

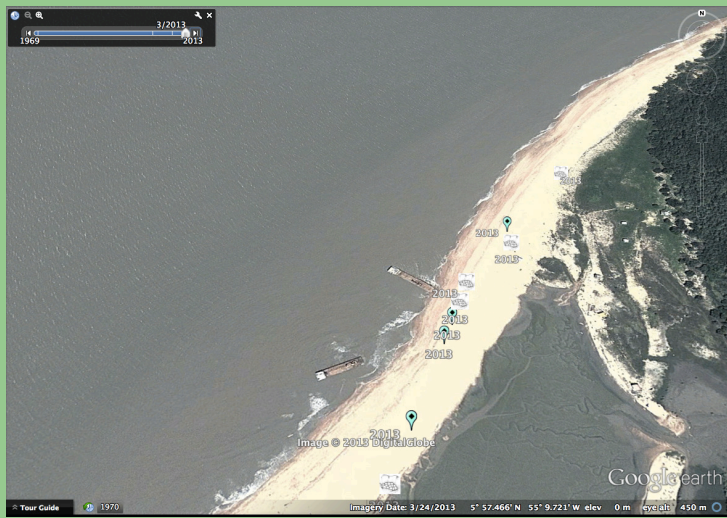
BRAAMSPUNT – SEA TURTLE NESTING SITE AND SAND MINING CONCESSION

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Introduction

Since 2005, the Green Heritage Fund Suriname (GHFS) has been conducting trips to the beach at Braamspunt at the mouth of the Suriname River on a regular, almost weekly basis. During these trips sea turtle tracks, live sea turtles and sea turtle nests were observed on the beach at Braamspunt an area that was also being mined by a concession holder for building materials. Over the past two years mining has increased and it now appears that more than one concession holder is present. This past year (2013) it became clear that the mining areas overlapped sea turtle nest sites. While photographs were taken from 2006-2013 of both sea turtle sightings and mining activities, in the past year more conscientious records were taken of mining and nest sites, including GPS points.



Source: "Commewijne Coast", 5° 57.466' N and 55° 8.866' W. Google Earth. 24 March 2013. 26 October 2013.

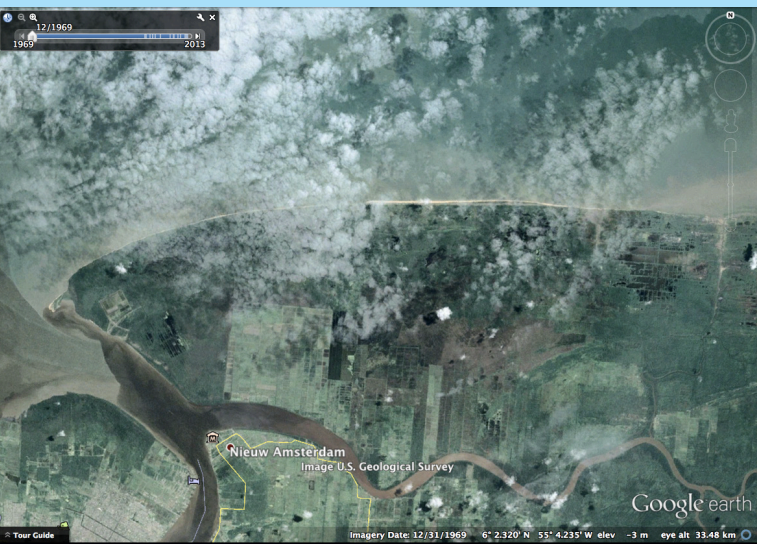
Shifting Beaches

Suriname has a coast of approximately 360 km with four large rivers – from east to west: the Marowijne, Suriname, Coppename, and Corantijn Rivers. The coast is characterized as a low to medium energy coast and is dominated by mudflats migrating in a westerly direction under the influence of a permanent pattern of waves, currents and sedimentation (Augustinus, 2012). The pace at which these mudflats migrate to the west is around

1-2 km per year. Sandy beaches are formed from sand arriving mainly from French Guiana and the Marowijne River and mostly occur in the east of Suriname. These sandy beaches also migrate slowly to the west causing creek estuaries to bend to the west forming sandy spits parallel to the coastline (Spaans, 2003). These sandy beaches are prime nesting sites for sea turtles.

