

Table 25 - Recoding system of LULC classes for calculation of landscape metrics in Machadinho d'Oeste and Vale do Anari.

LULC CLASSES	RECODED CLASSES
Forest	Forest
Advanced Secondary Succession	Secondary Succession
Initial Secondary Succession	
Pasture	Production
Agriculture	
Bareland	
Infrastructure	Others
Water	

Table 26 - List of computed metrics for patches, classes, and landscapes in Machadinho d'Oeste and Vale do Anari.

METRICS TYPE	ACRONYM	METRICS
Area metrics		
Patch	AREA	Area (ha)
Patch	PERIMETER	Perimeter (m)
Class	PLAND	Percentage of landscape (%)
Class/landscape	LPI	Largest patch index (%)
Patch density, patch size, and variability metrics		
Class/landscape	PD	Patch density (#/100ha)
Class/landscape	MPS	Mean patch size (ha)
Class/landscape	PSSD	Patch size standard deviation (ha)
Class/landscape	PSCV	Patch size coefficient of variation (%)
Edge metrics		
Class/landscape	ED	Edge density (m/ha)
Shape metrics		
Patch	SHAPE	Shape index
Patch	FRACT	Fractal dimension
Class/landscape	LSI	Landscape shape index
Class/landscape	AWMSI	Area-weighted mean shape index
Core area metrics		
Landscape	TCAI	Total core area index (%)
Class	MCAI	Mean core area index (%)
Diversity metrics		
Landscape	MSIDI	Modified Simpson's diversity index
Landscape	MSIEI	Modified Simpson's evenness index
Interspersion and juxtaposition metrics		
Class/landscape	IJI	Interspersion and juxtaposition index (%)

Table 27 - Computed metrics for Machadinho d'Oeste and Vale do Anari landscapes in 1988, 1994, and 1998.

Metrics	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
LPI (%)	17.7	13.3	10.7	15.2	8.0	2.6	13.2	5.5	4.5
PD (#/100ha)	6.8	8.0	8.5	9.8	11.6	12.3	3.0	4.3	5.0
MPS (ha)	14.8	12.6	11.8	10.2	8.6	8.1	33.7	23.1	19.9
PSSD (ha)	582.8	371.6	285.7	299.7	127.5	72.3	436.3	258.5	181.2
PSCV (%)	3940.8	2960.7	2414.5	2937.8	1481.9	892.9	1295.7	1119.2	911.1
ED (m/ha)	24.5	36.3	43.6	34.7	51.4	61.0	20.4	34.2	44.3
LSI	31.9	47.4	56.8	37.6	55.7	66.1	19.0	31.8	41.3
AWMSI	6.8	5.2	4.7	6.8	4.3	3.4	3.4	4.2	4.2
TCAI (%)	76.3	64.2	56.2	64.9	48.2	38.1	77.8	62.5	50.8
MSIDI	0.24	0.50	0.72	0.34	0.72	0.99	0.27	0.64	0.93
MSIEI	0.17	0.36	0.52	0.25	0.52	0.71	0.19	0.46	0.67
IJI (%)	86.3	94.3	90.6	67.3	73.5	70.6	81.1	87.3	82.2

Table 28 - Percentage of landscape (PLAND) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

PLAND (%)	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	88.4	76.0	65.7	83.4	65.8	51.1	86.8	68.5	52.9
Succession	1.6	8.4	13.5	2.3	11.9	19.0	1.5	7.9	16.9
Production	8.4	13.9	19.1	12.0	19.9	27.4	10.7	22.5	29.0
Others	1.6	1.7	1.8	2.2	2.4	2.5	1.0	1.0	1.1

Table 29 - Largest Patch Index (LPI) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

LPI (%)	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	17.7	13.3	10.7	15.2	8.0	2.6	13.2	5.5	4.5
Succession	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.3
Production	0.1	0.4	0.5	0.2	0.5	0.8	0.3	1.1	2.9
Others	0.2	0.3	0.3	0.3	0.4	0.4	0.2	0.2	0.2

Table 30 - Patch Density (PD) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

PD (#/100ha)	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	0.28	0.35	0.39	0.46	0.61	0.78	0.16	0.31	0.42
Succession	0.79	2.02	2.27	1.14	2.90	3.19	0.63	1.81	2.05
Production	1.20	1.08	1.27	1.68	1.55	1.80	0.79	0.81	1.15
Others	4.50	4.52	4.52	6.53	6.57	6.57	1.39	1.41	1.41

Table 31 - Mean Patch Size (MPS) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

MPS (ha)	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	319.0	219.1	167.4	182.1	107.8	65.7	556.4	224.9	126.7
Succession	2.0	4.2	5.9	2.0	4.1	5.9	2.4	4.4	8.3
Production	7.0	12.9	15.0	7.2	12.9	15.2	13.5	27.8	25.2
Others	0.4	0.4	0.4	0.3	0.4	0.4	0.7	0.7	0.8

Table 32 - Patch Size Standard Deviation (PSSD) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

PSSD (ha)	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	2864	1768	1313	1375	543	268	1829	940	585
Succession	3.1	9.4	14.1	3.1	9.1	13.9	3.9	9.2	19.9
Production	17.4	38.5	51.6	17.5	38.5	52.1	35.3	92.8	117.1
Others	5.6	7.0	8.3	5.5	6.6	6.6	7.1	7.7	8.7

Table 33 - Patch Size Coefficient of Variation (PSCV) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

PSCV (%)	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	897.8	806.8	784.2	755.1	503.6	407.6	328.7	417.8	462.1
Succession	151.3	226.1	236.7	152.7	220.8	233.6	167.4	210.1	240.8
Production	246.7	299.3	344.3	245.3	298.5	341.8	261.2	334.0	464.1
Others	1595	1877	2116	1619	1814	1726	1018	1038	1106

Table 34 - Edge Density (ED) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

ED (m/ha)	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	16.8	20.9	22.1	26.3	31.8	32.5	14.1	19.7	21.6
Succession	5.0	20.1	27.8	7.2	28.6	39.0	4.2	18.3	29.9
Production	16.4	20.8	26.3	23.4	29.9	37.8	15.6	23.3	29.9
Others	10.7	10.8	11.0	15.4	15.5	15.8	7.0	7.0	7.2

Table 35 - Landscape Shape Index (LSI) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

LSI	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	23.2	31.3	35.5	31.2	42.5	49.2	14.1	22.2	27.6
Succession	51.8	90.2	98.6	51.4	89.6	97.0	32.3	60.4	67.7
Production	73.9	72.9	78.6	73.1	72.5	78.1	44.4	45.8	51.7
Others	111.1	108.7	107.6	111.4	109.2	107.9	65.7	64.1	64.0

Table 36 - Area Weighted Mean Shape Index (AWMSI) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

AWMSI	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	7.5	6.2	6.0	7.8	5.4	4.5	3.5	4.7	5.1
Succession	1.5	1.9	2.2	1.6	1.9	2.2	1.6	1.9	2.3
Production	2.6	3.1	3.2	2.6	3.1	3.2	2.9	3.7	3.8
Others	2.8	3.5	4.8	2.6	2.8	3.0	11.6	10.8	11.1

Table 37 - Mean Core Area Index (MCAI) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

MCAI (%)	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	4.1	6.9	8.8	5.5	8.8	9.6	12.5	7.3	6.4
Succession	0.2	0.9	1.6	0.2	0.9	1.6	0.5	1.1	2.4
Production	1.8	3.5	3.9	1.8	3.5	3.9	3.6	5.9	5.1
Others	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Table 38 - Interspersion and Juxtaposition Index (IJI) for each class in Machadinho d'Oeste and Vale do Anari in 1988, 1994, and 1998.

