



NORTH EAST



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NORTH-EAST LANDSCAPE

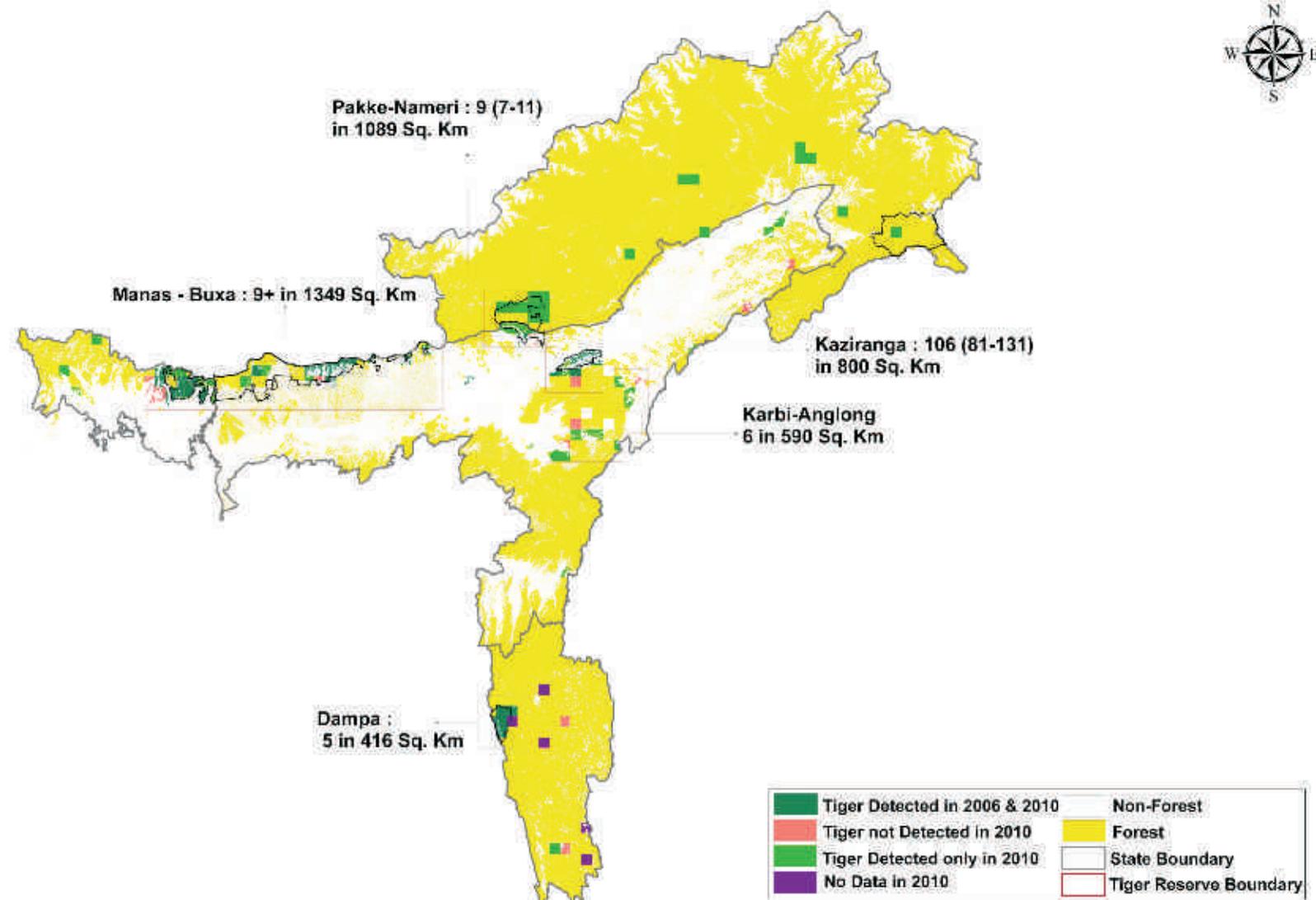
The tiger populations in this landscape have historical evolutionary significance as they share the connecting gene pool with south east Asian tiger populations and represent the entry point of tigers into the Indian sub-continent. This region has two important Tiger Conservation Units (TCUs), one comprising of the Manas Tiger Reserve, stretching across Bhutan to Arunachal Pradesh in the north-east, while the other includes Kaziranga in Assam and stretches upto Meghalaya. While the former is supposed to be the only landscape in south-Asia sustaining the phenomenon of tigers living close to the timber line and predated upon mountain ungulates, the latter encompasses the best preserved grassland habitat in the global tiger range (Wikramanayake et al. 1998). The region includes seven tiger reserves, viz., Buxa in Northern Bengal, Manas, Kaziranga and Nameri in Assam, Pakke and Namdapha in Arunachal Pradesh and Dampa in Mizoram. Several National Parks, Wildlife Sanctuaries, Reserved Forests and sacred groves are scattered across the landscape making it the largest connected forest landscape in India. Currently tiger occupancy was recorded from an area of 4,565 km² of forests within the Brahmaputra Valley and the North East Hills landscape, with an estimated population of about 143 (113 to 172) tigers. This area is recognised with high species diversity, high levels of endemism, taxonomic uniqueness of species, serious habitat loss and threatened status of the floral and faunal diversity of the area.

Most of this region today, is under intense tea cultivation with small isolated remnants of forests. The discovery of good tea growing areas in Assam made this region amongst the first to undergo extensive land-use changes with large areas being cleared out for tea cultivation on the banks of the Brahmaputra. Characterised by many islands and alluvial fertile soils, the region is under pressure from intense cultivation with high human densities. Sharing political boundaries with Nepal, Bhutan, China, Myanmar and Bangladesh make conservation a challenging task in this landscape and the need for trans-boundary International cooperation an essential requirement for conservation success. With 6.8% of its total land area under protected area network, this zone incorporates the highest diversity of species known from India, albeit the faunal abundances are low due to a high dependence of the local communities on bush-meat for subsistence and cultural reasons. Much of the prey is depleted in these forests as the hunter-gatherer tribes are efficient hunters and depend a lot on wild game for subsistence (Aiyadurai 2007). In addition, in recent years, most north-eastern states have been sites of intense political unrest resulting in differential development between states and within different regions of individual States.

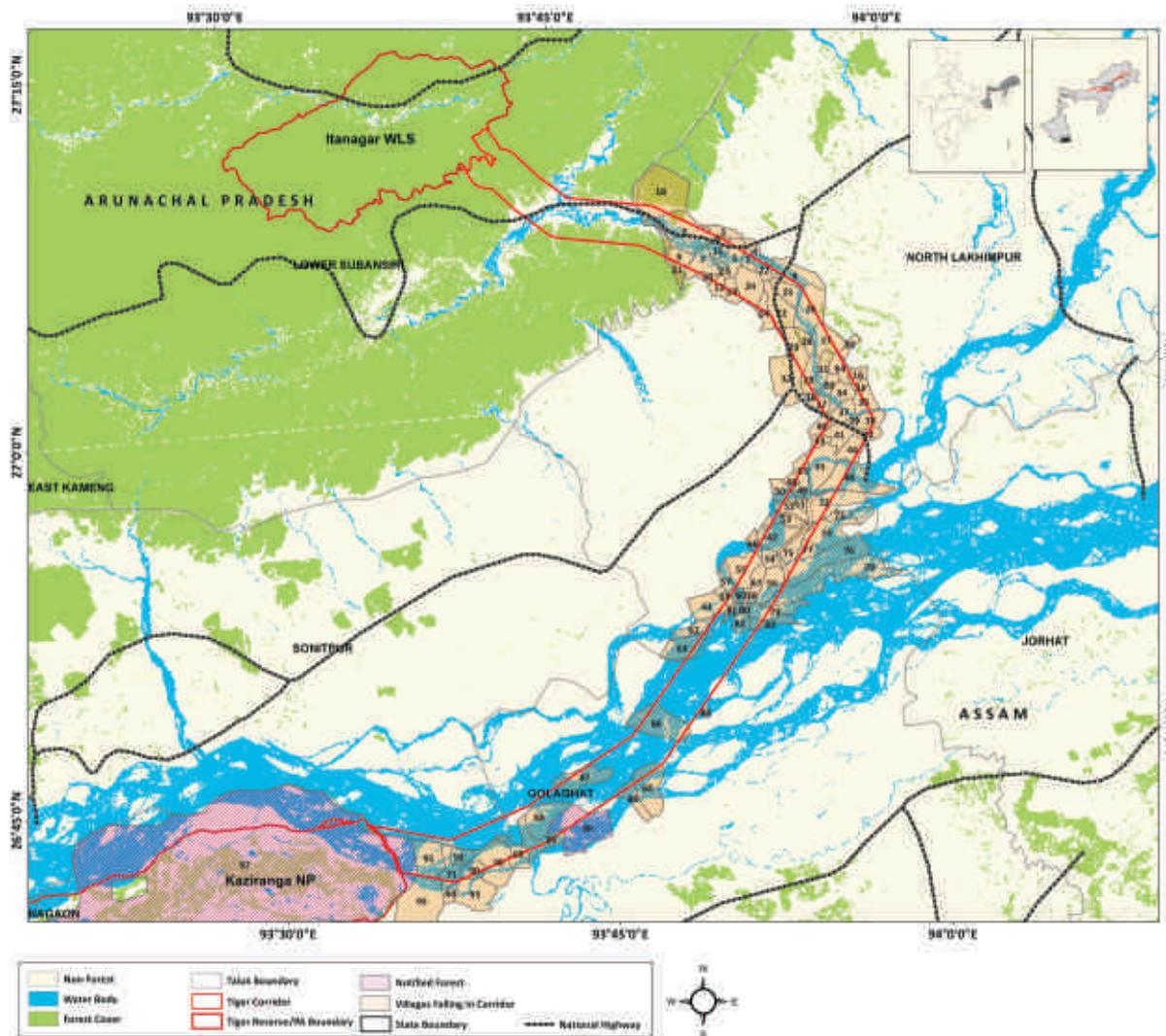


Figure 4.1:

Habitat Connectivity in North-Eastern Hills and Brahmaputra Landscape



KAZIRANGA TR WITH OTHER PROTECTED AREAS



This landscape holds the largest tiger population in the North-Eastern region consisting of about 125 tigers. The major source population of tigers in this landscape are in Kaziranga and Pakke in India and dispersing tigers from Bhutan and Myanmar. Kaziranga Tiger Reserve covers an area of 1,033 km² and includes the 859 km² Kaziranga National Park, 44 km² Burachapori and 70 km² Laokhowa Wildlife Sanctuaries. The National Park is located in Nagaon, Golaghat and Sonitpur districts, bounded in the north by the Brahmaputra and to the south, by the Karbi-Anglong Hills. It is connected to the southern parts of the North East Landscape via the Karbi-Anglong Hills, for which it acts as a major source. Further, Kaziranga is connected through the Karbi-Anglong Hills, to Intanki in the south. National Highway 37 separates it from the Karbi-Anglong hills where about 150 villages are located along this road, within the zone of influence of the Reserve. This connectivity through Karbi-Anglong is crucial for dispersal of tigers from their source population in Kaziranga. Kaziranga has lost its connectivity to the north (to Pakke) due to intensive agriculture on northern banks of the River Brahmaputra. The Kaziranga tiger population is contiguous with that of Orang Wildlife Sanctuary connected through island systems of the Brahmaputra. This is the single largest population in the North East Landscape consisting of about 125 tigers. The Kaziranga population connects with Nameri through riverine corridors which is an

Figure 4.2: Least Cost Pathway corridor for Tiger movement between Kaziranga-Itanagar WLS Corridor overlaid with village map (the village numbers are referenced in Table 4.1)

important connectivity maintaining gene flow between the plains and the hill population of tigers (in Arunachal Pradesh). This region being extremely fertile is in demand for agriculture and the Protected Areas are increasingly becoming isolated islands. In light of this the connectivity with Nameri in the North, Karbi Anglong in the South as well as the riverine islands, "stepping stones" through Laokhowa and Burachapori Wildlife Sanctuaries to Orang form the crucial elements for targeting conservation efforts. Large mammals from Kaziranga are also known to move between Karbi-Anglong hills and the Tiger Reserve, although protection of dispersing and migrating individuals is difficult

due to existence of political unrest in the Karbi region. Intanki National Park is also connected westwards through forests upto Balphakram National Park. This landscape has contiguous forest across the international border with Myanmar. The weak links in this landscape are the forests in the districts of Mon, Mokok Chung, Tuensang, Zuheboto, Wokha, and Pekh in the east. The landscape between Balphakram National Park and Intaki National Park through the districts of Karbi-Anglong, West Khasi Hills, East Khasi Hills and East and West Garo Hills is fragmented.

Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
1	Assam	Lakhimpur	Bihpuria	Merbeel	142	851	174	934
2			Bihpuria	Harmutty Gaon	314	1760	470	2255
3			Bihpuria	Pachoni Bogori	21	110	55	266
4			Bihpuria	Lakhonabari	63	351	77	381
5			Bihpuria	Merbeel Dighali	46	302	46	258
6			Bihpuria	Aunishbari 8/11	201	1151	236	1221
7			Bihpuria	Parbotipur Gaon	41	253	46	243
8			Bihpuria	Bangalmora Grazing Ground	520	2719	971	4857
9			Bihpuria	Parbotipur N.C.	664	3236	511	2289
10			Narayanpur	Pithaguri No.4	55	334	57	284
11			Narayanpur	Pithaguri No.2	100	470	38	179
12			Bihpuria	Bango Gaon	213	1232	205	1094
13			Narayanpur	Pithaguri No.1	35	229	53	266
14			Bihpuria	Dongibeel	255	1418	385	1966
15			North Lakhimpur	Merbeel Gt. No. 81/78	NA	NA	NA	NA
16			Bihpuria	Laholial Gaon	65	373	78	384
17			Bihpuria	Bangaligaon	175	1005	272	1405
18			North Lakhimpur	Harmutty Gt. No.95 F.C.	NA	NA	NA	NA
19			Bihpuria	Chichapathar	234	1196	267	1282
20			Bihpuria	Kandali Gaon	59	321	77	395

Table 4.1:

Villages within the Least Cost Pathway Corridor between Kaziranga-Iltanagar WLS as shown in Fig. 4.2

Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
21			North Lakhimpur	Rajgarh	NA	NA	276	1277
22			North Lakhimpur	Holmari Grant No.65/68	NA	NA	NA	NA
23			North Lakhimpur	Pithaguri No.5	NA	NA	NA	NA
24			North Lakhimpur	Holmari Grant No.80 Fs	NA	NA	NA	NA
25			North Lakhimpur	Hoimari No.79/87 Nlr	NA	NA	NA	NA
26			North Lakhimpur	Gerelua	NA	NA	NA	NA.
27			Bihpuria	Kalabil Mornoi Nepali	271	1356	254	1186
28			Bihpuria	Mornoi Gaon	371	2067	526	2773
29			Bihpuria	Keyamora	263	1423	289	1493
30			Bihpuria	Chintaoligaon	40	227	43	190
31			Bihpuria	Santapur Gaon	171	907	247	1218
32			Bihpuria	Bihpuria	NA	NA	NA	NA
33			Bihpuria	Gondhia Gaon No.2	55	323	69	366
34			Bihpuria	Gondhia Gaon	75	413	Na	Na
35			Bihpuria	Pokadol Grant	19	116	17	90
36			Bihpuria	Bihpuria Gaon	52	253	68	316
37			Bihpuria	Bengenati Grant	93	506	115	548
38			Bihpuria	Modhupur	12	71	15	71
39			Bihpuria	Pokadol Pathar	70	429	97	507
40			Bihpuria	Bangaligaon No.2	9	42	3	9
41			Bihpuria	Nepali Gaon	123	628	150	645
42			Bihpuria	Arunachal	84	501	104	491
43			Bihpuria	Japjup	49	266	60	264
44			Bihpuria	Badati Jamuguri	75	369	101	492
45			Bihpuria	Kenduguri	143	705	388	1721
46			Bihpuria	Badati Miri	260	1810	300	1775
47			Narayanpur	Mazor Chapori	104	755	129	744
48			Narayanpur	Sonaribari Block 3	41	279	4	19
49			Narayanpur	Sonaribari Block 2	6	41	50	363
50			Narayanpur	Dhanguloi Pathar	68	492	10	44



Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
51			Narayanpur	Sonaribari Block 1	3	10	18	110
52			Narayanpur	Sonaribari	3	17	Na	Na
53			Narayanpur	Dikrongmukh	11	93	35	222
54			Narayanpur	Chayang N.c.	44	344	64	401
55			Narayanpur	Borbil	50	393	98	725
56			Narayanpur	Banornlukh N.c.	33	268	49	379
57			Narayanpur	Borbil Mazgaon	60	477	0	0
58			Narayanpur	Kongbong N.c.	21	174	42	258
59			Narayanpur	Bothakhona No.2	58	482	84	548
60			Narayanpur	Borbeel N.c.	30	276	21	183
61			Narayanpur	Jamuguri	141	898	59	330
62			Narayanpur	Borati N.c.	66	573	58	394
63			Narayanpur	Atua Chapori	5	48	7	54
64			North Lakhimpur	Kandali Pathar	Na	Na	Na	Na
65			North Lakhimpur	Kachikata Pathar	Na	Na	Na	Na
66			North Lakhimpur	Meromukh N.c.	Na	Na	Na	Na
67			North Lakhimpur	Patri N.c.	Na	Na	Na	Na
68		Golaghat	Khumtai	Alani Chapori	214	1143	230	1115
69			Bokakhat	Mariahola	10	58	28	200
70			Bokakhat	Dighali Ati	64	353	85	463
71			Bokakhat	Bezgaon	3	21	66	329
72			Golaghat	Gahorighat P.G.R.	NA	NA	NA	NA
73			Golaghat	Namghuria Gaon	NA	NA	NA	NA
74			Golaghat	Dadhora Gaon	NA	NA	NA	NA
75			Golaghat	Sakala Satra	NA	NA	NA	NA
76			Golaghat	Dalajjarani	NA	NA	NA	NA
77			Golaghat	Lohkor Pathar Chapori	NA	NA	NA	NA
78			Golaghat	Phalengi	NA	NA	NA	NA
79			Golaghat	Gatanga Chapori	NA	NA	NA	NA
80			Golaghat	Barfakua	NA	NA	NA	NA

Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
81			Golaghat	Rangamuri	NA	NA	NA	NA
82			Golaghat	Namati	NA	NA	150	786
83			Golaghat	Hutar Gaon	NA	NA	NA	NA
84			Golaghat	Bakuli Chapori No.2	NA	NA	NA	NA
85			Golaghat	Majdolapa	NA	NA	NA	NA
86			Golaghat	Bakuli Chapori No.1	NA	NA	NA	NA
87			Golaghat	Bhalukaguri	NA	NA	NA	NA
88			Golaghat	Borbali	NA	NA	230	1105
89			Golaghat	Chowguri Chapori	NA	NA	NA	NA
90			Golaghat	Nowbhangi	NA	NA	NA	NA
91			Golaghat	Bamungaon N.C.	NA	NA	NA	NA
92			Golaghat	Bilotia Gaon	NA	NA	NA	NA
93			Bokakhat	Jogania Ati	107	512	137	625
94			Bokakhat	Palashguri	142	805	241	1221
95			Golaghat	Bohikhowa	NA	NA	NA	NA

Kaziranga-Itanagar WLS Corridor

Habitat size	155799 Km ²
Source Population	Kaziranga
Size of Source	106 (81-131) tigers in 800 Km ²
Protected Areas	Kaziranga TR Itanagar WLS
Corridors	Kaziranga TR-Itanagar WLS Corridor



Figure 4.3:

Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Kaziranga-Itanagar WLS



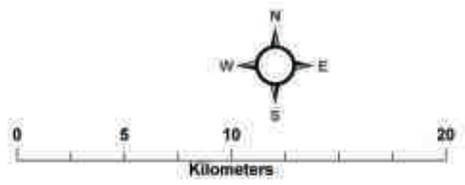
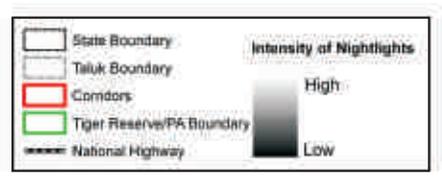
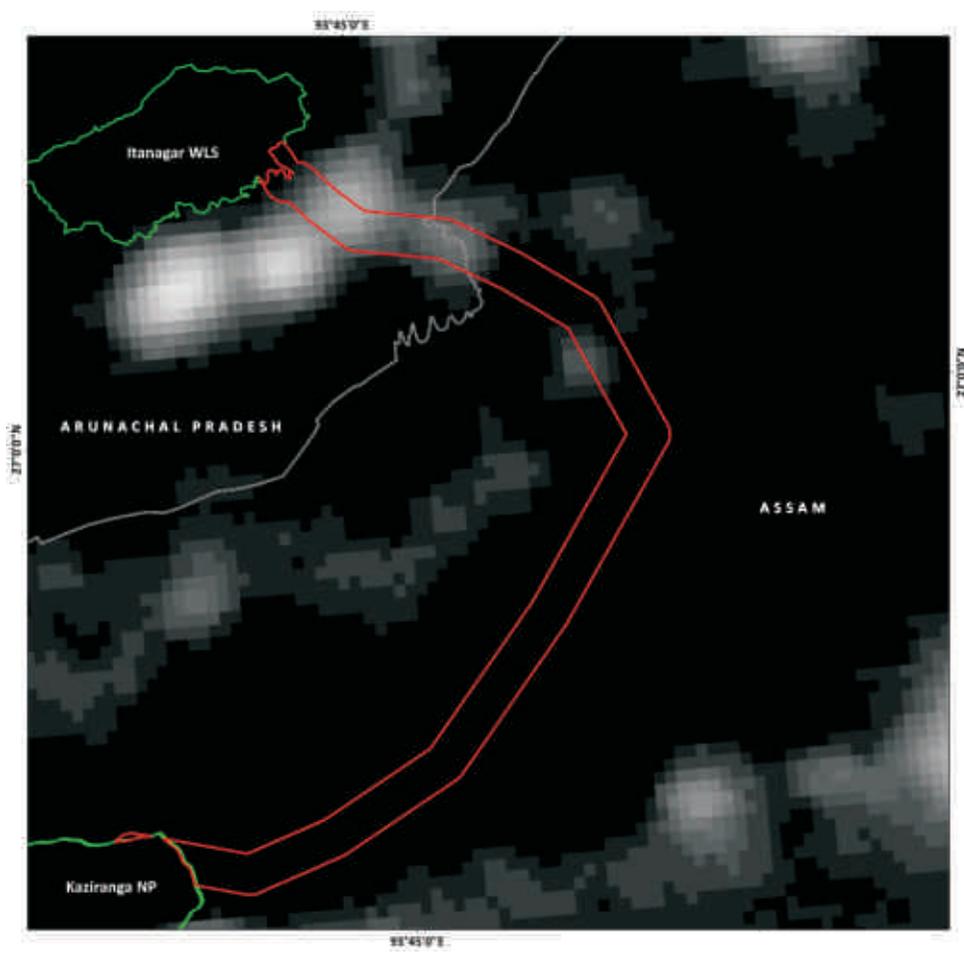
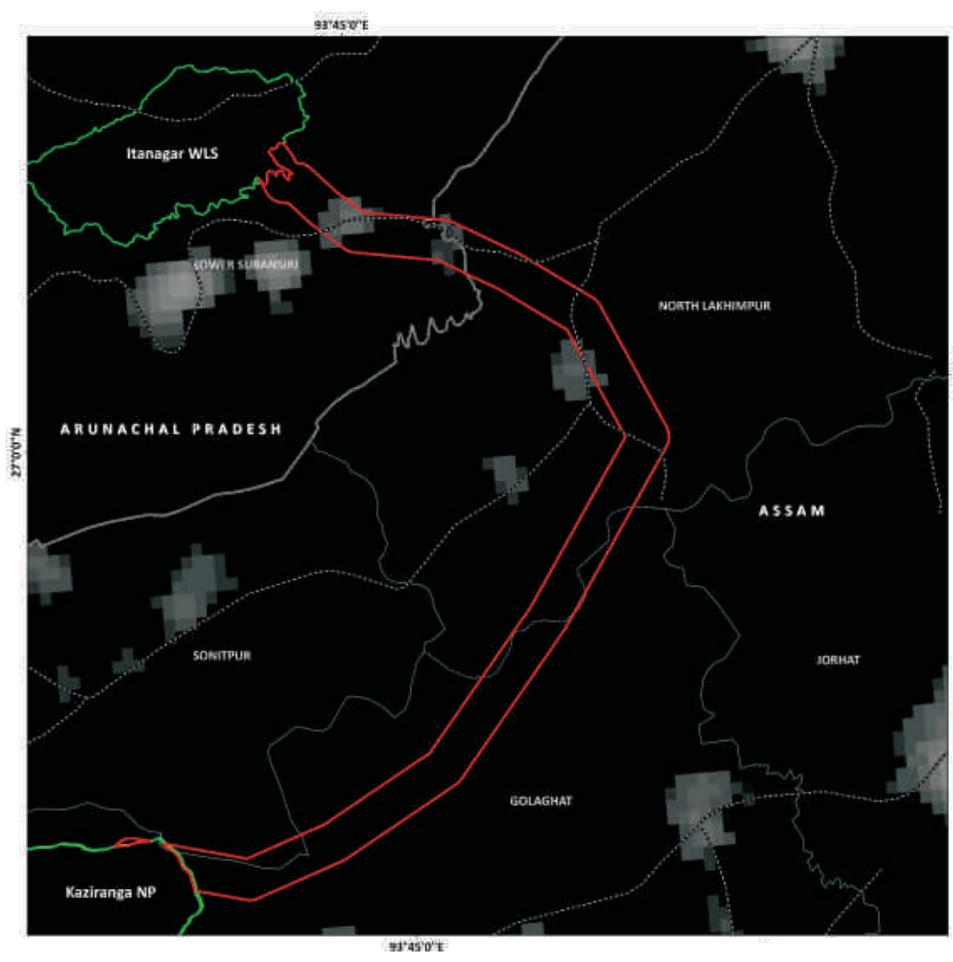
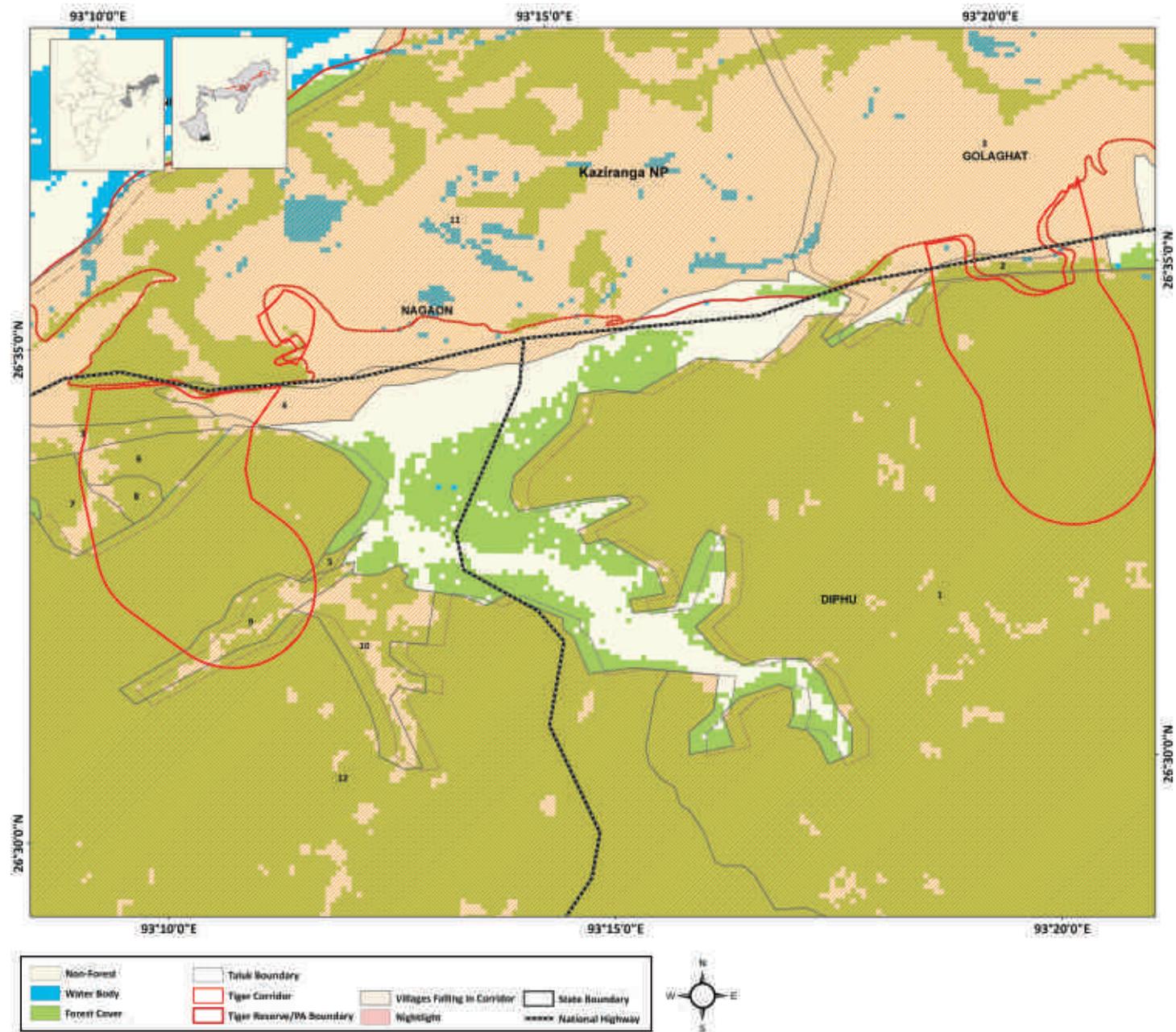


Figure 4.4:
 Human habitation as depicted by nightlights within the Kaziranga-Itanagar WLS landscape in the year 1992 and 2012

Figure 4.5:

Least Cost Pathway corridor for Tiger movement between Kaziranga-Karbi-Anlong Corridor overlaid with village map (the village numbers are referenced in Table 4.2)



Kaziranga-Karbi-Anglong Corridor

Habitat size	155799 Km ²
Source Population	Kaziranga
Size of Source	106 (81-131) tigers in 800 Km ²
Protected Areas	Kaziranga TR
	Karbi-Anglong WLS
Corridors	Kaziranga-Karbi Anglong1
	Kaziranga-Karbi Anglong2

Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
1	Assam	Karbi Anglong		Bokajan	NA	NA	NA	NA
2		Golaghat	Bokakhat	Haladhibari	76	389	84	413
3		Nagaon	Kaliabor	Deopani	80	480	155	832
4		Nagaon	Kaliabor	Bandardubi	149	1009	224	1286
5		Nagaon	Kaliabor	Kalapanimukh	7	35	8	46
6		Nagaon	Kaliabor	Kanchanjuri	82	425	59	248
7		Nagaon	Kaliabor	Silimkhowa	75	378	117	619
8		Nagaon	Kaliabor	Injaygaon	17	105	25	128
9		Nagaon	Kaliabor	Rangagara	2	14	189	975
10		Nagaon	Kaliabor	Krogaon	45	236	NA	NA
11		Nagaon	Kaliabor	Bhokuamari	261	1621	391	2169
12		Karbi Anglong	Diphu	Hora Ghat	NA	NA	NA	NA

Table 4.2: Villages within the Least Cost Pathway Corridor between Kaziranga-Karbianglong as shown in Fig. 4.5

Figure 4.6:

Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Kaziranga-Karbi-Anglong



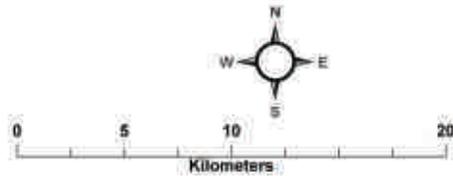
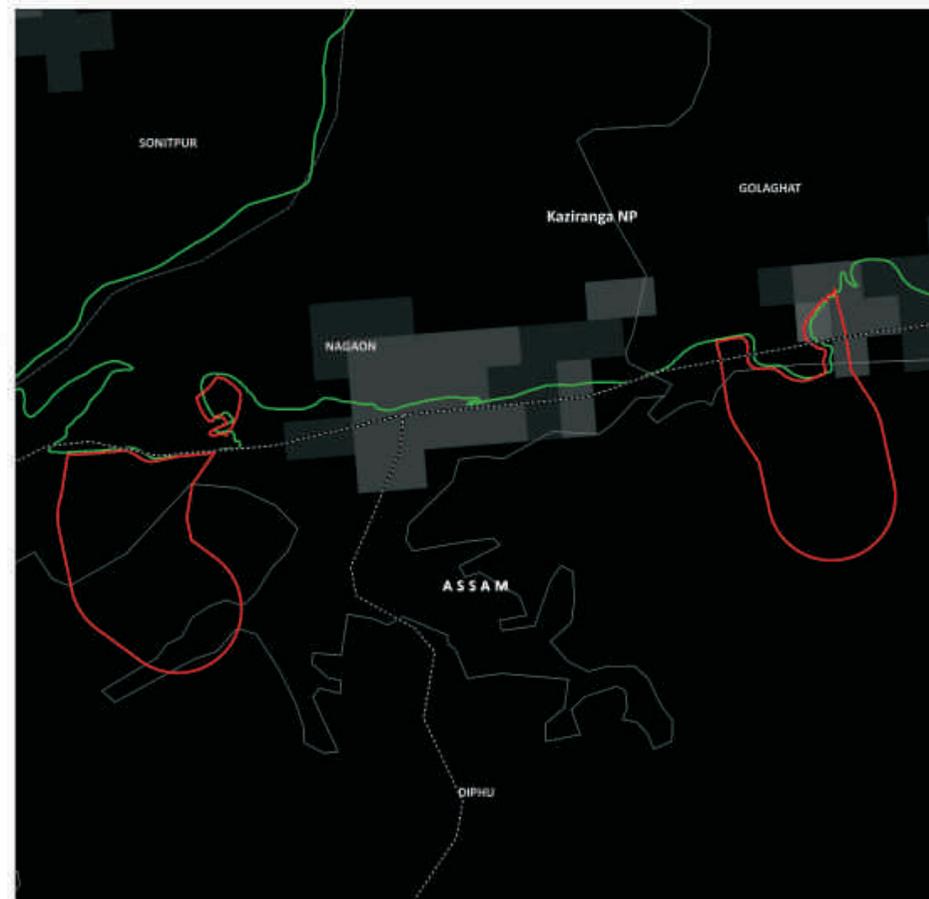
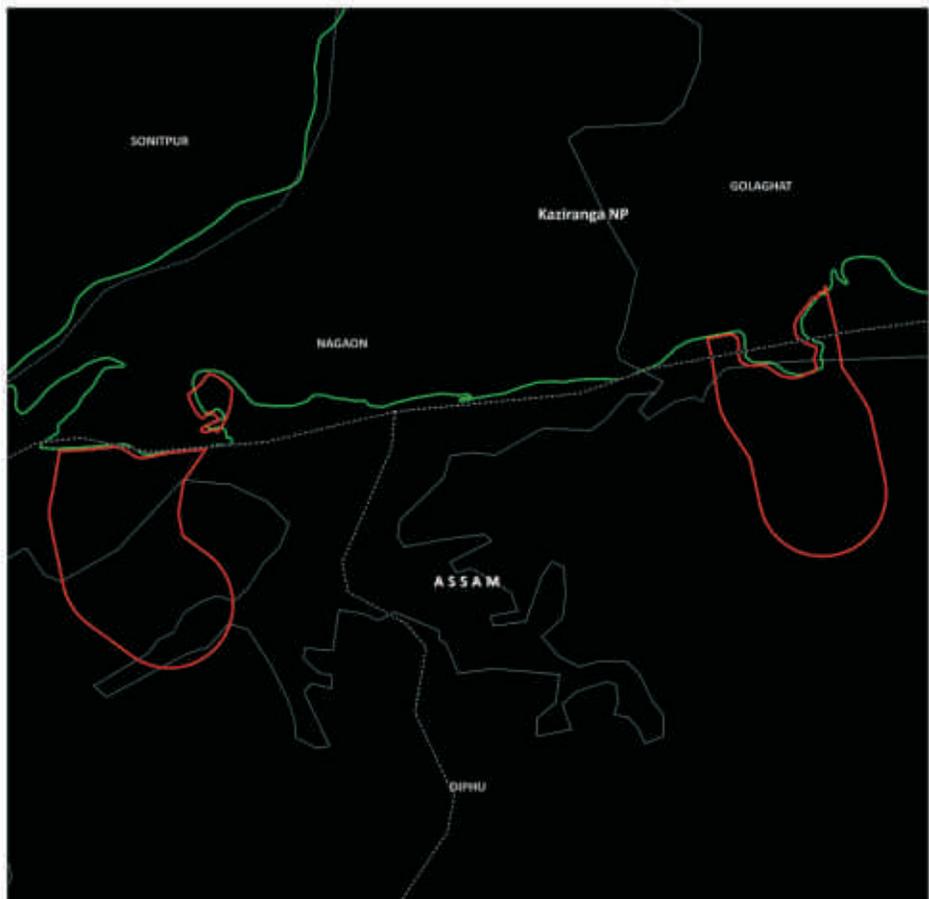
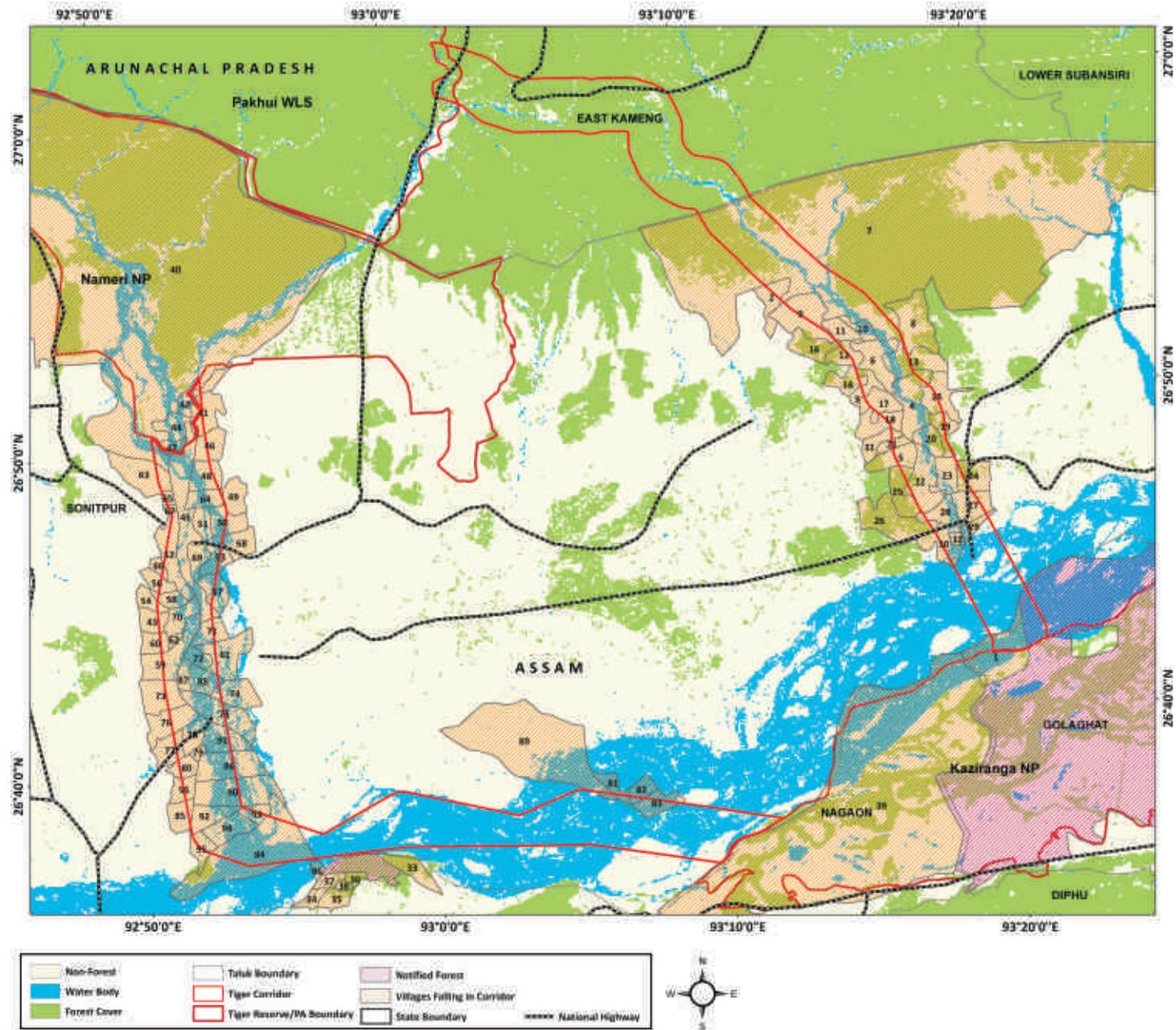


