Hornbill
Specialist
Group

Dear HSG members,

Wow! What a year it has been. As Volume 1(2) was being released and we were advertising for contributions to Volume 2, who could have imagined what lay ahead. To date, Covid-19 has infected more than 160 million people worldwide and resulted in more than 3.3 million deaths. For HSG field biologists and zoo staff, the impact of steps taken to limit the spread of Covid-19, including lockdowns, stay at home orders, curfews, and social distancing, has been huge. Most of us had to suspend field programs, often resulting in loss of jobs for HSG members and local staff. Zoos and conservancies closed, losing fortunes. And, most of us have been touched by the deaths of family, friends and colleagues.

The COVID-19 pandemic has changed the world. We are now more aware than ever of the risks we impose upon ourselves due to the current unsustainable ways in which we manage and use nature. As we have experienced over the course of the COVID-19 pandemic, these risks are not just related to our health, but also have deep repercussions for global economies, local livelihoods and society in general. Much has been written about the rise of pathogens - especially in regard to rapidly changing environments. Global warming, deforestation and habitat fragmentation have intensified proximity and rate of interaction between humans, their livestock and nature, increasing exposure risk. Legal international wildlife trade has risen 400% since 2005, and illegal and unregulated trade have also increased over time. Consumption of wildlife, especially birds and mammals, is believed to pose a great risk of disease emergence.

The rise of emerging diseases of zoonotic origin has understandably caused widespread concern and underscores the need to prevent future spillovers and potential pandemics. Wildlife trade bans and closing of all markets selling live wildlife have been proposed, but such approaches are considered impractical by many and would not solve the problem. Domestic animals, for example, account for 96% of mammalian biomass on Earth and the vast majority of meat traded and consumed is from domestic rather than wild animals. When considering these differences in scale of production and consumption, the risk of contracting a food-borne illness from domestic animals in trade has been estimated to be ~3,000 times greater than from wild animals in trade. However, it should be noted that wildlife health is not monitored and man-

aged with the same diligence as domestic animal health, which is very uneven globally.

While not all emerging infectious disease events have occurred within the context of the wildlife trade, SARS, Ebola, and monkeypox, are examples of spillover events with their origins most probably - although not conclusively - linked to wildlife consumption, wildlife farms, and/or markets selling live wildlife. The SARS Cov-2 virus that causes the COVID-19 disease is suspected to have originated in horseshoe bats and entered humans via an intermediary animal associated with the wildlife trade. However, no intermediary, wild or domestic, has been unambiguously identified so we still have significant gaps in our knowledge as to exactly how and when these diseases emerge.

What we do know for certain is that one spillover is one too many. Every pandemic begins with a single infection event and while infection events may occur frequently around the world, most infections are unable to spread. In the unlikely event that an infection spreads into an urban human community (coupled with airborne transmission), pandemics can result. As Andy Dobson and colleagues (including HSG member Margaret Kinnaird) point out, the costs of preventing a pandemic can be measured in hundreds of billions of dollars while the economic and social costs of dealing with a pandemic (e.g. Covid-19) are measured in tens of trillions of dollars. If prevention is the best medicine, then we clearly need to change our relationship with nature, and wildlife, if we hope to head off the next pandemic.

Stay well and stay safe.

~Tim O'Brien and Margaret Kinnaird