2007-2008

WSB-NOAA Vanuatu Nesting Beach Surveys

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2007-2008

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Background

The Vanua-Tai Resource Monitors (formerly known as the Turtle Monitors Network Program) was established in 1995, following a Wan Smolbag (hereafter referred to as WSB) research and theatre project entitled, 'Year of the Sea Turtle,' coordinated by the South Pacific Regional Environmental Programme (hereafter referred to as SPREP). The monitors, who are community-based, work to protect and conserve turtles, tagging and monitoring turtle activity in their local communities. As of May 2008 there are approximately three hundred turtle monitors in villages across the country.

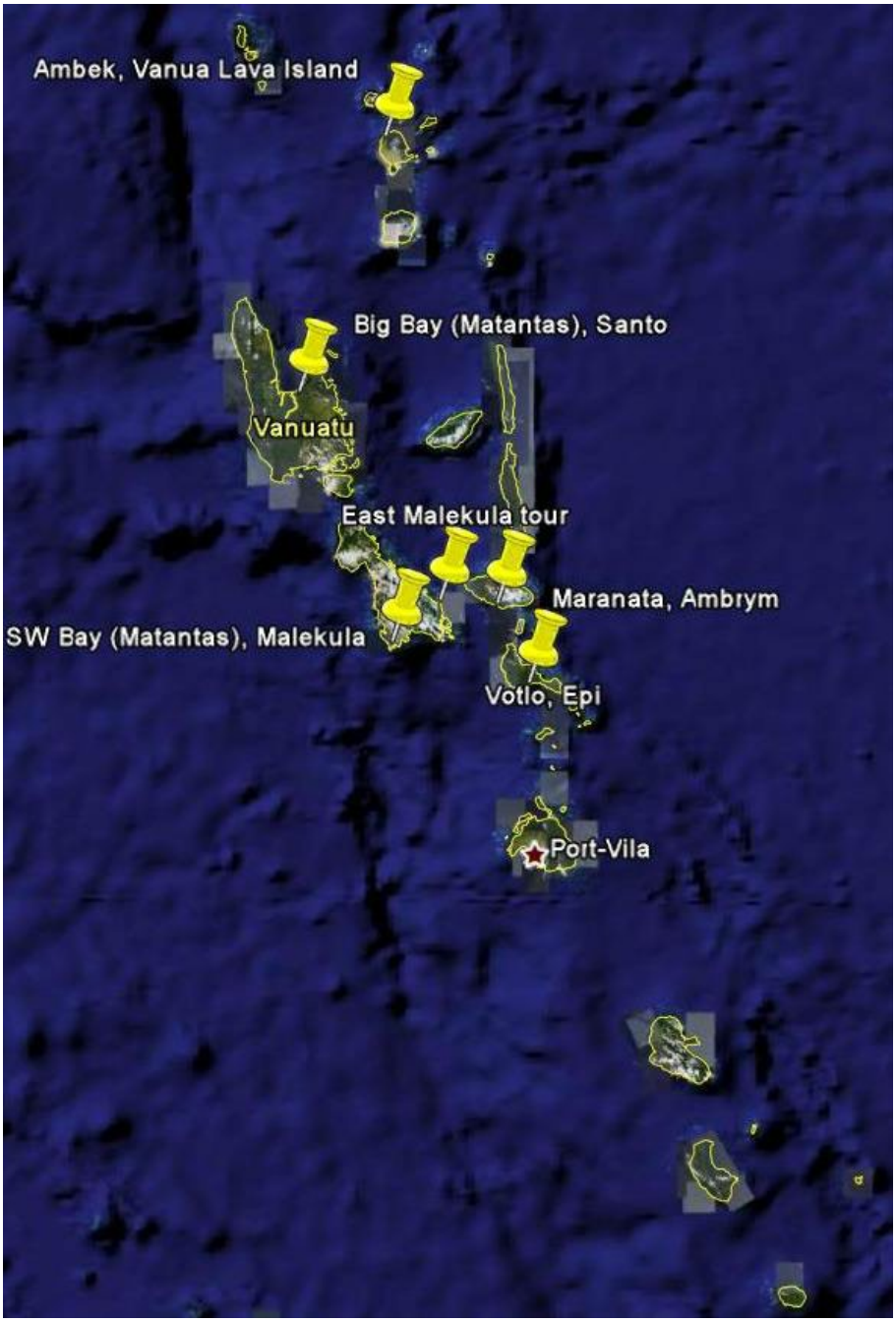

Figure 1: Map of Vanuatu

In January 2005 a new facet was added to the Vanua-Tai program when the National Oceanic Atmospheric Administration (hereafter referred to as) NOAA provided funding to survey three reported leatherback nesting beaches. The beaches on Votlo (Epi Island) and Maranata (Ambrym Island) were both confirmed to have nesting leatherbacks while the nesting beach at Bamboo Bay (Malekula Island) did not have Leatherbacks nesting that season but was identified as a regionally significant nesting beach for Green Turtles (see Figure 1).

During the 2006-2007 nesting season WSB staff once again traveled to Votlo and Maranata. The goal was to train monitors at those leatherback beaches to conduct their own nesting surveys. One problem that did emerge from this exercise is that the monitors had some confusion with recording data on the new data sheets that were adopted as part of the new regional SPREP turtle tracking database, TREDS. In response to that confusion changes were been made to the data sheets (e.g. fields simplified, unneeded fields removed, sheet translated into Bislama, etc.) for use during the 2007-2008 nesting season.

Two new areas, Big Bay (Santo Island) and Southwest Bay (Malekula Island) were also visited in 2006-2007 and surveys were conducted in an attempt to confirm reports of leatherback nesting at these beaches. Unfortunately few leatherbacks nested in Vanuatu during the 2006-2007 nesting season resulting in the need for follow-up surveys to confirm the presence or absence of leatherbacks at these two sites.

In addition to the four survey sites mentioned above there are many other potential Leatherback nesting sites that have been reported to WSB but have not been visited yet. For those islands that contain leatherback nesting beaches for which there has been little or no surveying, monitoring or conservation efforts, nesting leatherbacks continue to be killed on their nesting beaches. Here, villagers are unaware of the current plight of leatherback populations and likely do not realize the impact they are having on the decline of the species. This highlights the continued need to visit and establish surveys at 1-2 newly identified nesting areas every year.

Results of Project Deliverables

All potential turtle nesting sites marked on 1:50,000 topographic maps at April 2007 annual Vanua-Tai workshop.

During the first week of May 2007, WSB brought together sixty volunteer turtle conservation volunteers from coastal villages across the country for the annual Vanua-Tai conservation monitors network workshop. This workshop provided WSB with the opportunity to identify potential sea turtle nesting sites across the country.

Topographic maps (1:50,000 scale) were provided and monitors were asked to mark the location of known nesting sites on these maps and fill in an accompanying information sheet for each of these sites (Figure 2). From this exercise, the monitors identified 93 individual nesting sites in attendance. A complete table of these sites is located in Appendix 1. This table includes the latitude and longitude of each site as well as the species nesting there and an estimate of numbers per year if that information is available.

This information will be very useful for the selection of future sites to conduct nesting surveys. Due to the success of this exercise, it will be repeated at future national workshops since the Vanua-Tai members in attendance rotate each year.

At this time, WSB does not have the ability to electronically map the locations of the sites that were marked on the topographic maps. This data has been passed on to NOAA and SPREP though as both organizations have the GIS resources needed to map this data.

Figure 2: Turtle Monitor Marking Locations of Turtle Nesting Beaches

Six nesting beach surveys and trainings of local monitors so that they can continue the surveys will be completed during the 2007-2008 nesting season.

Prior to the beginning of the nesting season two changes were made to the draft work plan upon which the grant proposal had been based. WSB had intended to include two new beach survey sites this season, one in the Torres Islands and the other in NW Santo. Information received prior to the start of the nesting season indicated that these two sites were unlikely to currently have nesting Leatherbacks. Based on that information the work plan was altered. The Torres survey was replaced with a survey at Ambek on Vanua Lava Island and the NW Santo survey was replaced with a scouting tour of east Malekula where reports had been coming in that some communities were still eating nesting Leatherbacks.