IJI (%)	MACHADINHO D'OESTE INCLUDING RESERVES			MACHADINHO D'OESTE EXCLUDING RESERVES			VALE DO ANARI		
	1988	1994	1998	1988	1994	1998	1988	1994	1998
Forest	87.4	93.6	86.7	69.3	74.1	69.0	76.6	83.8	78.2
Succession	89.4	87.7	85.4	71.1	69.8	67.9	83.4	78.2	74.2
Production	86.2	98.0	94.3	68.7	77.8	74.6	83.2	95.3	88.7
Others	79.7	95.6	93.1	63.3	75.7	73.3	76.2	81.9	78.8

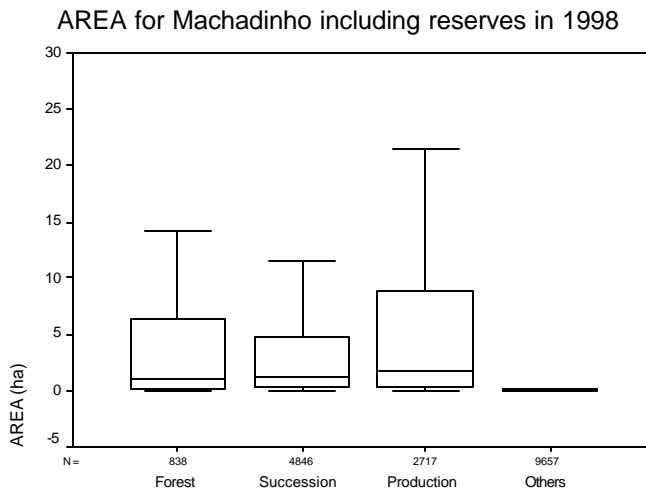
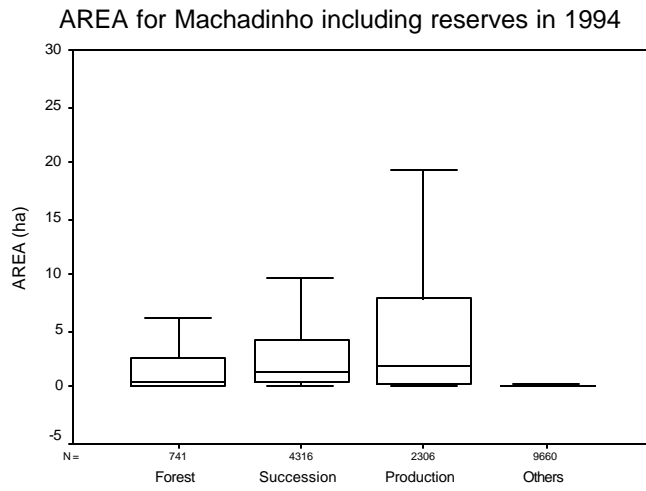
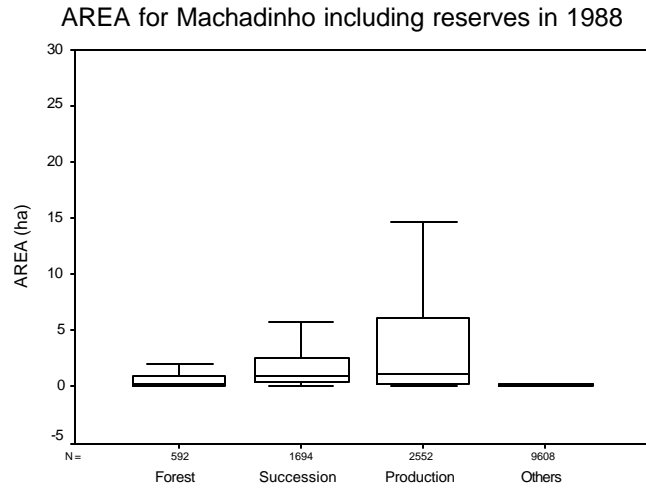


Figure 71 - Patch area distribution for Machadinho d'Oeste including reserves in 1988, 1994, and 1998.

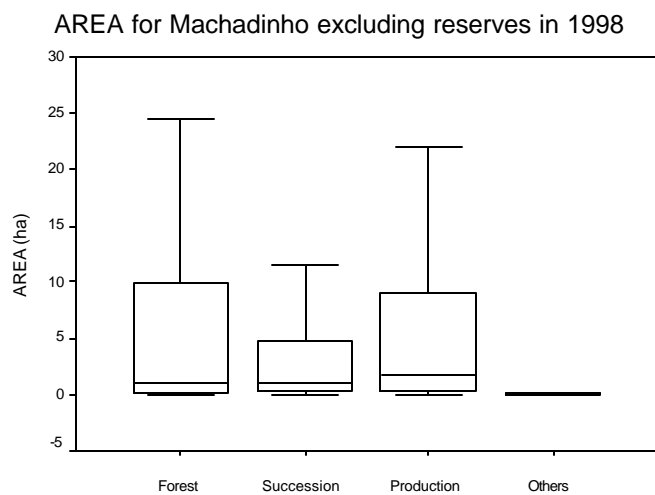
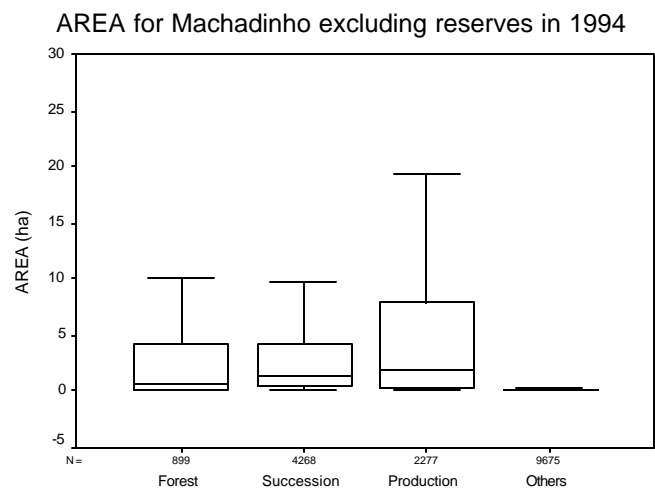
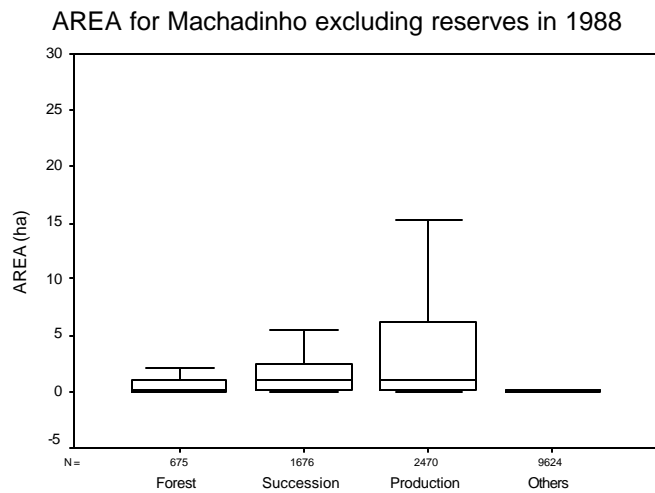


