SAMPLE

Geodatabase schema diagram

This diagram was auto-generated by the Geodatabase Diagrammer application sample and contains graphic elements that you can use to produce a data model diagram. This sample is available from the ArcScripts site on www.esri.com. You can find examples of finished data model diagrams at the data model section of arconline.esri.com.

Geodatabase C:\AvalancheGIS\ISSW\Geodatabase\Obs.mdb
Date generated Monday, August 23, 2004 By Douglas Scott of Avalanche Mapping ©

Geodatabase summary graphics

You can use these graphics to construct a structural summary of your geodatabase.

- **Obs1** Point feature class — Snow And Weather Observations.
- **Obs2** Point feature class — Snowpack Observations.
- **Obs3** Polygon feature class — Avalanche Observrtations.

This Geodatabase design was referenced from the:
The American Avalanche Association
and
The USDA Forest Service National Avalanche Center's
Snow, Weather, and Avalanche:
Observational Guidelines for Avalanche Programs
In the United States.
Published in 2004

Geodatabase detail graphics

You can use these graphics to lay out a detailed diagram of your geodatabase schema.

Simple feature class Obs1

Geometry Point · Contains M values No · Contains Z values Yes

Snow and Weather Observations.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
SHAPE	Geometry	Yes					
Observation_Location	String	No					50
Observer	String	No					50
Date_	Date	No			0	0	8
Time_	Short integer	No			0		
Elevation	String	No					
Air_Temperature	Short integer	No			0		
New_Snow_Depth	Short integer	No			0		
Total_Snow_Depth	Short integer	No			0		
Water_Content_of_New_Snow	Short integer	No			0		
Snow_Temperature	Short integer	No			0		
Wind_Direction	String	No		Wind Direction			10
Sky_Condition	String	No		Sky Condition			
Precipitation_Type	String	No		Precipitation Type			25
Precipitation_Rate	String	No		Precipitation Rate			25
Snow_Transport	String	No		Snow Transport			25
Snow_Classification	String	No		Snow Classification			35
Surface_Crust_Type	String	No		Surface Crust			25
Wind_Speed	String	No		Wind Speed			20
Surface_Penetration	String	No					20
Maximum_Wind_Gust	String	No		Maximum Wind Gust			15
New_Liquid_Precipitation	String	No					20
Note_	String	No					100

Location of site to nearest topographic landmark.
Name of Personal who made the observation.
Time of observation, 24 hour clock..
Altitude in Feet(meters).
Maximum, minimum and current air temperature.
Depth of snow from the last 24 hour period.
Total depth of snow on the ground.
Water content of the snow during the last 24 hour period.
Snow temperature 20cm below snow surface.
Average wind direction after 2 minute observation.
Sky conditions, clear, few, scattered, broken, overcast, or obscured.
Current weather precipitation type.
Current weather precipitation rate.
Extent of snow transport at ridge tops.
Form and size of surface snow and subclasses.
Surface deposits and crust subclasses.
Estimate wind speed by observing for 2 minutes.
Surface penetration to nearest whole centimeter.
Observe wind for 2 minutes and record the maximum wind gust.
Record the depth of liquid precipitation from the last 24 hours.
Observer notes not coved in the above observations.

