

**ROLE OF GEOGRAPHY
IN THE LOCATION OF BUDDHIST SITES
FROM ANDHRA PRADESH
A GIS PERSPECTIVE**

Dr. K.P.RAO

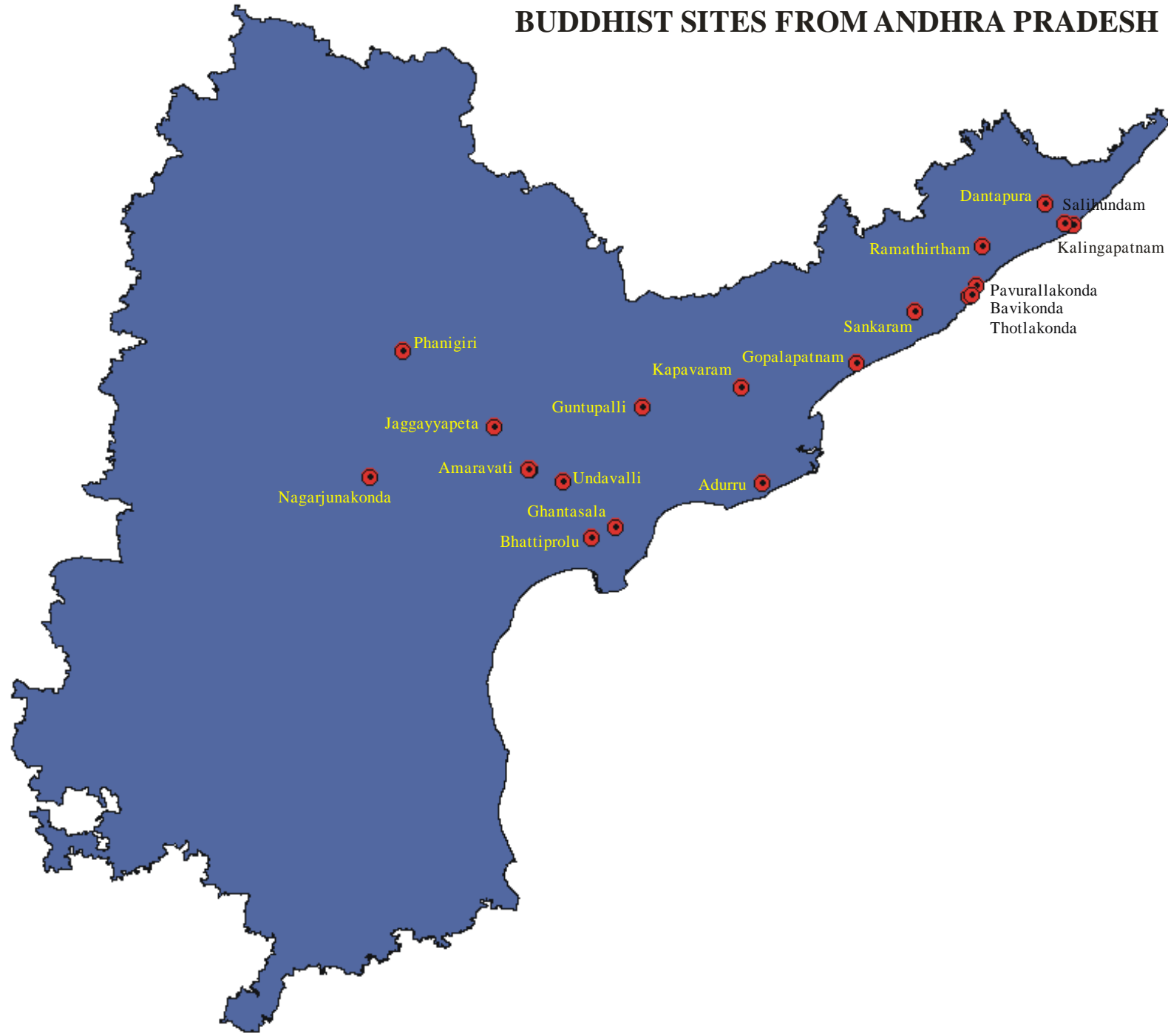
Professor

**Department of History
University of Hyderabad
HYDERABAD – 50006
INDIA**

drkprao@gmail.com



BUDDHIST SITES FROM ANDHRA PRADESH



ADURRU



AMARAVATI



GUNTUPALLI



GUNTUPALLI



KAPAVARAM







NAGARJUNAKONDA



NAGARJUNAKONDA



PHANIGIRI

SALIHUNDAM



UNDAVALLI



BAVIKONDA



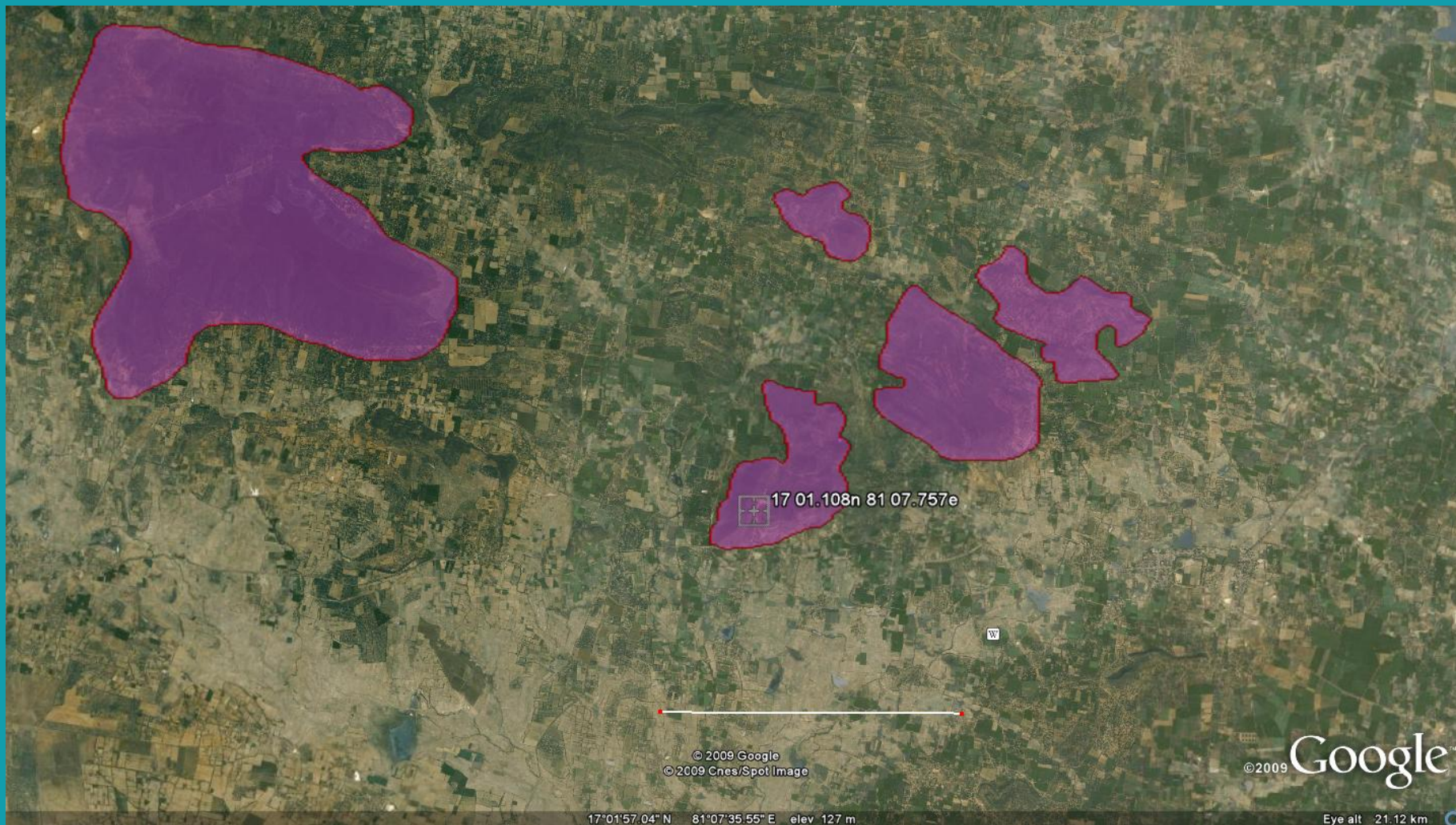
BAVIKONDA



ADURRU



LAND CLASSIFICATION (Ghantasala region)



ArcView GIS 3.2

File Edit Table Field Window Help

0 of 20 selected

Shape	Site	Y	X	Altitude	Land_ait	Difference	Beginning	ERange	End	ERange	Land_use	LULC	Grading
Point	Aduru	16.47849	81.95461	6M			2 BC	2	2CBC	2	100% agriculture	A	100 - 75
