



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric
Administration
Pacific Islands Fisheries Science Center
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18 JANUARY 2015 F/PIC:KDG:FLF
A1HA1501-KG

MEMORANDUM FOR: MOC – CAPT Doug Baird Concur
Acting Commanding Officer

FROM: F/PIC – Dr. Ned Cyr *eu*
Acting Science Director

SUBJECT: Change No. 1 - Amendment to *Hi'ialakai* final project
instructions, HA-15-01.

Please amend the subject project instructions, dated 5 January 2015, as follows:

Under Section I. Overview, Subsection F. Personnel / Science Party:

The following staffing changes have occurred:

Remove:

Annandale, Senifa (Leg 2)
Day, Russell (Leg 3)
Heenan, Adel (Patch Test, Leg 1)
Zamzow, Jill (Patch Test, Leg 1)

Add:

Day, Russell (Leg 2)
Donham, Emily (Leg 2)
Manuel, Mark (Leg 4)
Schumacher, Brett (Patch Test, Leg 1)

Thus, the participating legs of the following science party members should be updated as shown:

Day, Russell	Instrumentation Diver	2	Male	NIST	USA
Donham, Emily	Fish REA Diver	2,3	Female	BLOS	USA
Manuel, Mark	Instrumentation Diver	4	Male	CRED/JIMAR	USA

Schumacher, Brett	Benthic REA / Tow Diver	Patch Test, 1,2,3	Male	CRED/JIMAR	USA
Zamzow, Jill	Fish REA	2	Female	CRED/JIMAR	USA

Furthermore, the following scientists should be removed from the science party:

Annandale, Senifa	Fish REA Diver	2	Male	CRED/JIMAR	USA
Heenan, Adel	Fish REA Diver	Patch Test, 1	Female	CRED/JIMAR	ENG

Under Section I. Overview, Subsection G. Administrative:

The status of the following authorizations have changed from “pending” to “approved”:

National Park: Scientific Research and Collecting Permit in the National Park of American Samoa, NPS permit (approved: NPSA-2015-SCI-0003)

Refuges: Special Use Permit for research in Rose Atoll, Palmyra Atoll, Kingman Reef, Howland Island, Baker Island, and Jarvis Island National Wildlife Refuges, USFWS permit (approved permit #: 12521-14001)

Under Section II. Operations, Subsection A. Project Itinerary:

Change Project Itinerary as follows:

Remove:

Entire Subsection A. Project Itinerary

Add:

A. Project Itinerary

Weather, equipment failures, and scheduling problems are unpredictable. As such, the following intended itinerary should be considered as only a guide for survey progression. In particular, the order in which survey areas are worked within a single island area or among islands within close proximity may be altered as appropriate based on weather, sea conditions, or the progress of the survey. Transit estimates have been calculated based on a ship’s speed of 9.7 knots westbound, 9.2 knots north and southbound, and 8.7 knots eastbound.

In addition, the dates below reflect the schedule for our maximum project of 103 DAS.

Pre-Project

Jan 12-16 Loading of 10’ ARMS Lab container, boat cradle and chest freezer with Navy crane. Small boat fuel (gasoline) and ethanol loading. Conduct small boat and davit familiarization for scientific personnel. Conduct station walk-throughs and dive neurological examinations for scientific personnel joining on later legs in Pago Pago.

Leg I:

