



# **GFECP**

## **GUIANAS FORESTS & ENVIRONMENTAL CONSERVATION PROJECT**

**The Sea Turtles of Suriname 2002 Project:**

# **Aerial Survey of the Coastline of Eastern Suriname and Nesting Beach Characteristics**

Prepared by:

*E. Goverse*



In collaboration with the Foundation for Nature Conservation Suriname (STINASU).

January 2003

**This Study was commissioned by the World Wildlife Fund – Guianas Forests and Environmental Conservation Project (GFECP). The views expressed herein are those of the author(s) and do not necessarily reflect the views of the World Wildlife Fund.**



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<b>Table of contents</b>	<b>Page</b>
General description	1
Aerial survey of the Surinam coastline between the Marowijne and Suriname River 2002	4
Beach characteristics of: Babunsanti, Samsambo, Kolukumbo and Matapica	14
GPS coordinates	19
References	21

## General description

### Introduction

The Surinam coast forms part of the extensive tropical mud coast between the Amazon River (Brazil) and the Orinoco River (Venezuela). Due to the westward-oriented Guyana current and north easterly trade winds, the Surinamese coastline is highly dynamic and subject to successive phases of beach erosion and accretion. The coastline is dominated by extensive mudflats, which are overgrown with black mangrove or *parwa* forest at the higher levels. Sandy beaches can be found at only few places. Due to the dynamic character of the Surinamese coast, both the sandy beaches and the mudflats move in a westward direction. This is caused by erosion on the east side and accretion on the west side.

A substantial supply of mud originates from the Amazon River, while most of the sand originates from the Marowijne River or French Guiana. The sand is being transported westward by beach drift, the mud by the Guyana current. Where a mudflat has disappeared, the shore is no longer protected from the waves. As a result of this, large areas of beach or vegetation can be "eaten away" by the waves. On the other hand, if there is enough sand available, this can also be accreted on the shore.

When sandy beaches disappear, or shift westward, the nesting beaches for sea turtles do so too. Other beaches can accrete or can be newly formed in a short span of time. The length of the cycle of beach erosion and accretion is estimated at approximately 35 years. When mudflats are formed in front of a beach, access to the beach can be difficult for sea turtles, especially for the larger species. This will lead to a lesser suitability of a nesting beach, thereby locally reducing the number of nesting sea turtles.

### The Galibi Nature Reserve

The Galibi Nature Reserve comprises of (south to north) the beaches Galibi, Pruimenboom, Babunsanti and Thomas/Eilanti. These stretch out over a distance of approximately 11 km. The STINASU post Babunsanti, which includes the Warana Lodge, is situated on the border of Pruimenboom and Babunsanti beaches. The beaches consist of medium to coarse sand, and are generally bordered on the landward side by a steep slope of 0.5 to 1 m height. The vegetation, which varies from low scrub to forest, begins on top of these sandy ridges. At spring tide, which occurs twice a month during new moon and full moon, most of the beaches are submerged up to the vegetation line.

Green turtles (*Chelonia mydas*), locally called *krapé*, usually climb up the slope to nest between the vegetation. Most leatherbacks (*Dermochelys coriacea*), locally called *aitkanti*, stay on the beach proper and thus usually nest under the spring tide line. Olive ridleys (*Lepidochelys olivacea*), locally called *warana*, nest on the beach as well as on the border of the vegetation line. A small proportion of the leatherback turtles nest far below the spring tide line, causing those nests to be washed over by almost every high tide.

