

On scaling up pangolin conservation

INTRODUCTION

Pangolins have until recently received limited biological and ecological research effort and little conservation attention and investment, despite an increasing extinction risk for all eight species (e.g., Challender *et al.*, 2014; Waterman *et al.*, 2014). It is understood populations of Asian pangolins (Chinese Pangolin *Manis pentadactyla*, Sunda Pangolin *M. javanica*, Indian Pangolin *M. crassicaudata* and Philippine Pangolin *M. culionensis*) have declined steeply, trends which are predicted to continue (Challender *et al.*, 2014). This is attributed primarily to overexploitation for international trade, largely to supply demand in East Asia, both historical and contemporary, and legal and illegal, and has involved skins, meat and scales (Challender *et al.*, 2015). It is also due to local use across the geographic range of the species and habitat loss and alteration (Challender *et al.*, 2014).

Although fewer data are available for African pangolins (Black-bellied Pangolin *Phataginus tetradactyla*, White-bellied Pangolin *P. tricuspis*, Giant Pangolin *Smutsia gigantea* and Temminck's Ground Pangolin *S. temminckii*), these species have long been hunted and poached for bushmeat and use in traditional African bush medicine, and recent research suggests exploitation for local consumption is increasing in Africa (Ingram *et al.*, 2016). Furthermore, a growing intercontinental and illegal trade involving African pangolins and their derivatives, primarily their scales, to supply demand in East and South-east Asia is a developing and worrying trend (Challender and Hywood, 2012; Gomez *et al.*, 2016). Other threats include habitat loss and degradation (Waterman *et al.*, 2014) and for Temminck's Ground Pangolin specifically, electrocution from electric fences (see Pietersen *et al.*, 2014).

TRADE DYNAMICS

The current pressure on global pangolin populations seems to have been stimulated by the commercial depletion of populations of pangolins in China (SATCM, 1996; Zhang, 2008), which saw annual harvests of around 160 000 specimens during the 1960s to 1980s (see Zhang, 2008), and a simultaneous trade in tens of thousands of specimens from South-east Asia to Taiwan (see Challender *et al.*, 2015). As a consequence, by the 1990s increasing numbers of pangolins were being imported to China from Lao PDR, Myanmar and Viet Nam (Newton *et al.*, 2008), as well as South Asia (Anon., 1999), a trade that continues today (Challender *et al.*, 2015) and which now includes specimens from Pakistan, the most western reach of the species' range in Asia (Mahmood *et al.*, 2012). The decline of Asian pangolin populations, and crucially, the increasing economic and development ties between East Asia and many African countries in recent years (e.g., see Wang and Bio-Tchané, 2008), has resulted in a growing illegal trade in African

pangolin parts to Asian markets (e.g., Gomez *et al.*, 2016). Since 2009, there have been seizures involving pangolin derivatives implicating Angola, Cameroon, Central African Republic, Republic of Congo, Côte d'Ivoire, Guinea, Kenya, Mozambique, Nigeria, Sierra Leone, Uganda, Zimbabwe and Zambia in the trade.

This trade has taken place despite protection afforded to pangolins through national legislation—though to varying degrees—and through CITES (see Challender *et al.*, 2015; Waterman *et al.*, 2014). Based on seizure data and a comparatively conservative extrapolation parameter, it is estimated that upwards of one million pangolins have been traded illegally since the year 2000 (IUCN SSC Pangolin Specialist Group, 2016). Unfortunately, conservation organizations have been slow to realise this crisis, and even slower to act.

CATALYSING CONSERVATION ACTION

In response to the apparent precarious status of pangolins in the wild and increasing extinction risk, there has been a growing, global pangolin conservation movement in recent years. Here the authors report on some of the activities that have taken place to address the conservation concerns for pangolins, including efforts undertaken since the re-establishment of the IUCN Species Survival Commission (SSC) Pangolin Specialist Group in 2012. The Group recognizes those individuals and organizations who, over the years, have dedicated their invaluable efforts into researching, protecting and safeguarding pangolins, and helping to bring the species to the public's awareness. And how, through the collective capacity of its members, the IUCN SSC Pangolin Specialist Group is contributing to conservation actions for pangolins at the local, national and global scale and enhancing the ability and capacity to respond to the challenges pangolins face.