- Jan 21 **Depart Pearl Harbor:** Embark full scientific complement (18 ASRAMP personnel and 3 CRED mapping specialists) at Ford Island. Transit to Navy fuel pier to take on fuel. Embark additional (3) ASRAMP divers for the Welcome Aboard Brief. (These 3 divers will then disembark once brief is completed.) Depart the fuel pier to conduct a patch test throughout the night in order to calibrate *Hi'ialakai's* multibeam (see ancillary project below).
- Jan 22-24 **Begin ASRAMP Transit:** From a nearshore, logistically advantageous location to be determined (e.g., Koolina, Pearl Harbor, Kewalo Basin), transfer the (3) mapping specialists (Lichowski, Suka, Taylor) to shore by small boat and embark final (3) ASRAMP personnel. Recover small boat and begin transit to Johnston Atoll, estimated distance 710 nmi.
- Jan 25-30 **Johnston Atoll:** Begin Johnston Atoll operations upon arrival. Transfer USFWS terrestrial team to shore via small boat to conduct terrestrial surveys. After this initial effort, additional trips to deliver camp re-supply equipment may be conducted opportunistically while on station. Johnston Atoll operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: 16 STRs and 25 CAUs, as well as a temporary deployment [up to 48 hours] of an anchored array consisting of a PUC, ADCP, CTP, and thermistor string; retrieve: nine STRs, 25 CAUs, and the temporarily deployed anchored array), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Night operations include shipboard ADCP transects each night around Johnston Atoll. Prior to departure, retrieve USFWS terrestrial team. Depart Johnston Atoll Jan 30 and transit to Howland Island, estimated distance 1,050 nmi. The Chief Scientist may request an earlier departure from Johnston Atoll due to work tempo and/or operational conditions.
- Jan 31-Feb 3 Continue transit to Howland Island.
- Feb 4-7 **Howland Island:** Arrive at Howland Island and begin operations as time allows. Upon arrival, transfer USFWS terrestrial team to shore via Avon inflatable boat to conduct terrestrial surveys. Howland Island operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: seven STRs, 25 CAUs, as well as a temporary deployment [up to 48

hours] of an anchored array consisting of a PUC, ADCP, CTP, and thermistor string; retrieve: six STRs, 25 CAUs, and the temporarily deployed anchored array), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Night operations include shipboard ADCP transects each night around Howland Island. Prior to departure, retrieve USFWS terrestrial team. Depart Howland Island Feb 7 en route to Baker Island, estimated distance 40 nmi.

- Feb 8-11 **Baker Island:** Arrive at Baker Island for a full day of operations. Upon arrival, transfer USFWS terrestrial team to shore via Avon inflatable boat to conduct terrestrial surveys. Baker Island operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: 16 STRs and 25 CAUs, as well as a temporary deployment [up to 48 hours] of an anchored array consisting of a PUC, ADCP, CTP, and thermistor string; retrieve: nine STRs, 25 CAUs, and the temporarily deployed anchored array), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Night operations include shipboard ADCP transects each night around Baker Island. Prior to departure, retrieve USFWS terrestrial team. Depart Baker Island Feb 11 en route to Swains Island, estimated distance 770 nmi.
- Feb 12-14 Continue transit to Swains Island.
- Feb 15-18 **Swains Island:** Arrive at Swains Island for full day of operations. Swains Island operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: 16 STRs and 25 CAUs, as well as a temporary deployment [up to 48 hours] of an anchored array consisting of a PUC, ADCP, CTP, and thermistor string; retrieve: seven STRs, one anchor, 25 CAUs, and the temporarily deployed anchored array), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Divers may also be tasked with collecting tissue samples of reef fish (details provided in the Supplementary Projects section). Night operations include shipboard ADCP transects each night around Swains Island. Depart Swains Island Feb 18 en route to Tutuila, American Samoa, estimated distance 205 nmi.

- Feb 19 .Continue transit to Tutuila, American Samoa.
- Feb 20-21 **Tutuila:** Arrive at Tutuila (exact work location TBD) to conduct a full day of Tutuila operations (detailed in Leg II). On Feb 21, conduct ½ day, or more, of Tutuila operations (detailed in Leg II) in the general vicinity of Pago Pago Harbor prior to pulling into port (if feasible, small boats could meet the ship alongside the pier). End of Leg I.
- Feb 22-25 **In-Port, Pago Pago, American Samoa:** Neurological exams and station walk-through for new divers. Resupply small boat fuel. Many staff will remain onboard for HA-15-01, Leg II.

