

Supplementary Materials

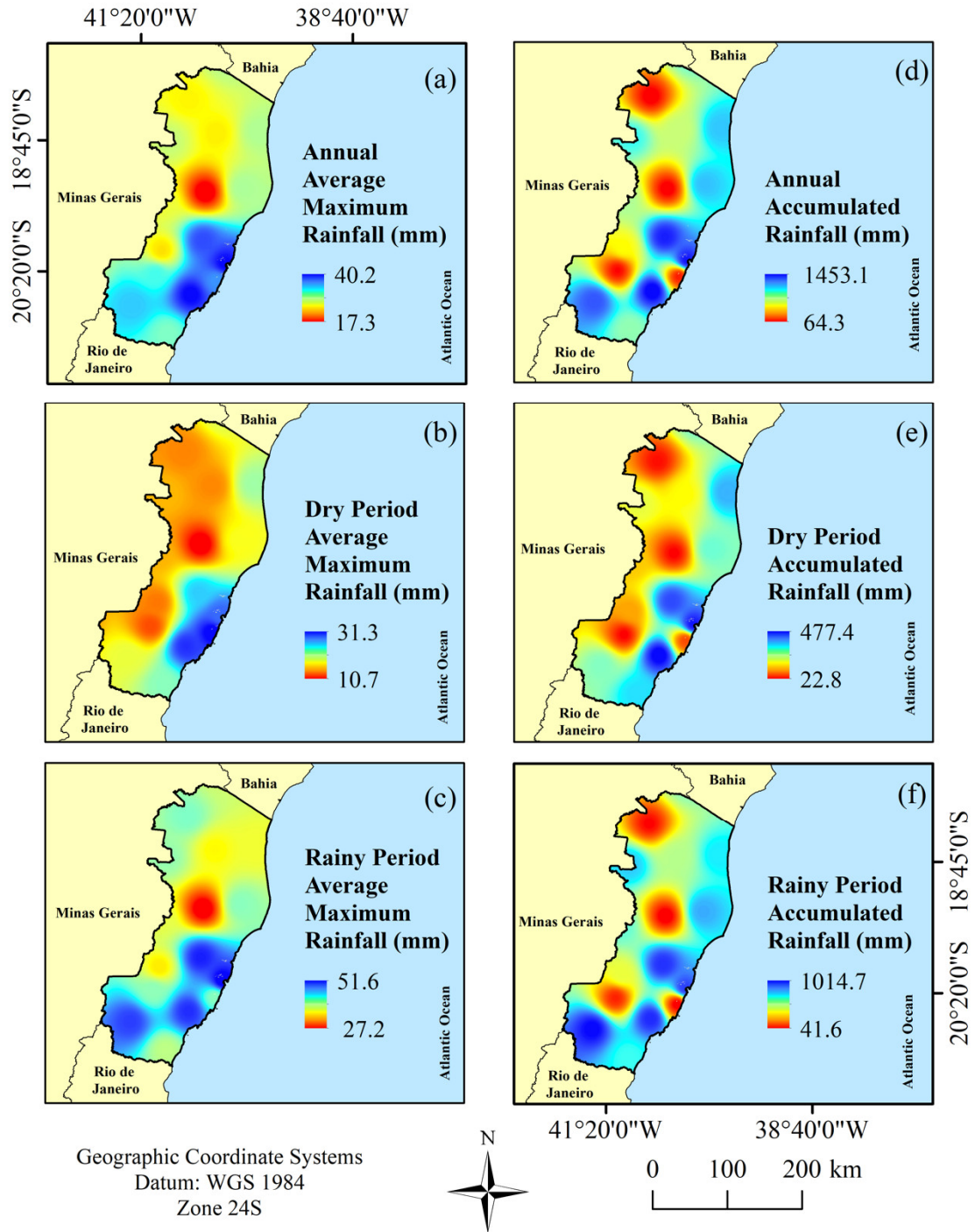


Figure S1. Rainfall distribution for Espírito Santo state, Brazil. (a) Annual average maximum rainfall, (b) dry period average maximum rainfall, (c) rainy period average maximum rainfall, (d) annual accumulated rainfall, (e) dry period accumulated rainfall e (f) rainy period accumulated rainfall.