Figure 4.7:
 Human habitation as depicted by nightlights within the Kaziranga-Karbi-Anglong landscape in the year 1992 and 2012

Figure 4.8.:

Least Cost Pathway corridor for Tiger movement between Kaziranga- Nameri Corridor overlaid with village map (the village numbers are referenced in Table 4.3)



Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
33	Assam	Nagaon	Kaliabor	Hatimura No.2	39	167	53	227
34			Kaliabor	Joysagar No.2	42	211	37	177
35			Kaliabor	Kamakhyaogaon	264	1153	321	1379
36			Nagaon	Kurchimari	NA	NA	NA	NA
37			Nagaon	Bihdubi No.2	NA	NA	NA	NA
38			Nagaon	Silikhaguri	NA	NA	NA	NA
39			Kaliabor	Bhokuamari	261	1621	391	2169
40		Sonitpur	Chariduar	Charduar	315	1516	620	4150
41			Na-Duar	Bardikarai No.2	359	2048	403	2083
42			Sonitpur	Bardikarai Balichapari	NA	NA	NA	NA
43			Chariduar	Berajon	119	627	255	1299
44			Na-Duar	Purani Bardikarai	41	260	91	462
45			Na-Duar	Bardikarai Miri Gaon	175	1111	212	1116
46			Na-Duar	Gorbil	130	810	150	752
47			Na-Duar	Patgaon N.C.	44	273	63	319
48			Na-Duar	Bamun Gaon	116	663	Na	Na
49			Na-Duar	Nabil	320	1669	421	1891
50			Na-Duar	Bagabil	217	1106	245	1110
51			Na-Duar	Tarajan	17	95	Na	Na
52			Chariduar	Goraligaon	65	365	107	550
53			Na-Duar	Chamdara	106	540	108	512
54			Chariduar	Tinigharia Miri	127	731	156	781
55			Tezpur	Tengabasti	214	1166	324	1647
56			Chariduar	Kekokali Bangali	38	211	53	277
57			Na-Duar	Karaiani Chapari	523	3161	752	4098
58			Chariduar	Kekokali Miri	45	243	62	281
59			Chariduar	Singatali	570	2997	498	2473
60			Chariduar	Rajgarh	233	1213	276	1277
61			Na-Duar	Ghahi Bezgaon	40	207	79	341
62			Chariduar	Karaibari	52	313	42	195

Table 4.3:
Villages within the Least Cost Pathway Corridor between Kaziranga- Nameri as shown in Fig. 4.8

Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
63			Sonitpur	Kalabari Gaon	NA	NA	NA	NA
64			Sonitpur	Tanbhangi Pathar	NA	NA	NA	NA
65			Sonitpur	Baligaon N.C.	NA	NA	NA	NA
66			Sonitpur	Miri Pathar No.2	NA	NA	NA	NA
67			Sonitpur	Bokagaon N.C.	NA	NA	NA	NA
68			Sonitpur	Bormata	NA	NA	NA	NA
69			Sonitpur	Dafalagarh	NA	NA	NA	NA
70			Sonitpur	Mahajan Chapari	NA	NA	NA	NA
71			Sonitpur	Bharali Chapari N.C.	NA	NA	NA	NA
72			Na-Duar	Bharali Chapari	76	408	117	613
73			Chariduar	Borghat Gaon	411	2322	657	3960
74			Na-Duar	Goalgaon	92	490	486	2324
75			Na-Duar	Chankighat Block	64	329	190	980
76			Chariduar	Karkani	380	2365	405	2113
77			Chariduar	Chamdhara	307	1865	108	512
78			Chariduar	Bhiagaon	129	734	149	775
79			Tezpur	Gorsinga Bihia	292	1773	397	2162
80			Tezpur	Alisinga	75	400	16	70
81			Sonitpur	Singrimari Gaon	NA	NA	NA	NA
82			Sonitpur	Balosutigaon	NA	NA	NA	NA
83			Sonitpur	Jowani	NA	NA	NA	NA
84			Tezpur	Marisuti N.c.	28	175	33	210
85			Tezpur	Karaiani Nepali	347	2207	540	2880
86			Sonitpur	Makua N.C.	NA	NA	NA	NA
87			Sonitpur	Gataimara N.C.	NA	NA	NA	NA
88			Sonitpur	Gataimara	NA	NA	NA	NA
89			Sonitpur	Bhojmari	NA	NA	NA	NA
90			Sonitpur	Chiruani Chapari Pgr	NA	NA	NA	NA
91			Sonitpur	Gorsinga Biching N.C.	NA	NA	NA	NA
92			Sonitpur	Karaiani Nepali N.C.	NA	NA	NA	NA

Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
93			Sonitpur	Tengakhuti	NA	NA	NA	NA
94			Sonitpur	Jorgarh N.C.	NA	NA	NA	NA
95			Sonitpur	Chiruani N.C.	NA	NA	NA	NA
96			Sonitpur	Rabarbari	NA	NA	NA	NA

Kaziranga-Nameri Corridor

Habitat size	155799 Km ²
Source Population	Kaziranga
Size of Source	106 (81-131) tigers in 800 Km ²
Protected Areas	Kaziranga TR Nameri TR
Corridors	Kaziranga-Nameri1 Kaziranga-Nameri2



Figure 4.9:
Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Kaziranga-Nameri

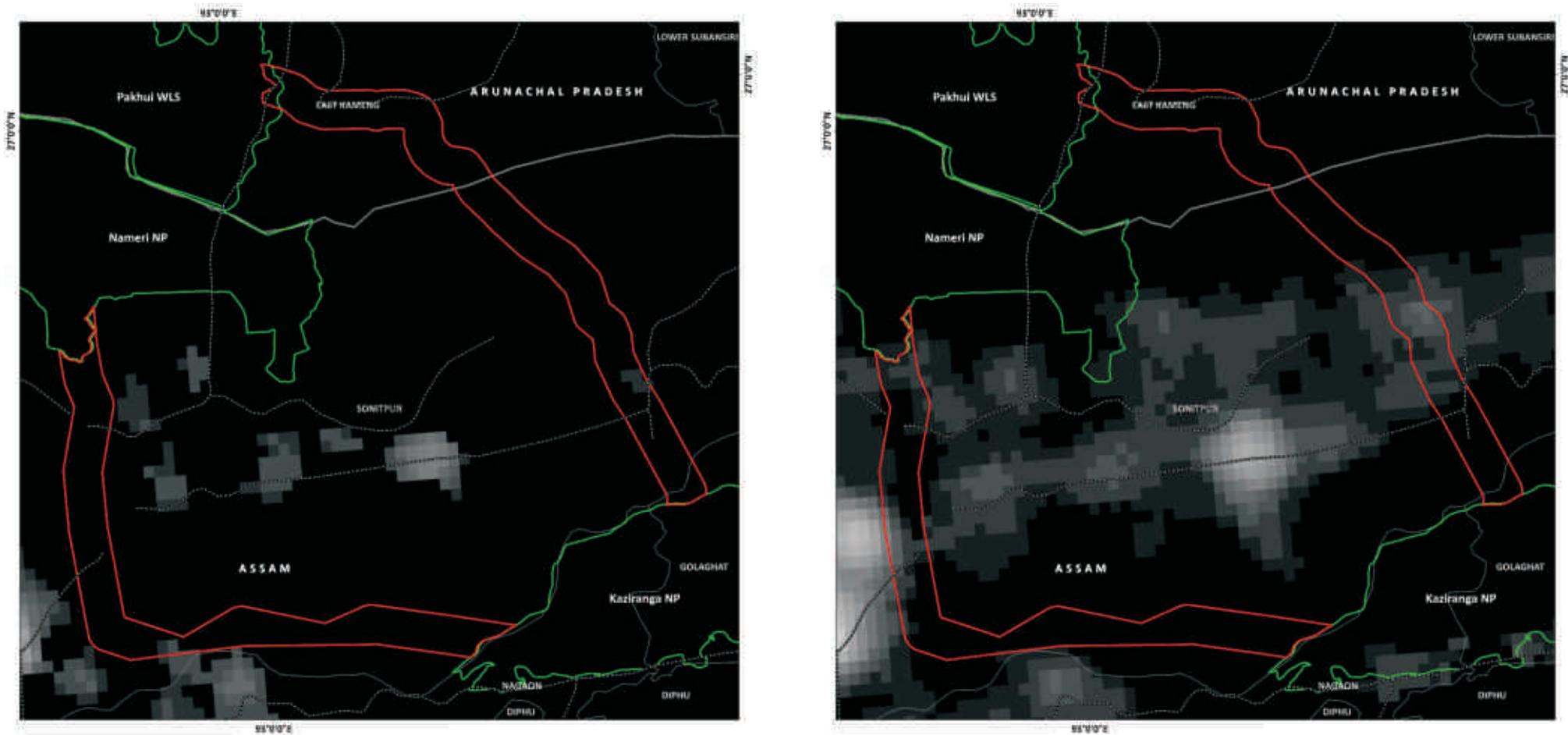
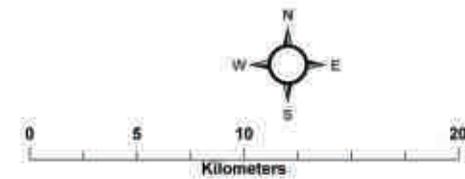


Figure 4.10:

Human habitation as depicted by nightlights within the Kaziranga-Nameri landscape in the year 1992 and 2012



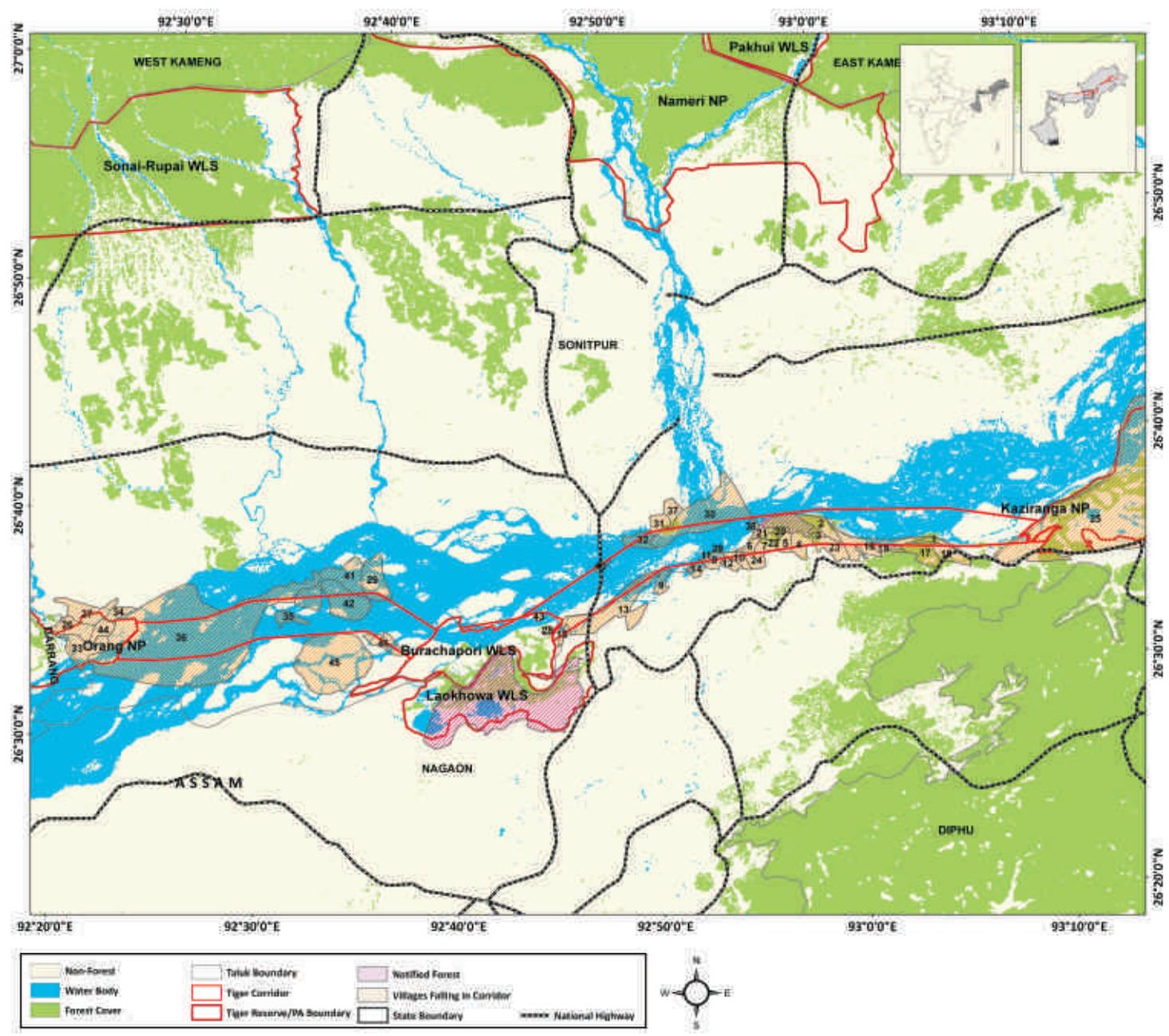


Figure 4.11: Least Cost Pathway corridor for Tiger movement between Kaziranga-Orang Corridor overlaid with village map (the village numbers are referenced in Table 4.4)

Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
1	Assam	Nagaon	Kaliabor	Bhokuamari	261	1621	391	2169
2			Kaliabor	Hatimura No.2	39	167	53	227
3			Kaliabor	Hatimura No.1	61	298	38	185
4			Kaliabor	Dakhinpat	169	750	208	934
5			Kaliabor	Sonarigaon	105	511	Na	Na
6			Kaliabor	Joysagar No.2	42	211	37	177
7			Kaliabor	Kamakhya Gaon	264	1153	321	1379
8			Kaliabor	Bihdubi No.1	129	561	136	552
9			Kaliabor	Bhurbandha No.2	174	894	283	1409
10			Kaliabor	Silghat Gaon	186	969	229	1029
11			Kaliabor	Bihdubi No.3	18	98	68	381
12			Kaliabor	Samdhora	326	1683	368	1492
13			Nagaon	Bhurbondha N.C.	NA	NA	NA	NA
14			Kaliabor	Gakhirakhati No.4	146	977	142	725
15			Rupahi	Bogamukh No.3	4	27	41	233
16			Nagaon	Kalangmukh P.G.R.	NA	NA	NA	NA
17			Nagaon	Jamuguri No.1	NA	NA	NA	NA
18			Nagaon	Deochur No.1	NA	NA	NA	NA
19			Nagaon	Barghop No.1	NA	NA	NA	NA
20			Nagaon	Kurchimari	NA	NA	NA	NA
21			Nagaon	Bihdubi No.2	NA	NA	NA	NA
22			Nagaon	Silikhaguri	NA	NA	NA	NA
23			Nagaon	Saguri	NA	NA	NA	NA
24			Nagaon	Joysagar No.1	NA	NA	NA	NA
25			Kaliabor	Bhokuamari	261	1621	391	2169
26		Sonitpur	Dhekiajuli	Nichalamari Chapari	168	888	210	1074
27			Sonitpur	Borbhagia	NA	NA	NA	NA
28			Sonitpur	Sishuati	NA	NA	NA	NA
29			Sonitpur	Kochumara Chapari	NA	NA	NA	NA
30			Tezpur	Marisuti N.C.	28	175	33	210

Table 4.4:
Villages within the Least Cost Pathway Corridor between Kaziranga-Orang as shown in Fig. 4.11

Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
31		Sonitpur	Tezpur	Rajbhoral	287	1719	455	2378
32			Tezpur	Bhomoraguri	321	1930	226	1150
33			Dhekiajuli	Belsiri Chapori N.C.	1	4	8	43
34			Sonitpur	Hatibari Gaon	NA	NA	NA	NA
35			Sonitpur	Kaniya Tapu	NA	NA	NA	NA
36			Sonitpur	Borsola Pgr	NA	NA	NA	NA
37			Sonitpur	Chiruani N.C.	NA	NA	NA	NA
38			Sonitpur	Rabarbari	NA	NA	NA	NA
39			Sonitpur	Bihdubi No.2	NA	NA	NA	NA
40			Sonitpur	Sutartapa	NA	NA	NA	NA
41			Sonitpur	Dhaka Tapu	NA	NA	NA	NA
42			Sonitpur	Kosmara Pgr	NA	NA	NA	NA
43			Sonitpur	Dhania	NA	NA	NA	NA
44			Sonitpur	Belsiri Chapori	NA	NA	NA	NA
45			Sonitpur	Arna Chapori	NA	NA	NA	NA
46			Sonitpur	Batulibil	NA	NA	NA	NA

Kaziranga-Orang Corridor

Habitat size	155799 Km ²
Source Population	Kaziranga
Size of Source	106 (81-131) tigers in 800 Km ²
Protected Areas	Kaziranga TR
	Orang NP
Corridors	KazirangaTR-Orang NP Corridor



Figure 4.12:

Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Kaziranga-Orang



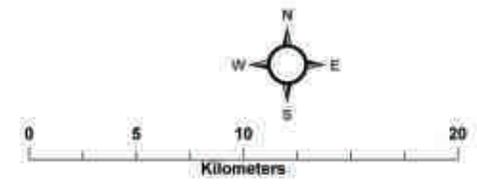
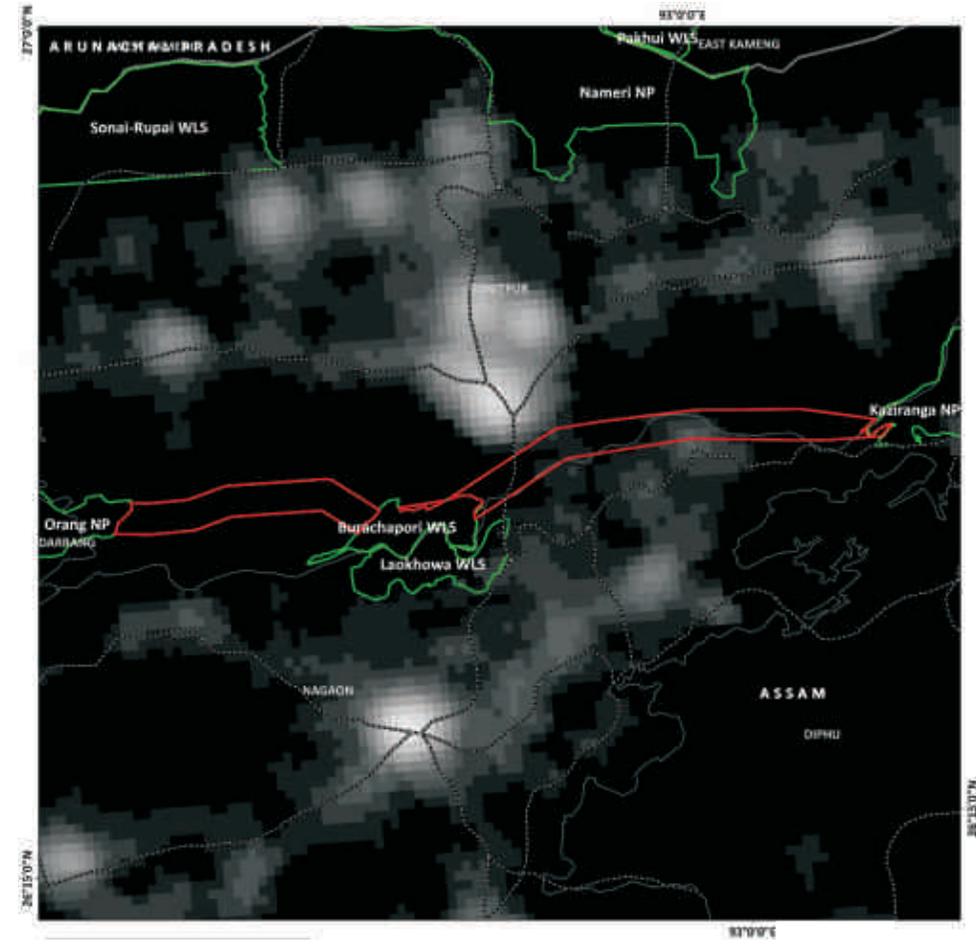
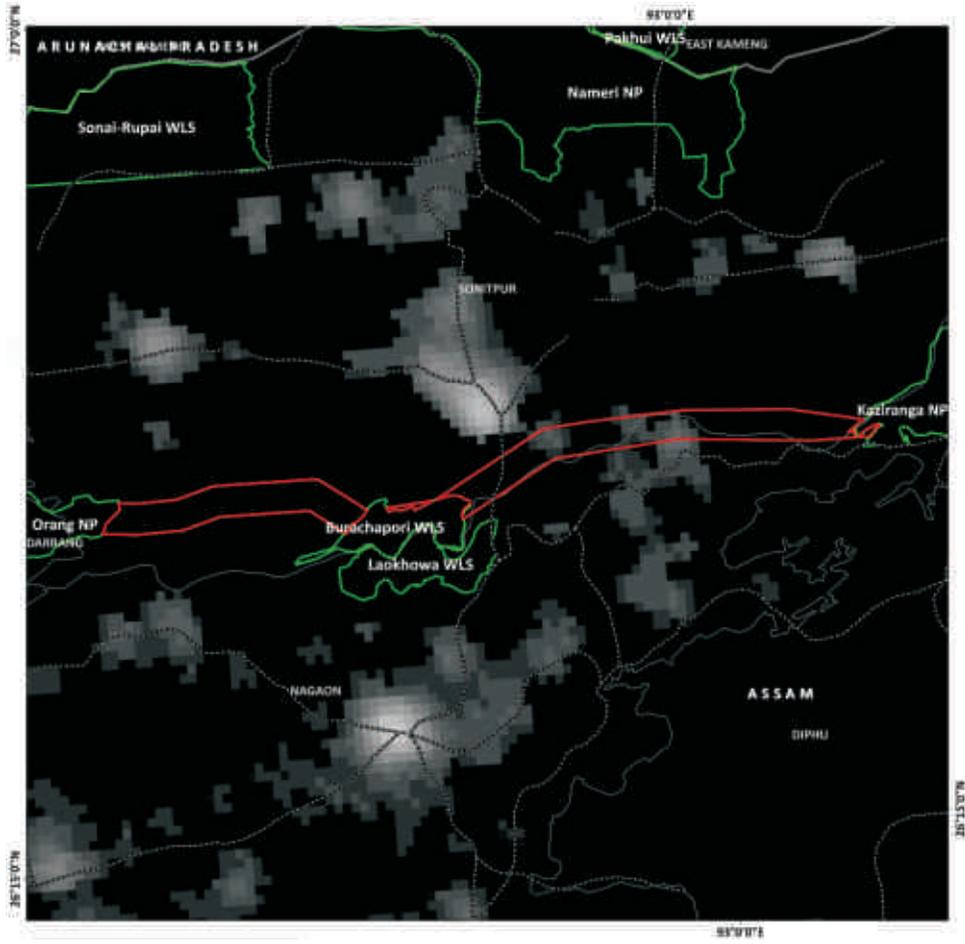
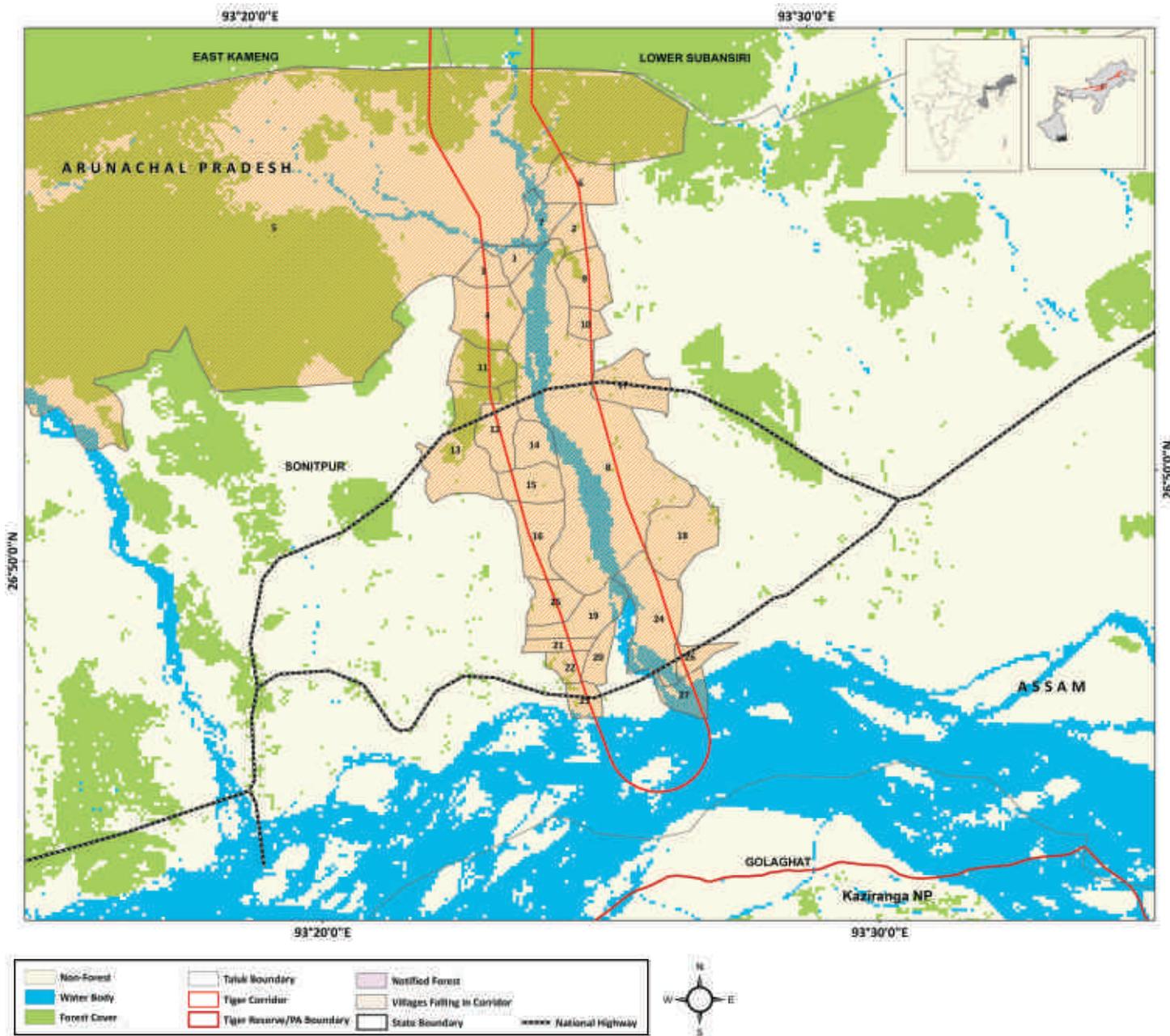


Figure 4.13:
 Human habitation as depicted by nightlights within the Kaziranga-Orang landscape in the year 1992 and 2012

Figure 4.14:

Least Cost Pathway corridor for Tiger movement between Kaziranga-Papumpare Corridor overlaid with village map (the village numbers are referenced in Table 5)



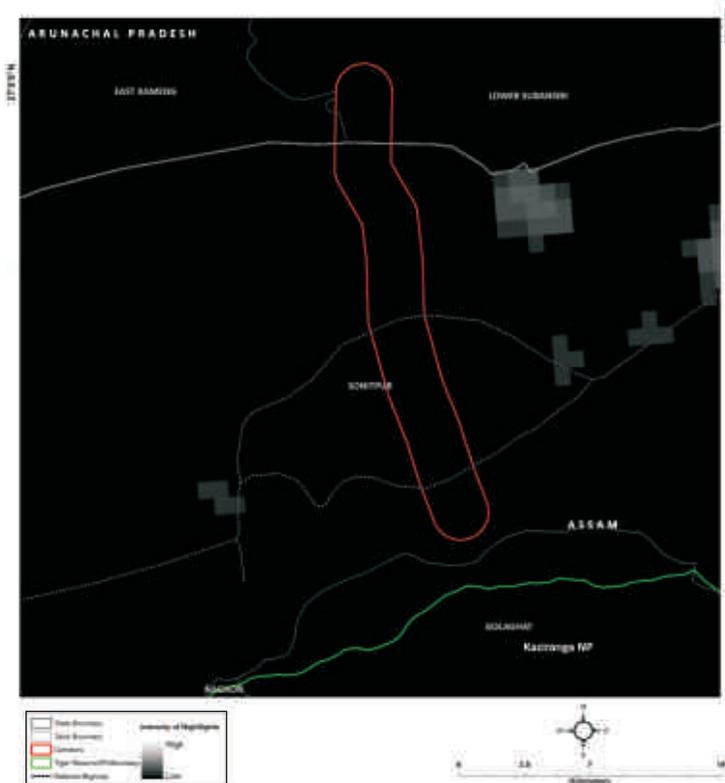
Village_ID	State	District	Tehsil	Village	No of Household	Total Population	No (in hactares)
1	Assam	Sonitpur	Biswanath	Bihmari N.C.(Part)	129	696	136.00
2			Sonitpur	Karibill Bangali	NA	NA	NA
3			Biswanath	Bihmari	263	1509	136.00
4			Biswanath	Lalpukhuri	118	581	241.00
5			Sonitpur	North Guhati	NA	NA	NA
6			Sonitpur	Karibill Gaon	NA	NA	NA
7			Sonitpur	Dullung N.C.	NA	NA	NA
8			Sonitpur	Takawbari Gaon	NA	NA	NA
9			Sonitpur	Bholuadanga	NA	NA	NA
10			Sonitpur	Karibill Chapari	NA	NA	NA
11			Biswanath	Barajuli T.e.	200	1040	233.00
12			Biswanath	Nashbar	313	1545	265.00
13			Biswanath	Bedeti Pathar	81	434	164.00
14			Biswanath	Barajuli Pathar	63	286	141.00
15			Biswanath	Barajuli Gaon (part)	207	1093	180.00
16			Biswanath	Barajuli Nepali	258	1200	253.00
17			Sonitpur	Rangajan	NA	NA	NA
18			Sonitpur	Leptapara	NA	NA	NA
19			Biswanath	Batiamari N.c.2	153	815	220.00
20			Biswanath	Batiamari Pgr (part)	98	514	172.00
21			Biswanath	Batiamari N.c.3	155	814	172.00
22			Biswanath	Batiamari N.c.5	85	397	145.00
23			Biswanath	Roumari Gaon	65	326	87.00
24			Sonitpur	Burai N.C.	NA	NA	NA
25			Sonitpur	Batiamari N.C.1	NA	NA	NA
26			Sonitpur	Barhatiguri	NA	NA	NA
27			Sonitpur	Buraight Lower	NA	NA	NA

Table 4.5:
Villages within the
Least Cost Pathway
Corridor between
Kaziranga-Papumpare
as shown in Fig. 4.14

Figure 4.15:

Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Kaziranga-Papumpare





Manas Tiger Reserve spans across the districts of Kokrajhar, Bongaigaon, Barpeta, Nalbari, Kamrup and Darrang in north-west Assam, covering an area of 2,837 km² of which 470 km² is designated as the core area. To the north, it is separated from the Royal Manas National Park of Bhutan by River Manas and its tributaries- Beki and Hakua; while to the west, it is separated from the Buxa Tiger Reserve of West Bengal by River Sankosh. Around 62 villages are located within two kilometres of the Reserve boundary between rivers Sankosh and Dhansiri. The region is affected by high levels of extremist activities, thus making conservation and scientific monitoring in the area a challenge. The Reserve Ripu Chirang Elephant Reserve within the Bhutan Biological Conservation Complex, in Bhutan is connected with the forests of Buxa in West Bengal, thus making a large transboundary conservation area. The entire area inclusive of the Bor Nadi Sanctuary

in Assam covers an area of 7,200 km². Manas Tiger Reserve was camera trapped and tiger density is estimated to be 1.8 tiger per 100 km². However, the region has higher potential and is on its path to recovery. With control of poaching of prey, tiger densities are likely to increase substantially, especially in the southern parts of Manas.

