

National Mapping Program
Technical Instructions
Data Users Guide 7

US GeoData

Alaska Interim Land Cover Mapping Program

Data Users Guide

DATA USERS GUIDES

- 1: Digital Line Graphs from 1:24,000-Scale Maps
- 2: Digital Line Graphs from 1:100,000-Scale Maps
- 3: Digital Line Graphs from 1:2,000,000-Scale Maps
- 4: Land Use and Land Cover Digital Data from 1:250,000- and 1:100,000-Scale Maps
- 5: Digital Elevation Models
- 6: Geographic Names Information System
- 7: Alaska Interim Land Cover Mapping Program

Data Users Guides 1-7 generally replace the Geological Survey Circular 895.

Questions regarding availability and ordering of US GeoData (all types of digital cartographic and geographic data produced and distributed by the U.S. Geological Survey) should be addressed to:

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National Cartographic Information Center
U.S. Geological Survey
507 National Center
Reston, Virginia 22092
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UNITED STATES
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

ALASKA INTERIM LAND COVER MAPPING PROGRAM

Data Users Guide 7

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PREFACE

Susan P. Benjamin of Technicolor Government Services, Inc., was responsible for designing the format of data from the Alaska Interim Land Cover Mapping Program to meet the specifications developed by the Landsat Ground Station Operators Working Group (Landsat-D CCT standards committee, 1979). Leonard Gaydos of the U.S. Geological Survey suggested adoption of those specifications to insure that complete documentation of the data would be available on tape in an easy to use format.

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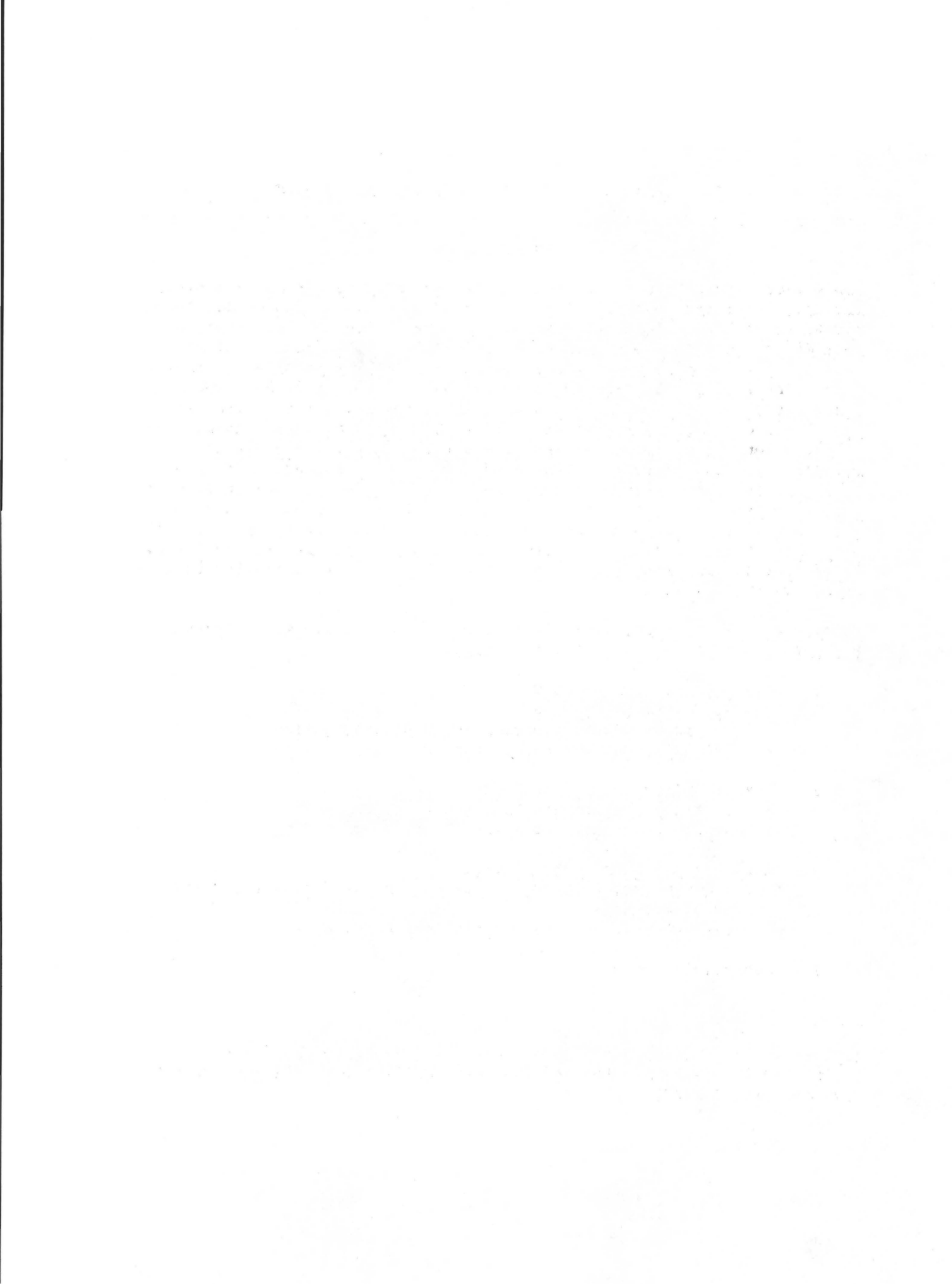
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THE ALASKA INTERIM LAND COVER MAPPING PROGRAM

