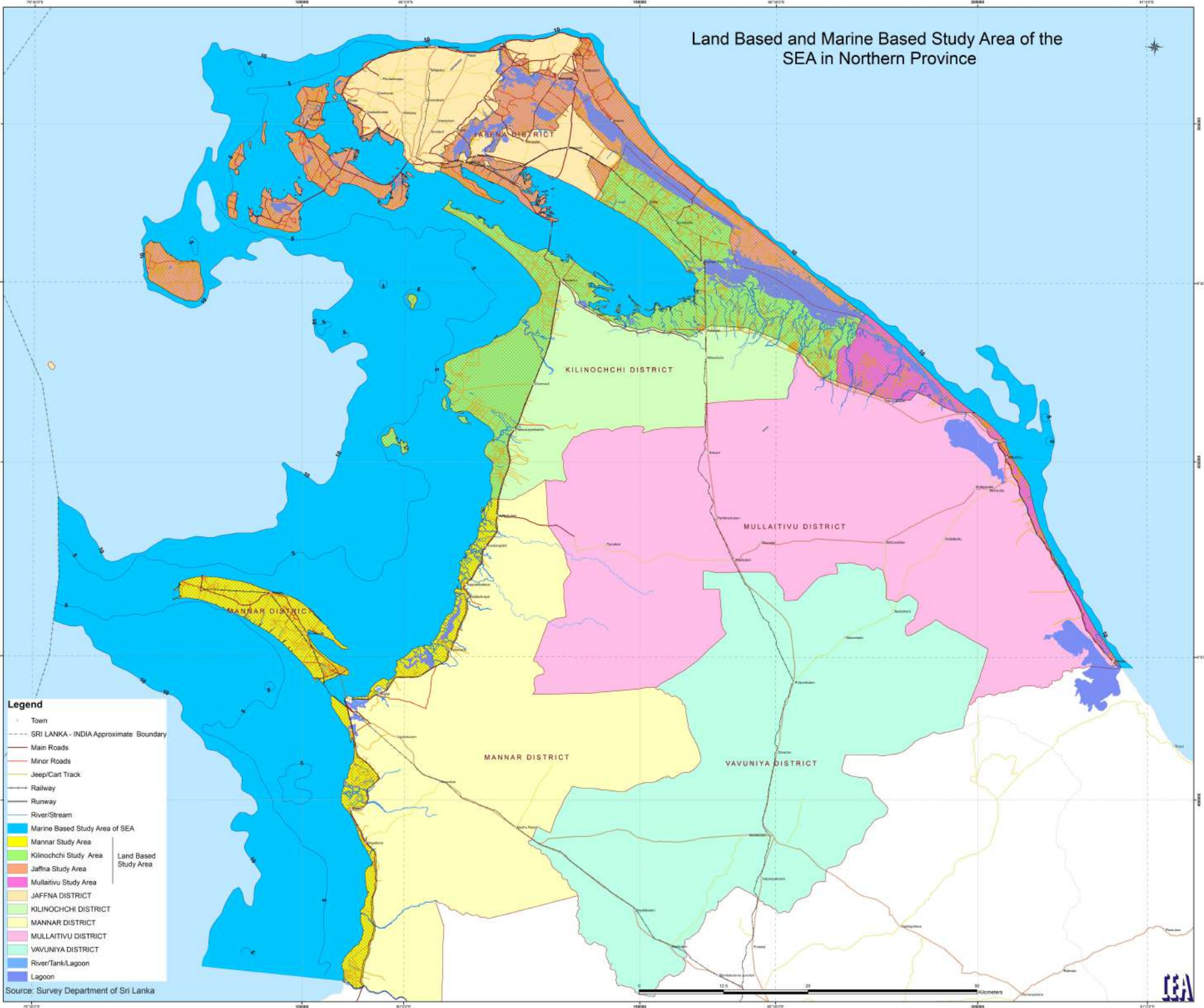
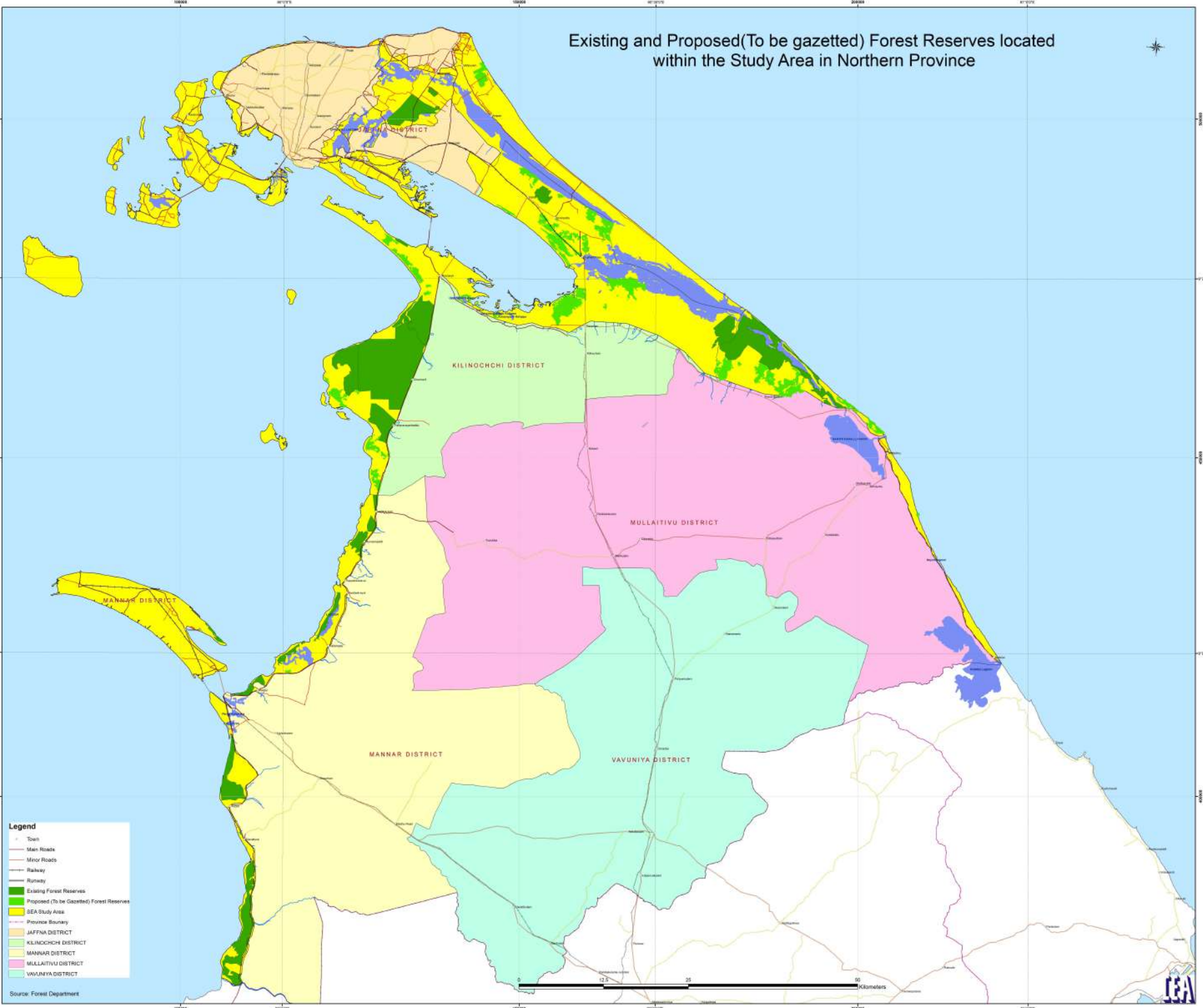


Land Based and Marine Based Study Area of the SEA in Northern Province





Existing and Proposed (To be gazetted) Forest Reserves located within the Study Area in Northern Province



- Legend**
- Town
 - Main Roads
 - Minor Roads
 - Railway
 - Roadway
 - Existing Forest Reserves
 - Proposed (To be Gazetted) Forest Reserves
 - SEA Study Area
 - Province Boundary
 - JAFFNA DISTRICT
 - KILINOCHCHI DISTRICT
 - MANNAH DISTRICT
 - MULLAITIVU DISTRICT
 - VAVUNIYA DISTRICT

Source: Forest Department



Declared Archaeological reserves and Protected Monuments within the SEA study area in Northern Province



