ҚАЗАҚСТАН РЕСПУБЛИКАСЫ БІЛІМ ЖӘНЕ ҒЫЛЫМ МИНИСТРЛІГІ

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РЕСПУБЛИКИ КАЗАХСТАН

ӘЛ-ФАРАБИ АТЫНДАҒЫ ҚАЗАҚ ҰЛТТЫҚ УНИВЕРСИТЕТІ

КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ АЛЬ-ФАРАБИ

ГЕОГРАФИЯ ЖӘНЕ ТАБИҒАТТЫ ПАЙДАЛАНУ ФАКУЛЬТЕТІ
ФАКУЛЬТЕТ ГЕОГРАФИИ И ПРИРОДОПОЛЬЗОВАНИЯ

Студенттер мен жас ғалымдардың

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IV ГЕОДЕЗИЯ ЖӘНЕ КАРТОГРАФИЯ
IV ГЕОДЕЗИЯ И КАРТОГРАФИЯ
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Conclusion. The area near the town Fort Shevchenko is suitable for construction wind energy station. The area is free for use and has good wind potential with average long-term rate about 8,5 m/s at height of 80 m. The utilization coefficient of the set capacity of turbines can make about 41,5-42,5 %. Annual volume of production of the electric power from WES in capacity 19,5 MWt will make an order 72 [illegible] of MWt/h that is enough for a covering needs of the Tupkaragan region for the electric power on perspective. There are possibilities for extension of capacity of WES. Region is located nearby from power lines, there are delivery ways equipment. Building the wind turbines near Fort Shevchenko could work out the electric power at very acceptable price. The approximate price on from WES about 14 tenge/kWh can make the electric power for supports of internal norm of profitability of the project at level of 9,5 %.

The list of references:

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4 [illegible]

METHODS OF REMOTE OF STUDY FOR THE ADAPTIVE-LANDSCAPE SYSTEM AGRICULTURE

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This article describes the methods of distance learning for the design of the adaptive-landscape system of agriculture.

Keywords: landscape, GIS, remote sensing.

In many developed countries, especially those resulting from the study of Russian scientists, now in t he scientific and theoretical basis and methodology of the implementation of the adaptive landscape agriculture (ALSA). In this area of research conducted in Kazakhstan and their results were published in scientific journals.

Purpose - to identify best practices in distance learning for the design of adaptive-landscape systems of agriculture.

To achieve the goal we were necessary solve the following problems:

- A comparative analysis of remote sensing methods for the study of landscapes;
- To identify the advantages and disadvantages of existing methods;
- To establish best practices for the landscape ALSA.

Methods of remote sensing studies the Earth's surface now includes not only the arsenal of scientific research, but also in the everyday practice of forecasts, inventory of natural resources, the search for mineral resources, contribute to the solution of a number of economic and scientific-technical problems. Depending on the task, a variety of natural objects and phenomena, there are three groups of remote sensing:

- Geoinformatic structural geomorphology to study, mainly endogenous processes and objects related to geological features;
- Landscape-indicator, used mainly in the study of morphosculptural features associated with the climatic zonation;
- A set of methods for remote sensing studies related to the study of anthropogenic and anthropogenic impact on the environment.

In this case, we are interested in methods of the second group, although these groups separately considered impractical, because only an integrated approach and the landscape as a whole or of individual components will help to recreate the real and believable atmosphere on the earth's surface, is reflected through the airspace information [1].

After selection of the existing methods of distance learning landscape, analyzing these methods focus on their strengths and weaknesses. In this regard it should be noted that the main and most promising area in the landscape is the preparation and use of spatial data. For geographers, including

scientists in landscape, is the most important study of the images taken with the spacecraft. In addition to the landscape for these studies may be very different - geological, agricultural, weather, landscape, etc. Consequently, the widespread use of space-based and aerial images has a number of essential advantages.

First, it gives almost a lump is solid information on environmental conditions over large areas, and not information about individual objects and points, as is typical of many other methods of the Earth's surface. Second, remote sensing methods provide information about the spatial relationships of objects and their relative positions. Third, aerospace methods, especially satellite imagery provide greater repeatability, and therefore the possibility of permanent monitoring the earth's surface.

With these advantages aerial and satellite imagery have become almost indispensable means. However, new and fruitful remote methods have their drawbacks.

The first is the ability of remote survey record only the surface of the Earth. Meanwhile, many consumers are interested in the objects directly on the picture is not shown. For example, the tectonic structures, ground water and other features of the landscape. Yet such is difficult to observe in terms of remote survey sites are identified in the photographs, as they are reflected in natural phenomena directly on the surface. So there is a new problem: how to judge easily landscape components which difficult to observe. For different areas identified easy-to-observation diverse natural features - indicators - which provides insights about the characteristics of objects hidden from direct observation - indicators. Indicators can serve as landforms, vegetation, some species of plants, etc. These indicators related to specific elements of the landscape, are called private. In the later stages of the display indicator appears natural appearance of environmental systems. Such indicators were called complex. So, the first shortcoming requires an increase of the "deep" or "details" received information from pictures.

