# MULTIMEDIA AND MOBILE ATLAS OF KURIL
ISLANDS

Kuriles – unique territory on all parameters. Being on distance of thousand kilometers from industrial centers with huge anthropogenic loading on environment and sharp ecological conditions, these islands almost have completely kept the natural complexes in natural state. Developed in Institute of geography of Russian Academy of Sciences in cartography laboratory the multimedia atlas of Kuriles is the lineal heir of classical paper atlases. It is created by means of modern computer technologies and the Internet is intended to distribution on any carriers of the electronic information and on channels. The multimedia atlas – collection of maps, text, animations, video, photos, digital models of relief, sound, satellite images. The atlas contains the arch modern information and knowledge of islands and region - their nature, resources, the population, an economy, ecology, history, a heritage, and also preconditions and sustainable development prospects. It gives to governing bodies of different levels, design, industrial and other establishments, public organizations and movements an authentic material for formation of federal and regional scientific and technical and other projects, programs and initiatives of economic, ecological, cultural-historical, geopolitical, geostrategic and other value. Gives an impulse to increase of public and business interest to region, to its studying, search of ways, means and development mechanisms.

Unlike traditional "paper" atlases, in the multimedia atlas there is constant comparison of "object" and its "description", transition from "object" on its more detailed description by means of hyperlinks system. Connection of the atlas with the text - old tradition which has harmoniously passed in electronic and multimedia atlases. In multimedia atlases the tradition of placing of the text in atlases has had the further development. The text maintenance is integrally connected in atlas maps, but it, and also the quantity of illustrations to maps in the electronic environment is actually boundless. Such possibilities do the multimedia atlas by even more informative. Modern technologies, besides, have allowed to combine successfully in the atlas traditional cartographical and graphic materials with explanatory, quite often training texts. Use of the photos, supplied is information capacious texts, allow to visualize and comment on the phenomena represented on maps. Certainly, in all atlas the information has multilevel character: access to the desirable information can be individualized and adapted for interests and abilities of users. All information is represented step by step. For example, at first the page on which the most general data on territory and some specific photos of various subjects are resulted is formed. Further transition to concrete thematic page

for choice the user on which the information more detailed about this or that object is placed is carried out. By means of system of hyperlinks it is possible and to concretize and detail the information further.

Under the maintenance and on information volume, on application of the advanced scientific techniques and last computer technologies multimedia atlases concern atlases of new generation. They hand over the information in the systematized, formalized and uniform kind. In them with the greatest completeness lines of dialectic unity, the general and private are shown. All system of maps in atlas acts as whole: each map is an element of this system. Territorial, substantial and functional characteristics are in them in close interrelation. Inherently the multimedia atlas of Kuriles harmoniously connects the cartographical form of the traditional atlas to functionality of geographical information systems (GIS) and multimedia, doing its even more convenient in use and giving new tools for carrying out of scientific researches. Thereby the multimedia atlas acting in the form of adapted GIS which is popular and does not demand from the user of the special software. To advantages of use of multimedia technologies in creation of the atlas Kuril it is possible to carry storage of great volume of the most different information on one carrier and in an independent mode; increase (detailed elaboration) at the screen of the whole image or its most interesting fragments; allocation in the text accompanying the image or other visual material of "hot points" on which immediate reception of help or any other explanatory information is carried out; connection to a global network the Internet; interactive dialogue; navigation and an exit in the basic menu; the friendly interface providing ease of work with the project; project update (addition of the new information or its removal). The user of the multimedia atlas has possibility serially to include and disconnect (to reproduce or remove) on the screen of the computer different maps, to increase their scale. In help system of the atlas explanations on the general use of the atlas and a call of other software products are made.
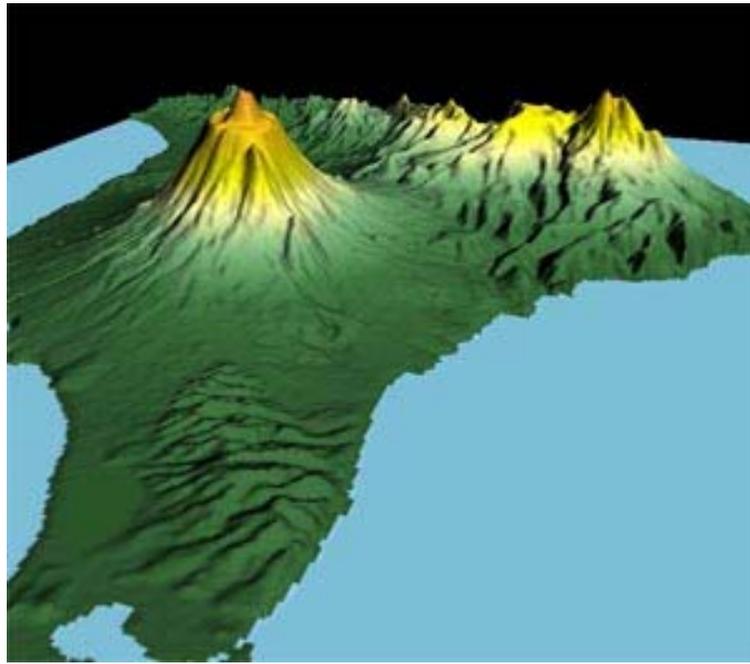
Digital elevation model of Kuriles.

