

ELEPHANT INTRUSION IN SRI LANKA: THE IMPACT OF LAND USE

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ABSTRACT: Elephant intrusion in human settlement (which is commonly known as human elephant conflict) is one of the burning issues in Sri Lanka which has lost life of both humans and the elephants for decays. Due to the elephant intrusion in Sri Lanka we lose 150-200 elephant and 50-80 humans annually in average. At the same time it loses human properties and cultivated land of the country making the life of the people in poor and sad condition. As the largest mammal on the earth surface they need huge area for their survival. The changing socio physical conditions of the country make shrink the available lands for elephant to roam. The forest area before few years changed into cities, cultivated land or built up area in few years later, as elephant think that they are their lands elephants roam as they did earlier. The conflict arises when both species meet together on the way they roam. As the protected areas for the elephant are getting shrink they do not get sufficient amount of food and water for their survival, then the elephant found their source of food where people have cultivated. The severity of the issue change based on several surrounding factors as seasonal condition of the climate, amount of rainfall, available forest cover of the area, the way of land use, elephant population ect. The factors are geographically varied and temporally changed, therefore the pattern and the trend of the issue is not always in a constant situation, the number of death, amount of damages amount of loses are varied with the changes of the associated factors. This paper only concludes the land use change and its impact on elephant intrusion. The land use and the land cover change annually based on the seasonal pattern and the rainfall. As the agricultural land use is totally depend on the seasonal changes the elephant intrusion also has a positive relationship with land use changes of an area. The elephant intrusion in Sri Lanka is highly concentrated in the dry zone of the country where main land use type is paddy which highly attracted by elephants. Most of the elephant caused attacks were taken in the paddy lands. And the attacks are getting more higher when paddy in the stage of harvesting. The houses where the harvest are stored are getting more vulnerable because the elephant attracted by the smell of paddy. Most of the house damages wre taken place after the harvesting of paddy. These all resulted because paddy is one of the easy food source for the elephants. Therefore the Multi Linear Regression model was implemented to predict the phenomena with selected criteria of rainfall, land use and the elevation to identify the potentially risk areas of the elephant intrusion. According to the results of the Multi Linear Regression model the potential areas of the elephant intrusion has the higher relation, with where there are paddy land with low rainfall and lower elevation The prediction of the phenomenon has only been implemented for a selected area where latest land use data available. The study has been highly incorporated with the GIS methods and techniques which has given the wider range of application and analyzing capabilities.