Simple feature class Obs2

Geometry Point · Contains M values No · Contains Z values Yes

Snowpack Observations.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
SHAPE	Geometry	Yes					
Observation_Location	String	No					50
Observer	String	No					50
Date_	Date	No			0	0	8
Time_	Short integer	No			0		
Elevation	Long integer	No			0		
Aspect	String	No		Aspect			10
Slope	Short integer	No			0		
Total_Snow_Depth	Short integer	No					
Hardness	String	No		Snow Hardness			15
Grain_Size	String	No					20
Grain_Type	String	No		Snow Description			30
Snow_Stability	String	No		Snow Stability			25
Test_Profile	String	No		Test Profile			10
Full_Test	String	No		Full Test			10
Snow_Classification	String	No		Snow Classification			15
Shovel_Shear_Test	String	No		Shovel Shear Score			15
Rutschblock_Score	String	No		Rutschblock Score			15
Boardblock_Score	String	No		Boardblock Score			15
Stuffblock_Score	String	No		Stuffblock Score			15
Ram_Profile	String	No					15
Surface_Penetration	String	No					20
Compression_Test	String	No		Compression Test			15
Slope_Cut_Score	String	No		Slope Cut Score			15
Sky_Condition	String	No		Sky Condition			20
Air_Temperature	Short integer	No			0		
Precipitation_Type	String	No		Precipitation Type			25
Precipitation_Rate	String	No		Precipitation Rate			25
Wind_Speed	String	No		Wind Speed			20
Wind_Direction	String	No		Wind Direction			10
Avalanche_Danger	String	No		Avalanche Danger			20
Avalanche_Hazard	String	No		Avalanche Hazard			20
Snow_Layers_1	String	No					50
Snow_Layers_2	String	No					50
Snow_Layers_3	String	No					50
Snow_Layers_4	String	No					50
Snow_Layers_5	String	No					50
Snowplotid	String	No					20
Note_	String	No					100

Location of site to nearest topographic landmark.
Name or Names of Personal who made the observation.
Date of observation (YYYYMMDD).
Time of observation, 24 hour clock..
Altitude in Feet(meters).
Record the direction the slope faces.
Record the incline of slope where observations are being made.
Total depth of snow on the ground.
The hardness of each layer checked with the hand hardness test.
Determine the grain size of each layer.
Basic classification of snow on the ground and subclasses.
The chance that avalanches do not initiate, analyzed in space and time.
Observations made commonly at a targeted site or fracture line these can be varied in the amount of information collected.
Observations made at a study plot or study slopes in a time series to track changes in the snow pack.
Form and size of surface snow and subclasses.
Record the results of the shovel shear test.
Record results of the Rutschblock test.
Record the results of the boardblock test.
Record the results of the stuffblock test.
Record results of the ram profile test.
Surface penetration to nearest whole centimeter.
Record the results of the compression test.
Record results of the slope cut score.
Sky conditions, clear, few, scattered, broken, overcast, or obscured.
Maximum, minimum and current air temperature.
Current weather precipitation type.
Current weather precipitation rate.
Estimate wind speed by observing for 2 minutes.
Average wind direction after 2 minute observation.
The potential for avalanches to cause death or injury to backcountry recreationists.
The potential for avalanches to cause death or injury to people, things of value, or the environment.
Determine the boundary for each layer and report its characteristics.
Determine the boundary for each layer and report its characteristics.
Determine the boundary for each layer and report its characteristics.
Determine the boundary for each layer and report its characteristics.
Determine the boundary for each layer and report its characteristics.
The number of the Snow Pilot profile.
Observer notes not coved in the above observations.

Simple feature class Obs3

Geometry Polygon · Contains M values No · Contains Z values YES

Avalanche Observrtations.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
SHAPE	Geometry	Yes					
Observation_Location	String	No					50
Observer	String	No					50
Date_	Date	No			0	0	8
Time_	Short integer	No			0		
Elevation	Long integer	No			0		
Aspect	String	No		Aspect			10
Slope	Short integer	No			0		
Total_Snow_Depth	Short integer	No			0		
Snow_Layers1	String	No					20
Snow_Layers2	String	No					20
Snow_Layers3	String	No					20
Snow_Layers4	String	No					20
Snow_Layers5	String	No					20
Hardness	String	No		Snow Hardness			20
Grain_Size	String	No					20
Grain_Type	String	No		Snow Description			30
Snow_Classification	String	No		Snow Classification			15
Area	String	No					50
Size_	String	No		Size			20
Dimensions	String	No					20
Avalanche_Type	String	No		Failure type			10
Path_Name	String	No					50
Trigger	String	No		Trigger			10
Destructive_Force	String	No		Destructive Potential			10
Snow_Failure	String	No		Failure type			10
Water_Content	String	No		Water Content			10
Terminus	String	No		Terminus			10
Secondary_Trigger_Code	String	No		Secondary Trigger			10
Mapid	Short integer	No			0		
Bed_Surface	String	No		Bed Surface			20
Slab_Thickness	String	No					10
Start_Zone	String	No		Zone Start			10
Detailed_Terminus	String	No		Detailed Terminus			20
Number_of_Charges	Short integer	No			0		
Size_of_Charges	Short integer	No			0		
Number_of_Detonations	Short integer	No			0		
Snow_Pilot_ID	String	No					10
Note_	String	No					100
SHAPE_Length	Double	Yes			0	0	
SHAPE_Area	Double	Yes			0	0	

