To George:

There once was a man named Balazs who championed a spectacular cause - green sea turtles - his claim to worldwide fame. But his efforts received great applause.

From
Marlyn Major
1986

"Everything you ever wanted to know about turtle work at French Frigate Shoals, 1986"

By
G. Balazs

and

Marlyn Major

Please return to me, with all data written herein. Photo copy for you to keep can be made at NMFS lab, if you wish.
Rick Vetter, FWS Refuge Manager at French Frigate Shoals, is the top authority here. See "Special Use Permit" for further details.

Other people here now:
- Kristen O'Brien: an FWS volunteer helping with seabird studies (arrived 5/29)
- Nancy: same as above, but arrived 5/20
- Joan: Rick Vetter's wife, and a wildlife biologist herself
- Heather Walbridge: NMFS volunteer arrived 5/15 approx. A second or third year uni. student who started volunteering for NMFS (Bill) 4 or 5 months ago.

An "emergency bucket" also stays in the boat clip down at all times; among other important items, this bucket contains flares.

*: Fish & Wildlife Service

SAFETY

FIRST AND FOREMOST, AT ALL TIMES.

Don't enter into any situation which common sense, and your own limitations, tell you is unsafe, especially within the Boston Whaler.

There is relative security while on the islands. There is always potential danger within the boat. Carry extra water in the boat (1 or 2 gal jug and your 2 quart blue thermos) also handy at night in the ton.

Emergency "EPIRB" Radio Beacon is under the steering, along with extra rope. Also, keep all safe radio checks with Walky-Talky with FWS Team as required by their safety policy.

(MORE)
SAFETY, CONT.

Radio-Check Procedure with Rick Vetter, FWS TERN IS:
(Mandatory):

Before departing from any island, and immediately upon arrival at any island, TERN must be radioed and notified. Rick will tell you if he feels the wind/sea condition is unsafe and you should not use the boat. If he doesn't hear from you within an hour of your ETA, he will initiate a search.

Check with Rick about any modifications or update procedures of this policy.

While camping on East Is., the normal daily radio check is at 8 AM each morning.

HINTS ON THE CONTROL OF TICKS

Periodically spray "off" and/or insecticide completely around outside surfaces of Tent Door Zipper.

When leaving and entering tent, especially at night, bang and shake zipper area to knock off "waiting" ticks. Leave and enter quickly, making sure zipper is pulled tight to close screen door securely, treat zipper gently to prevent it from catching fabric or coming off the track (the ticks would love something like this to happen!)

Before entering tent at night, "stomp" your feet to dislodge ticks that may be clinging to your shoes. Don't linger outside the tent door for longer than needed, as ticks will get on you there.
For tick bites, use 1% hydrocortisone to control itching. 0.5% doesn't usually help much. The more you scratch, the more it will itch, and likely become infected.

Some people are more sensitive to the bites than others.

Ticks will sometime cling around the underside edge of the lid to the water container. Give it a rap before screwing back on.

Last note: A recent problem that has cropped up is the presence of ticks on or around the outdoor toilet. "OFF" should be sprayed here too every so often. Also, it will help to shorten your "toilet stay" as much as possible (I got two "bol" bites on the 22nd).
ROOM MORE TOWARD WEST END, BUT COURT YARD SIDE OF THE BUILDING.

MISC. ITEMS - CUPBOARDS TO THE LEFT AND ABOVE MICROWAVE OVEN IN KITCHEN.

NMFS "OFFICE" - EXTREME WEST END OF THE NORTHERN WING OF THE DOOR BUILDING.

I recommend that you take an hour to look through all NMFS food and supplies to fully acquaint yourself with what we have available. You may take, eat and use anything we have.

However, few food and supplies are not normally available to use except by very special arrangement.

OUTBOARD MOTOR MAINTENANCE LOG BOOK, ALONG WITH MANUALS, ARE IN THE NMFS OFFICE ON THE DESK.