The final work plan for the nesting season included conducting nesting beach survey trainings at Maranata (Ambrym) and SW Bay (Malekula) during the month of November. During the month of December nesting beach survey trainings were conducted at Votlo (Epi), Big Bay (Santo) and Ambek (Vanua Lava) and a scouting tour of nesting beaches on eastern Malekula was also completed.

The protocol was the same for each of the areas nesting beach survey training was conducted. During the month of October WSB staff got in contact with one of the turtle monitors that would be helping with the survey at each site. These monitors were notified of when WSB staff would be coming to their areas to conduct training. The monitors were asked to make sure that everyone who would be assisting with the survey attended the training session.

The training sessions lasted 4-6 days, dependant on the travel logistics to each site. (trip reports for some of the sites have been included in Appendix 2) The training went as follows. After arriving at the site and setting up a base camp WSB staff sat down with the monitors to determine the area to be surveyed. The beaches at some of the sites are too large to survey on a regular basis, so at these sites the areas with the most concentrated nesting were chosen based on the locals' knowledge of the site. Once the area to be surveyed was selected the group then walked the beach and marked it into zones (e.g. 50m in length) to make it easier for recording nest locations. The next task was to work with the group on how to properly fill in the data sheets (see Appendixes 3 and 4). This is something that was repeated throughout the week as data recording has been found to be sometimes problematic for the Vanua-Tai members. At nightfall the group once again returned to the beach. The group then walked the beach searching for turtles that had come onto the beach to lay their eggs. If one was encountered WSB staff showed the group how to work with the nesting turtles. At this time the monitors were instructed how and when to measure and flipper tag the turtle in order to cause as little disturbance as possible. They were once again shown how to fill all of this data into the data sheets. Finally they were shown how to mark the nests, and if required protect them, using local materials such as bamboo (see Figure 3).

Figure 3: Making Nest Protection Grids and Marking Nests With Local Materials

Return Beach Survey and Training

Maranata (Ambrym)

Training began at this site (see Figure 4) during the end of November 2007. The survey then began in December 2007 and continued through to the end of April 2008. There were four monitors helping with the survey this season, three that had helped on previous surveys and one person new to the survey this season. Over the course of the nesting season the monitors surveyed the beach approximately one night a week.

No turtles or nests were encountered during the entire 5 months of the nesting survey. The only turtle nest recorded on the beach was one green turtle nest that was laid prior to the survey, early in November, and checked during the survey training. That one nest did hatch successfully.

Training began at this site during the end of November 2007. The survey then began in December 2007 and continued through to the end of April 2008. There were four monitors helping with the survey this season, three that had helped on previous surveys and one person new to the survey this season. Over the course of the nesting season the monitors surveyed the beach approximately once a week.

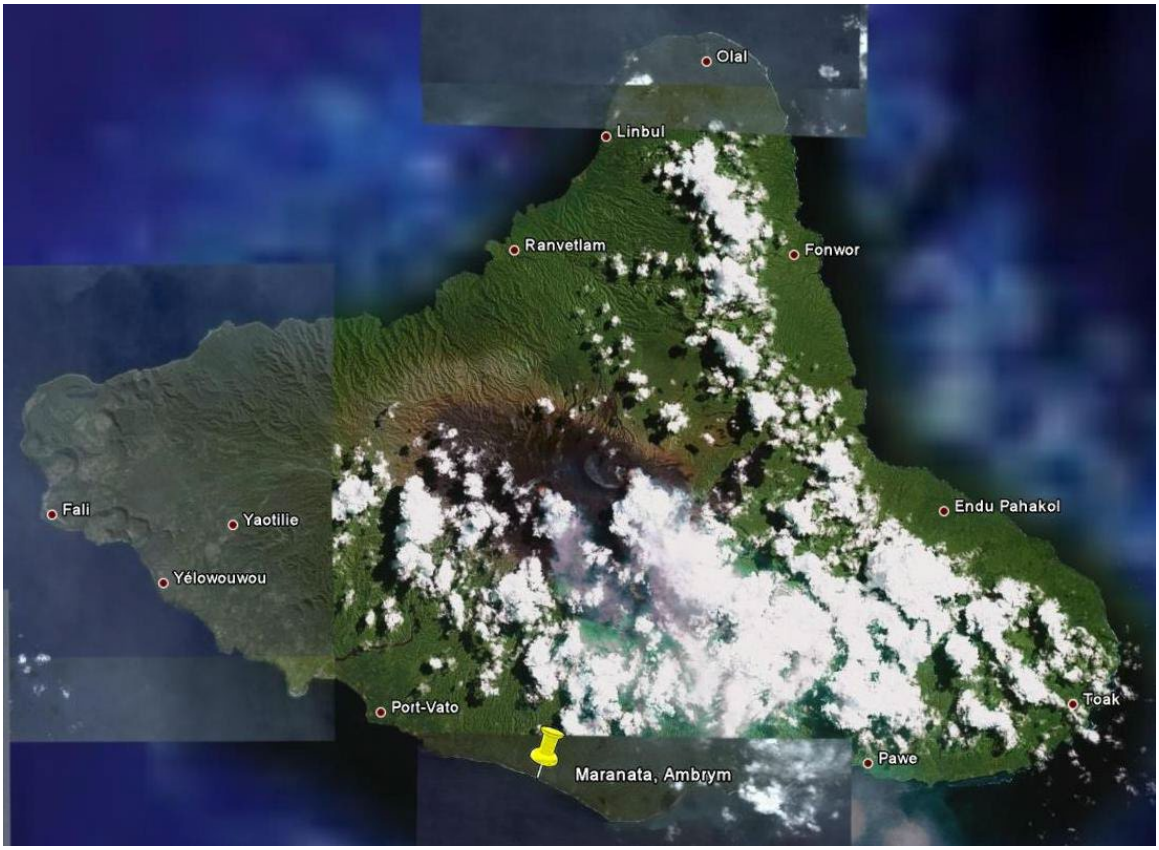

Figure 4: Map of Ambrym

No turtles or nests were encountered during the entire 5 months of the nesting survey. The only turtle nest recorded on the beach was one green turtle nest that was laid prior to the survey, early in November, and checked during the survey training. That one nest did hatch successfully.

The beach at Maranata is over twelve kilometres long so only a portion of that beach was selected for routine surveys. The other sections of the beach were checked periodically though. On those sections of beach there were several Hawksbill and green Turtles that nested but no Leatherbacks. Based on the tracks on those sections of the beach the monitors estimated the peak nesting season this year was December-January. That timing is the same as past nesting seasons but there were fewer turtles nesting, of all species. (see Table 1 for a summary of nesting beach findings)

Speaking with one of the monitors at the end of the nesting season he indicated that they saw plenty of nesting Leatherback Turtles until the late 80's and killed many of them while they were on the beach. The community started to see the numbers of Leatherbacks fluctuate through the 90's (total numbers dropping and numbers on the beach varying between years).

During the 2005-2006 survey they recorded seven Leatherback Turtles on the beach. During the 2006-2007 nesting season they only recorded one Leatherback on the beach. And this year in 2007-2008 there were no Leatherbacks recorded nesting in the area. This was the first year he remembered not having any Leatherbacks coming to nest on their beach.

