

Pacific Islands Fisheries Science Center
Marine Turtle Research Program
2570 Dole Street
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East Island Turtle Camp Standard Operating Procedures 2012

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Supplies to Order for the 2012 Turtle Camp season:

Quantity	Item
1	Set of small screwdrivers
1	Nyquil
1	Blister Care kit (e.g. 'blister medic')
1	Cough suppressant syrup
2	Safety Goggles, lightweight, clear lenses.
2	No-rinse shower soap
2x6oz	Insect repellent <i>Repel</i> permanone clothing and gear
1	Silicone lubricant Heavy Duty
1	Water repellent, silicone spray <i>Camp Dry</i> heavy duty
2 pair	Kneepads <i>McGuire Nichols</i> (pair), Soft cushion nylon
6	Propane canisters for stove <i>Coleman</i>
30	D Batteries
70	AAA Batteries
2	Field book, needs list, <i>Rite in the Rain</i> #311
50	Field books, <i>Rite in the Rain</i> #393
2	Mototool tips
15	0.7mm Pencil lead, for mechanical pencils
1	Pencil sharpener
10	Pencil, mechanical
1	Tape measure, soft
100 caps	Acetaminophen (<i>Tylenol</i>) (pain relief/fever reducer)
1 box (~25)	Anti bacterial wipes
1 x 1oz tube	Antibiotic ointment (prevent infection in cuts/scrapes/burns)
100 caps	Aspirin (pain relief)
1 box of ~20	Finger care, Band aids
8fl oz	Bismuth Subsalicylate oral suspension (upset stomach reliever/antidiarrheal) <i>Pepto-Bismol</i>
20 tabs	Bismuth Subsalicylate tablets (anti heartburn/indigestion/upset stomach/nausea/diarrhea) <i>Pepto-Bismol</i>
2	Epi pen, 0.3mg
2 x 4 oz	Eye-wash solution
50 caps	Ibuprofen (pain relief/fever reducer)
18 tabs	Non-drowsy nasal decongestant (nasal congestion/sinus pressure relief)
1 x 4oz	Pain relieving cream (pain relief /backache/muscle/joint)
2.5 yds	Self adhesive athletic wrap
2 x 0.15oz	Sunscreen Lib Balm, 15 SPF (sunburn prevention)
1	Fire extinguisher, old one sent to Hono for re-charge, confirm it was returned to Tern
1	Folding futon mattress, single size
1	Leatherman multi tool, with locking accessories
5 sheets	Coarse Sand Paper

Suggestions for 2012:

These are things that, we think, would make the 2012 season more efficient, safer in terms of time on East Island, and better in terms of collecting and backing up data.

Making sure that all the supplies needed for turtle camp are in fact ordered and get stored inside the locked turtle closet as soon as they arrive to Tern. It is crucial that the items that are expected to be found are in fact available for camp. The Tern island manger should be provided with a current copy of this SOP as a reference.

Ordering food that is appropriate for turtle camp as the season approaches. The Tern island manager (and any person ordering food/supplies) should be familiar with the operating procedures of turtle camp and consider its unique setting for provisions and cooking when placing food orders. Taking long working hours (that do not allow for conventional cooking times) and the absence of a fridge into account might help. Some suggestions include a full supply of coffee and various canned fruit and vegetables, canned meats (tuna, chicken, turkey etc.), canned soups, single-portion milk packets, granola bars, *mac and cheese* (or comparable ready meals), a variety of nutritious snacks, instant single-portion oatmeal, dried fruit and nuts etc. The average time spent on East Island in recent years is ~40 days.

An Oceanside Room for the Duration of Turtle Camp - Sleep is harder for some more than others during the day. The oceanside rooms have a breeze (and are cooler) and lack the bird noise during the day the other rooms have. If at all possible, reserving the rooms furthest from the bathrooms and common areas might help minimize the disturbance created by the people that work on a daytime schedule.

Not assigning the turtle techs maintenance chores- The inverted sleep/work schedule does not allow for comfortable completion of the tasks. (In past years turtle techs have contributed for the house chores only since those can be done later in the evening or at night without disturbance to day-sleeping people).

I. Honolulu Preparations

National Marine Fisheries Service:

Meet with George Balazs for training and guidelines.
Discuss how he wishes to communicate throughout the season: email/radio calls schedules, satellite phone calls, etc.

He will provide the following:

- 1) PIT tags
- 2) PIT tag applicators
- 3) PIT tag readers and spare batteries
- 4) Turtle Data sheets (do not hole-punch close to edge!)
- 5) Datalogger retrieval and deployment lists.
- 6) Daily totals forms.
- 7) Photo-log.
- 8) Turtle scutes for mototool practice (for loan only in Honolulu)
- 9) Digital Camera with cord and universal card reader
- 10) Data loggers and any other equipment needed for special projects.
- 11) Mototools and batteries
- 12) GPS devices
- 13) Memory cards for digital camera
- 14) 3 extra batteries for digital camera
- 15) 2 EPIRB

Inventory:

Before departure, confirm with USFWS that all the supplies needed were ordered for the season. Table 1, at the end of this document, is a list of items that are found on Tern Island for turtle camp use. Read this list in order to familiarize yourself with what will be available in order to properly prepare before departure. This list also serves as a guideline for items/quantities that are necessary for a safe and efficient field camp.

II. Turtle Camp Preparations on Tern Island

A. Preparing to set-up camp:

Use “East Island Turtle Camp Packing list”, **Table 2**, at the end of this document as a packing reference for camp.

It will be helpful later if you also use Table 1 (inventory) to verify that all items are in fact available in the quantities/condition noted as you stage them when taking them out of the turtle closet. You can choose to do the complete inventory at the end of the season only, as long as it done accurately. (It is useful to put used batteries, propane containers, spray paint bottles etc. aside during the season and count them at the end, in order to know how many were used, and therefore will be needed in the future).

- 1) Fire up stoves to test their functionality (NOTE: check both stoves, for accuracy of inventory and to make sure a backup is available and well maintained). Spray with lubricant and/or rust inhibitor where needed.
- 2) Fresh Water jugs: rinse w/ Clorox or baking soda and water before filling up.
- 3) First Aid Kit: stock using supplies specifically ordered, found in a separate container in the linen closet. If you need additional items, inform the Tern island manager you will be taking these items from the USFWS supply, and make a note of them so that they can be ordered the following year as part of the necessary turtle camp supplies.
- 4) Use available buckets and line with trash bags to keep gear dry during transport (especially important for electronics).
- 5) Speak with manager on Tern and George Balazs (PIFSC/NMFS) to establish a time table for setting up camp, keeping in mind that at least 4 people are needed to build the tent, that both turtle technicians will stay on East for the first shift, and that at least 3 nights are needed for training.
- 6) Double check to make sure you have all the tools necessary to set up camp, especially:
 - a) Small sledge hammers and pole driver (in tractor shed) to pound in large fence stakes
 - b) Cordless drill with attachments and extra charged batteries.
 - c) Complete ratchet set (in FWS warehouse)
 - d) Zip-ties to tie fencing to fence stakes after they are pounded in.
 - e) Screws and washers for attaching tent base poles to platform (in turtle camp toolbox, extras in metal cabinet drawer in turtle closet)
 - f) All tent pole T-shape connector pieces (in metal cabinet drawer in turtle closet)

III. Turtle ID Data Sheets, Daily Totals Forms and Field Notebook

Note: Blank copies of the Daily Totals forms as well as the transfer day checklist can be found on the Tern Island computer. Go to Refuge, Turtles, Turtle Camp, and Blank forms. (NOTE: check at season's beginning that these are still available and up-to-date, otherwise, let George Balazs know so new versions can be emailed and saved).

A. Turtle Data and Data Forms

Two data sets were used for this turtle season: one combined identification

and sighting data for each turtle and one for recording the number of turtles up each night. The core of this system is three data sets. One for turtle identification purposes, one for recording sightings and one for recording the number of turtles up each night. The Daily totals form is used to keep George Balazs informed of activity throughout the season. It is recommended that this information be relayed to George Balazs on a nightly basis via email if internet is available. Once the training shift is over it is recommended that Turtle Techs create a spreadsheet which lists all metal tag numbers observed and the corresponding moto-tool number for the turtle with those tags. This spreadsheet should be updated after each shift upon return to Tern Island and sent to George Balazs via email as this is used to identify “special girls” or historically important tag returns on East Island. Information about nesting and data collected is provided in a report written at the end of the season.

Following are explanations of the turtle forms:

Note: To reduce confusion, **all activity during a nights walks will be based on the “turtle night” not exact date.** All times will be recorded based on 24 hour military time. For example, the first walk is at 2100 on June 5th. If you see a turtle at 0200 the same night, the date entered for that turtle’s sighting information will still be June 5th (not the actual date of June 6th). So June 5th will be the date given from the 2100 walk until the 0700 walk the next morning.

However, for datalogger deployment and photos the actual date will be used when entering information in the logs.

1. Green Turtle Identification Form:

Each turtle will have its own datasheet (more if necessary) with ID information on the top of the form (information descriptive of the animal, that does not change throughout the season) and sighting data on the lower portion of the form (notes on events relevant to a particular date). Each old tag read or new tag applied will require filling out a line on the ID portion of this form. Carapace length, tumors, and tumor positions can all be written on the same line, provided the data was collected on the same night.

After a turtle is fully identified (mototool number assigned, PIT tags applied, carapace measurements taken, tumors noted, etc.) each subsequent trip ashore will only have to be recorded on the Sightings portion of the form.

Data Variables for ID Section:

Island: East, Tern, etc.

Date: Month/day

Mototool ID: A letter, number or alphanumeric are engraved (“mototooled”) and painted on each turtle nesting during the season for temporary identification. Information on what letter/number combinations and position on the carapace should be used will be provided by George Balazs, PIFSC/NMFS. Turtles are numbered beginning with the number 1 and numbered continuously until the last turtle is seen. Any duplication of mototool numbers will be given a “D” in front of their number to differentiate between the two individuals.

Tag #: Number of old tag read or new tag applied. PIT tags have stickers with their numbers printed on them which are placed in this space after PIT tag has been applied and data is being entered.

New or Old: Put a check mark in the respective box when a new tag is applied or an old tag is read.

Tag Position: Record the position of the old tag read or new tag applied using the tag position codes listed below.

TAG POSITION CODES:

Right front flipper	RF
Right hind flipper	RH
Left front flipper	LF
Left hind flipper	LH

Carapace Length- Curved: curved carapace length in cm (to nearest ½ centimeter) measured to the longest point on the shell, **not** to the notch.

Carapace Length- Straight: straight carapace length in cm (to the nearest 0.1 cm), to the longest point on the shell, using the metal calipers. Measure the straight carapace first, but also measure the curved carapace if time allows.

Tumor Size: enter a size code for EACH tumor. Refer to the list of SIZE CODES FOR TUMORS below.

SIZE CODES FOR TUMORS:

Small (1-3 cm diameter)	1
Medium (3-6 cm diameter)	2
Large (6-10 cm diameter)	3
X-Large (>10 cm diameter)	4

Examples for field estimations of sizes:

Small – the size of the tip of your little finger

Medium – fits in the circle made by touching your index finger to your thumb (ok sign) but larger than small size

Large – smaller than the palm of your hand, but larger than size medium

X-large – larger than the palm of your hand.

