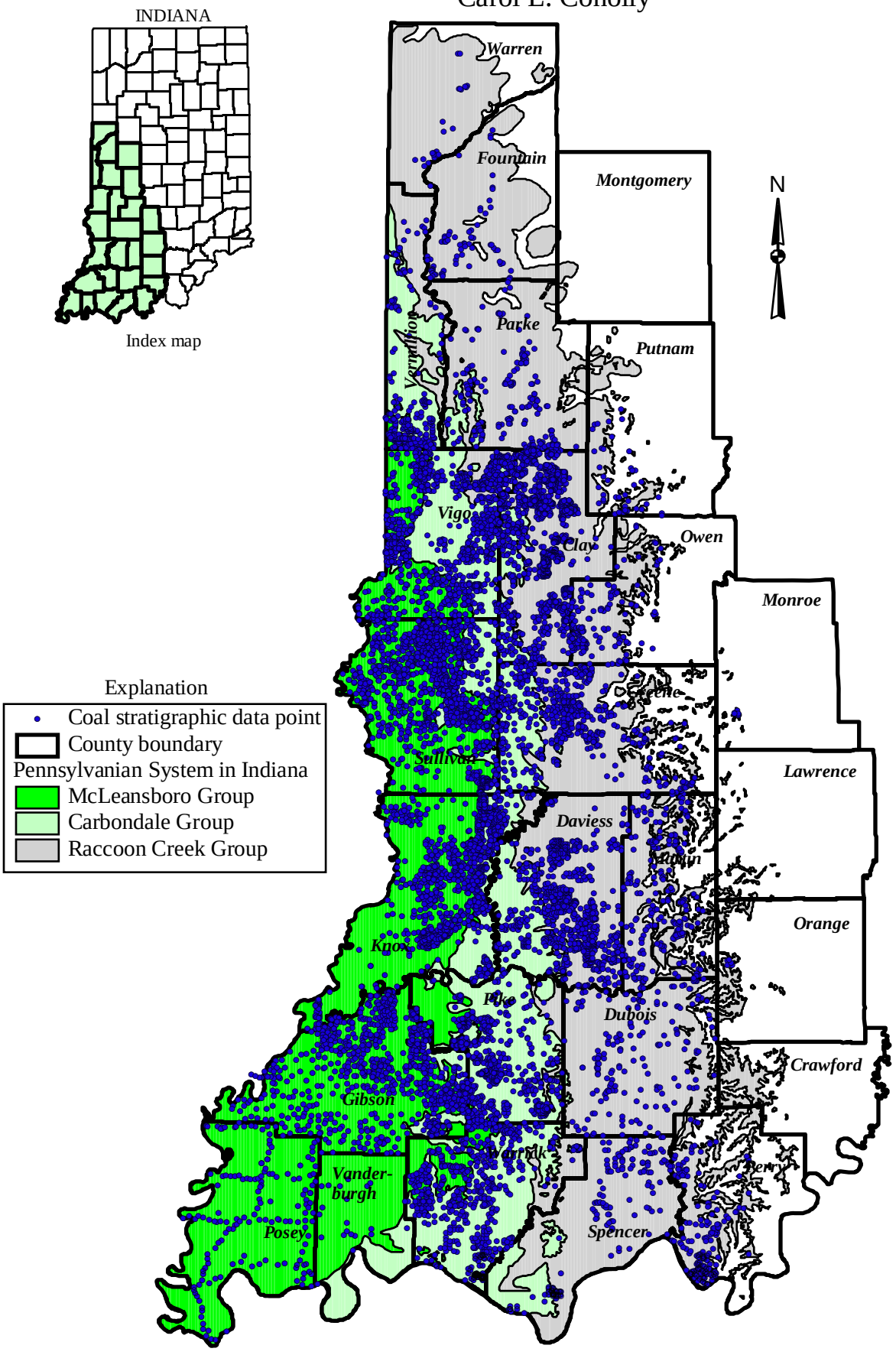
The Indiana Geological Survey Coal Stratigraphic Database

