INTRODUCTION TO KADOORIE FARM & BOTANIC GARDEN (KFBG) GIS DATA MODEL

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Kadoorie Farm & Botanic Garden
30th Sept, 2011.

1 Background

2 KFBG GIS Data Model

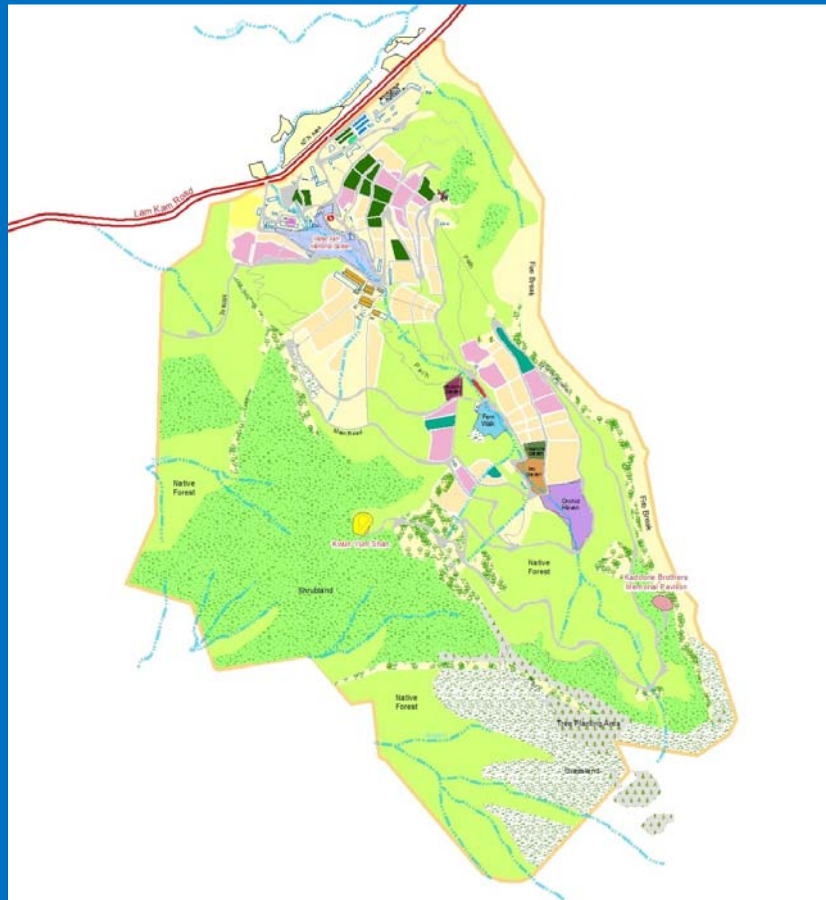
3 Applications

3-1 CAD integration in seed growing area
3-2 SLA Management with relationship class
3-3 Raster Management
3-4 Collection of canopy reflectance data

1-1 KFBG Location

1-1 KFBG Location

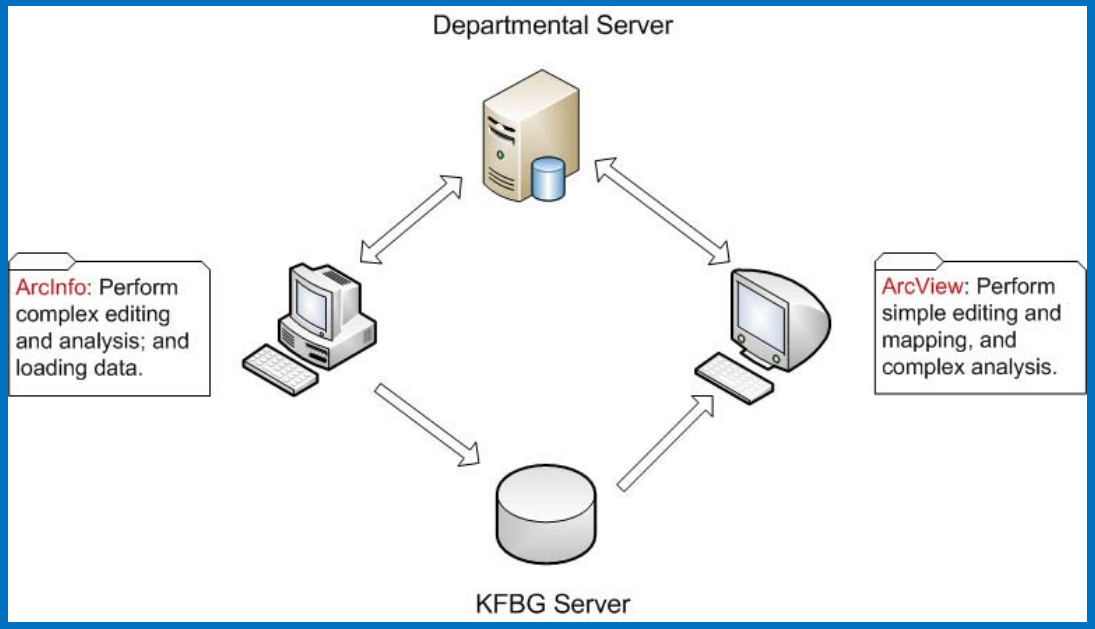
1-1 KFBG Map



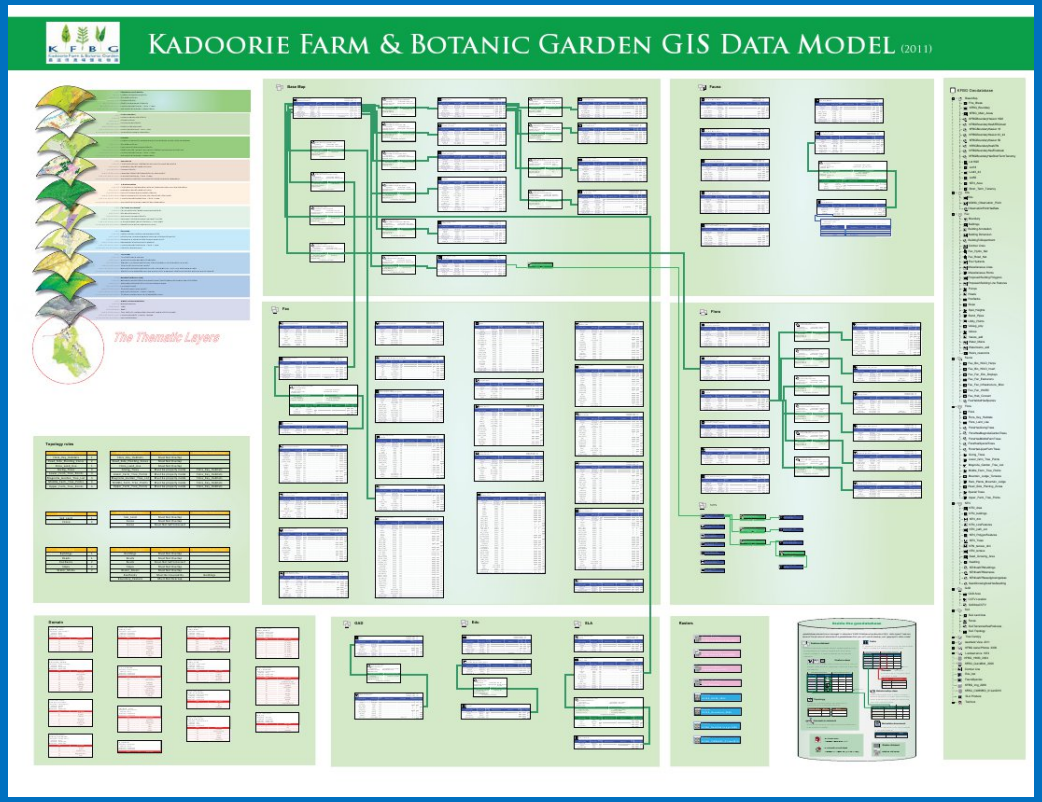
Lam Kam Road
Native Forest
Shrubland
Native Forest
Native Forest
Fern Walk
Orchid Haven
Fire Break
Tree Planting Area