INTRODUCTION

The National Cartographic Information Center (NCIC) distributes digital cartographic/geographic data files produced by the U.S. Geological Survey (USGS) as part of the National Mapping Program. Digital cartographic data files may be grouped into four basic types. The first of these, called a Digital Line Graph (DLG), is the line map information in digital form. These data files include information on planimetric base categories, such as transportation, hydrography, and boundaries. The second type, called a Digital Elevation Model (DEM), consists of a sampled array of elevations for a number of ground positions that are usually at regularly spaced intervals. The third type is Land Use and Land Cover digital data, which provide information on nine major classes of land use such as urban, agricultural, or forest as well as associated map data such as political units and Federal land ownership. The fourth type, the Geographic Names Information System, provides primary information for all known places, features, and areas in the United States identified by a proper name.

The digital cartographic data files from selected quadrangles currently available from NCIC include the following:

- Digital Line Graphs (DLG)
 - 1:2,000,000-scale maps
 - 7.5- and 15-minute topographic quadrangle series
 - 1:100,000-scale quadrangle series
- Digital Elevation Models (DEM)
 - 7.5-minute topographic quadrangle series
 - 1-degree quadrangle coverage
- Land Use and Land Cover digital data
 - 1:250,000- and 1:100,000-scale land use and land cover and associated maps
 - 1:250,000-scale Alaska Interim Land Cover Maps
- Geographic Names

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The digital data are useful for the production of cartographic products such as plotting base maps and for various kinds of spatial analysis. A major use of these digital cartographic/geographic data is to combine them with other geographically referenced data enabling scientists to conduct automated analyses in support of various decision making processes.

This document describes digital land cover data prepared from analyzing Landsat multispectral scanner data. The data consist of digital land cover codes for 50-meter cells based on the Universal Transverse Mercator (UTM) grid. Each data set contains land cover data for one 1:250,000-scale quadrangle. They can be used to produce a variety of products having applications for land management, wildlife habitat studies, geomorphology, hydrology, or related fields. The data differ from other land cover data distributed by NCIC in several ways:

- They are available in cellular form rather than polygons.
- 1:250,000-scale land cover maps have been prepared from the digital data, rather than the digital data being generated from a map.
- Land cover is mapped according to a system unique to Alaska.

ALASKA INTERIM LAND COVER MAPPING PROGRAM

In order to meet the requirements of the Alaska National Interest Lands Conservation Act (ANILCA) for comprehensive resource and management plans from all major land management agencies in Alaska, the USGS has begun a program to classify land cover for the entire State using Landsat digital data.

Vegetation and land cover classifications, generated in cooperation with other agencies, currently exist for 115 million acres of Alaska. Using these as a base, the USGS has prepared a comprehensive plan for classifying the remaining areas of the State. The development of this program will lead to a complete interim vegetation and land cover classification system for Alaska and allow the dissemination of digital data for those areas classified.