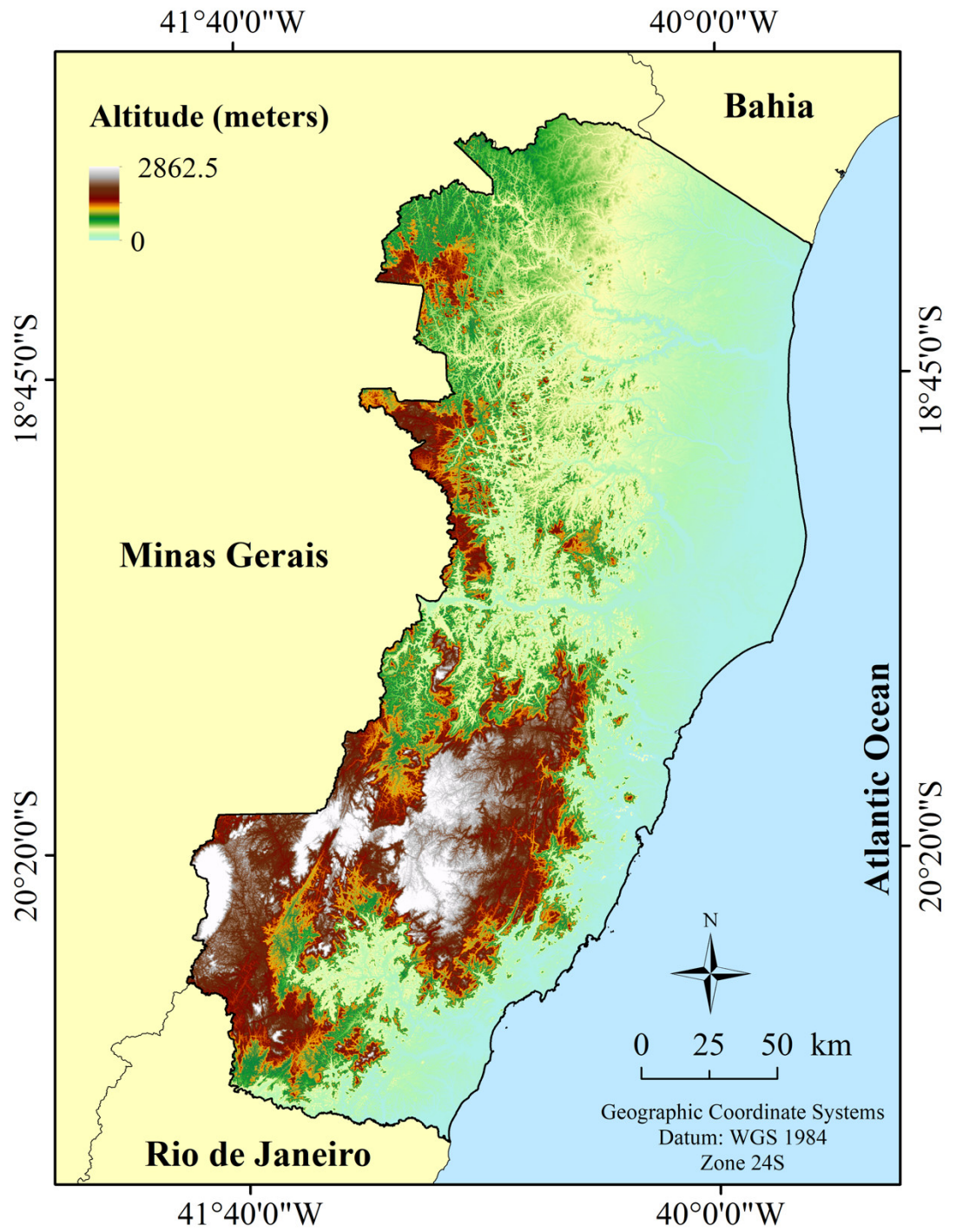


Figure S2. Digital Elevation Model for Espírito Santo state, Brazil.