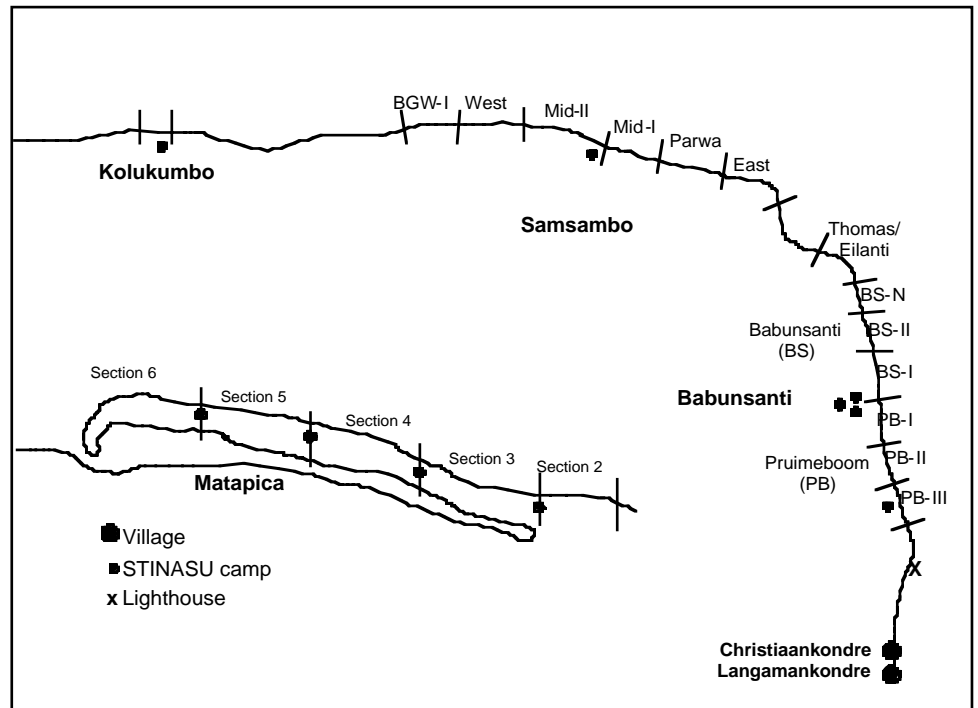
Beach erosion in the Galibi Nature Reserve is not apparent except for the southernmost parts - where the coast consists mainly of mangrove forest, causing the beach to be littered with uprooted trees - and the area around the "bend" between the Marowijne area and the Atlantic coast, where many mangrove trees are also uprooted. The beach Thomas/Eilanti, just westward of the bend, is characterized by a steep sand cliff where erosion still takes place. Along the beaches inside the estuary, no extensive mudflats like on the Atlantic coast will form, because mud is primarily carried by the Guyana current - which has little influence in the estuary itself.

Eilanti beach, situated just westward of the Marowijne estuary, used to be a world famous olive ridley nesting beach with thousands of *waranas* nesting per night up to the 1960's. Because of its location, Eilanti has been subject to many changes and nowadays the only remaining part is the present beach named Thomas/Eilanti. The mass nestings of *waranas*, or *arribadas*, also ended because of mass poaching of eggs and, killing of females in the past, as well as shrimp fisheries.

In the beginning of the 1990's, in front of the former Eilanti beach, a sand bank started to deposit. In less than ten years time, this sand bank has developed into a 7 km long, suitable nesting beach where high numbers of *aitkantis* are nesting. This beach is named Samsambo. Since 2001, most of this beach has become inaccessible for leatherback nesting due to extensive mud flats that have formed in front of it.

## Matapica

Another important nesting beach for sea turtles (leatherbacks, green turtles, olive ridleys and hawksbill turtles) is Matapica, a 10 km long beach situated east of Paramaribo. This beach is moving 1.5 km a year to the west, due to strong erosion on the eastern side and accretion on the western side.