Tumor Position: enter a position code of EACH tumor that corresponds with the size entered under “Tumor Size”. Example: Tumor size input of 1,1 and Tumor Position input of N1,F1 means the turtle has a size 1 tumor at position N1 (left dorsal neck) and another size 1 tumor at position F1 (left distal of front flipper). Each size and corresponding position identifies one tumor. Refer to the list of TUMOR POSITION CODES below.

TUMOR POSITION CODES:

Left eye	LE
Right eye	RE
Left neck	LN
Right neck	RN
Left hind flipper	LH
Right hind flipper	RH
Left mouth	LM
Right mouth	RM
Left front flipper	LF
Right front flipper	RF
Other	O

Comments: any pertinent information such as injuries, markings, barnacles, deformities etc.

Data variables for Sightings Section:

Date: month/day

Verification Tag #: About two weeks into data collection tag verification will begin. From then to the end of the season, any new pit tag will be verified at least one week after it was inserted. This tag number will be written in the space provided (referencing LHF or RHF) and used to check against the sticker in the ID Section. During the last week of camp, verify ALL new PIT tags even if the turtle was identified only the prior night: it is unlikely that turtles will be sighted multiple times at this stage.

Time UP and Time BACK: These are the times the turtle comes ashore and returns to the ocean. We will not always be able to record this data with accuracy - so just record the time the turtle is FIRST encountered that night.

This should be entered as the "Time Up" variable. "Time Back" is usually the time a turtle is seen returning to the water, or was last observed on land with an estimation factor added. To determine "Time Back" for a turtle the following estimation factors will be used:

For each activity, times should be added to the last time seen:

Crawling to water	Add 2 minutes
Crawling	Add 10 minutes
Digging (Bodypit, egg chamber or backfill)	Add 30 minutes
Nesting (eggs seen)	Add 1 hour
Pattycaking	Add 1 hour

Activity: codes are as follows:

N	=	nested (<u>eggs seen</u>)
P	=	probably nested (turtle was seen pattycaking)
M	=	maybe nested (turtle seen back filling)
X	=	digging (turtle was digging but did not nest XBP, or XEC)
C	=	crawling (turtle crawling above berm but not seen digging)

Always enter the highest level of activity only; nesting (N) being the highest level, then P, M, X and crawling being the lowest.

Comments: any sighting information that is pertinent to that night. (e.g. pictures taken, datalogger deployed, odd activity witnessed etc.)

2. Daily Totals Form:

There are two versions of this form. The Tern Island version is updated nightly during the turtle technicians' nightly radio call. This is used to pass to Honolulu offices when requested throughout the season. The East Island version allows for more information as it is used as a summary of the night's walk including weather, etc and therefore provides an overall "snapshot" of the season.

Data Variables:

Date: month/day/year

Turtles Up: Total number of turtles observed above the berm that night.

New Turtles IDed: number of turtles identified for the first time that season. Do not include any turtles that were already mototooled or tagged that season, but are still on the needs list for tumor exam, etc. This total should equal the

total number of turtles ID'd at the end of the season.

Number of Nests N/P/M: The number of turtles that were seen N-Nesting, P-Patty caking, and M - Back filling that night. *Ex. 2N, 3P, 2M*

Your name: the researcher's initials that is recording the data.

Comments: the number of baskers recorded on the sunset walk every evening, any pertinent information on weather, tides, full moon, "jumpy turtles", etc (the only comments that are relevant to the Tern Island form are partial nights due to training or weather).

3. Field Notebook:

Format:

The field notebook should be a journal of the night's activities. Two notebooks are kept: one for East Island activity, and a separate notebook used as a needs list where you can easily cross-check what needs to be done to complete the identification of each turtle. For the nesting activity notebook the date, the next Mototool # to be used, and the next picture number should be placed at the top of the page for each new night. A new page should be started each night so that the first activity of the night will never be recorded halfway down the page (it is also helpful to skip a page between days). The "needs list" must be updated every day to make sure all data is collected for each turtle and to limit the chance of recollecting data or re-tagging an individual turtle. Ask George Balazs, PIFSC/NMFS if he wants a separate "tunored turtles list" kept for the season.

Data Notation:

Upon discovering a turtle above the berm (and for our purposes, now considered a nesting turtle), these data should be collected and noted in the field notebook:

First, identify the turtle. The turtle is NOT identified until it has a mototool. If you are unable to mototool the turtle for some reason do NOT approach and record old tag information. The mototool number is her ID number for the season and without that mototool she is not part of the data set.

1. New, unidentified female:
 - a) Determine her activity/record time first observed
 - b) Proceed with data collection according to these guidelines:
If turtle is crawling, excavating a body pit- XBP, back filling- BF or patty caking- PC you may collect all data. If a turtle is excavating an egg chamber-XEC use your judgment and the

turtle's reactivity as a guide. (George Balazs will discuss in further detail) If nesting-N you may take measurements and read old tags, but DO NOT pit tag. Turtles can continue to nest through some disturbance, but pit tagging will most likely cause her to abort nesting.

c) Mark the field notebook with a check mark if completed upon first encounter or if more data needed, note the field notebook accordingly.

2. Previously identified (mototooled) female:

a) Record her mototool number, the time she is first observed and her activity.

b) Check field notebook "needs list" for general needs. If on the list, complete needed items (e.g. tag her, get measurement of her carapace) Helpful hints: if the turtle has needs, but you are unable to take them at that time write SCL: _____ etc so that if you see her again that night you know to take her SCL and you don't have to refer to the needs list again. If she has no needs putting a checkmark by her mototool number will let you know that she has no needs. The same is true when finishing all needs put a checkmark. This will save you valuable time during a busy season.

c) Special Project only: Check field notebook tumored female list

1) If on the list, mark her nest and fill out the tumored female form

2) Be sure to add a corresponding control nest to the tumor/control needs list. This should have the approximate location of the tumored nest so that you can be sure to get a control in the same general location as the tumored nest. Try to get the control and tumor nests as close together in both space and time.

d) After the second week of camp begin PIT tag verification

1) Read tags with portable PIT tag scanner and record tag # in field notebook.

2) When updating the needs list, check off "tag ver" and if everything else has been obtained draw a pencil line across her line in the needs book and she has then been completed.

3) Record verified tag numbers under sightings section of ID form.

3. Record subsequent sighting times and activities throughout the night of each mototooled turtle encountered.

* See the examples of field notebooks for the format. For each turtle, leave at least six lines in the notebook, so all her activities for that night may be recorded in one place.

IV. FIELD WORK

Procedures:

1. Nightly Duties

a) **Every night you MUST check-in with Tern Island via VHF radio.**

This has been done at approximately 01:00 hrs in the past which allows privacy and less activity on Tern at time of call, but may be done at other agreed upon time. Use Handheld if needed. **Safety First! This is the single most important duty of the season.**

- Calls should be made within an hour either way of the agreed upon call time.
- The person on Tern must be within hearing distance of the radio and should not rely on handheld units nor be using the internet or sleeping during this time. The purpose of this call is to ensure the safety of the person on East Island. In addition, it allows for human contact, questions to be asked, and Daily Totals to be exchanged.
- Agree upon a time (e.g. 3am) to call with the satellite phone if radio contact is not made or was interrupted unexpectedly. At this time the Tern Island tech will be within hearing range of the phone on Tern (in the computer room).
- If contact cannot be established, use the 'turtle cam' on Tern first thing in the morning to scan the island for activity.
- Agree upon additional signals that will be used in case the radio and phone calls are unsuccessful, such as placing a large object in a very visible area at an agreed upon time (e.g. 7am) to let Tern Island know all is well.
- If it still cannot be determined whether or not the person on East is ok, ask any other researchers going to East Island that day to check in on them.
- If all of the above things do not yield a positive result, or the 'all OK' signal is absent, a trip to East should be made.

b) Each night, a short walk around the island starting just before sunset should be performed to locate hauled out mom and pup pairs and memorize (or map) their locations so that disturbance throughout the night can be avoided. Then, starting at 2100 6 walks will be made: at 2100, 2300, 0100, 0300, 0500, and 0700. The number and times of walks are not written in stone and judgment may be used based on activity/conditions. Also, care should be made not to go out at night more than once an hour, unless a turtle needs to be identified or observed laying eggs. This is to minimize unnecessary disturbance to nesting turtles, birds and seals. The island should be divided into

imaginary monitoring quarters (ex. northeast quarter is first starting from the tent). The turtle-tech should complete each monitoring quarter in 30 minutes and plan accordingly to be sure to allow enough time to gather the minimum requirements on each turtle within the 2 hour allotted walk time period. Depending on how busy the season is, all data attributes may be collected upon first encountering the turtle. Data that is not able to be collected the first time the turtle is seen may be taken on a subsequent walk or evening. See page 19 for data collection order and priority.

- c) Update Daily Totals Form, Photo-log, Datalogger Deployment Log, and Needs List after completion of walks or before the next day's walks begin. **Do not put this off.** Forms have a way of getting out of control if they're not filled out each night. Remember when filling out the Daily Totals form that a new ID is any turtle which has been mototooled that night. If no mototool number was applied, then the turtle is unknown, and she is not considered a new ID on the form.
- d) Transfer days: During your shift, make a note of anything that you run out of, or is needed, for the other tech to bring for their shift. Go over the checklist at least the day before the transfer so that there is plenty of time to prepare. It is not only courteous, but necessary to make sure that there is enough food, water, camping and tagging supplies for your co-worker when they arrive. This will help the camp run smoothly. Also, if any supplies appear to be running short at Tern Island, inform the Refuge Manager so that they can be re-ordered.
- d) Entering your field data: You will enter them on Tern Island, where the data book will remain. After the first switch, the tech that comes off East Island will enter the data collected during the shift, regardless of who actually collected the data in the field book. After that, the tech that comes off East enters their own data during their days on Tern and so on.

Note on data proofing:

Each technician will enter their own data. The other tech will proof it and then the first tech will proof it again. It is always entered once and proofed twice. Please check not only for information that was overlooked, but also information that is superfluous. The data sheet should reflect ID data on that turtle, nothing else. Comments in the sighting section should include information about data collection, such as: training night, missed walks, dataloggers deployed and pictures taken.

2. Satellite phone use:

During most years, you will have a satellite phone supplied by MTRP, (PIFSC/NMFS) to use on East Island. Its main purpose is to provide an additional means of communication with Tern Island for emergencies and in case radio contact cannot be established. Additionally, you may call George Balazs any time you feel this might be beneficial to the data collection process and if there's any information that needs to be communicated immediately (i.e. that shouldn't wait until the following scheduled radio call) and/or if contact with Tern Island cannot be made. Pre-approved, sporadic and brief personal calls may also be made.

One of the potential weaknesses of the phone is that the antenna might become loose even if still attached to the phone thus preventing you from getting a proper signal. The antenna should be able to rotate, but it should not "wobble" inside its socket. You can take it out by pressing the release button on the top part of the phone, while gently pulling out the antenna at the same time. Line up the connections inside the antenna receptacle and press it back into place.

To dial out: Turn on the phone by pressing and holding the "ON" button for at least 3 seconds. The phone number must be dialed in international format: 00 or + [country code][area code] [phone number]. For example: +1 808 286 2899. The + is obtained by pressing and holding the "0" button. After you have entered the number you wish to call hit "send" (green button). Press the red button to terminate the call.

