

BACKSCATTER



Kite in the Rain.

ALL-WEATHER

FIELD

Nº 350F

Research
2021 - 2022



NSF Senior Study

P.I. Ewan G. Garrison

Start Date: 9/2020

End Date: 12/2022

This notebook starts: 7/1/21

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< Actual End Date
12/2024

7/1/21

Post test, Marine Sciences
Training Post.

12:45 PM - 1:30 PM

VeloRay Scout RV,
Teleread. EO Pro there's
set on 30s/image.Results: RV did not look
all video good. Contacts
& lights functional.
Unit ready.
EO Pro there's 3 captured
col frames.

7-5-21

SKID

Departed UST @ 7:15 AM,
Arrived Sausalito marina @
12:34 PMVisited Sausalito beach @
Thee Island, some
wave break. Seas 13'.
Marine forecast for
7-6-21 is favorable.
Landed @ 12:30 PM.
Depart SKID after
8 AM.USA crew: Tim Wilson,
Andie Carter, Engstrom
SKID: Mike RichterBoat loaded, Genworth & RV
dock.
Weather 84°F overcast
Marine warning until 11 AM
watersportsN 31° 50', 765
W 80° 41', 154
Starport @

12:10 PM

6 KC-B site 7.6-21

12:25 PM - Reset anchor, 42' depth.

ROV functional, 11m & find a bit further.

Low Tide.

"Mother load" due north of anchor site for B. handling draft. 80'.

12:39 PM Reset anchor again. Wind is East.

12:45 PM Reset anchor.

12:52 PM anchor from range

* 12:50 - 1:05 video @ 1st drop site. Some drift.

Moved boat, 1:15 PM.

7 KC-B site 7.6-21

Second Drop Site (#2) Moving @ 1:15 PM

Notes: Water is green. Bottom sandy. Divers & small frog noted.

1:20 N. of the range. Fish.

Bottom is rock-marked w/ poles

Video from 1:20 - 1:35.

Site # 31 50, 776 }
2 80 ft, 807 }

Tried drop core.

1:40 return.

Over camera at lunch.

Left site @ 2:05 PM

* Camera was reversed.

KC B

6 July 21

Downed Saur @ 2:40 PM
 shadows - light, overcast,
 SKT @ 3 PM.

Note: sediment appears to
 differ from site #1, Site #2.
 Check GPS data.

Note: Drop down ^{buoy} from GPS,
 correlates to fossil site corner
 placement of anchor.

Forgot to turn off GPS on board.
 Went over 520 images.*

Push ROL & drop weight
 fittings w/ fresh water.

* Mike Richter will borrow
 GPS and give KC B, will take
 HDD video.

** Convert decimal GPS to
 degrees, mins, secs.

USA

Cruise Remarks.

7 July 21

Primary objective of cruise
 was success full in that:
 KD images of trust areas
 adjacent to a scum nuclei-
 KC B barge site.

Site #1 was roughly in the
 vicinity of 31° 56.005 N
 80° 46.154 W

North of barge. at 1600 'Deck Barge'
 Site #2 was @ 31° 50.776 N
 80° 46.007 W

~ 65' North of barge. Much
 closer than Site #1.

Drop cores (2) @ Site 2 recovered
 no sediments. Refractor in
 barrel could hold coarse sand.
 Suspicion is the substrate is hard
 material, will dig in bottom and
 retrieve to determine if this is so.

UGA

7-7-2021

Bureau of
Cruise,

GoPro images from 7-6-21

Image #

Comments

80986

Site 1, view toward drop
weight. Sand is rippled
above w/ small shell
visibility ~ 2m

80989

Site 1, view toward drop
weight, Tamarisks.

80994

Site 1, recovering, Red.
Tamarisks 110m. View

81092

area is ~ 45g.m
Site 2, view of angle and
and fish. Drop is 10m

from barge to the north
of location of Red.

81048

Drop is north of barge's
possible north edge of barge's
scum area. Bottom is hummocky.

Site 2, Good Pan-view.

Hummocky nature of sediment
layer apparent. Fish in some
indicated radiating manure
of structure.

UGA

7-9-21 13

New GoPro-type camera arrived
today. Sending older GoPro
to Mike Richter (SMIT) for
instead of KC Bostrom doing.

Setup Data GR 150 on iPhone SE.
Function is good.

UGA

7-9-21

Bought test tank (110 gal.) for
lab.

GoPro 3 sent via UGA to Mike
Richter (Savannah).

New 4K 1440 camera acquired.
Test in tank 7-14-21.
Test in Good 7-20-21.