At completion, 153 Alaska 1:250,000-scale quadrangles will be published and will include land cover from digital Landsat classifications, statistical summaries of all land cover by township, and computer-compatible tapes. An interagency working group has established an Alaska classification system (table 1) composed of 18 classes modified from "A land use and land cover classification system for use with remote sensor data" (Anderson and others, 1976), and from "Revision of a preliminary classification system for vegetation of Alaska" (Viereck and Dyrness, 1982) for the unique ecoregions which are found in Alaska.

Table 1.--Interim classification system for Alaska

<u>Class</u>		<u>Class Number</u>
I. Forest (forest canopy of one third or more)	A. Needleleaf Forest (over two-thirds of tree cover contributed by needleleaf species)	1
	B. Broadleaf Forest (over two-thirds of tree cover contributed by broadleaf species)	2
	C. Mixed Forest (broadleaf or needleleaf species contribute one-third to two-thirds of the tree cover)	3
II. Shrubland (forest canopy cover of less than one-third and shrub canopy cover of one-third or more)	A. Tall and Low Shrubland	4
	B. Dwarf Shrubland and related communities (rarely exceeding 50 cm in height)	5
III. Herbaceous Vegetation (vegetation with 5% or more of vascular and non-vascular [mosses and lichens] cover and less than one-third cover of woody plants)	A. Dry or moist Herbaceous	6
	B. Wet Herbaceous	7
	C. Aquatic Herbaceous	8
	D. Mosses	9
	E. Lichens	10
IV. Agriculture		11
V. Urban land		12
VI. Barren land	A. Sparse vegetation	13
	B. Nonvegetated	14
VII. Water	A. Clear and/or Deep	15
	B. Turbid and/or Shallow	16
VIII. Ice, Snow, and Clouds		17
IX. Shadow		18

DATA CONTENT

Each Alaska Interim Land Cover Mapping Program tape contains data for one 1:250,000-scale quadrangle (1 degree of latitude by either 2 or 3 degrees of longitude) and the area immediately surrounding it.

The data describe polygons of the land cover classes described in table 1. Each data set contains a subset of all of the possible data classes. In addition to the land cover data, format specification and documentation information are supplied.

DATA SOURCE

Landsat Earth observation satellites provide the primary source data. A multispectral scanner on Landsat measures and records intensity of reflected light in four wavelength bands for areas on the ground measuring approximately 57x79 meters. A computer is used to sort these multispectral readings into a number of spectral classes, then to classify each area sensed (referred to as a pixel, or picture element) into one of the classes. These spectral classes are interpreted by a data analyst who associates each with a land cover class. Other steps are taken to register the data to map coordinates, mosaic data from adjacent Landsat scenes, and edit the resulting data.

DATA STRUCTURE

The Alaska land cover data are structured in a raster cell format. The area mapped on each 1:250,000-scale quadrangle is divided into a matrix of equal-size cells (pixels), resampled in size and orientation from the original Landsat image pixels. The result is a rectangular array (rows and columns) of land cover data where each pixel represents a ground area of 50x50 meters.

Land cover data are registered and resampled to a UTM grid in a separate process for each quadrangle. Pixel values going down a column of data represent land cover at 50-m intervals along a UTM northing; likewise, pixel values across a row of data represent land cover at 50-m intervals along a UTM easting (fig. 1).

DATA CATEGORIES

Landsat scene analysis to create the classified data sets is performed by the EROS Data Center Alaska Field Office (AFO) and by the Geographic Investigations Section (GIS) of the Western Mapping Center. Map products are prepared from the digital data.

Each pixel in a land cover data set is identified by one of the Alaska Interim Classification System land cover class numbers (table 1) to indicate its land cover assignment. Adjacent pixels containing the same class number combine to make up the polygons of land cover data printed in different colors on the paper maps.

