

## Abstract

In this study, Autecology of species *Populus euphratica* Oliv. The Sistan plain is studied. For this purpose, First aid sites in Sistan plain maps 1: 50,000 topics as Topographic maps, Soil Map, Satellite imagery and field survey has revealed. The issues Climate and soil characteristics of the habitat, Quantitative traits such as height tree, Tree diameter, Cover and species density and, Phenology of the species examined. The results showed that, This species has few natural habitat in the area Including the Nyatk, Jzynk and is Zahak. Annual rainfall in the study area 60/8 mm and The annual average temperature is 22.6 degrees Celsius. The measurement results showed that tree growth parameters, The average number of trees per hectare habitat is between 280 and 360. The average tree diameter between 95/9 and 19/12 cm and The average height of trees from 74/3 to 17.5 m and Percent between 46/28 to 56/58 is the canopy. This species is widespread on a variety of soils from light to heavy But in the medium to heavy soils with greater density and height. The average amount of  $\text{CaCO}_3$  in the soil habitat between 9/14 and 5/38 percent, The average organic carbon between 32/3 to 97.3 percent, The average N between 34/0 to 41/0 percent, Between 89/7 to pH 8.29, electrical conductivity between 66/18 to 80/30 dS m<sup>-1</sup>, Rates between 28.8 to 89 percent sand, clay, between 1 and 6.24 percent, silt between 10 and 2/51 percent And saturated soil moisture content between 22/21 to 48/38 percent is the habitat. The results of the study showed a correlation between tree parameters and soil nutrients Between soil electrical conductivity and density of trees and tall trees 01/0 level is significantly correlated with the percentage 05/0 there. Also, the clay content in the soil habitat of tree height and density of trees in the 05/0 significant relationship exists. Investigation showed that the phenology of species new species Brgdhy second half of March, Bloom mid-May, the fall in autumn and late December and mid-January the seeds of the species started and will continue until October. The main method of reproduction of this species in much of the cuttings are the Sistan. Such a harsh environment and of successive drought and salt tolerance and high acidity in the soil in the area has had a lot of resistance. Due to the mentioned features, these can be used in Sistan plain management plans and amendments.

**Keywords:** Autecology, *Populus euphratica*, phenology, Sistan plain.



University of Zabol

Faculty of Water and Soil Science

Department of Rangeland and Watershed Management

The Thesis submitted for the Degree of M.Sc ( in the Desertification)

title

Survey of ecological characteristics of individual species *Pupolus euphratica* in Sistan plain

Supervisor:

Dr. A. Fakhireh

**Adviser:**

Dr. E. Rouhimoghaddam

**By:**

M. Shoeibi

September 2014