If you get no signal: Make sure you are outside and a few feet away from the tent, rotate and fully extend the antenna so that it is vertical to the ground and has a clear and unobstructed view of the sky. Wait 3-5 minutes after the phone has been turned on while staying in place. If this fails, you may walk to a different spot on the island, then stop and wait again. In order to save battery life, the phone will be kept off when you're not using it or expecting a planned phone call.

NOTE: Turn the phone on and check the battery level at least before each shift switch, and take it back to Tern to be charged if necessary.

The table below shows the important phone numbers you should have readily available. Shortly before departure, reaffirm that they are all still current.

Maritime Health Services	(206) 781 8770	medical emergency (24hr)
Tern Island	(011) 881 64 141 6408	sat phone
Tern Island	(808)447-7665	office landline
George Balazs	(808) 286 2899	cell
	(808) 983 5733	office
	(808) 395 6409	home
	gbalazs@honlab.nmfs.hawaii.edu	email
Ty Benally	(808) 792-9554	office
	(808) 927-5033	cell
	Ty_Benally@fws.gov	email
	(808) 792-9585	fax
Tom Edgerton	(808) 792-8637	cell
	(808) 792 9480	office
	Tom_Edgerton@fws.gov	email
Iridium customer care	+1 480 752 5155,	phone tech ass.
Vizada customer care	+1 301 838 7700 Account # M24425	phone provider
Iridium phone	(011) 881 641 484 414	sat phone (self)

3. Approaching a Turtle

Walks always begin from the tent and advance in a clockwise direction (facing north you head east) around the island, ending at the tent. Proceed cautiously. A pair of safety glasses is available for your use: these will protect your eyes from sand and dirt that might be thrown by the turtle and from birds' sharp beaks and airborne feces (especially frigate birds) even during daylight hours. A full beam of light even from a AA flashlight is excessive and unnecessary. To lessen the amount of light and control your beam more effectively cover the face of the flashlight with your first two fingers and direct a small beam of light by spreading them apart slightly. If you need to light your way while walking, cast the beam of light directly on the ground in front of you and not in a wide beam. Your speed while scanning for turtles will increase with experience, be patient. Always scan from the berm to the center of the island (left to right). Seals usually lie facing in, so if you accidentally hit them with a beam of light it's better to shine the light on their flippers than their face. If you are using a flashlight and a seal happens to be looking in your direction, turn off the flashlight and slowly move away from the seal. Keep your distance from the seals at all times. In areas where burrowing birds nest, it is advised that scanning and walking be two separate actions: stand still while scanning for turtles, then proceed forward for a short stretch (~5 steps) using the light to illuminate the ground you are walking on (to avoid

crushing a burrow or egg) then stop again to scan.

There is no set way to approach a turtle, because every situation will be different. Everybody will find a way that minimizes the disturbance to the turtle, as well as being comfortable for the researcher. When it is dark, a flashlight will have to be used to scan the island and spot turtles (use other senses too, e.g. sound of sand being thrown, smell of fresh dirt, dust in the air.... to help locate the turtles). Once a turtle is spotted and before proceeding any closer, her activity should be noted. Wait and watch her. Look for a white, spray-painted mototool number on the lower right (and/or left) side of her carapace. If it is too dark to see without a flashlight, use a small beam of light on the back of her carapace to see if there is one. If there is no mototool number, assess her activity and proceed to identify her if conditions allow.

When there is a moon to walk by, you usually don't need a flashlight to see, but you will need it to scan thick vegetation and read old tag numbers. When the moon is bright, there are a couple of things to consider: The turtles can see you a lot sooner so you need to be more decisive. First identify their orientation and approach from behind and then watch your shadow. Turtles will jump if you cast your shadow over their face just as must as if it were your flashlight.

When working with a turtle, and a flashlight needs to be used, try to make the beam as small as possible and avoid shining direct light into her eyes. The turtles can, at times, get very skittish if they see something moving in front of them, whether it's a light, you, or your shadow. When handling turtles keep your profile low and stay behind them as much as possible.

The use of a red filtered head-lamp when collecting data can lower the reactivity of the turtle (and presumably the level of disturbance). Other animals in the vicinity may also be less affected as the red beam does not reach as far as the white one. However, to accurately read some metal tags, you will still need to use the white light.

Use your best judgment as to what is needed to get the job done with the least amount of disturbance to both the turtles and the other animals in the vicinity while preserving the accuracy of the collected data.

4. Nesting Activity Determination

A turtle can be engaged in at least six different activities:

- a) **Crawling**-- the turtle is actively moving across the island and is not digging (recorded as "C" or crawling in the field notebook).

- b) **Digging a Body Pit**-- the turtle uses all four flippers to dig a shallow pit in which she fits her body before digging an egg chamber (recorded as "XBP" in the field notebook). Turtles commonly dig "false pits," so do not assume her to have nested if you see her digging again on subsequent walks, always assess the activity based on what you see.
- c) **Digging an Egg Chamber**-- this is the chamber in which the eggs will be placed. It is cylindrical in shape, approximately 0.5 m in width and 1 m in depth. The turtle uses her hind flippers to carefully scoop out sand to make this chamber (recorded as "XEC" in the field notebook). The percent completed is also a useful notation if you need to remember to catch her laying eggs. Turtles are easily disturbed during this stage.
- d) **Nesting**-- after completion of the egg chamber, eggs are laid inside it (recorded as N in the field notebook). Percent completion of nest may also be recorded.
- e) **Pattycaking**-- after eggs are laid, the turtle will carefully fill the egg chamber with sand using only her hind flippers. She will then "patty cake" the top until it is firm (recorded as "PC" in the field notebook).
- f) **Backfill**-- after the eggs are buried, the nest is covered with sand, using predominantly her fore flippers. She vigorously sweeps sand over the body pit/egg chamber (recorded as "BF" in the field notebook) while moving forward very slightly.

5. Tagging and Collecting Data

On walks, you should wear your tagging vest equipped with the following tools:

2	Flexible measuring tape, in cm (1 as backup)
2	PIT tag applicators (one for back up)
-	PIT tags
1	Small sharps container (for used PIT tag needles)
1	PIT tag scanner
1	GPS unit
2	Flashlights (one for back up)
2	Mototools (or extra battery for the one mototool) with bits (one for back up)
2	cans White spray paint (one for back up)
2	Field notebooks (one regular and one "needs list")
2	Mechanical Pencils

2	Sharpie markers
1	50% Isopropyl Alcohol in small squirt bottle (to sterilize flipper for PIT tag)
1	Wire cutters to free entrapped turtles
-	Back up batteries
-	Piece of sand paper (to scrape of excess spray paint from carapace, if mototool # is not well-legible and before taking pictures)
1	Datalogger to deploy

Always put tools back in the vest immediately and make sure pocket is securely closed. (If you put down the alcohol bottle in the sand as you tag and the turtle starts crawling there is a very low chance of finding it again. Same thing applies to any other item you take out of the vest. Please take the time to ensure it is safely put away before moving on to the next step). Also, remember to put the mototool in the vest with the tip facing in. This way, if the unit turns on accidentally you can safely reach into the pocket and turn it off. After mototooling a turtle squirt the mototool bit with alcohol between individuals.

To avoid making a turtle abandon her eggs, never pit tag while nesting and allow turtle to finish excavating her egg chamber. However, you may perform all other data collection (other than pit tagging) while she is nesting and there are no restrictions while she is crawling, digging a body pit, pattycaking, or backfilling.

Data collection for her identification should be done in this order:

- 1) Approach her during one of her previously mentioned behaviors and give her mototool ID # on her carapace, if needed. Squirt the mototool bit with alcohol between turtles. [Tips on Mototool: Read all directions and precautions (you can use safety goggles if you would like), drain tool COMPLETELY before recharging, recharge tool for 3 hours ONLY, and it is best to leave the mototool bits on East Island and transfer the battery only for charging.
- 2) Check her for tags. (Scan for PIT tags first then look for old metal tags)
- 3) Pit tag her if needed. (LHF first)
- 4) Take her straight and curved carapace lengths, making sure to measure to the longest point of the shell, not to the notch.
- 5) Examine her for tumors (good time to check for front flipper tags)
- 6) Record all data in the field notebook after each of the above is taken. Do not attempt to keep all of the information in mind and enter it simultaneously.

If she is a tumored female, add her to the tumored female list if needed.
(Special Project only)

When identifying a turtle, be sure to be thorough, but you don't need to have

the flashlight blazing. A small, dim beam will do just fine. Pointing it sideways towards the tail end of the turtle is useful to see the complete mototool number etching, since paint might have partially chipped away (the most frequently confused numbers are 1 and 7, 3 and 8, 8 and 9, 5 and 6).

After each walk, take the time to highlight turtles encountered by using a black marker pen and over-writing the mototool numbers in the field book. This will speed up the process of looking up whether or not an animal was already seen that night, thereby saving time and reducing the chance of counting a turtle twice.

6. PIT tag application procedures

Passive Integrated Transponder (PIT) tags are internal, magnetically encoded tags which allow individual animals to be identified using a special scanner. Tags used at French Frigate Shoals are factory loaded in a large gauge needle and come in sterile packages. The tags are injected subcutaneously using an applicator supplied with the tags.

PIT tags may be applied while a turtle is crawling, body pitting, patty-caking, or backfilling. We have found it easier if the turtle has finished laying eggs and is either patty-caking or backfilling. The turtle goes into a “trance-like” state during this time and has very little reaction to the needle. Turtles should not be tagged while digging an egg chamber or nesting since this may cause a nest to be abandoned.

Materials needed:

- PIT tags
- PIT tag applicator
- Small squirt bottle of alcohol (50%)
- Sharps container (small size)

Procedures:

- a) Approach the turtle from behind with a small penlight or muted flashlight. If you choose not to wear a headlamp, holding a penlight between your teeth frees both hands for tagging.
- b) Assemble the needle and applicator. Remove the needle from its sterile package. Notice that the tip of the needle is beveled. When properly assembled, the bevel (or open side) of the needle will be facing up when being inserted into the flipper. This allows the PIT tag to be supported by the bottom of the needle and reduces the risk of the tag falling out of the needle before it is in the turtle. Slide the white piece on top of the applicator back to expose the needle chamber. Slide the rectangular end of the tag into the exposed chamber of the pit tag gun, with the bevel of the needle facing up. The rectangular end of the needle should be flush with the top of the

applicator when properly seated. Lock the needle in place by pushing the white slide forward to completely cover the rectangular needle end.

