

Chapter 11

CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY IN THE TRANS-ALTAI GOBI DESERT OF MONGOLIA

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1. INTRODUCTION

From ancient times Mongolians have had a custom to “worship” nature. The first law on the protection of environment was issued in the 12th century when Khaan Tooril of the Khoreid aimag took over the protection of the Bogdkhan Mountain, which surrounds Ulaanbaatar, the present capital of Mongolia in the south. At present, there are 48 protected areas in Mongolia, covering 20.5 million hectares, 13.1 percent of the country’s territory. Among others they include twelve Strictly Protected Areas (SPA) (Oyungerel 2001). Two of these 12 SPAs are situated in the arid zone of Mongolia. Of these two, the Great Gobi SPA established in 1975 and announced in 1991 by UNESCO’s Man and the Biosphere Program as a Biosphere Reserve is of special interest. It is the largest protected area in Asia and the fifth largest one in the world. There are 410 species of plants and 170 species of animals and birds in the area (Gunin et al. 1998). Included in the SPA is the unique Trans–Altai Gobi desert.

The Trans–Altai Gobi desert is a combination of unique Central Asian deserts among which the extremely arid deserts have no analogues anywhere in Asia. In addition to its unique landscape and climate, the Trans–Altai Gobi supports a unique biodiversity as well. For example, the Snow Leopard, Gobi Bear, Asiatic Wild Ass, Wild Mountain Sheep, Goitered Gazelle and the world’s only population of the Wild Bactrian Camel occur here. Moreover, several international projects have studied the ecology of

this region. Conservation and population recovery projects for the Trans–Altai Gobi's rare and endangered animal species were implemented here. Consequently, this region serves as an excellent case study of improved methodology for conservation and management, and increasing public awareness and involvement of local population in conservation and management programs. It also exemplifies the efforts of international cooperation for the conservation of biodiversity of global significance in arid zones.

2. ECOLOGICAL CONDITIONS

2.1 Topography

Mongolia is situated in Asia between the Russian Federation and the People's Republic of China and covers an area of 1564 thousand square kilometers. It is the seventh largest country in Asia. The arid zone occupies one quarter of Mongolia's territory. Taken together with the semi–arid zone it covers one–third of the territory, known as the Mongolian part of the Gobi Desert. The arid zone lies to the south of the Mongolian Altai Mountains and the Gobi Altai mountain ranges and stretches to the Mongolian border with the People's Republic of China. This zone includes three desert regions: the Dzungarian Gobi, the Trans–Altai Gobi and the Alashani Gobi.

The Trans–Altai Gobi spreads over an area of 9.4 million hectares and lies between the Alashani Gobi and Dzungarian Gobi. It is the most arid region in Central Asia. Based on types of soil and vegetation and climatic conditions, it is divided into three sub–zones: the steppe–desert (the northern part), the true desert (the middle part) and the extremely arid desert (the southern part) (Vostokova et al. 1995). The relief of the Trans–Altai Gobi is a combination of mountain chains, ranges, massifs and valleys. The absolute altitudes vary from 3957 m (the range of Ikhe–Bogd in the Gobi Altai Mountain) to 700 m (depression to the north of the Gobi's Tian–Shan). Landscapes of the Trans–Altai Gobi reflect the major zonal and high altitude belt types of the Gobi Desert.

The Trans–Altai Gobi is unique with its richness in various ecosystems. According to Gunin (1990), there are 43 different ecosystems. Among them, the largest are the extreme arid deserts, which occupy 56.7 percent of the territory. The gravel–stony extreme arid desert (gammada) of Central Asia is widespread and accounts for 17.9 percent of the extreme arid deserts. The second in size are the true desert ecosystems (40.5 percent). The high mountain steppes occur only in the mountain regions and their area does not exceed 1 percent of the region's territory. Besides these, there are