The atlas contains a considerable quantity of the three-dimensional models constructed on the basis of DEM (Digital Elevation Model). Under DEM also it is accepted to understand set of high-rise marks in knots regular or irregular grid; set of isolines (horizontals); structural lines etc. Use of digital models of district in the atlas is dictated by a wide circulation and application of this way of visualization in modern cartography and in other geographical sciences. The constructed three-dimensional models were not only one of ways of visualization, but also the important scientific material to which can take advantage well, working with various sections of the atlas. As independent software products at the atlas there are interactive nature protection modules, independent software products. They will allow the user to take part in nature protection activity and to receive exhaustive knowledge of the territory nature. Interactive sections go to in parallel various sections of the atlas and make up together with them the branched out system of hyperlinks. The nature protection direction of interactive sections gives to users various kinds of their interaction with cards. Interactive interaction oriented on participation of users, especially workers of nature protection structures and local residents, in monitoring of an environment and protection of the unique nature of Kuriles. The interactive section in this quality will promote involving in nature protection process of all subjects of economic and nature protection activity in territory and out of it. A main objective of working out of interactive nature protection section is improvement of system of operative reaction to infringements in sphere of wildlife management, availability of the information for a wide range of persons and accordingly attraction more numbers of citizens in the given process. This working out will allow to

