An evolutionary game theoretic model of rhino horn devaluation.

Nikoleta E. Glynatsi

In recent times, rhino populations are at a critical level due to the demand for rhino horn and the subsequent poaching. Rhinos now persist in protected areas or on private land, and require intensive protections.

Wildlife managers, in charge of these areas, attempt to secure rhinos using approaches to devalue the horn. However the efficacy of the approach is dependent on the behaviour of the poachers:

- They can be‘selective poachers: will not hunt dehorned rhinos or
- ‘indiscriminate poachers: will kill any rhino (even devalued horns still have a small value).

Tough game theory has been used to examine the interaction of poachers and wildlife managers, our work is the first to consider an evolutionary game theoretic model to determine which strategy is preferred by a poacher in various different populations of poachers.

The purpose of the work is to discover whether conditions which encourage the poachers to behave selectively exist, that is, they only kill those rhinos with full horns. In essence, contribute to the discussion of does devaluation work?

Our paper shows that dehorning can indeed work, when implemented along with a strong disincentive framework, such as educational interventions or engaging the rural communities that live with wildlife. *need closing sentence.*