Indiana Geological Survey Open-File Study 01-5

April 2001

by

Carol L. Conolly



Indiana Geological Survey
611 North Walnut Grove
Bloomington, IN 47405

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I. Introduction

This document provides a brief history of the Indiana Geological Survey's coal stratigraphic database, an explanation of the contents of the CD-ROM, and instructions for opening the database. Questions regarding the database should be directed to:

Indiana Geological Survey
611 North Walnut Grove
Bloomington, Indiana 47405-2208
phone: 812-855-7636
fax: 812-855-2862
e-mail: IGSinfo@indiana.edu
Internet address: http://www.indiana.edu/~igs

II. Brief history of this database

Since 1980, members of the Indiana Geological Survey (IGS) have collected and entered coal resource information into this database as part of the National Coal Resources Database System (NCRDS) cooperative project with the U.S. Geological Survey (USGS). The purpose of this project is to provide a means of rapid retrieval of point-source coal resource information, including coal location, thickness, depth, and other parameters. The IGS plans to continue adding data to this database as long as funding for this project is available. Information about the NCRDS cooperative project and about the USGS Coal Resources databases may be found at the following Internet address: http://energy.er.usgs.gov/products/databases/USCoal .

III. Contents of this CD-ROM

This CD-ROM contains the Indiana Geological Survey's coal stratigraphic database, **NCRDS_Indiana2000.mdb**.

NCRDS_Indiana2000.mdb is a Microsoft Access database (version 2000) that contains tables which provide detailed location and stratigraphic information for 11,560 public, point-source coal resource data in southwestern Indiana. This database represents the data that have been collected as of January 2001. Figure 1 illustrates the location of these data points plotted on a 1:1,250,000-scale county base map.

The **NCRDS_Indiana2000.mdb** database contains the tables described below. Figure 2 provides a view of all the tables that one would see upon opening the database.

1. LOCATION = Location information for each data point. Corresponding geologic information for each data point is contained in the STRATIGRAPHY table. There is one record in the LOCATION table for each data point described in the STRATIGRAPHY table; in other words, the LOCATION and STRATIGRAPHY table are associated by a one-to-many relationship. To view this relationship, open the **NCRDS_Indiana2000.mdb** database and select the Relationships button on the toolbar. Figure 3 illustrates the results that one should see upon selecting the Relationships button.

2. STRATIGRAPHY = Stratigraphic information for each data point.

A brief explanation of each field in the LOCATION and STRATIGRAPHY tables is provided in the tables themselves. One may view an explanation for a particular field by moving the cursor to the field, or by viewing the table in Design view. To see a table in Design view, first select the table and then select the Design button on the toolbar. Figure 4 illustrates the results that one should see when viewing the LOCATION table in Design view.

3. The following accessory tables in the **NCRDS_Indiana2000.mdb** database provide additional information about the contents of the LOCATION and STRATIGRAPHY tables:

a) lookuptable_abbreviations – Explains the abbreviations used in the LOCATION and STRATIGRAPHY tables.
b) lookuptable_coalnames – Names of Illinois Basin Coal Members. Figure 5 is a correlation chart of coalbeds in the Illinois Basin.

c) lookuptable_stratigraphic_units – Names of Pennsylvanian and Mississippian stratigraphic units in Indiana.
d) valid_elvprec - Explanation of the codes used in the elvprec field in the LOCATION table.
e) valid_llprec - Explanation of the codes used in the llprec field in the LOCATION table.
f) valid_contact – Explanation of the codes used in the contact field in the STRATIGRAPHY table.
g) valid_dscplog - Explanation of the codes used in the dscplog field in the STRATIGRAPHY table.
h) valid_fossils – Explanation of the codes used in the fossil field in the STRATIGRAPHY table.
i) valid_lith - Explanation of the codes used in the lith field in the STRATIGRAPHY table.
j) valid_unitqual - Explanation of the codes used in the unitqual field in the STRATIGRAPHY table.