The second disadvantage is decoding the received satellite images must be mentioned in the order. Over time, the quality of recognition of objects in images is due to the introduction of computer technology, but still has a "decoding" of materials is quite labor intensive and does not provide absolute certainty "reading" images. Accordingly, the effective use of information from space is limited to two issues: how to maximize the information extracted from the images and how to make a more accurate interpretation of the components of environmental systems. One of the most promising solutions to this problem lies in the analysis of landscape patterns. Landscape pattern - a spatial mosaic, which is formed on the surface developed at the site of environmental systems or microformations comprehensive. Thus, it comes down to recording the images of landscape-indicator structural links [2].

When using satellite images the Earth's surface on a global scale establishes cosmophoto-thematic maps (CPM). They may be such as a map of vegetation, soil, exogenous relief forming processes, etc. This involves the study of information capacity of aerospace photographs of different types and scales, developed signs of interpretation, the principles and methods of creating the basis for a series of landscape CPM, processed methodology was specific series cards in view of their training in a single landscape basis. [2] Landscape basis, in this case, is considered as a common link, a detailed picture of the overall zoning. In this case, within the boundaries of landscapes using medium-and large-scale set cosmo pictures border landscape mapping - at facies, and further differentiation to the level of landscape facies can be performed using an aerial photograph. The selection of different categories of landscape (groups, types, classes) produce quality photo colors and color, according to the data in Table 1 [3].

Table 1 - Landscape types and their reflection in satellite imagery (L.K. Zyatkova, 2002)

Groups	Type of landscape	Class of landscapes	Reflection on the satellite imagery
I	Land	flat foothill intermountain basins plateau high plains Low midlands highlands	Changing fototona from dark, dark gray to gray
II	Amphibious	river lacustrine	Clean water surface, black
III	Water	Coastal, littoral, in fact, amphibian, shallow Water-surface plankton	Black

		continental slope	
IV	Ground	bathyal abyssal The ultra-deep-sea trenches	Different tones of black

In the development of the landscape map of the base used aerial and satellite images of different types - black and white spectrozonal, as well as multi-zone. Spectrozonal contain sufficient material to classify the various components of the landscape (eg vegetation), and to characterize the topography of their information content is similar informative black-and-white photographs.

Prepared landscape map is the basis not only allows you to create a series of thematic maps conjugate natural environment and resources, but also the card industry - frozen, water, etc.

As noted above, the landscape is used as the initial basis for the study and mapping of the dynamics of landscapes, moreover, it is used to determine the direction and intensity of human impact on the environment, followed by the forecast increase anthropogenesis [1].

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ВЕЛИКИЙ ПАМЯТНИК ГЕОДЕЗИИ

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Дуга Струве (Русско-Скандинавская дуга) — это цепь старых триангуляционных пунктов, протянувшаяся на 2820 км по территории десяти европейских стран и представляющая собой уникальный памятник науки и техники.

Дуга, ориентированная с севера на юг и следующая примерно вдоль 25-градусного меридиана восточной долготы, берет начало от «Пункта Фугленес», лежащего на побережье Баренцева моря, недалеко от норвежского города Хаммерфест (70° северной широты), далее следует на юг — еще через восемь стран Северной и Восточной Европы (проходит немного восточнее Хельсинки, Таллина, Риги и Вильнюса, и существенно западнее — Минска и Киева, далее близ Кишинева), и заканчивается недалеко от побережья Черного моря, на крайнем юго-западе Украины, в районе города Измаила — «Пункт Старая Некрасовка» (45° северной широты).

Эти геодезические точки наблюдений были заложены в период 1816–1855 гг. Работы осуществлялись под руководством известнейшего российского астронома и геодезиста тех времен — Фридриха Георга Вильгельма (Василия Яковлевича) Струве , 1793–1864 гг., академика Петербургской АН, основателя и первого директора Пулковской обсерватории. Непосредственно полевыми изысканиями занимался Карл Теннер, 1783–1859 гг., — военный геодезист, полковник, а впоследствии — генерал-лейтенант. Теннера сопровождала группа, состоящая из помощников, проводников и солдат. Таким образом, Струве произвел первое достоверное измерение большого сегмента дуги земного меридиана. Это позволило ему точно установить размер и форму нашей планеты, что стало важным шагом в развитии наук о Земле и сильно продвинуло вперед всю отрасль топографического картирования. По итогам своих исследований и по завершении всех расчетов Струве написал большой труд — «Дуга меридиана в 25°20’ между Дунаем и Ледовитым морем, измеренная с 1816 по 1855 гг.»

Точность тех расчетов оказалась просто поразительной — современная спутниковая проверка технологии, примененной Струве более 150 лет назад, дала ничтожное расхождение. Однако по тем временам это было не только наиболее точное, но и самое грандиозное градусное измерение Земли: ведь по широте покрывался огромный отрезок — примерно в 25 градусов (или