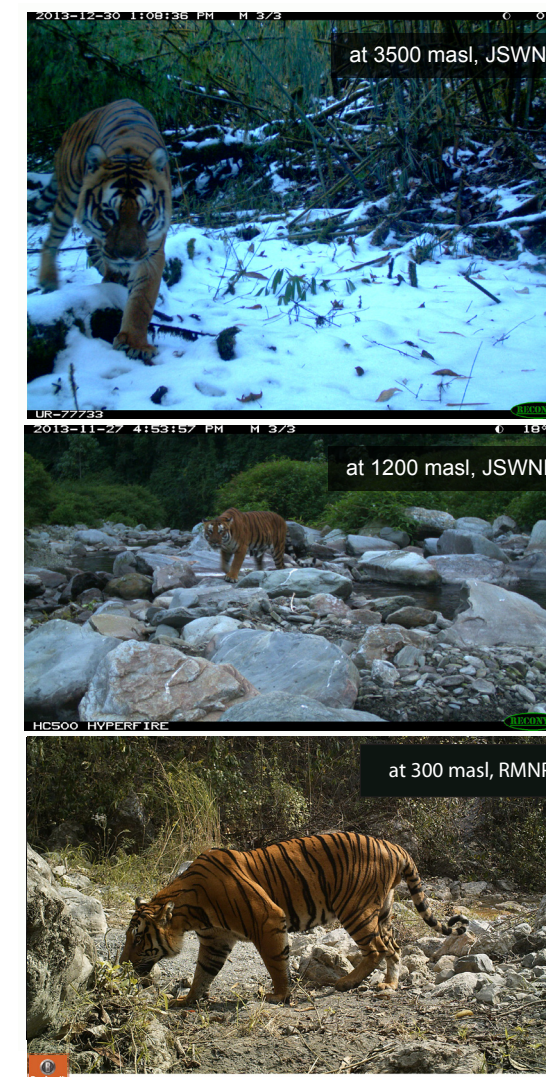
Prepared by:

Tshering Tempa
Nawang Norbu

Tigers in the Jigme Singye Wangchuck National Park: Implications for Conservation

The global population of tigers in the wild stands at a dismal 3200, with the species also having experienced one of the most dramatic range collapses over the last half century (see range map below). Current tiger habitat accounts for only 7% of its original range and three of the eight subspecies have already gone extinct.

Much of the remaining habitats in turn suffer from habitat fragmentation and lack of connectivity. The vexed issue of sustaining viable tiger populations into the future has therefore been gaining increasing attention from leaders,



government and communities across the globe. Most notably, leaders from tiger range countries adopted the St. Petersburg declaration on 23rd November 2010 to double tiger numbers in the wild by 2022.

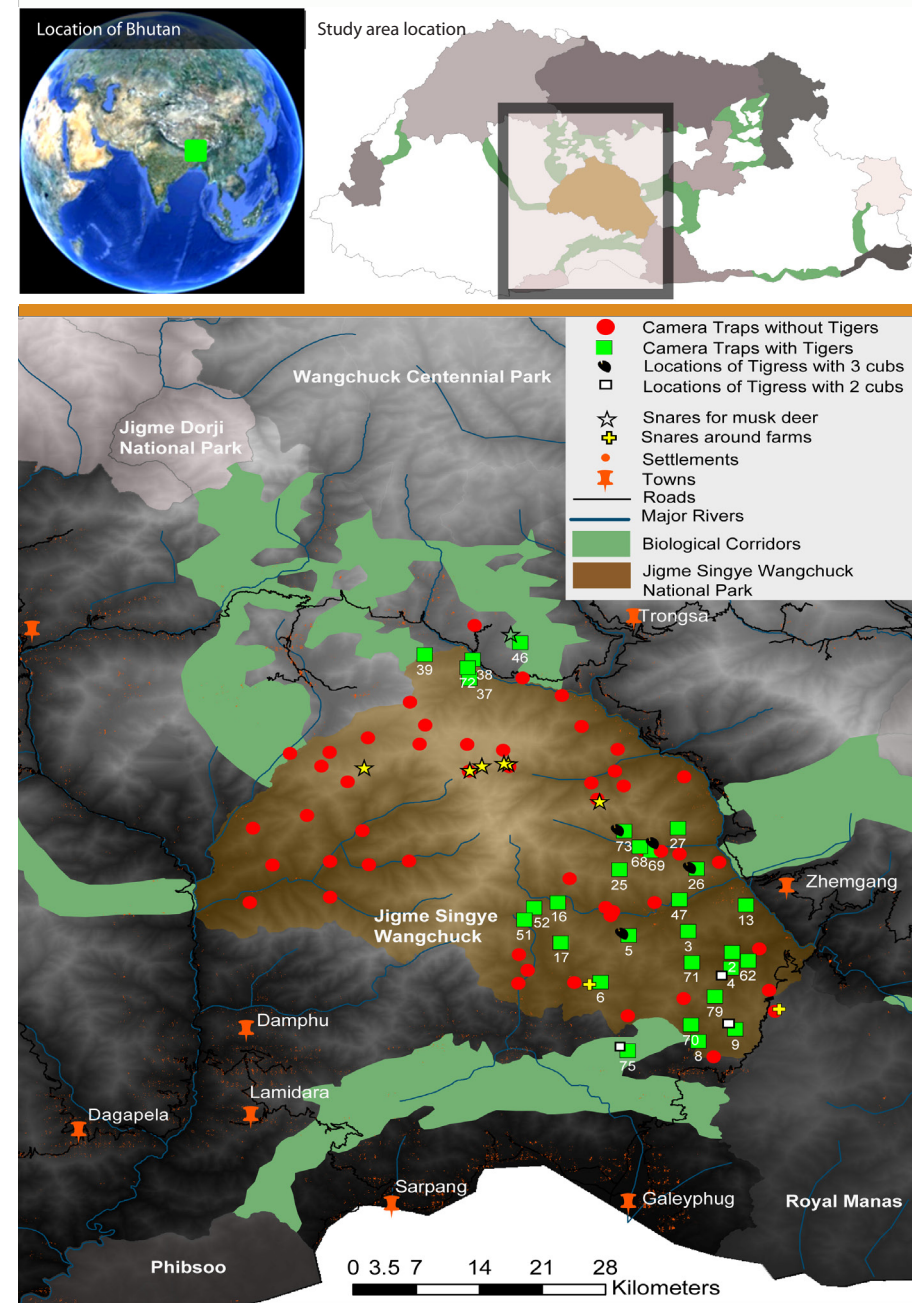
In addition, the declaration also called for a multipronged strategy, which includes amongst others the need to upscale anti-poaching stints, reduce habitat loss and increase connectivity, and compensate for livestock losses to minimize retaliatory killings.