Point	Amaravati	16.57576	80.35654	37 M			3BC	1	13AD	8	No waste land	A	100 - 75
Point	Bavikaonda	17.81771	83.39073	135M	5M	130M	3 BC	1	2AD	4	Not much fertile land	D	25-0
Point	Bhattiprolu	16.09950	80.78091	8 M			2BC	2	2BC	2	No waste land	A	100 - 75
Point	Dantapura	18.47699	83.91714	34M	25M	9M	3 BC	1	9AD	8	90% usable	B	75-50
Point	Dharanikota	16.57563	80.34285	35M			3BC	1	4AD	6	No waste land	A	100 - 75
Point	Ghantasala	16.16979	80.94866	19M			2AD	4	2AD	4	100% ag. land	A	100 - 75
Point	Gopalapatnam	17.33525	82.61434	80MT	15M	65M	3 BC	1	2AD	4	80% ag. land	A	100 - 75
Point	Guntupalli	17.01990	81.13035	171M			3 BC	1	3BC	1	50% usable dry ag.	C	50-25
Point	Jaggayyapeta	16.88696	80.10649	75M	55M	20M	3BC	1	7AD	7	Majority of land not suitable	D	25-0
Point	Kalingapatnam	18.33057	84.11077	5MT			3BC	1	1AD	3	Most land usable	A	100 - 75
Point	Kapavaram	17.16768	81.81294	123M	30M	93M	2 AD	4	4AD	6	More than 95% ag. land	A	100 - 75
Point	Nagarjunakonda	16.52292	79.24879	183M	80M	103M	3AD	5	3AD	5	60% usable, dry.	B	75-50
Point	Pavurallakonda	17.88927	83.43756	162M	25M	137M	3BC	1	2AD	4	Not much fertile land	D	25-0
Point	Phanigiri	17.42733	79.47235	290m	240M	50M	1 AD	3	2AD	4	More than 90% ag.	A	100 - 75
Point	Salihundam	18.33379	84.04304	49M	8M	41M	3 BC	1	12AD	8	Mostly usable	A	100 - 75
Point	Sankaram	17.71017	83.01567	46M			2AD	4	9AD	8	75% usable	B	75-50
Point	Thotlakonda	17.82821	83.40882	115M	5M	110M	3 BC	1	2AD	4	No usable land	D	25-0
Point	Undavalli	16.49689	80.58167	31.39M	21M	10M	4 AD	6	5AD	6	90% usable	A	100 - 75
Point	Ramatirtham	18.17701	83.47557	75M	64M	11M	3 BC	1	9AD	8	Not much fertile land	D	25-0