Location of site to nearest topographic landmark.
Name or Names of Personal who made the observation
Date of observation (YYYYMMDD).
Time of observation, 24 hour clock..
Altitude in Feet(meters).
Record the direction the slope faces.
Record the incline of slope where observations are being made.
Total depth of snow on the ground.
Determine the boundary for each layer and report its characteristics.
Determine the boundary for each layer and report its characteristics.
Determine the boundary for each layer and report its characteristics.
Determine the boundary for each layer and report its characteristics.
Determine the boundary for each layer and report its characteristics.
The hardness of each layer checked with the hand hardness test.
Determine the grain size of each layer.
Basic classification of snow on the ground and subclasses.
The name of the operation or avalanche area where the avalanche is located.
The size relative to path.
Record the width and vertical fall of the avalanche.
Record the type of avalanche.
Name or ID of the avalanche path.
Primary avalanche triggers.
Estimate the destructive potential from the mass of deposited snow.
Avalanche failure type.
Record the moisture content of the snow from squeezing.
Describe the location of the tip of the avalanche deposit.
Secondary avalanche triggers and modifiers.
The ID number of the avalanche when placed on a map.
Record the level of the bed surface in the snowpack.
Record the average height of the crown.
Describe the location of the avalanche fracture at the start zone.
Detailed terminus information for large avalanche paths.
Record the number of charges applied to that.
Record the number of charges applied to target.
Record the number of detonations that occurred.
The number of the Snow Pilot profile.
Observer notes not coved in the above observations.

Coded value domains

Boardblock Score — Description Boardblock Score · Field type String · Split policy Default value · Merge policy Default value

Code	Description
BB1	1 Block slides when digging or cutting
BB2	2 Snowboarder places gently board on block and then weights rear foot
BB3	3 Snowboarder drops from straight leg to bent knee and pushes downwards
BB4	4 Attaches back to binding and jumps in same spot
BB5	5 with both feet in bindings jump again on same spot
BB6	6 For hard slab remove board and jump in same spot, for soft slab slide the board down the middle of the block
BB7	7 No steps produce a smooth slope parallel failure

Compression Test — Description Compression Test · Field type String · Split policy Default value · Merge policy Default value

Code	Description
CTV	Very Easy
CT1 to CT10	Easy
CT11 to CT20	Moderate
CT21 to CT30	Hard
CTN	No Fracture

Destructive Potential — Description Destructive potential · Field type String · Split policy Default value · Merge policy Default value

Code	Description
D1	Relatively harmless to people, typical length 10m
D2	Could bury,injure, or kill a person, typical length 100m
D3	Could bury and destroy a car damage a truck, or destroy a wood frame house or break trees, typical length 1000m
D4	Could destroy a railway car,large truck,several buildings, or a forest area up to 4 hectares, typical length 2000m
D5	Largest snow avalanche known,could destroy a village or forest over 40 hectares, typical length 3000m

Detailed Terminus — Description Distance Down the · Field type Fan · Split policy String · Merge policy Default value

Code	Description
1F	Oneform of fan
2F	Halfway down fan
3F	Threeforthe down fan

Failure type — Description Avalanche Failure Type · Field type String · Split policy Default value · Merge policy Default value

Code	Description
L	Loose-snow
WL	Wet loose-snow
SS	Soft slab
HS	Hard slab
WS	Wet slab
U	Unknown

Full Test — Description Full Test · Field type String · Split policy Default value · Merge policy Default value

Code	Description
Yes	Performed full test
No	Performed quick test

Maximum Wind Gust — Description Strongest Wind Gust · Field type String · Split policy Default value · Merge policy Default value

Code	Description
C	Calm 0km
L	Light 1-25km
M	Moderate 26-40km
S	Strong 41-60km
X	Extreme >60km