Site No.	Name	Site No.	Name
1	Ruins of Hindu Koid	35	Puravadi Fort
2	Deft Baddine name (Dutch/Portuguese)	36	Stone Building (British)
3	Old Stables	37	Angkor Dutch Fort
4	Dutch Church, Deft	38	Vankalai Settlement Site
5	Paper's House and Ruins	39	Kappalukkulam Muhammed Ameran Koid Ruins
6	Buildings near Divisional Secretariat	40	Sawarikulam Settlement Site
7	Thirukudavai Church	41	Sengalappattu Settlement Site
8	St. Peter's Church	42	Kondalukkulam Thoma Puthi Settlement Site
9	Akkavai Fort	43	Sengalappattu Settlement Site
10	Kayls Island Fort	44	Veduthalukkulam Pkayar Koid Madam
11	Jeppia Cemetery	45	Akathukkulam Settlement Site
12	Ruins of Kayls Dutch Church	46	Mundankutti Ambalama
13	Kayls St. Anthony's Church	47	Sagambaram Ruins (Monastery Complex)
14	St. Anthony's Bishop House	48	Mullaitivu Old Church
15	Dutch Church, Marakadu	49	Mullaitivu Fort Ruins
16	Porters Site	50	Old Mosque, Mullaitivu
17	Kulmaru Supply Tower	51	Mullaitivu Mosque
18	Mamalakki Church	52	Dutch Ruins in Mamalakki (Church)
19	Swan Koid, Mamalakki	53	Queen's Towers, Deft Island
20	Settlement Site, Mamalakki	54	Bombay Tree
21	Koetharikulam Shivan Koid	55	Dutch Fort
22	Settlement Site, Kuelthammaru	56	Deft Cemetery
23	Mangan Koid, Goumadam	57	Chattamalai Ruins (Dagap Mount)
24	Settlement Site, Koid Ruins	58	Royana Ruins (Dagap Mount)
25	Settlement Site, Koid Ruins	59	Kankasanthuram Light House
26	Sunary Tower, Unumalai	60	Ruins in Kankasanthuram Koid
27	Aden's Tomb, Unumalai	61	Kankasanthuram Ruins
28	Thakammaru Old Hospital	62	Mullaitivu Ruins (Bridge Case)
29	Takammaru Jetty	63	Mullaitivu Ruins
30	Portuguese Church, Kappaluk	64	Ancient Port of Mullaitivu
31	Chaffthodasam Ruins Church	65	Mullaitivu Excavation Site (Ruins)
32	Baldwin Tree, Kappaluk	66	Thirukudavai Ruins Koid
33	Mamalakki Dutch Fort	67	Mamalakki Raja Maha Viharaya
34	St. Mary's Church	68	Kuladai Marichchi Motion Kalam Ruins

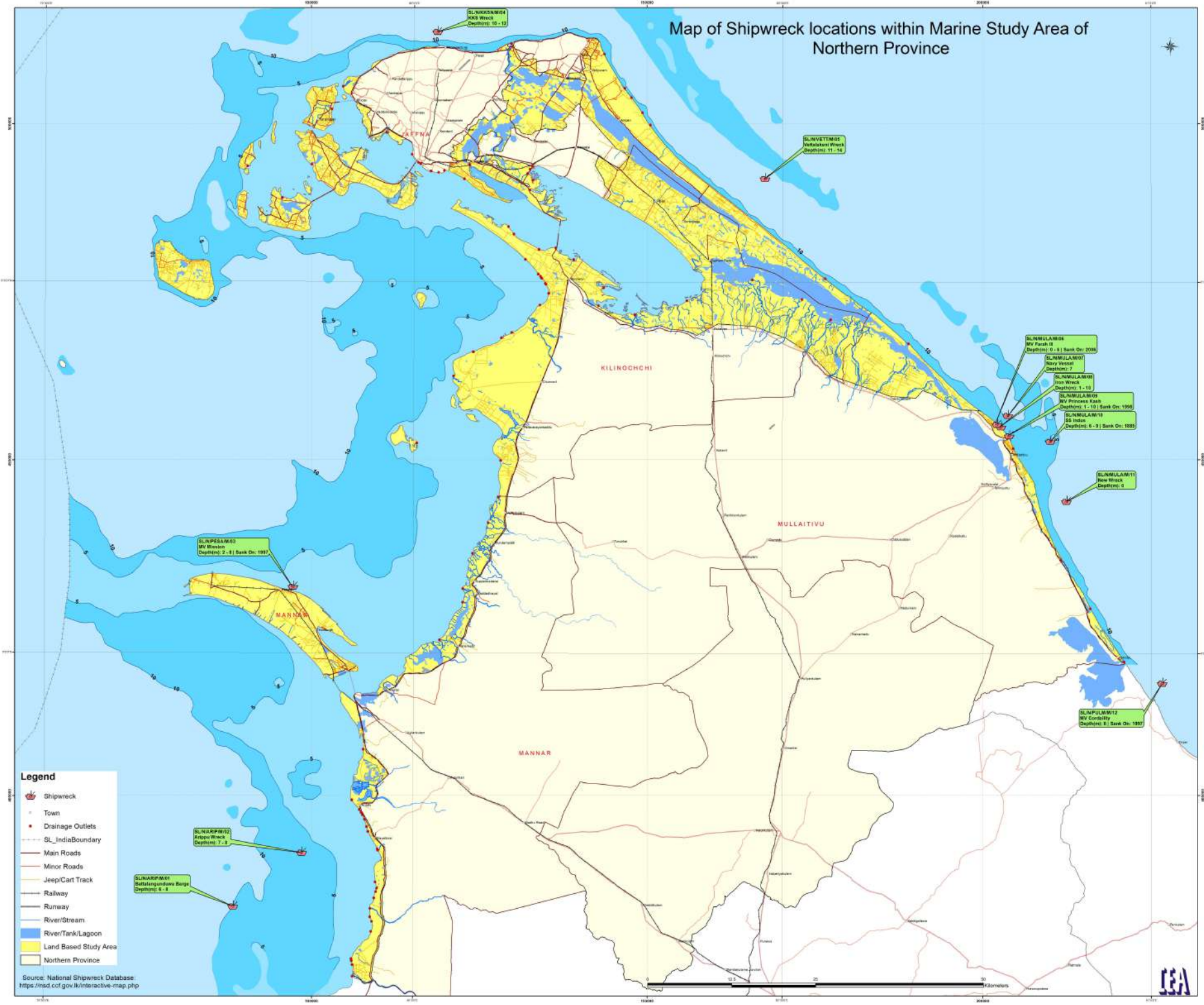
Legend

- Town
- Archaeological Sites
- Main Roads
- Minor Roads
- Railway
- Roadway
- SEA Study Area
- Province Boundary
- JAFNA DISTRICT
- KILINOCHCHI DISTRICT
- MANNAR DISTRICT
- MULLAITIVU DISTRICT
- VAVUNIYA DISTRICT