WATER

RECOMMEND THAT FOR DRINKING YOU ONLY USE FILTERED WATER, ONLY OBTAINABLE FROM SLOW-RUNNING SMALL TAP IN THE KITCHEN. CAST IS, BLUE WATER JUGS FIT IN SINK RIM FOR FILLING. AN EXTRA FULL JUG IS STORED AT THE SEAL TENT (CLEAR PLASTIC WITH MY NAME ON IT).

ELECTRICAL POWER ON TOP IS.

GENERATOR IS USUALLY TURNED ON BY 6:45 AM WEEKDAYS, 8:30 AM OR 9:00 WEEKENDS. IT GOES OFF AUTOMATICALLY AT ABOUT 11:45 PM. SOMETIMES ON WEEKENDS RICK LEAVES IT ON UNTIL 1-2 AM.

FRESHWATER DOES WORK WHEN GENERATOR IS OFF. TOILETS DO, AS THEY ARE SALT WATER.

KEEP A FLASHLIGHT BY YOUR BED TO FIND THE TOILETS, IF YOU NEED IT AFTER THE GENERATOR IS OFF. IT CAN BE REAL DARK IN THE BUILDING AT NIGHT.
Radio calls to Honolulu and elsewhere

Messages can be passed any weekday morning through Rick Vetter. When he talks to the FWS office in Honolulu, "K.M.I." marine operator can be obtained for hook-up to telephone calls anywhere. Charges in USA are $15.95 for 3-minutes, $5 minute thereafter. You may call collect, bill to a third party, or use a charge card (I think). See Rick for help.
Spare poles for Stax
(Turtle Camp) Tent

Some spare poles are here just in case one breaks or bends. Check storage brums inside tent, and also package under tarp outside (wrapped with gray plastic garbage bags & tape).

Turtle-Camp Tent Annin (blue)

When it battles from the wind, it often like living in a "plastic garbage bag" eear plugs can be borrowed from Rick Vetter, if needed.

Line on annin constantly need to be adjusted, changed, etc. As it tears more.

Prop-up annin facing the wind during the daytime to create a small wind-scoop effect. You will roast in the tent on hot days if you don't!
WASHING CLOTHES
ON TERN ISLAND

MACHINES IN WASHROOM.
FWS REQUESTS FULL
LOADS ONLY TO CONSERVE
ON FRESHWATER. NMFS
SOAP IS SO MARKED IN
THE WASHROOM. ALSO A NEW
BOX IS IN THE DORMITORY FOOD STORAGE
ROOM.

SHEETS AND BLANKET CAN
BE BROUGHT FROM TERN
FOR USE ON EAST, IF
YOU WISH. ALL BEDDING
ITEMS, AS WELL AS
ACCESSORIES, AND THE "CHARGER"
FOR THE HAND-HELD RADIOS,
ARE IN THE DRY-ROOM
WITH THE DOOR LABELED
FIRST AID. THIS IS AN FWS
ROOM. BUT YOU CAN PUT ANY
ITEM IN HERE THAT YOU WANT TO
STORE IN LOW HUMIDITY. SEE
JOAN (RICK'S WIFE).

COT IN TURTLE TENT

WHEN I ASSEMBLED THIS COT THE
HEADBOARD WAS LOOSE AND KEPT
FALLING OUT. TO KEEP IT IN
PLACE, I GUDED IT LIGHTLY
WITH SILICONE. WHEN IT
COMES TIME TO DISASSEMBLE
IT, GIVE IT A HARD PULL AND
IT WILL COME UNGUDED.
Swimming or going in the waters around East is.

I don't recommend anything over "knee-deep" for any purpose. If you see 6' great reef sharks nearby, or a 9'+ tiger shark (they don't come any smaller than 9'!), then don't go in even to knee-deep. Stay dry on the beach. Use fresh water for a sponge or pan bath. There are plenty of water jugs - have all you need.

Propane stove on East.

