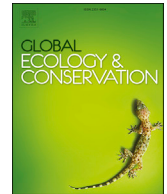




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Original Research Article

Monitoring illegal trade in snow leopards: 2003–2014

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ABSTRACT

Illegal trade in snow leopards (*Panthera uncia*) has been identified as one of the major threats to long-term survival of the species in the wild. To quantify severity of the threats to dwindling snow leopard population, we examined market and questionnaire surveys, and information from the published and unpublished literature on illegal trade and poaching of snow leopards. We collected information from 11 of the 12 snow leopard range countries in central and southern Asia, barring Kazakhstan, and reported 439 snow leopards (88 records) in illegal trade during 2003–2014, which represents a loss of approximately 8.4%–10.9% snow leopard population (assuming mid-point population of 5240 to minimum population of 4000 individuals) in a period of 12 years. Our data suggested a 61% decadal increase in snow leopard trade during 2003–2012 compared with 1993–2002, while taking the note of significant strengthening of wildlife enforcement and crime control network in the decades of 2000s and 2010s. We found 50% prosecution rate of snow leopard crimes resulting in only 20% conviction rate globally. Many limitations e.g., secretive nature of illegal trade, ill developed enforcement mechanism, poor and passive documentation of snow leopards' seizures, restricted us to reflect actual trend of snow leopards' illegal trade. Even on a conservative scale the present situation is alarming and may detrimental to snow leopard conservation. We propose an effective networking of enforcement efforts and coordination among the law enforcement agencies, efficient collection of data and data management, and sharing of intelligence in snow leopard range countries, could be useful in curbing illegal trade in snow leopards in central and southern Asia.

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1. Introduction

The snow leopard (*Panthera uncia*) categorized as Vulnerable on the International Union for Conservation of Nature (IUCN) Red List (McCarthy et al., 2017), is a large feline in high altitude ecosystems of central and southern Asia across 12 range countries (Fig. 1). The species like other large predators is intrinsically rare, and even though it inhabits a large geographical range (~1.6 million km²), and its global population is estimated at 7463–7980 (McCarthy et al., 2016). However, the population estimates for snow leopard are not robust and based mainly on expert knowledge and approximations due to extremely rugged terrains, remoteness of the snow leopard habitats and lack of large scale support for monitoring (McCarthy et al., 2016). Snow leopard, a cross boundary species is an indicator species, which makes cascading effects on different

