



Development 3D model of adaptation of the Azerbaijan coastal zone at the various levels of Caspian Sea

Ramiz Mammadov

Institute Of Geography, Caspian Sea problems, Baku, Azerbaijan (ramiz.mamedov@geo.ab.az, (99412) 5393541)

The most characteristic feature of the Caspian Sea which difference it on relation other seas is its periodical fluctuating in its level. In many coastal regions of the world the problem of influence of change of a sea level on activities of the human is a problem of the long-term future, but in region of Caspian Sea, especially in its Azerbaijan sector, it is already actual. Also experience accumulated here, can be use at the decision of problems of optimization of wildlife management in conditions of significant change of a sea level as model of potential consequences of warming of a climate.

Changeableness of the level of the Caspian sea over many years can be observed better on the basis of natural observations, a systematic basis of which has been put by the academician E. Lents in 1830 year in Baku coastal line. According these data in 1882 the average level has reached its level -25.2 m. the highest point over the observations, i.e. by 1.8 m. higher than today's level. The average level over 1830-1930 was about -25.83 m. In 1960 some stabilization in the level, about 28,4 meters, in 1970 was a sharp drop, in 1977 - sharp drop reached -29.00 m. The drop over the whole period of observations totaled 3.8 m within diapason -25.2 -29.0 m.

In 1978 the level of the sea began to increase and in 1995 its average yearly mark reach -26,62 m. Intensiveness of the rise of the level ever that period totaled in average about 14 cm per year. As a result of this rise of a sea level about 800 km² of a coastal zone it has been flooded, the ecological situation has worsened, and there were ecological refugees. The damage to a coastal zone of Azerbaijan was 2 billion USA dollars.

Caspian sea also has within-year (seasonal) variability equal 32 sm and sleeve and pileup change of level. Its estimate in Azerbaijan coastal zone is 0.8-1.0 m. In the coastal zone also necessary take into height of the wave which in these coasts can be 3.0 m height. All these means that in the coastal areas at hydraulic engineering projects the sea level should be considered as multistage process, what we have considered by development of adaptation of a coastal zone

The exact three-dimensional map of a coastal zone has been created. For different scenario sea levels, or example, -30.0; -29.0; -28.0; -27.0; -26.0; -25.0 and -24.0 exact coastal lines have been certain. Further maps of a vegetative cover, ground, social and economic and ecological conditions have been developed for different level and respective alterations are certain. More vulnerable coastal zone, flooded area and socio-economic damage were estimated.