Store it outside the tent when not using. If it leaked inside while you were asleep...

Also, with a pot on it heating, it's easy to accidentally tip over, careful about burns. I always cook inside the tent but am careful about not catching tent fabric on fire.
**Another Propane Stove Safety Tip**

Don't heat cans directly on the burner. If you do, the lead seam of the can will partly melt and contaminate your food with lead (bad stuff!). Instead, heat food in cans by putting them in a pan half filled with water, then boil open the can first. I find this method convenient because it gets around having to wash pans.

**CALL AND ASK**

If a difficult problem comes up or there's something that seems important that you're simply uncertain about, please radio call (through Rick Letter, FWS) Bill Gilmartin or me for an answer.

**Leftover spray paint & propane should not be returned to Honolulu. Store at teen in proper locations. Remaining batteries should be put in the box in the freezer.**

**Items to be returned to Honolulu**

Remaining tags and utensils should be brought with you back on the airplane. Also, anything labeled "Balazs" and "NMFS" (ie flashlights, propane stove parts, first aid kit etc.) if weight allowance on return flight will allow you to do so. If not, store in cardboard boxes and label for future shipment to Honolulu.
WHEN SPACE ON A FLIGHT 
BECOMES AVAILABLE. NOTE: 
DRUM CONTAINER CAN NOT BE 
NORMAL SHIPMENT ON THE 
AIRPLANE BECAUSE THE PILOT 
(BOB JUSTMAN) FINDS IT VERY 
DIFFICULT TO STRAP THEM 
DOWN SECURLY.

THE TURTLE CAMP TENT 
AND LARGE BLUE AWNING SHOULD 
BE PACKAGED AND STORED AT 
TERN ISLAND FOR USE NEXT 
YEAR. NOTE AND PLEASE 
REPORT TO ME ANY TEARS 
OR PROBLEMS WITH THE TENT.

ALL REMAINING GOOD 
STAYS STORED 
AT TERN IS. FOR FUTURE 
USE (RUST & ALL!).

THE SMALL BLUE TARP BEING USED 
AS A DOORMAT BELONGS TO 
ME. IF POSSIBLE, PLEASE BRING 
IT BACK ON THE PLANE. OR BEK 
FOR FUTURE SHIPMENT. ALSO THE 
3 PIECES OF SILVERWAVE IN THE 
TURTLE TENT.
**Flashlight Bulbs**

The black metal double-A flashlight ("magnilite") has a spare bulb in the cap that unscrews in the handle end. Along with others, please return this flashlites to me when your field work is over.

If the neon bulb in my large light burns out, replace it with the bulb from the smaller-size body only neon light in the seal tent. They have two neon lights, but only ever use one. The bulbs are the same size and interchangeable.

**Obstacle - Barrier Around Tent**

These are to discourage nesting turtles from flowing into the tent, digging around it and destroying the campsite. Especially while you are away from East Is. Maintain the barrier system as needed.

In addition, it's possible a turtle could become entangled in the campsite lines, etc. If trapped there during the day in the heat, the turtle could die.

(Too bad the turtle didn't have a nice fence around it, like the seal camp.)

On the night of 6/9, a turtle came over the barrier, because I had the aluminum stretcher lying flat instead...
OF UPRIGHT (LIKE IT IS NOW), THE TURTLE APPARENTLY CRAWL/GLIDE RIGHT OVER THE STRETCHER. I WAS DOZING IN THE TENT, BUT QUICKLY AWOKE. IT WAS A MESS GETTING HER OUT. I Scraped up my feet and legs in the process, since boots weren't on. Fortunately, I "guided" her out, with strong-arm tactics to the head, before she demolished the tent and awning.

**Note:** Sometimes, one side of the shell will be reasonably dry, while the other side is wet (resulting from light blowing rain/shower). In such cases, just spray paint the dry side.

MORE DISHES, CUTLERY, SILVERWARE, CANNED FOOD, ETC.