	Maranata	Epi	Big Bay	SW Bay	Ambek
survey start	Dec. 2007	Dec. 2007	Dec. 2007	Nov. 2007	Dec. 2007
survey end	Apr. 2008	Jan. 2008	Jan. 2008	Feb. 2008	Jan. 2008
# Leatherbacks tagged	0	0	0	?	0
# Leatherback tracks	0	0	1	?	0
# Leatherback nests laid	0	0	0	0	0
# Greens tagged	0	0	0	?	3
# Green nests laid	1	0	0	?	12
# Green nests hatched	1	0	0	0	1
# Hawksbills tagged	0	0	0	?	0
# Hawksbill nests laid	0	0	11	?	0
# Hawksbill nests hatched	0	0	0	0	0

Table 1: Summary of 2007-2008 Nesting Beach Surveys

Votlo (Epi)

Training began at this site (see Figure 5) during mid-December 2007. The survey then began in December 2007 and continued through to the end of January 2008. There were ten monitors helping with the survey this season, five who had helped on previous surveys and five that were new to conducting nesting surveys. Over the course of the nesting season the monitors surveyed the beach every night.

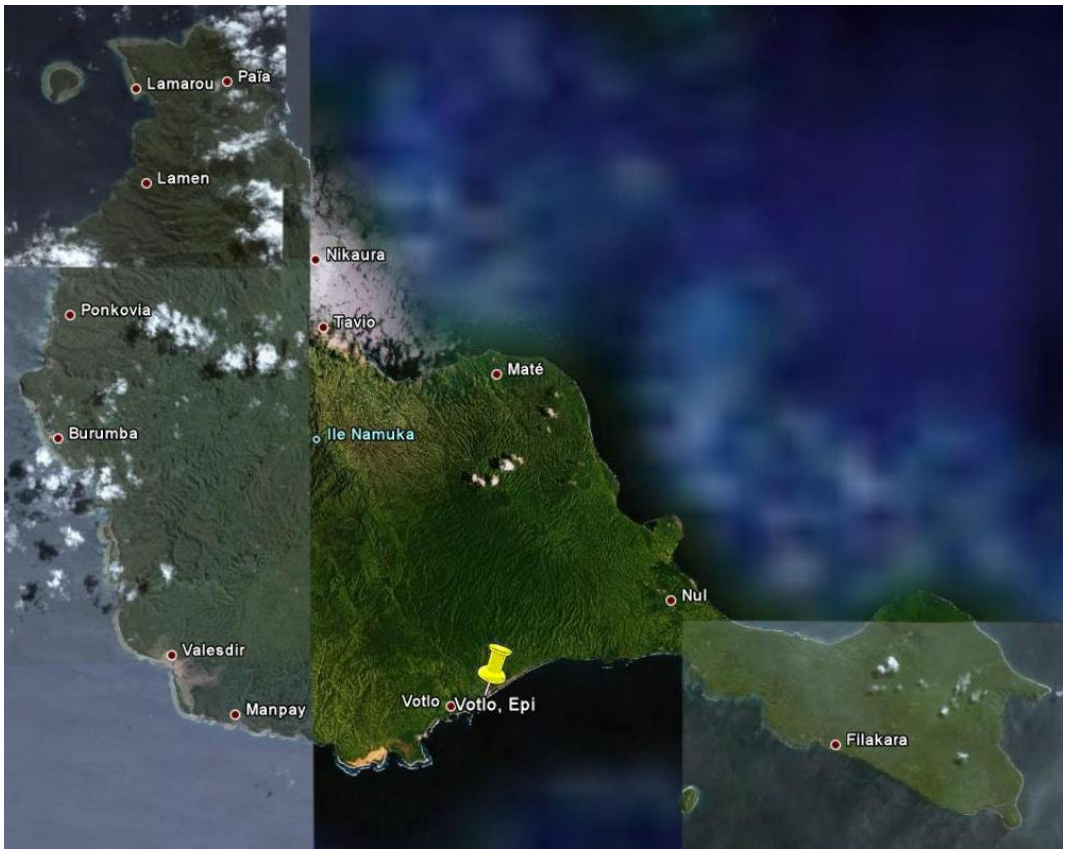

Figure 5: Map of Epi

No turtles or nests were encountered during the 2 months of the nesting survey. The only turtle nest recorded on the beach was one green turtle nest that was laid in early February after the survey was finished. That one nest did hatch successfully.

While the monitors did not have the opportunity to tag any nesting turtles this season they did comment that with the new data sheets and the training that they were given they felt confident that they could fill in the data sheets accurately. This is a positive thing as this community had the most problems with the new data sheets that were introduced as part of the new SPREP regional TREDS turtle tracking database in 2006-2007. Based on the problems with those data sheets WSB developed its own new national data collection sheets tailored for use by rural villagers.

Big Bay (Santo)

Training began at this site (see Figure 6) during early December 2007. The survey then began in December 2007 and continued through until the end of January 2008. There were three monitors helping with the survey at this site. This is the second year of surveying at this site but due to problems with the monitor that worked at the site last year all three monitors this year were new to conducting nesting surveys. Over the course of the nesting season the monitors surveyed the beach once a week, during the day.

The monitors at this site conducted their surveys during the day; as a result no turtles were directly encountered or tagged. At the time of the February follow-up trip to the site no Leatherback Turtles had come ashore to nest. However, the when the monitors attended the national workshop in May they reported finding one Leatherback track during the month of April but no nest associated with that track. In addition to that they recorded eleven Hawksbill Turtle nests. None of the nests hatched though as ten were dug up by poachers and one was buried by sand from the overflowing of the river.

In some communities where people are eating turtles or their eggs there is some very heated tension between the turtle monitors and the people eating the turtles or eggs. When asked if there was any conflict between the monitors and the egg poachers at this site the monitors responded that there is no conflict between the monitors and the people that eat the eggs, those people just go ahead and eat the eggs.

This was the first time that the monitors in this area had the opportunity to record data collected as part of a nesting survey. When asked, the monitors said they felt the sheets were easy to use and that they had no problems with them. This was not actually the case though. The monitors at this site had no tagging records to fill in because they were conducting their surveys during the day, but they also didn't record any data for the nests that they did locate as part of their survey. The training at this site followed the same protocol as was used at other sites so we are unsure why the survey was conducted during the day and no data was recorded at this site.

The monitors at this site estimated that the peak of the nesting season occurred in December and January. When asked how this season compared to past seasons they said that there were more turtles nesting this season than in past seasons. They felt that this was due to there being more rain and lightning this nesting season.