IV. Instructions for opening the database

To open **NCRDS_Indiana2000.mdb**, you will need to do the following:

a. copy **NCRDS_Indiana2000.mdb** to your local hard drive
b. right-select **NCRDS_Indiana2000.mdb**
c . left-select "Properties," then left-select the "General" tab
d. uncheck the "Read-only" box
e. double-click **NCRDS_Indiana2000.mdb** to open the database

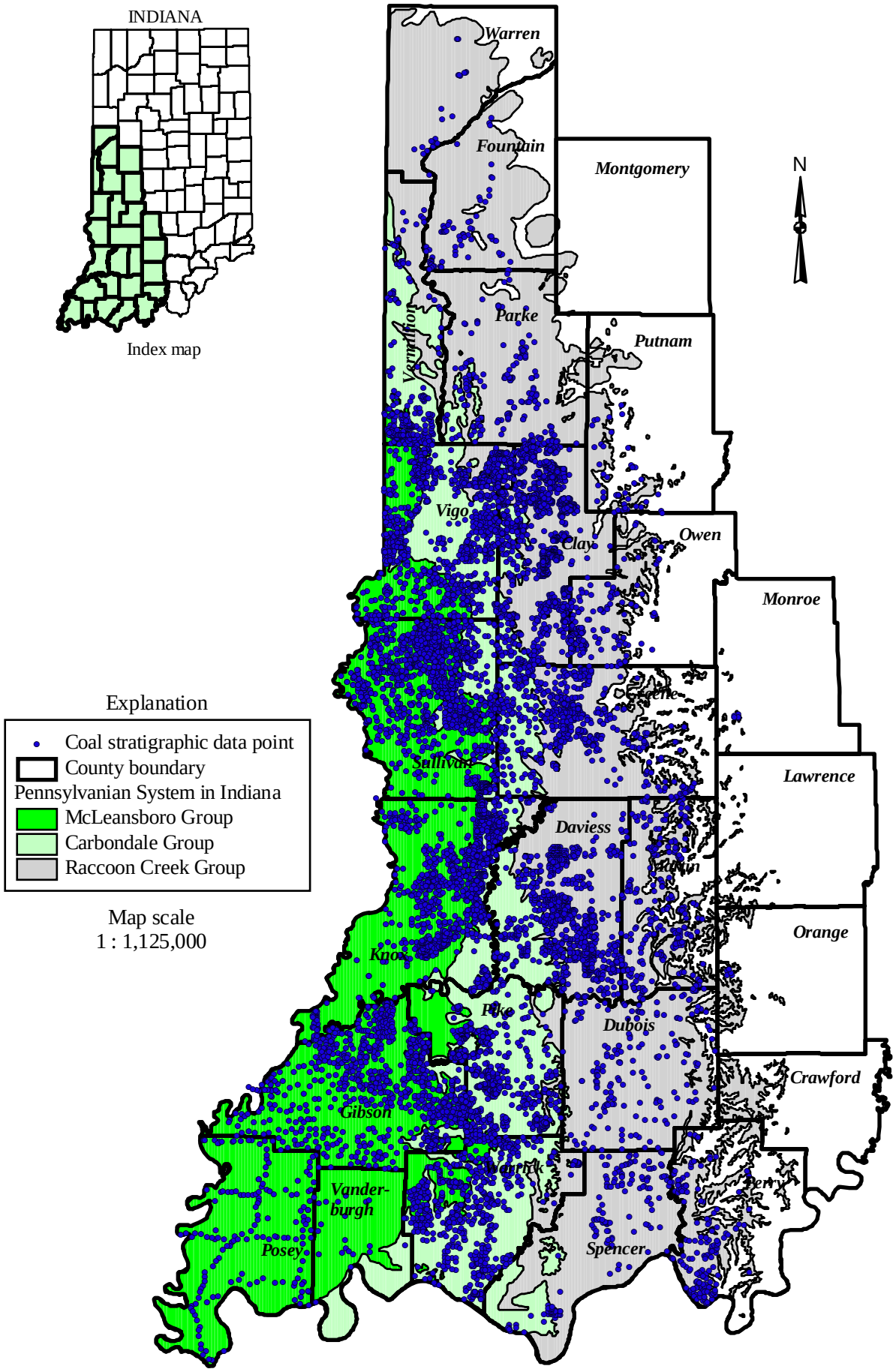

Figure 1. Map of southwestern Indiana showing the location of coal stratigraphic data points as of January 2001.