IN BUCKETS AND STORAGE DRUMS AT SEAL CAMPsite ON EAST IS.
HELP YOURSELF TO EVERYTHING AS MAY BE NEEDED.

TIPS ON USING SPRAY PAINT TO MARK TURTLE SHELLS

- **Shake can well just before each use.**
- **Shell must be reasonably dry.** If it's glistening wet, it absolutely won't stick so there's no sense spraying it. A fine layer of dirt/dust on the shell is O.K.
- **After each use turn can upside down.** Hold away from you, down wind and press nozzle for approx. 5 seconds. This will help to clear the spray ket of paint. If you don't do this, it will quickly clog and become... (more)
PAINT, CONT.

USELESS AFTER 2 OR 3 PAINTINGS.

PUT THE LID BACK ON LOOSELY WHEN CARRYING THE SPRAY CAN IN THE SHOULDER BAG. IF YOU DON'T THE CAN'S NOZZLE WILL OFTEN PRESS AGAINST THE SIDE AND BE GOING OFF WITHOUT YOUR KNOWLEDGE UNTIL YOU SMELL PAINT AND LOOK DOWN TO SEE IT DRIPPING OUT OF THE BAG ONTO YOUR CLOTHES. (AS YOU MIGHT GUESS, I'VE LEARNED THIS FROM HARD EXPERIENCE).

WHEN MARKING THE SHELL, A FINE COAT WILL ULTIMATELY STICK BETTER THAN A SATURATED, DRIPPING COAT. THE LATTER SEEMS MORE LIABLE TO CHIP OR PEEL OFF AFTER A FEW DAYS.

PAINTED MARKS CAN STAY READABLE FOR 2 WEEKS OR LONGER, BUT THERE IS

CONSIDERABLE VARIATION BETWEEN INDIVIDUAL TURTLES, THE PRESENCE OF PAINT CAN USUALLY BE DETECTED UP TO 1 A MONTH OR LONGER, THOUGH IT WILL USUALLY NOT BE READABLE.

COLOR PAINT CODES

VERNIS - WORK BEING DONE BY RICK VETTER & FWS VOLUNTEERS

BLUE - EAST ISLAND - G. BACARIS - 5/29 - 6/18 NUMBERS 1 THROUGH 32 AND 34

YELLOW - G. BACARIS 6/19 - 6/23

GREEN - 338, 35 THROUGH 44

IVORY - M. MAJOR - 6/29 - 6/1

USE ALPHABET LETTERS A THROUGH Z; IF MORE THAN 26 ARE NEEDED, GO AA, BB, CC, ETC.
You have 1\frac{1}{2} cans of ivory paint (both in the turtle tent). A full can should last for about 35 turtles, so I don't expect you to run out of ivory, but if you do, start using green. Nearly full can on east and several new ones in storage on fern.

You are not expected nor should you go out at night when it's raining. Wait till the rain/fever completely passes. If it rains hard on and off frequently all night, just skip that night, get a good night's sleep instead.

Three times a night will be adequate once you become experienced. More than four times a night is unnecessary and, in fact, can be counterproductive and even harmful by putting too much pressure/disturbance on the turtles, monk seals & seabirds too.

OBJECTIVES OF YOUR WORK

METHODS TO USE

1. TO DETERMINE THE NUMBER AND IDENTITY OF FEMALES

   Nesting each night on East Island.

   The females up to nest on any one night will consist of two components:

   a) Turtles that I have “handled” already this season and marked with either yellow or green paint,
   b) Turtles that I have not handled and, therefore, are being seen for the first time nesting this season.

   TO ACCOMPLISH THIS OBJECTIVE

   You must monitor nesting activity three or four times each night. By walking around the island, recording turtles’ presence and “handling” those that fall under “b” category above, suggested times to go out are 9:30 pm, 12:30 am, 3:30 am, and if needed 6 am. Each trip out will last 45 min to 1\frac{1}{2} hours, depending on how many
Turtles are present, nesting is light this year.
One night I had 8.