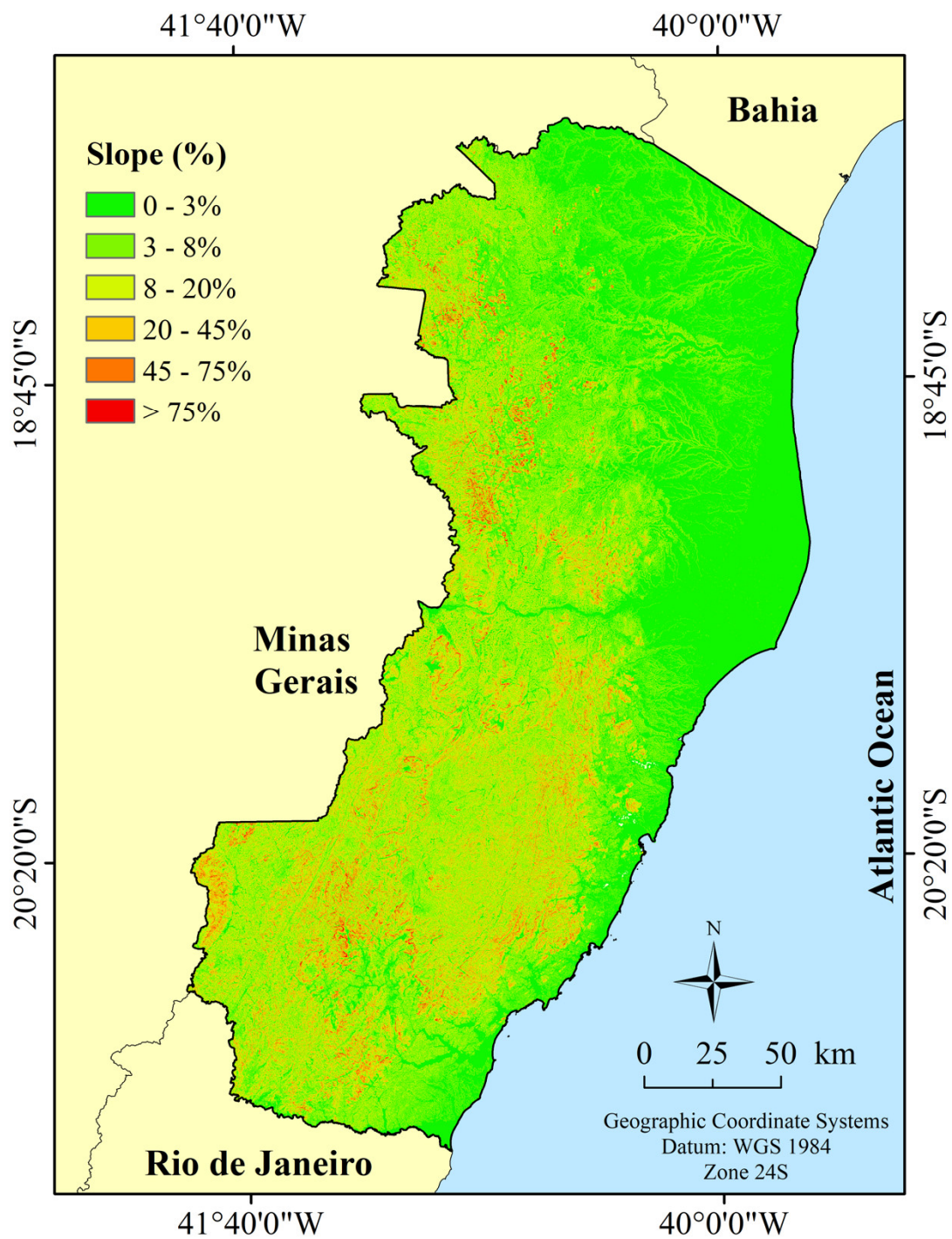


Figure S3. Slope classes for Espirito Santo state, Brazil, as proposed by EMBRAPA, (1979).

EMBRAPA, E.B. de P.A., 1979. Sumula da X reunião técnica de levantamento de solos. Serviço Nac. Levant. E Conserv. Solos 10, 83.