CHRONOLOGY

ArcView GIS 3.2

File Edit Table Field Window Help

12 of 20 selected

Attributes of Geopnts.shp

Site	Y	X	Altitude	Land_alt_	Difference	Beginning	BRange	End	ERange	Land_use	LULC	Grading
Aduru	16.47849	81.95461	6M			2 BC	2	2CBC	2	100% agriculture	A	100 - 75
Amaravati	16.57576	80.35654	37 M			3BC	1	13AD	8	No waste land	A	100 - 75
Bavikaonda	17.81771	83.39073	135M	5M	130M	3 BC	1	2AD	4	Not much fertile land	D	25-0
Bhattiprolu	16.09950	80.78091	8 M			2BC	2	2BC	2	No waste land	A	100 - 75
Dantapura	18.47699	83.91714	34M	25M	9M	3 BC	1	9AD	8	90% usable	B	75-50
Dharanikota	16.57563	80.34285	35M			3BC	1	4AD	6	No waste land	A	100 - 75
Ghantasala	16.16979	80.94866	19M			2AD	4	2AD	4	100% ag. land	A	100 - 75
Gopalapatnam	17.33525	82.61434	80MT	15M	65M	3 BC	1	2AD	4	80% ag. land	A	100 - 75
Guntupalli	17.01990	81.13035	171M			3 BC	1	3BC	1	50% usable dry ag.	C	50-25
Jaggayyapeta	16.88696	80.10649	75M	55M	20M	3BC	1	7AD	7	Majority of land not suitable	D	25-0
Kalingapatnam	18.33057	84.11077	5MT			3BC	1	1AD	3	Most land usable	A	100 - 75
Kapavaram	17.16768	81.81294	123M	30M	93M	2 AD	4	4AD	6	More than 95% ag. land	A	100 - 75
Nagarjunakonda	16.52292	79.24879	183M	80M	103M	3AD	5	3AD	5	60% usable, dry.	B	75-50
Pavurallakonda	17.88927	83.43756	162M	25M	137M	3BC	1	2AD	4	Not much fertile land	D	25-0
Phanigiri	17.42733	79.47235	290m	240M	50M	1 AD	3	2AD	4	More than 90% ag.	A	100 - 75
Salihundam	18.33379	84.04304	49M	8M	41M	3 BC	1	12AD	8	Mostly usable	A	100 - 75
Sankaram	17.71017	83.01567	46M			2AD	4	9AD	8	75% usable	B	75-50
Thotlakonda	17.82821	83.40882	115M	5M	110M	3 BC	1	2AD	4	No usable land	D	25-0
Undavalli	16.49689	80.58167	31.39M	21M	10M	4 AD	6	5AD	6	90% usable	A	100 - 75
Ramatirtham	18.17701	83.47557	75M	64M	11M	3 BC	1	9AD	8	Not much fertile land	D	25-0

CHRONOLOGY

- 3rd BC - 1
- 2nd BC - 2
- 1st AD - 3
- 2nd AD - 4
- 3rd AD - 5
- 4th AD - 6
- 7th AD - 7
- 13th AD - 8

Attributes of Geopnts.shp

Fields

- [Land_alt_]
- [Difference]
- [Beginning]
- [BRange]
- [End]
- [ERange]
- [Land_use]

Values

- 1
- 2
- 3
- 4
- 5
- 6

Update Values

[(BRange) = 1]

New Set

Add To Set

Select From Set

CHRONOLOGY

ArcView GIS 3.2

File Edit View Theme Graphics Window Help

Scale 1:2,941,134 8,879,216.86 2,147,308.57

View1

- Coast-line.shp
- Ap_bound_line.shp
- Routes-trade.shp
- Geopnts.shp
- Ap_bound_polygon