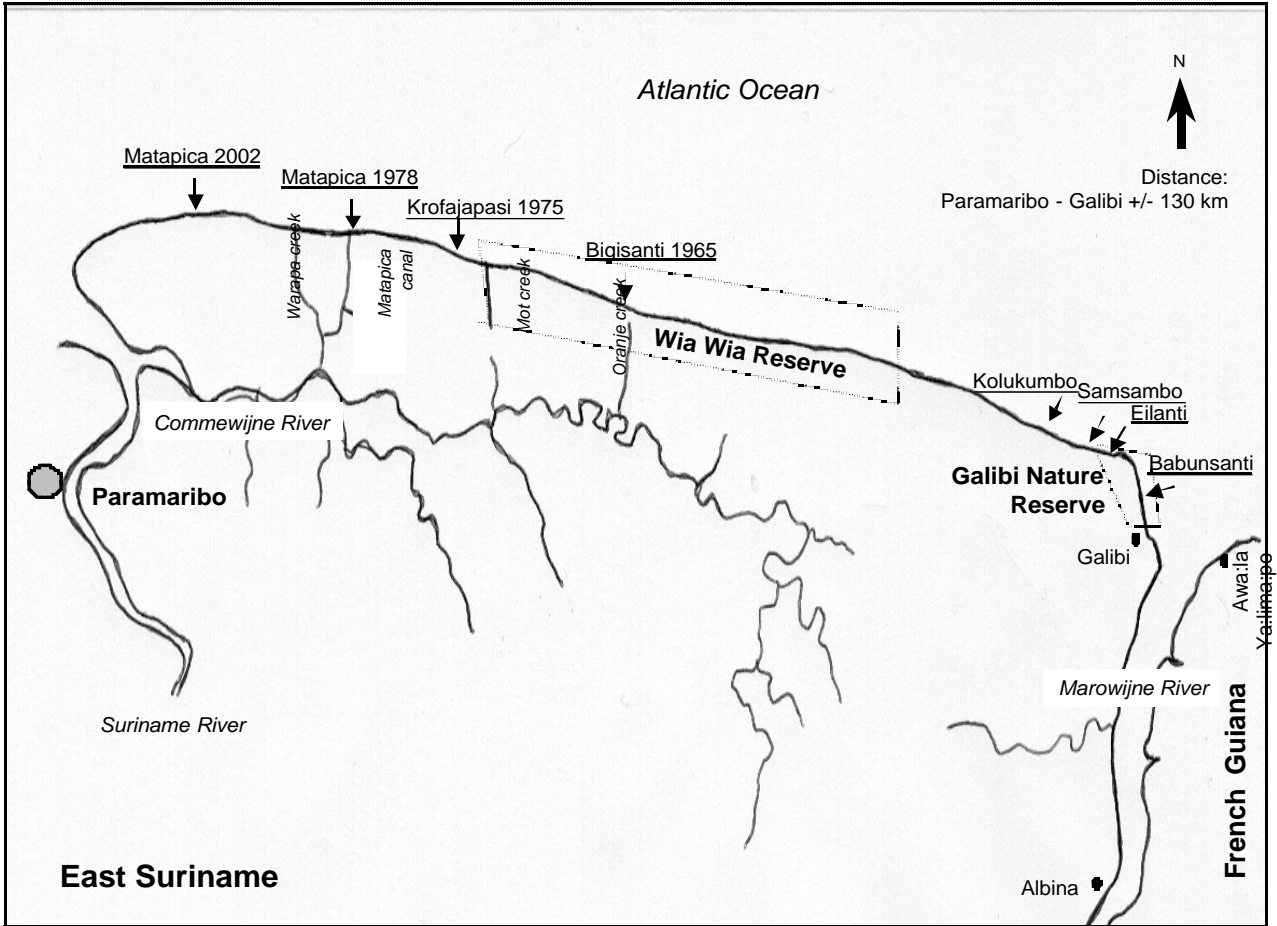
Map of all beaches and sections of Galibi and Matapica

### List of Abbreviations

BGW-I and II	Section 'Buitengebied West' – I and II
Section BS-I and II	Section 'Babunsanti' – I and II
Section BS-N	Section 'Babunsanti' – North
Section PB-I, II and III	Section 'Pruimenboom' – I, II and III

## Aerial survey 2002

Each year an aerial survey is done to check whether new nesting beaches have formed and to monitor changes of the existing nesting beaches. This aerial survey is conducted in the morning of May 25<sup>th</sup> 2002, during low tide. The pictures have been sorted on the same way as in the aerial survey report of 2002. With this report of Goverse and Hilterman (2002) it is easy to compare sections with each other to look at the changes in time. The report of 2002 contains also descriptions of the beaches and their characteristics.