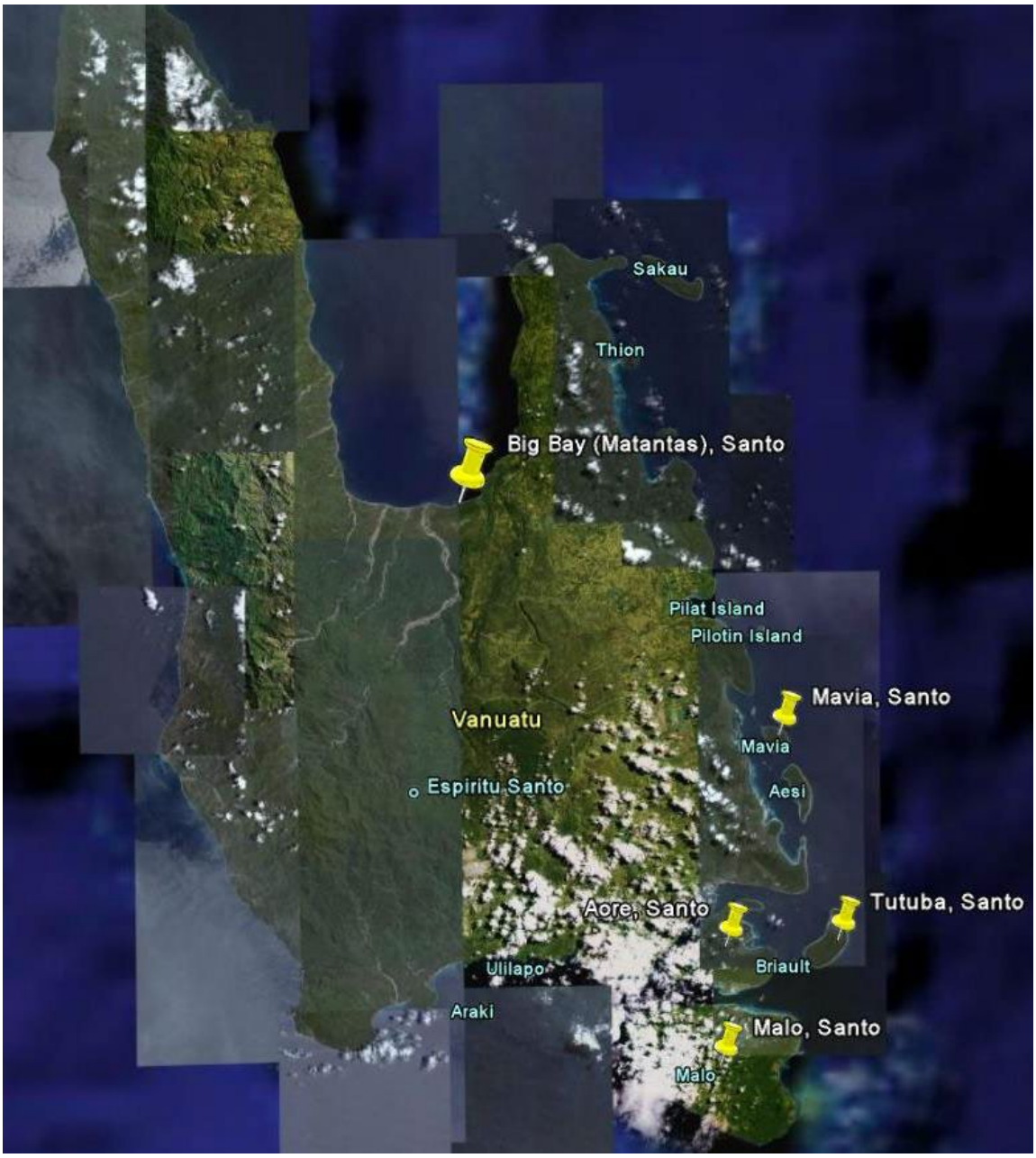

Figure 6: Map of Santo

Southwest Bay (Malekula)
Southwest Bay is the most logistically difficult site to work at of the sites included in this project. It is difficult to communicate with the community involved as they have no telephone and flights into the closest airport are often cancelled due to the weather. This has proven to be a problem for collecting the data from this survey.

There was no money available in the budget for a follow-up trip to the site at the end of the season. With that in mind WSB staff planned to collect the data from one of the monitors when they attended the annual national turtle monitors workshop in May. Unfortunately WSB was unable to get in contact with any of the turtle monitors from that site. So although one of them did turn up at the workshop after hearing of the date and location through word of mouth, WSB

was not able to remind him to bring the survey data with him. And with his late arrival at the workshop and trying to run the workshop WSB staff did not have the opportunity to sit down with him to have an in-depth conversation about the nesting season. As a result very little information has been received from this site.

Training began at this site (see Figure 7) during mid-November 2007. The survey then began in November 2007 and continued through until the end of February 2008. There were three monitors helping with the survey at this site, two that had helped on previous surveys and one person new to the survey this season.

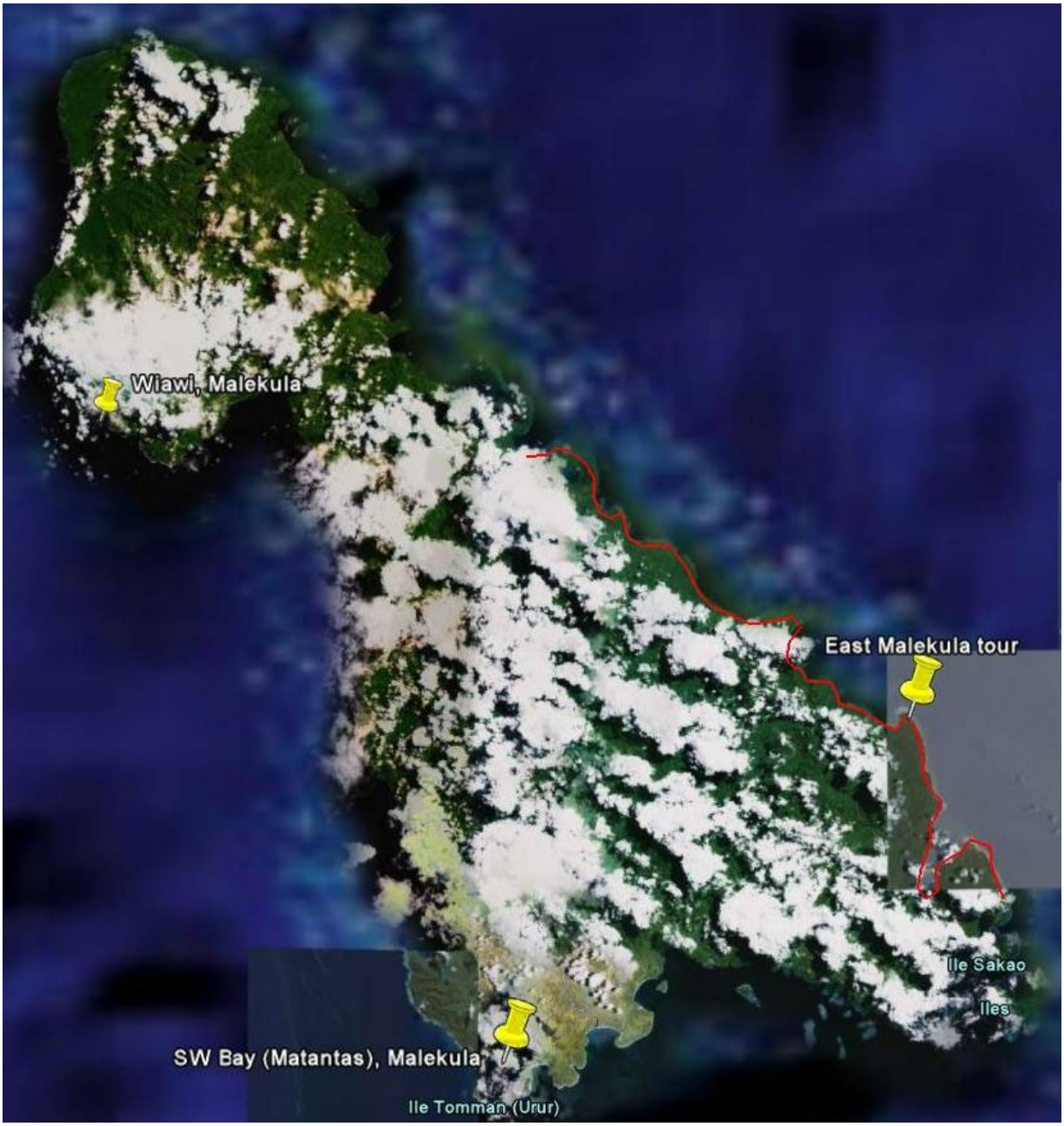

Figure 7: Map of Malekula

WSB has not received data on how many turtles were tagged during the season or how many nests were marked. We were told that all of the nests located were damaged by strong waves during a storm and as a result none of the nests hatched. WSB will continue to follow this up to determine how many turtles, and what species, used this nesting site during the nesting season.

Initial Survey and Training

Ambek (Vanua Lava)

Training began at this site (see Figure 8) during early December 2007. The survey then began in December 2007 and continued through until a cyclone hit the area in mid-January 2008. There were three monitors helping with the survey this season. As this was the first year of the survey all three were new to conducting nesting surveys. Over the course of the nesting season the monitors surveyed the beach every night.