- c) Hind flipper tags should be injected 2-3 scutes above (proximal to) the hind flipper claw and about 1/3 flipper width in (medial) from the outside flipper edge. If necessary, palpating the flipper will help in determining a suitable location. Tags should be placed between the 2nd and 3rd bones medial to the outside edge. The objective is to place the tag in a fleshy part of the flipper but away from any bones. The needle will be inserted between two flipper scutes in this general area.
- d) Clean the insertion area using a 50% solution of alcohol. A small squirt bottle can be used to direct a stream of alcohol to this area with enough force to remove sand grains. At this is time you might want to put on gloves (at least on the hand that will hold the turtle's flipper and in areas with sharp substrate) since this lowers the chance of hurting yourself and provides you with a stronger grip, allowing for quicker action.
- e) Insert the needle subcutaneously into the soft area between the flipper scutes. Insertion should be one smooth forceful motion where the needle breaks the skin and is inserted up to the collar on the needle. Keep the needle parallel to the flipper so it goes just under the skin and not into the muscle. The turtle will often pull the flipper towards her body when the needle is inserted into her flipper. If the flipper is at an angle to the turtle's body, it should be repositioned so that it is in line with the body. Otherwise, when the turtle pulls its flipper in, the needle is pulled sideways and will either rip out of the turtle or break the applicator.
- f) Inject the PIT tag by pushing the white sliding pin on top of the applicator forward. This pushes a rubber plunger against the PIT tag, injecting it into the flipper. A slight forward pressure should be kept on the needle to keep it from backing out while the tag is injected. If the needle starts to back out while the tag is being injected, reposition the needle slightly and try again. In some cases the needle may have to be removed and relocated to a different part of the flipper where it can be injected without obstruction.
- g) Remove the needle and place the protective cover back on. Used needles should be disposed of as medical waste in an approved sharps container. A small, sealable container can be use as a temporary waste container while on a turtle walk.
Record the PIT tag number and the flipper it was inserted into in the field notebook using the provided sticker and write the turtle's mototool number and flipper on the outside of the envelope with a Sharpie. Four labels are supplied on the PIT tag package. One can be placed in the field notebook, one on the ID data sheet, and the other two will remain on the envelope. Save lost and misapplied tags, make a list of them, and send them to George

Balazs at the end of the season. Keep ALL pit tag envelopes for tagged turtles; file them in order of mototool number LHF first, then right and return to George Balazs, PIFSC/NMFS.

Safety Precautions:

Make sure the first aid kit on East Island is well stocked with gauze pads and bandages. Lacerations and puncture wounds are the most likely types of accidents to occur from PIT tags. All turtle personnel should know how to treat these types of wounds. Accidents should be reported to the Tern Island manager.

The needle used to insert the PIT tag into a turtle is extremely sharp. It should be kept covered with its plastic safety cap until you are ready to insert the needle and should be re-covered immediately after the needle is removed from the flipper. Keep the exposed needle pointed away from your body at all times.

Turtles occasionally have violent reactions to a needle being inserted into their flipper. The turtle may crawl away quickly and violently. Let go of the applicator in these situations and slightly back away from the turtle. Trying to hold onto the applicator can cause the needle to be pulled from the applicator by the force of the turtle, breaking the applicator and causing an exposed needle to be lost in the sand or flung toward you. A turtle that is reacting strongly to your presence can usually be PIT tagged in two steps. First, quickly insert the needle into the flipper in one smooth thrust, then let go of the applicator as the turtle moves away. Usually, the needle will stay in the flipper on its own. Once she has stopped moving, re-approach the turtle and push the plunger forward thereby inserting the PIT tag into the flipper.

7. Tag Verification

Newly applied PIT tags should be verified any time a turtle is seen again after ~10 days from the tagging event. This is to ensure that tags are still in place. However, if the encounter is likely to be the last one of the season, tags can be verified as soon as one day after insertion. Once a PIT tag has been verified, write the 10 digit number in the field notebook with that turtles sighting and ID information from that night. When transferring data from the field notebook to data sheets write the 10 digit number next to the sightings information and cross-reference with that turtles PIT tag sticker number. If no tag is found upon verification a second tag should be applied and appropriate notes made on data sheets.

8. Temperature data loggers

In the 1995-2003 field seasons data loggers were buried at French Frigate

Shoals; Four “sand” data loggers that are in historical locations and not nests on Tern Island and East Island and nest dataloggers on East Island. They were placed in approximately the same locations every year and left for nearly 4 months (beginning of turtle camp until September). Starting in 2006, an additional sand data logger was added to the historical ones on East Island, deployed at the same time as the others. The total number of dataloggers placed in the sand in 2010 was three. Loggers are no longer deployed on Tern.

Deployment Procedure:

- a) Obtain the data loggers from George Balazs; they will be programmed and ready to be deployed. Loggers are attached to a long cord marked with burying depths (45-55 cm) and a tag showing the serial number.
- b) Locations for historical sand deployment sites on East Island are listed on the data logger retrieval form.
- c) Bury the loggers to the 45-55 cm mark, tie the end of the cord to LARGE marine debris to prevent losing marker by other nesting turtles digging over it. Record the data logger’s serial number, location, and date/time of placement. On East Island there are black buoys marked with a spray-painted “T” that can be used as markers.
- d) Check occasionally throughout the season to make sure markers and sand data loggers have not been dug up by other turtles. If so, re-bury to the 45-55 cm mark again and record date(s) found dug up and re-buried on the appropriate form. You will not do this for nest loggers to avoid disturbing the eggs. Simply pack the logger and send back to HNL at season end, making a note of the circumstances it was found in.

9. Satellite transmitter removal

Satellite transmitters allow animals to be remotely tracked by satellite. The transmitter determines the position of the animal in relation to the position of Argos satellites overhead. This information is transmitted to the satellites and can be downloaded onto a computer.

Transmitters have been occasionally placed on green sea turtles in Hawaii since 1992 to determine migratory routes and swimming behavior between nesting and feeding grounds. Retrieval of old transmitters is desirable since they can be refurbished and reused for a fraction of the cost of a new one. Emergence of female sea turtles onto their natal nesting beaches allows researchers an easy opportunity to retrieve transmitters.

Transmitters are 7 cm x 4 cm x 12 cm brown boxes attached to the top of the turtle’s carapace. They may have an antenna attached, but this usually breaks off before retrieval. The transmitter sits on a ¼" silicone base pad and is attached to the carapace with 2-4 layers of fiberglass cloth draped over the top of the transmitter and down the side of the carapace.

Materials Needed:

Hacksaw

Large flat blade screwdriver or small pry-bar

Procedure:

- a) Satellite transmitters should be removed while turtles are crawling or have finished nesting to avoid abandonment of possible nests. Removal takes five to ten minutes, therefore the turtle should be a sufficient distance away from the berm so that she cannot easily retreat into the water before you finish.
- b) Cut around the base of the transmitter using a hacksaw. The objective is to cut through the fiberglass cloth at the level of the rubber base pad without damaging the turtle or the transmitter. It is easiest to cut the corners first and then the sides.
- c) Once the fiberglass cloth has been cut on all four sides of the transmitter, use the screwdriver to pry the transmitter up. There will be a small amount of suction holding the transmitter in place. If the transmitter does not come off with a moderate amount of pressure, continue cutting since you probably did not completely cut through the fiberglass the first time. Transmitters should be returned to George Balazs, PIFSC/NMFS Honolulu.

Short Season Notation:

Short season procedures (i.e. since 1993) are almost identical to full seasons. However, more effort should be made to collect all data the first time a turtle is seen as this might also be the only time you encounter her. This includes getting at least one tag and one measurement on every turtle. Tag verification may need to be collected the very next evening the turtle is encountered if it is an extremely short season and there is a possibility the turtle may not be seen again.

V. POST-SEASON CLEAN-UP

Ideally you will have planned to have 5 days on Tern for finalizing data entry, cleanup, inventory and storage of gear.

- A. Clean all gear thoroughly. Below are examples of what needs to be done.
 - Clean all tent parts first. They will need to dry COMPLETELY before storage to prevent mold and rust formation. Get OK from Tern manager for using the boat dock to clean and the warehouse to dry the parts. Some tent parts contain padded windows or padded walls; thoroughly check these portions prior to storage as these parts will mold/mildew if stored when moist to touch. Also, ensure that all bird droppings are completely

free of tent (using *soft scrub* cleanser and *scotch-brite* green pads while scrubbing vigorously on affected areas will facilitate in this task). This means that there should be no yellow or black tinted spots remaining on tent, only white (or blue depending on the tent part used) coloration should be visible after the tent is cleaned. The entire tent can be washed with a mixture of Pine-sol, bleach and water and scrubbed with hand and/or pole boat brushes (found in FWS laundry room). Tent parts should be dried in the open sun by draping over unused boats, trailers, or boathouse doors so that the seabreeze can be fully utilized. However, spot cleaning (with dry rag and spray cleanser) should take place of any and all bird droppings incurred during the drying process prior to folding and packing. Close examination is essential as any bird droppings left on the tent will cause odor/mildew issues for the next camp season.

- Rinse all metal objects with fresh water, dry, use wire brush on the ends of tent poles and connector pieces to remove rust build up, and spray with rust inhibitor and/or lubricant if applicable.
- Remove batteries from equipment.
- Wash and dry turtle vests and futon covers.
- Rinse water jugs and leave a capful of bleach inside
- Soak porta-potties holding tanks in a bleach solution for ~1/2 day, clean thoroughly and leave a capful of bleach inside.
- Spray tent zippers with silicone lubricant

B. Once all gear is cleaned and ready for storage, you must take an inventory of all turtle camp items available: at the end of the season, update table 1 (at the end of this document) to reflect any changes in gear status, location, type and /or quantity.

C. Update the SOP for the following season. The “supplies to order” list on page 1 will be generated by going through inventory list (Table 1) and comparing what is available against what is needed. By filling out the “quantity used” column, you will also be able to verify if the listed “quantities needed” actually reflect the ones that were used during the season (allowing for spares as well). Please note, some of these items are used as backup, but they still need to be accounted for and their condition needs to be checked.

Note: Good health and safety are crucial for the well being of the turtle techs and a successful season. It is therefore of paramount importance that all First Aid supplies listed in the inventory (Table 1) are available every year. At season end, inventory and separately store unused first aid supplies that will be good for the entire next season (at least July of the following year). Label the box ‘for turtle camp use only’ and store it in a dry place, such as the linen closet. Items that will expire before next season will be left out for USWFS to use and have to be added to the list of supplies to be ordered next year so that the full stock will be available again.

D. Seasonal Trip Report

- 1) Must be completed within 30 days of end of East Island camp season.
- 2) Disc and hard copies must be provided to the USFWS Honolulu office, Tern Island manager, and George Balazs, PIFSC/NMFS.
- 3) Must be in Times New Roman 12 Point Font in Microsoft Word.

E. In Honolulu you will copy turtle data, photos, printouts and discs, for:

- 1) National Marine Fisheries Service - George Balazs
- 2) USFWS, Honolulu office
- 3) Tern Island

F. In Honolulu you will meet with USFWS and George Balazs, PIFSC/NMFS to give feedback and make suggestions for future camps.

LIFE AT TURTLE CAMP

Addendum to USFWS volunteer packing list: A turtle tech's suggestions.

As a Turtle Tech, you will be spending approximately half of your time on East Island, and the other half on Tern. Living conditions on the two islands are quite different: following are some suggestions that may aid when getting ready to pack, and help in giving an idea of what to expect.

Before packing, please carefully read over the “*turtle closet inventory*” and “*equipment to pack*” in the latest turtle camp SOP to familiarize yourself with what will already be on the atoll for turtle camp use, thus avoiding to pack superfluous items. This will also provide a first indication of what can be expected, as far as life on East is concerned.

East Island is beautiful, but it does present some potential hazards in addition to those on Tern. The substrate is mainly hard coral rubble with patches of low vegetation, compacted soil and medium-grained sandy areas. Also, due to its history, glass shards, rusty-iron poles and various remainders are scattered throughout the island.

