

Method of classification of integumentary elements of landscape

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The article behaves to ecology and touches the problems of development of method of creation of thematic card of landscapes elements from data of the remote sensing of Earth which kennel maximally formalized and accessible for the wide circle of users.

Most works from researches of elements of landscape on a base information of the remote sensing classifications of landscape of concrete geographical area are devoted or one of objects of landscape - delta of the rivers, coastline, preserve and others like that. Among methods classifications are used mainly traditional methods of the controlled classification, and in for some time past - method of neurons networks. But overwhelming part of works carries author character which limits the effective use of method to other operators. That is why a task becomes actual to do her by maximally formalized and accessible for the use by the wide circle of users.

A method is given intended for the selection of scopes and quantitative estimation of areas which are busy at the separate integumentary elements of earthly surface and is used with a purpose:

- forming of base thematic space card of territory of Ukraine of scale earthly to the surface 1: 100000, actualization for the term of supervision;
- estimation of dynamics of separate integumentary elements of earthly surface;
- subsequent thematic classification and decoding within the limits of separate integumentary elements of earthly surface.

The finished informative good (STACKS) is the thematic card of integumentary elements of earthly surface of scale 1: 100000.

A thematic card includes such elements: waters objects; long-term vegetation (forests and beams); agricultural lands on the stage of vegetation; agricultural lands under *паром* and soils which are not covered by the vegetation; elements of city building.

Method of classification: the data processing is executed by the controlled classification, or classification with studies [5].

Classification is controlled is process of grouping of pixels to the classes which answer some educational plurals, by a certain operator. Educational plurals are determined by the so-called regions of interest, which get out on the image interactively and must be the homogeneous groupments of pixels. Before to execute the controlled classification, it is necessary to define and estimate distribution of the created educational plurals. For this purpose there are two procedures: the calculation of matrix of ρ_{03} of divisibility is that visualization by the export of certain regions of interest to n - measurable visualization, which allows to estimate grouping of every regions of interest and ceiling of educational plurals between itself.

Multispectral information of optical apparatus must be given in green, red and fellow creature ranges of electromagnetic spectrum. Entrances information must be radiometry and geometrically normalized and not must need operations of removal of hindrances. The visual control of quality of entrances information is executed during the revision on a display. Farther the control of quality of entrances information can be executed after the relation «signal/noise» by procedure of smoothing of remain. Procedure expects statistical descriptions of entrances information, executes the selection of pixels of hindrances on the image and noise.

The controlled classification is the method of the data processing. An operator executes classification with studies after one of decided rules. Follows to remind that classification can require conducting of a few iteratsiy, if the results of estimation of its quality will appear unsatisfactory. An operator must execute the followings operations:

- to define signatyre, or educational information;
- to estimate their statistics and distributing;
- to execute classification and conduct the estimation of its exactness;
- to withdraw single pixels from classes, using a post sifting classifications to the operation and clamping, operations of analysis of majority;
- to calculate statistics of classes (on an area).

Control of quality and interpretation of results of the data processing: for the estimation of quality of classification the special raster layer which characterizes distance of every pixel to the cent of his class can be created. Thereon image and more bright pixels have the greater removal from the center of class and with greater probability can be subsumed the unclassified objects, more dark - form group round the center of class.

For an estimation qualities of classification are used ground given to the test as the image which was got before and has the plural of certain classes in the set, or given to the test, got the field way with the use of co-ordinate attachment and confirmation of information on locality.

For an estimation qualities of classification are used also GPS is surveys with the purpose of determination of co-ordinates on localities and visual control with the purpose of determination of scopes and presence of the classes of information got as a result of thematic treatment.

Creation of thematic card of elements of landscape from data of cosmofooto will give possibility of creation of information after separate masks, for example by the masks of agricultural. Exception or vice versa, including in treatment of the territory disguised thus on the basis of the next controlled from distance information (subject to the condition exact attachment) will enable their subsequent detailed decoding after a select subject.