Attributes of Geopnts.shp

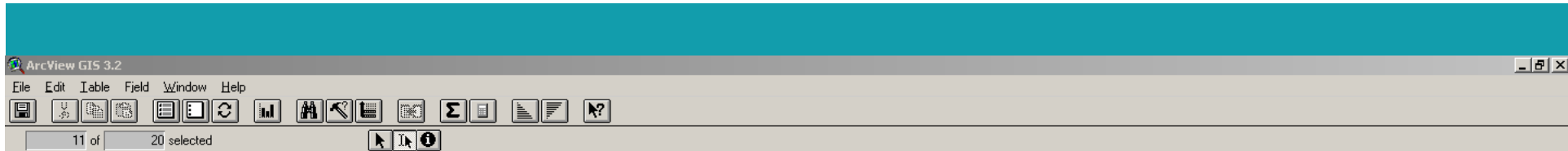
Fields	Values
[Land_alk_]	1
[Difference]	2
[Beginning]	3
[BRange]	4
[End]	5
[ERange]	6
[Land_use]	

Update Values

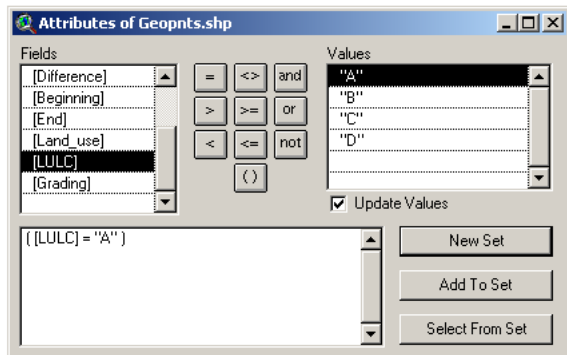
[(BRange) = 1]

New Set Add To Set Select From Set

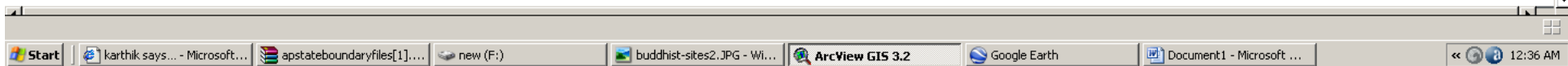
Displays the Query Builder to select features with a logical expression