Figure 72 - Patch area distribution for Machadinho d'Oeste excluding reserves in 1988, 1994, and 1998.

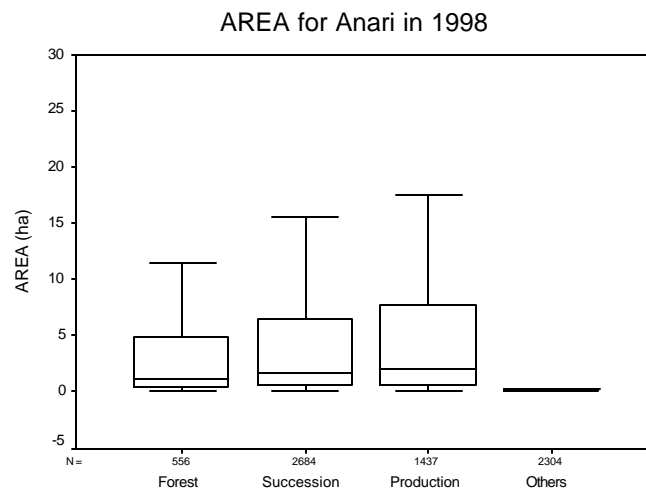
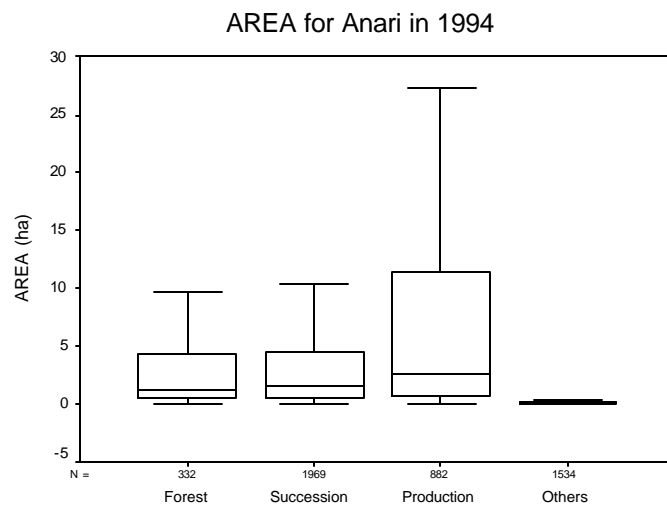
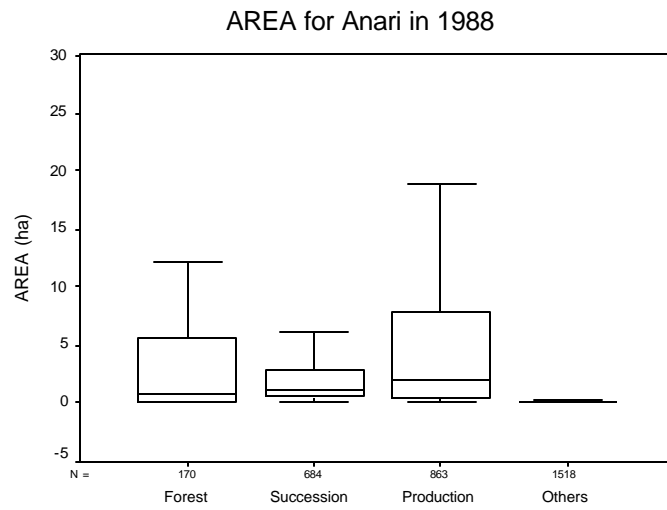
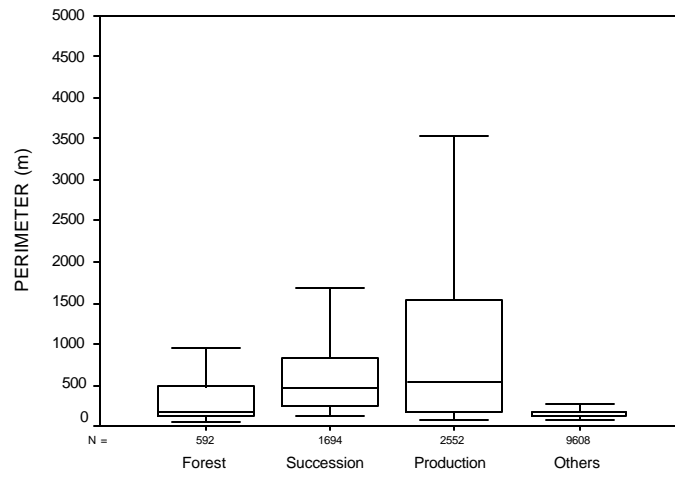
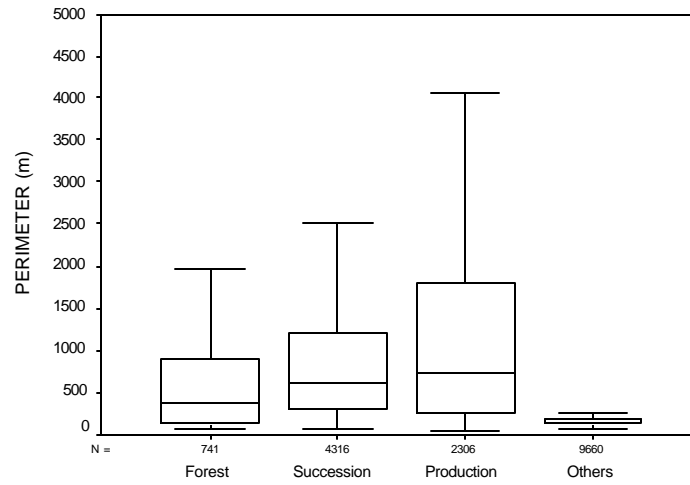


Figure 73 - Patch area distribution for Vale do Anari in 1988, 1994, and 1998.