Refer to the packing list provided to Tern Island volunteers by USFWS but please integrate with the following considerations:

“*Essential Gear*” section:

- One pair of shorts and bathing suit is needed for the boat transfer days.
- Bring at least 2 long sleeve t-shirts, and a sweatshirt for the same reason as above (strong winds can blow during night work, and you will want protection for your arms).
- You will want at least 2 pairs of pants: they should dry rapidly (in case of sudden rain-showers during night work) and be long enough that they can be tucked into your shoes or have some sort of strap at the bottom (to minimize tick

entry/bites and to avoid getting caught in debris). Women strongly advocate leggings, they give optimal motion freedom, dry quickly and paired with the use of knee-high pantyhose (provided) will virtually eliminate tick bites on your legs. You may want to wear knee-high pantyhose during turtle camp set-up and tear down to avoid tick bites.

- You will need more than the suggested 2 pairs of socks since you will wear them every night. Bring at least 5 pairs.

“Shoes” section:

- For night work we recommend closed (possibly hard) –toed shoes, very sturdy but comfortable enough to walk in for extended periods of time. (In past years lightweight hiking boots, construction worker boots, hard-toed closed Keen sandals and good quality running shoes have been used).
- The sandals you bring should be water-friendly. They should also provide good grip and be apt to walk on sandy/rocky areas (e.g. waterproof Keens, Chacos, water-shoes etc.)
- One pair of flip flops (or anything you’re comfortable in) to use only inside the barracks, as house-shoes.
- One pair of flip flops (or slip-on sandals) to use and leave on East Island (for the season) to walk around at times other than night-work.

“Gear” section:

- You are welcome to use the pocket knife available as part of turtle camp gear.
- In addition to being waterproof, your watch should have a backlight and an alarm.(bring extra batteries and a spare watch).
- Alarm clocks are part of turtle camp gear, no need to bring your own.

“Toiletries” section:

- In addition to those listed, think about items such as different types of wipes, a kind of soap that rinses off fast etc. that you would take when camping and in case you cannot shower for up to four days. A solar shower is available, but on windy/rainy days you may not want or be able to use it.

My best advice however is: Ask George Balazs or USFWS to put you in contact with one of the techs that have recently been at East Island and talk to them. This way you’ll be able to ask specific questions and obtain additional suggestions.

Created/Revised by Irene Nurzia-Humburg.MTRP.March 2010

TABLE 1: Tern Island inventory list**1) Toilet**

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QTY NEEDED	NEED TO RE-ORDER?	QTY	QTY USED
Holding tank deodorant " <i>Liquid Gold</i> "	Turtle Closet	8oz	POOR	8	B/U			
Holding tank dissolvent <i>Bio-green</i>	Turtle Closet	packet	OK	34	10			
Holding tank deodorant packets <i>Waste-b-Gone</i>	Turtle Closet	~	OK	7	B/U			
Holding tank treatment packets <i>Odorlos</i>	Turtle Closet	4oz	OK	7	B/U			
<i>Waste eating packets</i>	Turtle Closet	packet	Good	5	B/U			
<i>Lysol</i> disinfectant, can	Pantry	16oz	GOOD	2	1			
Mirror (in pocket solar shower)	Turtle Closet	~	OK	1	1			
No-rinse shower soap	Turtle Closet	10oz	OK	2	4	Y	2	2
Porta Pottie <i>Mansfield SaniPottie</i> top	Turtle Closet	L	OK as backup	1	B/U			
Porta Pottie <i>Mansfield SaniPottie</i> top	Turtle Closet	S	Excellent	1	1			
Porta Pottie, <i>Mansfield SaniPottie</i> bottom	Turtle Closet	L	OK as backup (used in 1995-2001)	0	B/U			
Porta Pottie, <i>Mansfield SaniPottie</i> bottom	Turtle Closet	S	Excellent & good	5	4			
Toilet paper rolls	Turtle Closet	~	~	1	5			

Sealand replacement cap kit (310102)	Turtle Closet	~	good	1	B/U			
Sealand domestic bellows kit (item 3853100104)	Turtle Closet	~	Good	3	B/U			
Sanipottie handle	Turtle Closet	~	Good	1	B/U			
Sanipottie bottom cap	Turtle Closet	~	Good	1	B/U			

2) Chemicals

Note: Do not store these items inside the turtle closet. They are currently stored in a sealed (labeled) bucket in the corner of the FWS pantry.

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QTY NEEDED	NEED TO RE-ORDER?	QTY	QTY USED
Fabric protector <i>Camp Dry</i> performance	Tractor shed	10.5 oz	OK	12	3			
Fabric protector <i>Scotch gard</i>	Tractor shed	10 oz	OK	0	B/U			
Insect repellent <i>Cutter Backwoods</i> (23%DEET)	Tractor shed	6 oz	OK	1	B/U			
Insect repellent <i>Cutter Skinsations</i>	Tractor shed	6 oz	OK	1	B/U			
Insect repellent <i>Off Deep Woods sportsmen</i> (98%DEET)	Tractor shed	1 oz	OK	1	B/U			
Insect repellent <i>Off Deep Woods</i> (25% DEET)	Tractor shed	6 oz	OK	1	B/U			
Insect repellent <i>Off active</i> (15% deet)	Tractor shed	6 oz	OK	2	2			
Insect repellent <i>Repel</i> permanone clothing and gear	Tractor shed	6 oz	OK	0.5	2	Y	2	
Insect repellent <i>Repel</i>	Tractor shed	6.5 oz	OK	0.75	B/U			

sportsmen (29%DEET)								
Off Deep woods (30% deet)		6oz	OK	0.75	B/U			
<i>Home Defense Max insect killer</i>	Tractor shed	1 gal	OK	0.75	0.5			
<i>Hot Shot spider killer spray</i>	Tractor shed	11oz	Ok	1	1			
<i>Orion Hand-held flares</i>	Turtle Closet	Pkg 4	EXCELLENT	1	1			
Rust inhibitor Bottle <i>Must for rust</i>								
Silicone lubricant Heavy Duty	Tractor Shed	32oz	OK	1	2	Y	1	
Water repellent, silicone spray <i>Camp Dry heavy duty</i>	Tractor Shed	10oz	OK	0	1	Y	1	
Permethrin clothing and gear insect repellent	Tractor shed	6 oz	OK	0.5	B/U			

3) Clothing

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QTY NEEDED	NEED TO RE-ORDER?	QTY	QTY USED
Fanny pack	Turtle Closet	M	OK	1	1			
<i>Gloves Ironclad PAIR, tagging</i>	Turtle Closet	S,L,X L	GOOD, OK, OK	2,1,2	2			
Kneepads (pair), soft cotton	Turtle Closet	one-size	OK	2	B/U			
Kneepads <i>McGuire Nichols</i> (pair), Soft cushion nylon	Turtle Closet	One size	POOR	2	2	Y	2	2

Kneepads <i>McGuire Nichols</i> Heavy Duty (pair)	Turtle Closet	L	NEW (bulky)	1	B/U			
Pantyhose (pair), full	Turtle Closet	One-size	OK	25	B/U			
Pantyhose (pair), knee high	Turtle Closet	one-size	OK	68	50			
Ponchos (heavyweight, bulky), vinyl	Turtle Closet	L	OK	2	B/U			
Raingear, (Heavy duty, pant+jacket) <i>Acadia</i>	Turtle Closet	S, M, L	OK	3	2			
Rain Jacket, Vinyl, lightweight	Turtle Closet	One-size	OK	1	B/U			
Vests	Turtle Closet	M,M, L, L, XL	POOR, OK, POOR, OK, OK	5	4			

4) Kitchen

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QTY NEEDED	NEED TO RE-ORDER?	QTY	QTY USED
Bowls	Turtle Closet	S	OK	2	2			
Bulk propane conversion adapters	Turtle Closet	?	?	1	1			
Bulk propane conversion hoses	Turtle Closet	?	?	2	2			

Butane fuel canister	Tractor shed	7.8oz	OK	1	1			
Butane lighters	Turtle Closet	~	NEW+2OK,+ POOR	4	2			
Can openers	Turtle Closet	~	OK+New	2	2			
Cast Iron Pan	Turtle Closet	8"	POOR	1	1			
Collander, plastic	Turtle Closet	8"	GOOD	1	1			
Coffee filter + holder	Turtle Closet	~	OK	1	1			
Cups	Turtle Closet	M	OK	4	2			
Dish Tub	Turtle Closet	M	OK	1	1			
Emergency meals	Turtle Closet	~	OK	4	4			
Fillet knife	Turtle Closet	L	POOR	1	B/U			
Food cooler (for dry food storage) Igloo	Turtle Closet	L	OK	1	1			
Forks	Turtle Closet	~	OK	2	2			
French Press	Turtle Closet	~	EXCELLENT	1	1			
Hot pad	Turtle Closet	2square+mit t	2POOR+GO OD	3	2			
Knifes	Turtle Closet	~	OK	2	2			
Matches	Turtle Closet	Pack of 20	OK	2	B/U			
Pan	Turtle Closet	~8"	GOOD	1	1			
Plates	Turtle Closet	L	OK	2	2			
Pots and lids	Turtle Closet	S,M	OK	2	2			
Propane 2 burner stove <i>Hillary</i> (MOD 201 728 612)	Turtle Closet	2 burner	OK+OK as backup	2	2			

Propane canisters for stove <i>Coleman</i>	Tractor Shed	16.4oz	OK	4	10	Y	6	4
Spoons	Turtle Closet	~	OK	3	2			
Spoon, wood	Turtle Closet	~	OK	2	1			
Spouts for grey water jugs	Turtle Closet	~	EXCELLENT	3	3			
Water cooler, orange	Turtle Closet	5 gal	OK	3	1			
Water jug, blue	Turtle Closet	3 gal	OK	1	B/U			
Water jug, blue	Turtle Closet	3 gal	OK	3	3			
Water jug, brown	Turtle Closet	5 gal	OK	3	3			
Water jugs for inside tent, grey <i>Coleman</i>	Turtle Closet	2 gal	OK	3	3			

5) Field

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QTY NEEDED	NEED TO RE-ORDER?	QTY	QTY USED
Alcohol, isopropyl	Turtle Closet	16oz	OK	9	5			
Batteries	Turtle Closet	9v	OK	7	5			1
Batteries	Turtle Closet	AA	OK	173	150			50

Batteries	Turtle Closet	D	OK	72	100	Y	30	32
Batteries	Turtle Closet	AAA	OK	6	70	Y	70	50
Binder hole protecting rings 900ct packet	Turtle Closet	~	OK	3	2			
Calculator	Turtle Closet	~	OK	1	1			
Calipers	Turtle Closet	125cm	GOOD & POOR	2	1			
Calipers	Turtle Closet	95cm	OK as backup	1	1			
Calipers adjustment kit (Ziploc bag)	Turtle Closet	~	OK	1	1			
Clipboard flat, metal with East map	Turtle Closet	M	OK	1	1			
Clipboards, metal field c w/ storage space	Turtle Closet	L	1 OK+2 POOR	3	1			
Field book, needs list, <i>Rite in the Rain</i> #311	Turtle Closet	#311	OK	1	3	Y	2	
Field books, <i>Rite in the Rain</i> #393	Turtle Closet	#393	OK	0	50	Y	50	34
Field note books, <i>Rite in the Rain</i> #135	Turtle Closet	#135	OK	2	0			
Gloves, latex	Turtle Closet	M, L, XL	GOOD	~100	50			
Higlighter	Turtle Closet	~	OK	2	2			

