RLC FOREST COVER MAP OF THE FORMER SOVIET UNION, 1990

Summary:

This data set consists of a 1:2.5 million scale forest cover map for the land area of the Former Soviet Union (FSU) that was completed in 1990 (Garsia 1990). There are forty-five classes distinguished in this data set, thirty-eight of which are forest cover classes. The purpose of this map was to create a generalized and up-to-date map of forest cover for the USSR. This map should be viewed not as a detailed forest cover map but as an economic forestry map. The most important tree species of a region are highlighted rather than the dominant trees species or tree cover. Very few tree species are defined. In many cases, of course, the dominant and the most important trees species are the same.

In addition, the map bears a very strong resemblance to the 1973 Forest Atlas (Anon. 1973), so there is concern that this map is based on a 1973 Atlas, which was likely based on forestry data from the 1940s, 1950s, and 1960s. This 1990 map appears more simplified than the Forest Atlas of 1973.

The data are provided in several formats, including binary raster data in Idrisi format, ASCIIGRID raster data in ASCII format (easily imported into ArcInfo), vector data in ArcView shapefile format, and a graphic map in JPEG format (see Figure 1.). Please read all documentation before using these files.

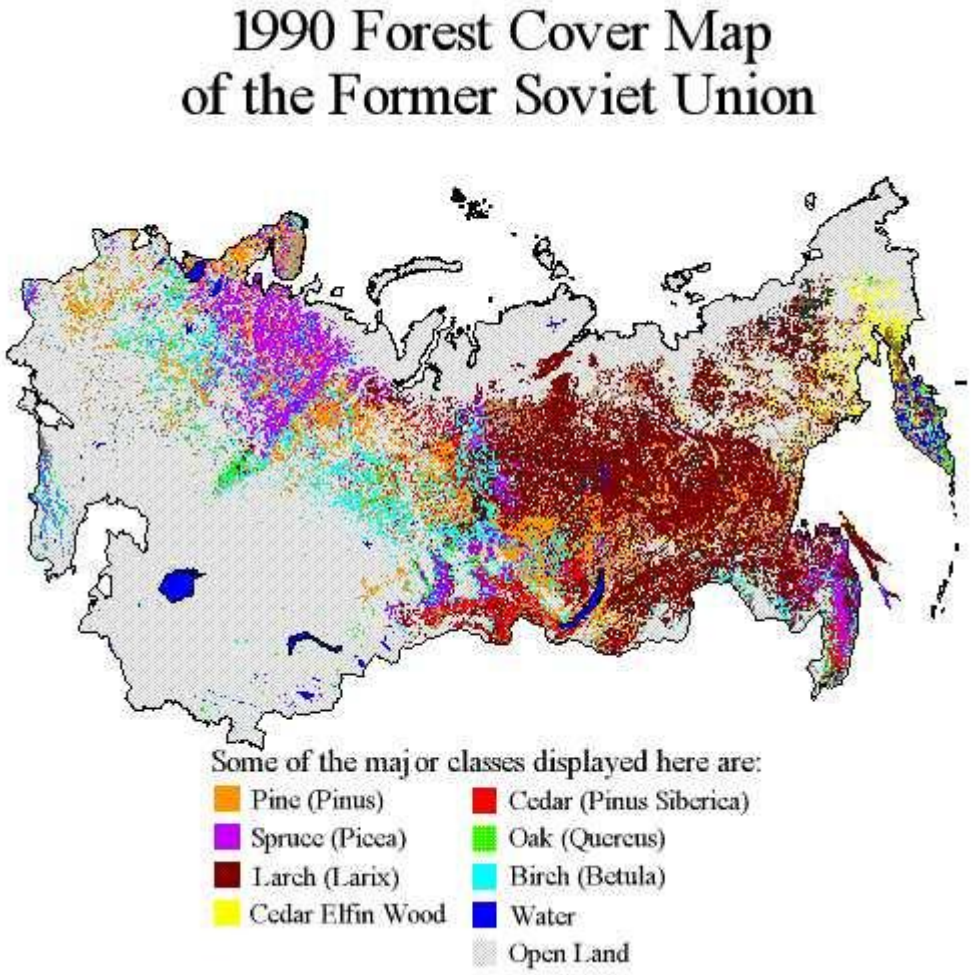

Figure 1. Forest Cover Map for the Land Area of the Former Soviet Union.