Edo Goversse

**Aerial Survey of the Surinam Coastline  
between the Marowijne and Suriname River**

**2002**





1. Alusiaka, field station of Nature Conservation Department, border Galibi Nature Reserve



2. Lighthouse Galibi



3. Babunsanti, section PB-III



4. Babunsanti, section PB-III



5. Babunsanti, border sections PB-I and PB-II



6. Babunsanti, headquarters, border PB-I and BS-I



7. Babunsanti, headquarters, border PB-I and BS-I



8. Babunsanti, section BS-II



9. Babunsanti, section BS-N



10. Babunsanti, section Thomas/Eilanti



11. Babunsanti, field station Thomas/Eilanti



12. Babunsanti, section Thomas/Eilanti



13. Between section Thomas/Eilanti and Samsambo



14. Samsambo, section East



15. Samsambo, section East



16. Samsambo, section Parwa



17. Samsambo, section Mid-I



18. Samsambo, field station, section Mid-I





19. Samsambo, section Mid-I



20. Samsambo, border sections Mid-I and West



21. Samsambo, section BGW-I



22. Samsambo, border sections BGW-I and BGW-II



23. Border section BGW-II and Kolukumbo



24. Kolukumbo



25. Kolukumbo



26. Kolukumbo, field station



27. Kolukumbo



28. Kolukumbo



29. Kolukumbo



30. Kolukumbo



31. Westward of Kolukumbo



32. Wia Wia, stretch of sand



33. Wia Wia, stretch of sand



34. Wia Wia, sandbank



35. Wia Wia, sandbank

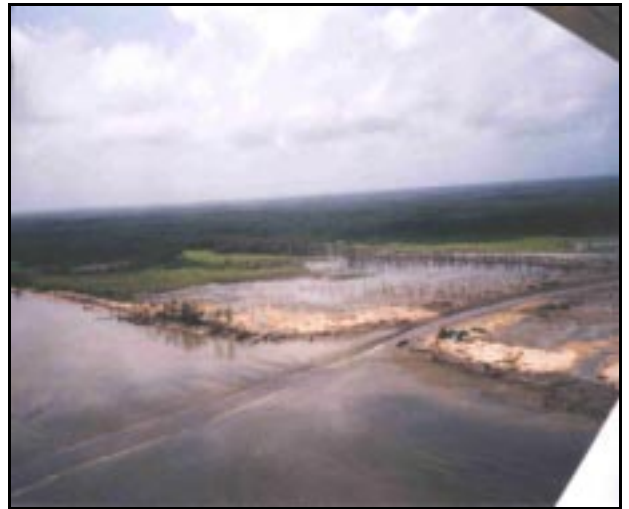


36. Wia Wia, sandbank





37. Matapica Canal



38. Warapa creek



39. Westward of Warapa creek



40. Matapica, most eastern part of section 3



41. Matapica, section 3



42. Matapica, campsite, border of sections 3 and 4



43. Matapica, section 4



44. Matapica, campsite, border of sections 4 and 5



45. Matapica, section 5



46. Matapica, border of sections 5 and 6



47. Matapica, section 6



48. Matapica, section 6





49. Matapica, section 6



50. Diana Beach, section 1



51. Diana Beach, campsite, border sections 3 and 4



52. Diana Beach, section 4



53. Braampunt



54. Braampunt

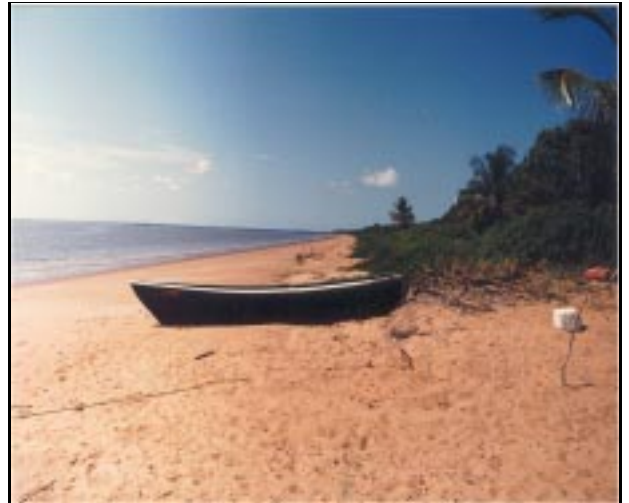
**Beach Characteristics of:**

**Babunsanti, Samsambo**  
**Kolukumbo and Matapica**



Babunsanti, section PB-I, enclosure