The hitherto largely overlooked threat of trade to pangolins in Asia was addressed at a workshop convened by TRAFFIC in 2008, which served to focus international attention on the issue for the first time (see Pantel and Chin, 2009). At the meeting, a range of scientists, government and NGO stakeholders set out to examine the extent of illegal trade in pangolins native to the South and South-east Asia region and to devise key conservation actions to address them.

Similarly, in 2011, the African Pangolin Working Group (APWG) was formed to further the conservation and protection of all four African pangolin species by generating knowledge, developing partnerships and creating public awareness and education initiatives. Since that time, the group has undertaken research on the behaviour and ecology of African pangolins, has investigated the molecular structure of pangolin populations in different African countries, and investigated local use and trade, as well as hosted the first international APWG Pangolin Conference in South Africa in October 2015.

Also, in 2014, the Singapore Pangolin Working Group (SPWG) was formed with the aim of better co-ordinating local conservation, research and outreach

efforts for pangolins. The SPWG brings together varied stakeholders in pangolin conservation biannually from both government and non-governmental organizations. Already noticeable impacts are increased public awareness of pangolin conservation. For example, Arts Fission's Young People Environmental Dance-Theatre Production was inspired to raise awareness about the threat of extinction of pangolins in their annual production in The National Library, Singapore, 2015, and a range of other projects have also been initiated.

At the global level, the IUCN SSC Pangolin Specialist Group was re-established in recognition of the deteriorating conservation status of pangolins, and the tangible conservation benefits that could be reaped by engaging researchers, social scientists, biologists, veterinarians and conservation practitioners within a network of expert volunteers under the auspices of an IUCN SSC Specialist Group (see Challender *et al.*, 2012). Since then, there have been a number of advances in consolidating knowledge and understanding of pangolins and the threats they face, and in catalysing conservation action.

First, representatives of the IUCN SSC Pangolin Specialist Group attend CITES meetings to inform the Parties and raise awareness of pangolin trade issues. Since 2013, the Specialist Group has attended each meeting of the CITES Animals Committee, Standing Committee and the Conference of the Parties (CoP), with the aim of informing CITES Parties and Committees in their decision-making. This has taken place through the holding of side-events (at CoP13 (2010) and SC66 (2016)), the making of interventions in plenary sessions, and participation in the CITES inter-sessional working group on pangolins. It has also entailed the submission of information documents to such meetings on the status of, and illegal trade in the species. Similarly, nine members of the Specialist Group attended the First Pangolin Range States meeting, hosted and organized by the Viet Nam and US governments in June 2015, and several members delivered technical presentations and took part in working groups. At the request of range States at this meeting, and coinciding with priorities in the Pangolin Specialist Group Conservation Action Plan (see below), the group is undertaking work to assist range States further in their decision-making and management—namely by producing a series of mapping tools illustrating species' distributions, the protection status of native and non-native pangolin species, and legal and illegal trade dynamics. Similarly, the group is working to assist range States in monitoring pangolin populations, through a body of work to develop standardized survey and monitoring methodologies.

Second, members of the Specialist Group continue to contribute to the evidence and knowledge base on pangolins through publications on the species and the threats they face. This includes scientific papers on trade (including its extent and dynamics), the nature of demand for pangolin products, habitat preferences, diet and ecology, ethno-medicinal use and offtake levels, ecto-parasite loads of wild pangolins and genetic research.

The IUCN SSC Pangolin Specialist Group, through the collaborative efforts of its members, has also played a significant role in setting the conservation agenda for pangolins over the next decade. In 2013, it organized the First Pangolin Specialist Group Conservation Conference, which was held at Wildlife Reserves Singapore and brought together more than 45 members and non-members from over 15 countries in order to exchange information, share research and insights and complete revised assessments for the *IUCN Red List of Threatened Species*, which were subsequently published in 2014 (e.g., Waterman *et al.*, 2014). These assessments concluded that all pangolins are now threatened with extinction: the Chinese and Sunda pangolins are classified as Critically Endangered, the Indian and Philippine species as Endangered, and the four African species as Vulnerable. Beyond this, the group launched the first-ever global conservation action plan for pangolins in 2014, titled "Scaling Up Pangolin Conservation", which outlines the range of multifaceted and critical actions that need to be implemented to secure the conservation of pangolins.