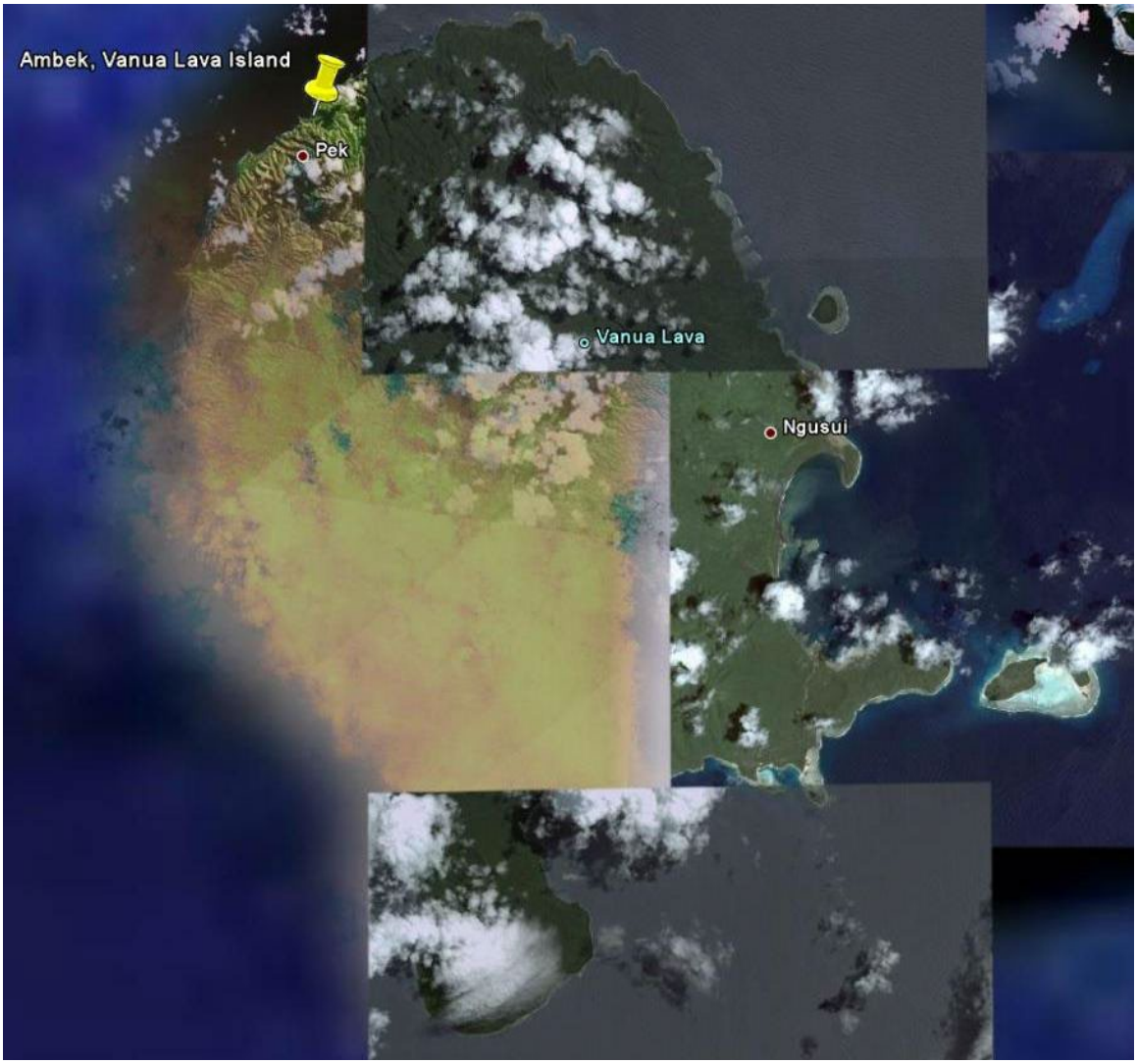

Figure 8: Map of Vanua Lava

No Leatherback Turtles were encountered over the course of the survey. The monitors did locate and tag three nesting Green Turtles and marked twelve Green Turtle nests. From those nests ten were washed away by strong waves during the cyclone, one hatched, and one was dug up and

eaten. Someone from the community dug up one intact nest and when the cyclone began to wash away the nests the community did eat the eggs they could salvage from those nests.

This was the first time that the monitors in this area had the opportunity to record data collected as part of a nesting survey. When asked, the monitors said they felt the sheets were easy to use and that they had no problems with them. This is confirmed by the fact that the data sheets they returned at the end of the survey had all been filled in accurately.

While the official survey ended with the onset of the cyclone the monitors were able to estimate, based on their personal observations, that the first turtle of the season nested in late November 2007 and the last one nested in early March 2008. The peak of that nesting occurred in December and January. When asked, the monitors stated that the numbers of turtles hey saw on the beach this year was lower than in past years.

Tours and Scouting Trips

East Malekula (Malekula)

Based on recent reports WSB staff determined it important to tour the area of east Malekula to confirm that there are currently Leatherback turtles nesting in this area, and that communities are still eating the turtles and their eggs. The general standard for WSB when they conduct a tour to a new area is to have one of the existing turtle monitors from a nearby area accompany them. This helps with the logistics of arranging travel, meeting with chiefs in the area, and with general local knowledge, current news and information of the area.

The tour of east Malekula took place over a ten day period in mid- December 2007. One WSB staff member and one turtle monitor from the Maskelyne area of Malekula travelled through the east part of the island during this time period. The pair started in the village of Remef, which is in the centre of the area in East Malekula where you can find black sand beaches, and worked its way south (see Figure 7).

As they travelled they stopped in each village along the coast. At each village they met with the chief first to outline what they wanted to speak about and seek his permission to speak to the community. If the chief approved he then called the community together so that the WSB staff could speak to them. The main topics covered were turtle awareness and general conservation of the environment. At the end of the session time was taken to answer all questions from the community. Then the community was asked to nominate one or two members of the community to join the national turtle monitors network and undertake turtle conservation/education activities in the village.

Over the course of the tour twenty villages were visited and twenty-six new turtle monitors joined the national network. A more detailed account of the tour can be found in Appendix 2.

The tour to these new areas did confirm the presence of Leatherback nesting beaches. It also confirmed that the turtles and eggs on these beaches are currently under threat. The information presented to the communities in this area will make a positive start to protecting the nesting turtles in this area but further work is needed. For that reason follow-up work in this area has been included in the WSB work plan for the 2008-2009 nesting season (dependant on funding).

Wiawi (Malekula)

During the mapping exercise at the 2007 workshop the monitor from Wiawi had indicated that there were a large number of turtles nesting every year on the beaches in his area. The nesting

surveys were already planned at that point but we decided to make a short side trip when one of the WSB staff members, Donald, was coming back from doing some work in Santo.

Donald went to Wiawi (see Figure 7) October 16th-18th, 2007. It is a small community and everyone there are family members. After talking with the chief (the turtle monitor) they walked a portion of the beach to see if there were any nests yet at that early point in the season. On the section of the beach that they walked they found 20 nests. Donald felt that if they had of covered the whole beach they would have fond even more. He also noted that when he looked out into the water he could see many turtle heads sticking up out of the water. This was unlike anywhere he had ever been, both due to the number of turtles he could see and the fact that they didn't appear to be afraid of the people on the beach. The chief told him that the area had been protected for many years so now there were many turtles and they aren't frightened of people.

After speaking with the turtle monitor and looking at the beach Donald determined that this site was most likely only being used by Green Turtles. The community members would like to do a full scale survey with WSB during the 2008-2009 nesting season and Donald feels that this would be a very good site to do a survey.

(The site is included in the 2008-2009 nesting season work plan dependant on funding coming through)

Malo (Santo)
Malo was not one of the areas included in the original NOAA grant work plan. However, the Malo area is serviced by the same airport used for the Big Bay beach survey so it was felt that by extending this trip by an extra day it would be a cost effective way to do a quick scouting visit to this area. There had been previous reports that there was a good turtle nesting area on Malo for Green and Hawksbill turtles. In addition to that, there had been reports of Olive Ridley Turtles nesting in the island.

The monitors on this island are new and they had not yet received any flipper tags or tag applicators. Donald took the opportunity of this trip to instruct the turtle monitors on how to flipper tag a turtle and fill in the turtle tagging data sheets as well as distribute tags and tag applicators.