Turtles that have been previously marked with yellow or green paint need only be recorded, not handled.
If the number is legible, record it. If not, just write the color, and perhaps your "best guess" as to what the number is.
If the turtle has no visible paint, it needs to be handled by you. This is by far the most important piece of your work. First, if the shell is dry enough, use your ivory paint to put an alphabet letter on each side. Next, check for the presence of a tag or tags using only the one-cell (AA) flashlight provided. This works excellent by holding it in your mouth, when needed. You only need to read one tag with certainty.

If several tags are present, however, if it's easy to do so (meaning the turtle "lets you read them"), read as many tag numbers as you can. They are rarely consecutive numbers. If you can only read one number, then note how many tags the turtle has total. We need this info to compute tag shedding rates. If you can't read any of the tag numbers because encrusting coralline algae or other foreign material on the tag, use the pocket knife provided, or other appropriate metal object, to scrape the tag and expose the number.

Note: There is a lot of behavioral difference between turtles. Some will simply not let you fool around with their tags. They will respond in a wild manner.
Just do the best you can without getting yourself hurt by the turtle. Watch that...
They don't grind their shell and flippers against your ankles and feet (note bandages on my legs now) from not heeding this warning. To help in reading tag numbers accurately, I suggest you familiarize yourself with how each number is formed (their style). Study numbers as they are printed on the new tags.

If no tags are present on the turtle then at least one, and ideally two, need to be applied. It takes practice to do this correctly, quickly, and safely. Demonstration and instruction will be given 6/23-6/24 on East. Again, the ease of tagging depends heavily on the behavioral disposition of the turtle. The key thought is always safety to yourself. They are strong, powerful animals that are capable of doing damage with their flippers and body. Also, flipper can and do throw sand with incredible stinging force. A "blast" in the face and eyes is an unpleasant experience (I know!).

If you simply can't get a tag on an animal don't be overly concerned. The painted number for our mighty census work is almost as important as tagging. And I am sure you will always be able to apply the paint with no problems.

If any tags tear out on you or for some other reason are ruined, please don't throw them away. Record the numbers in this book and return them to me. The stage of nesting that the turtle is involved in will also, to a large extent, determine how easy it may be to tag. The "best" time to tag is within 5-15 minutes after the eggs have been
DEPOSITED AND THE HAND FLIPPERS ALONE ARE PULLING SAND OVER THEM. SHE IS THE LEAST IMMUNE TO DISTURBANCE AT THIS TIME. I NEVER APPLY THE TAGS WHILE EGGS ARE BEING DROPPED. THIS COULD CAUSE HER TO "SHUT-DOWN" AND LEAVE. HOWEVER, IT IS AN EXCELLENT TIME TO APPLY PAINT WHILE EGG LAYING IS HAPPENING. ALSO, TO INSPECT HER OVER CAREFULLY WITH THE SINGLE-COIL LIGHT LOOKING ESPECIALLY FOR:

1. Tumors on the eyes, neck, front flippers, close to the body, high, or anywhere else visible.
2. Any signs of fresh amputations or mutilation, usually from shark attack.
3. Any signs of old and completely healed amputations. I seem to be worthy to document.
4. Anything else that

NOTE: THE SINGLE-CELL FLASHLIGHT BATTERY MUST BE CHANGED FAIRLY REGULARLY (APPROX. EVERY 3RD NIGHT AS IT DRAINS FAST, MAKING IT TOO DIFFICULT TO SEE THINGS YOU NEED IT FOR (IE: TAG NUMBERS).