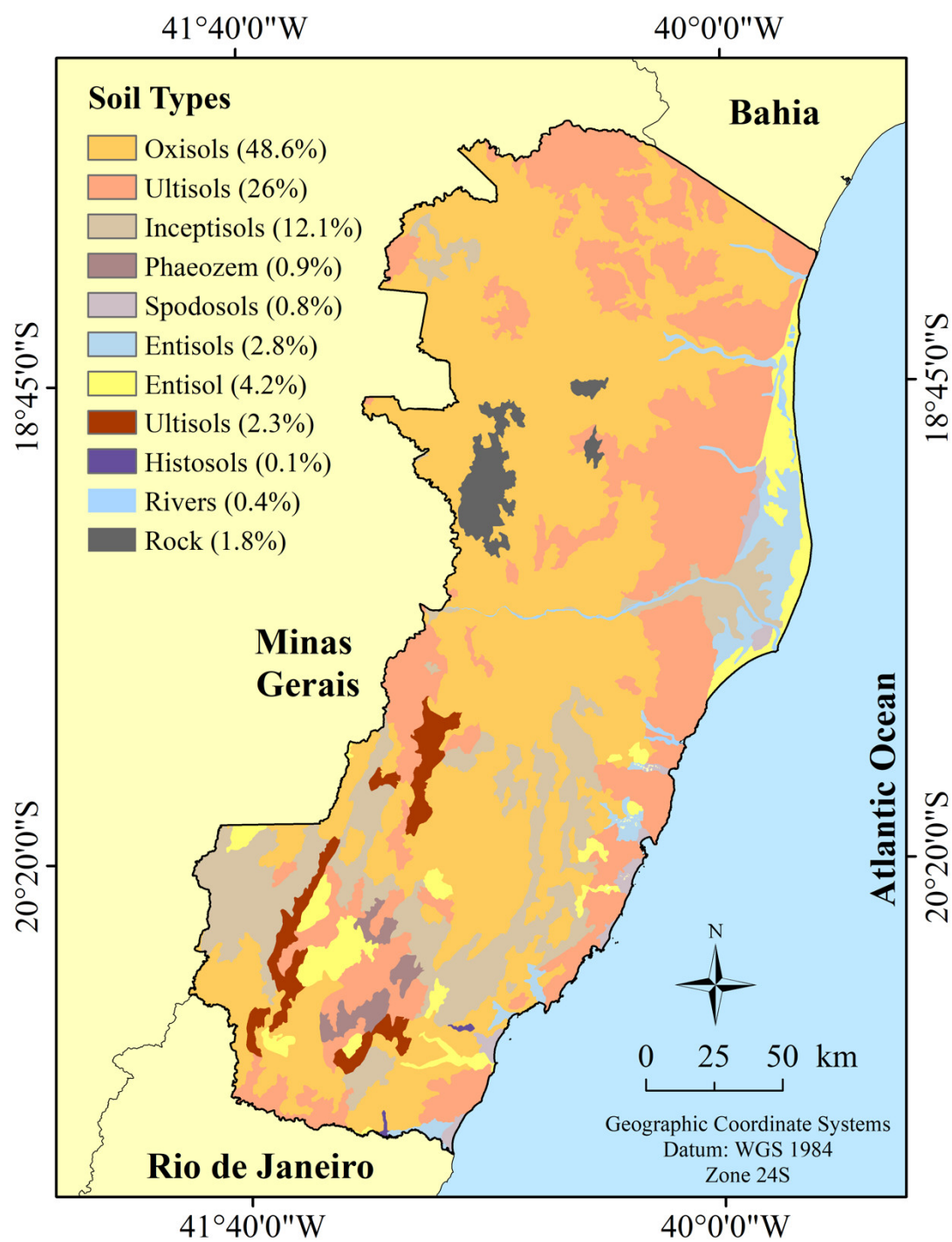


Figure S4. Soil types for Espírito Santo state, Brasil.