PERIMETER for Machadinho including reserves in 1988



PERIMETER for Machadinho including reserves in 1994



PERIMETER for Machadinho including reserves in 1998

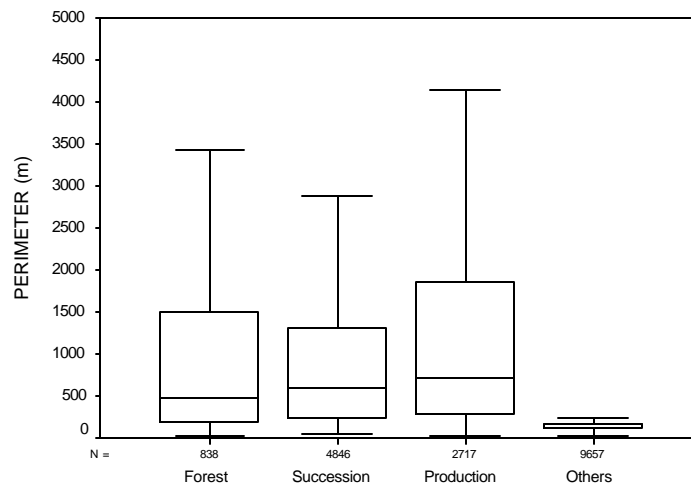
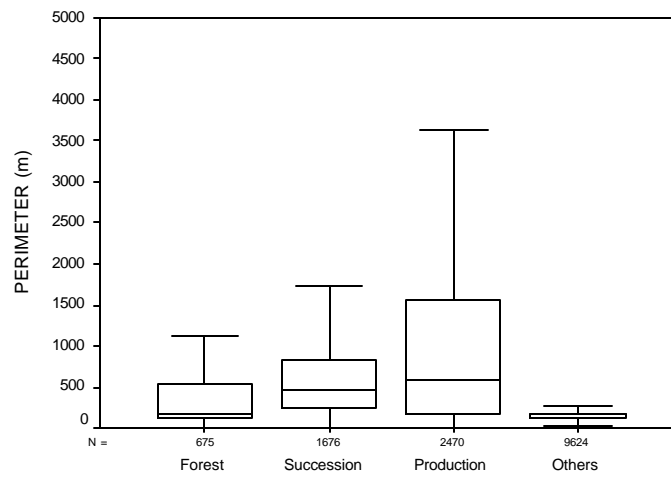
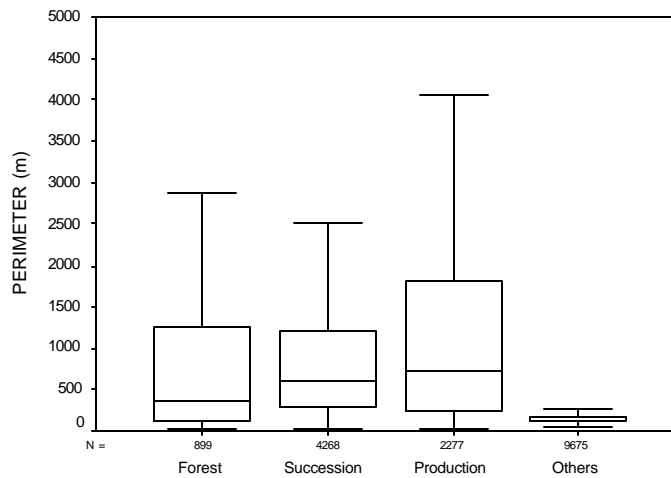


Figure 74 - Patch perimeter distribution for Machadinho d'Oeste including reserves in 1988, 1994, and 1998.

PERIMETER for Machadinho excluding reserves in 1988



PERIMETER for Machadinho excluding reserves in 1994



PERIMETER for Machadinho excluding reserves in 1998

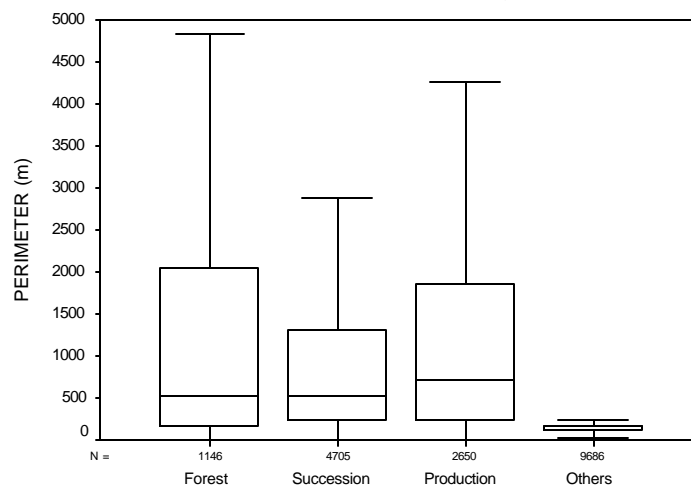


Figure 75 - Patch perimeter distribution for Machadinho d'Oeste excluding reserves in 1988, 1994, and 1998.