Leg II:

- Feb 26-Mar 6 **Tutuila, American Samoa:** All scientific personnel should embark at designated time in Pago Pago. Depart Pago Pago, anticipated morning departure. If feasible, small boats should be launched prior to ship getting underway. Tutuila operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: 16 STRs, 65 CAUs, 20 BMUs, and 12 ARMS, as well as temporary deployments of up to eight ADCPs [for one month] and an anchored array [up to 48 hours] consisting of a PUC, ADCP, CTP, and thermistor string; retrieve: two SST buoys, eight anchors, 12 STRs, 65 CAUs, nine ARMS, and the temporarily deployed anchored array and up to eight ADCPs), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Night operations include shipboard ADCP transects each night around the island of Tutuila.
- Mar 7 Conduct ½ day, or more, of Tutuila operations (detailed above) in the general vicinity of Pago Pago Harbor prior to pulling into port (if feasible, small boats could meet the ship alongside the pier). End of Leg II.
- Mar 8-11 **In-Port, Pago Pago, American Samoa:** Neurological exams and station walk-through for new divers. Resupply small boat fuel. Many staff will remain onboard for HA-15-01, Leg III.

Leg III:

- Mar 12 **Tutuila, American Samoa:** All scientific personnel shall embark vessel at designated time in Pago Pago. Depart Pago Pago, anticipated morning departure. If feasible, small boats should be launched prior to the ship getting underway. Teams will

complete work remaining from the initial effort (detailed above in Leg II). Depart Tutuila Mar 12 en route to the Manu'a Islands, estimated distance 65 nmi.

- Mar 13-16 **Manu'a Islands:** Arrive at Ofu/Olosega or Ta'u on Mar 13 for full day of operations. Ofu/Olosega and Ta'u operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: 16 STRs, 70 CAUs, 20 BMUs, 12 ARMS; retrieve: 14 STRs, one anchor, 70 CAUs, and nine ARMS), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Night operations include shipboard ADCP transects each night around Ofu/Olosega and Ta'u. Depart Ofu/Olosega or Ta'u Mar 16 en route to Rose Atoll, estimated distance 85 nmi.
- Mar 17-21 **Rose Atoll:** Arrive at Rose Atoll for full day of operations. Within the first few days of arrival (exact day will be determined based on the progress of diving operations), transfer USFWS terrestrial team to shore to conduct terrestrial surveys. Rose Atoll operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: 16 STRs and 60 CAUs, as well as a temporary deployment [up to 48 hours] of an anchored array consisting of a PUC, ADCP, CTP, and thermistor string; retrieve: one SST buoy, three anchors, two EARs, 12 STRs, 60 CAUs, nine ARMS, and the temporarily deployed anchored array), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Divers may also be tasked with collecting tissue samples of reef fish (details provided in the Supplementary Projects section). Night operations include shipboard ADCP transects each night around Rose Atoll. Prior to departure, retrieve USFWS terrestrial team. Depart Rose Mar 21 en route to the Manu'a Islands, estimated distance 85 nmi.
- Mar 22 **Rest Day:** The actual date of the rest day is flexible, but must occur on any day between Mar 20-22, such that divers do not exceed 10 days of consecutive diving during Leg III. No scientific dive operations are scheduled for the rest day, however possible night operations would include shipboard ADCP transects in the vicinity.
- Mar 23-27 **Manu'a Islands:** Arrive at Ofu/Olosega or Ta'u for full day of operations on Mar 23. Teams will complete work remaining

from the initial effort (detailed above in Leg II). Depart Ofu/Olosega or Ta'u Mar 27 en route to Pago Pago, estimated distance 65 nmi.

Mar 28-30 **Tutuila, American Samoa:** Arrive at Tutuila for full day of Tutuila operations. Teams will complete work remaining from the initial effort earlier in this Leg. Mar 30 conduct ½ day, or more, of Tutuila operations in the general vicinity of Pago Pago Harbor prior to pulling into port (if feasible, small boats could meet the ship alongside the pier). End of Leg III.

Mar 31-Apr 2 **In-Port, Pago Pago, American Samoa:** Resupply small boat fuel. Many staff will remain onboard for HA-15-01, Leg IV. Shipboard education and outreach event for American Samoa partners (1 day).

Leg IV:

Apr 3 **Depart Pago Pago:** All scientific personnel shall embark vessel by a designated time. Depart Pago Pago en route to Jarvis Island, anticipated morning departure, estimated distance 1,050 nmi.