Markers, Sharpie Blue, red, black	Turtle Closet	~	OK	1, 1, 5	1,1,5			
Mototool tips, spare	Turtle Closet	~	NEW	8	10	Y	2	5
Pencil sharpener	Turtle Closet	~		0	1	Y	1	
Pencil-box	Turtle Closet	~	OK	1	1			
Pencils (need sharpening)	Turtle Closet	#3	OK	17	B/U			
Pencil lead, mechanical	Turtle Closet	0.5mm, 0.7mm	OK, OK	20, 6	20, 20	Y	15x 0.7mm	
Pencil, mechanical	Turtle Closet	0.5 lead, 0.7 lead	OK, OK	3, 5	15	Y	10	
PIT tag applicators, spare	Turtle Closet	~	OK	17	10			
PIT tags in turtle rescue kit (orange pelican case under desk in "bio room")	Bio Room	~	OK	4	10	Bring from Honolulu		
Red reflectors	Turtle Closet	S	OK	8	2			
Ruler	Turtle Closet	S	OK	2	1			
Scissors	Turtle Closet	~	OK	1	1			

Sharps container (green top, clear plastic) used for in-tent first aid kit	Turtle Closet	L	OK	1	1			
Sharps container (ketchup bottle + clear plastic)	Turtle Closet	M	OK	2	1			
Soap containers	Turtle Closet	S	OK as backup	2	0			
Spray paint can replacement tips	Turtle Closet	~	GOOD	9	B/U			
Spray paint cans, white (4x <i>Weekend</i> 2007 +8 x <i>Krylon</i> 2009 + 3x <i>Colormate</i> 2010)	Tractor Shed	12oz	OK	15	15			5
Squirt bottles for alcohol	Turtle Closet	S	OK	2	2			
Tape measure,soft	Turtle Closet	~	2 OK, 2 NEW	4	5	Y	1	
Toothbrush containers,	Turtle Closet	S	OK as backup	6	B/U			
Toothpick container (for sharps)	Turtle Closet	S	OK	4	4			
T-Square (use unknown)	Turtle Closet	47"	OK	1	0			

6) First Aid Kit

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QYT NEEDED	NEED TO RE-ORDER?	QTY	QTY USED
Acetaminophen (<i>Tylenol</i>) (pain relief/fever reducer)	Linen closet	100 caps	OK	0 caps	100 caps	Y	100 caps	
Alcohol swabs packets (antiseptic)	Linen closet	100ct	OK	100ct	100ct			
Allergy and cold kappgels (allergy/cold relief) <i>Benadryl</i>	Linen closet	24 caps	OK	20	20 caps			
Anti bacterial wipes	Linen closet	40ct	OK	23	50ct	Y	25	
Anti diarrheal cps, <i>Imodium</i>	Linen closet	24caps	OK	24	20 caps			
Antibiotic/pain relief ointment (prevent infection in cuts/scrapes/burns)	Linen closet	1oz tube	OK	0	1oz tube	Y	1 tube	
Antihistamine/allergy relief tablets, <i>Benadryl</i>	Linen closet	24 caps	OK	36caps	24 caps			
Anti-itch cream, <i>Benadryl</i> (anti-itch, 1% hydrocortisone)	Linen closet	1oz tube	OK	1.5tube	1oz tube			
Aspirin (pain relief)	Linen closet	120 caps	OK	0	120 caps	Y	120	
Baby wipes (personal care)	Linen closet	72ct	OK	3x	120ct			
Band aids (clear waterproof) (wound dressing)	Linen closet	Asstd	OK	30 asstd sizes	30 asstd sizes			
Band aids (finger care) (wound dressing)	Linen closet	~	OK	5ct	30ct asstd sizes	Y	20	
Band aids (flexible adhesive pad) (wound dressing)	Linen closet	Asstd	OK	10ct one size	10ct one size			
Band aids (flexible fabric) (wound dressing)	Linen closet	Asstd	OK	38 ct asstd sizes	38 ct asstd sizes			

Bandage rolls (wound dressing), <i>Kling rolls</i>	Linen closet	2yd x 3" rolls	OK	5 x 2yd x 3" rolls	5 x 2yd x 3" rolls			
Bismuth Subsalicylate oral suspension (upset stomach reliever/antidiarrheal) <i>Pepto-Bismol</i>	Linen closet	8 fl oz	OK	0	8 fl oz	Y	1x8fl oz	
Bismuth Subsalicylate tablets (anti heartburn/indigestion/upset stomach/nausea/diarrhea) <i>Pepto-Bismol</i>	Linen closet	48 tabs	OK	30 tabs	48 tabs	Y	20	
Calamine lotion (topical analgesic/skin protectant)	Linen closet	6 fl oz	OK	6 fl oz	6 fl oz			
Cloth tape (bandage securing)	Linen closet	10yds	OK	10yds x2	10yds x2			
Cold pack ,instant (bumps/bruises/strains/sprains/burns)	Linen closet	L	OK	4ct	3ct			
Cotton balls	Linen Closet	~	OK	100	50			
Epi-pen	Linen Closet	.3mg	Exp 5/11	2	2	Y	2	
Eye-wash (eye irrigation)	Linen closet	4 fl oz	OK	0	2x 4 fl oz	Y	2x4oz	
First Aid kit, assembled	Turtle Closet	~	OK	1	B/U			
Flexible tape (bandage securing)	Linen closet	5yds	OK	5yds	5yds			
Gauze pads (wound dressing)	Linen closet	Asstd	OK	1 box (10 pads)	1 box (10 pads)			
Hand sanitizer gel (anti-bacterial)	Linen closet	32oz	OK	1oz	7.5oz			
Heat pack	Linen Closet	one	OK	2reusable, 1 instant	2			

Heating patch, one use (muscle/joint pain relief)	Linen closet	L	OK	2	6 lg patches			
Hydrogen peroxide (antiseptic)	Linen closet	16 fl oz	OK	1x16	16 fl oz			
Ibuprofen (pain relief/fever reducer)	Linen closet	100 caps	OK	50 caps	100 caps	Y	50 cps	
Insect repellent	Tractor shed	6oz	OK	See chemicals	6 oz spray bottle			
Isopropyl rubbing alcohol, 70% (antiseptic)	Linen closet	16 fl oz	OK	16 fl oz	16 fl oz			
Liquid bandage (antiseptic liquid bandage) <i>New skin</i>	Linen closet	1 fl oz	OK	1 fl oz	1 fl oz			
Moist burn pads (burn care) <i>2ND skin</i>	Linen closet	~	OK	6 pads	6 pads			
Non-drowsy nasal decongestant (nasal congestion/sinus pressure relief)	Linen closet	18 tablets	OK	0	18 tablets	Y	18 tabs	
Non-stick dressings (wound dressing)	Linen closet	Asstd	OK	1 box (12 patches)	1 box (12 patches)			
Pain relieving cream (pain relief /backache/muscle/joint)	Linen closet	4oz tube	OK	9	4oz tube	Y	1 tube	
Povidone iodine solution, 10% (antiseptic)	Linen closet	8 fl oz	OK	2x	8 fl oz			
Q-tips (Wound/ear cleaning)	Linen closet	170ct	OK	700ct	150			
Rolled gauze (wound dressing)	Linen closet	2.5 yd	OK	2.5 yd x2	2.5 yd x2			
Safety pins (bandage closure)	Linen closet	Asstd	OK	50ct asstd sizes	50ct asstd sizes			
Scissors, round tip	Linen closet	~	OK	1ct	1ct			
Self adhesive athletic wrap	Linen closet	5yds	OK	2.5yds	5yds	Y	2.5yds	

(wound dressing)								
Self adhesive elastic bandage (wound dressing)	Linen closet	1.2yds	OK	1yds	1yds			
Sports tape (helps prevent/support sprains)	Linen closet	10yds	OK	10yds	10yds			
Steri-strips (wound closure)	Linen closet	~	OK	30 strips	30 strips			
Sun block cream, 70 SPF (sunburn prevention)	Linen closet	3 fl oz	OK	1	3x 3 fl oz			
Sunscreen Lib Balm, 15 SPF (sunburn prevention)	Linen closet	0.15 oz	OK	0	2x 0.15 oz	Y	2	
Syringe,no-needle (wound flushing)	Linen closet	~	OK	2ct	2ct			
Thermometer	Linen closet	~	OK	1ct	1ct			
Transparent dressing (wound dressing), Tegaderm	Linen closet	~	OK	8 patches	8 patches			
Tweezers	Linen closet	~	OK	1ct	1ct			
Waterproof tape (bandage securing)	Linen closet	10 yds	OK	10 yds	10 yds			

7) Furniture

ITEM	LOCATION	SIZE	CONDITION	QTY	QTY	NEED TO	QTY	QTY
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				AVAILABLE	NEEDED	RE-ORDER?		USED
Alarm clock, digital (19v+1AA)	Turtle Closet	~	OK,OK,POOR	3	2			
Arm chairs, folding (2 with side table)	Turtle Closet	~	GOOD	3	2			
Boards for cot	Turtle Closet	L	OK	2	2			
Boards for shelves	Turtle Closet	L	OK	2	2			
Broom and dustpan	Turtle Closet	S	OK	1	1			
Buckets + lids for transporting gear	Turtle Closet	5gal	OK	11	12			
Clothespins	Turtle Closet	~	OK	50	10			
Cots	Turtle Closet	single	1OK+1 Backup	2	1			
Fans (need 4xD battery)	Turtle Closet	single	OK	2	2			
Fire extinguisher	Turtle Closet	S	OK	0	1	Y	1	
Fly swatter	Turtle Closet	~	OK, GOOD	2	1			
Futons	Turtle Closet	single	OK	2	3	Y	1	
Porta pottie enclosure	Turtle Closet	1man	OK+OK+Backup	3	2			
Solar Shower	Turtle Closet	3 gal	GOOD	1	1			
Step, wooden	Turtle Closet	~	OK	1	1			
Wooden blocks to put under cot legs	Turtle Closet	~	OK	6	6			
Wooden squares (place between buckets for storage IMPORTANT)	Turtle Closet	~	OK	12	12			
VHF Marine Radio	Turtle Closet	~	EXCELLENT	3	2			

8) Housing

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QTY NEEDED	NEED TO RE-ORDER?	QTY	QTY USED
Bungee Cords mini size	Metal cabinet	4 in	EXCELLENT	12	0			
Fence poles	Turtle Closet	~5ft	POOR	12	12			
Fencing (4 X 2 inch mesh size) for tent perimeter	FWS warehouse	~50ft	GOOD	2	1			
Tarp for inside floor with grommets (white)	Turtle Closet	8'x10'	GOOD	1	1			
Tarp, heavy duty	Turtle Closet	5'x7'	OK	1	1			
Tarp, light-duty, blue	Turtle Closet	S	OK	2	1			
Tent "silver lining" rolls, insulation <i>WeatherPort</i>	Turtle Closet	~	OK	2	2			
Tent back /2 windows (stuck open) w/ rope tie-downs <i>WeatherPort</i>	Turtle Closet	~	OK as backup	1	B/U			
Tent back w/ 1 window, white w/ wire tie-downs <i>WeatherPort</i>	Turtle Closet	~	OK	1	1			
Tent back w/ 2 windows (stuck)	Turtle Closet	~	POOR, as backup	1	B/U			

w/ rusted metal wires as tie-downs, white. <i>Weatherport</i>								
Tent base poles	Turtle Closet	~	GOOD	8	8			
Tent base screws and washers	Turtle Closet	3.5"x5"	OK	~30	14			
Tent blue main body w/ 2 patched windows, w/ rope tie-downs <i>WeatherPort</i>	Turtle Closet	~	OK as backup	1	B/U			
Tent connector poles	Turtle Closet	~	GOOD	12	12			
Tent door w/rope tie-downs <i>WeatherPort</i>	Turtle Closet	~	EXCELLENT	1	1			
Tent floor tarp	Turtle Closet	8'x10'	OK	1	1			
Tent liner w/ rope, white <i>WeatherPort</i>	Turtle Closet	~	OK	1	1			
Tent liner, white, w/ rope tie-downs ,windows do not line up with tent	Turtle Closet	~	OK as backup	1	B/U			
Tent main body w/ wire as tie-downs and 2 windows (new in 2008), blue <i>Weatherport</i>	Turtle Closet	~	Excellent	1	1			