1 – 2 GIS in KFBG

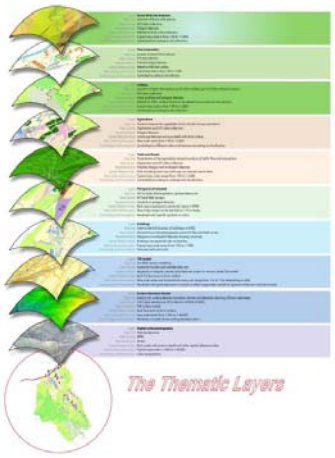
1) ArcView 2
2) ArcInfo 1 (since June-2011)

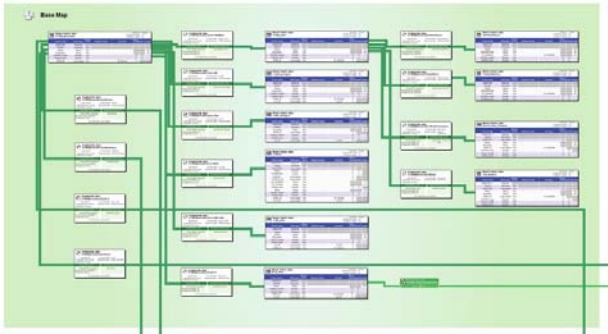


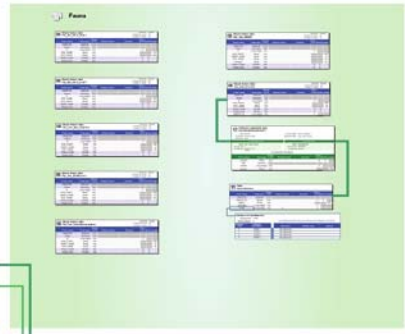
2 KFBG GIS Data Model

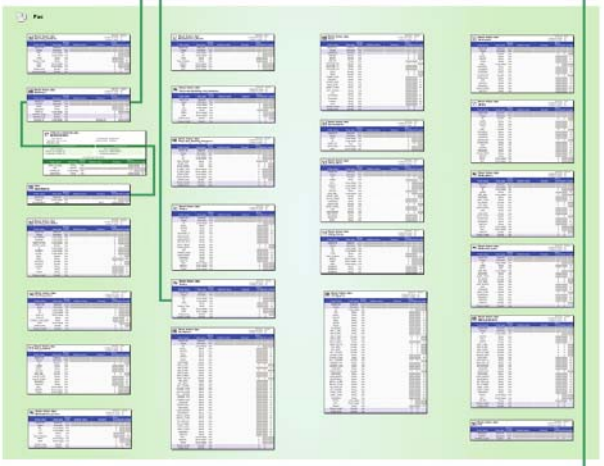


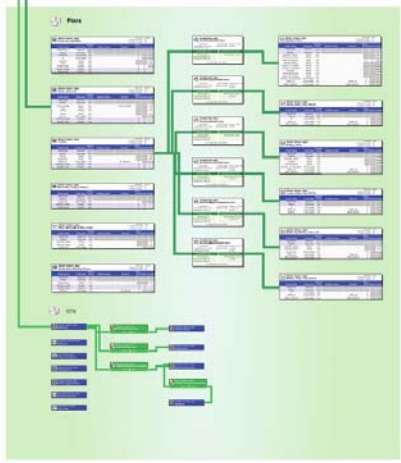
Kadoorie Farm & Botanic Garden GIS Data Model (2011)

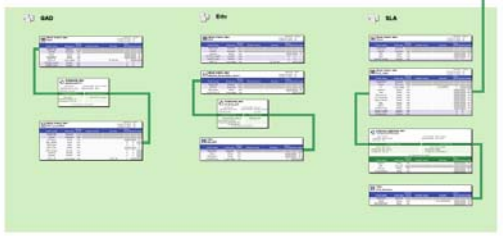


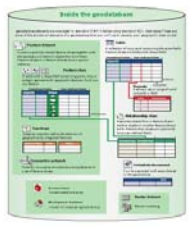




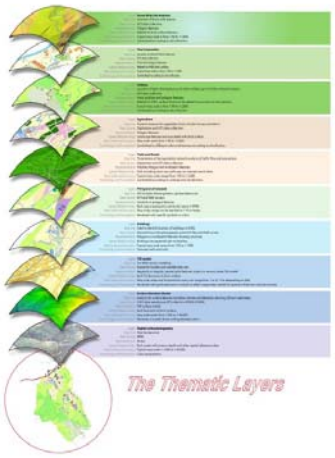


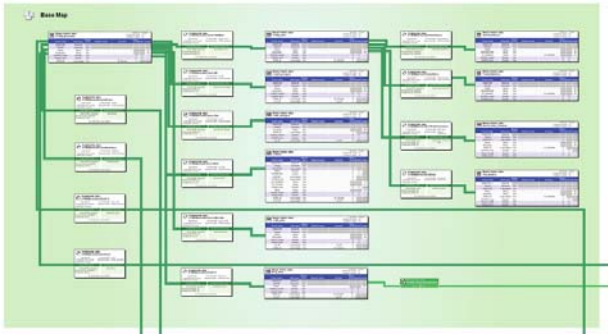


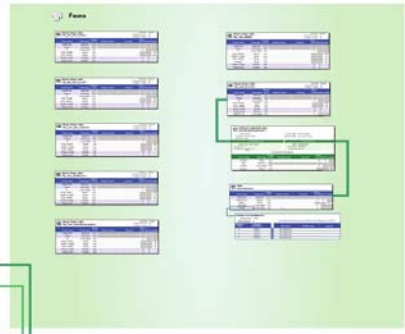


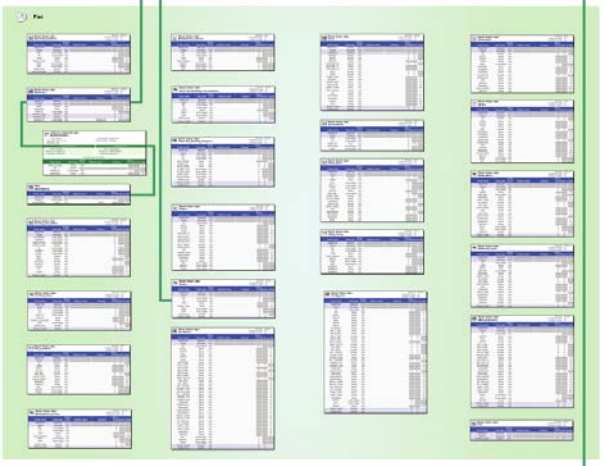


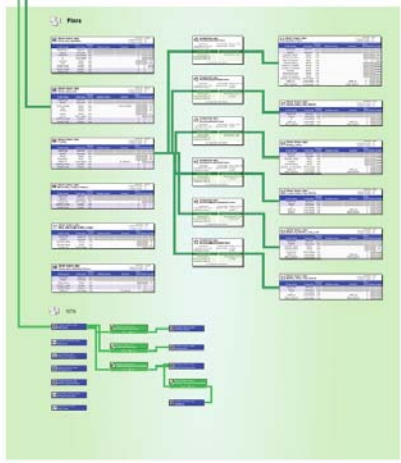
Kadoorie Farm & Botanic Garden GIS Data Model (2011)