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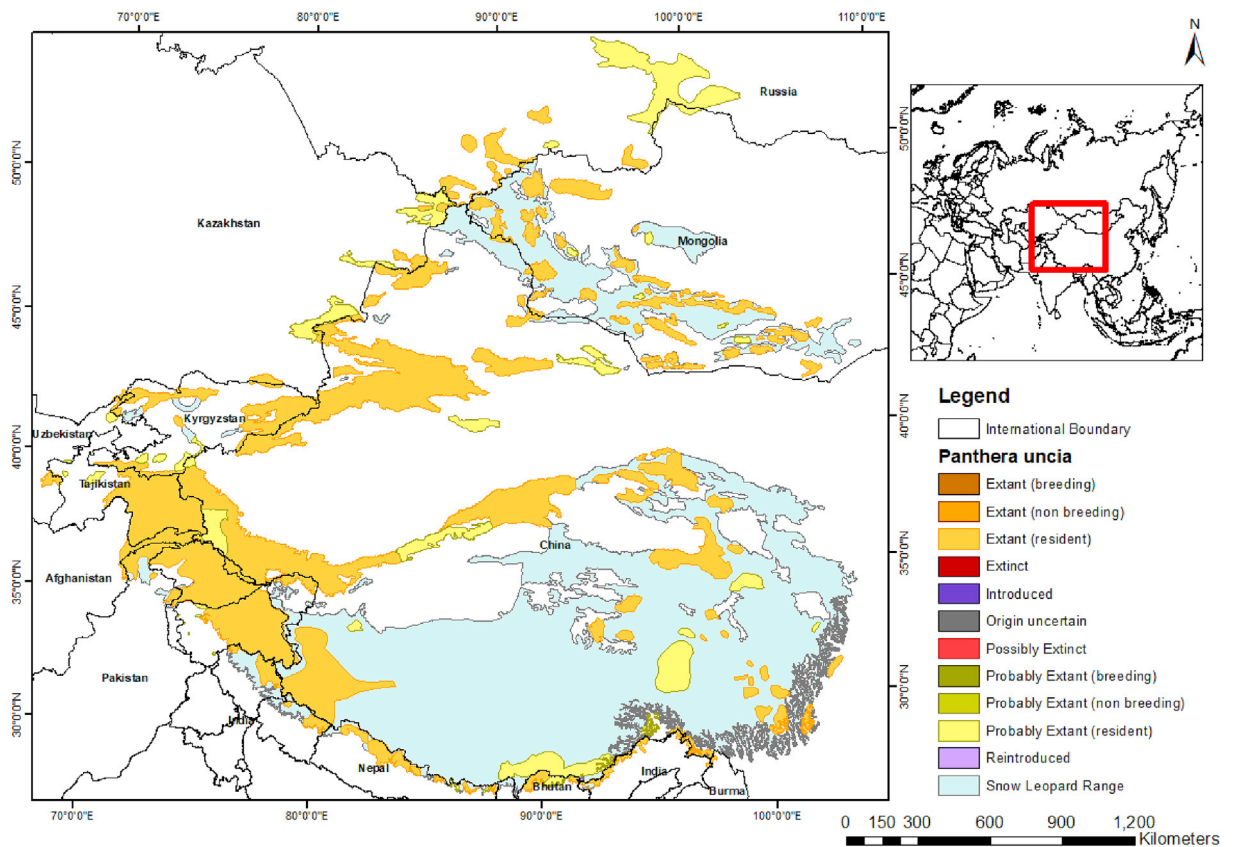


Fig. 1. Global distribution range of snow leopard in central and south Asia (Courtesy: IUCN Red List Version 3; McCarthy et al. 2017). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

trophic levels in thriving the health and functioning of the high-altitude ecosystems in central and southern Asia (Snow leopard Working Secretariat, 2013). For many decades, snow leopards have been menaced by the illegal trade related hunting for their valuable pelts and other body parts (Theile, 2003; Maheshwari and Niraj, 2016). According to Heptner and Sludskii (1972), approximately 1000 skins of snow leopard were estimated in illegal wildlife trade per year globally during early 1900s. Therefore, in 1975, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) included snow leopard in Appendix I, which is the list of most highly protected species banning the species' trade. However, despite the CITES initiative, illegal hunting of snow leopards has persisted in most of its ranges. Motives for such killings varied over commercial interest to retaliatory killings to protect livestock, notwithstanding, it is likely that the animal or its parts will ultimately enter trade (Theile, 2003). However, a lack of adequate information constrain quantifying the extent of threat to snow leopard conservation due to illegal trade.

2. Materials and methods

2.1. Study area

Currently, snow leopard is on the highest priority of several international treaties, conventions and national laws and legislations. Similar to CITES, Convention on the Conservation of Migratory Species of Wild Animals (CMS, 2002) has included the snow leopard in Appendix I to the Convention since 1985. At the national levels, hunting and trade of snow leopards is prohibited in all 12-range counties; however, the implementation and enforcement of the anti-illegal trade and anti-poaching laws varies, and is not always effective. In addition, global efforts have also been initiated for the conservation of the snow leopard across the 12 range countries (i.e., the Global Snow Leopard and Ecosystem Protection Program [GSLEP] and National Snow Leopard and Ecosystem Protection Priorities [NSLEP; Snow Leopard Working Secretariat, 2013]). The GSLEP is a joint initiative of 12-range countries aiming at strengthening conservation of snow leopard and the valuable high mountain ecosystems and landscapes. The GSLEP was formed based on 12 individual NSLEPs. In 2013, 12 snow leopard range countries and partners signed the Bishkek Declaration in Bishkek, Kyrgyzstan and agreed to the goal of the GSLEP for the seven years through 2020 and identified 20 snow leopard landscapes (Snow Leopard Working Secretariat, 2013) or in short – “Secure 20

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