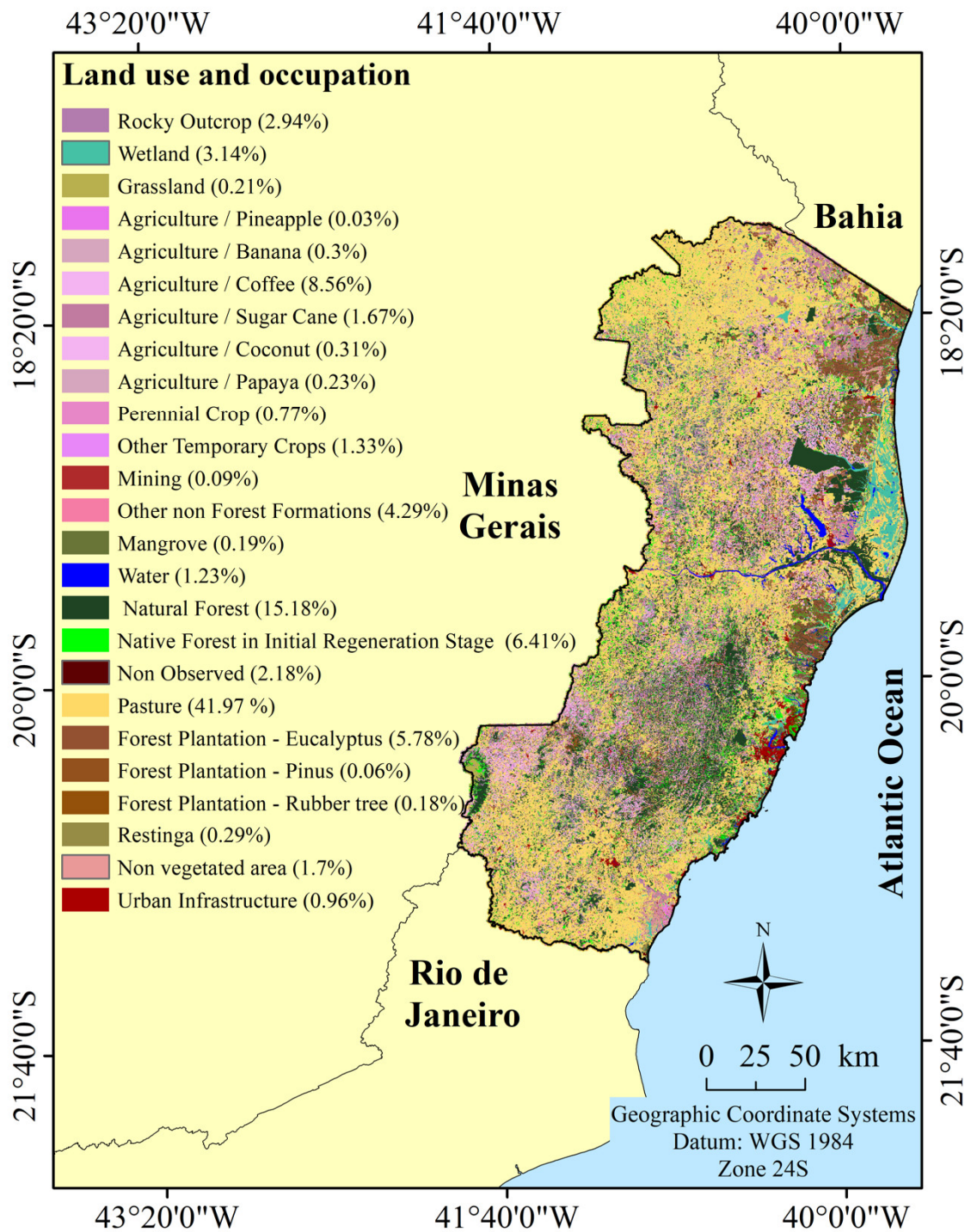


Figure S5. Land use and occupation for Espírito Santo state, Brazil.

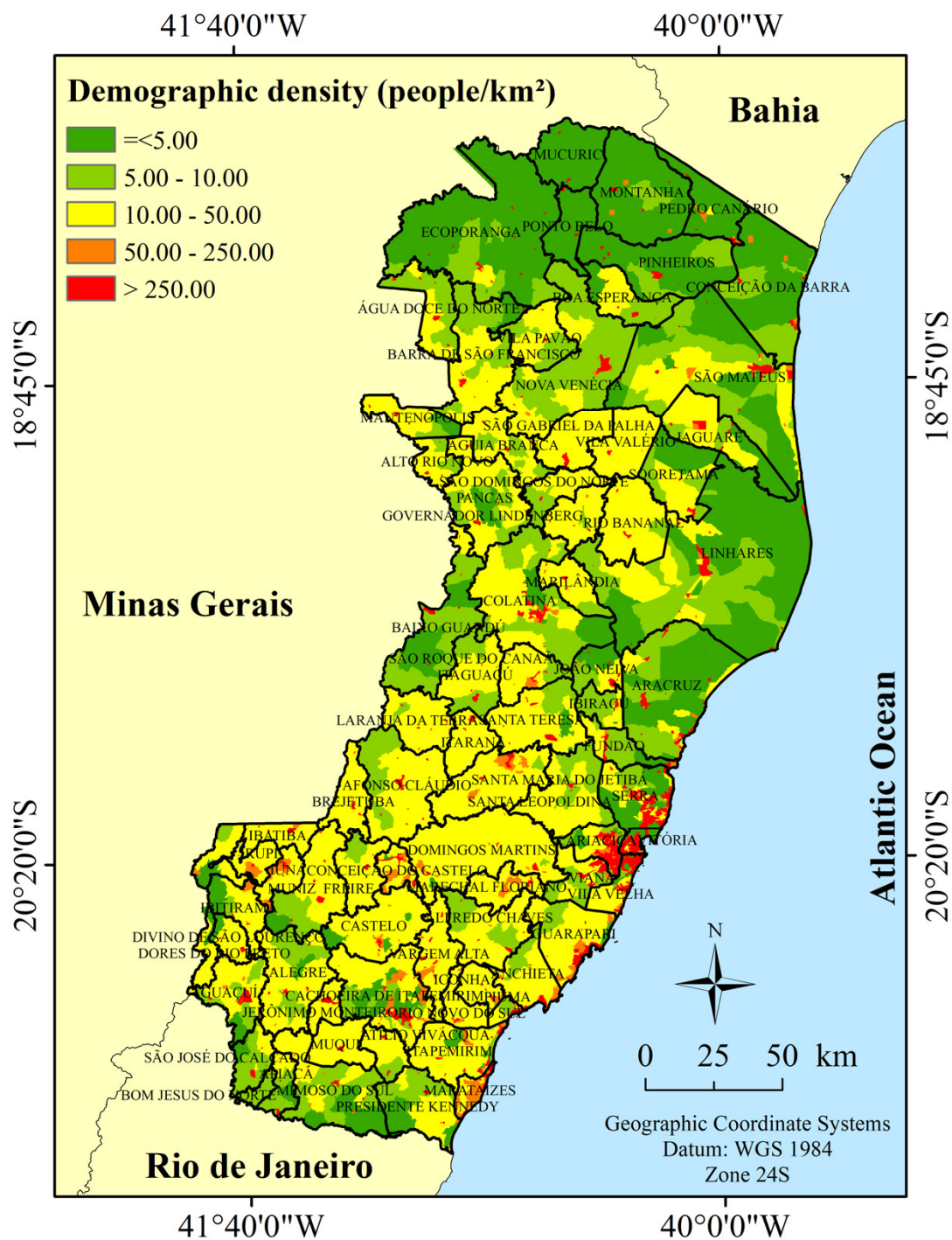


Figure S6. Demographic density (people/km²) and municipalities identification for Espírito Santo state, Brazil.