UGA-SKITO

7-25-21

Arrived @ SKITO camp @ 4 PM. Set batteries on

recommended Balance

Charge settings per BR Engineer, Deaneel Suchel.

Note to use Lipo setting @ 100% The Balance Plug must (SPI) be connected.

GPS changed. Camera okay. 2 hats prepped.

Weather 90°F, clear.

100% + storms Monday.

88°F Seas 2-3'

High tide: 11 AM.

Checked ROV encasement connections. All secure.

Reef KC Coordinates

7-26-21

Mollusks (31 50 42)
 31.8449 N
 80.7755 W (SE)
 31.8448 N (31.50, 41)
 80.7758 (SN)
 80.7758 (80 46.33)

Weather shifted overnight to northerly winds, seas over 4'. No deployment today.

Will watch conditions and deploy Wednesday when seas moderate.

Forecast: Winds S 10 mph, seas: 3' for ~~Wednesday~~ Thursday. High tide: 1 PM.

SKIO

7-27-21

M. Richter called. Seas still too rough this morning. Wednesday is possible but deconv made to return later. Arrived VST: 11:15 AM Demobilized equipment.

USA

8-10-21

15

Cruise plans sent for 8-11/12 sent to SKIO, Depart Athens A.M. Attention cruise to Wilmington River scout feature.

Washed today & Thurs. (8/12/21): Seas. 1' - 1-2' winds. (Dont today) Southwinds tomorrow. Air. 90°F Wind S and NEat.

Mobilized @ SKIO dock 12:00 noon. E.J. Jones, M. Robinson, M. Selby seas; left dock @ 12:53 PM. On site @ 1:00 PM.

Dropped marker float

Open port and then off Turner Rock Island.

ROV dropped to 11.2 m depth. Strongly currents bottom was located. Dive #1. Recovered vehicle @ 2 PM.

Richter on the River.

SKID

8-11-21

Reset on SCOR feature.
 let current drop.
 will redeployed ROV
 for dive #2.

Vehicle used over 200'
 of tether due to current.
 Vehicle recovery okay w/
 hand point

Dive #2 @ 3:10 PM.
 Reached bottom. Go Pro
 off. Saw some
 features. Recovered ROV
 @ 3:20 pm. Went
 for elb to slow; car.
 4 PM.

Dive #3 - 3:51 PM.

Bottom @ 7-8 m Ridding
 Features. Go Pro on.
 Current of sediment.
 Up @ 4:05 PM Video 4K.

SKID

8-11-21

Deployed anchor @ 4:10 PM.
 Returned to SKID dock.
 4:30 PM.
 will mobilize & depart.
 SKID dock @ 4 M. for
 Reef KC target.

8-12-21

Boat ready. Depart
 SKID dock @
 weather: Calm, hot.
 Crew: T. Bidny, E. Jones,
 E. Garrison

Underway @ 7:45 A.M.

Coordinates on plan were
 1/2 mile off. Weather
 0.4 mile N. of numbers.

South side of KC site is
 anchored @ "N" marker
 31.844883 N
 = 31° 50.6928 N
 80.775603 W = 80° 46.53618 W

KC - "Mother lode" 8-12-21

* Drop #1 - 23cm Panax Grabs

Drop #2 - moved south from

drop 1

31.845°N

31°50.7'N

80.776°W

80°46.56'W

(didn't move through

W/ coordinate change)

→ Negative

(no sediment)

* Drop #3 - some sand
(over-grab)

Drop #4 - Negative, caught
a fish, ex

* Drop #5 - if we get something

I'm going to just
write over the

empty bag for

Grab #4

- got sediment,
used smaller grab

* Drop #6 - I am using the

unused bag
from Grab #2

if we get anything

- used smaller grab

- went south north

(didn't change
coordinates)

- positive!

weighed anchor,
moving west of KC - "Mother
lode"

New
coordinates: ~~31.845°N~~
~~80.776°W~~

31°50.698'N

80°46.539'W

1011155
GPS location
coordinates?

31.8449667°N

80.77565°W

Drop #7 - at new coordinates

→ Negative

47 ft

Drop #8 - Negative

Now RV time

KC - "Motherlode" 8-12-21

ROV - start w/ no GPS
coordinates:31° 50.698' N
80° 46.539' W

10:30 AM

Bottom: 16.5-17m depth

ROV camera has picture
movement. Antiscor is
more ROV. Disarm
up @ 10:55. 17mins. VideoMoved boat to new position
near buoy. 11:02 AM.
Depth 50' (16.4m)KC site: "Motherlode"
ROV 2 - 31° 50.69' N

80° 46.53' W Video on.