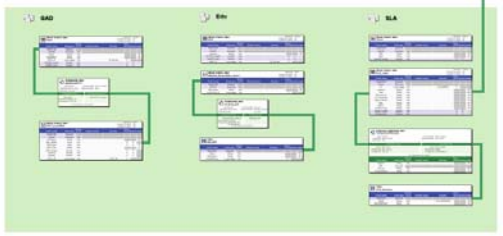


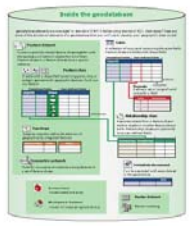


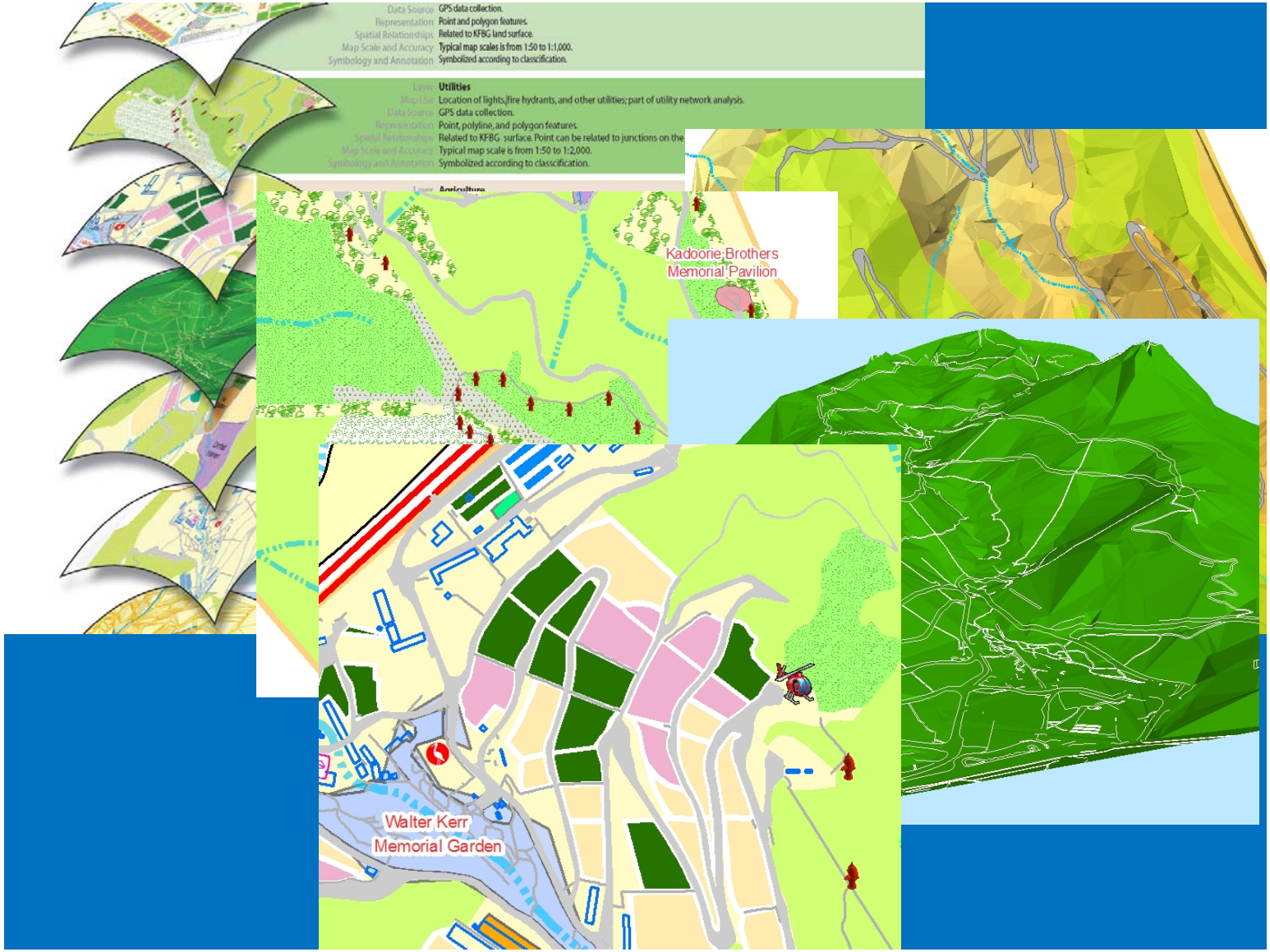











Data Source GPS data collection.
Representation Point and polygon features.
Spatial Relationships Related to KFBG land surface.
Map Scale and Accuracy Typical map scales is from 1:50 to 1:1,000.
Symbology and Annotation Symbolized according to classification.
Layer Utilities
Map Use Location of lights, fire hydrants, and other utilities; part of utility network analysis.
Data Source GPS data collection.
Representation Point, polyline, and polygon features.
Spatial Relationships Related to KFBG surface. Point can be related to junctions on the
Map Scale and Accuracy Typical map scale is from 1:50 to 1:2,000.
Symbology and Annotation Symbolized according to classification.
Kadoorie Brothers Memorial Pavilion
Walter Kerr Memorial Garden

KADOORIE FARM & BOTANIC GARDEN GIS DATA MODEL (2011)

Domain

Fauna

Simple feature class
Fau_Bio_WLD_Herps

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
Shape	Geometry	Yes					
Id	Long Integer	Yes			0		
SITE_NAME	String	Yes					50
SITE_FUNCT	String	Yes					200
Shape_Length	Double	Yes			0	0	
Shape_Area	Double	Yes			0	0	

Simple feature class
Fau_Bio_WLD_Invert

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
Shape	Geometry	Yes					
Id	Long Integer	Yes			0		
SITE_NAME	String	Yes					50
SITE_FUNCT	String	Yes					200
Shape_Length	Double	Yes			0	0	
Shape_Area	Double	Yes			0	0	

Simple feature class
Fau_Fac_Edu_Displays

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
Shape	Geometry	Yes					
Id	Long Integer	Yes			0		
SITE_FUNCT	String	Yes					200
ASREV_NAME	String	Yes					10
SITE_NAME	String	Yes					50
Shape_Length	Double	Yes			0	0	
Shape_Area	Double	Yes			0	0	

Simple feature class
Fau_Fac_Exsitucons

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
Shape	Geometry	Yes					
Id	Long Integer	Yes			0		
SITE_FUNCT	String	Yes					200
ASREV_NAME	String	Yes					10
SITE_NAME	String	Yes					50
Shape_Length	Double	Yes			0	0	
Shape_Area	Double	Yes			0	0	

Simple feature class
Fau_Fac_Infrastructure_Misc

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
Shape	Geometry	Yes					
Id	Long Integer	Yes			0		
SITE_FUNCT	String	Yes					200
ASREV_NAME	String	Yes					10
SITE_NAME	String	Yes					50

Simple feature class
Fau_Fac_WARC

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
Shape	Geometry	Yes					
Id	Long Integer	Yes			0		
SITE_FUNCT	String	Yes					200
ASREV_NAME	String	Yes					10
SITE_NAME	String	Yes					50
Manager	String	Yes					50
Shape_Length	Double	Yes			0	0	
Shape_Area	Double	Yes			0	0	

