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**APPENDIX G: DESECHEO OPERATIONAL COMMUNICATIONS PLAN**

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Communication between project personnel will be structured to reduce the amount of traffic to any one individual. Without a clear communications plan that is strictly followed, communication channels can be easily overwhelmed or personnel may find it difficult to understand important information during operations-based communications. Information should move freely up and down the chain of command and across operational groups at the appropriate level.

**1. Communications Equipment**

- **Satellite Phone**

One Iridium satellite phone will be located at the Operational base on Desecheo. All staff will be trained in its use. A list of contact numbers and instructions for the phone's use will be in the satellite phone's box. A spare battery will be part of this kit. How to operate the satellite phone will be included in the safety briefing.

A second satellite phone will be located at the Staging site during external load operations.

In addition, USFWS will have their own satellite phone when they are on Desecheo.

Text messages to satellite phone

On the Iridium satellite phones, you can send a text message from your computer (see Quick Start guide at end).

1. Go to the Iridium website [www.iridium.com](http://www.iridium.com)
2. Click on the link to "Send a satellite message" at the top right of the page
3. Enter the satellite phone number:
  - o Desecheo Island: TBD
  - o Staging site: TBD
4. Type your message. Keep messages short, ideally something like "Tommy, Phone me Tues 9AM, mom"; there is a 160 character limit on one message
5. Press "send message"

Make sure the text message includes the name of the person who the message is for, and who is sending it.

To receive text messages

Text messages are uploaded once the phone has been turned on and allowed to acquire a sufficient signal (typically 3 bars or greater). Messages may take multiple minutes to upload and are stored within the phone unless deleted.

- **Cellular Phone**

IC staff and/or USDA personnel will maintain at least two cellular phones on island. A cellular phone signal can be acquired on the island from the highest ridges, especially on the eastern side of the island closest to mainland. All on-island personnel will be briefed on the best locations to receive signal.

- **VHF Portable Radios**

Handheld VHF radios will be used for communication between operational staff, both on Desecheo and at the Staging site. On Desecheo, designated staff members will have a handheld VHF radio and spare battery. These VHF radios are typically line-of-site; therefore a repeater will be placed on the highest point of the island to facilitate radio communications across the island for field staff especially between the north and south slopes.

Portable radios will be programmed to operate on up to 8 unique channels (Table 1). A maximum of 14 portable VHF radios will be required to support the Desecheo operation during external loads and baiting operations (Tables 2 and 3). VHF channels will be assigned for communication with and between three operational groups:

- Air Operations (including personnel on Desecheo and Staging Site)
- Field Monitoring Team
- Emergency Services (TBD where will be located and who will be providing this service)

Personnel will be briefed on radio use and procedures prior to operating in the Staging Site and at the Operational base on Desecheo. A laminated pocket card will be distributed to all personnel outlining the schedule of radio frequencies and the radio call signs for all project positions (Fig 2).

**Table 1.** VHF frequencies on portable IC radios (working table)

Channel	Pathway	Frequency MHz		Radio Location	Use
		Transmit	Receive		
1	Repeater	158.4075	151.5125	Desecheo - Monitoring team zone	Field monitoring team/ bait operations
2	Line of sight	151.5050		Desecheo - Monitoring team zone	Field monitoring team
3	Line of sight	151.7600		Desecheo - Loading zone	Baiting team/ground operations
4	Line of sight	158.4000		Desecheo - Loading zone	Baiting team/ground operations
Marine 9	National	156.450	156.450	ALL	Boater Calling. Commercial and Non-

					Commercial.
Marine 16	National	156.8000	156.800	ALL	International Distress, Safety and Calling. Ships required to carry radio, USCG, and most coast stations maintain a listening watch on this channel
Marine 68	National	156.425	156.425	ALL	TourMarine
Marine 82A	National	157.125	157.125	ALL	US Government
WXJ68 *	Aguadilla/Desecheo		162.550	ALL	NOAA weather
WXJ69 *	Aguadilla/Desecheo		162.400	ALL	NOAA weather

NOAA weather channels coverage in Puerto Rico:

<http://www.nws.noaa.gov/nwr/Maps/PHP/puertorico.php>

<http://www.nws.noaa.gov/nwr/stations.php?State=PR>

- **Air Band Radios**

Radio communications with the helicopter will be conducted on an ‘air band’ frequency, which is not included in standard land VHF frequency ranges. Air Band radios will only be assigned to key personnel, and will require some staff to carry two radios: Air Band and VHF radio assignments are described for external load operation (Table 2) and baiting operations (Table 3).

Air 2 Ground	Line of sight	123.0500		Desecheo - Loading zone	Air operations team
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**Table 2.** Portable radios and headsets required during Desecheo external load operations.