2002



Babunsanti, section PB-I

1999



Babunsanti, section BS-I

2000



Babunsanti, section BS-I

2000



Babunsanti, section BS-II

2002



Babunsanti, section BS-N

2002





Samsambo, section Mid-II

2000



Samsambo, section Mid-II

2000



Samsambo, section Mid-I

2000



Samsambo, section Mid-I

2000



Samsambo, section Parwa

2000



Samsambo, section East

1999



Kolukumbo, eastern side

2000



Kolukumbo

2002



Kolukumbo, campsite

2002



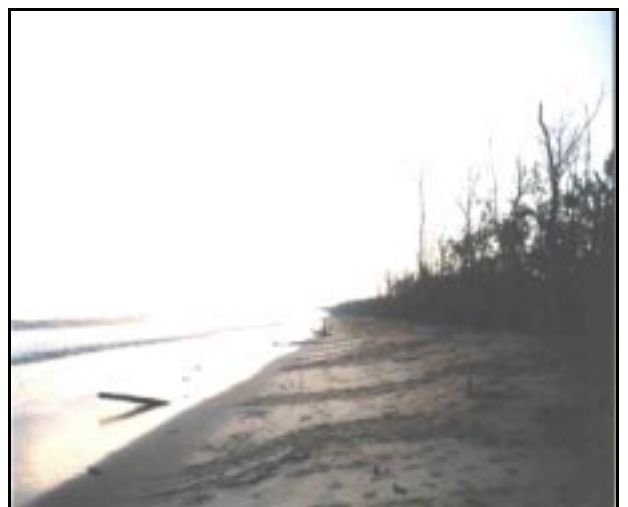
Kolukumbo, campsite

2002



Kolukumbo

2002



Kolukumbo, western side

2002



Matapica, section 6

2001



Matapica, section 6, head quarter

2001



Matapica, section 6

2001



Matapica, section 5

2001



Matapica, section 2

2001



Matapica, section 2

2002



## GPS coordinates

North	West	Location
05 46 530	053 59 927	Babunsanti, border sections PB-II and PB-III
05 46 661	053 59 984	Babunsanti, section PB-II
05 46 780	054 00 031	Babunsanti, section PB-II, end of the creek
05 46 889	054 00 087	Babunsanti, border sections PB-I and PB-II, TL 0 m
05 47 041	054 00 153	Babunsanti, section PB-I, TL 300 m
05 47 193	054 00 219	Babunsanti, section PB-I, TL 600 m
05 47 342	054 00 284	Babunsanti, section PB-I, TL 900 m
05 47 529	054 00 366	Babunsanti, section PB-I, TL 1270 m
05 47 646	054 00 415	Babunsanti, border sections PB-I and BS-I, TL 1500 m
05 47 657	054 00 448	Babunsanti, campsite
05 47 635	054 00 451	Babunsanti, border sections PB-I and BS-I, TL 1500 m
05 47 885	054 00 526	Babunsanti, section BS-I, TL 1986 m
05 48 122	054 00 658	Babunsanti, section BS-II, TL 2479 m
05 48 361	054 00 777	Babunsanti, section BS-II, TL 2961 m
05 48 378	054 00 788	Babunsanti, border sections BS-II and BS-N, TL 3000 m
05 48 614	054 00 868	Babunsanti, section BS-N
05 48 702	054 00 886	Babunsanti, section BS-N, mangroves
05 51 384	054 07 813	Kolukumbo, creek
05 51 452	054 08 029	Kolukumbo
05 51 552	054 08 265	Kolukumbo
05 51 555	054 08 275	Kolukumbo
05 51 643	054 08 468	Kolukumbo
05 51 739	054 08 702	Kolukumbo
05 51 764	054 08 752	Kolukumbo, mangroves