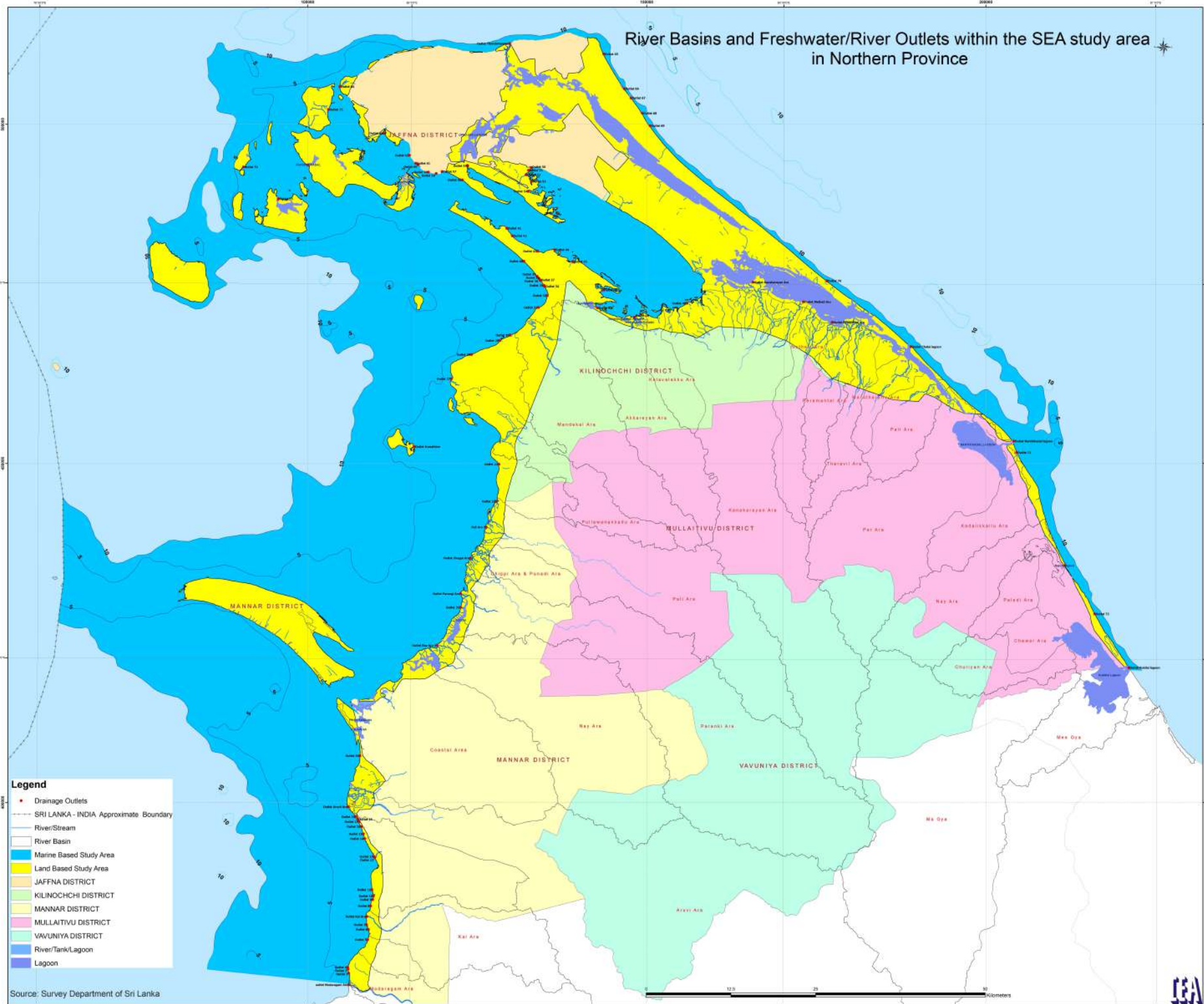
Source: Department of Archaeology



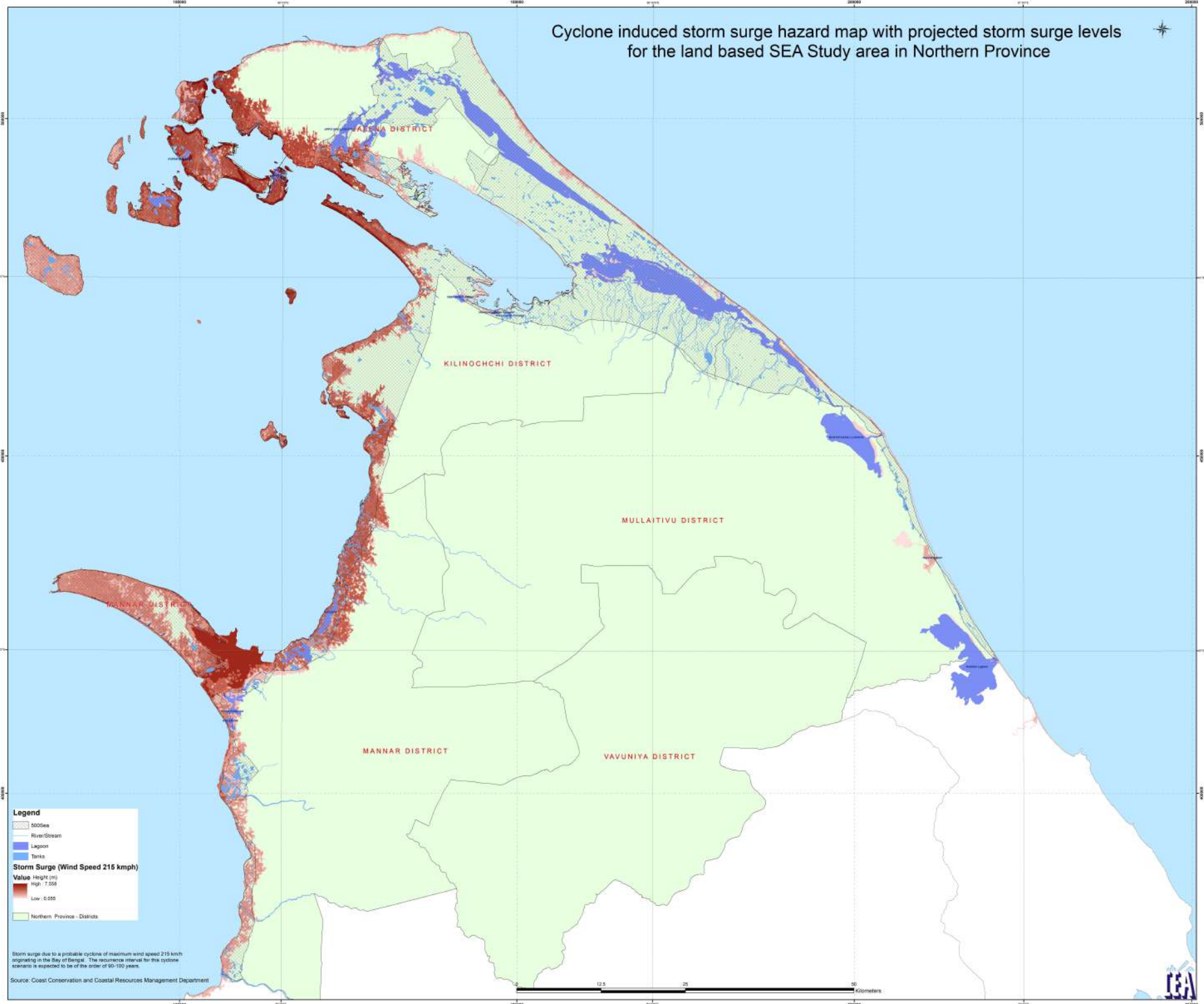
Map of Shipwreck locations within Marine Study Area of Northern Province



River Basins and Freshwater/River Outlets within the SEA study area in Northern Province



Cyclone induced storm surge hazard map with projected storm surge levels for the land based SEA Study area in Northern Province



Legend

- 500Sea
- River/Stream
- Lagoon
- Tanks

Storm Surge (Wind Speed 215 kmph)

Value - Height (m)

- High - 7.25
- Low - 0.05

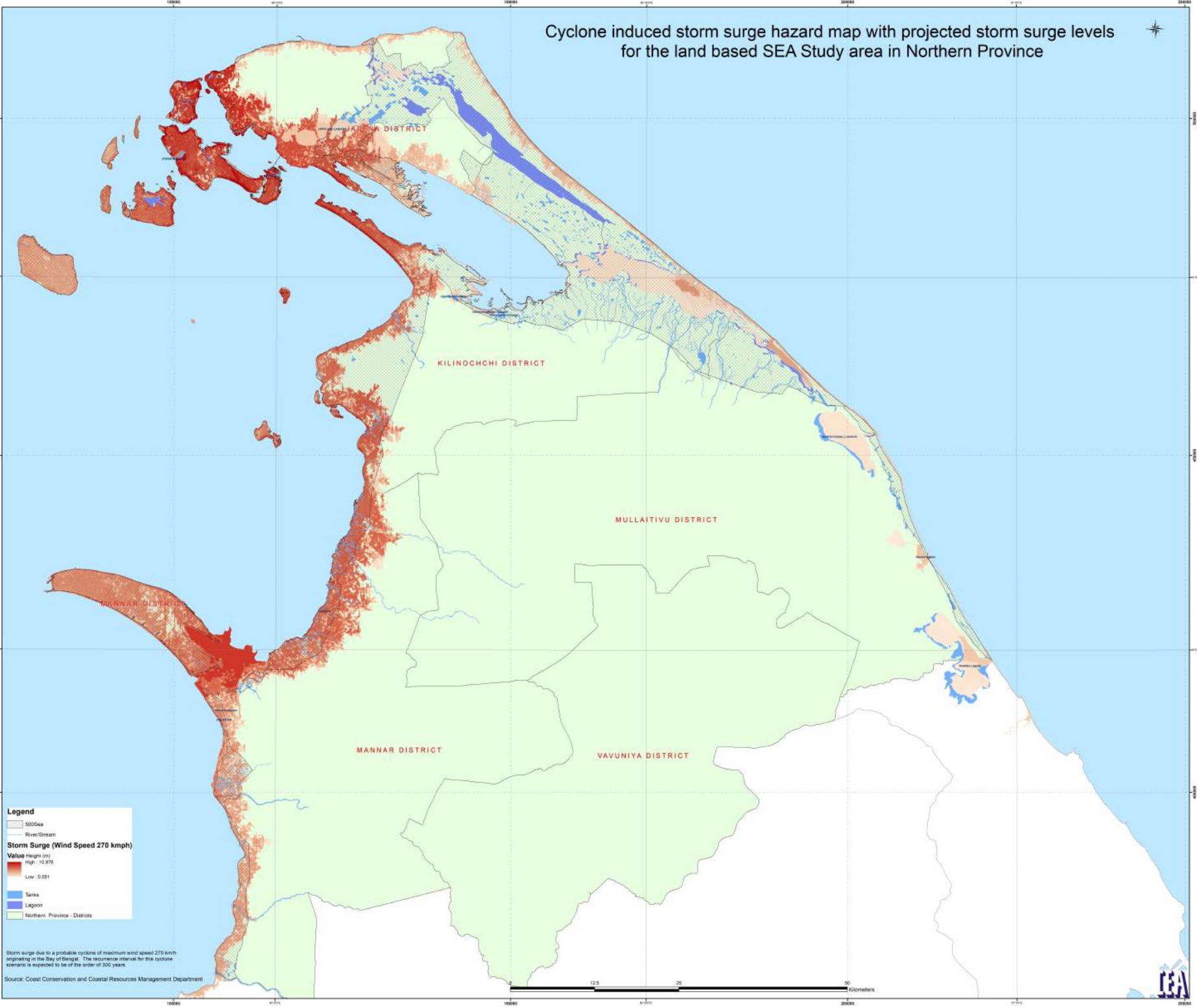
Northern Province - Districts

Storm surge due to a probable cyclone of maximum wind speed 215 kmph originating in the Bay of Bengal. The recurrence interval for this cyclone scenario is expected to be of the order of 50-100 years.

