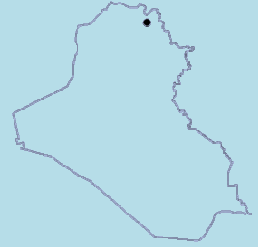


Bakhma & Bradost Mountain (E7 & E18, IBA 004)



Surveyed in winter 2007 and 2010 and in summer 2007-2010.

Admin Area: Erbil

KBA Criteria: V

Coordinates: N 36° 42' 07" E 44° 22' 53"

IBA Criteria: A1

IPA Criteria: Under assessment

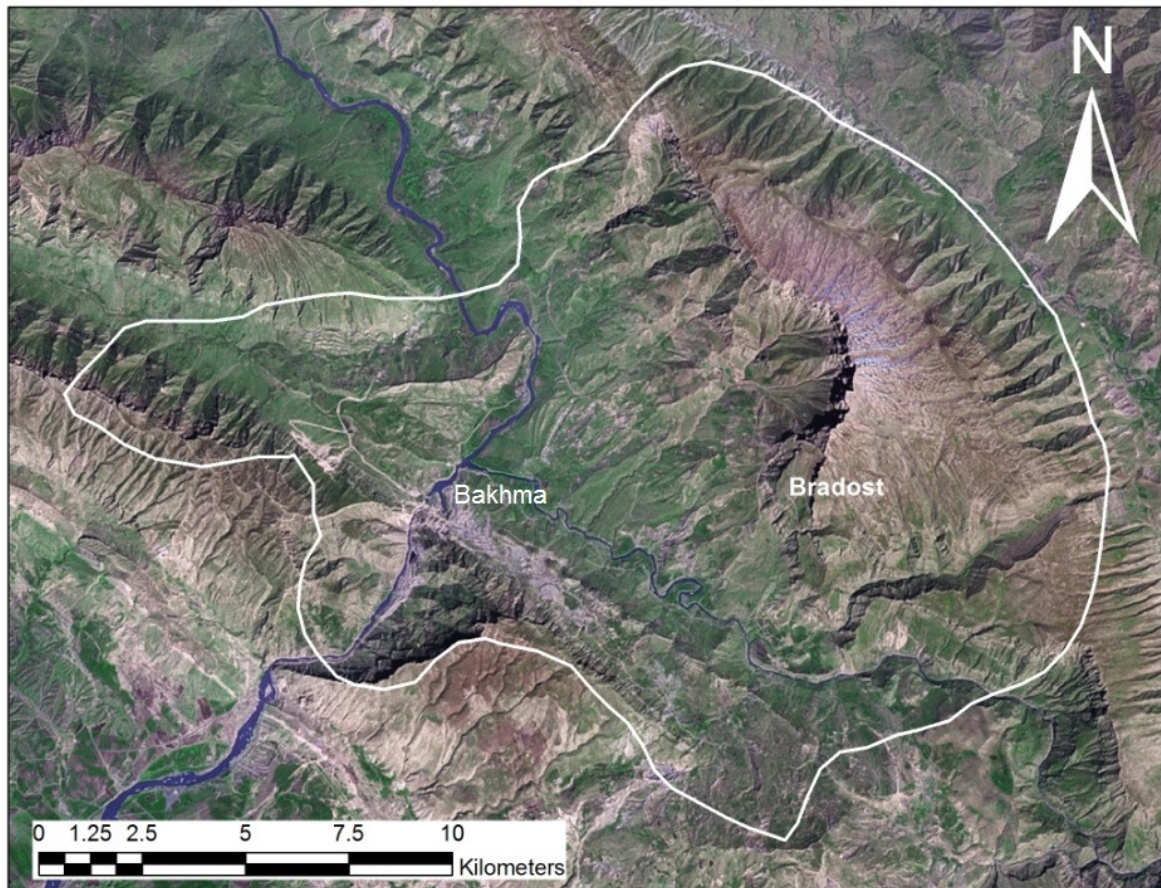
Area: 25,719 ha (Bakhma Area), 1246 ha (Bradost Mountain sub-site)

Status: Unprotected

Altitude: 389-1345 m

Ecoregion: Zagros Mountains Forest Steppe (PA0446)

Directional information: This site is located 66 km north-northeast of Erbil and 115 km southeast of Dohuk. The site can be reached by taking the main road north from Erbil and following the road towards Barzan.





Bakhma, facing SW from Bradost Mountain (Photo by Korsh Ararat, 2010)



Bradost Mountain (Photo by Korsh Ararat, 2010)

Site Description: The Bakhma site, where the Greater Zab and Rawanduz Rivers meet, was originally identified as an Important Bird Area along with Dukan and Darbandikhan Lakes (IBA 004) by Evans (1994). The site consists of deep valleys in a region of limestone characterized by steep and winding slopes with areas of semi-natural woodland where oak trees grow in low areas and juniper trees grow on the slopes. The

delineation contains the Bradost. Mountain sub-area, a large mountain ridge that overlooks the area from the east. The Lat and Cork Mountains rise to the south, and to the north and northeast are a number of high hills and ridges. Vegetation is sparse: largely oak-steppe with some occasional tamarisk along the riverbanks and farmed stands of poplar in the village.

A dam project was started in the gap in the ridge running southeast to northwest through which the Greater Zab River flows (below the confluence with the Rawanduz River), but construction was abandoned in 1991. There have been discussions on completing the project, which would place the first large scale barrier on what has largely remained Iraq's last wild river. A newer dam has been proposed and some construction has been undertaken that has had a significant impact on the area. The table below provides the sub-sites visited during the survey effort.