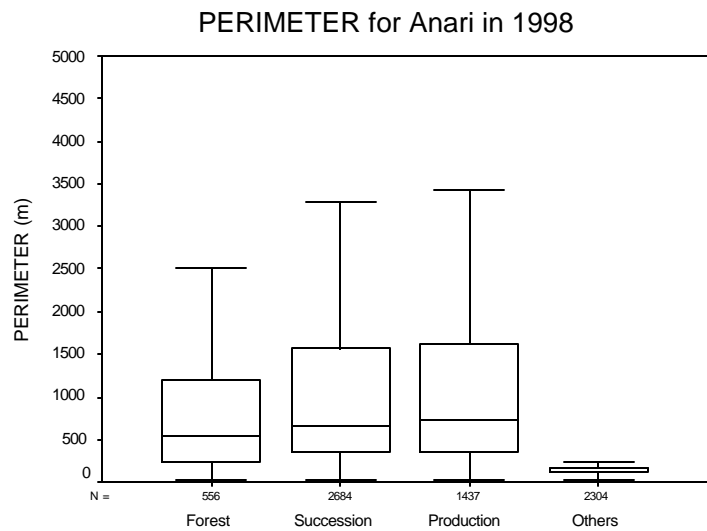
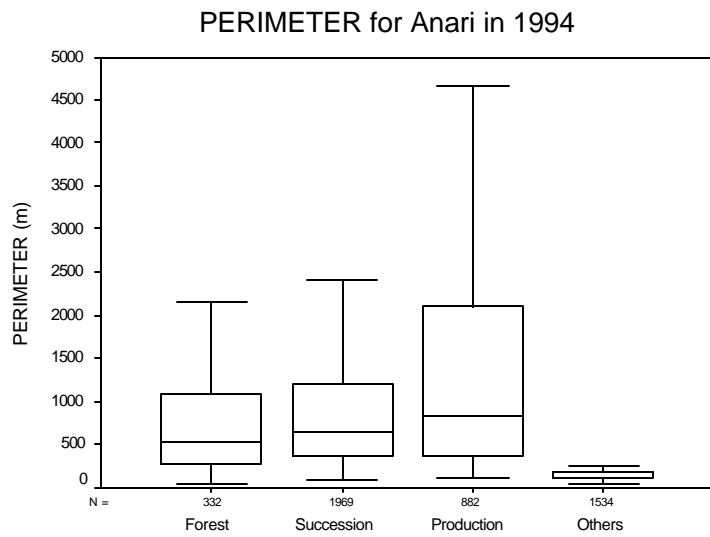
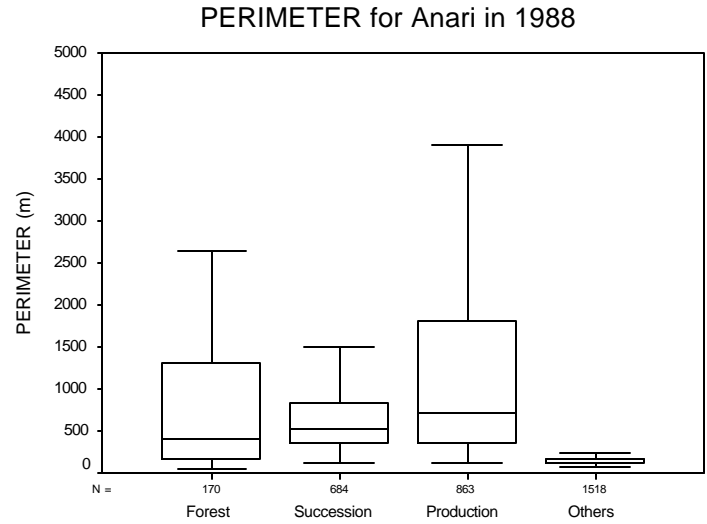


Figure 76 - Patch perimeter distribution for Vale do Anari in 1988, 1994, and 1998.

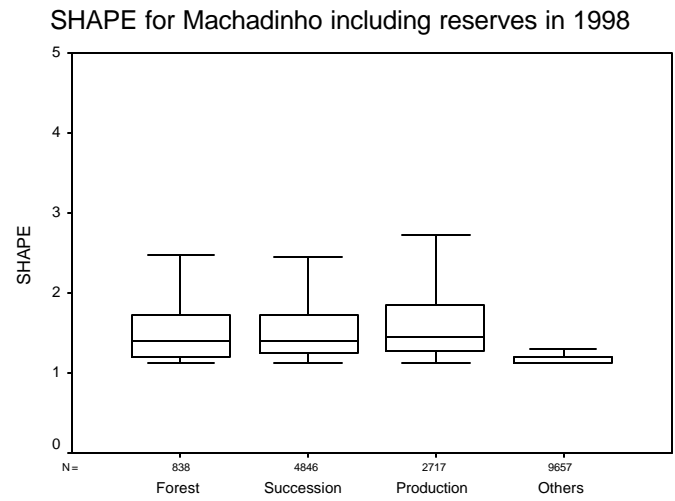
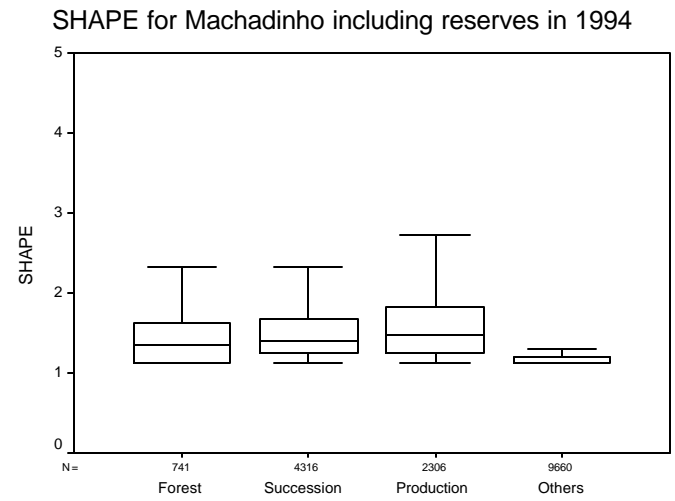
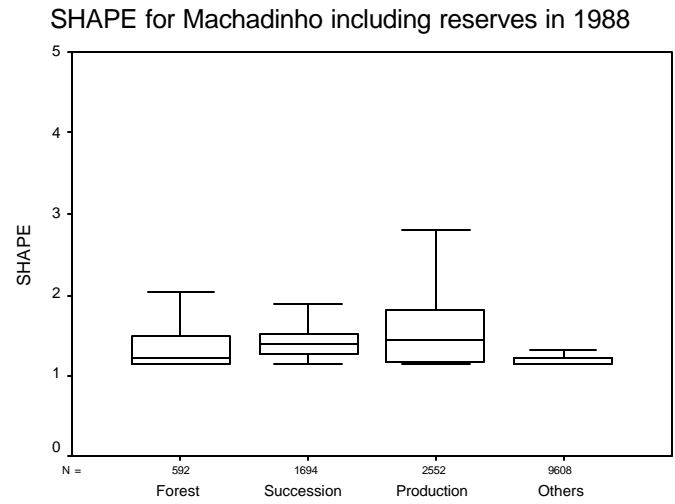
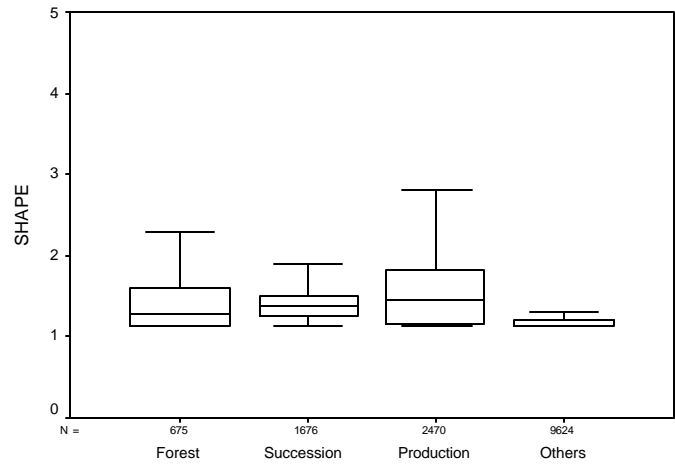
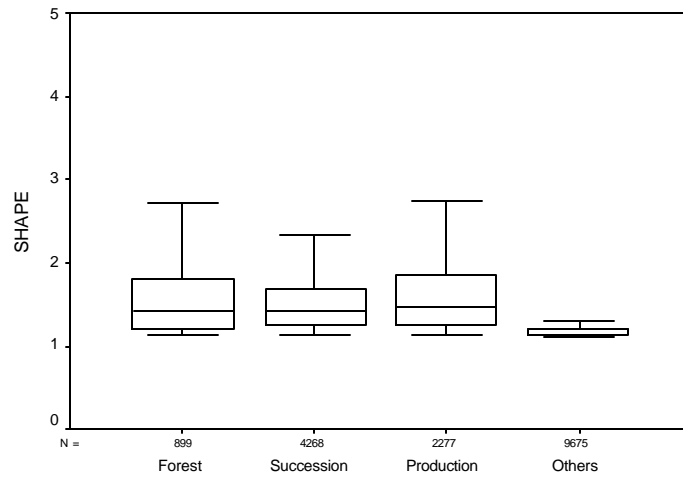