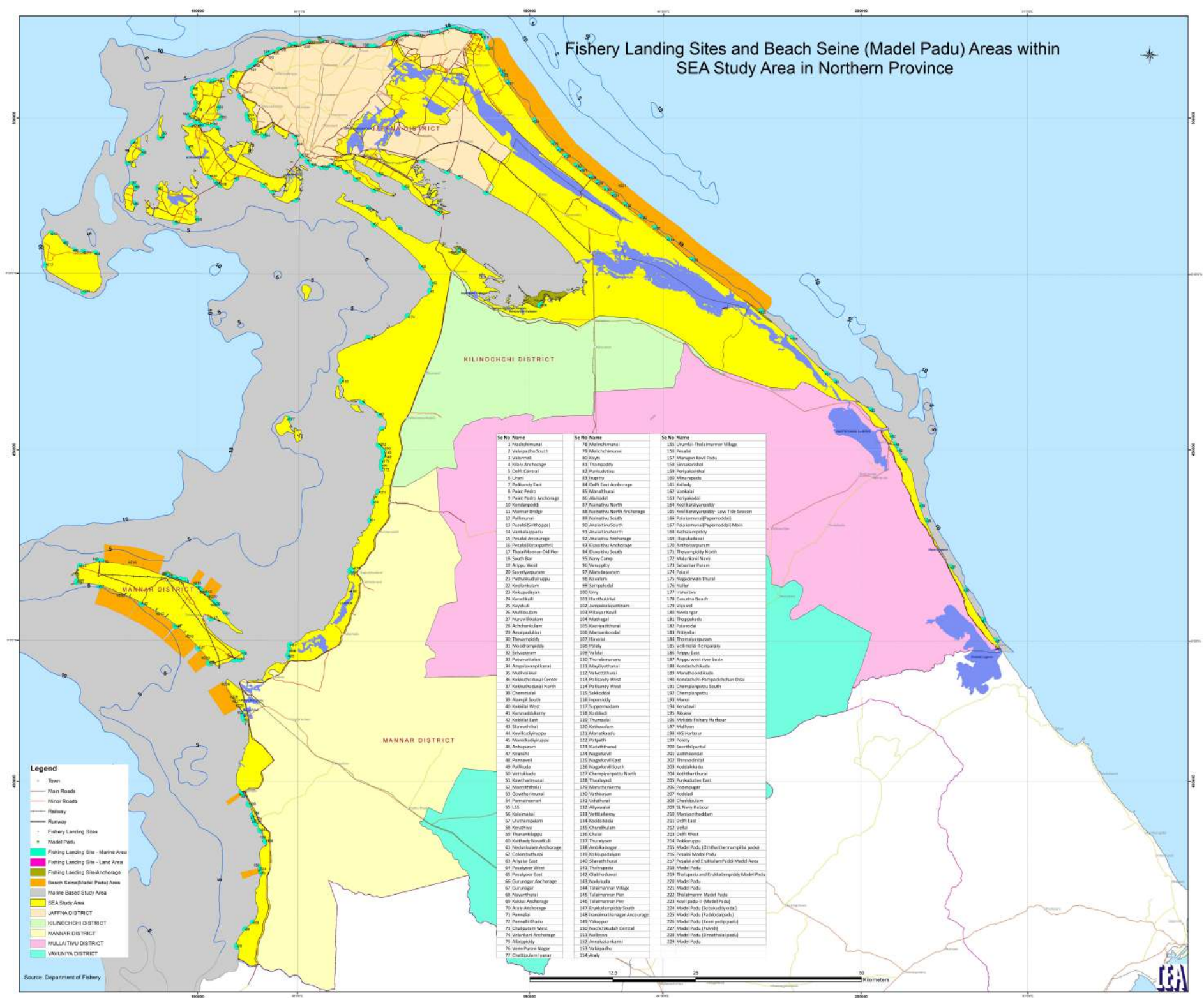
Source: Coast Conservation and Coastal Resources Management Department



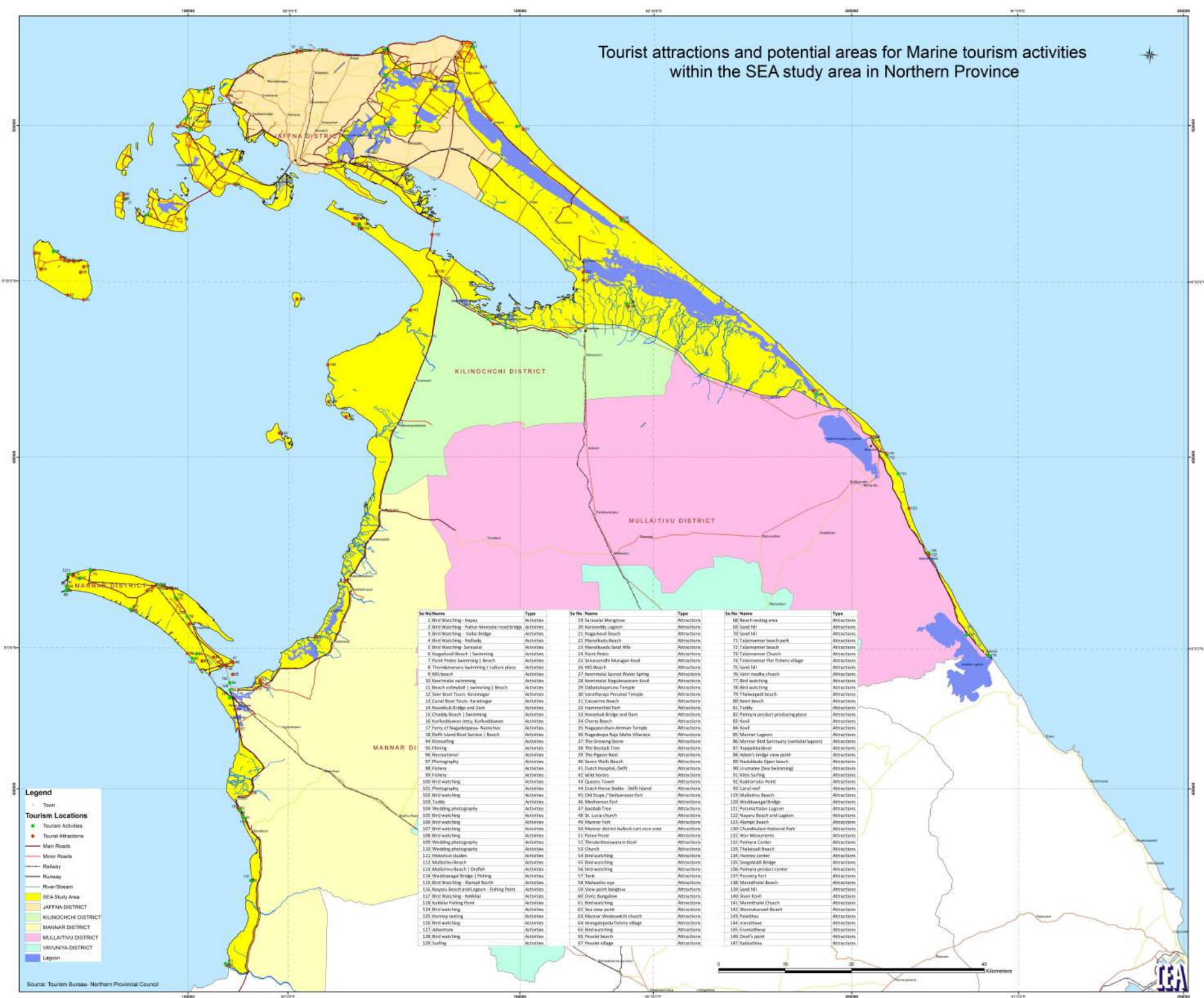
Cyclone induced storm surge hazard map with projected storm surge levels for the land based SEA Study area in Northern Province



Fishery Landing Sites and Beach Seine (Madel Padu) Areas within SEA Study Area in Northern Province



Tourist attractions and potential areas for Marine tourism activities within the SEA study area in Northern Province



Proposed and Existing Renewable Energy Development Projects within the SEA Study Area in Northern Province

Project Name	DSO Division / District	Type	Capacity (MW)	Planned Commencement
Pooneryn Phase 3 Solar Park (150MW)	Pooneryn DSO / Mannar district	Solar	150 MW	2025
Northern Solar 01 (50MW)	Korumbedy and Chakkilcheri DSO / Jaffna District	Solar	50 MW	2024
Northern Solar 02 (50MW)	Vadamaratchchi East DSO/Jaffna District	Solar	50 MW	2025
Pooneryn Phase 1 Wind Park (100MW)	Pooneryn DSO / Kilinochchi district	Wind	100 MW	2022
Pooneryn Phase 2 Wind Park (140MW)	Pooneryn DSO / Mannar district	Wind	140 MW	2024
Mannar - Capacity Extension Phase 1 Wind Park (50MW)	DSO/Mannar district	Wind	50MW	2024
Mannar Phase 2 Wind Park (275MW)	Mannar Town DSO/Mannar district	Wind	275MW	2024
Mannar Phase 3 (Mullukutur) Wind Park (100 MW)	Mannar DSO/ Mannar district	Wind	100MW	2024
Vadamaratchchi Wind Park (130MW)	Vadamaratchchi East/Jaffna District	Wind	130 MW	2026
Thambakappu Wind Farm Mannar		Wind	100 MW	
Thambakappu Wind M&L Jaffna		Wind		

- Legend**
- Town
 - Main Roads
 - Minor Roads
 - Railway
 - Roadway
 - Existing Wind Turbines
 - Proposed Wind Turbines
 - Proposed Solar Park
 - Gazetted Energy Development Areas
 - SEA Study Area
 - Province Boundary
 - JAFFNA DISTRICT
 - KILINOCHCHI DISTRICT
 - MANNAK DISTRICT
 - MULLAITIVU DISTRICT
 - VAVUNYA DISTRICT

Source: Sri Lanka Sustainable Energy Authority and Ceylon Electricity Board



Existing and Planned Industrial Zones and Salterns within SEA Study Area in Northern Province



- Legend**
- Town
 - Existing Industrial Estate
 - Proposed Industrial Zone
 - Main Roads
 - Minor Roads
 - Railway
 - Runway
 - Existing Industrial Zones and Salterns
 - SEA Study Area
 - Province Boundary
 - JAFFNA DISTRICT
 - KILINOCHCHI DISTRICT
 - MANNAR DISTRICT
 - MULLAITIVU DISTRICT
 - VAVUNIYA DISTRICT

Source: Land Use Policy Planning Division(LUPPD),
Department of Industries- Northern Provincial Council