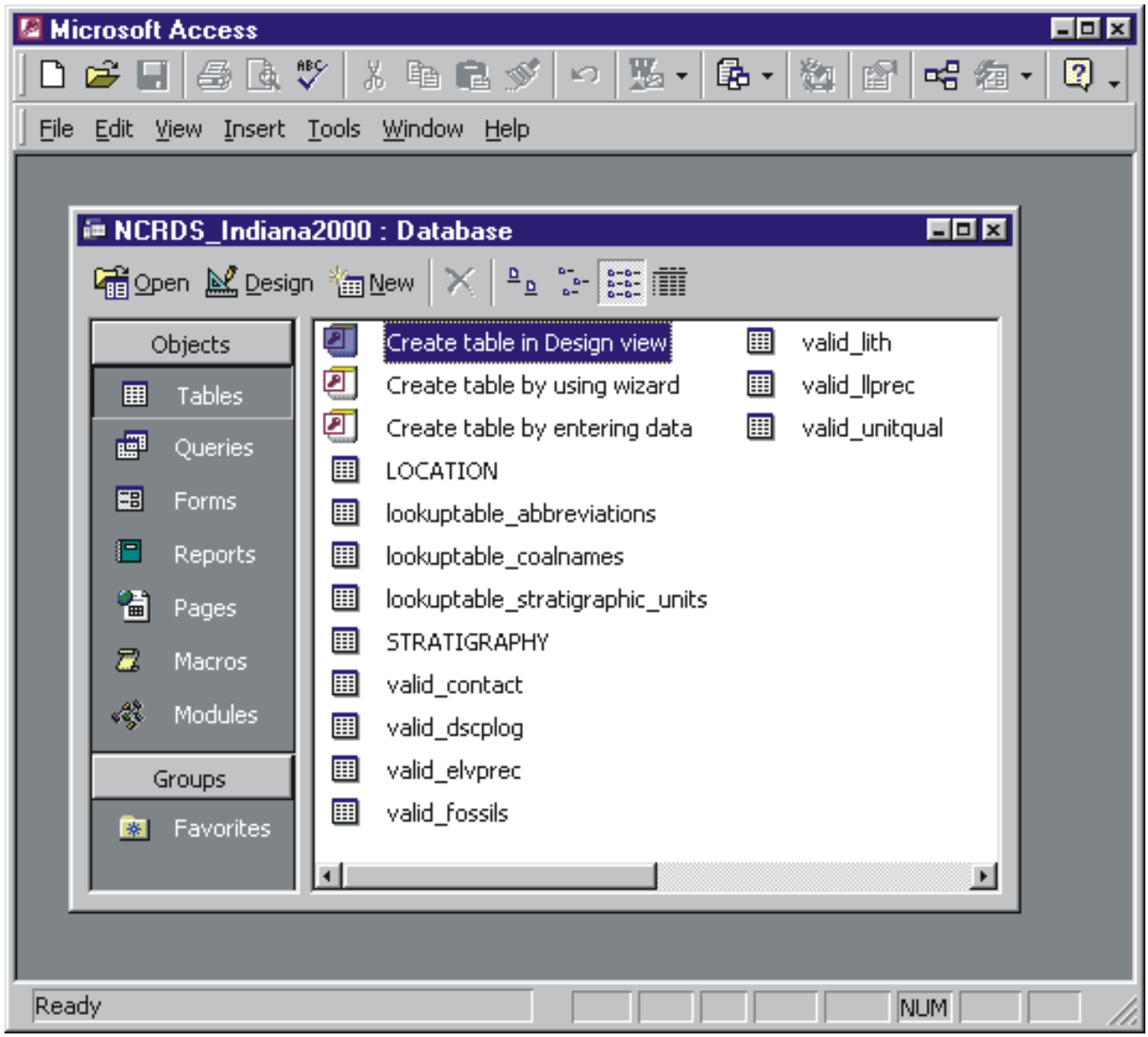

Figure 2. A view of the tables in the NCRDS_Indiana2000.mdb database.

