

Wild Climber *Mikania Micrantha* Threatening The Ecosystem of Chitwan National Park

-G. K. Sangat

Invasion of Chitwan National Park by Wild Climber *Mikania micrantha*

The wild climber locally termed as *banmara lahara* is found to have been invading the flora community of the Chitwan National Park. Upon receiving the information about the infestation of this wild weed, a SEF team recently visited the national park and observed the situation of infestation by this climber in the national park.

This weed which is scientifically known as *Mikania micrantha* H.B. Kunth, is also known, in other countries, as American rope, bittervine, Chinese creeper, climbing hempweed, mikania vine, mile-a-minute, etc. It is an extremely fast growing, sprawling, perennial vine and one of the world's most notorious invaders. *Mikania micrantha* rapidly colonizes disturbed habitats, retarding the growth of crops or natural vegetation by competing and producing plant inhibitors. In addition to its native distribution in tropical (south and central) America, it has been found to have spreaded to Mauritius, India, Sri Lanka, Bangladesh, Southeast Asia, and the Pacific. This wild weed is believed to have brought by 1992 flood in Chitwan, Nepal.

Habitat:

Humid, sunny or shaded habitats upto 2000 m altitude characterized by disturbed forest, stream banks, roadsides, pastures, plantations and cultivated crops are known habitat for *Mikania micrantha*. It grows best where fertility, organic matter, and soil and air humidity is high. (Swarbrick, 1997; p. 17).

Extent of spread and damage caused:

In Chitwan National Park, this wild climber is witnessed to have been expanding at a very alarming rate. Its present infestation is estimated to have over 20% of the entire national park area. The invasion is showing severely damaging effects on young trees, shrubs, grasses in mostly mixed and reverine forests and grass lands. It smothers shrubs and small trees which are important source of food and bedding for most of wild animals in the park. It is now gradually spreading out towards buffer zone area as well. Since it has been one of common weed in agro-forestry, this wild climber is going to threaten the livelihoods of the local people in buffer zone.

The wild weed is being dispersed by wind, animals and by its own natural expansion. The one of the world's worst weed is risking the whole ecosystem of the Chitwan National Park area endangering the very survival of entire floral and faunal community. If immediate action is not taken to control this weed or climber, Chitwan National Park which stands today as a successful testimony of nature conservation in South Asia may collapse tomorrow. Therefore, it has been an urgent to finding out practically possible ways of controlling or eradicating this perennial vine and one of the world's most notorious invaders (Holm et al., 1977; Cronk and Fuller, 1995) and noxious exotic weed.

Immediate actions to be taken:

In order to save the ecosystem of Chitwan National Park from the deadly invasion of killer weed *Mikania micrantha* a long-term and short term actions are required to be taken.

Recommendations for elimination of Mikania micrantha from CNP areas:

- Conduct detail study of infestation be carried out.
- Conduct public awareness campaigns with extensive media coverage on the topic.
- Conduct interaction program among concerned stakeholders.
- Develop educational materials on ecological damages & loss caused by this weed.
- Develop long-term project with viable control measures and ways for complete - elimination of this climber vine.

Chitwan National Park:

Chitwan National Park is the first national park of Nepal which was established in 1973 to preserve a unique ecosystem of worldwide significance. This is one of the most renowned national parks in Nepal. The park is situated in the sub-tropical lowlands of southern central part of Nepal covering a total area of 932 sq. km, lying at a distance from 175 kms south west of Kathmandu. In 1984, the Chitwan National Park was included on the list of World Heritage Site by UNESCO. In 1996, an area of 750 square kilometers surrounding the national park was declared a buffer zone, which consists of forests and private lands including cultivated lands as well.

The Chitwan valley situating at the altitude of 200 ft. is characterized by subtropical to tropical forest. It is a prominent destination for unique variety of flora and fauna. 70% of park vegetation is predominantly Sal (*Shorea robusta*) forest, a moist deciduous climax vegetation type of the Terai region. The remaining vegetation types include grassland (20%), riverine forest (7%) and Sal with Chirpine (*Pinus roxburghii*) (3%), the latter occurring at the top of the Churia range. The riverine forests mainly consists of khair (*Acacia catetsu*), sissoo (*Dalbergia sissoo*) and simal (*Bombax ceiba*). The grasslands form a diverse and complex community with over 50 species.

There are more than 50 species of mammals found in the park. The park is specially renowned for the protection of the endangered one-horned rhinoceros, Bengal tiger, gharial crocodile along with many other common species of wild animals such as leopards, deer, sloth bears, elephants. Some of the other animals found in the park are sambar, chital, hog deer, barking deer, ratel, palm civet, wild dog, langur, rhesus monkey, etc.

Gaur, wild elephant, four horned antelope, gangetic dolphin, pangolin, striped hyena, monitor lizard and python are regarded as endangered species of animals of this national park. This park is home for over 525 species of birds. The common species of birds found in the park are peafowl, red jungle fowl, and different species of egrets, herons, kingfishers, flycatchers and woodpeckers. Birds like Bengal florican, giant hornbill, lesser florican, black stork and white stork are regarded as endangered bird species.

Similarly, more than 55 species of amphibians and reptiles occur in the park and some of which are marsh mugger crocodile, cobra, green pit viper and various species of frogs and tortoises.

The park consists of diversified ecosystems-including churia hills, ox-bow lakes, flood plains of Rapti, Reu and Narayani rivers. The Churia hill rises gradually towards the east from 150 m to over 800 m. The lower but most rugged Someshwor hills occupy most of the western portion of the park. The flood plains of Chitwan are rich in alluvial soil. The park boundaries have been marked out by the Narayani and Rapti rivers in the north and west, and the Reu river and Someshwor hills in the south and south-west.

The park encompasses 35 Village Development Committees (VDC) and 2 Municipalities which are belonging to 4 Zones (Chitwan, Makwanpur, Parsa and Nawalparasi). There are 55 Community Forest Users Groups existing under physical jurisdiction of the national park which are engaged in conservation and community forest development activities.

Protected Areas of Nepal:

With the views to conserving overall biological diversity, Nepal has set aside 19.70 % of its land for protected areas. These protected areas include nine national parks (*Shey-Phoksundo National Park, Khaptad National Park, Chitwan National Park, Langtang National Park, Bardia National Park, Rara National Park, Sagarmatha National Park, Makalu Barun National Park and Shivapuri National Park*), three wildlife reserves (*Parsa Wildlife Reserve, Koshi Tappu Wildlife Reserve, and Shukla Phanta Wildlife Reserve*), one hunting reserve (*Dhorpatan Hunting Reserve*) and three conservation areas (*Annapurna Conservation Area, Kanchenjunga Conservation Area and Manaslu Conservation Area*) and eleven buffer zones covering an area of 28,998.67 sq. km. Allocation of land for managing protected areas in Nepal dates back to the year 1973 with the establishment of Chitwan National Park. Ever since, these natural sanctuaries are attracting nature lovers, wildlife enthusiasts, researchers and tourists from all over the world.