0 12.5 25 50 Kilometers



Demining Progress within SEA Study Area in Northern Province



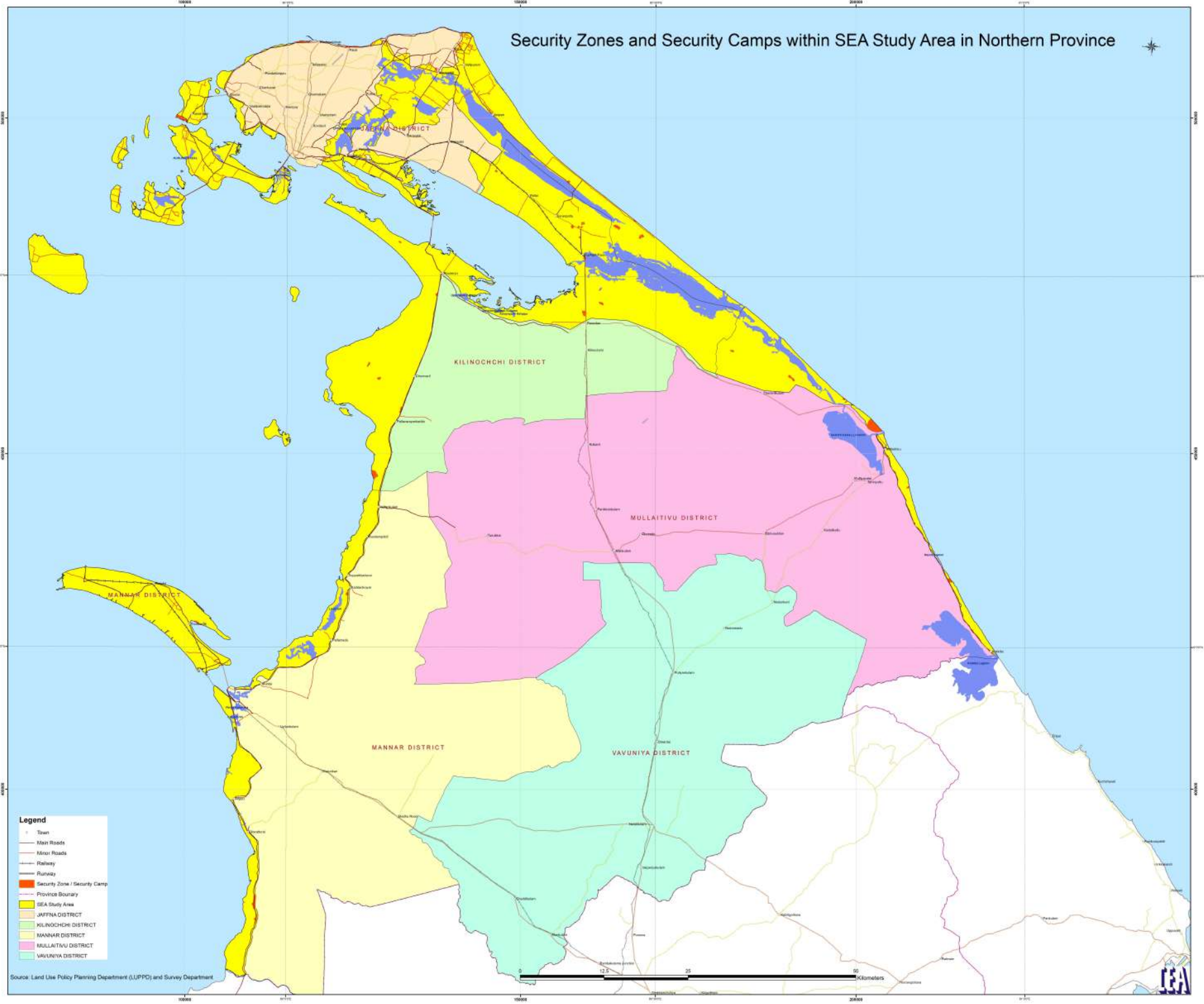
- Legend**
- Town
 - Main Roads
 - Minor Roads
 - Railway
 - Roadway
 - Mine Cleared Areas
 - Demining in Progress Areas
 - To be Cleared Area
 - Demining Suspended Area
 - SEA Study Area
 - Province Boundary
 - JAFFNA DISTRICT
 - KILINOCHCHI DISTRICT
 - MANNAR DISTRICT
 - MULLAITIVU DISTRICT
 - VAVUNIYA DISTRICT

Source: National Mine Action Centre

0 12.5 25 50 Kilometers



Security Zones and Security Camps within SEA Study Area in Northern Province



Legend

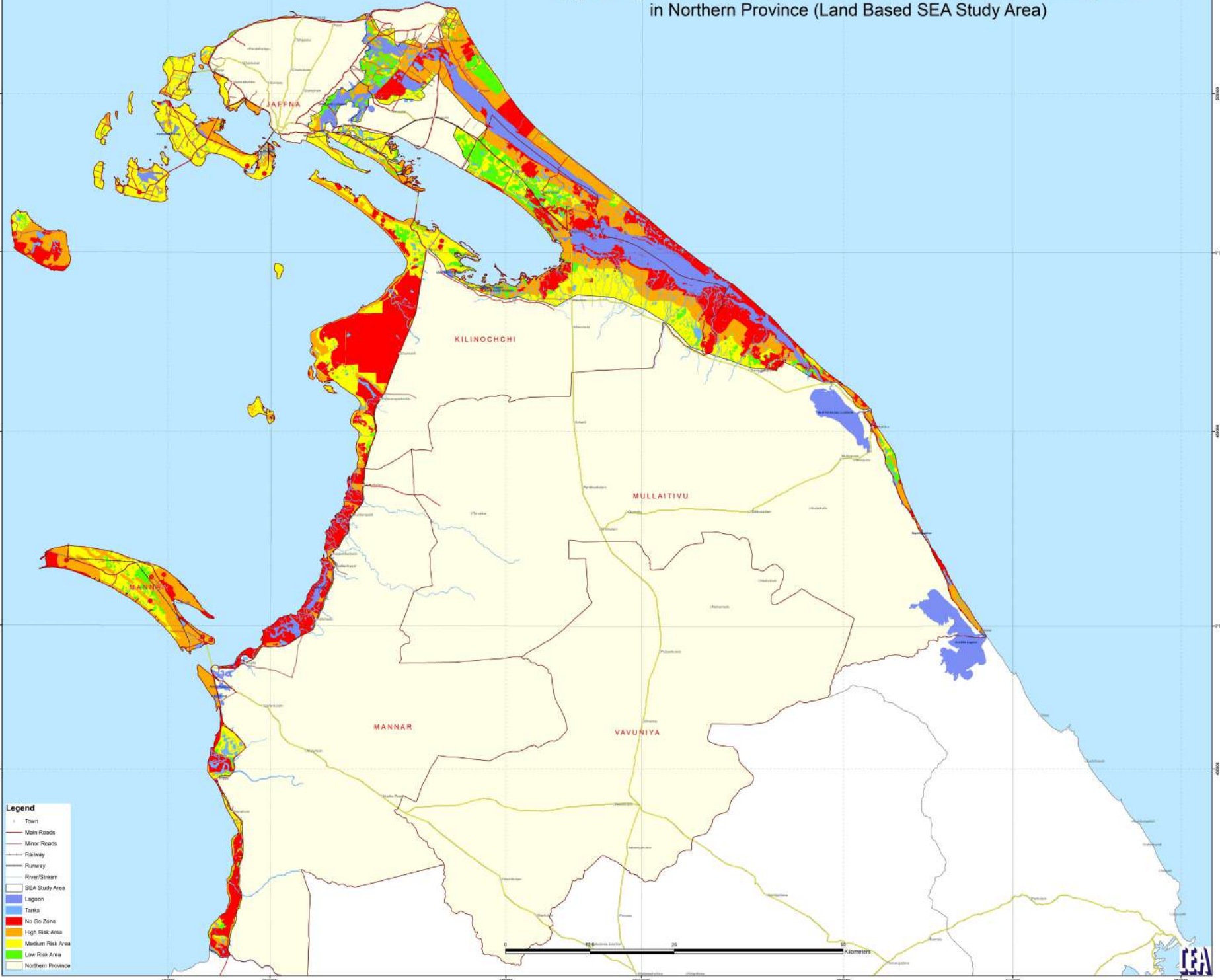
- Town
- Main Roads
- Minor Roads
- Railway
- Railway
- Security Zone / Security Camp
- Province Boundary
- SEA Study Area
- JAFFNA DISTRICT
- KILINOCHCHI DISTRICT
- MANNAR DISTRICT
- MULLAITIVU DISTRICT
- VAVUNIYA DISTRICT