Simple feature class
Fau_Hab_Concern

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
Shape	Geometry	Yes					
Id	Long Integer	Yes			0		
SITE_FUNCT	String	Yes					200
SITE_NAME	String	Yes					50
Shape_Length	Double	Yes			0	0	
Shape_Area	Double	Yes			0	0	
HABITAT_ID	Long Integer	Yes			0		

Attributed relationship class
FauHabitatHasSpecies

Type: Simple
Cardinality: Many to many
Notification: Both

Forward label: Fauna_Species
Backward label: Fau_Hab_Concern

Origin feature class
Name: Fau_Hab_Concern
Primary key: #
Foreign key: HABITAT_ID
Habitat

Destination table
Name: FaunaSpecies
Primary key: SPECIES
Foreign key: species

No relationship rules defined

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
percent	Float	Yes			0	0	
RID	Object ID						
habitat	Long Integer	Yes			0		
species	String	Yes					255

Table
FaunaSpecies

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length
OBJECTID	Object ID						
HABITAT_ID	Double	Yes			0	0	
FAMILY	String	Yes					255
SPECIES	Long Integer	Yes			0		
TYPE	Long Integer	Yes	0		0		

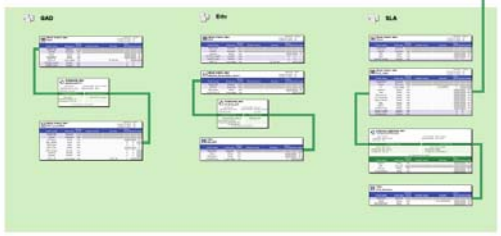
Subtypes of FaunaSpecies
Subtype field: TYPE
Default subtype: 0

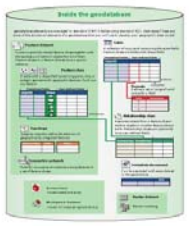
List of defined default values and domains for subtypes in this class

Subtype Code	Subtype Description	Field name	Default value	Domain
0	TYPE 1	No values set		
1	TYPE 2	No values set		
2	TYPE 3	No values set		
3	TYPE 4	No values set		

KFBG Geodatabase

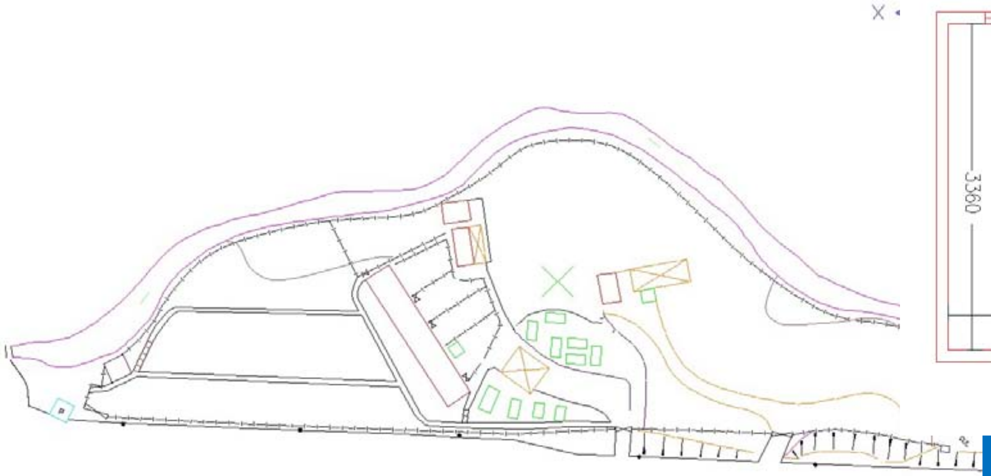
- Base Map
  - Fire_Break
  - KFBG_Boundary
  - KFBG_Main_Areas
  - KFBGBoundaryHasLot 1822
  - KFBGBoundaryHasKFBGmain
  - KFBGBoundaryHasLot 18
  - KFBGBoundaryHasLot 43_44
  - KFBGBoundaryHasLot 56
  - KFBGBoundaryHasNTN
  - KFBGBoundaryHasFirebreak
  - KFBGBoundaryHasShortTermTenancy
  - Lot1822
  - Lot18
  - Lot43_44
  - Lot56
  - NTN_Area
  - Short_Term_Tenancy
- Edu
  - Edu
  - Wildlife_Observation_Point
  - ObservationPointHasBats
- Fac
  - Boundary
  - Buildings
  - Building Annotation
  - Building Dimension
  - BuildingToDepartment