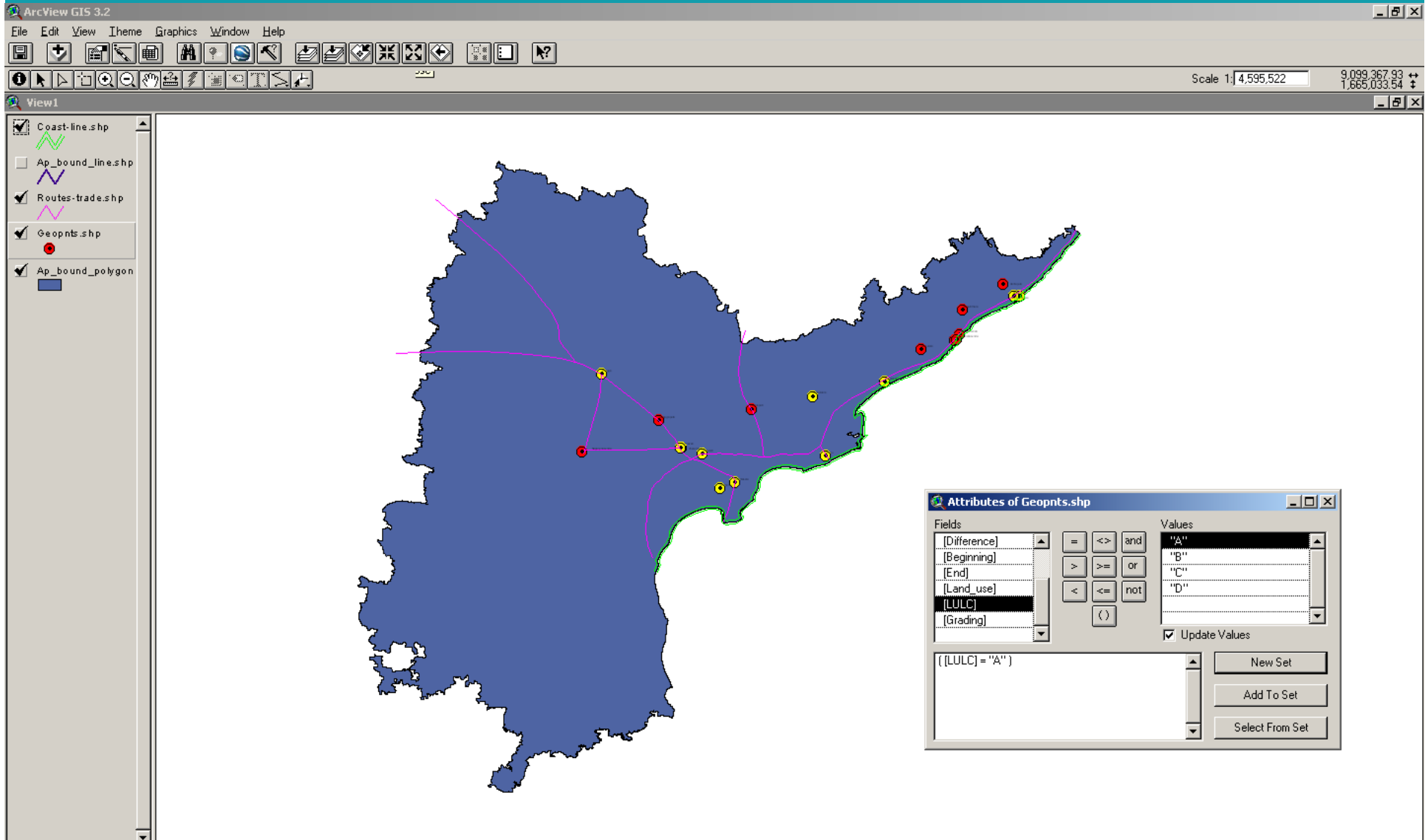
Shape	Site	Y	X	Altitude	Land_alt	Difference	Beginning	End	Land_use	LULC	Grading
Point	Aduru	16.47849	81.95461	6M			2 BC	2CBC	100% agriculture	A	100 - 75
Point	Amaravati	16.57576	80.35654	37 M			3BC	13AD	No waste land	A	100 - 75
Point	Bavikaonda	17.81771	83.39073	135M	5M	130M	3 BC	2AD	Not much fertile land	D	
Point	Bhattiprolu	16.09950	80.78091	8 M			2BC	2BC	No waste land	A	100 - 75
Point	Dantapura	18.47699	83.91714	34M	25M	9M	3 BC	9AD	90% usable	B	
Point	Dharanikota	16.57563	80.34285	35M			3BC	4AD	No waste land	A	100 - 75
Point	Ghantasala	16.16979	80.94866	19M			2AD	2AD	100% ag. land	A	100 - 75
Point	Gopalapatnam	17.33525	82.61434	80MT	15M	65M	3 BC	2AD	80% ag. land	A	100 - 75
Point	Guntupalli	17.01990	81.13035	171M			3 BC	3BC	50% usable dry ag.	C	
Point	Jaggayyapeta	16.88696	80.10649	75M	55M	20M	3BC	7AD	Majority of land not suitable	D	
Point	Kalingapatnam	18.33057	84.11077	5MT			3BC	1AD	Most land usable	A	100 - 75
Point	Kapavaram	17.16768	81.81294	123M	30M	93M	2 AD	4AD	More than 95% ag. land	A	100 - 75
Point	Nagarjunakonda	16.52292	79.24879	183M	80M	103M	3AD	3AD	60% usable, dry.	B	
Point	Pavurallakonda	17.88927	83.43756	162M	30M	137M	3BC	2AD	Not much fertile land	D	
Point	Phanigiri	17.42733	79.47235	290m	240M	50M	1 AD	2AD	More than 90% ag.	A	100 - 75
Point	Salihundam	18.33379	84.04304	49M	8M	41M	3 BC	12AD	Mostly usable	A	100 - 75
Point	Sankaram	17.71017	83.01567	46M			2AD	9AD	75% usable	B	
Point	Thottakonda	17.82821	83.40882	115M	5M	110M	3 BC	2AD	No usable land	D	
Point	Undavalli	16.49689	80.58167	31.39M	21M	10M	4 AD	5AD	90% usable	A	100 - 75
Point	Ramatirtham	18.17701	83.47557	75M	64M	11M	3 BC	9AD	Not much fertile land	D	