Near the end of the nesting season WSB received a letter from one of the turtle monitors on Malo that had been monitoring his nesting site. The letter asked for WSB to return to the area and hold a workshop. The reason was that while the small number of turtle monitors are monitoring and protecting their nesting beaches there are many other nesting beaches nearby where they have witnessed that turtle nests are still being dug up and eaten. The monitors on Malo are very committed to protecting the turtles in their area so they have asked that WSB comes back to the area to recruit more monitors, particularly on Aore Island.

As the 2008 annual national workshop was being held on Santo WSB staff took the opportunity to tour the near shore islands prior to the start of the workshop. Staff visited Aore, Tetuba and Mavea (see Figure 6) where they recruited fifteen new turtle monitors. These new turtle monitors then attended the national workshop the next week.

Recommendations

This is the second nesting season in a row that there has been no Leatherback nesting recorded at the site of Votlo, Maranata, SW Bay, or Big Bay. This is particularly important for the sites of Votlo and Maranata which have provided good survey results in past years and where the

communities report have never failed to produce nesting females prior to the 2006-2007 nesting season.

Due to the geography of the country travel to nesting sites is time consuming and expensive. This limits the number of nesting beaches that WSB staff can provide survey training and set-up at each year. Moreover, still other reported nesting areas have yet to be visited/confirmed by WSB. Some of which are currently being impacted by communities eating nesting turtles and their eggs.

For these reasons WSB has the following two suggestions. The first suggestion is that over the next one to two years an attempt is made to have the communities that have several years of surveying behind them conduct the surveys without the on the ground assistance of WSB. WSB staff will still provide any necessary assistance via telephone but will not visit the sites (this is based on the assumption that the new national mobile network is in place by the nesting season). This will cut down on the costs at each site, as the only costs for the surveys will be the per diems for the monitors working on the surveys.

The second suggestion is that one new reported nesting area is visited each year. With turtle populations on the decline it is important that all nesting sites in Vanuatu are confirmed and communities in those areas are given relevant turtle conservation information as well as a copy of the current Fisheries laws prohibiting the taking of turtles or their eggs.

Financial report

Due to a decline in the value of the US dollar against the vatu after the grant was submitted the project costs have exceeded the actual amount of vatu that will be received. The total amount spent on the project was 1,476,903vatu. It is anticipated (based on current exchange rates) that when the final instalment of the grant is received WSB will have received a total of 1,436,728 vatu. WSB will provide the 40,175 vatu to make up for the loss due to the exchange rate.

See Appendix 5 for the financial record of the grant.

Appendix 1: Turtle Nest Sites Indicated by Vanuatu Turtle Monitors at 2007 Annual Workshop

Sheet #	Latitude	Longitude	Green	Hawks	Leather	Logger	# turtles/year
1A	16 48' 50.70" S	168 13' 53.21" E					
1B	16 49' 02.26" S	168 15' 05.13" E					
1C	16 48' 11.06" S	168 16' 43.13" E					
1D	16 47' 09.42" S	168 19' 48.19" E					
1E	16 47' 13.92" S	168 21' 38.45" E					
2A	16 18' 30.52" S	167 22' 55.91" E	y	y	y		200 (12 km Beach)
2B	16 34' 39.64" S	167 30' 10.54" E	y	y	y		
3A	17 30' 47.75" S	168 16' 10.90" E	y	y			8
3B	17 30' 36.31" S	168 16' 30.08" E	y	y			
4	17 29' 30.43" S	168 24' 55.20" E	y	y			5
5	17 28' 22.71" S	168 30' 09.23" E	y				3
6A	14 13' 28.70" S	167 26' 09.03" E	y	y		?	10
6B	14 14' 51.54" S	167 25' 32.19" E	y	y		?	
7A	17 25' 45.46" S	168 19' 51.66" E		y			1
7B	17 27' 39.71" S	168 22' 40.36" E		y			
8	16 31' 00.77" S	167 38' 51.44" E	y				2
9	16 33' 41.11" S	167 45' 41.44" E	y	y			4
10	16 08' 08.83" S	167 11' 46.16" E	y	y	y		200
11	16 33' 11.22" S	167 47' 01.35" E	y	y			10 to 20
12	17 32' 16.18" S	168 23' 00.33" E	y				2
13	13 22' 29.85" S	166 39' 13.59" E	y				5 to 6
14A	15 07' 55.30" S	167 07' 52.13" E	y	y			
14B	15 06' 03.91" S	167 07' 39.99" E	y	y			
14C	14 57' 36.97" S	167 06' 54.62" E					
15	17 30' 51.58" S	168 24' 19.97" E	y				3 to 4
16	13 26' 14.14" S	166 42' 17.60" E		y			2 to 3
17	17 32' 34.68" S	168 20' 05.75" E	y				1
18	13 19' 49.59" S	166 38' 35.24" E	y				4 to 5
19	13 20' 03.28" S	166 38' 07.59" E				y	1
20	13 19' 25.78" S	166 38' 09.24" E	y				8 to 10
21	13 19' 15.09" S	166 38' 02.62" E	y				5 to 6
22	17 29' 12.83" S	168 30' 01.48" E	y				3
23	17 26' 45.86" S	168 22' 03.48" E	y				2
24	17 27' 34.83" S	168 22' 35.37" E					1
25	13 24' 33.12" S	166 40' 16.94" E	y				2 to 3
26	13 39' 12.31" S	167 41' 01.82" E		y			1
27A	18 40' 48.80" S	168 59' 56.42" E	y	y			1
27B	18 47' 54.83" S	169 00' 22.39" E	y	y			
27C	18 42' 54.31" S	169 10' 37.89" E	y	y			
27D	18 46' 22.76" S	169 15' 47.28" E	y	y			
28A	19 14' 06.35" S	169 35' 45.37" E	y				1 to 2
28B	19 13' 41.01" S	169 36' 54.22" E	y				
29A	20 14' 55.22" S	169 46' 35.63" E	y				7
29B	20 08' 38.53" S	169 45' 39.87" E	y				

29C	20 08' 35.07" S	169 50' 55.51" E	y				
30	16 05' 59.59" S	168 08' 40.26" E	y				2
31	15 34' 21.57" S	168 07' 50.66" E	y				2 to 3
33	16 54' 36.47" S	168 31' 44.45" E	?	?			7
34	15 19' 00.48" S	167 49' 50.20" E	y				1
35A	19 30' 54.23" S	170 14' 06.27" E	y				unknown
35B	19 30' 39.19" S	170 14' 17.83" E	y				unknown
36A	15 38' 49.50" S	167 05' 14.49" E		y			2
36B	15 37' 40.96" S	167 10' 21.21" E		y			3
37A	15 26' 59.93" S	166 39' 59.67" E	y		y		unknown
37B	15 22' 54.59" S	166 38' 56.12" E	y		y		unknown
37C	15 14' 58.19" S	166 40' 30.61" E	y		y		unknown
38A	15 10' 15.03" S	167 55' 00.13" E	y	y	y		50
38B	15 10' 19.50" S	166 52' 55.75" E	y	y			8
38C	15 10' 06.76" S	166 51' 05.45" E	y	y			4
39A	15 04' 13.41" S	167 05' 06.91" E	y				
39B	15 02' 11.55" S	167 05' 10.15" E	y				
39C	14 57' 44.76" S	167 03' 25.02" E	y				
39D	14 56' 27.76" S	167 00' 03.84" E	y				
41A	19 29' 54.32" S	169 27' 19.63" E	y	y		y	1
41B	19 30' 40.71" S	169 27' 34.79" E	y	y		y	1
41C	19 31' 55.06" S	169 29' 37.69" E	y	y		y	1
41D	19 31' 17.19" S	169 30' 14.43" E	y	y		y	1
41E	19 31' 45.23" S	169 30' 21.41" E	y	y		y	1
41F	19 32' 43.57" S	169 29' 26.31" E	y	y		y	1
41G	19 33' 46.40" S	169 28' 24.77" E	y	y		y	1
42	17 37' 16.41" S	168 30' 13.36" E	y	y			2
43	17 32' 09.10" S	168 27' 02.35" E	y	y			3
44A	16 35' 18.98" S	168 09' 44.28" E	y	y			4 to 5
44B	16 34' 52.20" S	168 12' 04.69" E	y	y			4 to 5
44C	16 38' 27.32" S	168 14' 08.08" E	y	y			4 to 5
44D	16 40' 13.70" S	168 14' 15.03" E	y	y			4 to 5
44E	16 45' 29.10" S	168 21' 41.24" E	y	y			4 to 5
44F	16 46' 36.57" S	168 24' 03.80" E	y	y			4 to 5
44G	16 49' 45.95" S	168 21' 36.98" E	y	y			4 to 5
45A	16 45' 03.86" S	168 09' 03.87" E	y	y			3
45B	16 45' 36.57" S	168 09' 14.66" E	y	y			4
45C	16 47' 10.18" S	168 10' 11.27" E	y	y			5
45D	16 47' 50.26" S	168 20' 45.02" E	y	y			2
45E	16 48' 19.30" S	168 23' 20.04" E	y	y			
45F	16 36' 18.24" S	168 12' 51.41" E	y	y			
47	17 38' 35.44" S	168 31' 03.59" E	y	y			2
49	16 31' 45.10" S	167 42' 18.29" E	y	y			4
50	16 32' 29.11" S	167 41' 47.98" E	y	y			6
51	16 33' 26.09" S	167 27' 40.84" E	y	y	y		12
52	15 08' 52.30" S	167 06' 34.46" E	y	y			5 to 6
53	15 06' 04.22" S	167 07' 44.14" E	y	y			8 to 10
54	15 02' 19.02" S	167 05' 02.10" E	y	y	y		plenty (80-100 nests)