Figure 77 - Patch shape distribution for Machadinho d'Oeste including reserves in 1988, 1994, and 1998.

SHAPE for Machadinho excluding reserves in 1988



SHAPE for Machadinho excluding reserves in 1994



SHAPE for Machadinho excluding reserves in 1998

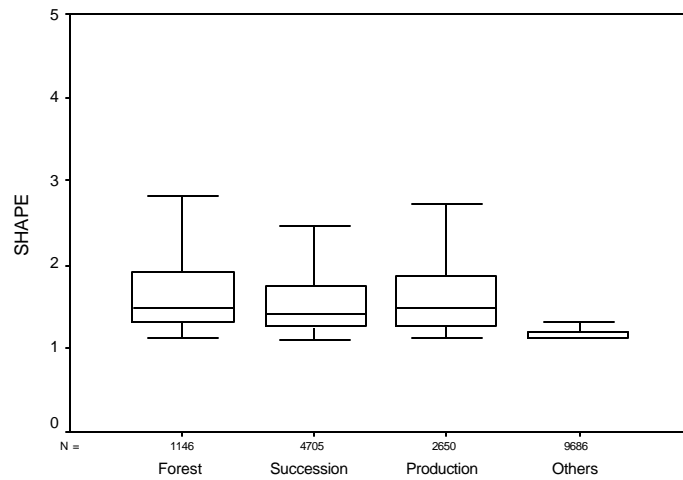


Figure 78 - Patch shape distribution for Machadinho d'Oeste excluding reserves in 1988, 1994, and 1998.

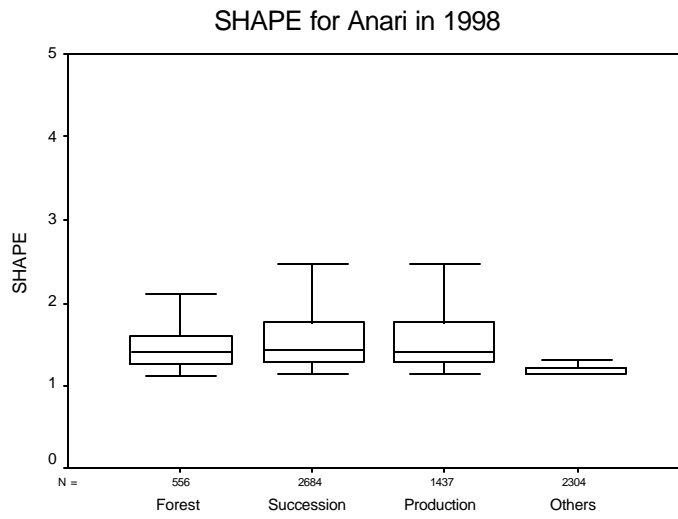
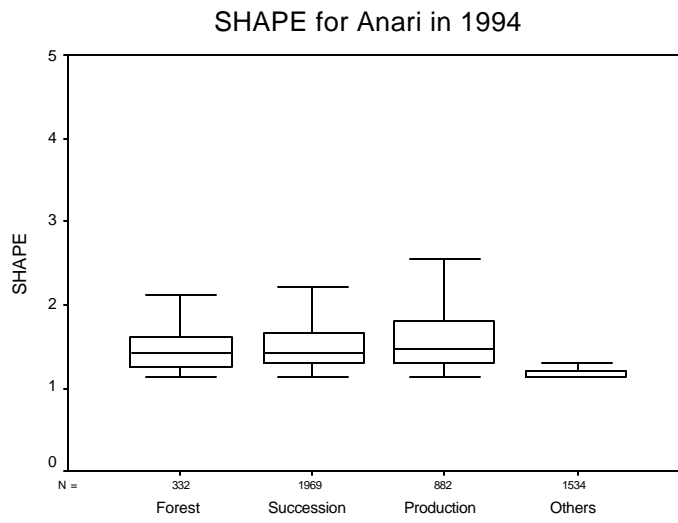
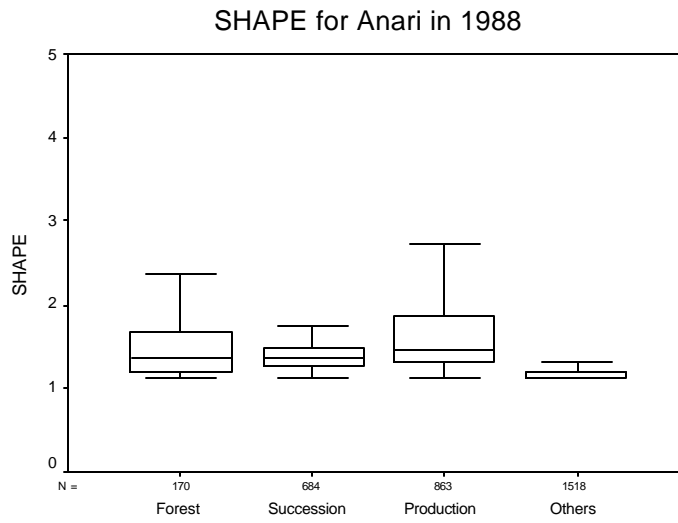


Figure 79 - Patch shape distribution for Vale do Anari in 1988, 1994, and 1998.