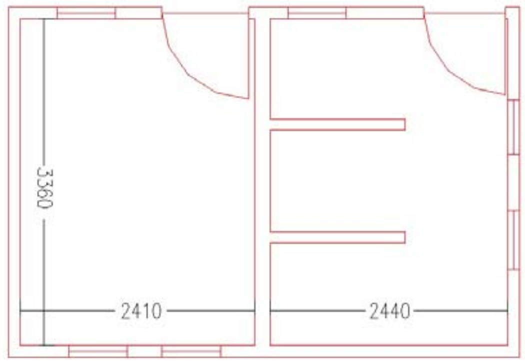


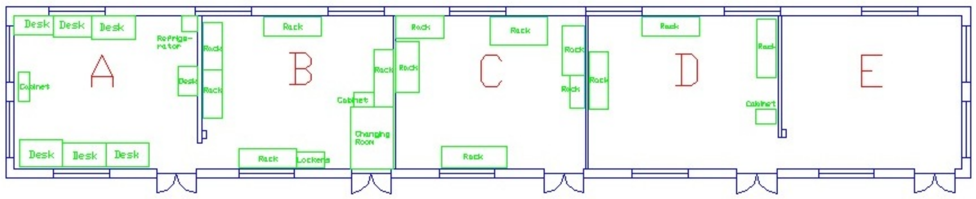


3 Applications

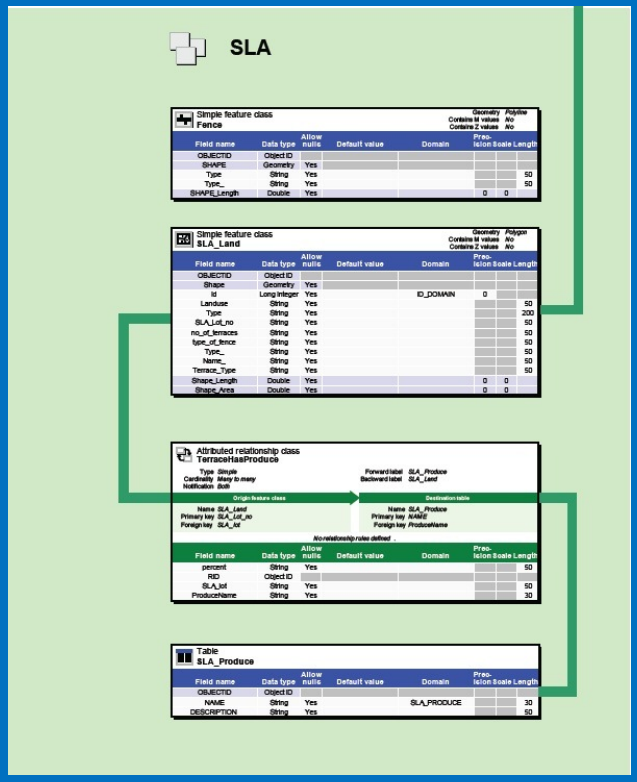
3-1 CAD File Integration

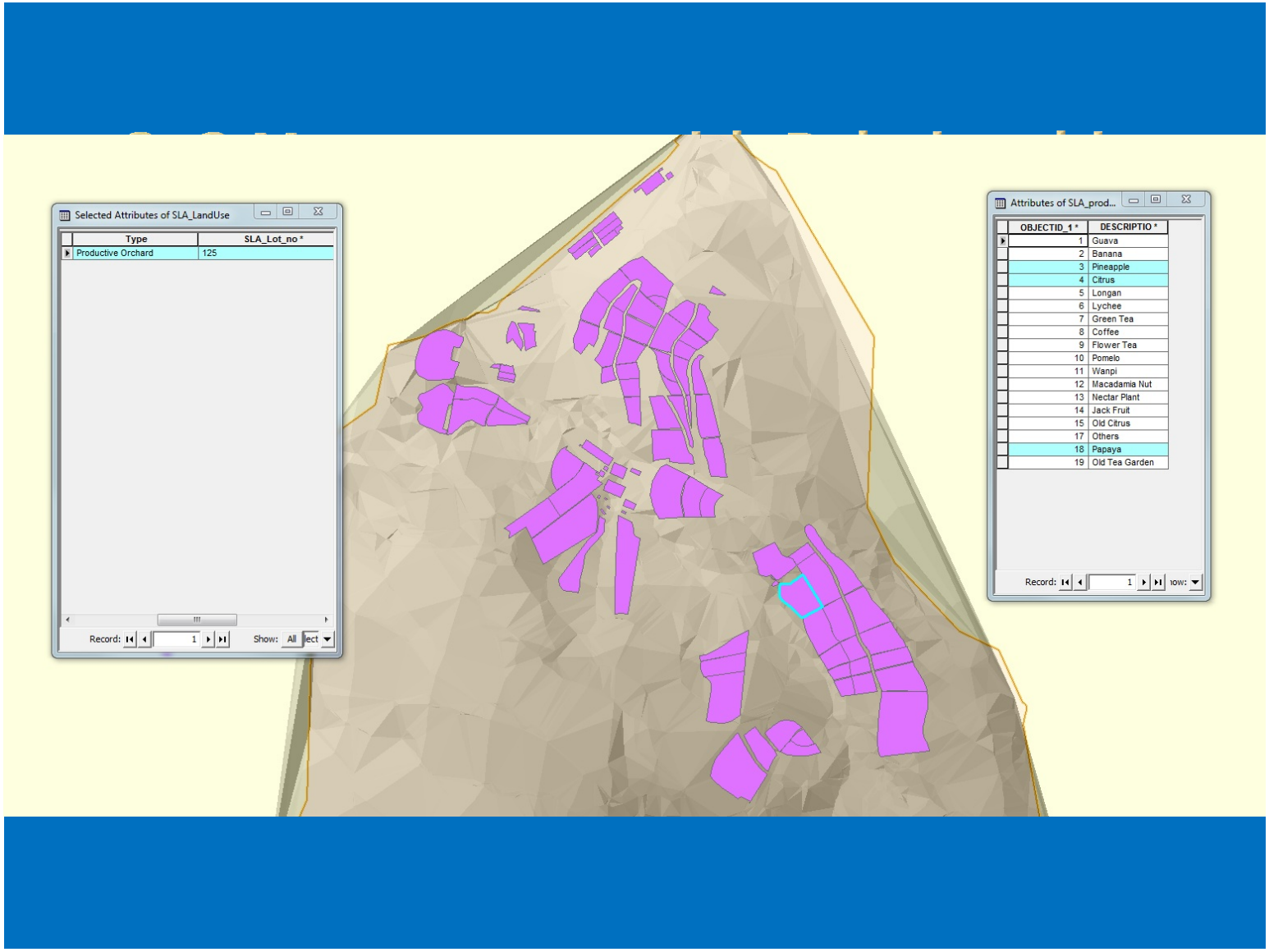


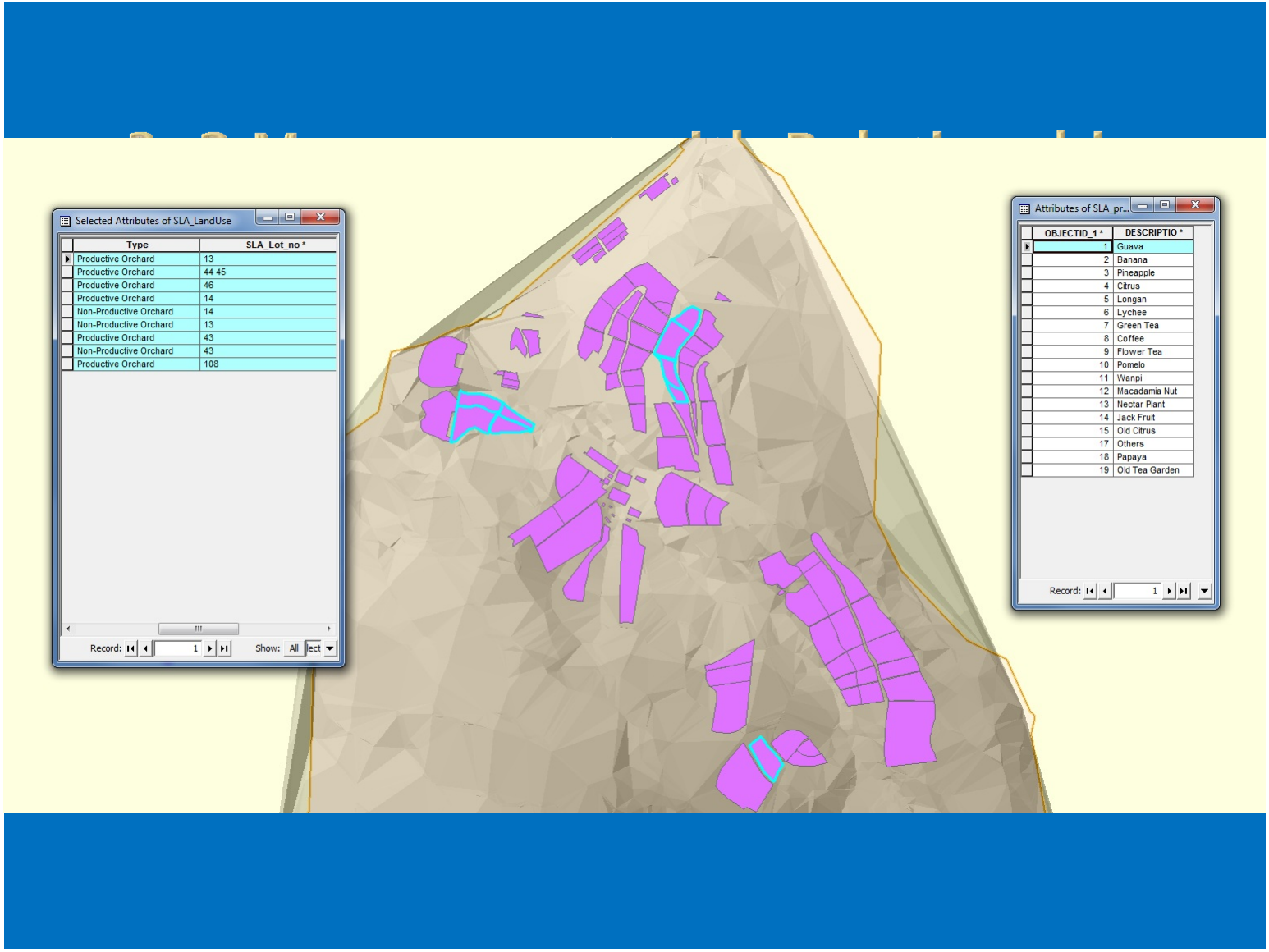


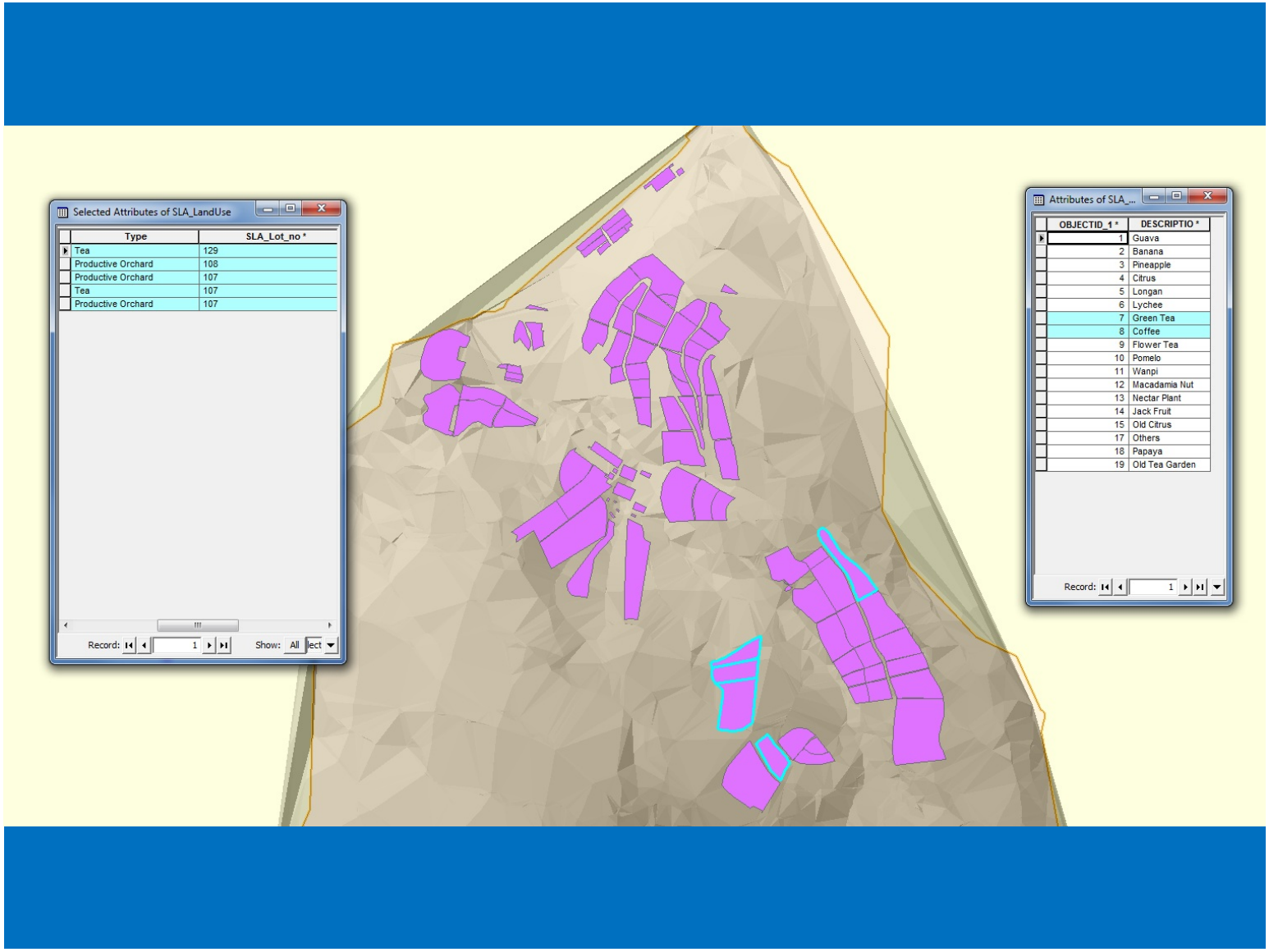


3-2 Management with Relationship Class

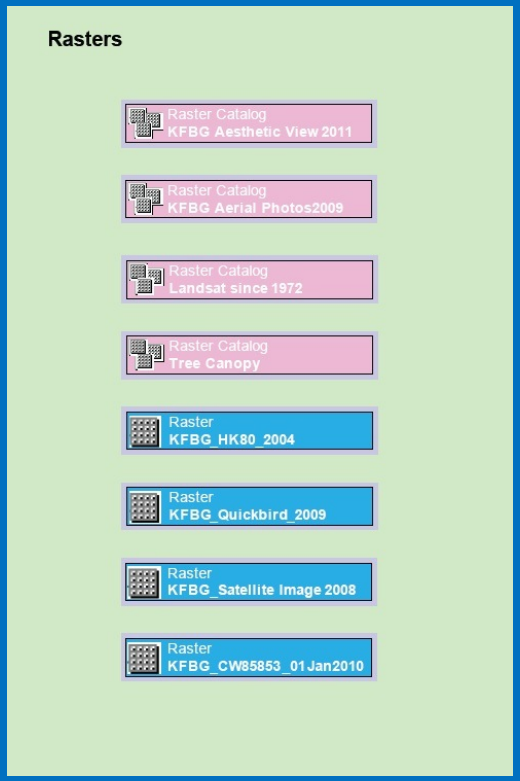


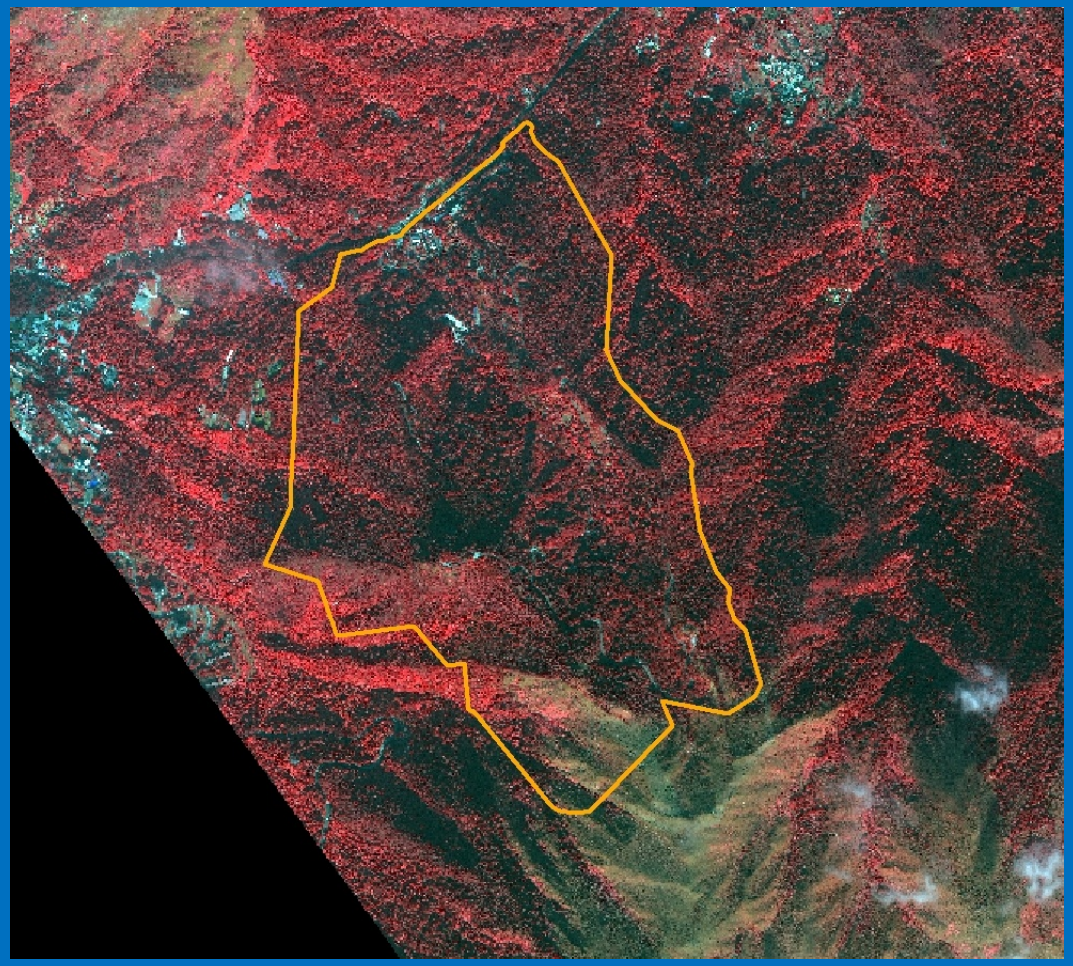

Selected Attributes of SLA_LandUse
Type
SLA_Lot_no *
Productive Orchard
125
Record:
1
Show:
All
Attributes of SLA_prod...
OBJECTID_1 *
DESCRIPTIO *
1 Guava
2 Banana
3 Pineapple
4 Citrus