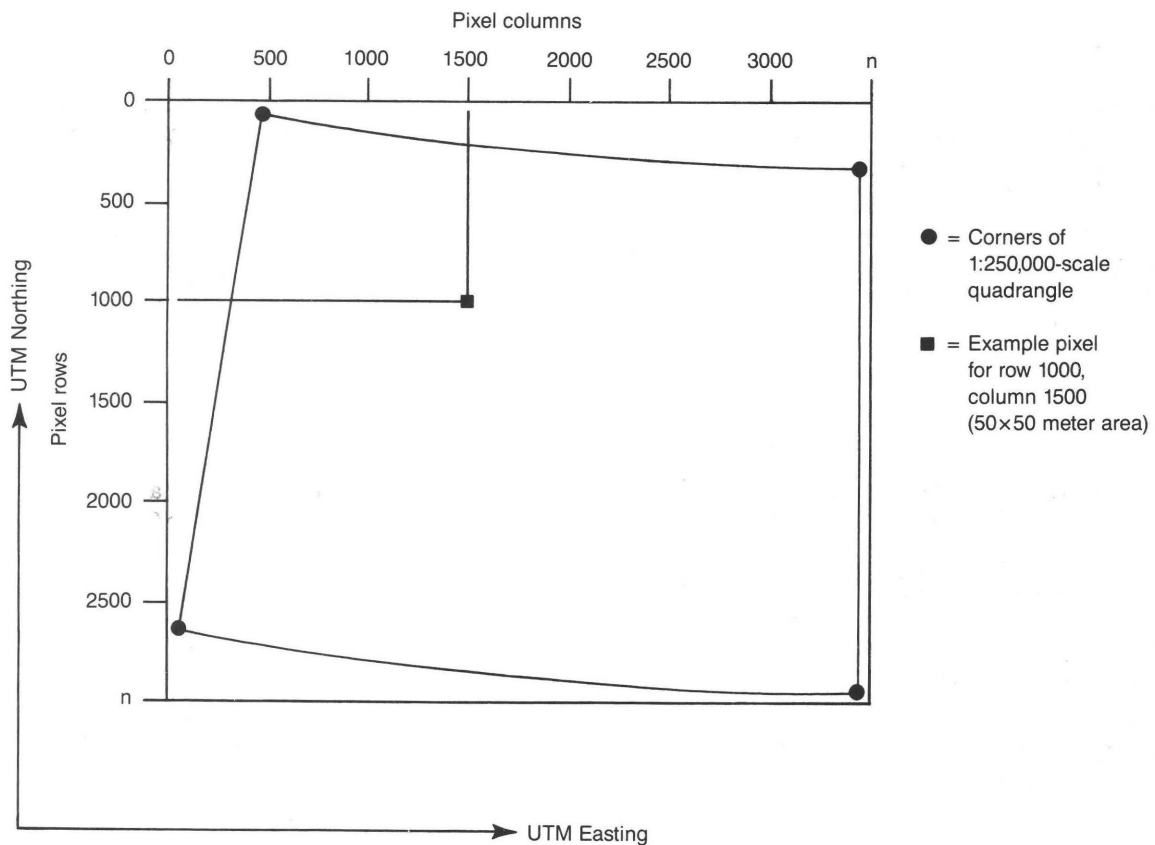


Figure 1.--Structure of Alaska land cover data.

DATA FORMATS

The format of the Alaska Landsat land cover tapes was designed to meet the tape format specifications developed by the Landsat Ground Station Operators Working Group (Landsat-D CCT standards committee, 1979). It incorporates the required descriptive superstructure records in addition to the classified Landsat digital image data.

Data are recorded on multifile 9-track magnetic tape in odd parity at 1600 bpi. Three files are included for each quadrangle (Appendix A). The first is a volume directory file that generally describes the tape. It contains three 360-byte records: a volume descriptor record containing references to relevant documentation and tape creation information, and two file pointer records containing format information for the following two files. These three records conform to the superstructure record specifications noted above.

The second file is a leader file containing information used to interpret the image data. Like the first file, all leader file records are 360 bytes long. The first record is a file descriptor record that provides additional format information. Bytes 181-196 of this record contain values for the number of records used to describe items that will vary in number between tapes, and so indicate the length of the file.

The remainder of the records in the leader file contain descriptive information in card image format. The second, third, and fourth records identify the area covered by the image data, the size of the image file, pixel size, and image projection. The next set of records identifies each of the Landsat scenes used in the compilation of the data. Following that are records identifying the registration tick mark coordinates used to register the image to the proper map. The next set of records lists and describes each of the land cover classes used in the image data. A final set of records contains additional, nonstructured comments about the image data.