Apr 4-7 Continue transit to Jarvis Island. Conduct neurological exams and station walk through for new divers.

Apr 8-13 **Jarvis Island:** Arrive at Jarvis Island for a full day of operations. Within the first few days of arrival (exact day will be determined based on the progress of diving operations), transfer USFWS terrestrial team to shore via Avon inflatable boat to conduct terrestrial surveys. Jarvis Island operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: 16 STRs, 30 CAUs, 20 BMUs, and nine ARMS, as well as a temporary deployment [up to 48 hours] of an anchored array consisting of a PUC, ADCP, CTP, and thermistor string; retrieve: one SST, two anchors, one EAR, seven STRs, 30 CAUs, nine ARMS, and the temporarily deployed anchored array), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Night operations include shipboard ADCP transects each night around Jarvis Island. Prior to departure, retrieve USFWS terrestrial team. Depart Jarvis Island Apr 13 en route to Palmyra Atoll, estimated distance 395 nmi.

Apr 14 Continue transit to Palmyra Atoll.

- Apr 15-22 **Palmyra Atoll:** Arrive at Palmyra Atoll and begin operations as time allows. Palmyra Atoll operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: 16 STRs, 60 CAUs, 20 BMUs, 9 ARMS, as well as a temporary deployment [up to 48 hours] of an anchored array consisting of a PUC, ADCP, CTP, and thermistor string; retrieve: one SST buoy, four anchors, one EAR, 17 STRs, 60 CAUs, nine ARMS, and the temporarily deployed anchored array), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Night operations include shipboard ADCP transects each night around Palmyra Atoll. Depart Palmyra Atoll Apr 22 en route to Kingman Reef, estimated distance 40 nmi (Or remain in the lee of Palmyra Atoll if choosing to observe the Rest Day there.)
- Apr 23 **Rest Day:** The actual date of the rest day is flexible, but must occur on any day between Apr 18-25, such that divers do not exceed 10 days of consecutive diving during Leg IV. If the rest day is taken on a day other than Apr 23, then the exact operation dates for Palmyra Atoll (detailed above) and Kingman Reef (detailed below) would be adjusted accordingly. No scientific dive operations are scheduled for the rest day, however possible night operations would include shipboard ADCP transects in the vicinity.
- Apr 24-28 **Kingman Reef:** Arrive at Kingman Reef. Kingman Reef operations include: fish and benthic Rapid Ecological Assessment (REA) surveys, towed-diver surveys, moored instrument deployments and retrievals (deploy: 16 STRs and 40 CAUs, as well as a temporary deployment [up to 48 hours] of an anchored array consisting of a PUC, ADCP, CTP, and thermistor string; retrieve: three anchors, one EAR, 13 STRs, 40 CAUs, nine ARMS, and the temporarily deployed anchored array), collection of up to six 20-40 cm coral cores as well as collection of carbonate chemistry water samples and small boat CTD casts at all CAU and coral coring sites, and microbial collections at one to two sites per day. Night operations include shipboard ADCP transects each night around Kingman Reef. Depart Kingman Reef Apr 28 en route to Pearl Harbor, estimated distance 930 nmi.
- Apr 29-May 2 Continue transit to Pearl Harbor.
- May 3 Disembark scientific personnel. End of project.

Under Section VIII. Miscellaneous, Subsection F. Foreign National Guests Access to OMAO Facilities and Platforms:

The first sentence should be updated as follows (i.e., remove Adel Heenan): The foreign national participants for project HA-15-01 are Cynthia Silveira, Marc Nadon, Mareike Sudek, and no others.

Under Appendix 4, please append the previously supplied station/waypoint list of instrument deployments and retrievals, to also include the attached fish and benthic team REA survey station/waypoints (Note: Only fish team points for Leg 1 are available at this time. The program will supply the remaining points prior to commencing diving operations in those areas.)

See attached files: Appendix4_BenthicStationWaypoints_ASRAMP2015.xlsx and Appendix4_FishStationWaypoints_Leg1.xlsx

cc: Commanding Officer, *Hi'ialakai*
Chief Scientists