LAND GRADING
100-75% USABLE A
75-50% USABLE B
50-25% USABLE C
25-0% USABLE D



LAND USE LAND CLASS-A (100-75% USABLE)



<25% USABLE LAND

ArcView GIS 3.2

File Edit View Theme Graphics Window Help

Scale 1:2,941,134 8,581,175.17 2,065,600.02

View1

- Coast-line.shp
- Ap_bound_line.shp
- Routes-trade.shp
- Geopnts.shp
- Ap_bound_polygon

Attributes of Geopnts.shp

Fields	Values
[Difference]	"A"
[Beginning]	"B"
[End]	"C"
[Land_use]	"D"
[LULC]	
[Grading]	

[LULC] = "D"

Update Values

New Set

Add To Set

Select From Set

Opens the tables of the active themes

SITES FALLING ON THE TRADE ROUTE

ArcView GIS 3.2

File Edit View Theme Graphics Window Help

Scale 1:1,200,917.938 780,378.06 2,173,174.62

View1

- Routes-trade_project.shp
- Geopnts_project.shp
- Ap_bound_polygon_project.shp

Attributes of Geopnts_project.shp

Fields	Values
[Grading]	1
[Brange]	2
[Erangle]	3
[feat]	4
[trd-dist]	8
[trade-dist]	9

[trade-dist] = 1

Buttons: New Set, Add To Set, Select From Set

SITES WITHIN 2 Km. FROM THE COAST

ArcView GIS 3.2

File Edit View Theme Graphics Window Help

Scale 1:1,880,023.820 663,015.20 2,074,909.13

View1

- Routes-trade_project.shp
- Geopnts_project_project.shp
- Coast-line_project_project.shp
- Ap_bound_polygon_project.shp

Attributes of Geopnts_project_project.shp

Fields	Values
[Lulc]	1
[Grading]	2
[Brange]	4
[Erangle]	7
[Trade_dist]	8
[coast_dist]	21

[coast_dist] <= 2

Update Values

New Set

Add To Set

Select From Set

SITES WITHIN 10Km. FROM THE COAST

The screenshot displays the ArcView GIS 3.2 interface. The main map area shows a coastal region with a red polygon representing the coastline and blue lines representing trade routes. A dialog box titled "Attributes of Geopnts_project_project.shp" is open, showing a list of fields and values. The "coast_dist" field is selected, and a value of 10 is entered. The dialog box also includes buttons for "New Set", "Add To Set", and "Select From Set".

Fields	Values
[Lulc]	1
[Grading]	2
[Brange]	4
[Erangle]	7
[Trade_dist]	8
[coast_dist]	21

[coast_dist] <= 10

SOME CONCLUSIONS

- Buddhism was in its most flourishing state in Andhra Pradesh during 3rd Century BC and 3rd Century AD.
- Maximum number of sites came up in agriculturally fertile terrain.
- Trade route was a major factor in establishing Buddhist sites.
- Sites also came up near the major ports of the ancient period.
- Web 2.0 techniques were useful in land use and spatial analysis.
- Application of GIS techniques helped in developing better insight into the factors that influenced setting up of Buddhist sites in Andhra Pradesh.



**PRESENTATION
DEDICATED TO
LORD BUDDHA**
drkpao@gmail.com