The Specialist Group is also dedicated to helping lead conservation efforts in the field. For example, members of the group are world leaders in the rescue, rehabilitation and release of pangolins back into the wild in Africa and Asia, for example in Zimbabwe, Viet Nam and Cambodia. Other members are undertaking vital research into pangolin ecology, distribution and threats in Africa (Benin, Ghana, Namibia, Nigeria and South Africa) and Asia (Malaysia, Pakistan, the Philippines, Singapore, mainland China, Hainan Island, Hong Kong, Taiwan, India, and Indonesia). Specialist Group members are also mentoring and training young African and Asian conservation practitioners to promote pangolin conservation in Central Africa; implementing community-based conservation projects in Nepal; supporting anti-poaching patrols at key sites in Thailand and Cameroon; working with informant networks to gain a deeper understanding of illegal trade in pangolins; and working to reduce demand for pangolins in Viet Nam and China.

The group has also made substantial efforts to raise the profile of pangolins globally, through the print, broadcast and social media, and at special events. In 2014, members of the Pangolin Specialist Group, with the very generous support of PPNAT (Photographers for the Preservation of Nature) highlighted the plight of pangolin species at the International Festival of Nature and Wildlife Photography at Montier-en-Der, France. The emphasis of the festival was on threatened species, in particular on pangolins. Attended by more than 42 000 people, the festival is the largest of its kind in Europe.

CONCLUSIONS

Pangolins are in crisis but a global movement to address this has begun. The membership of the IUCN SSC Pangolin Specialist Group has played an integral role in setting the global conservation agenda for pangolins over the next decade, which recognizes the need for multi-

faceted interventions that reflect the complex reality of the threats facing pangolins. In bringing together the expertise, knowledge and enthusiasm of its individual members, the Specialist Group is able to contribute more effectively to the conservation of pangolins at a global level. Other stakeholders in range States as well as national and international NGOs are also playing critically important roles in these efforts. This increased attention and investment in pangolin conservation is a start but, crucially, it must be sustained if there is to be any notable reduction in the illegal trade and the conservation of the world's pangolins is to be secured.

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Daniel W.S. Challender (corresponding author), IUCN Global Species Programme, Cambridge, UK; Co-Chair, IUCN SSC Pangolin Specialist Group; Durrell Institute of Conservation and Ecology (DICE), University of Kent, UK
E-mail: dan.challender@iucn.org/dan_pangolin@hotmail.co.uk

Jonathan E.M. Baillie, Conservation Programmes Director, Zoological Society of London; Co-Chair, IUCN SSC Pangolin Specialist Group

Carly Waterman, Pangolin Technical Specialist, Zoological Society of London; Programme Officer and Red List Co-ordinator, IUCN SSC Pangolin Specialist Group

Darren Pietersen, Africa Vice-Chair, IUCN SSC Pangolin Specialist Group; Co-Chairman, African Pangolin Working Group

Helen Nash, National University of Singapore; Genetics Vice-Chair, IUCN SSC Pangolin Specialist Group;

Leanne Wicker, Veterinary Health Vice-Chair, IUCN SSC Pangolin Specialist Group

Keri Parker, Communications Vice-Chair, IUCN SSC Pangolin Specialist Group

Paul Thomson, Communications Vice-Chair, IUCN SSC Pangolin Specialist Group

Thai Van Nguyen, Executive Director, Save Vietnam's Wildlife; Captive Ecology Vice-Chair, IUCN SSC Pangolin Specialist Group

Lisa Hywood, Tikki Hywood Trust; Wildlife Crime Vice-Chair, IUCN SSC Pangolin Specialist Group; Board Member, African Pangolin Working Group

Chris R. Shepherd, Regional Director—Southeast Asia, TRAFFIC; Asia Vice-Chair, IUCN SSC Pangolin Specialist Group