5 Longan
6 Lychee
7 Green Tea
8 Coffee
9 Flower Tea
10 Pomelo
11 Wanpi
12 Macadamia Nut
13 Nectar Plant
14 Jack Fruit
15 Old Citrus
17 Others
18 Papaya
19 Old Tea Garden
Record:
1

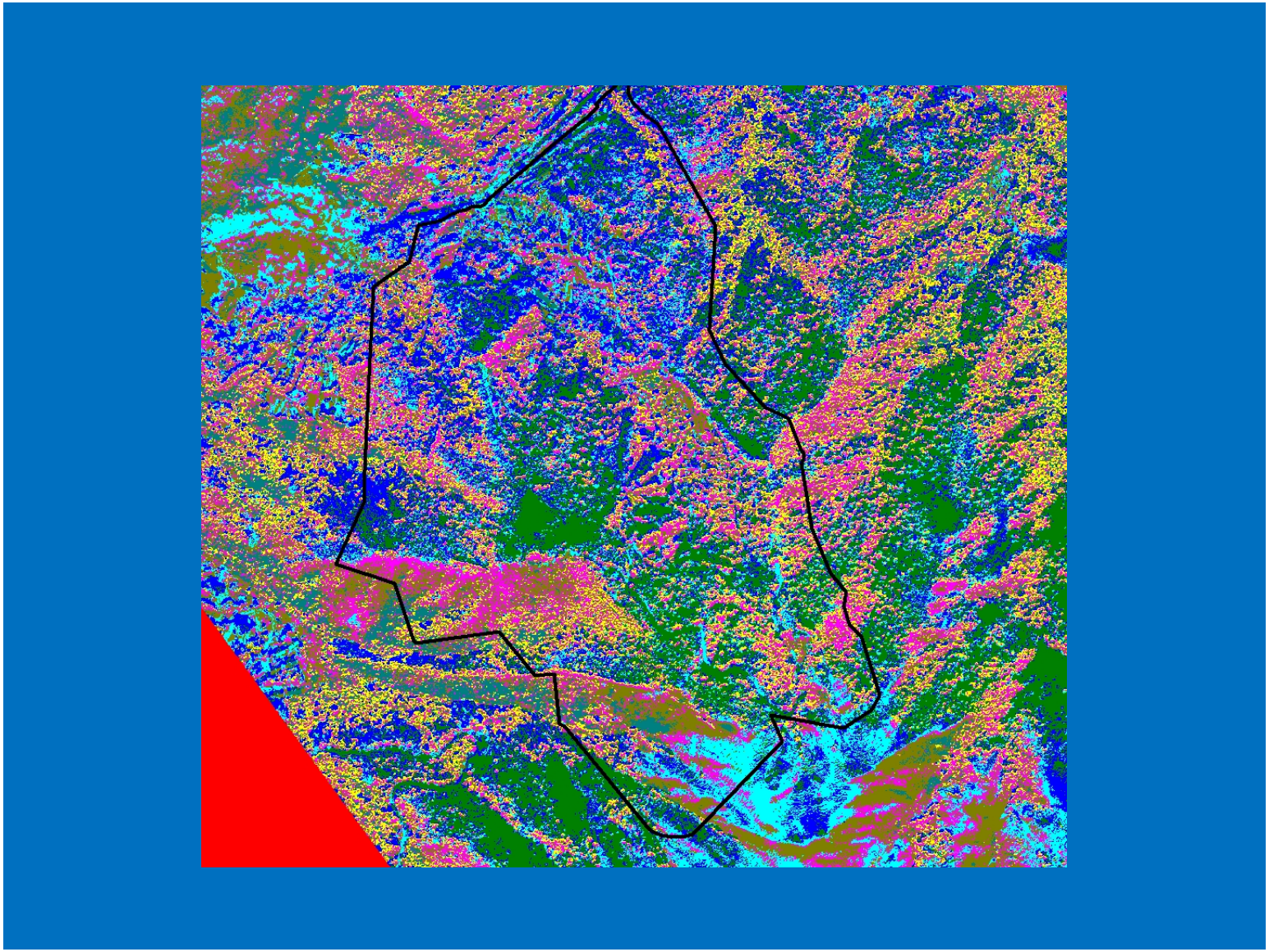

Selected Attributes of SLA_LandUse
Type
SLA_Lot_no *
Productive Orchard 13
Productive Orchard 44 45
Productive Orchard 46
Productive Orchard 14
Non-Productive Orchard 14
Non-Productive Orchard 13
Productive Orchard 43
Non-Productive Orchard 43
Productive Orchard 108
Record: 1
Show: All
Attributes of SLA_pr...
OBJECTID_1 *
DESCRIPTIO *
1 Guava
2 Banana
3 Pineapple
4 Citrus
5 Longan
6 Lychee
7 Green Tea
8 Coffee
9 Flower Tea
10 Pomelo
11 Wanpi
12 Macadamia Nut
13 Nectar Plant
14 Jack Fruit
15 Old Citrus
17 Others
18 Papaya
19 Old Tea Garden
Record: 1


Selected Attributes of SLA_LandUse
Type
SLA_Lot_no *
Tea
129
Productive Orchard
108
Productive Orchard
107
Tea
107
Productive Orchard
107
Record:
1
Show:
All
Attributes of SLA_...
OBJECTID_1 *
DESCRIPTIO *
1 Guava
2 Banana
3 Pineapple
4 Citrus
5 Longan
6 Lychee
7 Green Tea
8 Coffee
9 Flower Tea
10 Pomelo
11 Wanpi
12 Macadamia Nut
13 Nectar Plant
14 Jack Fruit
15 Old Citrus
17 Others
18 Papaya
19 Old Tea Garden
Record:
1