Position	Land Mobile Radio	Air Band Radio	Air Band Headset Needed
Operations Section Chief	1	1	1
Staging Site Controller	2	2	1
Bait Loading Site Controller		1	2
Helicopter Engineer		1	
Safety Observer	2		
Spares	1	1	
<b>TOTAL NEEDED</b>	<b>6</b>	<b>6</b>	<b>4</b>

**Table 3.** Portable radios and headsets required during Desecheo baiting operations.

<b>Position</b>	<b>Land Mobile Radio</b>	<b>Air Band Radio</b>	<b>Air Band Headset Needed</b>
<b>Incident Commander</b>	1		
<b>Operations Section Chief</b>	1	1	1
<b>Monitoring Coordinator</b>	1		
<b>Monitoring Supervisor</b>	1		
<b>Monitoring Crew</b>	5		
<b>Marine Compliance Supervisor</b>	1		
<b>Air Ops Supervisor</b>	1	1	1
<b>Baiting Leader</b>		1	1
<b>Bait Loader Specialist</b>			
<b>Bait loader/Bucket specialist</b>		1	1
<b>Broadcast Baiting Pilot</b>			
<b>Helicopter Engineer</b>		1	
<b>Safety Observer</b>	1		
<b>Spares</b>	2	1	
<b>TOTAL NEEDED</b>	<b>14</b>	<b>6</b>	<b>4</b>

## 2. Radio Communications Procedures

- Be specific: Before transmitting, know what you are going to say.
- Indicate objectives: Personnel should know exactly where to go, to whom they should report, the task and its objective.
- Use clear tone/effective rate: Speak clearly at a normal rate, not too fast or too slow.
- Well timed/spaced transmissions: Prioritize your messages. Do not waste valuable airtime with unimportant messages and insignificant details. Maintain an awareness of the overall situation and how you fit in. Wait until a message transaction has been completed before transmitting. Give priority to emergency transmissions.
- Pause between concurrent messages: A pause makes it clear when one message has been completed and another started. It will also give other personnel a chance to transmit important messages.

### ***Making a Transmission***

Transmission procedures should ensure that messages are received and understood. Radio transmissions are initiated when the intended receiver indicates readiness to receive a message. The message is transmitted and the receiver restates the message to confirm that it was understood. If correct, the original sender confirms, completing the communications sequence. The communications will be conducted using **first names** not titles.

For example, an exchange between the GIS Supervisor (**David**) and the Air Ops Supervisor (**Tommy**) would follow these five steps:

1. "David, this is Tommy on Mon 1." (Air Ops Supervisor transmitting)
2. "this is David, go-ahead Tommy." (GIS Supervisor transmitting)
3. "The area covered on the previous flight line was 2.5 hectares." (Air Ops Sup. transmitting)
4. "Copy that, 2.5 hectares." (GIS Sup. transmitting)
5. "Affirmative." (Air Ops Sup. transmitting)

If the transmission is complete, each person must sign off by stating "out" or "clear" at the end of the transmission sequence. This indicates that transmission has ended and the channel is free for other users.

If the sender or receiver wishes to talk to someone else after the other individual has signed off, he/she can use the word "break, break" then begin another transmission starting at #1 as above. This indicates to other listeners that the channel is not yet free to use.

Utilize the term "hot mic" in a succession of three in the event an unintentional open (keyed on) mic is transmitting. All staff should stop and verify that their radio is not keyed open.

### ***Emergency Radio Traffic***

The phrase "emergency traffic" is used to gain priority access to any channel. The phrase is transmitted by the personnel in need, causing all other personnel to defer to the caller until normal traffic can resume.

An example exchange:

1. "All personnel, standby for emergency traffic." (This statement gains priority access)
2. "David, this is Cielo on Tac1."
3. "this is David, go-ahead Cielo."
4. "Need immediate medical attention at location X, possible heat exhaustion." (Cielo transmitting)
5. "Medical attention needed for heat exhaustion at location X." (David transmitting)
6. "Affirmative."

**Figure 1. Desecheo Bait Operations radio pocket card: (above) front; (below) back**

<b>Group</b>	<b>ID</b>	<b>Who</b>	<b>Frequency</b>
Monitoring	1	Monitoring Team - Repeater	158.4075
	2	Monitoring Team	151.5050
Ground Ops	3	Baiting Personnel	151.7600
	4	Baiting Personnel	158.4000
Emergency		All Personnel	ANY
<b>Additional Channels</b>			
	9	Marine 9 Hailing	156.4500
	10	Marine 68	156.4250
	11	Marine 82A – US Govt	157.125
	12	NOAA Weather Forecast	162.5500
	13	NOAA Weather Forecast	162.4000
	16	Marine 16 Emergency	156.8000

<b>Position</b>	<b>Name</b>	<b>Contact On</b>
<b>Incident Commander</b>	Susan Silander	3
<b>Marine Compliance</b>	Bryant Marcial	3
<b>Operations Chief</b>	David Will	3
<b>Baiting Leader</b>	Jose-Luis Herrera	3
<b>Loader Specialist</b>	Jason Zito	3
<b>Air Ops Supervisor</b>	Tommy Hall	3
<b>Helicopter 2CA</b>	Peter Garden	Air 2 Ground
<b>Engineer/Mechanic</b>	Dave Sanderson	Air 2 Ground
<b>Monitoring Coordinator</b>	Kirsty Swinnerton	1
<b>Monitoring Supervisor</b>	Aaron Shiels	1
<b>Monitoring 1</b>	Cielo Figuerola	1
<b>Monitoring 2</b>	Jorge Gutierrez	1
<b>Monitoring 3</b>	Juan Gilberto Garcia	1
<b>Monitoring 4</b>	Erick Bermudez	1
<b>Monitoring 5</b>	Ricardo Colon/Claudia Lombard	1

*Call signs*

The communications will be conducted using **first names** not titles.