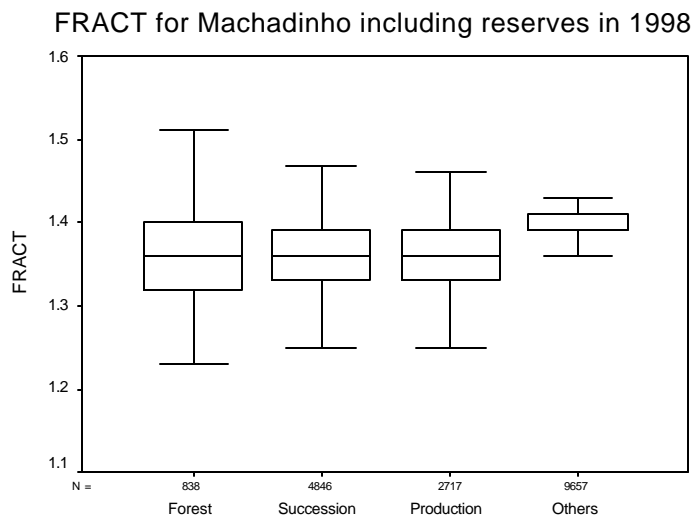
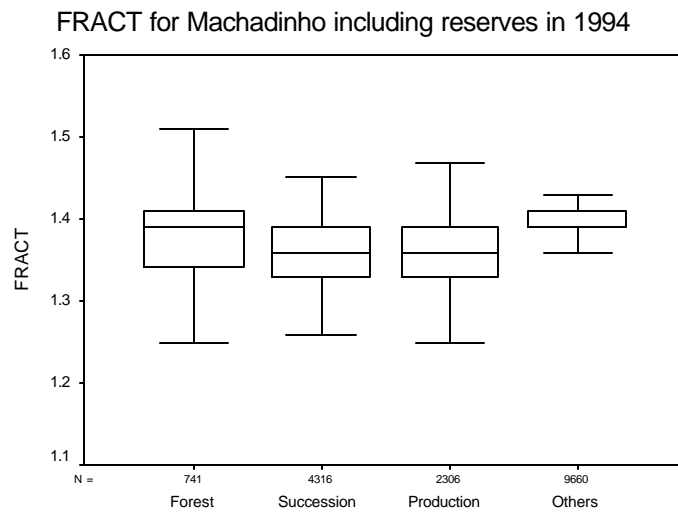
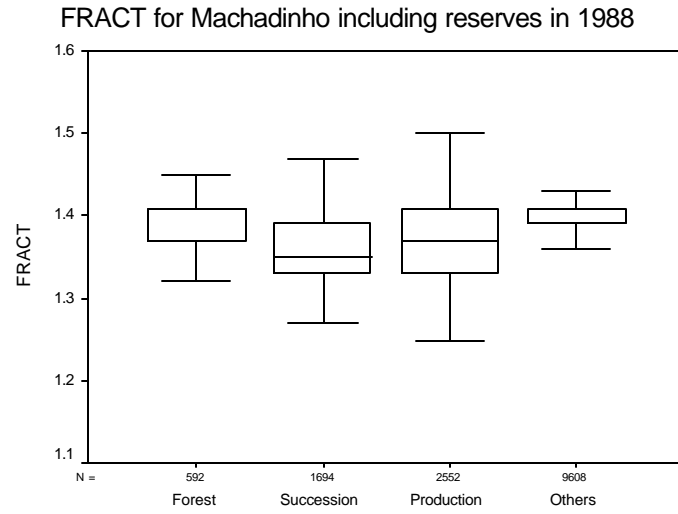


Figure 80 - Patch fractal dimension distribution for Machadinho d'Oeste including reserves in 1988, 1994, and 1998.

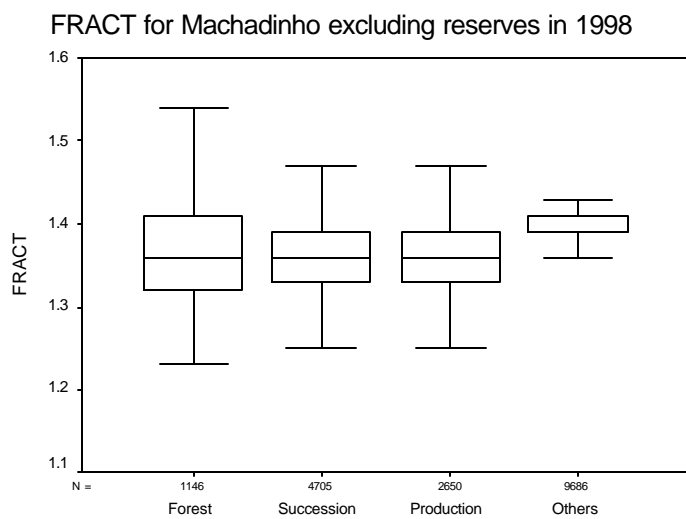
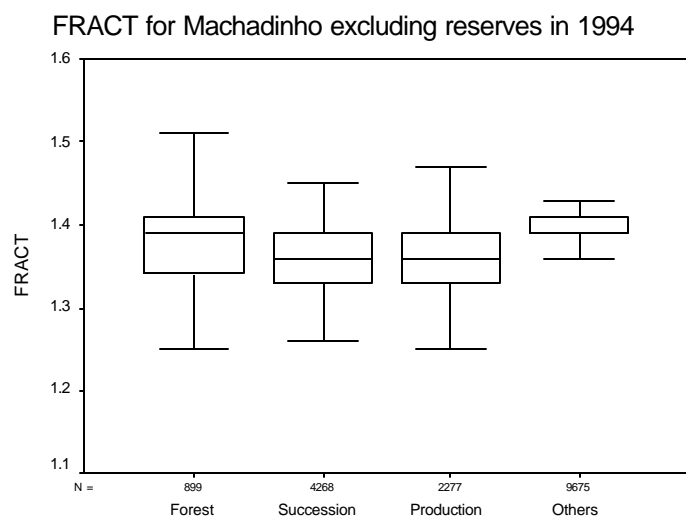
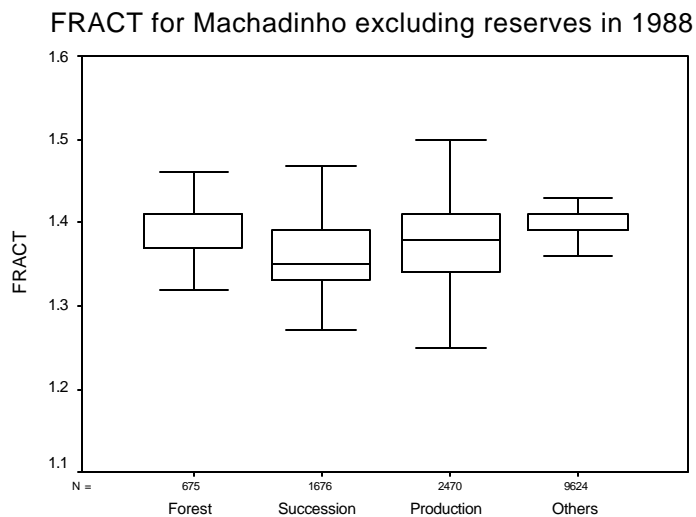


Figure 81 - Patch fractal dimension distribution for Machadoinho d'Oeste excluding reserves in 1988, 1994, and 1998.

