DATA BASE NEWSLETTER

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A Newsletter about Natural Resource Digital Data Bases Relating to National Park Service Areas

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Editor's Note:

As preoccupied as I am with information and information management, I not long ago realized that I had lost sight of the forest for the trees. I had no overall summary, no ready reference, for the increasing number of digital data bases that my colleague, Maury Nyquist, and I are building here in Denver. Ever more frequently, in describing our work to visitors, I could not remember the details of one data base or another. What I needed was a handy central reference that pulled it all together. So long as I was at it, why not issue the thing Servicewide, so that interested folks "out there" could also learn what was going on? Occasionally, I figured, the information might come in handy. Hence, this our premiere issue.

We intend to cover here, for your benefit as well as ours, news about the digital data bases we are constructing. We will be concerned in these pages with digital data bases only, because of their enormous utility (compared to noncomputerized data bases, such as those on paper or film) and the predominant (though not by any means exclusive) emphasis that we place upon them. I have presented the matter in two sections: completed data bases (i.e., ready to be used), and data bases under construction (not ready to be used). If you know of other "Natural Resource Digital Data Bases Relating to National Park Service Areas" (as our subtitle indicates), please let me know (FTS 234-4527) and maybe we can include news of them in a future issue.

Harvey Fleet

About our logo: Our logo attempts to portray computers and computer technology (represented by the CRT) in the service of management (represented by the ranger hat). We do indeed hope that management can "hang its collective hat" --at least partly--on these capabilities in dealing with resource problems and issues. (Many thanks to Nancy Thorwardson, our geographic information specialist, for creating, drawing, and--yes--digitizing the logo.)

COMPLETED DATA BASES

Data Base	Olympic National Park and surrounding region
Type	Cellular
Source	1976 Landsat data and DMA topographic data
Scale of source map(s) or base map(s) . .	NA
Minimum mapping unit or resolution . . .	50m X 50m cells (approx. 0.6 acre in size)
Organization	Regionwide (one-million acres), by theme, one theme to a file.
Size	Fifty-million pixels.
Software/hardware system	ELAS/Varian 75 minicomputer system

Themes:

- Unprocessed Landsat data
- DMA data
- Spectral classes
- Nine-class vegetation/land cover
- Twenty-one-class vegetation/land cover
- Elevation
- Slope
- Aspect
- Geographic zones
- NFDRS fuel models
- Potential fire hazard model
- Park boundary

Data Base	Imagery Coverage
Type	Line
Source	NCIC
Scale of source map(s) or base map(s) . .	NA
Minimum mapping unit or resolution . . .	NA
Organization	By park, one mapfile for each park: Yellowstone, Great Smokies, Glacier, Olympic, Big Thicket, Big Bend, Sequoia/Kings Canyon, Organ Pipe, Rocky Mountain
Size	Approximately 4000 accessions
Software/hardware system	SAGIS/CDC CYBER

Themes:

Imagery accessions at EROS Data Center

Data Base	Saratoga
Type	Line
Source	1981 color-infrared aerial photography
Scale of source map(s) or base map(s) . .	1:12000
Minimum mapping unit or resolution . . .	Approximately 1 acre
Organization	By park unit: Saratoga, Schuylerville
Size	600 lines and polygons
Software/hardware system	SAGIS/CDC CYBER

Themes:

Vegetation

Data Base	Upper Delaware
Type	Line
Sources	For landuse/land cover: 1979 1:24000-scale black-and-white aerial photography; other themes: from USGS, state, and county maps
Scale of source map(s) or base map(s) . .	Various
Minimum mapping unit or resolution . . .	5 acres
Organization	Study-corridor-wide; some themes to township boundaries
Size	3187 lines and polygons
Software/hardware system	SAGIS/CDC CYBER

Themes:

- Land use
- Land cover
- Transportation
- Utilities
- Geology
- Soils
- Zoning (by type)
- Zoning (by density)
- Floodprone areas
- Prime agricultural lands
- Ownership
- Recreation zones
- Political boundaries
- Quad sheet boundaries
- Mineral resources
- Significant features

Data Base	Shenandoah National Park and surrounding region
Type	Cellular
Source	Landsat data (winter and summer 1976) and DMA data
Scale of source map(s) or base map(s)	NA
Minimum mapping unit or resolution	50m X 50m cells (approx. 0.6 acre in size)
Organization	Regionwide, by theme, one theme to a file, Region includes a one-million-acre area surrounding the park.
Size	Twenty-five million pixels
Software/hardware system	ELAS/Varian 75 minicomputer system

Themes:

Unprocessed Landsat data (2 seasons)

DMA data

Unlumped spectral classes

Twenty-two-class vegetation/land cover

Elevation

Slope

Aspect

Boundaries, roads, trails

NFDRS fuel models

Data Base	Cape Cod
Type	Line
Source	Aerial photography (for 1979 data); existing map (for 1962 data)
Scale of source map(s) or base map(s) . .	1:24000; 1:25000
Minimum mapping unit or resolution . . .	5 acres
Organization	By quad sheet: Provincetown, North Truro, Wellfleet, Orleans, Chatham. Quad sheets cannot be merged one to another.
Size	3775 lines and polygons
Software/hardware system	SAGIS/CYBER

Themes:

Vegetation

Roads (except Orleans '79)

Township boundaries

Park boundaries

Coastlines (1962 only)

Developed areas

Data Base	Death Valley National Monument and surrounding region
Type	Cellular
Source	Landsat (spring 1973)
Scale of source map(s) or base map(s)	NA
Minimum mapping unit or resolution	50m X 50m cells (approx. 0.6 acre)
Organization	Regionwide, by theme, one theme to a file. Region includes a three-million-acre area surrounding the park.
Size	Thirty-million pixels
Software/hardware system	ELAS/Varian 75 minicomputer system

Themes:

Unprocessed Landsat data

Unlumped spectral classes

Geology/vegetation/landcover

Data Base	Big Thicket National Preserve and surrounding region
Type	Cellular
Source	Landsat (winter 1976 and spring 1977)
Scale of source map(s) or base map(s) . .	NA
Minimum mapping unit or resolution . . .	50m X 50m cells (approx. 0.6 acre in size)
Organization	Regionwide, by theme, one theme to a file. Region includes a 1.1-million-acre area surrounding the park.
Size	11-million pixels
Software/hardware system	ELAS/Varian 75 minicomputer system

Themes:

Unprocessed Landsat data (2 seasons of coverage)

Eighteen-class vegetation/land cover

NFDRS fuel models

Data Base	NPFLORA
Type	Text
Source	Soil Conservation Service National List of Scientific Plant Names and Park Floras
Scale of source map(s) or base map(s) . .	NA
Minimum mapping unit or resolution . . .	NA
Organization	Hierarchical by key attributes: phylum, class, subclass, order, family, genus, species, infraspecies, habit, national distribution, park, and literature source.
Size	Data on 22,000 vascular plant taxa in 19 parks
Software/hardware system	System 2000/CDC CYBER

Themes: Vascular plants of selected units of the National Park System

DATA BASES UNDER CONSTRUCTION

Data Base	Yellowstone
Type	Line
Source	Habitat type: park map; geology: USGS-published map; cover type: 1:40000-scale aerial photographs
Scale of source map(s) or base map(s) . .	Habitat type and geology: 1:125000; cover type: 1:62500
Minimum mapping unit or resolution . . .	Approximately 50 acres
Organization	By 15' quad sheets, in pairs, fourteen pairs in all
Size	Approximately 20,000 lines and polygons, one-million X-Y points
Software/hardware system	SAGIS/CDC CYBER

Themes:

Cover type

Geology

Habitat type

Data Base . . . . . Great Smokies

Type . . . . . Line

Source . . . . . Maps from the GMP and park; USGS quad sheets

Scale of source map(s) or base map(s) . . 1:125000 and 1:24000

Minimum mapping unit or resolution . . . Approximately 1 acre

Organization . . . . . Park-wide and by quad sheet

Size . . . . . 4461 lines and polygons

Software/hardware system . . . . . SAGIS/CDC CYBER

Themes:

- Streams
- Boundaries
- Park facilities
- Roads
- Trails
- Historic sites and structures
- Watershed boundaries
- Monitoring stations
- Kudzu sites

Data Base	Great Smokies National Park and surrounding region
Type	Cellular
Source	Aircraft MSS (winter & spring 1982); DMA
Scale of source map(s) or base map(s) . .	NA
Minimum mapping unit or resolution . . .	13m X 13m (approx. 0.04 acres)
Organization	Slope, aspect, and elevation: regionwide (750,000 acres), one theme to a file. Other themes on separate files covering approximately half the region.
Size	Approximately 500-million pixels
Software/hardware system	ELAS/Varian 75 minicomputer system

Themes:

Unprocessed aircraft scanner data
Unprocessed DMA data
Spectral classes
Vegetation/landcover
Elevation
Slope
Aspect
Fuel models
Soils (potential addition)

Data Base	Yosemite National Park
Type	Line
Source	1930 cover-type map
Scale of source map(s) or base map(s) . .	1:125,000
Minimum mapping unit or resolution . . .	Unknown, but probably about fifty acres
Organization	By quadrants (singly or in pairs) of fifteen-minute quad sheets (twenty-four sections in all)
Size	Not yet known, but probably about seven-thousand polygons
Software/hardware system	SAGIS/CYBER

Themes:

1930 cover type

Note: These data, originally mapped on a base map prepared early in the century, do not register to modern, properly georeferenced maps. In effect, they "float free" in space and cannot, in their present form, be compared with contemporary data. Using appropriate software, we hope later to "rubber sheet" them to their correct georeferenced positions.

Data Base	Yosemite National Park and surrounding region
Type	Cellular
Source	Aircraft MSS, DMA, and some DEM's
Scale of source map(s) or base map(s) . .	NA
Minimum mapping unit or resolution . . .	13m X 13m (approx. 0.04 acres)
Organization	Slope, aspect, and elevation: regionwide (one million acres), one theme to a file. Other themes on separate files covering approximately one quarter of the region.
Size	Approximately 930-million pixels
Software/hardware system	ELAS/Varian 75 minicomputer system

Themes:

Unprocessed aircraft scanner data
Spectral classes
Unprocessed DMA daa
Vegetation/landcover
Elevation
Slope
Aspect
Fire fuel models
Fire behavior models

Data Base	North Cascades National Park and surrounding region
Type	Cellular
Source	Landsat MSS and DMA
Scale of source map(s) or base map(s) . .	NA
Minimum mapping unit or resolution . . .	50m X 50m (approx. 0.6 acre)
Organization	One theme to a file, each theme covering the entire three-quarter-million-acre region.
Size	Approximately 14-million pixels
Software/hardware system	ELAS/Varian 75 minicomputer system

Themes:

- Unprocessed Landsat MSS
- Unprocessed DMA
- Spectral classes
- Vegetation/landcover
- Elevation
- Slope
- Aspect
- Fuel models
- Boundaries, roads, trails

Data Base	Big Bend National Park and surrounding region
Type	Cellular
Source	Aircraft MSS data (10 channels)
Scale of source map(s) or base map(s) . .	NA
Minimum mapping unit or resolution . . .	15m X 15m cells (approx. 0.055 acres in size)
Organization	By thirds of the region, which includes a one-million-acre area surrounding the park.
Size	345-million pixels
Software/hardware system	ELAS/Varian 75 minicomputer system

Themes:

Unprocessed aircraft scanner data

Spectral classes

DMA data

Twenty-six class vegetation/landcover