On bottom 11:08 AM

Paulina in view. Scan.
15 m. depthMove South from drop point.
11:13 AM

Village 11:33 Video

KC "Motherlode" 8-12-21

Dive #2 @ KC - "Motherlode" cont -
ROV @ South/top of
buoy. Buoy to Ndrn
of drop coordinates.ROV up @ 11:10 Weight
KC - Booster BuoyAudio @ KC - 8 buoy @
11:35 AM

31° 50.777' N

80° 46.030' W

Depth 51' (15.2m)

11:45 Drop #1 (Grab 1)

- drops 1-6
except #15

were positive

- ARA: #15 was negative

ROV in @ 11:30 AM @

300m test buoy

GPS deployed.

KC-Booster Barge 8-12-21

POV on south course,
used tether. Changed
to northward track.

[> 2 kg sediment collected @
Mather node & KC-B

ROV up @ 12:40 PM

ROD #2 KC-Booster

{ 31 50.77 N }
{ 80 46.02 W } 12:50 PM

ROV down @ 1:15 PM

Depth Nom.

Barge is N & W. of
drop site.

Sand bottom. No joy.

[31.846167 N } 31° 50.7664 N
[80.766988 W } 80° 46.01928 W

KC-Booster Barge 8-12-21

ROV up @ 11:40 PM - @
1300 hrs.

DAVE: 22+ minutes

ROV up @ 1303 hrs.

Spaced gear,

Weighted and down for SKID
and

Down @ 2:10 PM

Reported SKID @ 3:25 PM.

Arrived UGA @ 8:55 PM.

Offloaded & stored sediment,
in triage (oil burned).

UGA

8-13-21

Weighted sediment. 4.9 Kg.

1st version of UW ROV
video. "Mather node"

Video very good.
For bottom stability the ROV
needs more ballast.

UGA

8-17-2021

Updated GPS coordinates in

notes,

ROV batteries changed,

Battery #3 has low cell,

will not charge.

Orlando (8-16-21) 4K monitor
to review video footage.

28" ASUS monitor.

Contacted SUIO re gravity
corer. Will be 2400 K-B
corer available.

(Kaigan-Blinkhurst corer).

UGA

8/23/2021

Weighing Gravels (taken 8/12)

Motherode Grab 1

• 31.84°N 80.78°W

• .70 kg

Motherode Grab 3

• 31.845°N 80.776°W

• .10 kg

Motherode Grab 6

• 31.845°N 80.776°W

• .20 kg

KC-B

31.846233°N

KC-B Grab 1

80.7671667°W

• 31° 50.774' N 80° 46.030' W

• .600 kg

KC-B Grab 2

• 31° 50.774' N 80° 46.030' W

• .40 kg

KC-B Grab 3

• 31° 50.774' N 80° 46.030' W

• .90 kg

UGA

8/12 Grab Samples

8/23

KC-B Grab 4

- 30° 50.774' N 80° 46.030' W
- 95 kg

KC-B Grab 6

- 30° 50.774' N 80° 46.030' W
- 1.05 kg

UGA

8/23

Motherlode 1

- Wet: Gley 1 10Y 4/1
- Weighed 100g sample
- Dry:

Motherlode 3

- Wet: Gley 1 10Y 4/1
- Weighed ~~100~~ 100g sample
- Used all sediment available for analysis

• Dry:

Motherlode 6

- Wet: Gley 1 10Y 4/1
- Weighed 100 g sample
- Dry:

KC-B 6

- Wet: Gley 1 10Y 4/1
- Weighed 100g sample
- Dry:

* KC-B4 was 'inn clay'!

UGA

8-23-21

KC-B Grab 6 left in the sun to dry

Motherlode Grab 3 left in the sun to dry

Motherlode Grab 1 left in the sun to dry

Motherlode Grab 6 left in the sun to dry

KC-B Grab 6 • Split sample in half

31.2g ← • weigh watchglass

• add sample to watchglass

• weigh watchglass with sample

WEIGHED: 32.4g

GTG: sub-angular

KC-B Grab 6

• weigh paper 4.3g

• weigh #5 pan 0.2g

• weigh #10 pan 1.0g

• weigh #35 pan 8.5g

• weigh #120 pan 24.2g

• weigh catch pan 0.3g

Motherlode 6 weighed

8/27

- weight of watchglass = 36.4 g

- Split Motherlode 6

- Motherlode 6 weight: 33.6 g

69.8 g
 - 36.4

 33.4
 GTG: sub-angular
 (w/ some rounding)

• Feldspar in sample

#5 pan:

paper = 4.5 g
 sample = .3 g

#10 pan:

paper = 4.7 g
 sample = .3 g

#35 pan:

paper = 4.6 g
 sample = 7.5 g
 ← paper weight

#120 pan:

paper = 4.8 g
 sample = 25.2 g

Catching pan:

paper = 2.8 g
 sample =

minimal stuff
 came out, but
 not enough to change
 weight

8-30-21

Motherlode Grade 1
 Full PSK Strategy.