Source: Land Use Policy Planning Department (LUPPD) and Survey Department

0 12.5 25 50 Kilometers



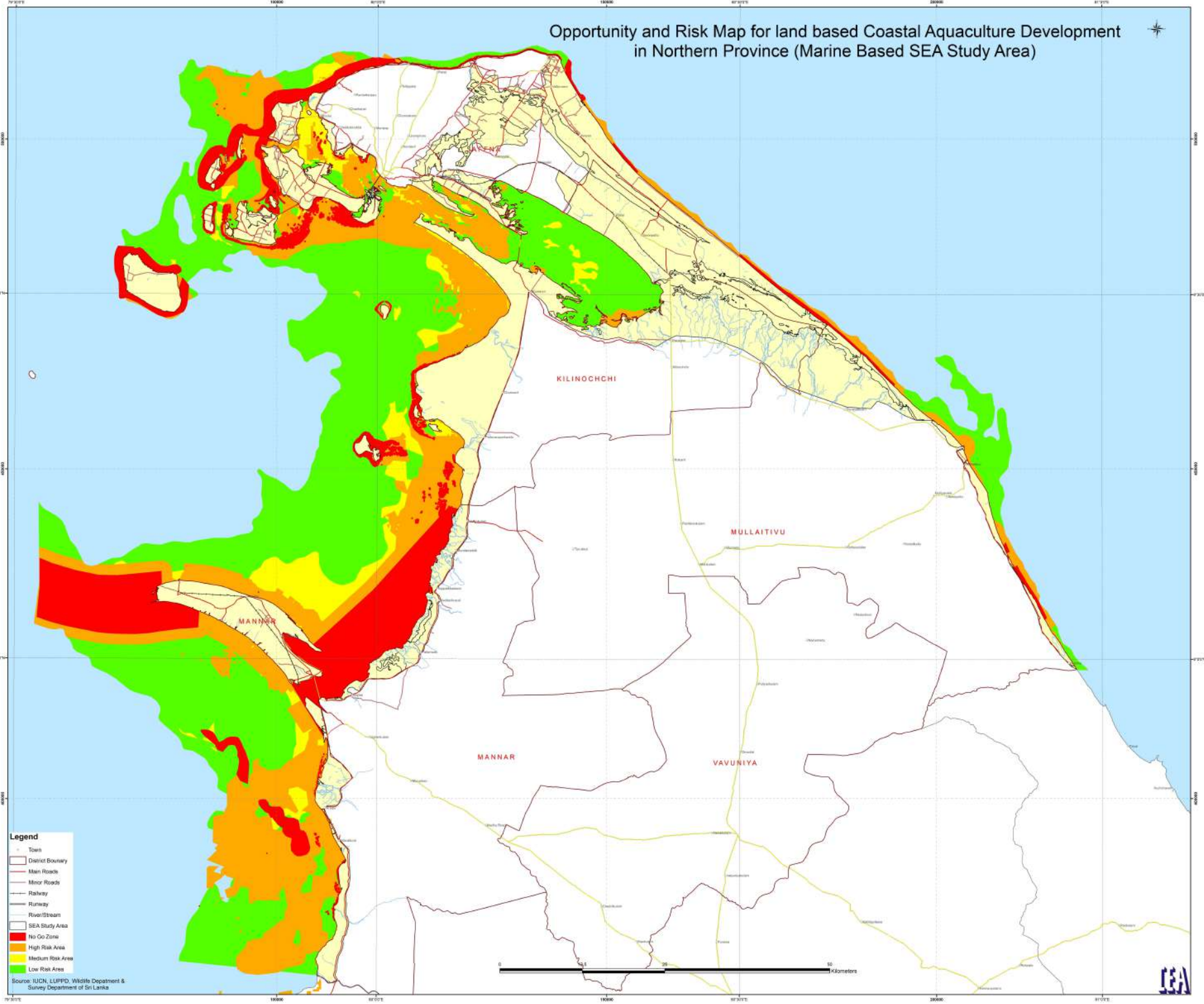
Opportunity and Risk Map for land based Coastal Aquaculture Development in Northern Province (Land Based SEA Study Area)



- Legend**
- Town
 - Main Roads
 - Minor Roads
 - Railway
 - Runway
 - River/Stream
 - SEA Study Area
 - Lagoon
 - Tanks
 - No Go Zone
 - High Risk Area
 - Medium Risk Area
 - Low Risk Area
 - Northern Province



Opportunity and Risk Map for land based Coastal Aquaculture Development in Northern Province (Marine Based SEA Study Area)



- Legend**
- Town
 - District Boundary
 - Main Road
 - Minor Road
 - Railway
 - Runway
 - River/Stream
 - SEA Study Area
 - No Go Zone
 - High Risk Area
 - Medium Risk Area
 - Low Risk Area

Source: IUCN, LUPPD, Wildlife Department & Survey Department of Sri Lanka



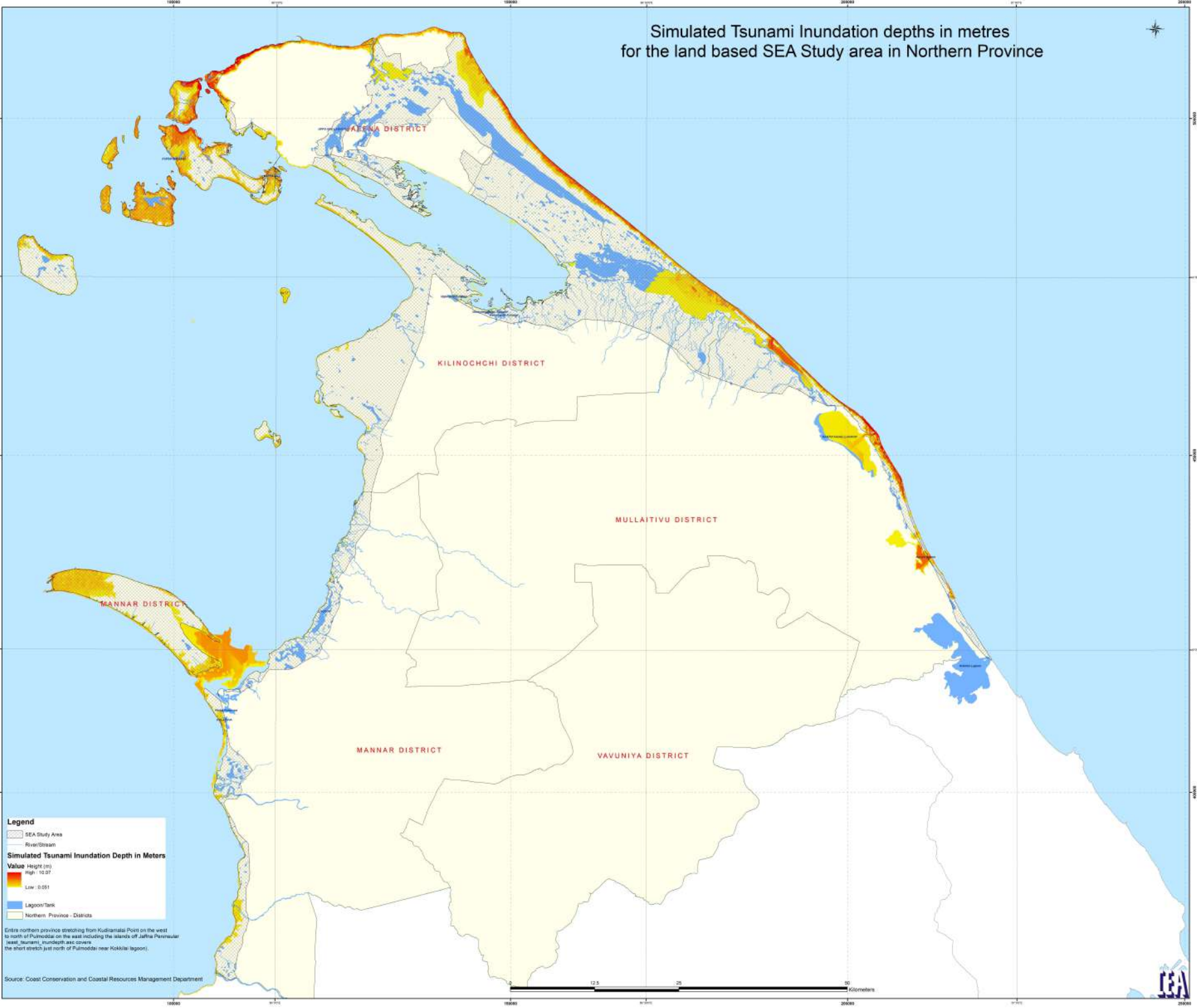
Land use and Land Cover within the SEA Study Area in Northern Province



Legend

- Town
- Main Roads
- Minor Roads
- Railway
- Runway
- SEA Study Area
- Northern Province
- Homesteads/ Home Garden
- Paddy
- Abandoned Paddy
- Seasonal Crops
- Agricultural Farms
- Cashew
- Coconut
- Palmyrah
- Sugar Cane
- Dense Forest
- Open Forest
- Shrub Land
- Grass Land
- Forest Plantation
- Mangroves
- Industrial Site
- Cemetery
- Others
- Areas with exposed rocks
- Security Camps/Security Zones
- Playgrounds
- Barren Lands
- Sandy Areas
- Sand Dunes
- Service Center
- Unfilled Lands
- Temple
- Urban Area
- Marsh
- Aquatic Farms
- Lagoon
- Natural Ponds
- River/Stream/Tank
- Water Hole
- Province Boundary
- JAFFNA
- KILINOCHCHI
- MANNAR
- MULLAITIVU
- VAVUNIYA

Simulated Tsunami Inundation depths in metres for the land based SEA Study area in Northern Province



Legend

SEA Study Area

River/Stream

Simulated Tsunami Inundation Depth in Meters

Value Height (m)