Bhutan, with most of its area under forests (estimated at 72%) offers one of the best hopes for maintaining a viable tiger population into the future. In addition to habitat contiguity, tigers are also revered in both myths and beliefs.

In 2006, Bhutan drafted a 10-year national 'Tiger Action Plan' detailing out strategies to ensure the future of tigers in Bhutan. Many activities within that action plan, which is due to expire in 2015, have not been carried out due to lack of financial support, including the important task of counting how many tigers there are in the wild.

However, momentum is building up and progress is being made. As a follow up to the Summit in Russia, Bhutan hosted the 2nd Asian Ministerial Conference on Tiger Conservation in

Thimphu on October 22nd and 23rd 2012. Also, in line with the aspirations of both the Summit in Russia and the 2nd Asian Ministerial Meeting of TRCs, the Royal Government has initiated and is conducting a nation-wide tiger survey. The national tiger survey will systematically conduct camera trap surveys across Bhutan. As of now, camera trap surveys for the southern part of Bhutan have been completed. Effort will now spread towards the middle and northern parts of Bhutan. It is expected that a comprehensive assessment of tiger presence and abundance will be completed by December 2015.



The JSWNP study area. Pictures show individual tigers from JSWNP. Numbers in brackets on tiger pictures relate to camera trap locations where they were captured. Each camera has been labelled by a unique number (shown under green square boxes on the Map)

Study Area	Density ±SE
Nagarahole (Karanth et al. 2004)	11.92±.71
Panna (Karanth et al. 2004)	6.94 ± 3.23
Chilla (Harihar 2005)	3.01 ± 0.71
Tadoba (Karanth et al. 2004)	3.27 ± 0.59
Kaziranga (Amhed et al. 2009)	26.39 ±5.65
Malaysia (Kawanishi and Sunquist 2004)	1.1 ± 0.52
Sumatra (O'Brien et al. 2003)	1.6
Myanmar (Lynam et al. 2009)	0.21
Lao PDR (Johnson et al. 2006)	0.2
JSWNP (Wang and Macdonald 2009)	0.52 ± 0.05
RMNP (Tempa et al. 2011)	4.87 ±0.52



In addition to the nationwide tiger survey, long term and rigorous science based camera trapping exercises has been underway in the Royal Manas National Park and the Jigme Singye Wangchuck National Park since December 2010.

So far, 12 unique individual tigers have been identified within Jigme Singye Wangchuck National Park (JSWNP). Two of these tigers have been caught with 2 and 3 cubs each at different locations. See pictures and map.

Bayesian based spatially explicit mark-recapture models estimate 14 – 26 tigers in JSWNP with a density of 2 tigers per 100 km². This is much higher than estimates previously obtained for the Park (see table).

More importantly, the finding of cubs means that tigers are breeding within the Park. This bodes well for the park and for tigers in particular.

In addition to tigers, camera traps also captured pictures of 7 other cats. This demonstrates that JSWNP is a hotspot for wild cat species.

On the flip side of this seemingly well to do narrative, we highlight 2 key concerns which will negatively impact the long term survival of tigers in JSWNP: 1) we have detected no tigers in the north-western part of the park; and 2) we found evidence of poaching and poachers within the heart of the Park.

We recommend the following to address the above concerns:

1. Patrols should be institutionalized so that tiger habitats and areas where poaching incidences have been noted are monitored at least once a month. These checks should be conducted randomly. Such patrolling trips could also be combined to include monitoring of long term research plots and camera traps.
2. Park staff should be equipped with basic necessities such as GPS, binoculars and communication equipments. Supply of trekking boots and camping gear once every five years also seems justified given the rugged terrain and frequency of visits required. A conservative estimate of about Ngultrums fifteen hundred thousand (Nu. 15,00,000) would suffice for the procurement of such basic necessities once every 3 years.
3. We calculate an annual expenditure of Ngultrums thirty two hundred thousand (Nu. 32,00,000) for such recurring patrols. These funds should be guaranteed to the Park either by the Royal Government or be sourced from conservation donor agencies.
4. In line with recommendations made in the Tiger declaration, we suggest that anti-poaching stints be systematized across both protected and non-protected landscapes in Bhutan.
5. Research into why tigers do not venture towards the north-western portion of the park should be initiated. This may yield important clues for how best to restore abandoned habitats. Long-term habitat monitoring plots should be established together with weather monitoring and camera trap stations.

Such interventions will be vital to ensure the functionality of one of the most important, though underappreciated, tiger conservation landscapes on our planet. The JSWNP which connects to the RMNP forms an important link between the Terai regions of Nepal and India with landscapes of Northeastern India, Myanmar, and SE Asia. Given the abundance of tigers, the JSWNP and RMNP Bhutan complex could very well be serving as a source for tigers within the region.