Weight of Split tray: 97.6 g
 wt. of tray = 20.7 g
 20.7 g sample: 69.9 g

#5 pan: ✓

• paper: 4.6 g
 • sample: 0 g

#10 pan: ✓

• paper: 4.9 g
 • sample: 0.3 g

#35 ✓

• paper: 4.6 g
 • sample: 2.1 g

#120 ✓

• paper: 4.6 g
 • sample: 55.4 g

Catch Pan (250+) ✓

• paper: 4.6 g
 • sample: 0.1 g

TOTAL MASS: 76.1 g

• potential
 error
 from
 previous
 sediment
 in sifter
 pans

sifted
 for 10
 minutes

pan #18 ✓

• paper: 4.1 g
 • sample: 1.3 g

pan #60 ✓

• paper: 4.6 g
 • sample: 16.4 g

#250 ✓

• paper: 4.7 g
 • sample: 6.5 g

Return the Pan.

microns for gechem sieve

#5: 4000
 #10: 2000
 #18: 1000
 #35: 500
 #60: 250
 #120: 125
 #230: 63

- lost .1g during sieve *
- not unimodal

Gravel: 0.4%

Sand: 99.6%

Mud: 0.0%

* pan fraction not
calculated in Gradostat
 Gravel

UGT lab

8-31-21

Prepped Gravel Not unimodal
 Gradostat, EGS.

Mothurloode

Grab 3

watchglass weight: 36.4 g

$$\begin{array}{r} 544.4 \\ 36.4 \\ \hline 28.0 \end{array}$$
- halved sample
- sample weight: 28 g

• subangular

Paper weighs: 4.9 g pink paper

4.7 g white paper

weights (in g)

#15 0.1 g

#16 0.9 g has shell, didn't weigh

#18 0.2 g

#35 5.3 g

#100 17.3 g

#120 2.7 g

#230

0.9 g

does have sediment

past

0.9 g some sediment?

• input into GRADISTAT

'Grab 3 Mothurloode'

9/8

lab

2.2.2021

Drying 4 Grab samples.

Grabs 1, 2, 3, 4. 8-12-21

Grab #2.

361 - 17 = 344 g wet

4/107 Grey (wet)

Grab #1

543.4 - 17 = 527 g wet

4/107 Grey (wet)

Grab #3

890 - 17 = 873 g wet

4/107 Grey (wet)

Grab #4

883 - 21 = 862 g wet

4/107 Grey (wet)

9-10-21

Samples dry.

9-10-21 Paper = 5.0g

Grab #2 in Shaker @ 3:55 PM
10 minutes (100g)

Grab #1 in Shaker @ 4:05 PM
10 minutes (100g)

> 230. 0.9g

#5 : 0.12g

Watch
glass : 36.4g

#10 : 0.1g

#18 : 36.8g - 36.4g = 0.4g

#35 : 37.5g - 36.4g = 1.1g

#60 : 23.9g - 5.0g = 18.9g

#180 : 82.4g - 36.4g = 46.0g

#230 : 38.5g - 36.4g = 2.1g

any 60-120
color : 7/10Y

any 230
color : 5/10Y

9-10-21

Grab #1

any
color : 8/10Y

#5 : 0.0g

#10 : 0.1g

#18 : 0.2g

#35 : 1.3g

#60 : 27.2g

#180 : 75.0g

#230 : 0.5g
any
color : 5/10Y

> 230 : 0.0g

9/13

• 100g sample of KC-B #3
 • 100g sample of KC-B #4
 both put in shaker
 for 10 min.

KC-B Grab 3 (paper used 2.65)

#5 $\emptyset$ g (1 shell fragment)
 #10 .1g
 #18 .5g color (wet)
 #35 35.5g color (dry) 1046/1
 #60 58.3g
 #120 3.9g
 #230 $\emptyset$ g (there is sediment)
 C.P. $\emptyset$ g

KC-B Grab 4

#5 $\emptyset$ g (nothing)
 #10 .1g
 #18 .5g color (wet)
 #35 7.4g color (dry) 1077/1
 #60 7.2g
 #120 14.6g
 #230 0.2g
 C.P. 0.0g

KC

9/13

MONITOR Grab 10

LEBLE

paper used 2.7g.