High - 10.07

Low - 0.051

Lagoon/Tank

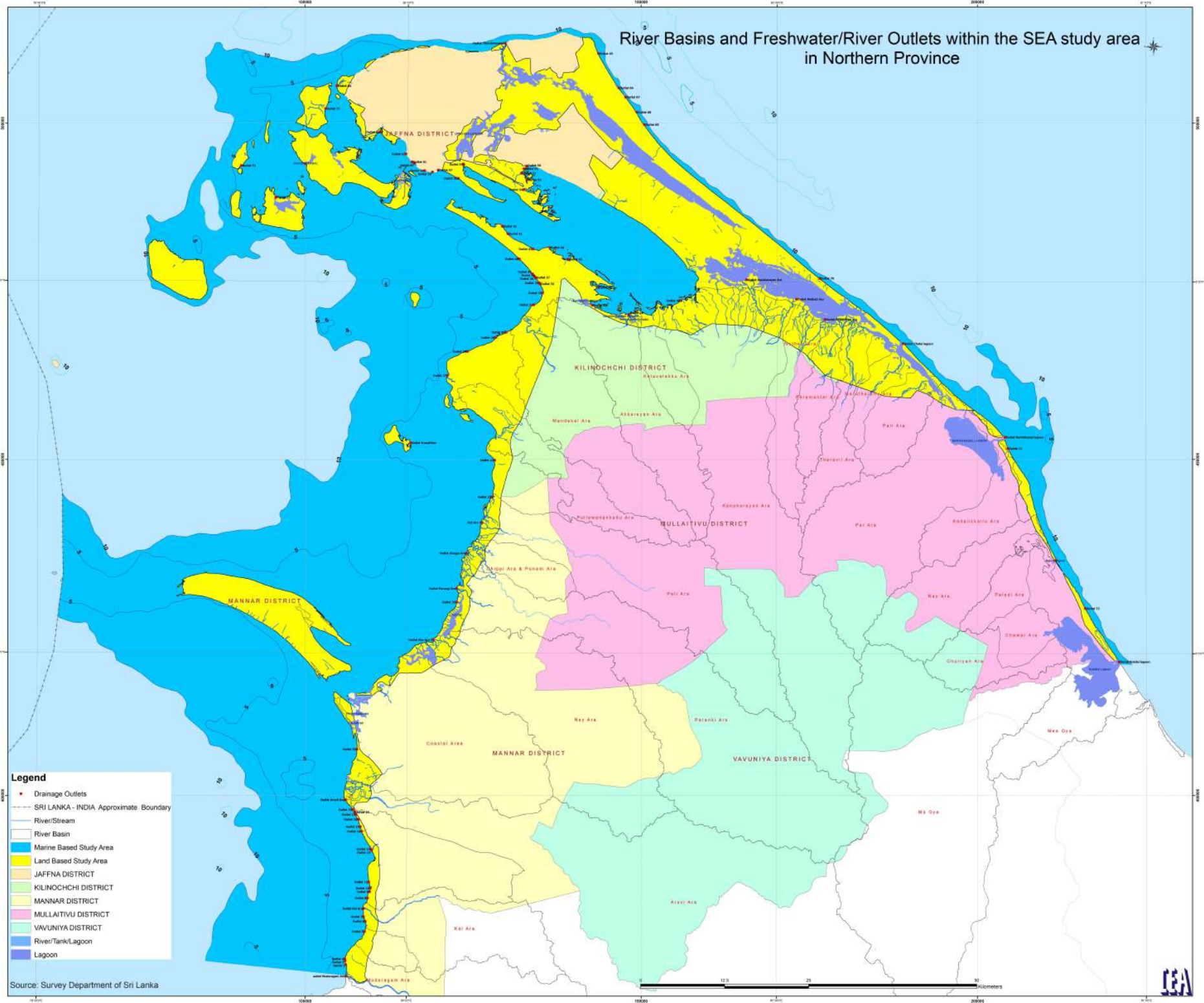
Northern Province - Districts

Entire northern province stretching from Kudiramala Point on the west to north of Pulmodai on the east including the islands off Jaffna Peninsula (east, Mannar, north) etc. covers the short stretch just north of Pulmodai near Kikkila lagoon.

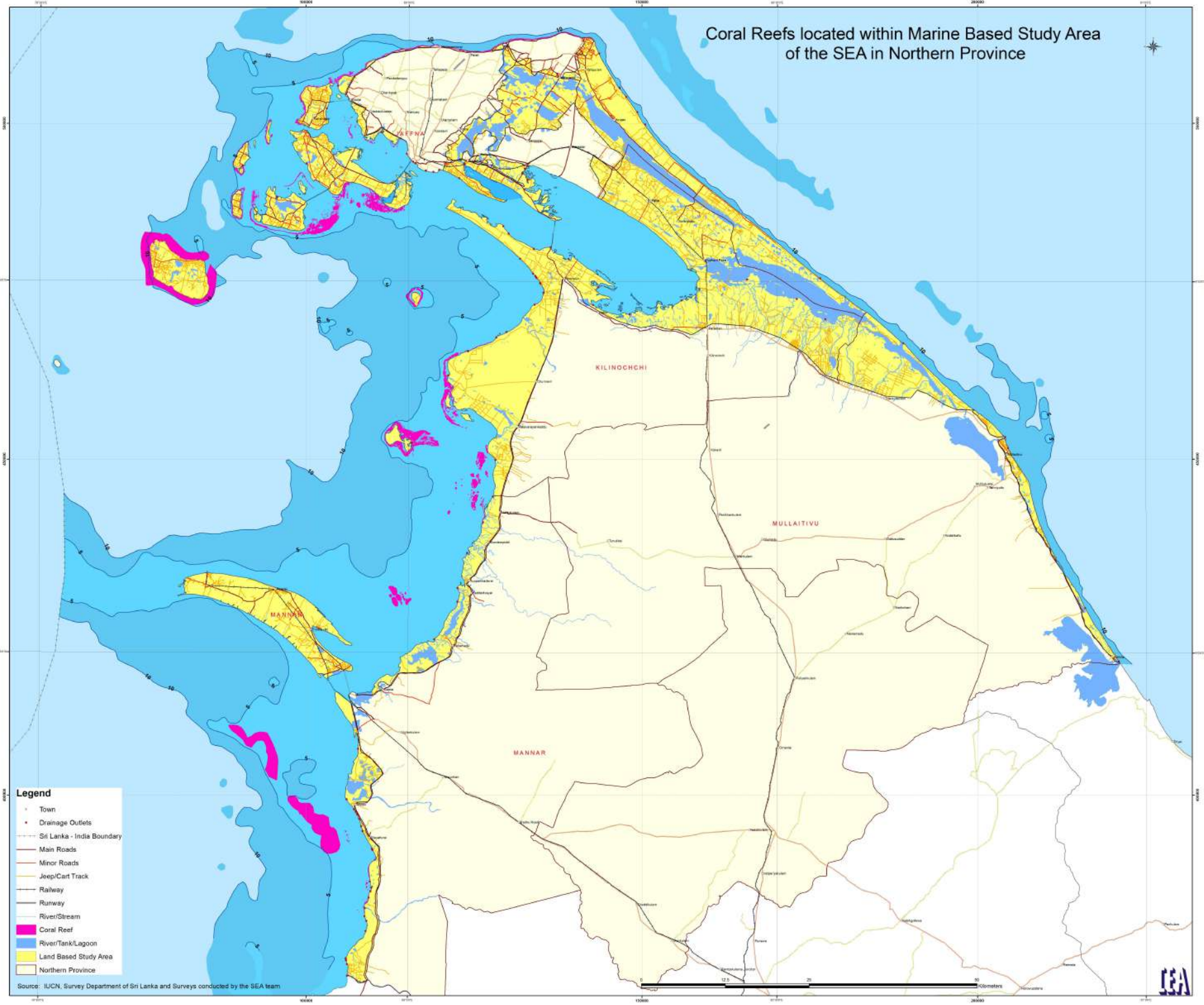
Source: Coast Conservation and Coastal Resources Management Department



River Basins and Freshwater/River Outlets within the SEA study area in Northern Province



Coral Reefs located within Marine Based Study Area of the SEA in Northern Province



- Legend**
- Town
 - Drainage Outlets
 - Sri Lanka - India Boundary
 - Main Roads
 - Minor Roads
 - Jeep/Car Track
 - Railway
 - Runway
 - River/Stream
 - Coral Reef
 - River/Tank/Lagoon
 - Land Based Study Area
 - Northern Province

Source: IUCN, Survey Department of Sri Lanka and Surveys conducted by the SEA team



Mangrove Areas located within Study Area of the SEA in Northern Province



Source: LUPPD & Survey Department of Sri Lanka and Surveys conducted by the SEA team

Sea Grass beds located within Marine Based Study Area of the SEA in Northern Province



