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Title: Effects of harvesting on population structure and plant density for selected MAPs in Nepal

In the high mountains of Nepal, the livelihoods of many households depend heavily on harvesting and trade of MAPs. Harvesting can be a separate and highly targeted and well-considered activity where harvesters harvest only the most valuable individuals selectively, leaving most of the other plants to grow. Alternatively, MAP harvesting can be done jointly with other activities, typically while taking care of livestock. In such cases, harvesting is not the only factor affecting plant populations but occurs along with disturbance factors such as trampling and browsing, and the activity is often concentrated in conveniently located populations. Furthermore, harvesting often takes place under open access conditions, and when plants of all sizes have value, harvesters may be tempted to harvest as much as they can, leaving populations severely depleted. To examine observable effects of harvest and other associated disturbance factors on population structure and density of different life stages, permanent sample plots were established (2014-2016) in populations of selected MAPs at different elevations in central, western, and far-western Nepal. Preliminary analysis of data from the first and second year show that harvest and associated disturbance factors have led to significant reduction of observed plant densities, both for larger (typically reproductive) plants and for plants at early stages of their life cycle, indicating that the harvest of these MAPs has reached significant levels at (some of) the study sites. Dynamics and longer-term effects of harvest on plant populations are analyzed using data from tagged plants observed over a period of three years (last field season is 2018). Moreover, growth models will be prepared and applied in developing sustainable harvest strategies.