Precipitation Rate — Description Precipitation Rate · Field type String · Split policy Default value · Merge policy Default value

Code	Description
S-1	Very light snowfall
S1	Light snowfall
S2	Moderate snowfall
S5	Heavy snowfall
S10	Very heavy snowfall
RV	Very light rain
RL	Light rain
RM	Moderate rain
RH	Heavy rain

Precipitation Type — Description Precipitation Type · Field type String · Split policy Default value · Merge policy Default value

Code	Description
NIL	No Precipitation
R	Rain
S	Snow
RS	Mixed rain and snow
G	Graupel and hail
ZR	Freezing rain

Rutschblock Score — Description Rutschblock Score · Field type String · Split policy Default value · Merge policy Default value

Code	Description
RB1	Block slides during digging or cutting
RB2	Skier approaches from above and gently steps onto the block
RB3	Skier goes from straight leg to bent knee pushing down to compact
RB4	Skier jumps and lands in same compacted spot
RB5	Skier jumps again in same compacted spot
RB6	For hard slab remove skis and jump, for soft slab keep skis on and step down another 35cm push once and jump 3 times
RB7	No steps produced smooth slope-parallel failure

Secondary Trigger — Description Secondary Trigger · Field type String · Split policy Default value · Merge policy Default value

Code	Description
NC	Cornice Fall
NE	Earthquake
NI	Ice Fall
NR	Rock
AA	Artillery
AE	Explosive placed under the snow or thrown
AL	Avalauncher
AC	Cornice fall triggered by a person or explosive
AI	Snowshoer
NO	Unclassified
AB	Explosive above the snow surface
AX	Gas Exploder
AH	Explosive by helicopter
AW	Pre-placed remotely detonated
AW	By wildlife
AU	Unknown artificial
AO	Unclassified artificial
AM	Snowmobile
AK	Snowcat
AV	Vehicle
AS	Skier
AR	Snowboarder
AF	Foot penetration
N	Natural Trigger
NL	Loose Snow
NS	Slab Avalanche
c	Controlled intentionally
u	Unintentional
r	Remote release by trigger
y	Released in sympathy

Shear Quality — Description Shear Quality · Field type String · Split policy Default value · Merge policy Default value

Code	Description
Q1	Clean,planar,smooth,and fast shear surface,slides easily on angles 25 and up
Q2	Average shear,mostly smooth,does not slide as easily as Q1
Q3	Non planar,uneven,irregular, and rough, slab moves little if at all

Shovel Shear Score — Description Shovel Shear Score · Field type String · Split policy Default value · Merge policy Default value

Code	Description
STV	Very easy,fails during shovel insertion
STE	Easy,fails with minimum pressure
STM	Moderate,fails with moderate pressure
STH	Hard,fails with firm pressure
STC	Collapse,block settles when cut
STN	No shear

Size — Description Size · Field type String · Split policy Default value · Merge policy Default value

Code	Description
R1	Sluff or side less than 50m
R2	Small,relative to path
R3	Medium,relative to path
R4	Large,relative to path
R5	Major or maximum,relative to path

Sky Condition — Description Sky Condition · Field type String · Split policy Default value · Merge policy Default value

Code	Description
CLR	Clear
FEW	Few
SCT	Scattered
BKN	Broken
OVC	Overcast
X	Obscured

Slope Cut Score — Description Slope Cutting Score · Field type String · Split policy Default value · Merge policy Default value

Code	Description
SCN	No Release
SCW	Whumphing
SCC	Cracking
SCS	Avalanche Slab
SCL	Avalanche Loose

Snow Classification — Description Snow Classification · Field type String · Split policy Default value · Merge policy Default value

Code	Description
PP	Precipitation particles,new snow
DF	Decomposing and fragmented particles
RG	Round grains
FC	Solid facets
DH	Depth hoar
WG	Wet Grains
SH	Feathery crystals
CR	Surface deposit and crust
IM	Ice masses

Snow Description — Description Snow Description · Field type String · Split policy Default value · Merge policy Default value

Code	Description
CL	Columns
ND	Needles
PL	Plates
SD	Stellars and dendrites
IR	Irregular crystals
GP	Graupel
HL	Hail
IP	Ice Pellets