WHILE THE TURTLE IS LAYING EGGS (ACTUALLY DEPOSING THEM), IT IS ALSO AN EXCELLENT TIME TO MEASURE THE CURVED CARAPACE LENGTH WITH THE TAPE PROVIDED. SINCE YOU MAY NOT ENCOUNTER TURTLES VERY OFTEN RIGHT IN THE PROCESS OF LAYING EGGS, I DON'T EXPECT YOU TO MEASURE VERY MANY TURTLES. IT IS VERY HARD TO MEASURE A TURTLE WHEN IT IS OUT MOVING AROUND.

MONITORING AT NIGHT'S NESTING IS A PRIME OBJECTIVE. TO GO OUT JUST ONCE OR TWICE TO CHECK ON TURTLES UP NESTING CAN PROVIDE GOOD INFORMATION, BUT THIS IS NOT
Near as valuable as "complete coverage" (3 or 4 times out, spaced properly) of 19 nights nesting. Also, consecutive nights of complete coverage monitoring are of greater value. For example, your schedule could be 4 or 5 consecutive nights on east is. doing complete coverage, and then 2 or 3 night back at tern is. resting up, getting a shower, and eating slightly better food. you devise the schedule that seems best for your working abilities. although the use of the boat is primarily for accomplishing the requirements of the monk seal research. however, there should be some accommodation of your needs and wishes.

If you want, you can stay on east is. alone, when the other two go back to tern is. for overnight stays. however, to do this you must plan ahead and bring an extra hand-held radio so you can make 8 am radio checks with tern is. while alone. see rick. make sure the radio is fully charged (i.e., radio on the charger for several hours - and preferably for overnight). note the red and green indicator lights on the charger don't work. a red light may be on, but the radio will nevertheless be fully charged if it has been on long enough, see rick.

Concerning occasional trips the seal people will be making to distant islands (shark, disappearing and gins) to count seals. i would personally recommend against your going. in my view, there are safety considerations in favor of not going, unless you feel you are very well skilled in small boat handling and related marine talents. for one thing, three people in the boat, versus two,
Disappearing is 1.6 miles southwest, at the very southern limit of the atoll.

Takes more gasoline, and gasoline is not in abundant supply here.
Another factor is that if a big problem occurs (i.e., motors won't work, boat drifts out to sea), two people adrift with limited fresh water is a better situation than three people adrift.

Use your own judgment in this matter, but that's my advice to you.

All of the ecological diversity found at French Frigate Shoal is represented on Tern, Whale-Skate, and East Islands. Disappearing, Shark, and Gns virtually barren sand bars. You should and will be visiting Whale-Skate. It is usually stopped at for seal work when traveling either to or from East Island. Whale-Skate is an attractive, interesting island which you will enjoy seeing.

When the Seal People go to the distant islands, please ask them to tell you the number of turtles seen basking as more and also if paint is present on any of them. Record the information in this book.

Objective 2: To count and record the identities of turtles basking along the shoreline of East Island (whale-skate too, when you visit that island).

The best time to do this count is between 3 pm and 6 pm, but other times as schedule permits will be O.K. Most turtles on East bask at the Southeast end of the island. An occasional one will haul out elsewhere. Take 45 minutes to walk around the island to do this census. Record in this book the date, time and number seen. Also enter the painted numbers seen or the presence of paint and color.
Males, as you know, have a very long, large tail. If you are able to distinguish them, record as such. Normally this is not possible without getting very close and behind them. You shouldn't do this. When walking around the island you shouldn't get so close to basking turtles as to disturb them, cause them to move due to your presence and return to the sea. At times their eyesight seems very good out of water, much better than what it's reported to be in the scientific literature.

One count of basking turtles per day will be fine. Well, you are one east island. If you want to do two per day, that will be fine too. You should not attempt to tag or read tags on basking turtles. Also note that it is not uncommon for a turtle or two to "bask" along the shore at night. Do not confuse such animals with those out to nest. Basking turtles never go much above the high tide mark. Basking turtles stay in one place motionless for long periods. Turtles hauling out to nest are almost constantly in-motion or on the move.
TURTLE LOG
JUNE-JULY 86
FOR MARILYN MAJOR