The third file contains the image data described by the preceding leader file. The first record is a file descriptor record that meets the superstructure record specifications. Bytes 181-192 of this record contain image size and number of land cover classes so that, if necessary, the data can be read and displayed without reading the leader file. The remaining records contain the image data with the number of records equal to the number of image rows and the record length equal to the number of image columns. (The file descriptor record is padded to this length with blanks so that the file contains only fixed-length records.) Each 8-bit byte represents an integer number in binary number representing the coded land cover class for that cell.

The end of the tape is indicated with a null volume descriptor record and three End Of File indicators.

APPLICATIONS

The Alaska land cover tapes have tremendous potential for regional landscape studies. They can be used in hydrologic and wildlife habitat studies and as a base for assessing impact of new development. Statistical summaries of the extent of cover types of the present landscape can provide a quantitative base for inferences regarding geomorphological changes. These data can also be used in combination with digital elevation models (DEM) (Elassal and Caruso, 1984) to correlate land cover and topographic features. In conjunction with still more layers of information, these data form the basis for a geographic information system. The simple format of the data should allow use on most image processing or information systems.

The land cover and vegetation maps being prepared from the data are a prime application of the data. The classified data for one 1:250,000-scale quadrangle are used to generate color-separated plates for printing a land cover map. The plates are registered to existing scribed base layers containing projection lines, public land survey system, cultural features, and place names. These are combined with the map collar information and printed on the front of the map. Statistical summaries of the extent of each land cover unit in each township cell are printed on the reverse side of the map.

ACCURACY

No comprehensive, controlled, systematic checks of the accuracy of all the land cover data have been conducted, although checks for specific areas have been done. Ground data and aerial photographs have been used as reference for controlling the classification, and the resulting classes are generally consistent with those sources. The Geological Survey does not assume any responsibility for the accuracy of the tapes, but does solicit comments from users that may help to improve the data for future revision.

REFERENCES

- Anderson, J.R., Hardy, E.E., Roach, J.R., and Witmer, R.E., 1976, A land use and land cover classification system for use with remote sensor data: U.S. Geological Survey Professional Paper 964, 28 p.
- Elassal, A.A., and Caruso, V.M., 1984, Digital elevation models: U.S. Geological Survey Circular 895-B, 40 p. [USGS Digital Data Standards, edited by McEwen, R.B., Witmer, R.E., and Ramey, B.S.]
- Landsat-D CCT standards committee, Landsat Ground Station Operators Working Group, 1979, LGSOWG CCT format CCB document: The standard CCT family of tape formats, Doc. No. CCB-CCT-0002E: Landsat Operations Division, Greenbelt, MD.
- Viereck, L.A. and Dyrness, C.T., 1980, A preliminary classification system for vegetation of Alaska: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station, General Technical Report PNW-106, 38 p.

APPENDIX

APPENDIX - RECORD FORMAT SPECIFICATIONS

This appendix describes the contents of the Alaska Interim Mapping Program land cover tape files in detail. Each of the three files included in the land cover data set for one 1:250,000-scale quadrangle is described down to the byte level.

A blank "Contents" field in any of the record descriptions indicates information which will be specific to a data set. The character ^ is used to indicate embedded blanks where they might not be evident in context. Any numbers followed by)8 are assumed to be octal values. Each quadrangle name is abbreviated to 12 characters, if necessary. This "sheet-abbreviation" is used to form the file names of the various files on the tape.

Each tape will contain information in the order described immediately below (record length in parentheses).