Tent pole T-shape connector pieces (in metal cabinet drawer)	Turtle Closet	~	GOOD	6	6			
Tent poles + shape connector pieces	Turtle Closet (in metal cabinet)	~	GOOD	9	9			
Tent side poles	Turtle Closet	~	GOOD	10	10			
Tent stakes - put around base of platform	Turtle Closet, inside metal cabinet	L	OK	5	B/U			
Tent stakes (green) put around base of platform	Turtle Closet (inside metal cabinet)	S	OK	19	10			
Tent top poles	Turtle Closet	~	GOOD	10	10			
Tent w/stakes (1 w/damaged ridge pole)	Turtle Closet	Small, 1-2 man	POOR	1	B/U			
Tent white main body w/ rope tie-downs, 2 windows <i>WeatherPort</i>	Turtle Closet	~	(1 window stuck open, one stuck closed)	1	B/U			
Tent Instruction	Turtle Closet	~	GOOD	1	1			
Tie-downs (red)- used to winch/cinch base of tent	Metal Cabinet	10 ft	GOOD	4	4			

9) Lighting

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QTY NEEDED	NEED TO RE-ORDER?	QTY	QTY USED
Belt holsters, <i>Mag lite</i>	Turtle Closet	~	OK	2	B/U			
Bulb replacement <i>Rayovac</i>	Turtle Closet	9v	OK	1	1			
Bulb replacements	Turtle Closet	2.2v	OK	3	1			
Bulb replacement for fluorescent <i>Coleman</i>	Turtle Closet	7v	OK	6	6			
Camp Light, Fluorescent, <i>Rayovac Sportsman</i> (needs 4 D-Cell Batteries)	Turtle Closet	~	OK	2	1			
Camp Light, Dorcy, 4xAA	Turtle Closet	S	EXCELLENT	1	0			
Camp Light, Coleman Max, LED, 4D	Turtle Closet	L	EXCELLENT	1	1			
Camp Light, fluorescent, 4xD	Turtle Closet	L	GOOD	1	1			
Camp Light <i>Garrity</i>	Turtle Closet	L	OK	1	1			
Keychain <i>Energizer</i> LED lights	Turtle Closet	~	EXCELLENT	2	0			
Mini Lantern <i>Coleman Max (4xAA)</i>	Turtle Closet	~	EXCELLENT	1	1			
Flashlight <i>Brinkman</i> LED	Turtle Closet	~	OK	1	1			
Flashlight holders for head, adjustable Velcro	Turtle Closet	mini	OK	4	B/U			
Flashlights, <i>Rayovac industrial and sportsman</i> (2xAA)	Turtle Closet	S	NEW, OK	11, 3	5			
Headlamp, <i>Energizer</i> 4 speed LED (red+white)	HONOLULU	~	OK	1	B/U			
Headlamp, <i>Petzl</i> 2-speed	HONOLULU	~	OK	1	2			

(red+white) LED								
Headlamp <i>Petzel</i> w/ battery packs	HONOLULU	~	OK as B/U	2	B/U			
Headlamp, <i>Princeton</i> white LED (use as backup)	HONOLULU	~	OK	2	B/U			
Headlamp, <i>Energizer</i> 2 speed (red+white)3X AAA , LED	HONOLULU	~	OK	1	1			
Headlamp <i>Brinkman</i> (red & white) 3xAAA	Turtle Closet	~	GOOD	2	2			
Solar Light Torch <i>Westinghouse</i>	Turtle Closet	10"	2 GOOD & 2 EXCELLENT	4	2			
Mini Clip-on Flashlight	Turtle Closet	~	GOOD	0	0			
<i>Coleman</i> LED Micropacker Lantern 3xAA	Turtle Closet	5 "	1 GOOD & 1 EXCELLENT	2	1			
Dive-light (D-cell)	Turtle Closet	~	OK	1	1			
LED Lenser (red & white) flashlight 3xAAA	Turtle Closet	~	EXCELLENT	2	2			
Flashlights LED (<i>City Mill</i>) brand 3xAAA	Turtle Closet	~	EXCELLENT	2	1			

10) Tool Kit

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QTY NEEDED	NEED TO RE- ORDER?	QTY	QTY USED
Bucket openers	Turtle Closet	~	OK	3	2			
Crescent wrench	Turtle Closet	L+M	OK	2	1			

Electrical tape, roll	Turtle Closet	1/2"	OK	1	1			
Gloves, work (assorted materials)	Turtle Closet	Asstd	OK	6	2			
Grommet, plastic, kit	Turtle Closet	8ct	OK	1	1			
Hacksaw	Turtle Closet	M,S	OK+POOR	2	B/U			
Hacksaw	Turtle Closet	mini	OK	1	1			
Hammer	Turtle Closet	M,L	OK	2	1			
Leatherman multi tool	Turtle Closet	~	GOOD	0	1	Y	1	
Line, misc. (pre-cut, USE FIRST)	Turtle Closet	~	OK	-	B/U			
Line, nylon	Turtle Closet	12'x 1/2"	OK	1	1			
Line, parachute, spool	Turtle Closet (in cabinet drawer)	~	GOOD	1	1			
Mirrors	Turtle Closet	S	OK	4	2			
Nails	Turtle Closet	Asstd	OK	-	0			
Needle nose pliers	Turtle Closet	S	OK	2	1			
Pliers, adjustable	Turtle Closet	~	OK	2	1			
Reflective Tape	Turtle Closet	2 ft roll	GOOD	½	1			
Rope, polypro	Turtle Closet	25'	OK	3	1			
Safety	Turtle Closet	One	OK, NEW	2, 2	2			

glasses, pair		size						
Sand Paper	Turtle Closet	Asstd	OK	1 sheet	6 sheets	Y	5 sheets , rough grain	
Screwdriver, Phillips	Turtle Closet	M & L	OK	2	1			
Screwdriver, standard	Turtle Closet	M+L	OK	2	1			
Sewing awl, <i>Speedy- stitcher</i>	Turtle Closet	~	OK+POOR	2	2			
Spray bottles for insect repellent solution, empty (new in 2009)	Turtle Closet	32oz	OK	1	B/U			
Tent repair kit for fabric	Turtle Closet	~	OK	3	2			
Thread seal tape, roll	Turtle Closet	~	OK	2	1			
Thread, coarse,roll for sewing awl	Turtle Closet	30yds	OK	2	2			
Tool kit box	Turtle Closet	L	OK	1	1			
Velcro strips heavy duty adhesive	Turtle Closet	2"x5'	OK	4	2			
Velcro strips	Turtle Closet	1/4"x1	OK	8	B/U			

lightweight adhesive		8"						
Wire cutter/pliers	Turtle Closet	L	OK	3	1			
Wire snip (orange handle)	Turtle Closet	M	OK	1	1			
Wire, can	Turtle Closet	M	OK	2	1			
Zipties (to attach fencing to poles)	Turtle Closet	Asstd	OK	~50	~50			

11) Other - For Special Projects Only

ITEM	LOCATION	SIZE	CONDITION	QTY AVAILABLE	QTY NEEDED	NEED TO RE-ORDER?	QTY	QTY USED
Cutting board (used for tumor sampling, not for food!)	Turtle Closet	M	POOR	1	~	N	0	
Dive bag, mesh	Turtle Closet	S	OK	1	~	N	0	
Harness for camera	Turtle Closet	L	OK	1	~	N	0	

set up on pole (in a bucket)								
Hatchling solution, bucket	Turtle Closet	?	?	1	~	N	0	
Hose for propane fridge (fridge no longer exists)	Turtle Closet	?	?	1	~	N	0	
Paint brushes for resin work	Turtle Closet	S	OK	50	~	N	0	
Resin, bucket	Turtle Closet	?	POOR	2	~	N	0	
Satellite Tagging Box (boards separated and labeled)	Turtle Closet	L	OK	1	~	N	0	
Satellite tagging cooler	Turtle Closet	M	OK	1	~	N	0	
Styrofoam coolers for transporting eggs	Turtle Closet	S	OK	2	~	N	0	
Turtle decoy (careful, very heavy)	Turtle Closet	L	OK	1	~	N	0	

TABLE 2: East Island Turtle Camp Packing list.

Ordered by Category, location found, item name.

CATEGORY	PACKED (✓ if yes)	QTY	ITEM	STORED IN:	NOTES
Camp Equipment		1	Hand-held radio	USFWS	
Camp Equipment		2	<i>Huggies</i> wipes, box	Box in linen closet	
Camp Equipment		2	<i>Wet wipes</i> , box	Box in linen closet	
Camp Equipment		2	Insect repellent bottle (permethrin) for platform legs	Tractor shed	Spray on cloth rags and attach to tent platform poles with duct tape. Repeat every 2 weeks.
Camp Equipment		1	Pillow	Linen Closet	Bring 2 at beginning of camp, take one back at start of regular shifts.
Camp Equipment		-	Rags	Linen Closet	Tie around platform legs with Permethrin (to keep out ticks and spiders)
Camp Equipment		1	Sheets, set	Linen Closet	Bring 2 sets at beginning of camp, take one back at start of regular shifts.
Camp Equipment		1	Towel	Linen Closet	Bring 2 at beginning of camp, take one back at start of regular shifts.
Camp Equipment		4	Toilet Paper, rolls	Pantry	
Camp Equipment		4	Trash bags, small	Pantry	
Camp Equipment		4	Propane containers (for stove)	Tractor Shed	Store inside tent, close to door
Camp Equipment		2	Alarm clock, digital	Turtle Closet	One as backup
Camp Equipment		2	Boards for cot	Turtle Closet	Put smaller one underneath the larger one, at center of cot

					for comfort
Camp Equipment		1	Broom+Dustpan, set	Turtle Closet	
Camp Equipment		2	Chairs	Turtle Closet	One for outside and one for inside the tent
Camp Equipment		10	Clothes pins	Turtle Closet	
Camp Equipment		1	Cot	Turtle Closet	Spray wooden legs with permathryn, and metal joints with lubricant
Camp Equipment		2	Fan	Turtle Closet	
Camp Equipment		All	Fencing,roll (listed to be ordered in 2010)	Turtle Closet	Attach to posts with 3 zipties each
Camp Equipment		1	Flashlight, large	Turtle Closet	
Camp Equipment		2	Fluorescent lamp and backup bulbs	Turtle Closet	
Camp Equipment		2	Fly tape, roll	Turtle Closet	
Camp Equipment		2	Futon mattresses for cot	Turtle Closet	Bring 3 at beginning of season for training nights, leave 2 on East for the duration of camp
Camp Equipment		1	Porta- pottie enclosure (mandatory)	Turtle Closet	setup SW of tent door is optimal
Camp Equipment		1	Porta pottie, set of top and bottom	Turtle Closet	Use smaller set, bring 2 bottoms at beginning of camp, take one back as first shift starts
Camp Equipment		2	Prell (for hair and as liquid soap) or other bar soap and no-rinse soap	Turtle Closet	
Camp Equipment		1	Rayon lamp and backup bulbs	Turtle Closet	As backup
Camp		2	Shelves,	Turtle Closet	Lay on top of 3