Shifting Nesting Sites

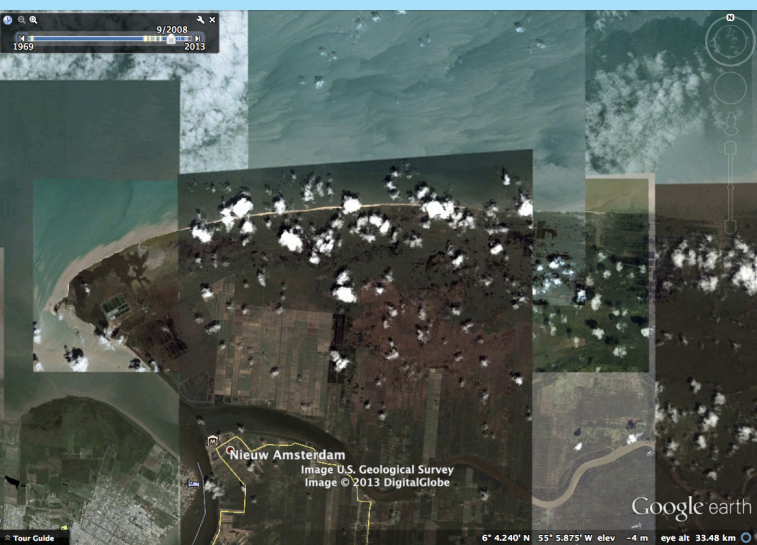
In the Google Earth time series from 1969 to 2013, it is clear that the sand has shifted more to the west, and the traditional nesting beaches for sea turtles as well. This means that the sea turtles also have to migrate with the beach more to the west to lay their eggs. Green sea turtles (*Chelonia mydas*) are known to return to their natal beach, whereas Leatherback turtles (*Dermochelys coriacea*) do not necessarily come back to the natal beach (Earthtrust.org, 2013).



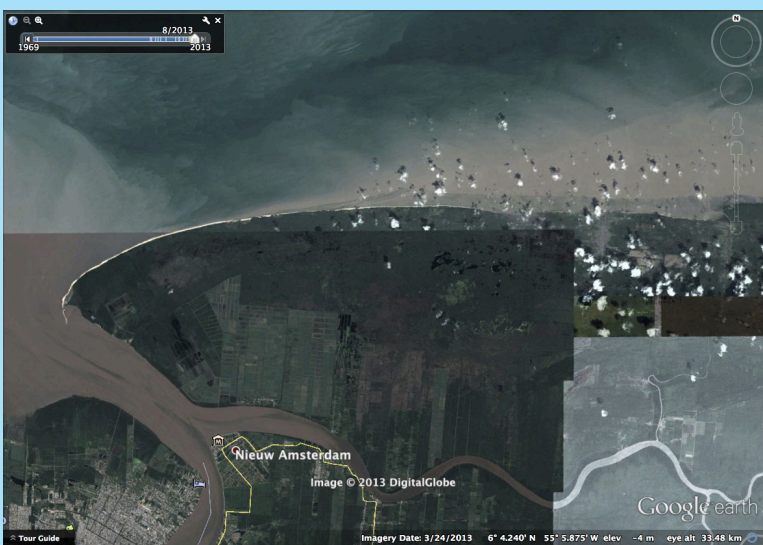
Source: "Commewijne Coast", 6.025° – 5.925° N and 55.175° – 54.875° W. Google Earth. 31 December 1969. 26 October 2013.



Source: "Commewijne Coast", 6.025° – 5.925° N and 55.175° – 54.875° W. Google Earth. 13 December 2001. 26 October 2013.



Source: "Commewijne Coast", 6.025° – 5.925° N and 55.175° – 54.875° W. Google Earth. 4 September 2008. 26 October 2013.