VOLUME	Volume Descriptor Record (360 bytes)
DIRECTORY	File Pointer Record - Leader File (360 bytes)
FILE	File Pointer Record - Image File (360 bytes)
EOF	
LEADER	File Descriptor Record (360 bytes)
FILE	Map Title Record (360 bytes)
	Basic Image Display Record (360 bytes)
	Ancillary Image Record (360 bytes)
	Origin Coordinate Record (360 bytes)
	Landsat Frame ID Record #1 (360 bytes)
	...
	Landsat Frame ID Record #i (360 bytes)
	Registration Tick Mark Record #1 (360 bytes)
	...
	Registration Tick Mark Record #j (360 bytes)
	Land Cover Class Description Record #1 (360 bytes)
	...
	Land Cover Class Description Record #k (360 bytes)
	Comment Record #1 (360 bytes)
	...
	Comment Record #n (360 bytes)
EOF	
IMAGE	File Descriptor Record (number of pixels across image)
FILE	Image Data Records (each, number of pixels across image)
EOF	

NULL (360 bytes)
 VOLUME
 DESCRIPTOR
 RECORD

 EOF

 EOF
 EOF

Volume Directory File

Volume Descriptor Record

This section describes the format of the first record of the Volume Directory File.

Field	Bytes	Contents	Description
1	1-4	^^^1	Record sequence number within file
2	5	300)8	Record Type Code
3	6	300)8	
4	7	022)8	
5	8	022)8	
6	9-12	360	Record length in bytes
7	13-14	A^	ASCII record indicator
8	15-16	^^	Always left blank
9	17-28	CCB-CCT-002	Format Control Document
10	29-30	C^	Format Control Document Revision
11	31-32	^A	Record Format Revision Letter
12	33-44		Software Release Number
13	45-60	AKLCsheet-abbreviation	16 character tape ID
14	61-76	AKLCsheet-abbreviation	16 character logical volume ID
15	77-92	AKLCsheet-abbreviation	16 character volume set ID
16	93-94	^1	Number of volumes in the set
17	95-96	^1	Start of logical volume
18	97-98	^1	End of logical volume
19	99-100	^1	Tape number containing VDF
20	101-104	^^^1	First referenced file number in the physical volume
21	105-108	^^^1	Volume number within volume set
22	109-112	^^^1	Volume number within physical volume
23	113-120		Date of tape creation YYYYMMDD

Volume Directory File--continued

Volume Descriptor Record

Field	Bytes	Contents	Description
24	121-128		Time of tape creation HHMMSSXX
25	129-140	USA^^..^	Generating country
26	141-148	USGS/NMD	Generating Agency
27	149-160		Generating Facility
28	161-164	^^^2	Number of pointer records in VDF
29	165-168	^^^3	Number of records in VDF
30	169-260	blanks	Spare Segment - Reserved
31	261-360	blanks	Local Use Segment

File Pointer Record - Leader File

This section describes the format of the second record in the Volume Directory File.

Field	Bytes	Contents	Description
1	1-4	^^^2	Record sequence number within file
2	5	333)8	
3	6	300)8	Record
4	7	022)8	Type
5	8	022)8	Code
6	9-12	360	Record length in bytes
7	13-14	A^	ASCII record indicator
8	15-16	^^	Always left blank
9	17-20	^^^1	Leader file number
10	21-36	LEADsheet-abbreviation	16 character leader file name
11	37-64	AKLC LEADER FILE	File type
12	65-68	LEAD	File type code
13	69-96	8 BIT ASCII ONLY	File data type
14	97-100	ASCO	File data type code
15	101-108		Number of records in the file
16	109-116	360	Leader file - length of FDR
17	117-124	360	Leader file - maximum record length
18	125-136	FIXED LENGTH	Record length type
19	137-140	FXLN	Record length type code
20	141-142	^1	Physical volume number, start of the file
21	143-144	^1	Physical volume number, end of the file
22	145-152	^^^1	First record number of the file on this physical volume

File Pointer Record - Leader File--continued

Field	Bytes	Contents	Description
			<u>Local Use Segment</u>
23	153-260	blanks	Spare Segment - Reserved
24	261-264		Number of Landsat scene records
25	265-268		Number of registration tick mark records
26	269-272		Number of land cover class description records
27	273-276		Number of comment records
28	277-360	blanks	

File Pointer Record - Image File

This section describes the format of the third record of the Volume Directory File.