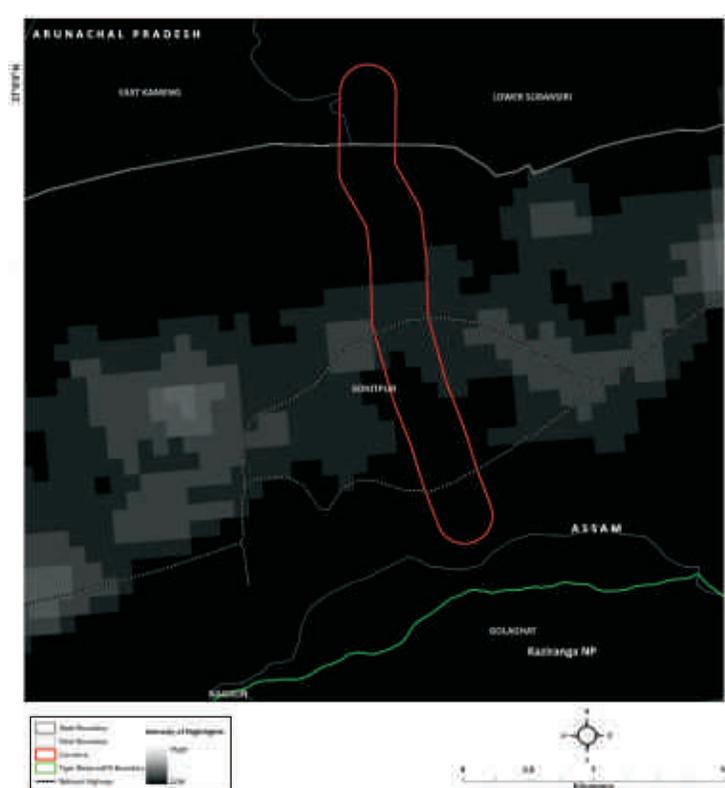


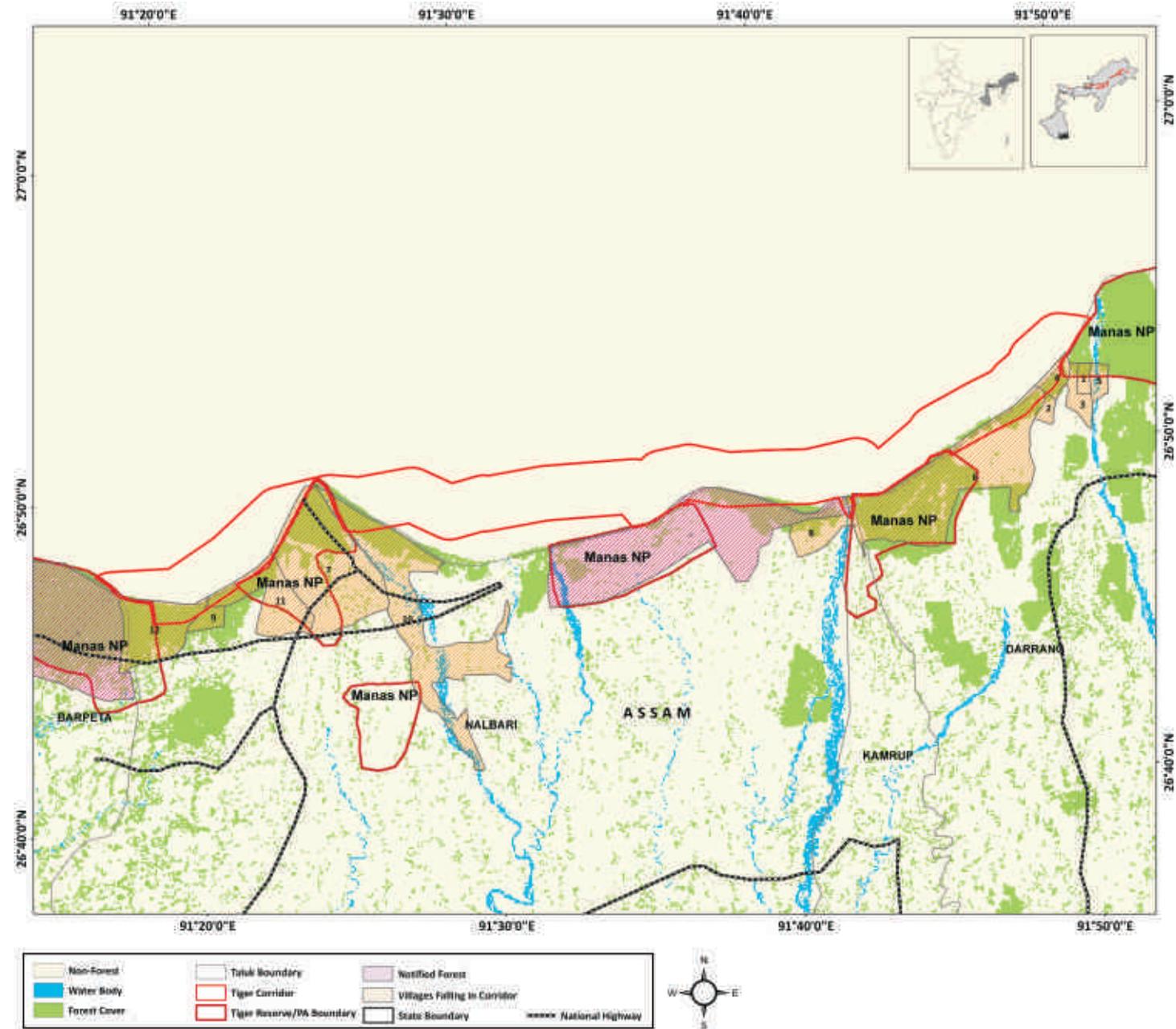
Figure 4.16:
Human habitation as depicted by nightlights within the Kaziranga-Papumpare landscape in the year 1992 and 2012

Kaziranga-Papumpare Corridor

Habitat size	155799 Km ²
Source Population	Kaziranga
Size of Source	106 (81-131) tigers in 800 Km ²
Protected Areas	Kaziranga
Corridors	Kaziranga-Papumpare Corridor

Figure 4.17:

Least Cost Pathway corridor for Tiger movement between Manas Corridor overlaid with village map (the village numbers are referenced in Table 4.6)



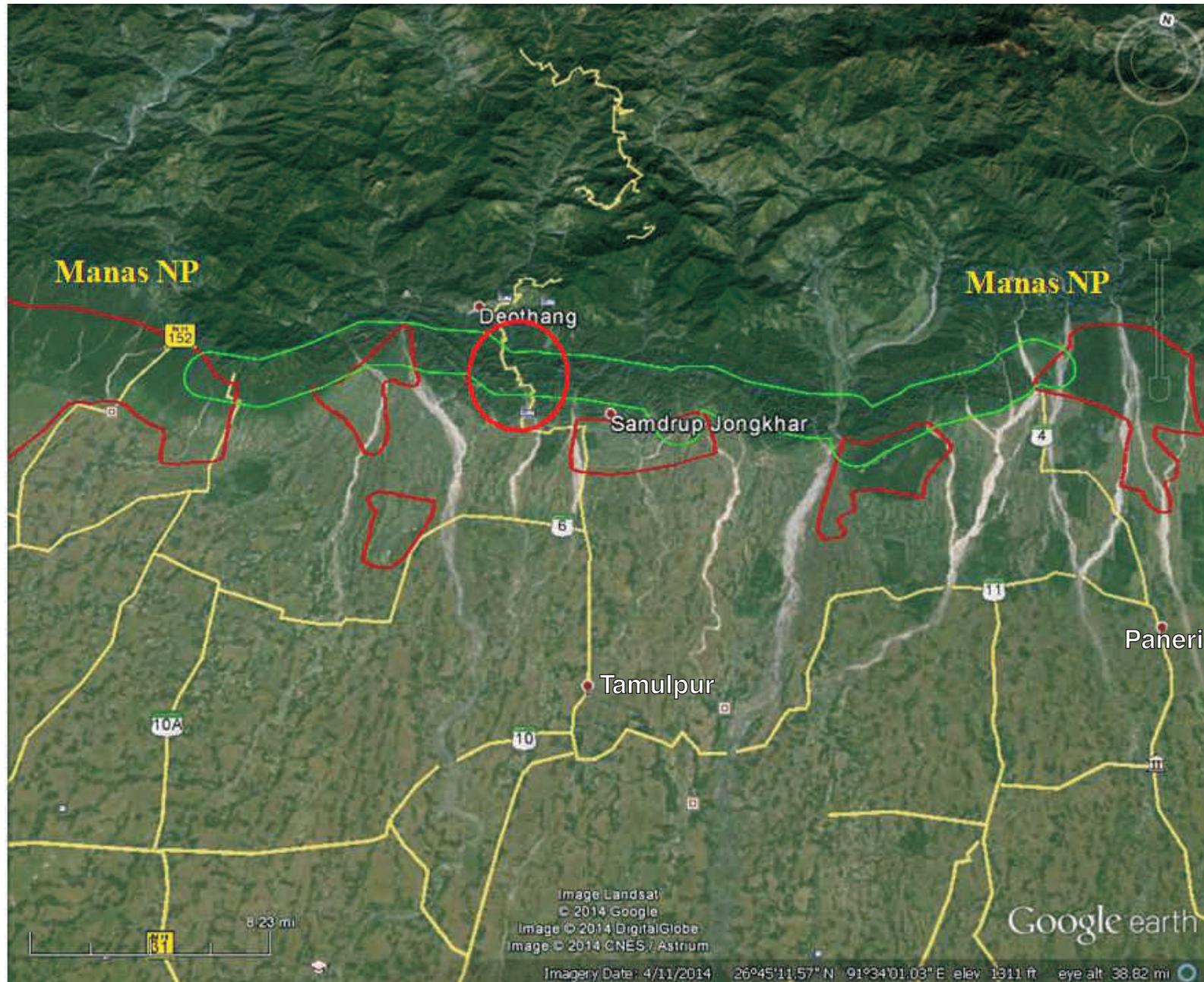
Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
1	Assam	Darrang	Harisinga	Bhutijhar N.c.	37	261	47	268
2			Harisinga	Newli No.1	9	59	8	33
3			Darrang	Chamrang N.C.	NA	NA	NA	NA
4			Darrang	Newli Block N.C.	NA	NA	NA	NA
5			Darrang	Sagunbari N.C.	NA	NA	NA	NA
6			Darrang	Suklai Khuti Bagan N.C.	NA	NA	NA	NA
7		Nalbari	Baska	Dihira	136	794	219	1240
8			Tamulpur	Goibari	814	4185	811	4200
9			Baska	Madhupur	163	874	425	2275
10			Nalbari	Angarkata P.G.R.	NA	NA	NA	NA
11			Nalbari	Dugapur	NA	NA	354	1484
12			Nalbari	Balabari (Part)	NA	NA	NA	NA

Table 4.6.
Villages within the Least Cost Pathway Corridor between Manas as shown in Fig. 4.17

Manas Corridor	
Habitat size	334 Km ²
Source Population	Manas-Buxa
Size of Source	9+ in 1349 Km ²
Protected Areas	Manas TR
	Buxa TR
Corridors	Manas-Buxa Corridor

Figure 4.18:

Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Manas



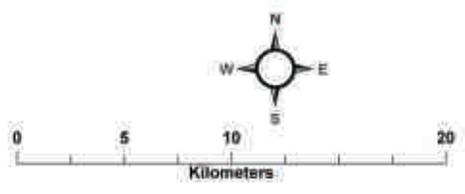
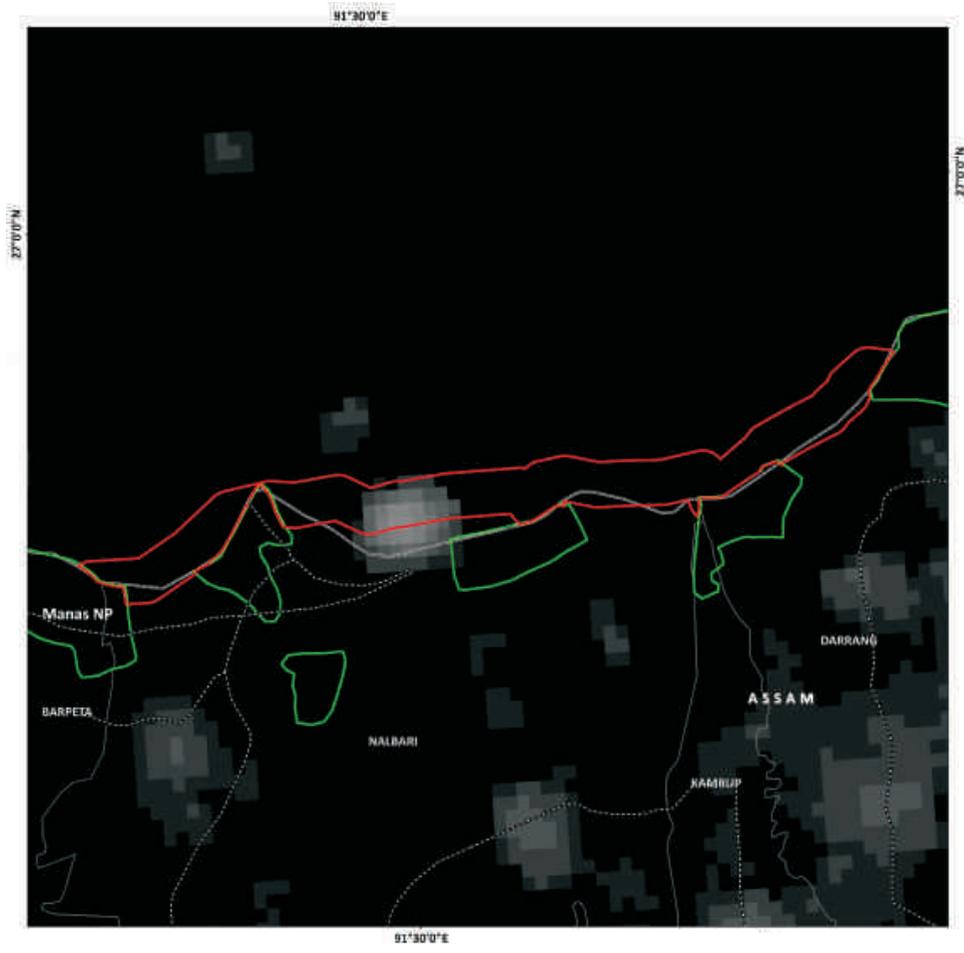
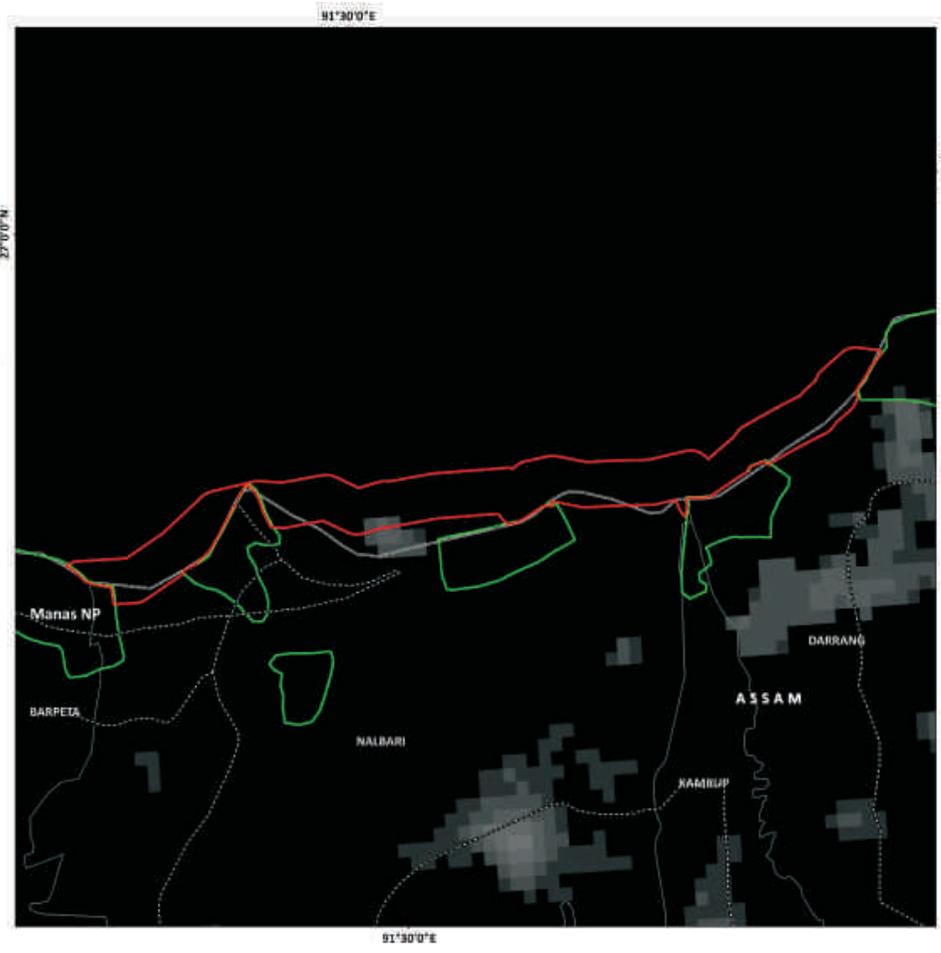
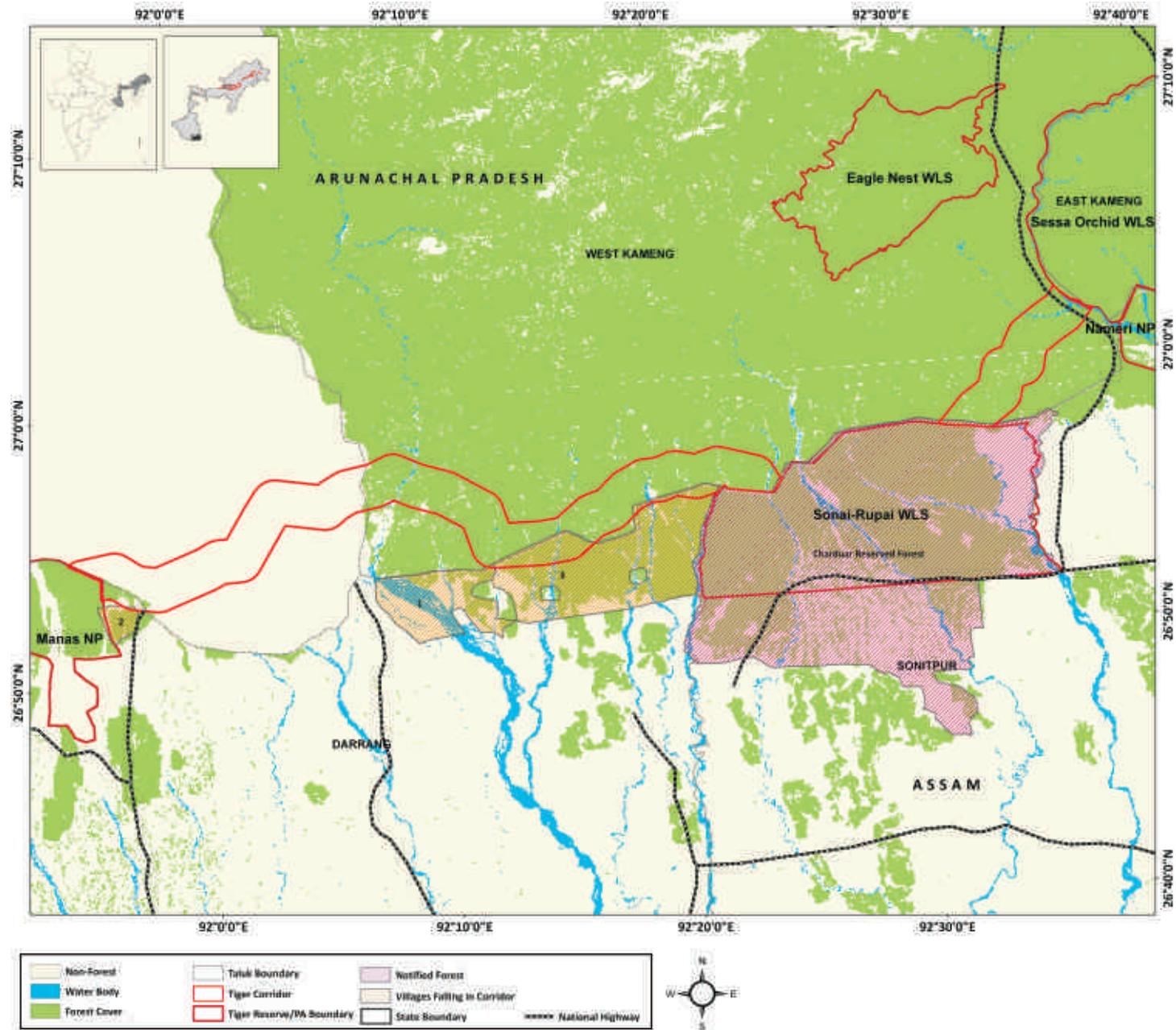