Equipment			Plywood		(empty) buckets
Camp Equipment		1	Solar shower and solar shower enclosure (optional)	Turtle Closet	Shower can be hung from radio pole
Camp Equipment		12	Stakes for fencing, metal	Turtle Closet	Disance them ~3m apart around the tent, anfter it has been set up. Include porta pottie enclosure.
Camp Equipment		1	Stove, propane	Turtle Closet	Setup closest to the tent door
Camp Equipment		1	Tent ,floor tarp	Turtle Closet	Open up before transporting to check status
Camp Equipment		1	Tent, back	Turtle Closet	Check status of ropes and zippers before transport
Camp Equipment		8	Tent, base poles	Turtle Closet	Brush with wire brush at season end, rinse in fresh water then spray with rust inhibitor
Camp Equipment		12	Tent, connector poles	Turtle Closet	Brush with wire brush at season end, rinse in fresh water then spray with rust inhibitor
Camp Equipment		1	Tent, front door	Turtle Closet	Check status of ropes and zippers before transport
Camp Equipment		1	Tent, inside floor tarp with gromments	Turtle Closet	Last part of tent to be setup, ziptie around frame poles through grommets, at ~15cm height. Prevents water and insects from coming inside.
Camp Equipment		1	Tent, main body	Turtle Closet	Open up before transporting to check status of ropes and zippers
Camp Equipment		1	Tent, main body liner	Turtle Closet	Check status of ropes and zippers before transport
Camp Equipment		2	Tent, main body silver insulation roll	Turtle Closet	Open up before transporting to check status

Camp Equipment		6	Tent, pole T-shape connector pieces (in metal cabinet drawer)	Turtle Closet	Brush with wire brush at season end, rinse in fresh water then spray with rust inhibitor
Camp Equipment		9	Tent, poles + shape connector pieces (in metal cabinet drawer)	Turtle Closet	Brush with wire brush at season end, rinse in fresh water then spray with rust inhibitor
Camp Equipment		10	Tent, side poles	Turtle Closet	Brush with wire brush at season end, rinse in fresh water then spray with rust inhibitor
Camp Equipment		10	Tent, top poles	Turtle Closet	Brush with wire brush at season end, rinse in fresh water then spray with rust inhibitor
Camp Equipment		3	Water cooler containers, coleman	Turtle Closet	Bring empty, use inside tent
Camp Equipment		6	Water jugs with spout	Turtle Closet	Clean with capful of bleach and then rinse, fill on Tern with fresh drinking water the day before setup
Camp Equipment		6	Wooden squares (for beneath cot legs)	Turtle Closet	Prevents cot legs to put holes in floor tarp
Camp Equipment		1	Wooden step	Turtle Closet	
Chemicals		2	Fabric protector, <i>Scotchgard</i> , can	Tractor shed	Use to rainproof vests and shoes
Chemicals		1	Disinfectant cleaner, <i>Lysol</i> , can	Pantry	To clean pottie between shifts
Chemicals		2	Insect repellent, cans	Pantry	
Chemicals		1	Insecticide (flies, roaches, ants etc)	Pantry	helps during 'fly times'
Chemicals		1	Butane fuel for stove lighter	ToBOrdered	
Chemicals		2	Permethrin, bottle	ToBOrdered	Spray on rags then taped around tent platform legs, to minimize tick/spiders entry into tent

Chemicals		1	Rust inhibitor, bottle	ToBOrdered	
Chemicals		1	Fire extinguisher	Turtle Closet	Mandatory
Chemicals		10	Waste B Gone or equivalent chemical, packets	Turtle Closet	Use one packet/portion per shift (every ~4days)
Field		1	Calulator	Computer room	
Field		2	Batteries for digital camera, spare	Honolulu, MTRP	
Field		4	Batteries for pit tag scanner, spare	Honolulu, MTRP	fully charge the day before camp setup
Field		10	Daily Totals form	Honolulu, MTRP	
Field		All	Data loggers	Honolulu, MTRP	
Field		All	Datalogger deployment/retrieval sheets	Honolulu, MTRP	
Field		1	Digital Camera	Honolulu, MTRP	
Field		2	GPS unit	Honolulu, MTRP	One for nests and one for island contour and features.
Field		1	Map of East Island	Honolulu, MTRP	
Field		3	Memory cards for digital camera	Honolulu, MTRP	
Field		5+	Mototool bits, spare	Honolulu, MTRP	
Field		All	Mototools and Batteries	Honolulu, MTRP	Charge for 3 hours the day before camp setup.
Field		1	Multi - tool	Honolulu, MTRP	(for cleaning old tags in the field)
Field		50	Photo log sheets	Honolulu, MTRP	
Field		2	Pit tag scanners	Honolulu, MTRP	one as backup
Field		300+	Pit tags	Honolulu, MTRP	
Field		-	Red light pen (if	Honolulu,	

			applicable)	MTRP	
Field		1	Satellite phone	Honolulu, MTRP	Fully charge the day before camp setup and check battery status daily
Field		10	Transfer Day Checklist	Honolulu, MTRP	
Field		4	Alcohol (Isopropyl), bottles	Linen Closet	pre-PIT tag insertion
Field		2	Wet Wipes	ToBOrdered	
Field		5+	Spray paint, can	Tractor Shed	
Field		5	Batteries, 9v	Turtle Closet	for alarm clocks
Field		50	Batteries, AA	Turtle Closet	for flashlights
Field		50	Batteries, AAA	Turtle Closet	for headlamps
Field		40	Batteries, D	Turtle Closet	for camp lights
Field		1	Calipers, 115 cm	Turtle Closet	
Field		1	Calipers, 95 cm	Turtle Closet	As backup
Field		2	Clipboards (1 regular, 1 with storage)	Turtle Closet	Use for datalogger retrieval list
Field		12	Field books (Horizontal line) <i>rite in the rain</i>	Turtle Closet	
Field		2	Field books, <i>Rite in the rain</i> (Level line)	Turtle Closet	Use for needs list, one as backup
Field		5	Flashlight, small	Turtle Closet	
Field		~20	Gloves, latex	Turtle Closet	
Field		2	Headlamps	Turtle Closet	One as backup
Field		2	Kneepads, pair	Turtle Closet	one as backup
Field		3	Measuring tape	Turtle Closet	2 as backup
Field		20	Pantyhose (for preventing ticks)	Turtle Closet	
Field		2	Ponchos or other rain gear	Turtle Closet	Full suit recommended for heavy rain storms
Field		1	Sharps container, large	Turtle Closet	For inside tent (an empty Yogurt tub has also been used)
Field		3	Sharps containers, mini	Turtle Closet	2 as backup
Field		2	Spray bottles,	Turtle Closet	For isopropyl alcohol

			small		
Field		5	Spray paint tips, spare	Turtle Closet	
Field		2	Vest	Turtle Closet	one as backup
Field		1	Waist Pouch	Turtle Closet	
Field		1	Yellow pencil box fully stocked with pencils, pens, <i>sharpiers</i> , extra lead, scissors, pencil sharpener, erasers etc.	Turtle Closet	
First Aid Kit		1	Manual, Wilderness First aid	Honolulu, MTRP	
First Aid Kit		1	First Aid Kit, fully stocked	Linen Closet	Use items set aside for turtle camp use. The inventory serves as a list of suggestions for a complete kit.
Kitchen		2	Stove lighters, butane	Bucket in pantry	one as backup
Kitchen		2	Dishtowels	Linen Closet	Dishes washed in salt water have to be dried off immediately to prevent rust!
Kitchen		1	Dish soap, bottle	Pantry	
Kitchen		1	Matches, box	Pantry	
Kitchen		1	Sponge to wash dishes	Pantry	
Kitchen		1	French press	ToBOrdered	
Kitchen		2	Bowls	Turtle Closet	
Kitchen		2	Can opener	Turtle Closet	one as backup
Kitchen		1	Coffee filter and holder	Turtle Closet	Use french press instead if ordered
Kitchen		2	Cups	Turtle Closet	
Kitchen		1	Dish Tub, plastic	Turtle Closet	
Kitchen		2 each	Forks, spoons, knives	Turtle Closet	
Kitchen		2	Hot pad (1 square, 1 mitt)	Turtle Closet	
Kitchen		1	Pan	Turtle Closet	Substitute with new one if order

Kitchen		2	Plates	Turtle Closet	
Kitchen		2	Pots and lids	Turtle Closet	
Tool Kit		1	LPS 3, bottle	Tractor Shed	Lubricant and rust inhibitor
Tool Kit		1	Shovel	Tractor Shed	Spray with rust inhibitor, use for datalogger retrieval
Tool Kit		1	Silicone lubricant, can	Tractor Shed	
Tool Kit		1	WD 40, can	Tractor Shed	
Tool Kit		2	Crescent wrench	Turtle Closet	Treat with LPS at the beginning and end of camp
Tool Kit		2	Gloves, heavy duty, pair	Turtle Closet	
Tool Kit		1	Hacksaw	Turtle Closet	Treat all tools with LPS at the beginning and end of camp to make sure they do not rust, for removing satellite transmitters
Tool Kit		1	Hammer	Turtle Closet	Treat with LPS at the beginning and end of camp
Tool Kit		-	Nails	Turtle Closet	
Tool Kit		2	Needle nose pliers	Turtle Closet	Treat with LPS at the beginning and end of camp
Tool Kit		1	Safety goggles, pair	Turtle Closet	
Tool Kit		1	Screwdriver, phillips	Turtle Closet	Treat with LPS at the beginning and end of camp
Tool Kit		1	Screwdriver, standard	Turtle Closet	Treat with LPS at the beginning and end of camp
Tool Kit		2	Thread seal tape, roll	Turtle Closet	
Tool Kit		1	Tool kit box	Turtle Closet	
Tool Kit		1	Wire cutter/pliers, large	Turtle Closet	Treat with LPS at the beginning and end of camp
Tool Kit		1	Wire snips, small	Turtle Closet	Treat with LPS at the beginning and end of camp

Tool Kit		2	Wire, can	Turtle Closet	
Tool Kit		2	Wire, metal, can	Turtle Closet	
Tool Kit		2	Duct tape, roll	Warehouse	What would McGyver do?
Tool Kit		-	Electrical Tape	Warehouse	
Tool Kit		-	Sand Paper	Warehouse	
Tools for setup		1	Battery pack for cordless drill, spare	Tractor Shed	Charge battery packs the day before setup
Tools for setup		1	Cordless drill	Tractor Shed	Use to fasten tent frame to platform
Tools for setup		1	Drill bits, complete set	Tractor Shed	
Tools for setup		1	Ratchet set, complete	Tractor Shed	
Tools for setup		2	Sledge hammers, small	Tractor Shed	For pounding in tent stakes
Tools for setup		1	Stake pounder	Tractor Shed	Use to hammer in large stakes for fencing
Tools for setup		1	Winch	Tractor Shed	For tightening tent wire tie-downs around frame
Tools for setup		~50	Zipties	Warehouse	Use to attach the fence rolls to the stakes