Data Citation:

Cite this data set as follows:

Stone, T. A., and P. Schlesinger. 2003. RLC Forest Cover Map of the Former Soviet Union, 1990. Data set. Available on-line [http://www.daac.ornl.gov] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAC/691.

Table of Contents:

1. Data Set Overview:

Data Set Contents:

This data set consists of a 1:2.5 million scale forest cover map for the land area of the FSU. Forty-five land cover classes are distinguished.

Related Data Sets:

See other Russian Land Cover data sets.

Title of Investigation:

Measuring Changes to Russian Forest Over the Last 25 Years

Investigator(s) Name and E-mail:

Name	Email
Stone, T.A.	tstone@whrc.org
Schlesinger, P.	pschles@whrc.org

Technical Contact(s) Name, Telephone, and E-mail:

Name	Email	Phone
Schlesinger, P.	pschles@whrc.org	(508)540-9900

Future Modifications and Plans:

Not available

2. Data Characteristics:

Study Area:

Spatial Coverage:

Min. X: -4737113

Max. X: 3474887

Min. Y: -1595781

Max. Y: 2952219

In meters from 104.5 degrees E, 56.5 degrees N

Spatial Resolution:

1:2.5 million

Projection:

Lambert Azimuthal Equal Area

Grid Description:

Cols: 8212

Rows: 4548

Resolution: 1000 meters

Temporal Coverage:

The map bears a very strong resemblance to the 1973 Forest Atlas (Anon. 1973), so there is real concern that this map is based on a 1973 Atlas, which was likely based on forestry data from the 1940s, 1950s, and 1960s. The 1990 map appears more simplified than the Forest Atlas of 1973.

Parameter or Variable:

Table for: fmap90.img

Variable	Description	Units	Instrument	Range
LAND COVER	Economically important tree species of a region are highlighted rather than the dominant trees species or tree cover.	Unitless	Map of forests of the USSR completed in 1990 (Garsia 1990)	Not applicable

LAND COVER footnote: Land Cover Classes

The 45 land cover classes distinguished in this dataset are listed below. They include:

1) Pine (Scotch)

2) Sparse (Scotch) Pine

3) Spruce

4) Sparse Spruce

5) Fir

6) Sparse Fir

7) Spruce/Fir

8) Sparse Spruce/Fir

9) Larch

10) Sparse Larch

11) Siberian and/or Korean Pine

12) Sparse Siberian and/or Korean Pine

13) Juniper

14) Oak

15) Sparse Oak

16) Beech1

17) Beech (Fagus)

18) Hornbeam

19) Betula Ermanii

20) Sparse B. Ermanii

21) Not Used

22) Birch

23) Sparse Birch

24) Not Used

25) Aspen

26) Sparse Aspen

27) Tilia

28) Other w/o dominant species

29) Other w/Maple dominant

30) Other w/Walnut dominant

31) Other w/Pistachio dominant

32) Dwarf Arctic Birch

33) Cedar Elfin Wood

34) Dispersed Larch Wood

35) Burned Forest

36) Glades

37) Tundra

38) Stones, stony places

39) Not Used

40) Stony Tundra

41) Land Outside Country

42) Open Land/Nonforest

43) Not Used

44) Sea

45) Water (inland)

Table for: fmap90.dat.gz

Variable	Description	Units	Instrument	Range
LAND	Economically important tree	Unitless	Map of forests of the	Not

COVER	species of a region are highlighted rather than the dominant trees species or tree cover.		USSR completed in 1990 (Garsia 1990)	applicable

LAND COVER footnote: See Land Cover Classes above.

Table for: fmap90av32.zip

Variable	Description	Units	Instrument	Range
LAND COVER	Economically important tree species of a region are highlighted rather than the dominant trees species or tree cover.	Unitless	Map of forests of the USSR completed in 1990 (Garsia 1990)	Not applicable

LAND COVER footnote: See Land Cover Classes above.