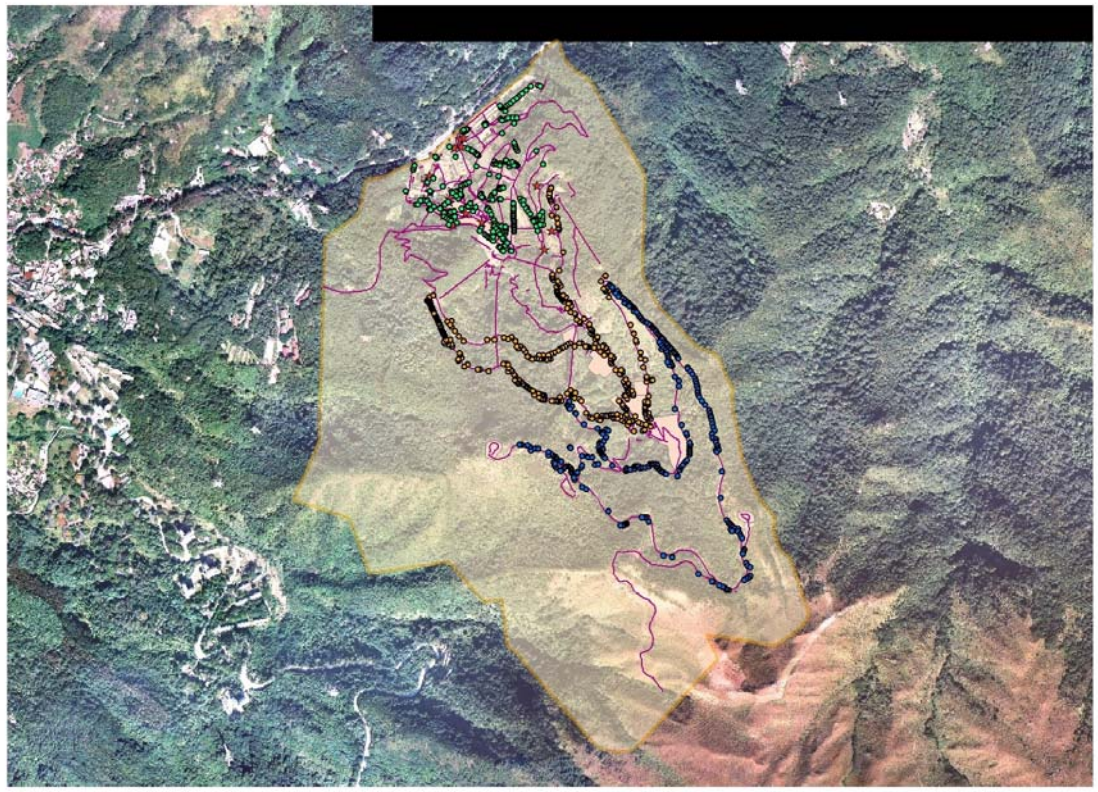
3-3 Raster Management

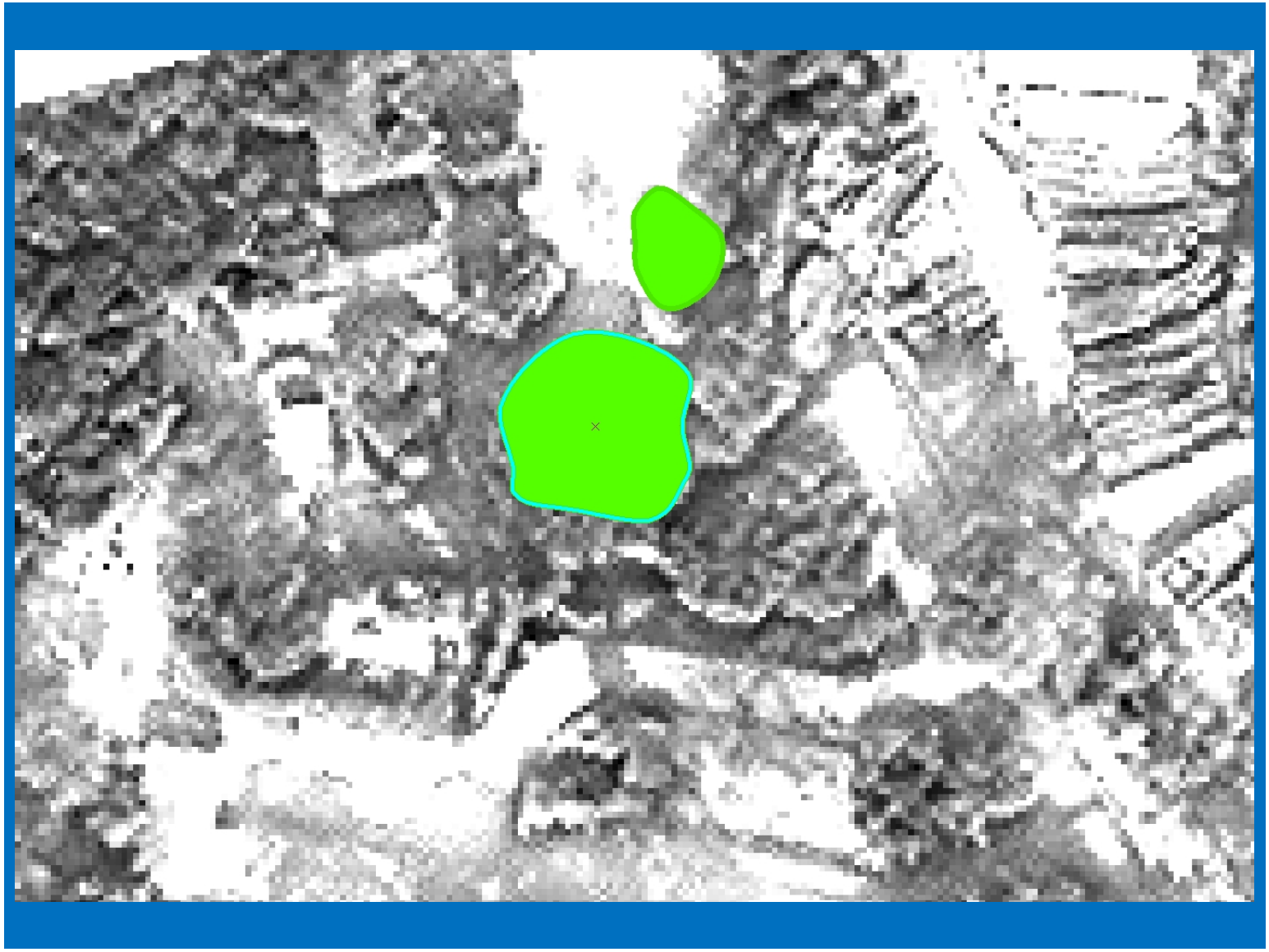


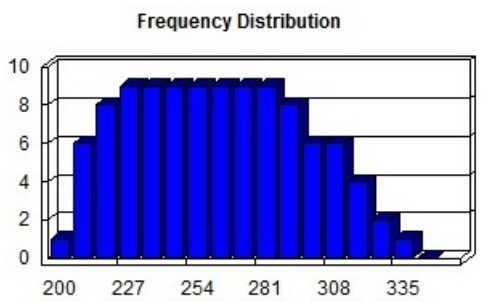


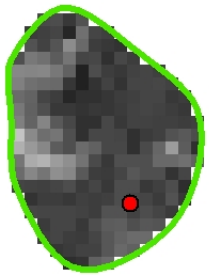


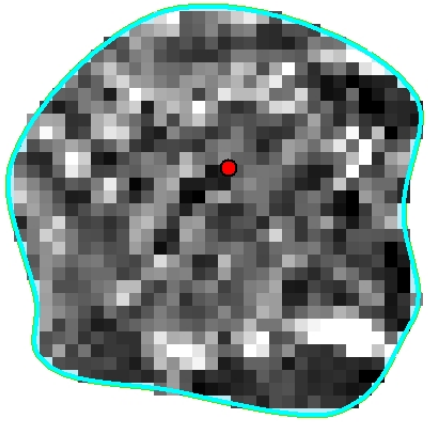
3-4 Collection of Canopy Reflectance Data






Frequency Distribution
10
8
6
4
2
0
200
227
254
281
308
335





Thank You!