Field	Bytes	Contents	Description
1	1-4	^^^3	Record sequence number within file
2	5	333)8	
3	6	300)8	Record
4	7	022)8	Type
5	8	022)8	Code
6	9-12	360	Record length in bytes
7	13-14	A^	ASCII record indicator
8	15-16	^^	Always left blank
9	17-20	^^^2	Image file number
10	21-36	IMAGsheet-abbreviation	16 character image file name
11	37-64	ALASKA DIGITAL LAND COVER^^^	File type
12	65-68	AKLC	File type code
13	69-96	BINARY ONLY	File data type
14	97-100	BINO	File data type code
15	101-108	# pixel rows + 1	Number of records in the file
16	109-116	# pixel columns	Image file - length of FDR
17	117-124	# pixel columns	Image file - maximum record length
18	125-136	FIXED LENGTH	Record length type
19	137-140	FXLN	Record length type code
20	141-142	^1	Physical volume number, start of the file
21	143-144	^1	Physical volume number, end of the file
22	145-152	^^...^1	First record number of the file on this tape

File Pointer Record - Image File--continued

Field	Bytes	Contents	Description
<u>Local Use Segment</u>			
23	153-260	blanks	Spare Segment - Reserved
24	261-284		24 character quadrangle name
25	285-288		Number of rows in the image
26	289-292		Number of columns in the image
27	293-294		Number of land cover classes
28	295-360	blanks	

Leader File

File Descriptor Record

This section describes the format of the first record of the Leader File.

Field	Bytes	Contents	Description
1	1-4	^^^1	Record sequence number within file
2	5	077)8	Record Type Code
3	6	300)8	
4	7	022)8	
5	8	022)8	Code
6	9-12	360	Record length in bytes
7	13-14	A^	ASCII record indicator
8	15-16	^^	Always left blank
9	17-28	this document	Control Document Number
10	29-30	this document revision	Control Document Number Revision
11	31-32		File Format Revision Number
12	33-44		Software Release Number
13	45-48	^^^1	File number (excluding VDF)
14	49-64	LEADsheet-abbreviation	16 character file name (same as FPR field 10)
15	65-68	NSEQ	No sequence numbers in records
16	69-76	blanks	
17	77-80	blanks	
18	81-84	NTYP	No record type codes in records
19	85-92	blanks	
20	93-96	blanks	
21	97-100	NLGT	No length indicators in records
22	101-108	blanks	
23	109-112	blanks	

Leader File--continued

File Descriptor Record

Field	Bytes	Contents	Description
24	113	Y	File interpretation information is in the Variable Segment
25	114	N	File interpretation information is not in the Leader file
26	115	Y	Information to display the file is in the Variable Segment
27	116	N	Information to display the file is not in the Leader file
28	117-180	blanks	Spare Segment - Reserved
			<u>Variable Segment</u>
29	181-184		Number of Landsat scene records
30	185-188		Number of registration tick mark records
31	189-192		Number of land cover class description records
32	193-196		Number of comment records
33	197-360	blanks	

Leader File Data Records

This section describes the format of the remaining records of the Leader file. These records contain information encoded in ASCII and so can be typed or printed directly. All records are 360 bytes in length, padded to the full length by blanks, if necessary. Underlined words are examples of data set-specific information.

Record Number	Contents
2	Complete title of the map area covered by the image data. E.g., <u>SAGAVANIRKTOK</u> <u>1:250,000</u> <u>QUADRANGLE</u>
3	Basic image display information. E.g., <u>IMAGE ROWS=2500</u> ; <u>IMAGE COLUMNS=2750</u> ; <u>NUMBER OF LAND COVER CLASSES=7</u>

Leader File Data Records--continued

Record Number	Contents
4	Ancillary non-variable length image information. E.g., CELL SIZE= <u>50</u> METERS; UTM ZONE= <u>6</u>
5	Coordinates of 0,0 pixel (used for image registration). E.g., COORDINATES OF 0,0 PIXEL: UTM= <u>496850</u> <u>Easting</u> , <u>7775000</u> <u>Northing</u> ;LATITUDE= <u>70.0</u> N; LONGITUDE= <u>148.0</u> W
6 - 6+i	LANDSAT scene identification records for the i scenes used; listed in decreasing order of importance. E.g., LANDSAT SCENE= <u>2170-20340</u>
6+i - 6+i+j	Registration tick mark records for the j tick marks used; each tick mark is assigned a labelling letter. E.g., TICK MARK <u>C</u> ; LATITUDE= <u>69.3567</u> DEG N; LONGITUDE= <u>146.2007</u> DEG W; ROW VALUE= <u>2001</u> ; COLUMN VALUE= <u>1579</u>
6+i+j - 6+i+j+k	Land cover class description records for the k classes used; classes are labelled numerically and are listed in increasing order. Only those land cover classes present in the data set will be described. Note that the complete interim classification system contains nineteen classes. E.g., LAND COVER CLASS= <u>4</u> ; <u>TALL AND LOW SHRUBLANDS</u>
6+i+j+k - 6+i+j+k+n	Comment records for the n comments to be made. E.g., COMMENT= <u>GROUND TRUTH DATA PROVIDED BY INSTAAR,</u> <u>UNIVERSITY OF COLORADO</u>