Figure 19.
 Human habitation as depicted by nightlights within the Manas landscape in the year 1992 and 2012

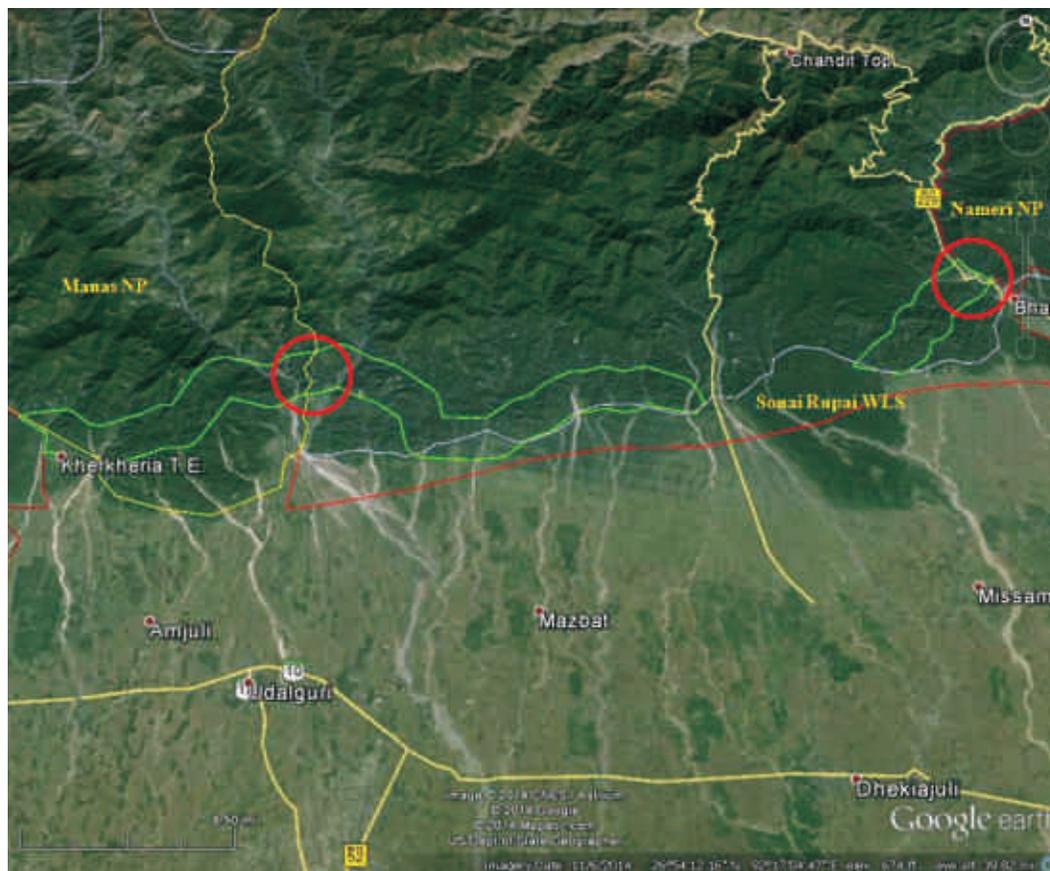
Figure 4.20:

Least Cost Pathway corridor for Tiger movement between Paake-Nameri-Sonai-Rupai-Manas Corridor overlaid with village map (the village numbers are referenced in Table 4.7)



Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
1	ASSAM	DARRANG	UDALGURI	No.1 Dhansiri T.E.	512	2622	NA	NA
2		DARRANG	HARISINGA	Khairabari Grant	35	137	NA	NA
3		DARRANG	NA	NA	NA	NA	NA	NA

Table 4.7.
Villages within the Least Cost Pathway Corridor between Paake-Nameri_Sonai_Rupai-Manas as shown in Fig. 4.20

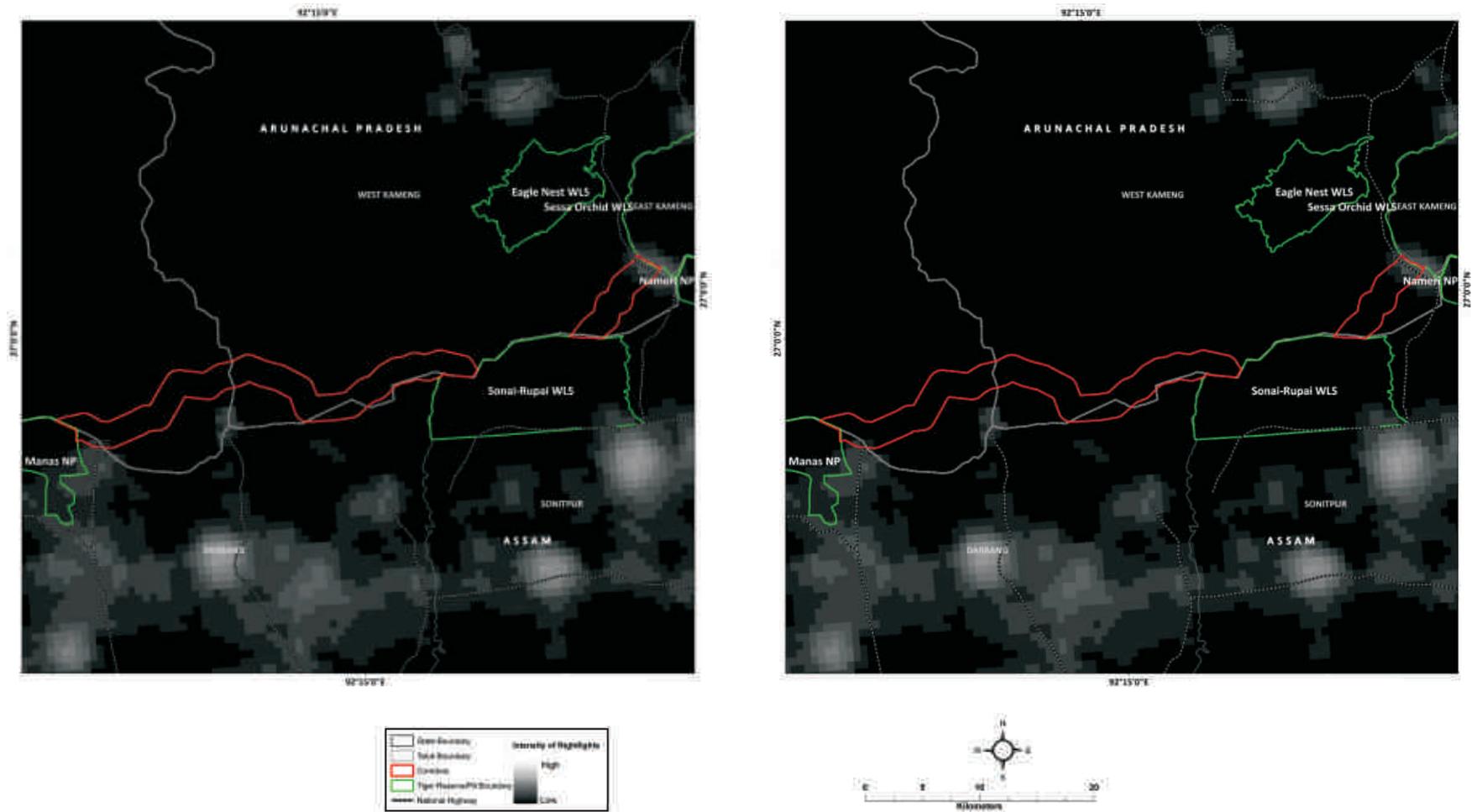


Paake-Nameri-Sonai-Rupai-Manas Corridor	
Habitat size	155799 Km ²
Source Population	Pakke-Nameri
Size of Source	9(7-11) tigers in 1089 Km ²
Protected Areas	Pakke TR
	Nameri TR
	Sonai-Rupai WLS
	Manas TR
Corridors	Nameri TR-Sonai-Rupai WLS
	Sonai-Rupai WLS- Manas TR

Figure 4.21:
Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Paake-Nameri-Sonai-Rupai-Manas

Figure 4.22:

Human habitation as depicted by nightlights within the Paake-Nameri_Sonai_Rupai-Manas landscape in the year 1992 and 2012



Nameri Tiger Reserve is located in Sonitpur and Tezpur districts of north-east Assam. It is contiguous with Pakke Tiger Reserve of Arunachal Pradesh to its north and covers an area of 344 km² of which 200 km² forms the core demarcated by Rivers Bhoreli and Bordikarai. Thirteen villages are located in the reserve of which eight are forest villages with predominantly tribal population. The population of tigers is small (about 9) and is shared with Pakke. Though the area has potential for higher densities and ability to sustain a larger population

of tigers, the depletion of prey by subsistence poaching as well as other anthropogenic disturbances likely results in depressed tiger populations. Its connectivity with Kaziranga is important and needs policy and managerial inputs for its continued viability. This complex may further be connected to the Sonai Rupai Wildlife Sanctuary in Assam and the greater forest complex of Arunachal Pradesh, that provides connectivity, although with high hunting pressures, to the forests further east into Namdapha, Intanki and maybe even Myanmar.

DIBRU SAIKHOWA-D'ERING-MEHAO, KAMLANG AND KANE WLS-TALE VALLEY WLS

The largest contiguous forested region in this landscape is over 136,000 km². This landscape unit commences in the north-west from Pakke Tiger Reserve through the forests of Palia, Tale Valley, Mouling and Dr. D'Ering Sanctuaries into Dibang National Park and upto Namdapha Tiger Reserve in the east. The landscape continues south through some degraded areas into Intanki National Park, and further South to Dampa Tiger Reserve and Blue Mountain National Park.

Pakke-Nameri landscape includes parts of the Sessa orchid Wildlife Sanctuary in Kameng district, Eagle Nest Wildlife Sanctuary, Pakke Tiger Reserve, parts of Nameri Tiger Reserve in Assam and continues via the forests of Tale Valley in to lower Subansiri to D'Ering Memorial Wildlife Sanctuary in East Siang upto Namdapha Tiger Reserve. The largest tiger population of Arunachal Pradesh is within pockets of this landscape. Tiger population of Pakke is shared with that of Nameri Tiger Reserve (Assam) and was estimated to be around 9 tigers.

The presence of *Dipterocarp* forests in this region along with the high levels of hunting, result in low abundances of prey which subsequently affect tiger abundances. Thus, despite the availability of vast forested areas in this zone, tiger abundances are low. The low-land forest and hill forest are connected within Arunachal Pradesh and with Assam.

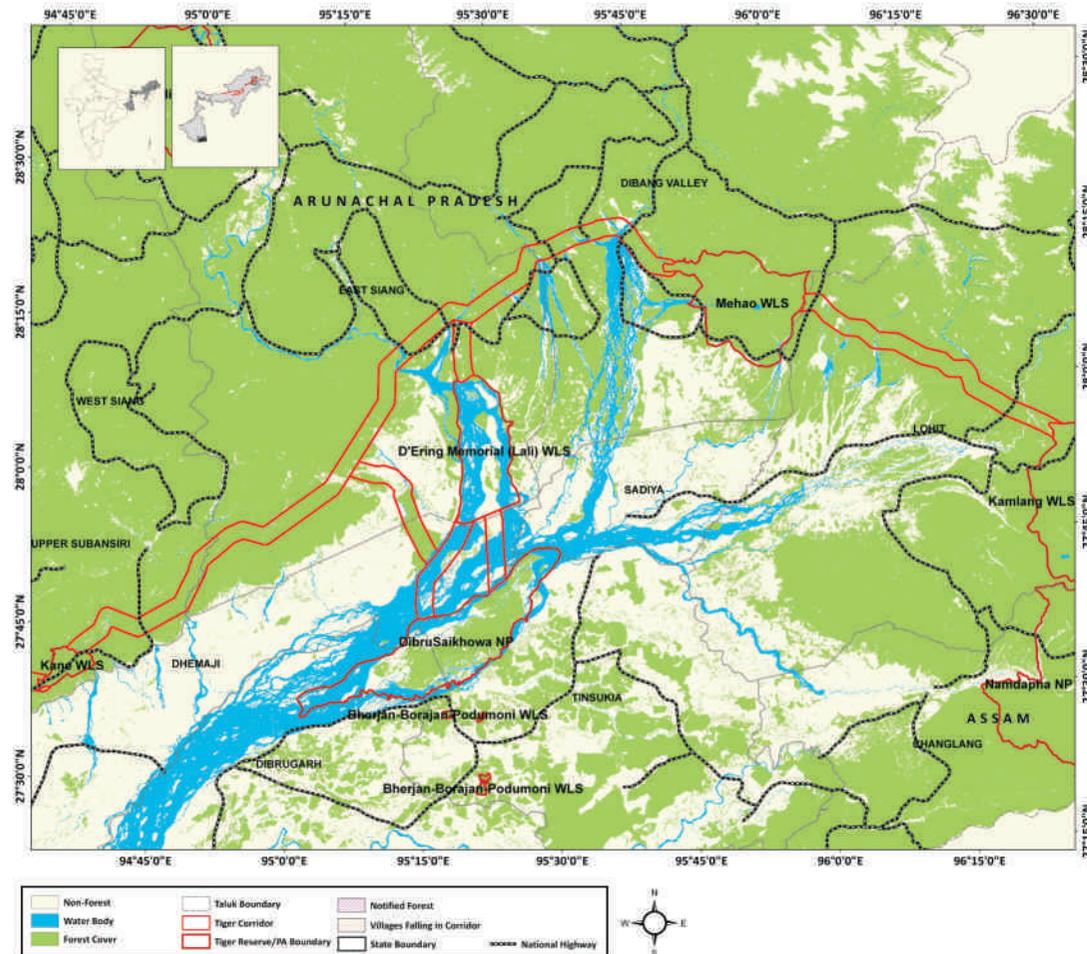
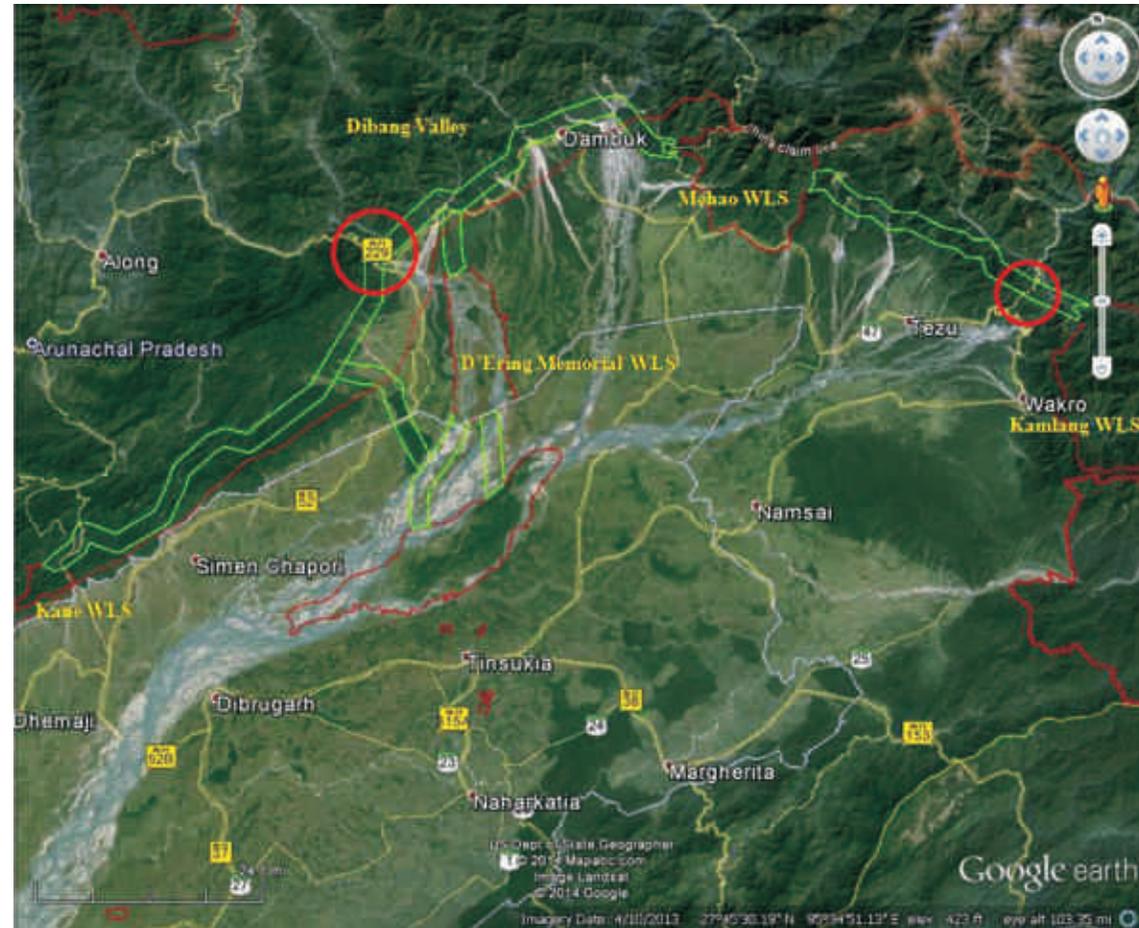