05 59 637	055 01 835	Matapica, section 6, end at western side
05 59 672	055 01 503	Matapica, section 6, new campsite
05 59 694	055 00 414	Matapica, section 6, TL 1200 m, enclosure
05 59 710	054 59 757	Matapica, border sections 5 and 6, campsite
05 59 718	054 58 229	Matapica, border sections 4 and 5, campsite
05 59 694	054 57 174	Matapica, border of sections 3 and 4, campsite
05 59 648	054 56 843	Matapica, section 3
05 59 592	054 56 560	Matapica, start section 3

*GPS coordinates recorded in 2002 with the Garmin GPS on foot.*

<b>North</b>	<b>West</b>	<b>Location</b>
05 51 530	054 06 875	Samsambo, border east side
05 51 679	054 05 707	Samsambo
05 51 596	054 04 801	Samsambo, campsite
05 51 539	054 04 479	Samsambo
05 51 442	054 03 275	Samsambo
05 50 805	054 02 199	Samsambo
05 50 256	054 01 392	Samsambo
05 49 785	054 01 084	Thomas/Eilanti, campsite
05 48 740	054 00 724	Babunsanti, section BS-N, mangroves
05 47 934	054 00 481	Babunsanti, section BS-I, TL 2200 m
05 47 659	054 00 374	Babunsanti, campsite
05 47 634	054 00 450	Babunsanti, pole in front of the research building

*GPS coordinates recorded in 2002 with the Garmin GPS by boat.*

<b>North</b>	<b>West</b>	<b>Location</b>
05 54 96	055 09 68	Paramaribo
05 56 64	055 10 87	Braamspunt
05 57 40	055 09 66	Braamspunt
05 58 54	055 07 87	Diana Beach
05 58 90	055 07 04	Diana Beach
05 59 29	055 05 56	Diana Beach
05 59 47	055 04 55	Diana Beach
05 59 74	055 01 46	Matapica
05 59 81	054 59 61	Matapica
05 59 81	054 57 89	Matapica, campsite
05 59 81	054 57 07	Matapica, campsite 'Rode Ibes'
05 59 61	054 54 22	Warapa creek
05 59 38	054 51 31	Matapica Canal
05 59 37	054 47 71	België
05 58 87	054 40 74	Wia Wia
05 55 44	054 19 86	Wia Wia, stretch of sand
05 55 18	054 18 86	Wia Wia
05 55 83	054 15 21	Wia Wia
05 52 46	054 09 78	Kolukumbo
05 51 99	054 09 48	Kolukumbo
05 51 17	054 06 20	Kolukumbo
05 50 86	054 04 52	Samsambo, campsite
05 50 49	054 01 68	Samsambo
05 49 46	054 00 82	Thomas/Eilanti

*GPS coordinates recorded during the aerial survey on May 25<sup>th</sup> 2002 with the board GPS.*



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