47g. dry

color (wet) 55/4/1
 color (dry) 55/5/1

paper: 2.7g

#5 : 0.02g
 #10 : 0.1g
 #18 : 3.2 - 2.7 = 0.5g
 #35 : 4.4 - 2.7 = 1.7g
 #60 : 24.2 - 2.7 = 21.5g
 #120 : 22.0 - 2.7 = 19.3g
 #230 : 0.2g
 C.P. : 0g

Dance 9/17
 KAM

9/15

- made box and put
weighed/shaken samples
in

- made 100g samples for

Skidaway at

KC-B G.1

KC-B G.2

KC-B G.3

KC-B G.4

9/17

Unidentified Grab Sample
from Mortarade (558g)
has been renamed
to: "Mortarade?"

9/20

[KC Mortarade?]

Weight: 433.5g

Color

WET

10/7 221

Paper: 4.5g

#5 0.10g

#10 2.2g

#18 5.5g

#35 16.5g

#60 26.5g

#120 140.7g

#230 1.7g

CP 0.0g

Final wt: 432.2g

[KC B Sample]

Weight: 724.4g

Color: 10/7/6

25% 10/7/6

*Weight decrease
due to accidental
shaker error

#5 0.05g 0.1g 0.1g

#10 0.1g 0.8g

#18 1.6g 1.5g

#35 5.9g 5.0g

#60 58.0g

#120 166.9g

#230 1.9g

CP 0.0g

1695.0g

Notes: see below

Saturday/SKITD 9-26-21

Arrived 10PM @ SKITD

Campfire.

Will load & depart on
R/V Blanton at 8AM

Tomorrow (9/27/21).

Dead:

Michael Richter, boat

captain.

Ever Garrison, Sweethill

* NOTE: Rick up there 3 ✓
w/ video of KC-B sure ✓

Richter says boogie SW-NE

orientation Baden

deteriorated. Birds collapsed.

Dealing fallen in Hib's

exposed in sand.

SKITD

9-27-21

Weather: 10AM, 10:45F, Clear

Boat open, set up @ 8:05AM

Laptop & monitor functional.

GPS operational

GPS functional 1

battery is low

GPS @ dock: 31.989972 N

81.02238 W

Destination Reef 1

Dodge "Hem" Basin

GPS: 31°45'38" N

80°36'54" W

Passed Wassail Is. @ 9AM.

On site @ 10:05AM

Seas 1-2; Wind S.W.

Dropped marker float

Reef L

9-27-21

ROV on @ 10:13 AM.
Operational.10:15 - 11:15 - Ties to sel hoost
close to wreck upo
hanging on the wreck.

Sel: 11:25 AM

31.45, 4063 N } (Duck goes)
80 36.5241 W }Reset ROV. Overcame false
battery power readings
(10V). Reset to 14.46 V.
will dive #1 w. of buoy.

ROV Tn @ 12:00, up @ 12:25

Depth: 20.4 m (ave.)

Location: upper head
area of dredge box.

Seam pit > 3m depth.

Pit slope is 7-10° east.

Reef L

9-27-21

Rover deployed @ 12:25 PM

W. of buoy drop t

① 31° 45, 392 (Boat GPS)

80° 36.530 NO samples
31.760833
80.614722Drop 2 31° 45.407 N
80° 36.531 W

N/A

Drop 3 31° 45.414 (31)
80° 36.544 (31)Drop 4 31° 45.409 (31)
80° 36.524 (31)

Drop 5 31° 45.392 (29)

80° 36.526 (29)

Drop 6 31° 45.388 (28)

80° 36.534

Rover in the Run.

9-27-21

Reef L

Last Grab @ Deep is. of
Bacon. Sediment on

5 grab total in 4 kg

Weighed and closed @ 1:05 PM

1404 V @ Recovery of

ROV.

Did not deploy K-B core!
Over 200 people, need
3 persons to deploy
safely.

Dock @ 2:10 PM.

USA

9-28-21

2 Desglut of Reef L Sediments

425 Kg. in 5 sample bags.

Quoted and changed ROV
bottom, ROV berthed.

Setup GoPro/Brave, repaired
and hamster laptop/4K
Monitor

Video of: 1) K-B

2) Henry Bacon,
Reef L.