Source: "Commewijne Coast", 6.025° – 5.925° N and 55.175° – 54.875° W. Google Earth. 24 March 2013. 26 October 2013.

Braamspunt

Braamspunt on the eastern shore of the Suriname River is build up from a mix of sand and shells. The sand arrives from the sandy beaches migrating from the east. The shells found on the Surinamese coast originate from shell animals living on the bottom of the sea within the zone of the coastal waters. After the death of the shell animals, the shells are transported to the coast (Augustinus, 1971). The beach at Braamspunt changes both in form and composition on an almost weekly basis, but whether this is only due to natural influences, or to both anthropogenic and natural influences is unclear. However, it is clear that increasing wave and wind action have pushed the pace at which these changes occur. Removal of these shells and sand may increase erosion at the Weg naar Zee area (Augustinus, 2012).

Activities at Braamspunt

Braamspunt is used by a group of illegal fishermen as their base for fishing activities, and they have set up camps there to live. These camps are moved around as the beach shifts due to wave action. Although most camps used to be at the far end of the sand spit protruding into the Suriname River, many of the camps have been moved in the past year to the east as a result of waves washing away the sand spit. During high tide, camps on the sand spit flood, taking with them most belongings of the fishermen, including sometimes the whole camp. Braamspunt is also used for tourist activities, such as fishing, (illegal) hunting and small parties. During the sea turtle nesting season, Braamspunt is also used as a

starting point for sea turtle watching tours. Beaches adjacent to the fishing camps are also inhabited by dogs—dumped on the beach by city people or left behind by fishermen. Although the largest population of dogs is currently at the far end of the sand spit in the west, these dogs may pose an additional threat to the sea turtles. Currently, the dogs are fed once a week by Stichting Henk Abrahams with the help of the Green Heritage Fund Suriname. In February 2013, the Animal Protection Society Suriname spayed and neutered 20 animals on the beach, of which only 7 survive currently. Spaying and neutering of the dogs was restarted in the month of October 2013.