improve also process of updating of the cartographical information on a condition of objects of wildlife management and to construct independent system of the nature protection control. In other words, the interactive nature protection section is tool which, leaning against modern technologies and cartographical experience of representation of the information, resources and present situation, promotes formation of the concept of sustainable development of territory in the future.
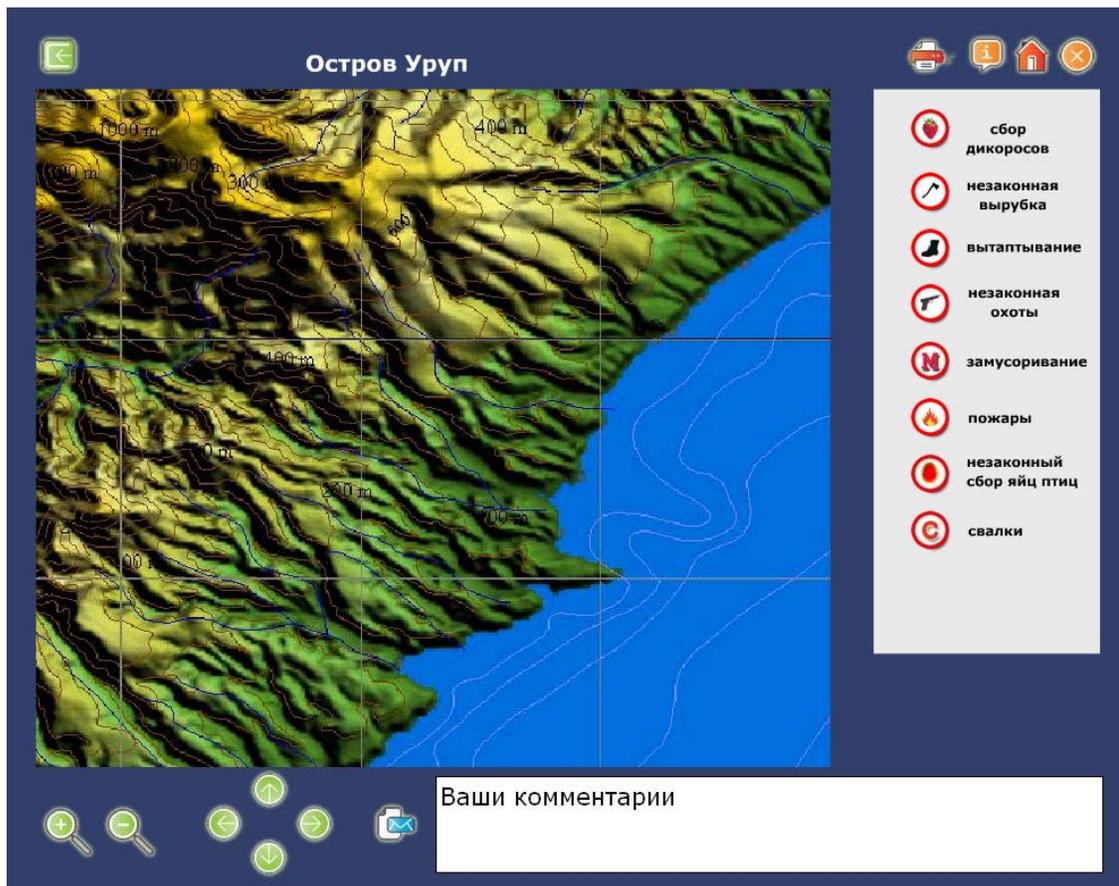
Interactive section of multimedia atlas.

Interactive nature protection reaction possesses two basic lines: it, first, is based on a principle of participation and will as much as possible mobilize participants nature management and nature protection activity; and, secondly, assumes that in the future the control over wildlife management will be carried out appreciably at the expense of creative actions of all participants of wildlife management.

Taking into account territorial features and geographical position working out of such tool represents new stage and new direction in nature protection activity. Interactive nature protection reaction does not set as the purpose replacement of existing traditional methods and wildlife management approaches. The main appointment is improvement of existing methods by means of more effective and flexible system of participation of the public and all interested persons, introductions of open access to additional possibilities (accessible maps of

the various maintenance, satellite images, animation and three-dimensional images, photos) using Internet.

Together with multimedia the mobile atlas of Kuriles intended for use in mobile phone also has been created. The mobile atlas is the first experience of thematic mapping in Russia specialized for mobile phones. The atlas is the truncated version of the multimedia atlas. At it there are basic maps across Kuriles which were included also into multimedia and paper version of the atlas of Kuriles. The mobile atlas of Kuriles is intended for use in mobile phone with the color display and support MIDP2, i.e. with loading possibility in phone and uses of Java-appendices. A main destination of mobile maps is granting of possibility of free orientation by means of a mobile phone that is provided with free viewing of cards with convenient navigation and address searches with instructions on map. Preparation of the atlas for mobile phones of all versions is carried out on the computer by means of the special program for Windows and collections of databases of electronic maps which have laid down in basis of the multimedia atlas. Result of preparation on the computer is Java-appendices which can be loaded into mobile phone regular means. The atlas loaded on mobile phone as a part of the Java-appendix will correspond to options of a kind which have been set by preparation on the computer. Each Java-appendix corresponds to one map or a fragment map, a corresponding kind set by the user at creation of this appendix on the computer. The quantity of such appendices and volumes of cards entering into them are defined by mobile phone possibilities on which the mobile atlas is loaded.

Loading of the mobile atlas of any version in phone is made standard for each model of phone by means. Therefore preliminary it is necessary to find out an order of installation of Java-appendices in the instruction of used phone. Base functionality also is transferred to the atlas necessary for management maps and an other material, thereby, forming uniform system.