Table S1. Flood vulnerability area, in square kilometers, by municipality for Espírito Santo state, Brazil.

Municipalities		Very Low	Low	Medium	High	Very High
Água Doce do Norte	Annual	46.81	345.34	72.97	10.36	0.02
	Dry	223.63	226.45	20.45	4.98	
	Rainy		120.26	329.20	24.40	1.64
Águia Branca	Annual	100.34	191.03	149.22	11.78	0.12
	Dry	140.33	241.26	63.50	7.39	0.01
	Rainy	75.72	159.88	190.64	24.43	1.84
Afonso Cláudio	Annual	198.81	664.70	79.90	10.40	0.66
	Dry	425.38	503.39	23.32	2.37	
	Rainy	256.18	637.34	55.17	5.51	0.27
Alegre	Annual			69.83	660.07	43.50
	Dry		117.35	626.66	28.34	1.04
	Rainy				88.05	685.34
Alfredo Chaves	Annual			39.09	276.10	301.38
	Dry	0.16	11.37	40.27	155.24	409.52
	Rainy		2.46	43.79	253.82	316.49
Alto Rio Novo	Annual	7.93	202.19	14.77	1.69	0.05
	Dry	42.81	178.85	4.00	0.96	
	Rainy	1.75	115.95	105.85	2.84	0.24
Anchieta	Annual				62.63	342.46
	Dry				1.47	403.62
	Rainy				45.28	359.81
Apiacá	Annual			20.21	168.34	5.09
	Dry		9.93	118.16	65.23	0.32
	Rainy			2.09	124.23	67.32
Aracruz	Annual	0.00	100.25	603.00	581.72	147.19
	Dry	0.00	92.17	614.56	594.43	131.01
	Rainy	0.18	80.91	575.06	583.92	192.10
Atilio Vivácqua	Annual		0.01	72.05	148.31	6.49
	Dry		0.53	53.94	166.71	5.68
	Rainy		9.54	133.76	77.69	5.86

Baixo Guandu	Annual	89.99	557.94	251.30	13.05	0.24
	Dry	186.48	623.82	92.75	9.48	0.01
	Rainy	110.29	633.50	156.99	11.56	0.17
Barra de São Francisco	Annual	46.68	440.99	429.65	19.17	0.39
	Dry	213.45	649.77	66.05	7.61	0.01
	Rainy		161.95	712.92	58.21	3.82
Boa Esperança	Annual	9.05	326.05	90.05	1.55	
	Dry	32.01	290.75	102.49	1.45	
	Rainy	5.24	260.58	156.89	3.99	0.00
Bom Jesus do Norte	Annual			8.58	78.26	2.54
	Dry		3.49	48.00	37.84	0.05
	Rainy			0.20	37.52	51.67
Brejetuba	Annual	22.04	249.31	65.49	3.51	0.21
	Dry	225.84	109.87	4.63	0.24	
	Rainy	30.22	273.64	34.11	2.50	0.09
Cachoeiro de Itapemirim	Annual			116.83	689.41	71.06
	Dry		55.16	329.01	467.26	25.88
	Rainy		1.21	93.85	525.85	256.40
Cariacica	Annual			4.78	116.24	154.72
	Dry				69.72	206.02
	Rainy			15.02	115.19	145.54
Castelo	Annual		13.83	273.95	335.96	45.24
	Dry	153.01	317.03	172.79	25.93	0.21
	Rainy		52.07	295.21	271.78	49.92
Colatina	Annual	1081.81	325.66	17.35	1.21	0.00
	Dry	932.50	446.76	45.22	1.54	0.00
	Rainy	1121.61	284.38	18.98	1.06	0.00
Conceição da Barra	Annual		150.94	762.76	245.82	18.87
	Dry		13.39	570.43	535.70	58.86
	Rainy	11.89	817.83	295.95	52.72	
Conceição do Castelo	Annual		65.96	254.86	35.44	8.57
	Dry	301.12	51.52	11.54	0.64	
	Rainy	0.00	134.68	203.17	23.57	3.40
Divino São Lourenço	Annual			47.03	125.70	3.08
	Dry		58.04	114.79	2.96	0.01
	Rainy			26.25	58.30	91.25
Domingos Martins	Annual	1.32	168.36	521.33	491.34	43.92
	Dry	202.47	284.89	276.09	362.13	100.68