Figure 4.23: Least Cost Pathway corridor for Tiger movement between Dibru Saikhowa-D'Ering-Mehao-Kamlang Corridor overlaid with village map

Figure 4.24:
Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Dibru Saikhowa-D'Ering-Mehao-Kamlang



Dibru Saikhowa-Ering-Mehao Corridor

Habitat size	155799 Km ²
Source Population	Arunachal Pradesh-Bhutan
Size of Source	NA
Protected Areas	Dibru-Saikhowa NP D'Ering Memorial WLS Mehao WLS
Corridors	Dibru-Saikhowa NP-D'Ering Memorial WLS D'Ering Memorial WLS-Mehao WLS

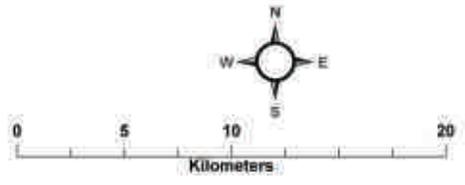
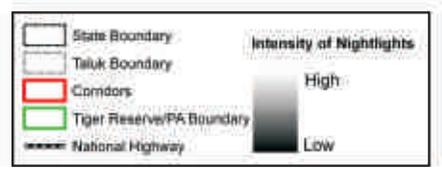
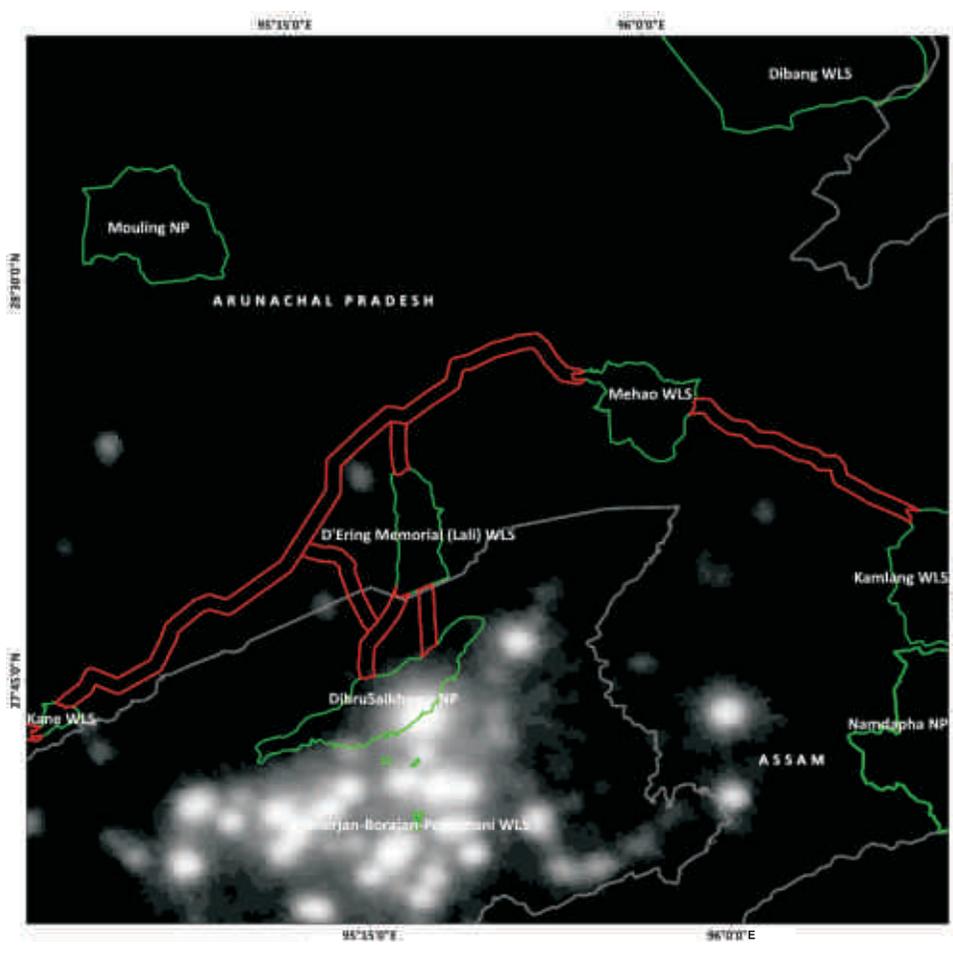
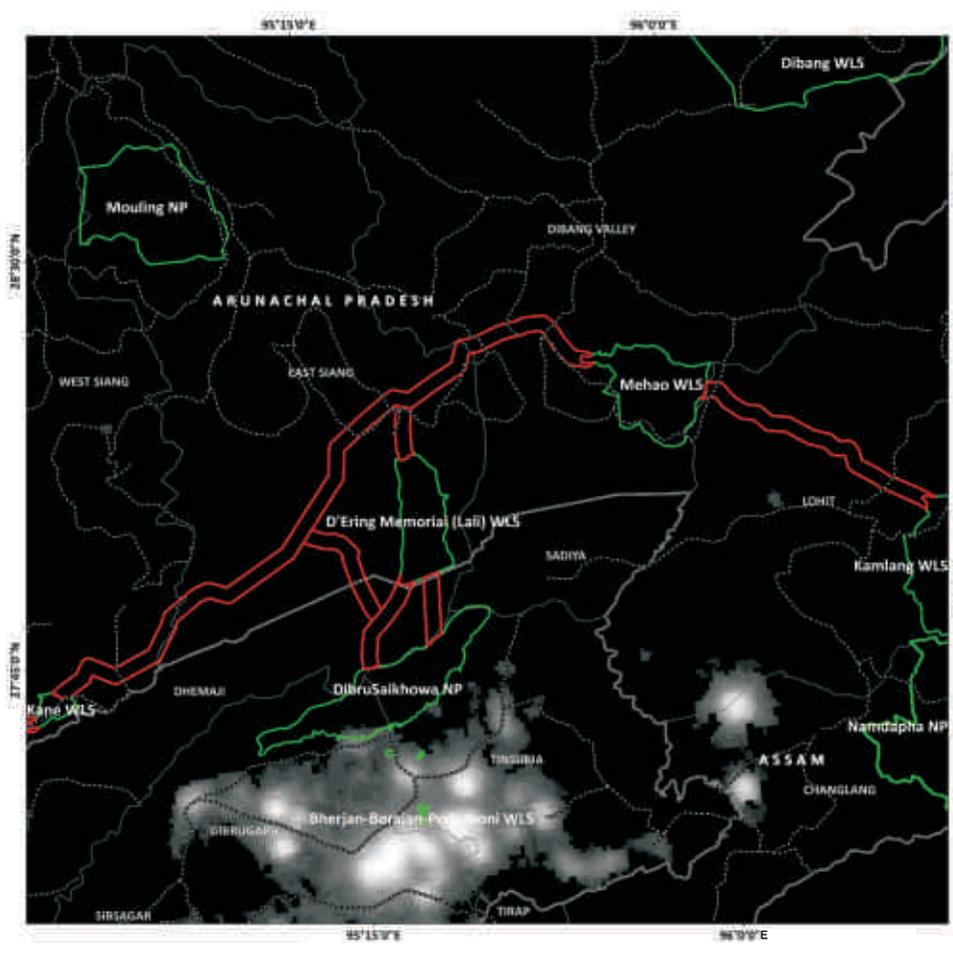
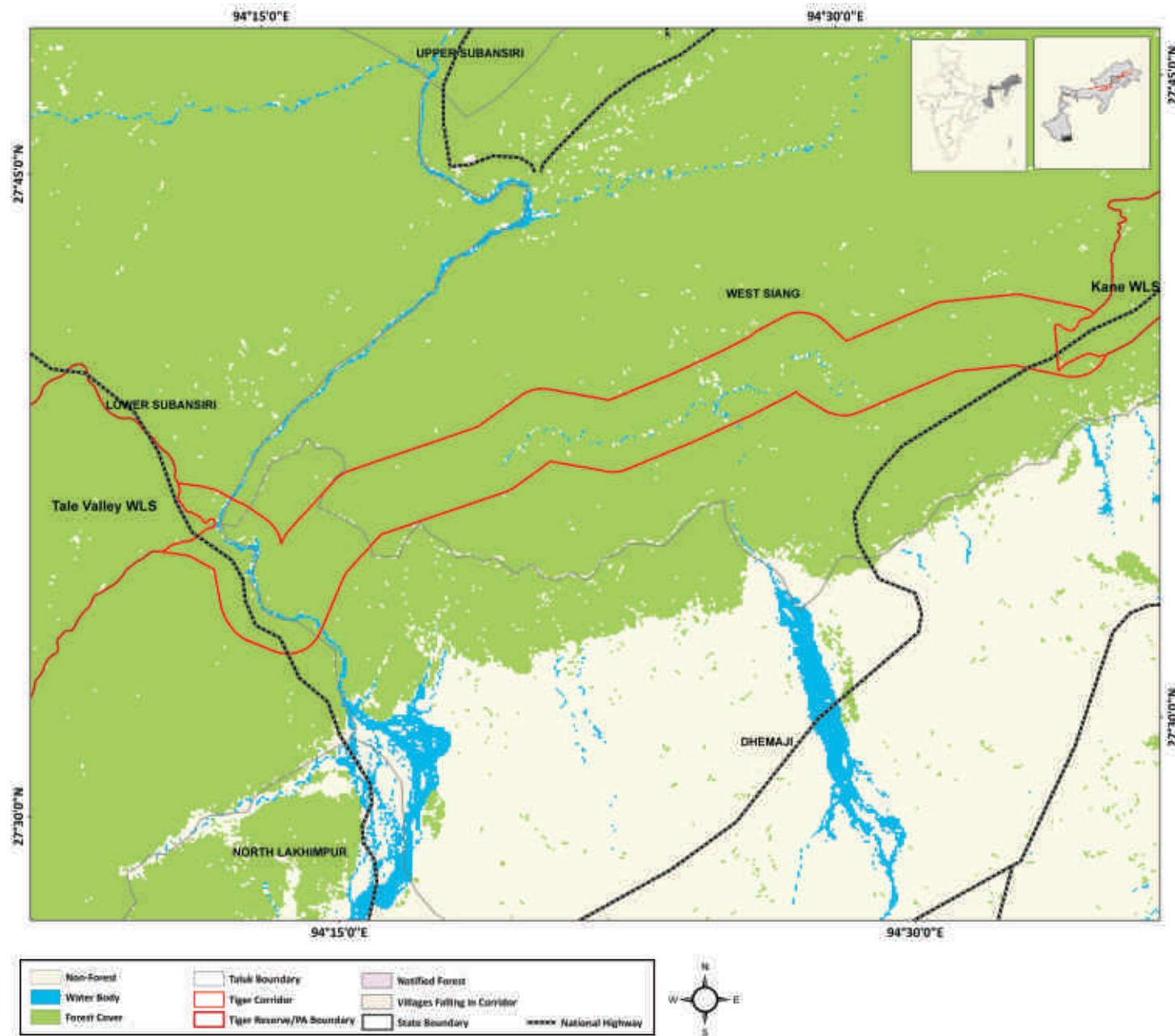


Figure 4.25:
 Human habitation as depicted by nightlights within the Dibru Saikhowa-Ering-Mehao landscape in the year 1992 and 2012

Figure 4.26:

Least Cost Pathway corridor for Tiger movement between Kane WLS-Tale Valley WLS Corridor overlaid with village map



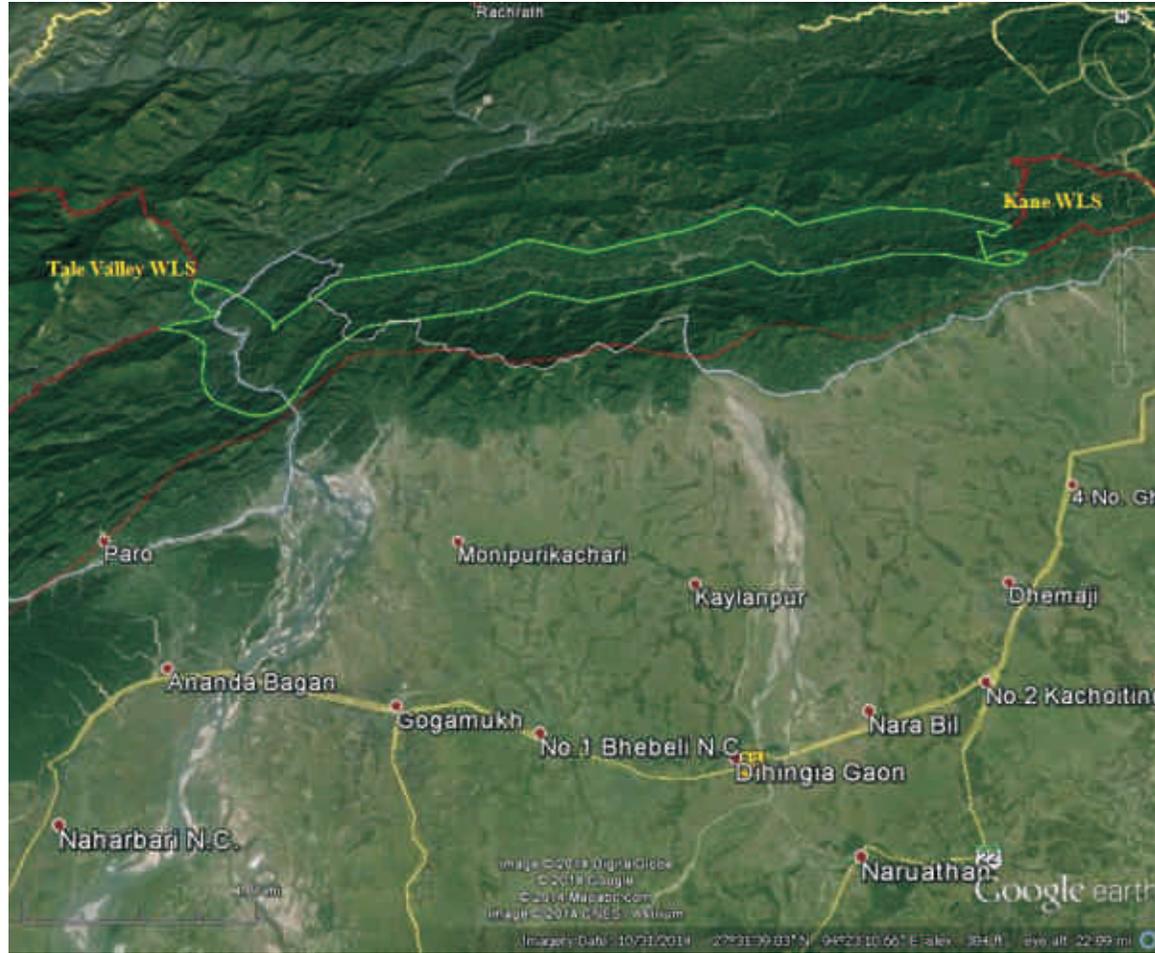


Figure 4.27:
Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Kane WLS-Tale Valley WLS

Kane WLS-Tale Valley WLS Corridor	
Habitat size	155799 Km ²
Source Population	Arunachal Pradesh-Bhutan
Size of Source	NA
Protected Areas	Kane WLS Tale WLS
Corridors	Kane WLS-Tale WLS

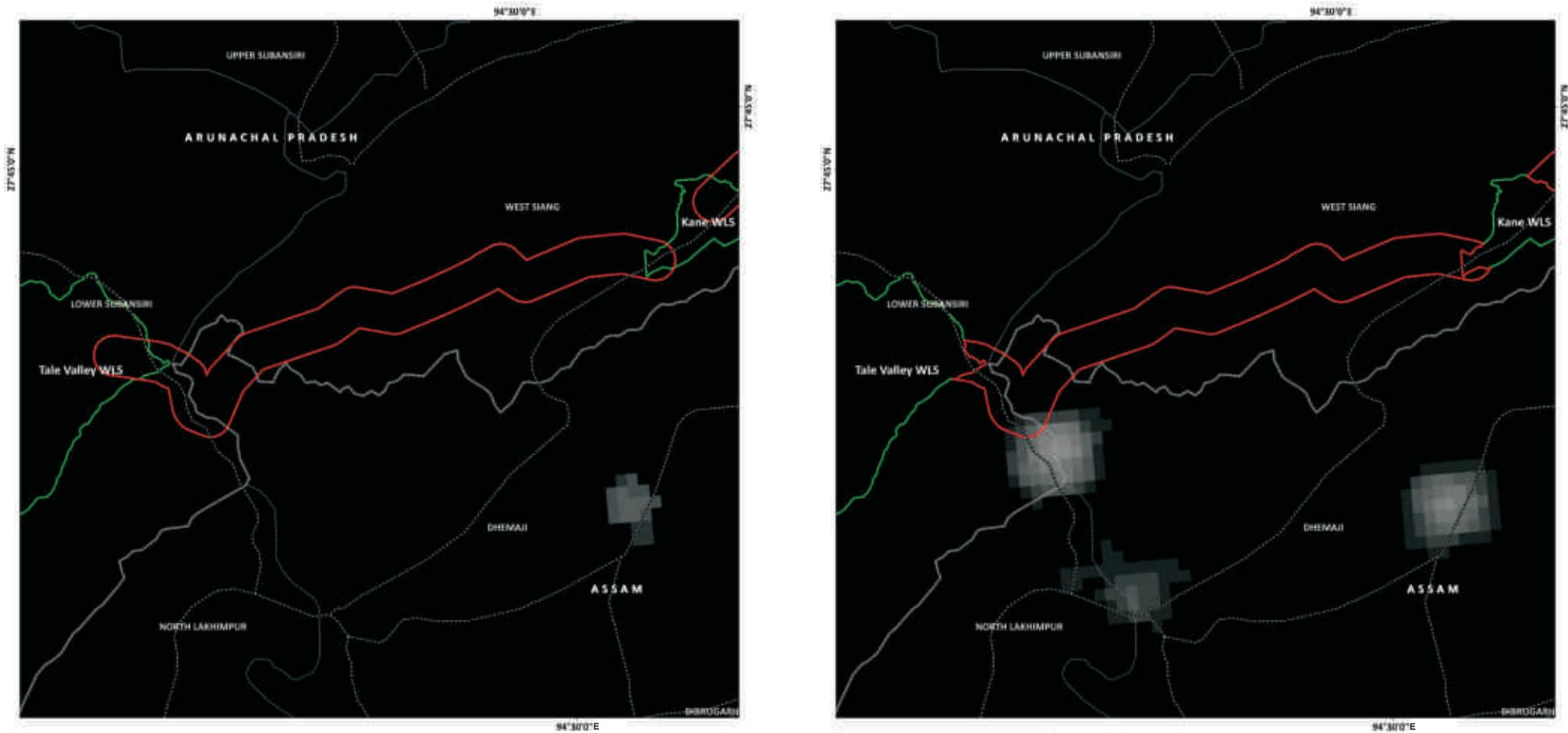
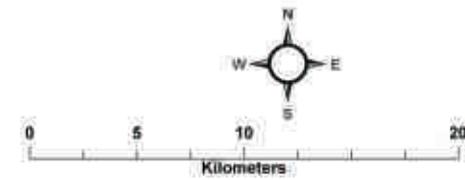