## **Desecheo Field Safety Communications Protocols**

**VHF hand-held radio:** Regular radio check-ins will be required within the field team (see below) and with Law Enforcement officers from the U.S. Fish and Wildlife Service (and other partner agencies). L.E. Officers will be based at the helipad, can assist with emergency radio transmissions, and will have the capacity for radio contact with the Coastguard and the National Wildlife Refuge personnel.

**Satellite phone:** In life-threatening medical emergencies, crew should contact RMI and MedEx directly to stabilize the injured crew member following the [Appendix M: Injured persons action plan: on-island](#). When searching for missing personnel, field crews should have the satellite phone and list of important phone numbers with them, in addition to the usual first aid equipment.

### **Radio Communications Schedule:**

Communications are critical for the safety of all personnel, and a radio check-in schedule should be agreed upon prior to leaving the camp.

- A work plan should be arranged before fieldwork at the start of each day, and communicated to L.E. officers. Details should include your area of work activity, intended route from the camp and the time you intend to return to the camp.
- Deviations from this plan should be communicated prior to action.
- Field personnel are to **carry radios and back-up batteries with them at all times**.
- Radio batteries should be in working order and checked before leaving the camp.
- Radios will remain on until all personnel are back at camp.
- Radio checks will be performed at 8am each day and should be at 2 hourly intervals (10:00, 12:00, 14:00, 16:00) through the day. At the start of each day (or for the entire trip), one team member will be designated “Radio Comms Officer” and will be responsible for conducting the radio-checks for all individuals for that day. At each radio-check you must give the following key information:
  - 1) Your current location
  - 2) Your next destination and route
  - 3) A brief summary of your intended activities
  - 4) Confirm the time of next radio check
  - 5) Report any deviations from your original workplan

All individuals will attempt to be back at camp by 5.30PM. If by 5.00PM you know you will be later than this, individuals should inform the Radio Comms Officer.

**Scheduled Radio Check-ins**

- 1) **Initial radio check at 8 am.** Check-ins will be scheduled every two hours. If an individual cannot be contacted during the scheduled radio check, either by the Comms Officer or other field staff, the following procedure must be implemented:
- 2) **15 Minutes:** Once personnel cannot be raised for a scheduled radio check, attempts should be made every 15 minutes for up to one hour until the individual is reached. Or, as soon as a person realizes they have missed the check, they should check in when able.
- 3) **One Hour=Missing/Overdue Person:** After 4 checks every 15 minutes (one hour) all available personnel should be informed of the situation, and given the key information about the missing person's work plan as known from their last contact. A response plan will be created for each scenario as it takes place. Coordinated by the person in charge at that time or their delegate. The timing and degree of response by all will be addressed as dictated by circumstances. At this point, the closest person to the missing person's supposed location will attempt to find the person. The searcher will cover the area thought to have been the probable location of the missing person. A visual search, loud vocal shouts, and a GPS track log will support the initial search. If the missing/overdue person is not found, staff will rendezvous and begin an organized search. Should the missing/overdue person have simply lost radio contact, the missing person should take the most direct route back to the camp and if the radio is operational continue to try and call in to report regularly. In most instances, a battery could then be replaced and communications be re-established.
- 4) **Missing, lost, or injured persons without communications**
  - **Missing Status:** If someone is missing/overdue (ie. after one hour/4 checks) and unable to communicate with others by radio, that person should take the most direct route back to the camp.
  - **Lost Status:** If you are missing and don't know where you are, or are unable to move you should stay put and blow your emergency whistle every few minutes. In most cases, field personnel are working in close enough proximity to each other that a missing person can be contacted by voice or whistle. If this is not the case, the missing person should remain put and blow the whistle every few minutes to alert searchers of your location.
  - **Injured Status:** Remain calm and know that people are responding in an orderly fashion. Try to get comfortable, and regulate your body heat (keep dry and warm, or cool if in too hot sun). Drink plenty of fluid and if possible, eat to keep your blood sugar levels normal. Use the whistle every few minutes to help searchers find you. Do not attempt to move unnecessarily as this will only expose you to greater risk.

**Procedures for Emergency Channel Marine 16 (U.S. Coast Guard)**

**If someone's life is unequivocally and immediately threatened**, and all other communications have failed, the camp will transmit "MAYDAY MAYDAY MAYDAY" on Channel 16 until they receive a response.

Emergency Radio Call Procedures:

1. Make sure radio is switched on
2. Select channel 16
3. Press/hold the transmit button
4. Clearly say: "MAYDAY MAYDAY MAYDAY"
5. Also give:
  - Vessel name and/or camp description
  - Position and/or location
  - Nature of emergency
  - Number of people involved in incident
6. Release transmit button
7. Wait for 10 seconds - if NO response, repeat call.