Data Organization

Please read all documentation before using these files:
ftp://daac.ornl.gov/data/russian_land_cover/forest_map_1990/comp/fmap90_readme.txt and
ftp://daac.ornl.gov/data/russian_land_cover/forest_map_1990/comp/fmap90_projection.txt.

Granule Name or Description:

fmap90.img

Data Format:

A binary raster image depicting forest cover (Garsia 1990) in Idrisi format made up of 8212 columns by 4548 rows comprising 8-bit bytes. Note: must be converted to an *rst file when using version 3.2 of Idrisi. Use the Idrisi File Conversion (16/32) utility available in the file pulldown menu to convert to the new format. Also note that the Idrisi v. 2 image documentation file, fmap90.doc, MUST be present for the binary data to be read by Idrisi.

Sample Data Record:

Not applicable

Granule Name or Description:

fmap90.dat.gz

Data Format:

Compressed ASCIIGRID version of the binary raster data (fmap90.img). This data file was created by converting the Idrisi binary file (fmap90.img) using Idrisi export utilities.

Sample Data Record:

Not applicable.

Granule Name or Description:

fmap90av32.zip

Data Format:

Vector map version of data (same info as raster data fmap90.img and fmap90.asc.gz) in ArcView shapefile format (compressed).

Sample Data Record:

Not applicable

3. Application and Derivation:

Typical Application of Data

Regional-, national-, and sub-national-level forest and land use change assessments.

Theory of Measurements:

Not available

Derivation Techniques and Algorithms:

Formulae:

Not available

Processing Steps:

The source vector data for the raster version of the 1990 Forests of the USSR (being distributed here) were obtained from the World Conservation Monitoring Centre (WCMC) as an ArcInfo Export format file (World Wide Fund for Nature and WCMC 1996). These data were reprojected from geographic projection to Lambert Azimuthal Equal Area using ArcInfo for UNIX using the PROJECT command. The subsequent coverage was also gridded using this software, and these data were exported to a generic binary format suitable to Idrisi v. 2.0 for Windows. Stone and Schlesinger (1993), "Translation of the Legend of the 1990 Map "Forests of the USSR," is included as a companion file [ftp://daac.ornl.gov/data/russian_land_cover/forest_map_1990/comp/fmap90_legend-4.pdf].

Processing Changes:

Projection: Lambert Azimuthal Equal Area

Datum : Undefined delta

WGS84 : 0 0 0

Ellipsoid : Sphere

Radius of sphere: 6370997.0000

Longitude of Central Meridian : 104.5

Latitude of True Scale: 56.5

False Easting: 0.0

False Northing: 0.0

Pixel Dimension: 1000 meters

Special Corrections/Adjustments:

Not applicable

Calculated Variables:

Not applicable

Graphs and Plots Used in Analysis:

Not applicable

4. Quality Assessment:

Data Usage Guidance:

Errors and Limitations:

Error Sources:

Not available

Limitations of the Data:

This map should be viewed not as a forest cover map but as an economic forestry map. The most important tree species of a region are highlighted rather than the dominant trees species or tree

cover. Very few tree species are defined. Generally, each polygon and color has one tree species assigned to it. In many cases, of course, the dominant and the most important trees species are the same. In addition, the map bears a very strong resemblance to the 1973 Forest Atlas (Anon. 1973), so there is concern that this map is based on a 1973 Atlas, which was likely based on forestry data from the 1940s, 1950s, and 1960s. The 1990 map appears more simplified than the Forest Atlas of 1973. There are no indications of land covers other than forests and there are no indications of forestry or logging activity. Some larger burn areas are noted. Hence, like all maps of this scale, the map is generalized. It is not recommended that the map be used at a scale more detailed than 1:2,000,000.

As in other maps, the polygons are discreet entities, tree species categories do not blend into one another. In nature, vegetation types and forms tend to go through gradual transitions from one group of plant species to another. This gradual transition is lost in cartographic products when a line is drawn that separates two units of land cover. Maps that are produced from satellite data are generally raster products that do not define well-bounded polygons and, in a sense, may be more representative of nature.