Snow Hardness — Description Snow Hardness · Field type String · Split policy Default value · Merge policy Default value

Code	Description
F	Fist
4F	4Fingers in glove
1F	1Finger in glove
P	Pencil
K	Knife blade
I	Too hard for knife
NO	Not observed

Snow Stability — Description Snow Stability · Field type String · Split policy Default value · Merge policy Default value

Code	Description
VG	Very Good
G	Good
F	Fair
P	Poor
VP	Very Poor

Snow Transport — Description Snow Transport · Field type String · Split policy Default value · Merge policy Default value

Code	Description
NIL	No snow transport
PREV	Snow transport since last obs but not currently
M	Moderate snow trans
I	Intense snow trans
U	Unknown

Stuffblock Score — Description Stuffblock Score · Field type String · Split policy Default value · Merge policy Default value

Code	Description
SBV	Very Easy
SB0	Easy
SB10	Easy, drop from 10cm
SB20	Easy, drop from 20cm
SB30	Moderate, drop from 30cm
SB40	Moderate, drop from 40cm
SB50	Hard, drop from 50+cm
SBN	No fracture

Surface Crust — Description Surface Crust Type · Field type String · Split policy Default value · Merge policy Default value

Code	Description
RM	Rime
RC	Rain crust
SC	Sun crust
WC	Wind crust
MFC	Melt freeze crust

Terminus — Description Terminus of Avalanche · Field type String · Split policy Default value · Merge policy Default value

Code	Description
SZ	In Start zone
TK	In track
TR	In top of runout
MR	In middle of runout
BR	In bottom of runout
TP	Top of path
MP	Middle of path
BP	Bottom of path

Test Profile — Description Test Profile · Field type String · Split policy Default value · Merge policy Default value

Code	Description
YES	Instead of Full Test
NO	Did Full Test

Trigger — Description Trigger · Field type String · Split policy Default value · Merge policy Default value

Code	Description
N	Natural
A	Artifical
U	Unknown

Water Content — Description Water Content · Field type String · Split policy Default value · Merge policy Default value

Code	Description
D	Dry Snow
M	Moist Snow
W	Wet Snow
V	Very Wet
S	Slush

Wind Direction — Description Wind Direction · Field type String · Split policy Default value · Merge policy Default value

Code	Description
N	North 0
NE	Northeast 45
E	East 90
SE	Southeast 135
S	South 180
SW	Southwest 225
W	West 270
NW	Northwest 315

Wind Speed — Description Wind Speed · Field type String · Split policy Default value · Merge policy Default value

Code	Description
C	Calm
L	Light
M	Moderate
S	Strong
X	Extreme

Zone Start — Description Location of Start Zone · Field type String · Split policy Default value · Merge policy Default value

Code	Description
TL	Top Left
TR	Top Right
TC	Top Center
ML	Middle Left
MC	Middle Corner
MR	Middle Right
BL	Bottom Left
BC	Bottom Center
BR	Botom Right
U	Unknown

Aspect — Description Aspect · Field type String · Split policy Default value · Merge policy Default value

Code	Description
N	North 0
NE	Northeast 45
E	East 90
SE	Southeast 135
S	South 180
SW	Southwest 225
NW	Northwest 315

Avalanche Danger — Description Avalanche Danger · Field type String · Split policy Default value · Merge policy Default value

Code	Description
Low	Nat Avalanches Unlikely
Moderate	Nat Av Unlikely Human Possible
Considerable	Nat Av Possible Human Proable
High	Nat and Human Likely
Extreme	Widespread Av Certain

Avalanche Hazard — Description Avalanche Hazard · Field type String · Split policy Default value · Merge policy Default value

Code	Description
None	Insufficant Snow
Low	Mostly Stable Snow
Moderate	Areas of Unstable Snow
High	Mostly Unstable Snow
Extreme	Widespread Unstable Snow

Bed Surface — Description Bed Surface · Field type String · Split policy Default value · Merge policy Default value

Code	Description
U	Unknown
S	Sliding on recent snow
O	Release on old
G	Released on ground, glacial ice, or firn
I	Released on newold