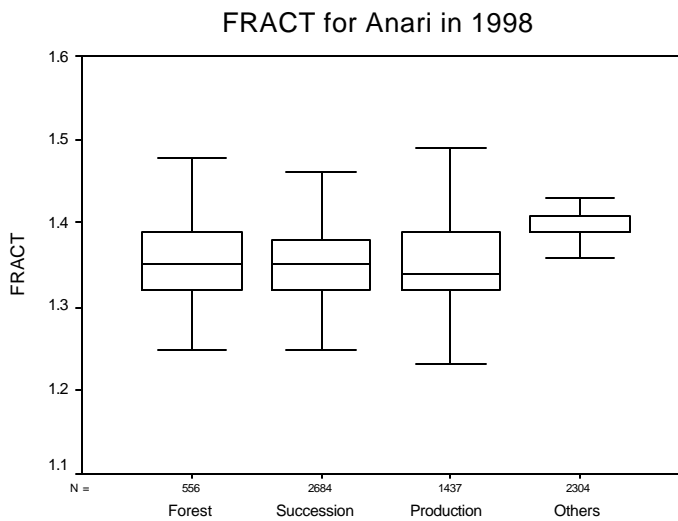
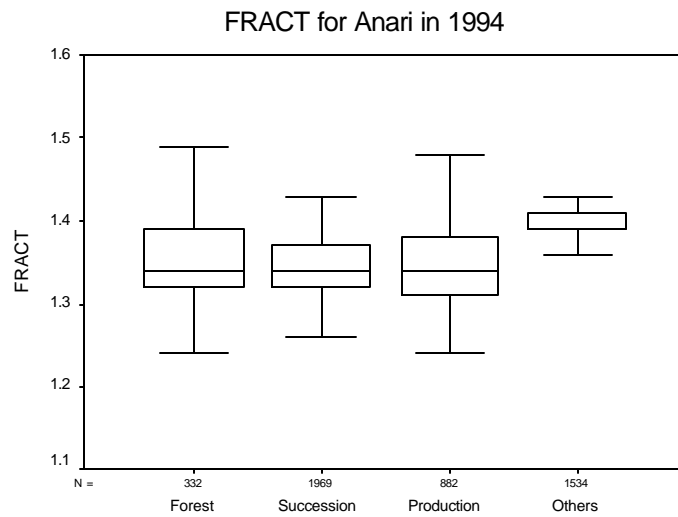
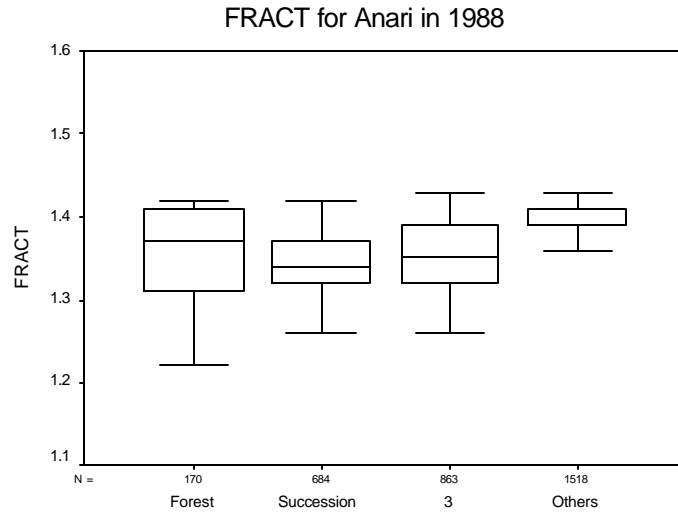


Figure 82 - Patch fractal dimension distribution for Vale do Anari in 1988, 1994, and 1998.

Table 39 - Trends found for landscape metrics in Machadinho d'Oeste and Vale do Anari between 1988 and 1998.

	MACHADINHO D'OESTE INCLUDING RESERVES	MACHADINHO D'OESTE EXCLUDING RESERVES	VALE DO ANARI
Metrics	1988-1998	1988-1998	1988-1998
LPI (%)	-	--	--
PD (#/100ha)	+	+	+
MPS (ha)	-	-	-
PSSD (ha)	--	--	--
PSCV (%)	-	--	-
ED (m/ha)	+	+	++
LSI	+	+	++
AWMSI	-	--	+
TCAI (%)	-	-	-
MSIDI	++	++	++
MSIEI	++	++	++
IJI (%)	+	+	+

Legend: - (decrease less than twofold), -- (decrease more than twofold), o (equal), + (increase less than twofold), ++ (increase more than twofold).

Table 40 - Trends found for class metrics in Machadinho d'Oeste and Vale do Anari between 1988 and 1998.

Metrics	MACHADINHO D'OESTE INCLUDING RESERVES				MACHADINHO D'OESTE EXCLUDING RESERVES				VALE DO ANARI			
	F	S	P	O	F	S	P	O	F	S	P	O
PLAND (%)	-	++	++	+	-	++	++	+	-	++	++	+
LPI (%)	-	++	++	+	--	++	++	+	--	++	++	+
PD (#/100ha)	+	++	+	+	+	++	+	+	++	++	+	+
MPS (ha)	-	++	++	o	--	++	++	+	--	++	+	+
PSSD (ha)	--	++	++	+	--	++	++	+	--	++	++	+
PSCV (%)	-	+	+	+	-	+	+	+	+	+	+	+
ED (m/ha)	+	++	+	+	+	++	+	+	+	++	+	+
LSI	+	+	+	+	+	+	+	+	+	++	+	-
AWMSI	-	+	+	+	-	+	+	+	+	+	+	-
MCAI (%)	++	++	++	o	+	++	++	o	-	++	+	o
IJI (%)	-	-	+	+	-	-	+	+	+	-	+	+

Legend: F (Forest), S (Succession), P (Production), O (Others), - (decrease less than twofold), -- (decrease more than twofold), o (equal), + (increase less than twofold), ++ (increase more than twofold).