Figure 4.28:

Human habitation as depicted by nightlights within the Kane WLS-Tale Valley WLS landscape in the year 1992 and 2012



BUXA-JALDAPARA

Buxa, is located in the Alipurduar sub-division of Jalpaiguri district and covers an area of 760.87 km². To the east, it is separated from the Manas Tiger Reserve of Assam by River Sankosh while on the west, tea estates and the Joygaon-Nimti State Highway demarcate its boundaries. To the north of it is the international boundary with Bhutan while on the south a mosaic of agricultural land, tea estates and the National Highway 31C are located. The Reserve has 37 forest villages while 7000-8000 pilgrims visit the Mahakal Temple, located within the Reserve, in March each year. The other factors adding to existing disturbance levels in the area include existence of a number of PWD roads, a National Highway and a meter gauge railway line from Damanpur to Hasimara. Until 1996, the area was also mined for dolomite, post which a stay order was passed on mining activities within the Park by the State High Court.

Buxa Tiger Reserve has a weak connectivity to Jaldapara National Park and Gorumara Wildlife Sanctuary. While both these latter areas are small with high levels of disturbance (with about 32 Toto villages around Jaldapara and 9 villages around Gorumara), they still provide some connectivity to tigers dispersing in this landscape. To the east, Buxa has a good connectivity with a much larger tiger landscape of Manas, Bor Nadi Wildlife Sanctuary in Assam and Royal Manas National Park in Bhutan.

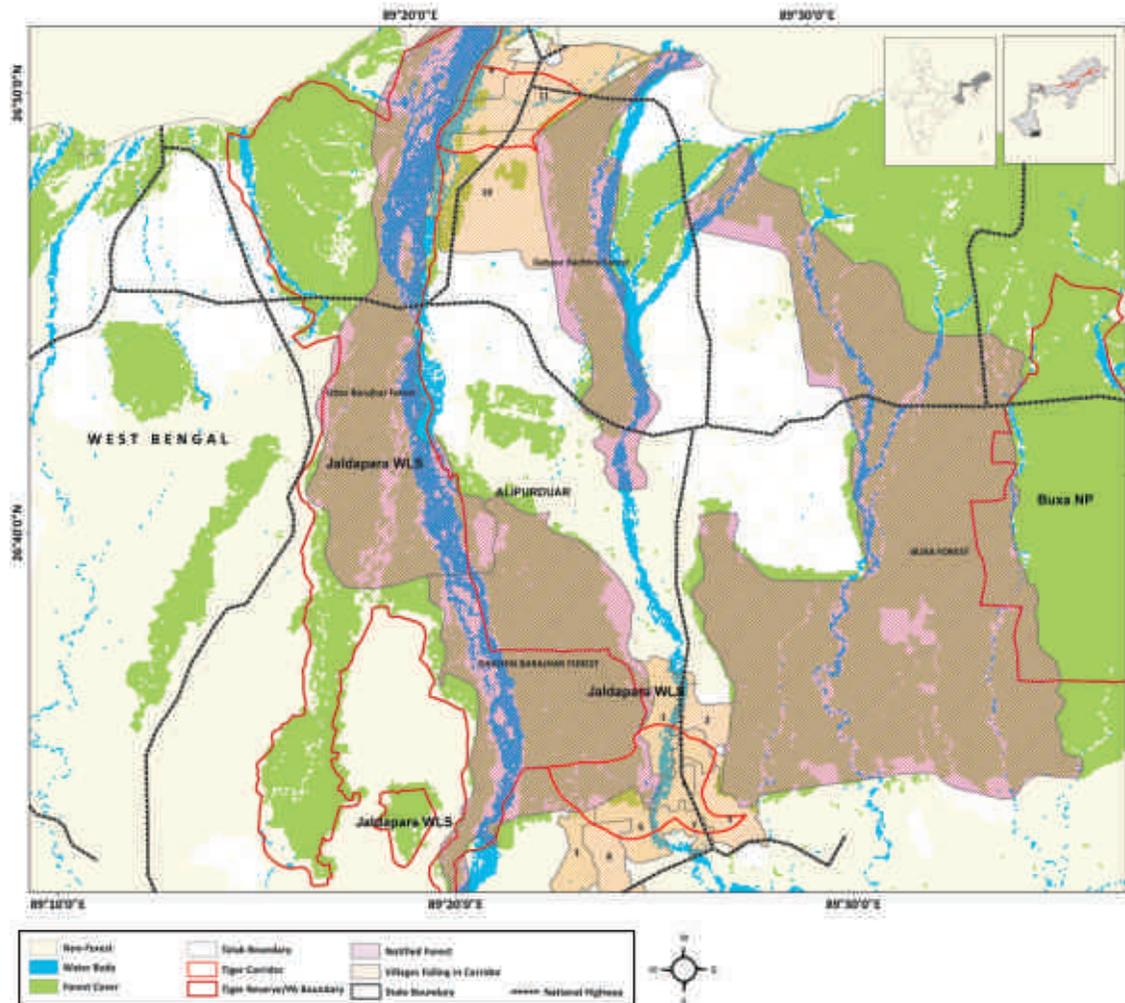


Figure 4.29: Least Cost Pathway corridor for Tiger movement between Buxa-Jaldapara Corridor overlaid with village map (the village numbers are referenced in Table 4.8)

Table 4.8:

Villages within the Least Cost Pathway Corridor between Buxa-Jaldapara as shown in Fig. 4.29

Village_ID	State	District	Tehsil	Village	No of Household (2001)	Total Population (2001)	No of Household (2011)	Total Population (2011)
1	West Bengal	Jalpaiguri	Kalchini	Dakshin Mandabari	516	2625	NA	NA
2			Kalchini	Nimtijhora Tea Garden	870	4266	NA	NA
3			Alipurduar -I	Kumarpara	345	1823	NA	NA
4			Alipurduar -I	Uttar Paitkapara	545	2716	NA	NA
5			Alipurduar -I	Paitkapara Tea Garden	905	4654	NA	NA
6			Alipurduar -I	Uttar Chakoakheti	241	1251	NA	NA
7			Alipurduar -I	Madhya Paitkapara	331	1712	NA	NA
8			Alipurduar -I	Mathura Tea Garden	1705	8472	NA	NA
9			Kalchini	Mechiabasti	966	5046	NA	NA
10			Kalchini	Dalsingpara Tea Garden	2879	15752	NA	NA
11			Kalchini	Tosra Tea Garden	1007	5142	NA	NA

Buxa-Jaldapara Corridor

Habitat size	9096 Km ²
Source Population	Manas-Buxa
Size of Source	9+ in 1349 Km ²
Protected Areas	Buxa TR Jaldapara WLS
Corridors	Buxa-Jaldapara1 Buxa-Jaldapara2

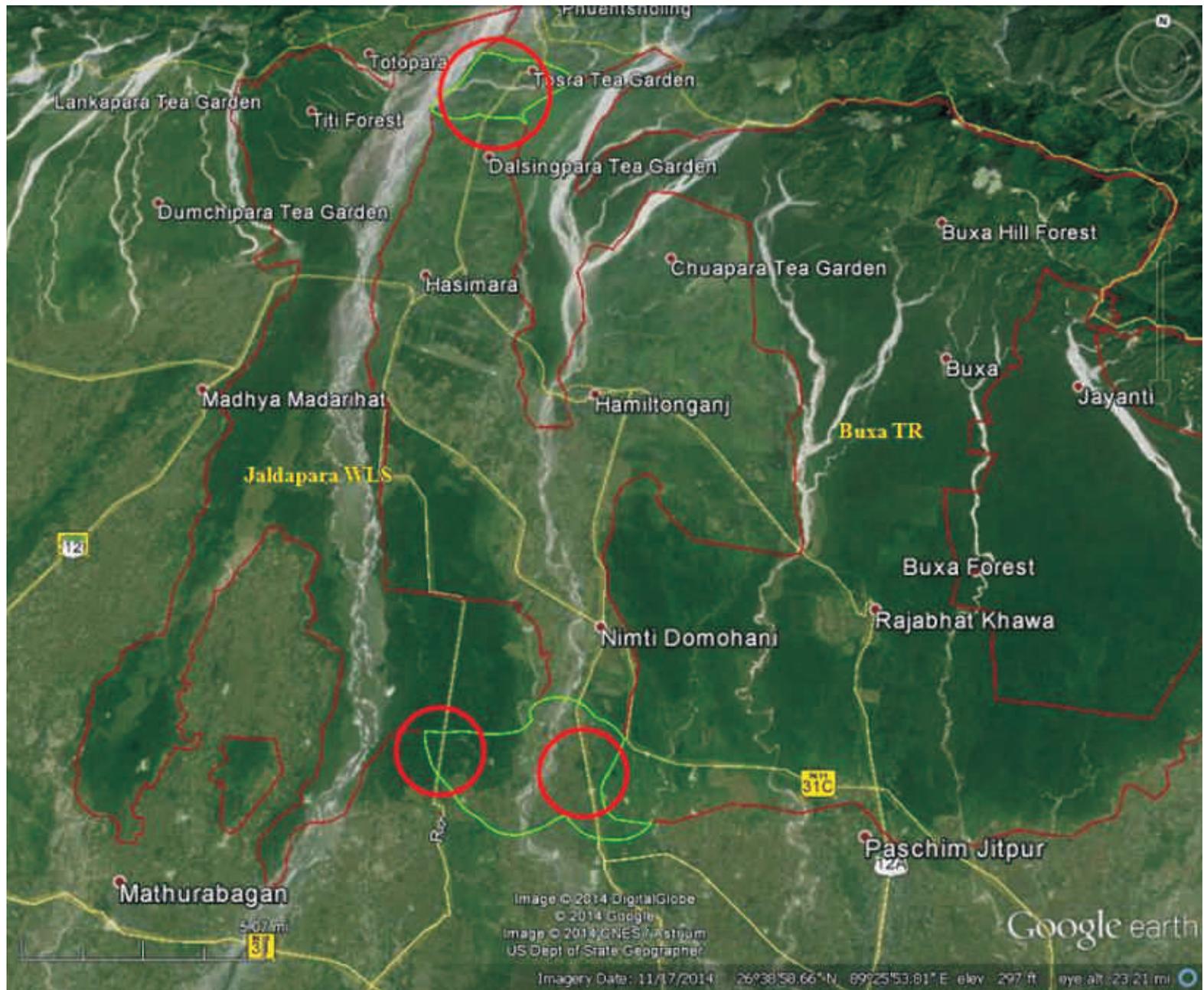


Figure 4.30:
 Potential bottlenecks, obstacles and weak links within the Least Cost Pathway corridor connecting Buxa-Jaldapara



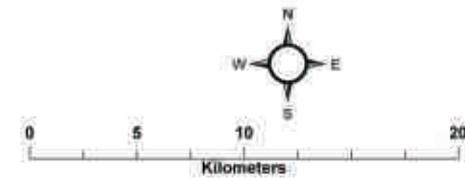
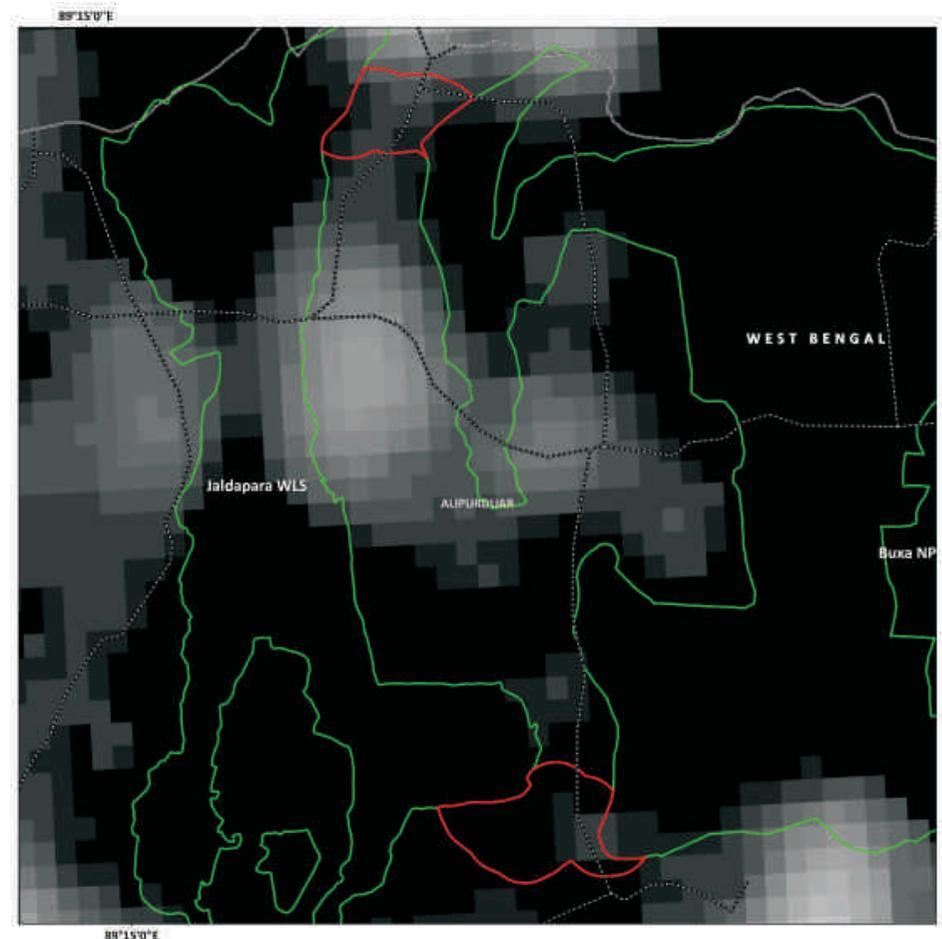
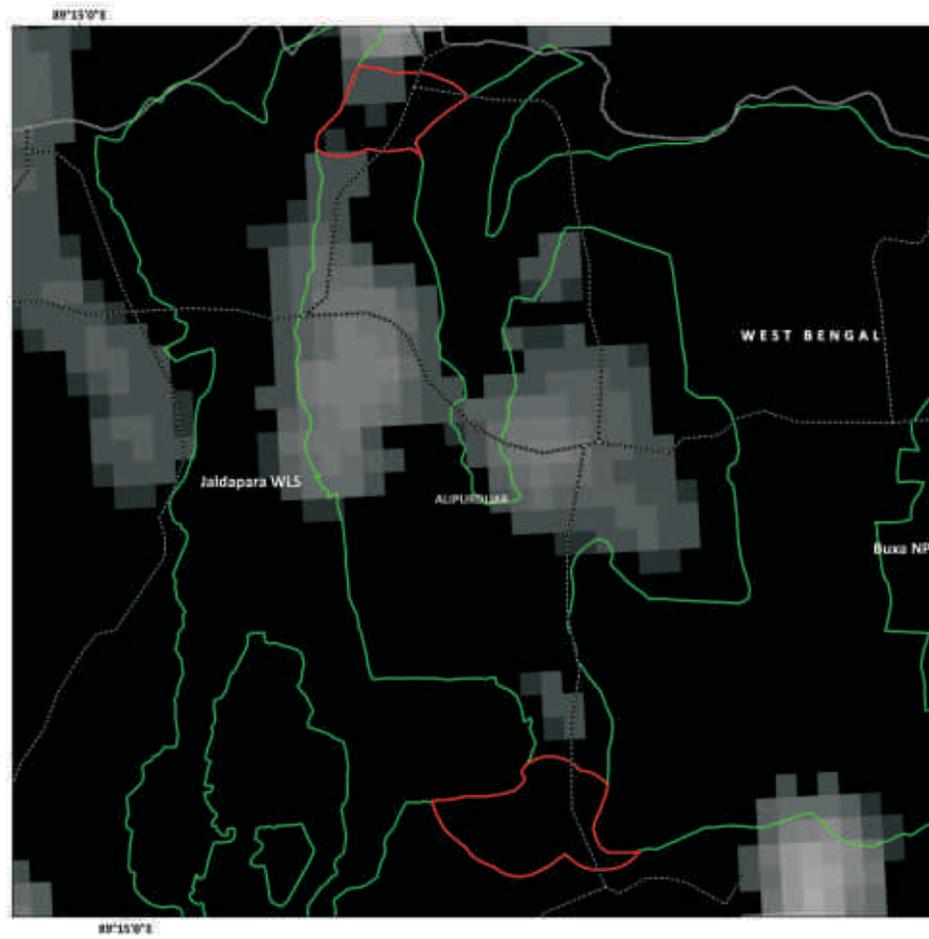


Figure 4.31:
 Human habitation as depicted by nightlights within the Buxa-Jaldapara landscape in the year 1992 and 2012