Appendix 2: Field Reports (translated from Bislama)

South Coast Malekula 11th-14th November 2007
New monitors recruited: Jetlen Masing, Toman Island
Silas Obed, Malvakal Village

Woisir beach is located on the south coast of the island of Malekula. The beach is located between the village of Melip and Caroline Bay. Toman Island is located about 100 metres offshore of the beach. Donald met the two monitors from this area to do the survey training session, Lansin Willie and Jack Iso.

On day one, the group measured out the beach for use in the survey. The beach is approximately 3.2 km long and was marked out into 16 separate 200-metre long zones.

On day two, the group went over the new data forms. There were two separate data forms to be used as part of the survey. The first was the tagging for to be filled out every time a turtle was encountered. The second was the nest data capture sheet to be filled out every time a nest was located. Part of the day was spent on exercises to teach the monitors how to fill out the forms correctly in the case of both nesting turtles and foraging turtles.

During the time that the training was taking place there were no turtles that came onto the beach.

While Donald was in the area, he recruited a new monitor from Toman Island, Jetlen Masing. He also took part in the beach survey training and asked to help with the beach survey that Donald had set up.

A second new monitor was also recruited and wanted to take part in the survey, Silas Obed from Malvakal Village. Malvakal is located further south than the current survey site. He reported that in the area between the villages of Malkaval and Ponfor there are Leatherback nesting beaches. He also requested that someone from WSB come to visit the area.

Big Bay (Matantas), Santo
New monitors recruited: Nixon Kath
Sima Ovah
Sakias Jeremiah
Niala Fred
Tatiana Jeremiah
Nadasa Tarisa.

In Big Bay, Donald tried to contact Jean Louis, the monitor who conducted a beach survey in that area during the previous nesting season. He could not be found though and people in the area did not know where to find him. Donald then spoke with one of the people that had helped Jean Louis last year and one of the chiefs for that area about the way Jean Louis had been conducting himself in the role of a turtle monitor. Based on some incidents in the past year it was decided to dismiss him and a new group of turtle monitors was recruited. The new monitors are: Nixon Kath, Sima Ovah, Sakias Jeremiah, Niala Fred, Tatiana Jeremiah and Nadasa Tarisa.

On day one, the group measured out the beach that would be used for the survey. The beach is approximately 5 km long and was marked out into 10 separate 500-metre long zones.

On day two, the group went over the new data forms. There were two separate data forms to be used as part of the survey. The first was the tagging for to be filled out every time a turtle was encountered. The second was the nest data capture sheet to be filled out every time a nest was located. Part of the day was spent on exercises to teach the monitors how to fill out the forms correctly in the case of both nesting turtles and foraging turtles.

During the time that the training was taking place there were no turtles that came onto the beach but there had already been two nests laid prior to the start of the survey but both had already been dug up by someone from one of the local villages.

East Malekula Tour to new Areas (December 2008)

Donald toured the area with one of the existing turtle monitors from Malekula, John Lakette. They started the tour in the village of Remef, which is in the centre of the area in East Malekula where you can find black sand beaches.

The pattern that was followed during the whole tour was to meet with the village chief upon arriving in the village. After meeting with the chief Donald and John would then meet with the community to present a turtle awareness/conservation session.

In Remef there is a turtle nesting site and the chief had already put a ban on taking the turtles and the eggs but they had never received any information about turtles before.

The chief was very thankful for the information that Donald and John presented and that the two of them were able to take the time to answer all the questions that the community members posed about turtles and other aspects of the environment. At the end of the session the chief nominated two men to act as turtle monitors for the community.

In every village where Donald and John went they did the same thing. They would sit down and speak with the chief first to explain why they were there and the work they were doing with turtles. Then the chief would make an announcement in the community asking for everyone to come to a central place where Donald and John could talk to the community and then answer any of their questions. Most people were happy to hear about the information that was being shared and to learn a little bit about the turtles in their area so they could begin to protect them.

During the tour there was one beach they passed through where they saw some children digging up a nest and taking the eggs. This was close to Banan Bay. In the villages of Haulua and Unuah 5 people had just recently taken nesting females from the beach to eat. Donald and John found the people who had taken the turtles and explained the fisheries law to them that prohibits the taking of sea turtles. The chief then said there was to be no more taking of turtle.

On the eastern side of Malekula they found that there were many nesting sites for Green and Hawksbill turtles. The Leatherback Turtles were only nesting in the areas around Black Sand, Lamap, Crab Bay, Unuah 5 and Tisman. All of these areas reported that the Leatherback populations nesting on their beaches had declined significantly but did not specify the timeframe for that decline. At Black Sand some people from the S.D.A. church had found a Leatherback Turtle nesting in December. They protected the nest and made sure the female made her way safely back to the water.

People in the community of Unuah 5 reported that over the last 3 or 4 nesting seasons they had seen a total of 5-6 Leatherback Turtles nesting. The chiefs and the community members in this area were very happy to learn some information about turtles and to have been asked to nominate

turtle monitors to join the national network. They will now start to protect the turtles in the water and on the nesting beaches.