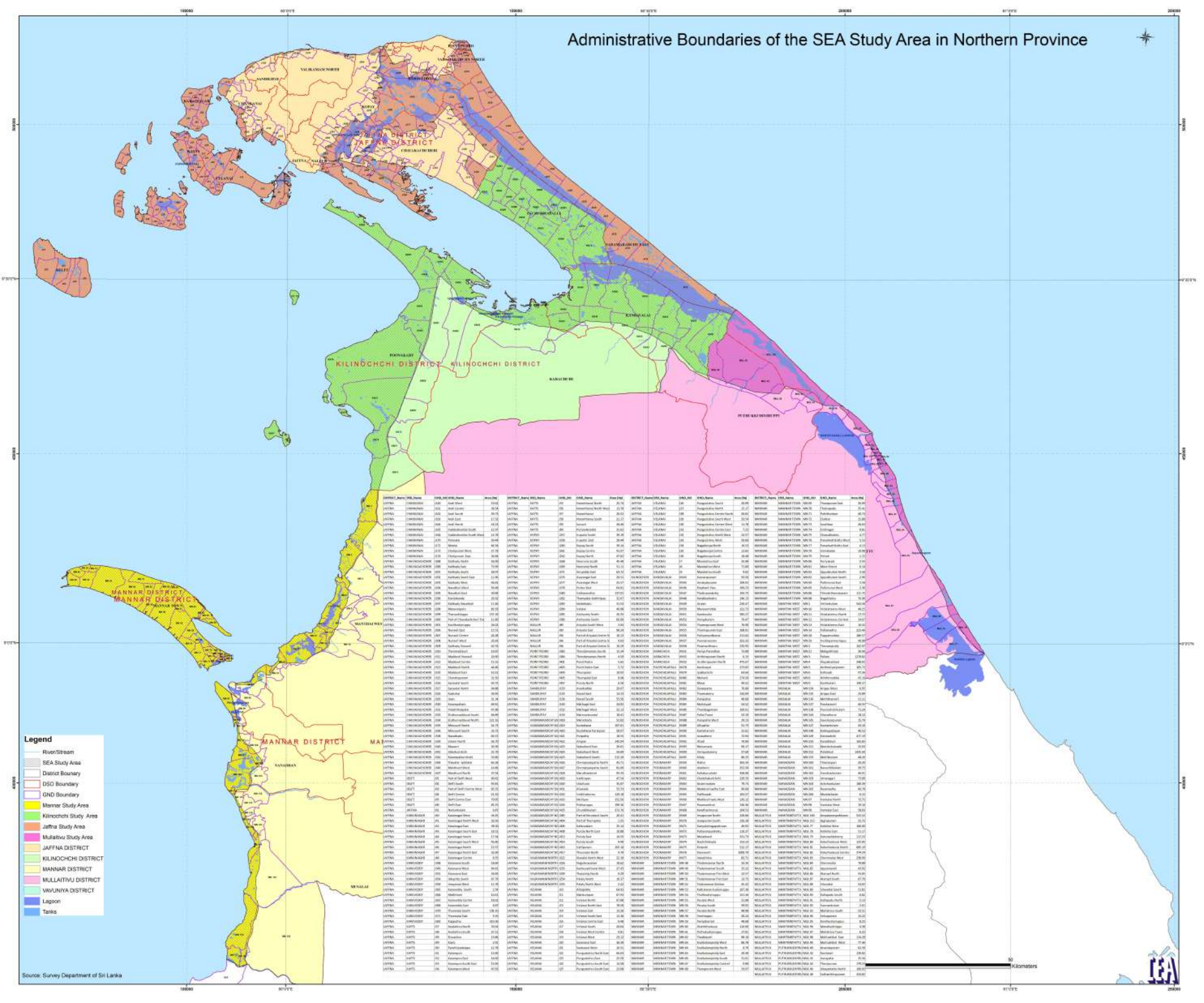
Source: IUCN, NARA & Survey Department of Sri Lanka and Surveys conducted by the SEA team

Sand dunes, Tidal Flats and Salt Marshes located within SEA Study area of Northern Province

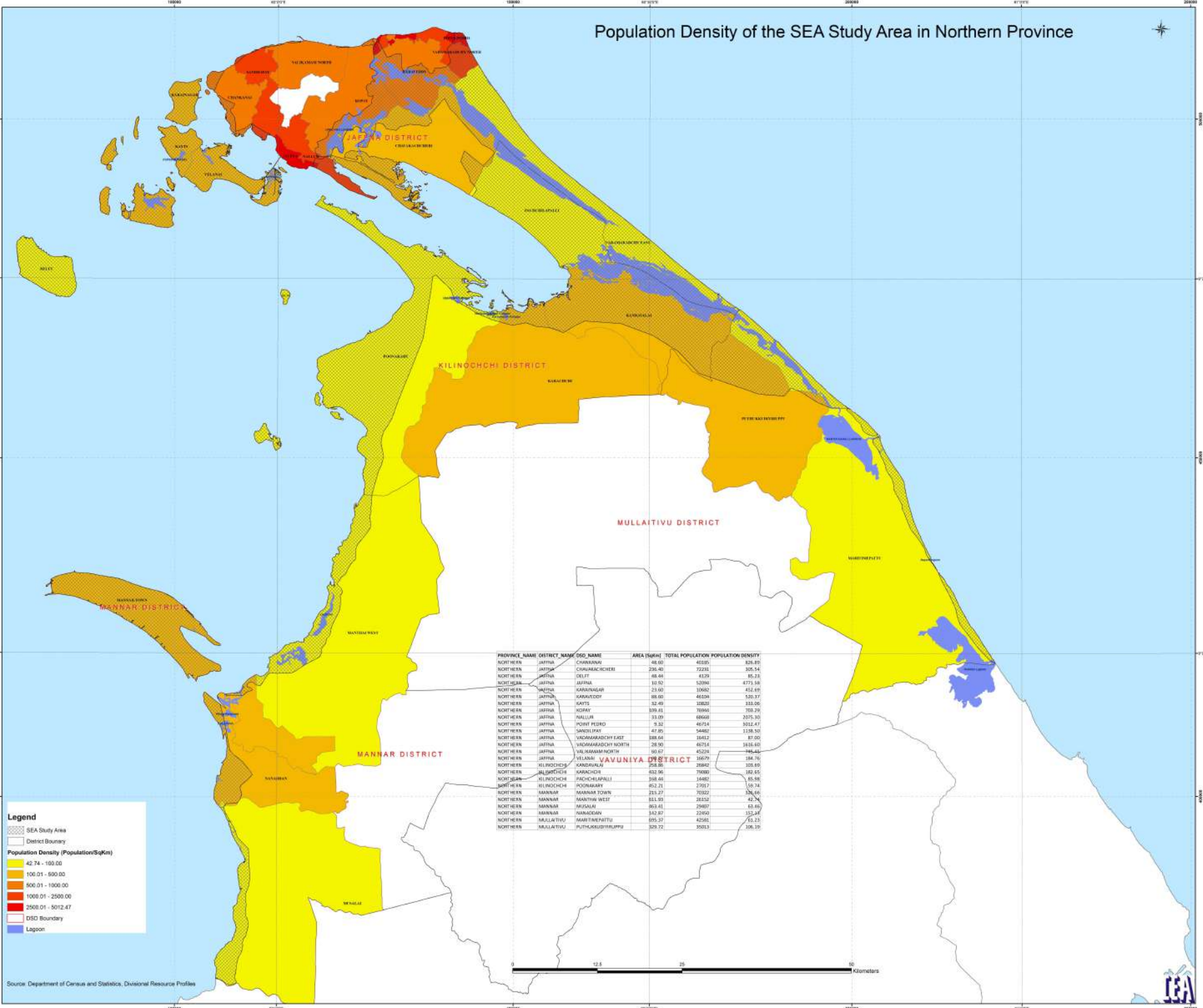


Source: LUPPD, Survey Department of Sri Lanka and Surveys conducted by the SEA team

Administrative Boundaries of the SEA Study Area in Northern Province



Population Density of the SEA Study Area in Northern Province



Legend

- SEA Study Area
- District Boundary
- Population Density (Population/Sqkm)
- 42.74 - 100.00
- 100.01 - 500.00
- 500.01 - 1000.00
- 1000.01 - 2500.00
- 2500.01 - 5012.47
- DSO Boundary
- Lagoon

PROVINCE NAME	DISTRICT NAME	DCO NAME	AREA (Sqkm)	TOTAL POPULATION	POPULATION DENSITY
NORTHERN	JAFFNA	CHANNAYA	48.00	40297	839.55
NORTHERN	JAFFNA	CHUNAKACHCHERI	236.40	72281	305.54
NORTHERN	JAFFNA	DELT	88.48	41293	466.23
NORTHERN	JAFFNA	JAFPAI	181.50	52084	287.16
NORTHERN	JAFFNA	KANNANAGAR	23.60	10682	452.69
NORTHERN	JAFFNA	KANNAYODI	85.00	46334	545.17
NORTHERN	JAFFNA	KATTI	12.49	28837	230.86
NORTHERN	JAFFNA	KOFFI	109.81	76946	700.29
NORTHERN	JAFFNA	KALLAR	33.09	88468	2675.30
NORTHERN	JAFFNA	POYIY PERI	5.32	40714	7652.47
NORTHERN	JAFFNA	SANDILPAT	47.85	54487	1138.50
NORTHERN	JAFFNA	VADAKKARACHCHI EAST	188.68	16812	87.00
NORTHERN	JAFFNA	VADAKKARACHCHI NORTH	28.50	40714	1428.40
NORTHERN	JAFFNA	VILAKKAM NORTH	90.67	45234	498.45
NORTHERN	JAFFNA	VELANAI	126.79	18476	146.16
NORTHERN	JAFFNA	KANDAKKAL	228.96	26842	117.69
NORTHERN	KILINOCHCHI	KARACHCHI	432.96	70080	161.65
NORTHERN	KILINOCHCHI	PACHCHILAPALLI	168.48	14682	86.58
NORTHERN	KILINOCHCHI	POONAGARY	492.21	27027	54.91
NORTHERN	MANNAR	MANNAR TOWN	213.27	70322	329.44
NORTHERN	MANNAR	MANNAR WEST	611.93	26132	42.74
NORTHERN	MANNAR	MISALAI	893.41	29887	33.46
NORTHERN	MANNAR	MANNAR	142.87	22490	157.34
NORTHERN	MULLAITIVU	MARTIMEPATITU	695.37	42981	61.23
NORTHERN	MULLAITIVU	PUTHAKUDITHUPPU	328.72	30513	92.80