UGA

9-28-21

NOTES ON HENRY BACK'S SCUBA
PIT.

RDV drop into area of the dredge's cutter head. Bow head square opening for this large attachment. Dredge was set down and an artificial reef w/o the cutter head attached.



Sketch map of bow area.

Bow lies NE direction.

Water visibility $\approx 10m$ (30ft)

Structure is relatively clear of marine growth. Marine appearance w/ clearly defined outline.

UGA

9-28-21

NOTES cont. -

Scuba pit sharply sloped w/ striated texture to the wpt's walls. Bottom of pit is "scalloped" w/ rounded indication of former substrate other than medium-to-fine sand seen in pit wall. Tabulae observed adjacent to near-field bow feature w/ a Bud light (blue) aluminum bottle among scattered material (vid in RDV video).

Total Dive time: 25+ mins.
Depth: 20.4 m. (flood tide)

Video of dive: 2:21 minutes
Video of descent: 23:04 minutes
Whole dive sequence recorded. Unobserved.

7:04 - Tiger Shark
10:38 - clearing of port bow pit.

USA

9.28.21

Reviewed Sofra lens 3 video
of KC-Belvis by M. Rickers
9-15-2021.

KC-B seriously deteriorated
w/ large structural elements
distributed across the site.
Good avoidance of sound
adjacent the aqueduct.
Induce different substrates
than Reef 1.
Good footage of sediments.

Sounds @ Belvis have angle
of repose @ value close to
52°. Sand sediment.

10-1-21

USA

Reef 4 Henry Bacon
murmuring murmur

Drop 2 ✓

31° 45.407 N → 31° 45' 24.42" (US)
80° 36.531 W → 80° 36' 31.86"

Drop 3 ✓

31° 45.414 N → 31° 45' 24.84"
80° 36.544 W → 80° 36' 32.64"

Drop 4 ✓

31° 45.409 N → 31° 45' 24.54"
80° 36.524 W → 80° 36' 31.44"

Drop 5 ✓

31° 45.392 N → 31° 45' 23.52"
80° 36.526 W → 80° 36' 31.56"

KC-B Cleanup R. 5:30 onwards.

Reef in the future.

UGA

9.28.21

Drop 6 ✓

31° 45.388 N → 31° 45' 23.28"
 80° 36.534 W → 80° 36' 32.04"

Add Point. (see direction,
 white file cards)

Renamed: "Regular Points" →

Grabs #

* Make Renamemnt *

10-1-21

UGA

Transferred and copied all

Roof KC B video (Ridder) and
 Roof L (9.27.21) video to:

- 1) Lanoro (NIST)
- 2) Backup External Drive (UGA USB)
 Plus

Transferred to Backup Plus:

- 1) USI migration Site drive Aug 11
- 2) McQuade drive Aug 12-21
- 3) KC B 4-21 (Ridder)

Deleted files from AWSO & GoPro SD
 cards.

Review of GoPro 10903 video files
 Emily and I,

@ 7:17 on video - good
 patch of shell along large
 leaves.

10-4-21

Reviewed video G0010904.

Did 6 frame grabs -
 KC B Cleanup N.S. Burroughs

10/1

UGA

- start drying process for Bacon samples

	weight	weight
	Grab	Grab
Grab 1:	831g	3/101 Gley 1
Grab 3:	628g	4/104 Gley 1
Grab 4:	1043g	3/104 Gley 1
Grab 5:	619g	3/104 Gley 1
Grab 6:	701g	4/104 Gley 1

- began drying process

10-7 still drying

10-7 - attempt on shaking

KC-L Grab 6

dry weight = 563.6 g

- took roughly half to shake
(304.5g)

dry munsell = 6/104 - 6/554

in between
Gley 1

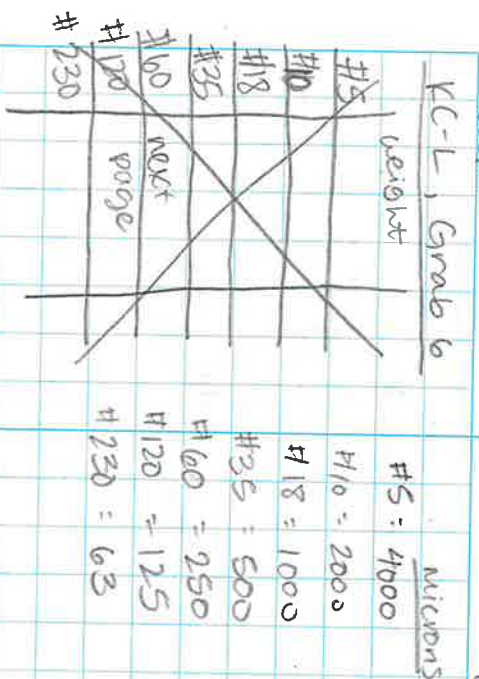
2nd attempt documented.