Names and Villages of the New Turtle Monitors Recruited on East Malekula
Village: Remef
Chief: Masing Haur
Monitors: Bong Navur Soksok /James Nambong
Contact: Waren @ Mob 51975

Village: Vartavu
Chief: Sam
Monitors: August Stephen /Alfet Jonety
Contact: Tel 48803

Village: Lambulpatwe
Chief: Vanu
Monitors: Roy Philip /Maxim Joel
Contact: Tel 48803

Village: Lanvitvit
Chief: Malingi
Monitor: John Kelven
Contact Tel 48803

Village: Asuruk
Chief: Masing
Monitor: Kalwin Luan
Contact: Tel 48586

Village: Black sand
Monitor: Tasso Luan / Dickson

Village: Renevier
Chief:
Monitor: Tasso James

Village: Burbar
Chief: Bong Bell
Monitors: Joseph Nadi / Kalmarie Jimmy

Village: Pangkir
Chief: Lesly
Monitor: Zakarie Navong
Contact: Tel 48860 /48946

Village: Rereb
Chief: Kalo
Monitor: Apia Kalo

Village: Pankumo
Chief: Eron Wilson

Monitor: Sami Simion

Village: Unuah 5
Chief: Joseph Johnny
Monitor: Joseph Johnny

Village: Unuah 4
Chief: Andrew Bob
Monitor: Andrew Bob

Village: Unuah 3
Chief Amsin Tom
Monitor: Amsin Tom

Village: Unuah 2
Chief: Stephen Willie
Monitor: Stephen Willie

Village: Unuah 1
Chief: Endy Shem
Monitor: Endy Shem

Village: Tembibi
Chief: Kalua Charlie
Monitor: Kalua Charlie

Village: Taremb
Chief: John Santhy
Monitor: John Santhy

Village: Lingarak
Chief Jacob Naus
Monitors: Amika Happy / Jeven Sam

Village: Mabes
Chief: Tangken
Monitors: John Kency

Appendix 3: Turtle Tagging Sheet

Turtle Tagging Sheets (English)

Island: _____ **Village**: _____ **Beach Sector**: _____

Habitat where turtle found: reef, lagoon, sea grass, open water, open beach, beach grasses, forest

Date: _ _ / _ _ / _ _ _ _ **Time:** _ _ : _ _ **PM / AM**

Form filled out by: _____

Turtle measured by: _____

Species: hawksbill, green, leatherback, loggerhead, olive ridley

Sex: female, male, unknown

Encounter type: caught in net, nesting, snorkeling daytime, snorkeling night, other _____

Activity: nesting, swimming, feeding, resting, trapped in net, mating, floating (dead or sick), beach washed (dead or sick)

Condition: dead / alive **CCL**: _____ **CCW**: _____

Does the turtle already have tags: Yes / No Left hand tag #: _____ Right hand tag #:_____

Did you apply any new tags: Yes / No Left hand tag #: _____ Right hand tag #:_____

Nest laid: Yes / No **Nest ID #:** _____ **# empty shells**: _____ **# yolk eggs**: _____

 # dead in eggs: _____ **#dead in nest**: _____

Comments: _____

Appendix 4: Nest Data Capture Sheet

Nest #	Beach Sector	Date Found	Eggs Seen (Yes/No)	Turtle Tagged (Yes/No)	Date to Start Checking	Date to Dig	Hatched (Yes/No)	Date Hatched	# Live	# Dead	# Bad Eggs	# Egg Shells	Total # Eggs in Nest	% hatched	comments
1															
2															
3															
4															
5															
6															
7															
8															
9															
						TOTALS									

*this is a shortened sample of the normal field sheets

Appendix 5: Project Spending

Actual Spending for 2007-2008 Leatherback Surveys

Repeat Nesting Surveys of Confirmed Leatherback Nesting Beaches						
Leatherback nesting beach surveys at Votlo on Epi Island						
Item	*# people*	*# items or days*	*cost per item*	*total vatu cost*	**budget**	**spent**
return airfare	2	1	19,000	38,000	38,000	8,970
return land transport	1	1	24,000	24,000	24,000	53,700
one week food for researcher	2	1	15,000	30,000	30,000	9,850
per diem for researcher	2	7	2,000	28,000	28,000	22,000
per diem for local turtle monitor	2	31	1,000	62,000	62,000	76,000
village fees/accommodation	1	1	5,000	5,000	5,000	8,800
equipment for monitors (e.g. lights)	1	1	10,000	10,000	10,000	6,210
sub total				***197,000***	***197,000***	***185,530***
Leatherback nesting beach surveys at Maranata on Ambrym Island						
Item	*# people*	*# items or days*	*cost per item*	*total vatu cost*	**budget**	**spent**
return airfare	2	1	24,000	48,000	48,000	50,493
return land transport	1	1	25,000	25,000	25,000	53,900
one week food for researcher	2	1	15,000	30,000	30,000	17,947
per diem for researcher	2	7	2,000	28,000	28,000	16,000
per diem for local turtle monitor	2	31	1,000	62,000	62,000	62,000
village fees/accommodation	1	1	5,000	5,000	5,000	5,000
equipment for monitors (e.g. lights)	1	1	10,000	10,000	10,000	6,150
sub total				***208,000***	***208,000***	***211,490***

Repeat Nesting Surveys of Unconfirmed Leatherback Beaches Visited in 2006						
Leatherback nesting beach surveys at Big Bay on Santo Island						
Item	*# people*	*# items or days*	*cost per item*	*total vatu cost*	**budget**	**spent**
return airfare	2	1	0	0	0	49,180
return land transport	1	1	20,000	20,000	20,000	50,500
one week food for researcher	2	1	15,000	30,000	30,000	6,500
per diem for researcher	2	7	2,000	28,000	28,000	35,000
per diem for local turtle monitor	2	31	1,000	62,000	62,000	64,000
village fees/accommodation	1	1	5,000	5,000	5,000	24,100
equipment for monitors (e.g. lights)	1	1	10,000	10,000	10,000	0
sub total				***155,000***	***155,000***	***229,280***
Leatherback nesting beach surveys at Southwest Bay On Malekula Island						
Item	*# people*	*# items or days*	*cost per item*	*total vatu cost*	**budget**	**spent**
return airfare	2	1	22,000	44,000	44,000	9,897
return boat transport	1	1	25,000	25,000	25,000	39,700
one week food for researcher	2	1	15,000	30,000	30,000	45,615
per diem for researcher	2	7	2,000	28,000	28,000	28,000
per diem for local turtle monitor	2	31	1,000	62,000	62,000	60,000
village fees/accommodation	1	1	5,000	5,000	5,000	23,000
equipment for monitors (e.g. lights)	1	1	10,000	10,000	10,000	4,060
sub total				***204,000***	***204,000***	***210,272***

Information Seeking Nesting Surveys						
Leatherback nesting beach surveys on Vanua Lava in the banks						
Item	*# people*	*# items or days*	*cost per item*	*total vatu cost*	**budget**	**spent**
return airfare	2	1	50,000	100,000	100,000	146,865
return boat transport	1	1	30,000	30,000	30,000	53,000
return land transport	1	1	10,000	10,000	10,000	7,400
one week food for researcher	2	1	15,000	30,000	30,000	3,310
per diem for researcher	2	7	2,000	28,000	28,000	28,000
per diem for local turtle monitor	2	31	1,000	62,000	62,000	62,000
village fees/accommodation	1	1	5,000	5,000	5,000	22,800
equipment for monitors (e.g. lights)	1	1	10,000	10,000	10,000	860
sub total				***275,000***	***275,000***	***324,235***
Leatherback nesting tour on East Malekula						
Item	*# people*	*# items or days*	*cost per item*	*total vatu cost*	**budget**	**spent**
return airfare	2	1	30,000	60,000	60,000	8,196
return land	1	1	70,000	70,000	70,000	53,500
one week food for researcher	2	1	15,000	30,000	30,000	3,700
per diem for researcher	2	7	2,000	28,000	28,000	27,500
per diem for local turtle monitor	2	31	1,000	62,000	62,000	7,000
village fees/accommodation	1	1	5,000	5,000	5,000	17,100
equipment for monitors (e.g. lights)	1	1	10,000	10,000	10,000	3,100
sub total				***265,000***	***265,000***	***120,096***
WSB Admin Fee				***196,000***	***196,000***	***196,000***
				total vatu cost	***budget***	***spent***
TOTAL				***1,500,000***	***1,500,000***	***1,476,903***

Grant Application Figures

Total Survey Costs	1,304,000
WSB 15% administration fee	196,000
Total Request in Vatu	***1,500,000***
Total costs in US dollars (@1 USD=100 vatu)	***15,000***
TOTAL USD GRANT REQUEST	***$15,000***

Grant	US $	Ex Rate	minus Bank Fees	Vatu Received
1st Payment (received)	$10,156	97.45	1,200	988,502
**2nd payment (4,844, not received)	$4,844	92.78	1,200	448,226
TOTAL RECEIVED	***$15,000***	***97.45***	***2,400***	***1,436,728***

****estimated based on current exchange rate**