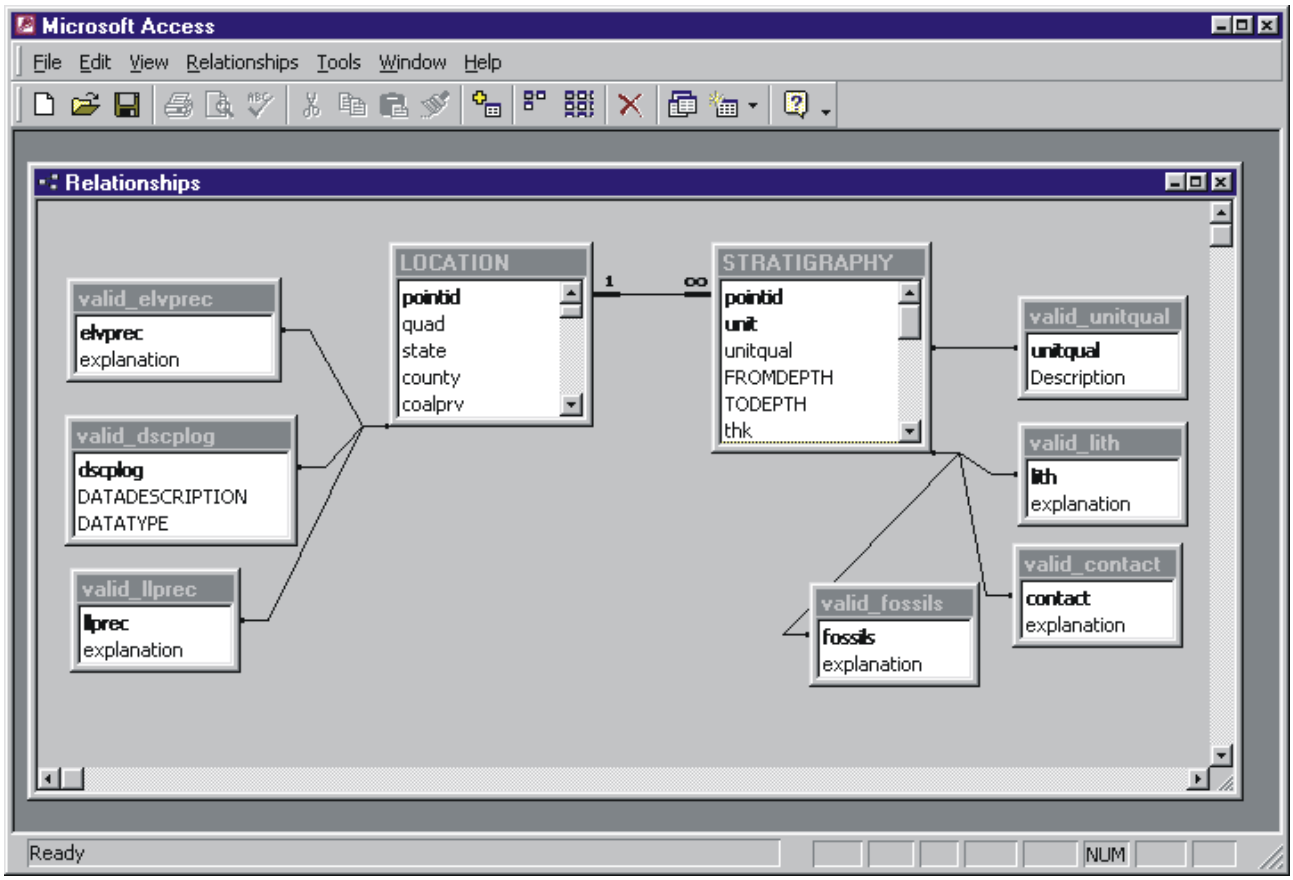

Figure 3. Table relationships in the NCRDS_Indiana2000.mdb database.