Sub-Site Code	Sub-Site Name	Nearest Town	IBA Code	Coordinates					
				North			East		
E7	Bakhma	Khalifan	IBA004	36	42	14	44	16	41
E18	Bradost	Khalifan		36	42	7	44	22	54

Key Biodiversity Area Criteria	Notes	
V. Vulnerability Criteria: <i>Presence of Critically Endangered and Endangered species – presence of a single individual or Vulnerable species – 30 individuals or 10 pairs.</i>		
<i>Capra aegagrus</i>	30 individuals reported by the forestry police on Bradost Mountain. No direct observation has been made by the survey team.	
Important Bird Area Criteria	Observations made 2007-2010. Unless stated otherwise numbers are estimates based on extrapolations using area/transect counts and area of known habitat (see methodology on p. XX).	
A1. Globally threatened species		
	Breeding	Wintering/Passage
Egyptian Vulture <i>Neophron percnopterus</i> (Summer visitor)	1-2 pairs (counts, 2009-2010)	

Additional Important Bird Observations: During the surveys 75 species were observed. In addition to those listed in the table, European Roller *Coracias garrulus* and Eastern Cinereous Bunting *Emberiza semenovi* (both Near Threatened) were breeding. Four Irano-Turanian and three Mediterranean biome-restricted species were also found breeding (Table xx) but these did not trigger inclusion under criterion A3.

Other Important Fauna

Mammals, Reptiles, and other Fauna: Mammal data were collected in 2007 and 2010. Golden Jackal *Canis aureus* were observed. During an interview survey with the forestry police on Bradost Mountain, the following additional species were reported: Wild Goats *Capra aegagrus* (Vulnerable), sometimes seen in flocks of 30 individuals down the mountain near the main road; Grey Wolf *Canis lupus*; Persian Squirrel *Sciurus anomalus*; Indian Crested Porcupine *Hystrix indica*; Syrian Brown Bear *Ursus arctos syriacus*, seen two weeks before the interview, but only present in low numbers; Striped Hyena *Hyaena hyaena*; and Wild Cat *Felis silvestris*, which are reported in plentiful numbers, as well as some more common species. No significant reptile observation was made.

Fish: Data were collected in 2007 and 2008 from the Rawanduz River. Eight economically important species were found as defined by Coad (2010): *Alburnus mossulensis*, *Cyprinion kais*, *Garra rufa* and *Luciobarbus xanthopterus* (also of conservation concern). One additional species of conservation concern was: *Glypto thorax kurdistanicus*. *Mastacembelus mastacembelus*, *Myxus pelusius*, and *Silurus triostegus* were also recorded.

Plants & Habitats: This area contained approximately 160 plant species. Two waypoints were surveyed in the two main habitat types:

1. Mountain Forest vegetation-Mountain Riverine Forest (N 36° 42' 14" E 44° 16' 40"), which is characterized by *Salix* sp, *Populus alba* and *Platanus orientalis* (trees); *Nerium oleander* and *Tamarix gallica* (shrubs); *Onopordon* sp. and *Equisetum ramosissimum* (herbs). Other characteristic species include *Paliurus spina-christi* and *Vitex agnus-castus*.
2. Mountain Forest Vegetation-Oak Forest-Medium zone (N 36° 42' 07" E 44° 22' 53"), which is characterized by *Quercus aegilops* and *Q. infectoria* (trees), *Prunus microcarpa*, *Pistacia eurycarpa* and *P. khinjuk* (shrubs), *Salvia palaestina*, *Onopordon* sp, and *Picris trigosa* (herbs).

The condition was very disturbed, with an ecological scale of four (especially near the river). The slope is somewhat steep (15-26°) near the riparian woodlands and steep (27-45°) in the Mountain Forest vegetation-Oak Forest. The site is located in the Zagros range where the geology is limestone and soil types are clay and sandy clay. The non-vegetated area covered 10-20%.

Conservation Issues: Bakhma is relatively distant from large human populations. Although logging is still at a low level compared to other sites in Kurdistan (such as in Sulaimania Governorate), current threats include in-stream and riparian gravel mining at many places. These threaten fish habitats and cause erosion that can damage infrastructure such as bridges and roads. It is likely that hunting may also be adversely affecting species. Landmines are present on Bradost Mountain and potentially other areas within the delineated site.

The greatest future threat to the site would be completion of the Bakhma Dam. The initial construction, including roads to and from the construction area, already affects the site, but a complete dam would have far-reaching effects both upstream and downstream. These impacts include, but would not be limited to, flooding of many important cultural, recreational, agricultural and environmentally-sensitive areas upstream and eliminating the natural hydrological pulse, sediment transport and available water resources of the river downstream. The future plans for a dam are currently unclear.

Recommendations: Agriculture and livestock grazing, which is practiced throughout the area from the edge of the local rivers to the top of Bradost Mountain, should be examined for sustainability and potential impacts. Education and outreach programs are necessary to raise awareness of the impacts of dam construction. As the Greater Zab is Iraq's last wild river, it offers many development opportunities for tourism, recreation and fisheries if it is left wild. The potential for developing the area for rafting, water sports and recreational fishing opportunities should be investigated to take advantage of the largely free-flowing rivers upstream for ecotourism and recreation ensuring an emphasis on sustainable socio-economic development for the region. Gravel mining within the site and upstream should be more closely managed to mitigate and/or eliminate problems caused. Landmine clearance should also be a priority.

References

- Evans, M.I. (ed.) (1994). *Important Bird Areas in the Middle East*. BirdLife Conservation Series No.2. Cambridge, UK: BirdLife International.
- Coad B. W. (2010). *Freshwater Fishes of Iraq*. SofiaMoscow: PENSOFT Publishers. No. 93.