	Rainy	6.37	256.93	589.01	348.71	25.25
Dores do Rio Preto	Annual		0.43	44.62	102.38	3.25
	Dry	3.52	44.80	98.79	3.53	0.04
	Rainy			14.58	85.28	50.83
Ecoporanga	Annual	222.05	2007.33	41.00	5.24	0.00
	Dry	628.12	1618.70	27.52	1.29	
	Rainy		270.55	1955.21	45.43	4.43
Fundão	Annual			2.30	135.01	138.65
	Dry			0.01	136.27	139.69
	Rainy				67.38	208.59
Governador Lindenberg	Annual	344.77	15.04	0.05		
	Dry	328.32	29.70	1.84		
	Rainy	341.57	18.19	0.11		
Guaçuí	Annual			65.12	393.39	9.77
	Dry		99.95	363.03	5.11	0.18
	Rainy				125.99	342.28
Guarapari	Annual			10.37	316.50	266.90
	Dry				28.31	565.46
	Rainy		9.29	144.05	262.84	177.59
Iúna	Annual		75.65	321.01	58.49	3.72
	Dry	88.44	315.50	49.56	5.36	0.00
	Rainy		13.66	231.22	205.33	8.66
Ibatiba	Annual		30.04	194.08	13.07	2.40
	Dry	72.27	157.37	8.24	1.72	
	Rainy		41.82	173.83	21.69	2.26
Ibiraçu	Annual			17.09	154.01	29.25
	Dry			25.87	155.12	19.36
	Rainy			9.87	121.05	69.42
Ibitirama	Annual		19.40	129.02	173.61	7.96
	Dry	59.83	87.04	178.32	4.78	0.02
	Rainy		0.62	88.27	161.20	79.90
Iconha	Annual				35.38	167.23
	Dry				18.47	184.14
	Rainy				39.20	163.41
Irupi	Annual		11.95	158.07	13.48	0.80

	Dry	21.22	155.07	7.25	0.74	
	Rainy		3.43	114.44	64.87	1.56
	Annual	11.78	278.07	228.66	11.49	0.97
Itaguaçu	Dry	51.99	295.30	175.84	7.37	0.46
	Rainy	14.11	261.90	240.84	12.96	1.15
	Annual		0.01	83.95	432.34	41.62
Itapemirim	Dry			32.49	433.85	91.58
	Rainy		18.33	310.56	215.68	13.35
	Annual	3.28	87.91	154.87	51.02	2.09
Itarana	Dry	22.87	112.93	136.01	26.28	1.09
	Rainy	7.54	83.14	147.49	58.48	2.54
	Annual	1.97	142.92	411.65	98.51	1.32
Jaguaré	Dry	2.63	96.50	391.40	163.58	2.26
	Rainy	5.69	320.83	264.65	65.21	
	Annual			9.87	141.58	10.85
Jerônimo Monteiro	Dry		9.56	115.29	35.95	1.51
	Rainy				11.23	151.07
	Annual	2.89	96.70	114.36	55.18	3.81
João Neiva	Dry	0.99	76.72	135.14	57.37	2.73
	Rainy	4.23	93.11	107.09	63.61	4.90
	Annual	37.99	360.26	57.54	0.35	
Laranja da Terra	Dry	137.36	305.09	13.61	0.07	
	Rainy	56.59	350.62	48.56	0.36	
	Annual	348.50	784.07	1469.53	803.76	92.94
Linhares	Dry	354.65	1060.67	1371.94	707.94	3.58
	Rainy	352.16	679.29	1316.03	955.09	196.23
	Annual	13.71	197.66	102.94	1.82	0.04
Mantenópolis	Dry	67.63	244.80	3.30	0.42	
	Rainy		62.37	250.24	3.29	0.26
	Annual			7.66	113.62	10.62
Marataízes	Dry			2.28	97.16	32.46
	Rainy		1.40	42.18	87.40	0.92
	Annual			18.37	221.09	44.76
Marechal Floriano	Dry			21.82	192.64	69.76
	Rainy		0.00	66.85	191.54	25.83
	Annual	297.30	7.80	0.78		
Marilândia	Dry	284.91	16.09	4.88		
	Rainy	296.51	8.53	0.83		
	Annual		0.12	214.26	637.65	16.12
Mimoso do Sul	Dry		28.97	403.13	425.06	10.98
	Rainy		15.69	269.59	488.09	94.77
	Annual	1.77	182.50	838.94	73.33	
Montanha	Dry	1.16	175.55	795.57	124.08	0.17