Coastline and great inland lakes in the data set correspond to those found in the Digital Chart of the World (ESRI 1993).

Known Problems with the Data:

Not available

Quality Assessment Activities

Validation by Submitter of Data:

Not available

Confidence Level or Accuracy Judgment:

Not available

Measurement Error for Parameters:

Not available

Additional Quality Assessments:

Not available

Verification by Data Center:

Not available

Other Relevant Information about the Study:

Not available

5. Acquisition Materials and Methods:

Source or Platform Collection Environment:

Not available

Source or Platform Program Management:

Not available

Source or Platform Mission Objectives:

Coverage Information:

Not available

Attitude Characteristics:

Not available

Data Collection System:

Not available

Communication Links:

Not available

List of Sensors or Instruments:

ANALYSIS

Ground Segment Information:

Data Acquisition and Processing:

Not available

Latitude Crossing Times:

Not available

Sensor or Instrument Descriptions:

Key Variables:

Not available

Principles of Operation:

Not available

Sensor or Instrument Measurement Geometry:

Not available

Manufacturer of Sensor or Instrument:

Not available

Calibration:

Specifications:

Not applicable

Tolerance:

Not applicable

Frequency of Calibration:

Not applicable

Other Calibration Information:

Not applicable

Data Acquisition Methods:

The source data were acquired from World Conservation Monitoring Centre (previously http://www.wcmc.org.uk; now http://www.unep-wcmc.org).

Observations:

Data Notes:

Users of these data agree to notify WWF Russian Programme Office (chestin@wwfus.glasnet.ru) and agree to acknowledge the source of data as follows: Source: WWF Russian Programme Office, Moscow, with support from WWF US and the World Conservation Monitoring Centre, coordinator Dr. I. Lysenko.

6. Data Description and Access:

Data Access:

This data set is available from the Oak Ridge National Laboratory (ORNL) Distributed Active Archive Center (DAAC).

Data Archive Center:

Contact for Data Center Access Information:

E-mail: uso@daac.ornl.gov
Telephone: +1 (865) 241-3952
FAX: +1 (865) 574-4665

Product Availability:

Data are available electronically on the ORNL DAAC's anonymous FTP site or from the DAAC's search and order system. Data files are also available by request from uso@daac.ornl.gov.

Reading the Media:

Not available

Software and Analyses Tools:

Not available

7. References:

Anon. 1973. Atlas of Forests for the Soviet Union, Main Geodetic and Cartographic Organization for the Ministries of the USSR, Moscow, 222 pp.

Garsia, M. G (ed.). 1990. Forests of the USSR, Scale 1: 2,500,000, Forest Cartography Department of All-Union State Planning - Research Institute Sojuzgiprolezhoz. GUGK, Moscow, USSR.

Stone, T. A., and P. Schlesinger. 1993. Translation of the Legend of the 1990 Map "Forests of the USSR." A report to the Northeast Forest Experiment Station, USDA Forest Service, Global Change Research Program, Radnor, Pennsylvania [ftp://daac.ornl.gov/data/russian_land_cover/forest_map_1990/comp/fmap90_legend-4.pdf].

The source title for the original ArcInfo Export format file is:

World Wide Fund for Nature and WCMC, 1996. The Digital Forest Map of the USSR, version 2.0, completed 12-20-95. World Wide Fund for Nature, World Conservation Monitoring Centre, Cambridge.

Source of coastline and lakes used in the production of the original Arc Info Export format file:

ESRI. 1993. Digital Chart of the World (DCW).

8. Glossary and Acronyms:

Glossary:

Not available

Acronyms:

DCW Digital Chart of the Word
ESRI Environmental Systems Research Institute
WCMC World Conservation Monitoring Center
WWF World Wide Fund for Nature

9. Document Information:

2003/11/27

Document Review Date:

2003/11/27

Document Curator:

webmaster@www.daac.ornl.gov

Document URL:

http://daac.ornl.gov