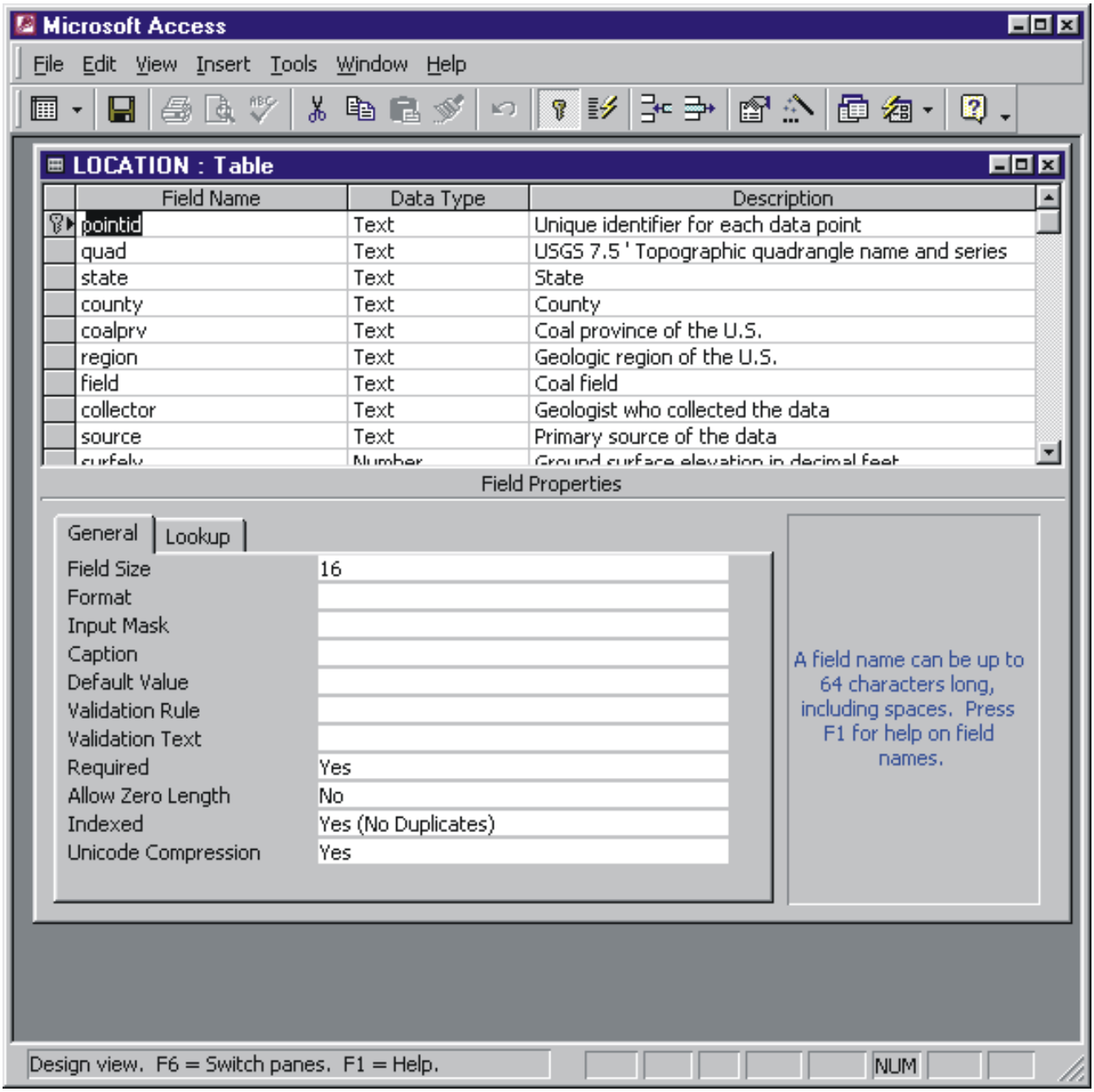

Figure 4. The LOCATION table in Design view.