Braamspunt Sea Turtles

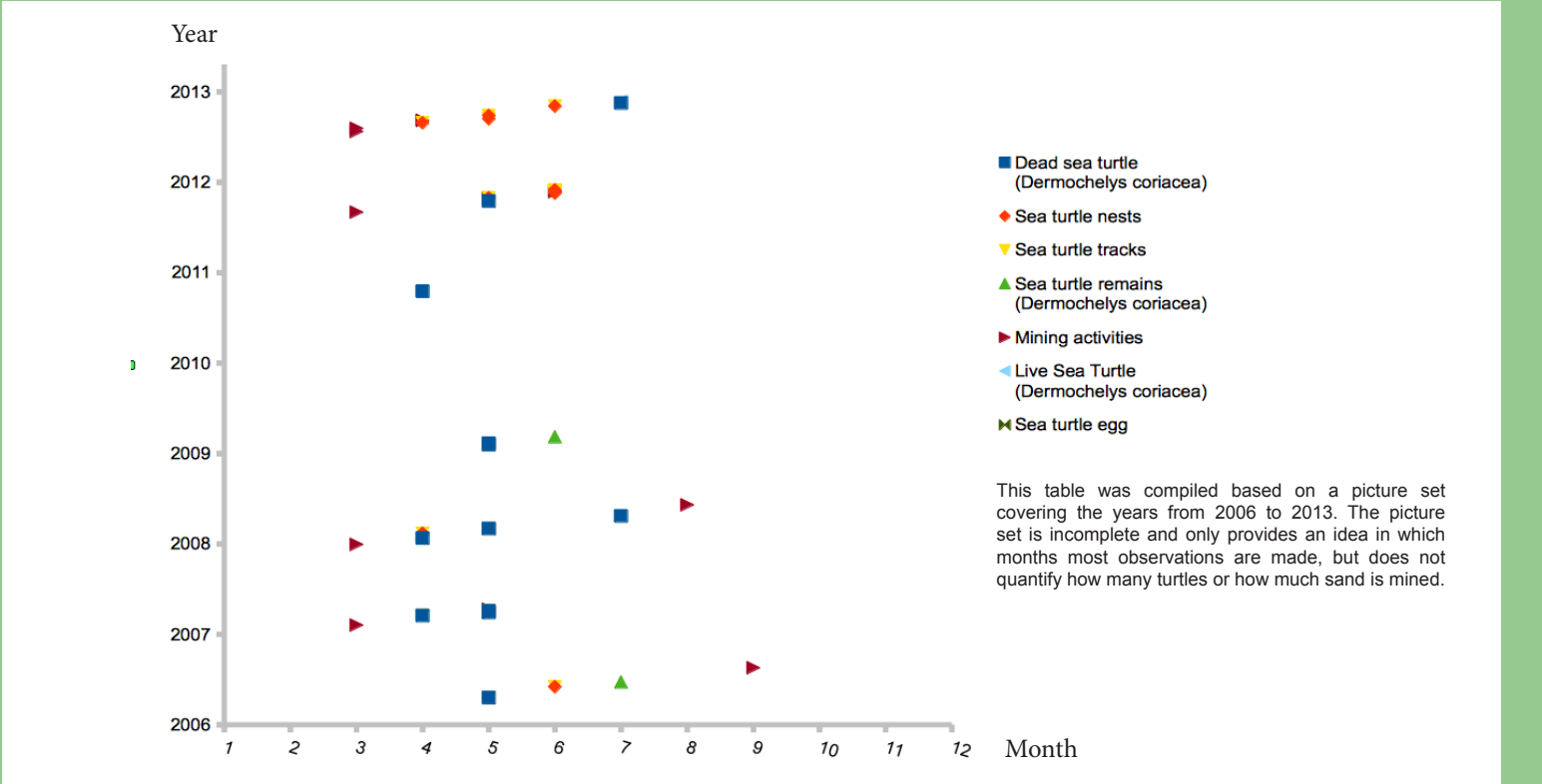
Two species of sea turtles are encountered at Braamspunt. In the early season from January up to May mostly Green sea turtles are spotted, while from March to July the larger Leatherback turtle is encountered. In 2013 a young Green sea turtle was caught in a shrimp net by a fisherman. He removed the animal from the net, and kept it for a few days in a barrel of water to show it to the GHFS volunteers. The animal was immediately released at the request of the volunteers. Although Green sea turtles are herbivorous when adults, they are carnivorous when they are young, and known to eat shrimp and jellyfish.



Findings

The graph shows that most nesting activities take place from March to July. To avoid overlap between mining activities and the nesting of these protected species, a solution could be to move the concession further to the west where the sand spit protrudes into the Suriname River. The findings are mostly based on anecdotal observations and not on protocol-based data or focused research. However, they do show a trend of increased mining activities and increased nesting of turtles. Mining activities

between 2006 and 2013 did not always take place within concession boundaries and the time series satellite photos (Google Earth) show that the beach has migrated so far to the east that turtle nesting sites currently coincide with the mining concession. In addition to the impact of mining, there has been a noticeable increase in sea turtle tourism activities on the beach as it is easy to reach from the city and can be done in an overnight tour.



This table was compiled based on a picture set covering the years from 2006 to 2013. The picture set is incomplete and only provides an idea in which months most observations are made, but does not quantify how many turtles or how much sand is mined.

Discussion

Our observations over the past years raise a number of questions that need to be addressed. One, are the nesting sites of protected sea turtle species in need of protection—in addition to that afforded to the species itself? Currently, Suriname offers protection to a nesting site, Matapica, that is no longer a beach and that is no longer visited by sea turtles. Two, since Green turtles return to their natal beach as adults, what is the impact of shifting beaches on nest location. Do they no longer nest on their more easterly

located natal beaches and have they shifted to the more western ones? Three, should shrimp fishing be banned in certain times of the year not just because nesting turtles can be caught in the net, but also because Green turtles are carnivorous when they are young, and eat shrimp? Four, given increased nesting at Braamspunt, should there be a closed mining season coinciding with the nesting season of the turtles?

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