Image File

File Descriptor Record

This section describes the first record of the Image File. This record is as long as the image data records which follow. All records in this file should equal the maximum record length which is equal to the maximum number of cells across the image. The File Descriptor Record is padded with blanks to fit this length. The record length of image files will then vary from quadrangle to quadrangle.

Image File--continued

File Descriptor Record

Field	Bytes	Contents	Description
1	1-4	^^^1	Record sequence number within file
2	5	077)8	Record Type Code
3	6	300)8	
4	7	022)8	
5	8	022)8	Code
6	9-12		Record length in bytes
7	13-14	A^	ASCII record indicator
8	15-16	^^	Always left blank
9	17-28	this document	Control Document Number
10	29-30	this document revision	Control Document Revision Number
11	31-32		File Format Revision Number
12	33-44		Software Release Number
13	45-48	^^^2	File number (excluding VDF)
14	49-64	IMAGsheet-abbreviation	16 character file name (same as FPR Field 10)
15	65-68	NSEQ	No sequence numbers in records
16	69-76	blanks	
17	77-80	blanks	
18	81-84	NTYP	No record type codes in records
19	85-92	blanks	No record lengths in records
20	93-96	blanks	
21	97-100	NLGT	
22	101-108	blanks	
23	109-112	blanks	
24	113	N	File interpretation information is not in the Variable Segment
25	114	N	File interpretation information is not in the Image File
26	115	Y	Information to display the file is in the Variable Segment
27	116	N	Information to display the file is not in the Image File
28	117-180	blanks	Spare Segment - Reserved
<u>Variable Segment</u>			
29	181-184		Number of rows in the image
30	185-188		Number of columns in the image
31	189-192		Number of land cover classes
32	193-EOR	blanks	

Image Data Records

The remaining records of the Image file contain the coded land cover data. Each record has length equal to the number of cells across the image. There is one record of this length for every row of cells in the image.

Each byte of a land cover data record contains a binary integer corresponding to the land cover unit present at that location.

Null Volume Descriptor Record

This section describes the format of the only record in the Null Volume Descriptor file.

Field	Bytes	Contents	Description
1	1-4	^^^1	Record sequence number
2	5	300)8	
3	6	300)8	Record
4	7	077)8	Type
5	8	022)8	Code
6	9-12	360	Record length in bytes
7	13-14	A^	ASCII record indicator
8	15-16	^^	Always left blank
9	17-28	CCB-CCT-0002	Superstructure Control Document
10	29-30	C^	Control Document Revision
11	31-32	^A	Record Format Revision
12	33-44	Software Release Number	
13	45-60	AKLCsheet-abbreviation	16 character tape ID
14	61-76	blanks	
15	77-92	AKLCsheet-abbreviation	16 character volume set ID
16	93-94	^1	Number of tapes in the set
17	95-96	^1	Tape number, start of logical volume
18	97-98	^1	Tape number, end of logical volume
19	99-100	^1	Tape number containing this record
20	101-104	^^^1	First referenced file in physical volume
21	105-108	^^^1	Volume number within the set
22	109-112	^^^1	Logical volume number within physical volume
23	113-120	blanks	
24	121-128	blanks	
25	129-140	blanks	
26	141-148	blanks	
27	149-160	blanks	
28	161-164	blanks	
29	165-168	blanks	
30	169-260	blanks	Spare Segment - Reserved
31	261-360	blanks	Local Use Segment