	Rainy	0.20	115.99	943.61	36.73	
	Annual	2.52	143.73	366.62	22.04	
Mucurici	Dry	3.35	160.86	339.14	31.55	0.01
	Rainy		24.54	470.24	40.14	
	Annual		48.70	343.68	266.88	20.52
Muniz Freire	Dry	168.55	332.69	169.61	8.82	0.12
	Rainy	0.01	66.48	299.86	218.97	94.45
	Annual		0.13	65.69	244.68	16.97
Muqui	Dry		18.68	232.25	70.98	5.56
	Rainy		3.09	31.02	171.57	121.79
	Annual	114.30	1187.99	128.82	16.56	0.02
Nova Venécia	Dry	304.77	1079.86	55.34	7.72	
	Rainy	125.63	1036.53	261.70	23.63	0.21
	Annual	376.59	367.23	67.48	9.81	0.09
Pancas	Dry	448.20	319.12	50.24	3.64	
	Rainy	350.48	329.82	125.67	14.05	1.19
	Annual		90.56	286.81	51.83	0.04
Pedro Canário	Dry		42.55	299.01	87.45	0.22
	Rainy	1.68	168.87	245.93	12.75	
	Annual				4.94	68.97
Piúma	Dry				2.68	71.23
	Rainy			0.00	12.78	61.13
	Annual	6.67	430.08	500.70	39.40	0.01
Pinheiros	Dry	7.18	314.81	521.89	132.74	0.24
	Rainy	6.57	381.20	565.01	24.08	0.01
	Annual	9.74	327.49	18.64	0.85	
Ponto Belo	Dry	23.49	312.03	20.59	0.60	
	Rainy		14.27	322.90	19.01	0.55
	Annual		2.98	97.97	460.53	24.24
Presidente Kennedy	Dry		0.02	53.27	502.37	30.07
	Rainy		48.11	478.44	57.78	1.39
	Annual	204.27	294.88	126.86	15.87	2.25
Rio Bananal	Dry	165.31	342.90	121.77	14.16	
	Rainy	217.58	278.33	121.56	24.24	2.43
	Annual			2.23	105.50	96.05
Rio Novo do Sul	Dry			0.08	86.73	116.97
	Rainy			8.19	151.40	44.19
	Annual	278.31	21.06	0.43		
São Domingos do Norte	Dry	266.55	32.38	0.86	0.00	
	Rainy	256.46	43.05	0.28		
	Annual	111.12	316.43	6.73	0.55	
São Gabriel da Palha	Dry	161.43	270.21	3.10	0.10	
	Rainy	116.73	312.21	5.43	0.46	

São José do Calçado	Annual			34.04	229.99	8.45
	Dry			21.92	200.78	49.05
	Rainy			0.02	73.67	198.78
São Mateus	Annual	51.00	707.34	1226.40	341.24	15.63
	Dry	81.17	525.59	724.82	924.42	85.61
	Rainy	106.57	1576.53	548.39	110.12	
São Roque do Canaã	Annual	7.67	124.40	169.86	38.65	1.81
	Dry	6.21	106.53	206.01	22.99	0.64
	Rainy	9.98	105.31	178.95	46.06	2.09
Santa Leopoldina	Annual			10.92	370.78	333.98
	Dry			5.05	444.51	266.12
	Rainy			1.02	304.16	410.50
Santa Maria de Jetibá	Annual	21.94	166.74	162.82	267.66	116.82
	Dry	83.52	154.14	150.13	281.44	66.73
	Rainy	40.43	155.51	144.94	224.65	170.45
Santa Teresa	Annual		1.75	98.84	499.08	94.30
	Dry		0.62	143.58	507.19	42.59
	Rainy		0.91	54.63	439.32	199.11
Serra	Annual				105.22	444.74
	Dry				66.11	483.85
	Rainy				34.99	514.97
Sooretama	Annual	3.24	301.78	257.19	30.25	0.23
	Dry	0.85	289.03	277.82	24.98	
	Rainy	0.30	294.28	249.37	48.68	0.06
Vargem Alta	Annual			82.26	270.85	61.70
	Dry	8.04	40.12	94.72	236.76	35.17
	Rainy		9.11	105.00	268.80	31.91
Venda Nova do Imigrante	Annual		32.88	130.14	24.04	1.33
	Dry	159.74	26.73	1.91	0.01	
	Rainy		74.88	104.37	8.74	0.40
Viana	Annual			12.49	253.63	46.07
	Dry				38.82	273.37
	Rainy		4.04	153.49	144.71	9.95
Vila Pavão	Annual	48.18	358.99	21.03	4.14	0.00

Vila Valério	Dry	120.47	301.01	10.46	0.40	
	Rainy	13.85	282.18	129.22	7.02	0.07
	Annual	53.02	384.53	24.68	0.41	
	Dry	76.09	310.81	75.36	0.39	
	Rainy	75.15	346.67	40.66	0.16	
	Annual			2.67	130.37	77.43
Vila Velha	Dry				14.77	195.70
	Rainy		21.53	98.97	46.43	43.53
	Annual				17.31	70.76
Vitória	Dry				8.19	79.87
	Rainy				4.06	84.00

Source: the authors.