Sand allowed to screen
and avoid not completely
close from sieves. Nothing
held on 60 screen.

UGA

10/7

KC-L, Grab 6



10-8

Grab 6, Reef L, Henry Bacon
sample. Re bagged.
PSA not completeSamples set out in sun @
noon-ish.At 4 PM The grab 6 sp. was
dry. Offense code close to dry.

All samples dry. 5 PM.

UGA

10/11

- PSA attempt on other half
of Reef - Grab 6 (~~259.1g~~)

lowest weight
is 212.2g

- putting Grab 6
in shaker for 10 min
→ success

Grab 6

weight (g)

5 .1g

10 .2g

18 .9g

35 2.7g

60 59.3g

120 145.6g

230 1.0g

230+ .05g

card: 2.7g

paper: 5.2g

209.85

- 1.1% of sample lost

UGA

10/11

- putting RL Grab 2 in shaker for
10 minutes ✓

- initial weight: 831g (whole sample)

Reef Grab # 2

- weight
of split
sample 2-1:

weight (g)

5 .01g

10 .5g

18 1.0g

35 3.0g

60 91.5g

120 179.8g

230 1.5g

> 230 0

- 275.1g

- pan: 22g

- paper: 4.5g

- final weight: 277.31g

- loss during sieve: 0.8%

Reef L Henry Bacon Grab 3

- put in shaker for 10 min ✓

- initial weight: 477.2 g

#	weight (g)	- pan: <u>22</u> g	- paper: <u>4.8</u> g
5	.2 g		
10	.8 g		
18	2.2 g		
35	5.7 g		
60	141.7 g		
120	321.6 g		
230	3.4 g		
>230	.1 g		

- final weight: 475.7 g- loss during sieve: 0.3 %

Reef L H.B. Grab 4

- initial weight: 383.5 g

- put in shaker for 10 min

#	weight (g)
5	0
10	.6
18	1.5
35	4.5
60	142.9
120	224.1
230	2.3
>230	0

→ 2 shell fragments

→ was a bit of "dust"

Final weight = 375.9 gloss during sieve: 2 %

Gravistat ✓

* Small quartzite (?) grain aggregate.

10-13-21

Video 2006-6101-214651-002
 Dine #1, Matherode site

9:31 minutes, feature (u.i.d.)
 adjacent to structure
 Edit in Photo,

Excellent video adjacent the
 Matherode, Woodchop
 coordinates:

31° 50.698 N
 80° 46.539 W

Feature is 3000g bed
 outcrop, Scored.

10-14-21

Frame grabs of video done.
 Feature seen @ 11:00 minutes
 on video as well. Two or
 and outcrops.

10-15-21

Restored Matherode video,
 transferred to One Drive,

10-15-21 Reef L Henry Bacon

Grab #5

Total Sample Weight: 544.1g

in shaker for 10 minutes

#5: 0.2g

#10: 0.5g

#18: 1.4g

#35: 5.1g

#60: 226.6g

#120: 235.4

#230: 3.5g

>230: 0.05g

 Total SN after Shaker: 472.75g

lost 15% Sample while sieving

10-18-21

LARS WORK

QG15

Reordered Metheolite SS
mosaics 689. Placed
grabs on SS layer
KC Ray Project QG15.

Moved to KC-B. Placed
grabs. Grabs 1, 2 same
coordinate; Grabs 3-6
at new coordinate, QG15.

* No Grabs -

UGA

10/22

Project GRNMS (Archive)
Box No. 15

- Sample: 00-15-07

1 Reef

Sediment

Location: T reef 1/B or 4/A
210 cm depth (2.1 m)
Weight: 24 g

- Put in Shaker for 10 min

Weight (g)

Nothing

#5	0
#10	0.3
#18	2.2
#35	4.4
#60	4.9
#120	5.3
#230	8.6
C.R.	6.7

* I did
bag, can
move back
to original
containers
any time

UGA

printed

10/22

Project GRNMS (Archive)

Box No. 15

- Sample: 00-15-10

J Reef

Sediment

Location: J Reef 1/B or 4/A

110 cm depth (1.1 m)

