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1983

On the classification of lakes and lake-like  
water bodies of the Ukraine.

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Translated by: I. Pettman

In the Ukraine there are several thousand large, medium and small lakes and lake-like reservoirs, distinguished by origin, salinity, regional position, productivity and by construction a significant number of large and small water bodies, ponds and industrial reservoirs of variable designation. In this case the hydrobiological regime and productivity levels of reservoirs on small rivers are very similar to the natural lakes of this geographical area. For example, Lake Liman and Krasnovoskol'sk reservoir, situated in the basin of Siversk Dons, Mlynovsk and Shatskie lakes on the Polessie, Tereblya-Riksk reservoir and lakes Sinevir and Karpatakh possess all the same animal and plant populations and the characteristics of their seasonal dynamics, similar rates of productivity, self purification capacity etc.

The all-embracing eutrophication of lakes (resulting from an excessive quantity of biogenic and atmospheric deposition, effluence from intensive fertilizing of fields etc) makes the use of the Tinneman-Nauman classification system unsuitable, because reservoirs such as these in pre-war years classified

as dystrophic or oligotrophic (e.g. Lake Poles'ya), now appear mesotrophic or else even eutrophic. There are also disadvantages of one kind or another in the classifications of Born-Shtruk, M.P. Somov, Ya. Ya. Tseeb and other workers. The problem of national systems necessitates the creation of specific schemes and classifications. Classifying into specific types of reservoir by means of suitable specifications is required for planning national measures with the objective of the rational utilisation of natural resources. It is now necessary to consider the present-day characteristics of Ukrainian lakes. In our case it is possible to use two approaches - genetical and ecological.

The first, reflecting common characteristics of origin of one or another group of lakes, is extremely fundamental in theoretical respects, but not invariably appropriate in practice. The second more useful for the management of rational systems, however at the same time the first category encompasses great variability through natural origin and man-made water bodies. Under the genetical system the lake-like water bodies of the Ukraine are classified into the following types: lakes, drowned river valleys (limans) and "pody". Lakes in turn can be sub-divided into groups: a) situated in river floodplain - oxbow and other water bodies of floodplains and terraces; b) situated in karst and other subsiding relief c) residual lakes - retained water bodies of former major Holocene lakes, e.g. Nobel on Poleiss, Liman in the Siversk-Donts basin etc; d) mountain lakes of the Carpathians and Crimea; e) saline. The latter usually are situated in maritime regions, many of them in the Crimea. There is a series of lakes in this group, considerably distant from the sea as for example the Slavonic lakes in the Donbas (Repnoe, Slepnoe, Veisovoe, Shchetsilovskoe), saline-caustic lake Solenyi a liman situated on the third terrace of the river Samar in the Dnieper-Petrovskii district and others.

Limans are formed as a result of the flooding of lowland river valleys during the rising of the water of the Black and Azor seas and the dividing by the large size brackish waters (Dnieper-Bugsk, Dnestrovskii) and minor limans, situated in lowland small steppe rivers. The latter are classified as saline limans of the north-western area of the Black Sea (Sasyk, Tuzlovskie liman, Shagany, Sukhoi, Khadzhibeevskii, Kuyal'nitskii, Definovskii, Grigor'evskii, Tiligul'skii, Berezaiskii); similar to them are the adjoining group of saline limans of the north-west part of the Azor Sea (Sivash, Utlyukskii, Malochnyi), Crimean limans (Donuzlar, Sasyk-Krymskii and others) and brackish water Danube region limans (Kagul, Yalpug, Saf'yan, Kitai) with Kuckurgansk limans cut off now from the sea in connection with the growth of the Danube and Dnestra deltas.

Pody exhibit lake-like origins from the formation of the steppe zone of the Ukraine across the area from the river Ingul to the river Molochnoi. The forming of pody is the result of natural break-through of loess rock, they are characterised by their unstable hydrological regime, drying up in hot weather.

The ecological approach requires the estimation of the current status of the water body and the grouping of them by their present hydrobiological, hydrological, hydrochemical regimes and their characteristics. For the classification of the Ukrainian water bodies we worked from first principles, the studies of Ya. Ya. Tseeb, to set and coordinate systematic categories - zone, group, class and type of water body, where zone and group indicate similar features in more general characteristics and class and type - more specific criteria of characteristics.

Landscape zones specify precise regional locations of water-bodies. They work out with the exception of the large Dnieper reservoirs (Kakhovskoe, Kievshoe and others), the hydrobiological regimes of which show explicit

expression of azonal characteristics, and continental saline water-bodies. With regard to zones we picked out Polessie (alluvial plain), Lesostepi (forest steppe), Steppe, Carpathia and Crimea, Primorsk (maritime) water bodies and continental saline water bodies, which are patchily included in various zones.

Polessie water bodies can be classified into three groups, Pripyatskii, Kievskii and Desnyaiskii Polessie; in each can be separated out a class of ponds and small lakes and a reservoir class, constructed on small streams (average size 1-6 thousand hectares). In the Pripyatskoe Polessie medium size reservoirs and alluvial plain lakes - Shatskie, Turskoe and others - amalgamated in one class. In this case and analogous cases there are the following specified types, reflecting more specifically the status of the water body: cooling-pond, drinking water, fish farm, sedimentation tank etc.

Lesostepi water bodies include in the group lakes of the Volyno-Podol'skoe uplands, the left-bank of the Dnieper and the basin of the Siberian Dons; in the latter case small reservoirs, lake Liman and other large scale natural lakes amalgamated in one class.

Steppe water bodies are classified into three groups: pravoberezhnye, levoberezhnye (including water bodies of Crimea steppe) and Donbas.

Primorsk water bodies can be divided into large brackish waters (Dnestrovskii, Dnepro-Bugskii limans) mildly brackish - oligohaline (Pridunaiskie limans, Kuchurgan), brackish-mesohaline (Berezanskii, Tiligul'skii limans) marine polyhaline (Sasyk, Tuzla, Shabolat, Khadzhibeevskii, Grigor'evskii, Dofinovskii, Sukhoi, Donuzlav, Sasyk-Krymskii, Utyuyskii) and ultrahaline (Sivash, Kuyal'nitskii liman, Kerchenskii, Perekopskie lakes).

In the Carpathian zone man-made water bodies and natural lakes make up one group class.

Continental saline water bodies are associated with natural water bodies and man-made by means of enhanced mineralisation, for example, formed as a result of manufacturing salt in the Tyachevskii region of Zakarpat'ya, discharge of mine water in Donbas, in the Dneiper region etc.

### **Notice**

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