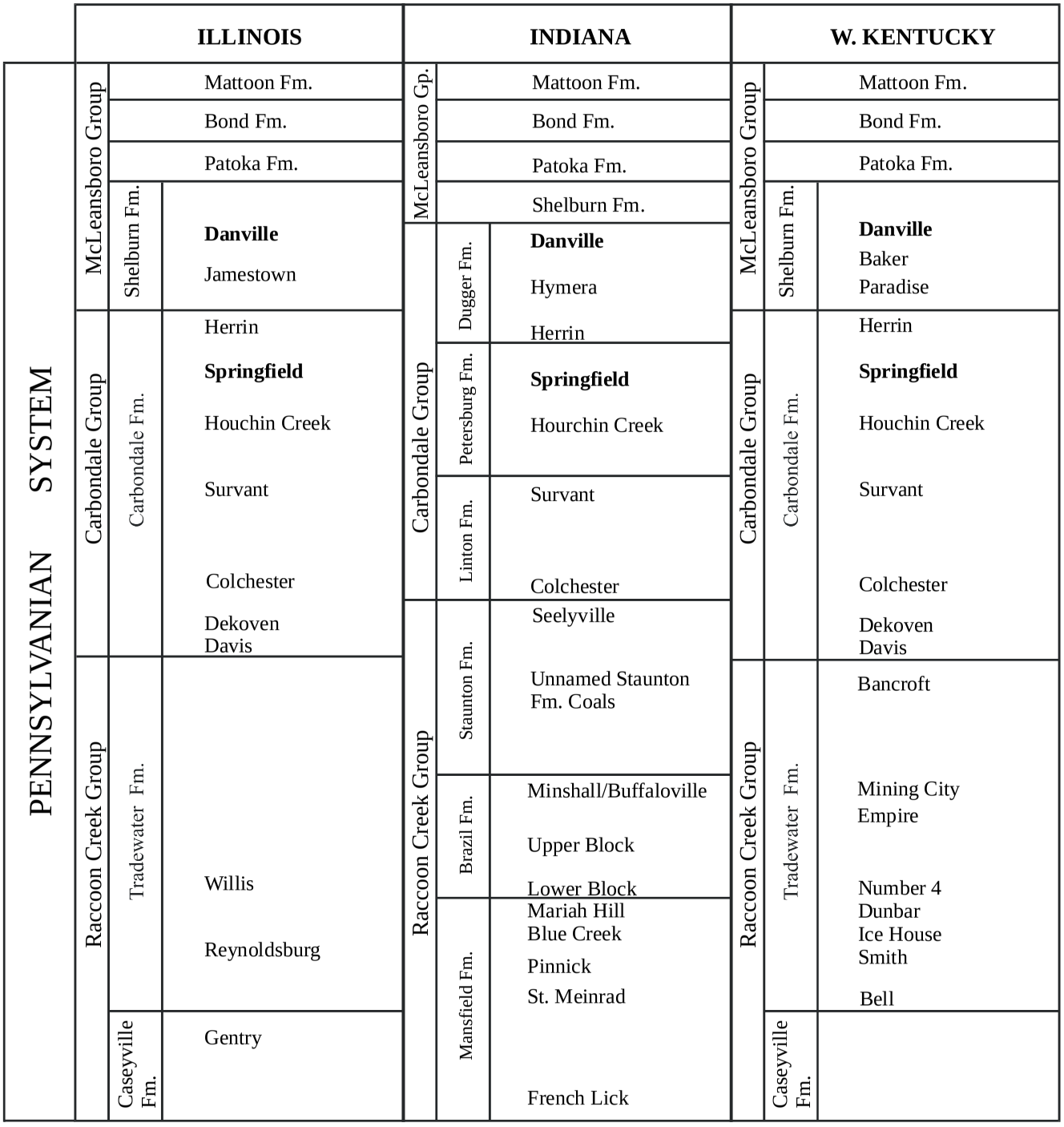

Figure 5. Lithostratigraphy of the Pennsylvanian System in the Illinois Basin, showing major coalbeds.

Appendix 1. Field definitions of the LOCATION table.

Field definitions of the LOCATION table				
Field Number	Field Name	Data type	Field Size	Description
1	pointid	Text	16	Unique identifier for each data point
2	quad	Text	28	USGS 7.5 ' topographic quadrangle name and series
3	state	Text	8	State
4	county	Text	24	County
5	coalprv	Text	16	Coal province of the U.S.
6	region	Text	16	Geologic region of the U.S.
7	field	Text	16	Coal field
8	collector	Text	20	Geologist who collected the data
9	source	Text	55	Primary source of the data
10	surfelv	Single	4 bytes	Ground surface elevation in decimal feet
11	elvprec	Integer	2 bytes	Ground surface elevation precision
12	totdept	Double	8 bytes	Total depth logged in decimal feet
13	dscplog	Integer	2 bytes	Data type code
14	weaqual	Integer	2 bytes	Weathering quality
15	date	Double	8 bytes	Date of data entry (yyyymmdd)
16	estrank	Text	12	Estimated coal rank
17	locstr	Integer	2 bytes	Local strike direction
18	locdip	Integer	2 bytes	Local dip direction
19	locangl	Integer	2 bytes	Local angle direction
20	latitud	Double	8 bytes	Latitude in decimal degrees
21	longtud	Double	8 bytes	Longitude in decimal degrees
22	llprec	Integer	2 bytes	Precision of latitude, longitude location
23	confid	Integer	2 bytes	1 = confidential; blank = public data
24	pmerid	Integer	2 bytes	Principal meridian
25	quartr1	Text	2	Public land survey system: 2.5-acre quarter
26	quartr2	Text	2	Public land survey system: 10-acre quarter
27	quartr3	Text	2	Public land survey system: 40-acre quarter
28	quartr4	Text	2	Public land survey system: 160-acre quarter
29	section	Integer	2 bytes	Public land survey system: section number
30	twnship	Integer	2 bytes	Public land survey system: township number
31	tns	Text	1	Public land survey system: township direction
32	range	Integer	2 bytes	Public land survey system: range number
33	rew	Text	1	Public land survey system: range direction
34	comment1	Text	55	Additional data regarding data source
35	hydrocd	Integer	2 bytes	USGS Hydrologic Unit number
36	fileptr	Text	16	Name of a related database
37	ownrshp	Text	16	Data ownership indicator
38	COUNT	Long Integer	4 bytes	Unique numeric value for each data point
39	UTMX27	Long Integer	4 bytes	Universal Transverse Mercator x-coordinate, NAD 1927
40	UTMY27	Long Integer	4 bytes	Universal Transverse Mercator y-coordinate, NAD 1927
41	UTMX83	Long Integer	4 bytes	Universal Transverse Mercator x-coordinate, NAD 1983
42	UTMY83	Long Integer	4 bytes	Universal Transverse Mercator y-coordinate, NAD 1983
45	SPX27	Long Integer	4 bytes	State Plane x-coordinate, NAD 1927
46	SPY27	Long Interger	4 bytes	State Plane y-coordinate, NAD 1927
43	DATADESCRIPTION	Text	50	Explanation of the value in the dscplog field
44	DATATYPE	Text	50	Generalization of the DATADESCRIPTION field

Appendix 2. Field definitions of the STRATIGRAPHY table.

Field definitions of the STRATIGRAPHY table				
Field Number	Field Name	Data Type	Field Size	Description
1	pointid	Text	16	Data point identifier
2	unit	Integer	2 bytes	Sequential number for each unit in the data point
3	unitqual	Text	4	Unit qualifier: refer to the "valid_unitqual" table
4	FROMDEPTH	Double	8 bytes	Depth to the top of the unit in decimal feet
5	TODEPTH	Double	8 bytes	Depth to the bottom of the unit in decimal feet
6	thk	Single	4 bytes	Unit thickness in decimal feet
7	formatn	Text	20	Geologic Formation
8	bed	Text	20	Stratigraphic unit name
9	lith	Text	16	Primary lithology: refer to the "valid_lith" table
10	lithmod	Text	13	Lithology modifier
11	color	Text	10	Color
12	grnsize	Text	8	Grain size
13	grnshp	Text	8	Grain shape
14	mineral	Text	12	Mineralogy
15	bedding	Text	8	Bedding
16	contact	Text	1	Contact with unit above: refer to the "valid_contact" table
17	fossils	Text	1	Fossils: refer to "valid_fossils" table
18	wc1	Text	4	User definable field #1
19	wc2	Double	8 bytes	User definable field #2
20	comment2	Text	60	Additional comments