Weight: 55.2 g

- shaver for 10 mm

weight (g)

#5: 0.4

#10: 3.1

#14: 6.1

#35: 6.4

#60: 6.6

#126: 8.2

#230: 16.8

>230: 7.6

* Damaged

Sediment

put back

in box 15

on 11/8

(00-15-10

and 00-15-07)

10/22

printed

UGA

* Open to scrape sediment

if sea = coral rubble

Project GRNMS

Box 28

00-28-00

#5: shaver

#10: 0.05g

#14: 0.1g

#35: 0.1g

#60: 1.0g

#120: 2.2g

#230: 7.2g

>230 (cp): 11.6g

Initial

Weight: 42.4g

Final

Weight: 42.0g

Color: 1/2

* Damaged sediment

put back in box 28

on 11/8

10-27-21

USF → SKID

Toward, 12:30 - 5:45 PM
 E. Garrison; Tina And. Kelly;
 Collin Prindlville

Towed SKID, visited dock.

Added lat/long coordinates
 to SKID grab sample splits
 (3).

Roef KC & CCA

10-25-21

Weather postponed cruise
 to after Halloween.

Dropped off sediment splits for
 Dr. Alexander. Discussed ✓
 cruise payments for 2021 w/
 Ms. Doser.

Return to Athens.

Arrived: 3PM.

Got set up Jan.

Roof damaged?
 Turned on dock is
 broken.

WGA

10/28/11

• grind and test

foram

J-Reef hand auger
samples 0-12" and
12-24"

• ground

J-Reef Foram sample H2 *
12-24" depth

initial weight w/ bag = 80 g

weight after grinding

+ no bag = 78.7 g

• ground

J-Reef Foram sample H1

0-12" depth

initial weight w/ bag = 47.5 g

weight after grinding

+ no bag = 45.6 g

* see p. 67 results

compare to 15-10 & 28-26
more similar to 28-26.

11/3 OGA

8hr pan: 31.5 g

Clay Analysis (Reef #1) 3min

paper: 2.5 g pan: 39.3 g

sample from catch pan: 14.8 g#2 12-24" in shaker
for 10 min + 5 min17.3 g - 2.5 g = 14.8 g catch pan

> 230

#5 0.0 g

#10 0.1 g

paper: 2.9 g

#16 1.5 g

#35 3.0 g

#60 4.2 g

#120 18.9 g

#230 15.7 g

> 230 14.8 g

total 88.2 g

dish = 31.3 g

wt. of A + Dish = 31.4 g

A - Dish = 0.1 g

wt. of B: 31.6 - 39.3 = 0.3 g

wt. of C: 31.7 - 31.5 = 0.2 g

UGT Lab

11-4-21

Clay Analysis of J-Reef #2.

Calculation of: Coarse Silt (A)

Fine & Medium Silt: (B)
over Clay (C)

A = Coarse Silt

$$50 \left(\frac{0.1 - 0.3}{14.8} \right) 100 = 1.35\%$$

B = Fine & Medium Silt

$$\left(\frac{0.3 - 0.2}{14.8} \right) 100 = 0.67\%$$

$$C = \left(\frac{0.2}{14.8} \right) 100 = 1.35\%$$

Clay fraction

Summary: Silt = 2.02%
Clay = 1.35%

UGA

M/S/21

PSA

Shake

i-reel hand auger #1
(0-12") for 20 min

#	weight (g)
#5	0
#10	0
#18	0
#25	1.2
#60	5.5
#120	25.4
#200	6.2
Catch	7.5

- put in gradstret ✓

No clay analysis
done on J-Reef #1.* hand auger #1
and #2 (0-12" and
12-24") put back
in box 30 on 11/8 ** Checked assignment of hand auger
samples to Box 30. 11-16-21
28

UGA

11-15/16-21

Regrind (11-15) refrained images
 also for scallop beds!

Studied in 4/2006 @ Gray's
 Reef (West) and 3-4 Reef (Gardner).

Why? Comparison of these
 video bed say there record
 Reef KC-Motherlode is
 need to confirm these

now beds are geologically
 the same as those previously
 studied at Gray's Reef and
 3-4 Reef, Research Lodge sites.

Photo files, David 7-06 002
 to 7-06 114 refrained.

These are photo and
 scans at post scan pt.
 AB, Daniels and artificial reef.

Additional photos outside
 the post scan pt show
 shell beds.

UGA

11-16-21

Shoal Beds @
 Gray Reef & 3-4 Reef West. -

Photos at Research
 Lodge on images refrained
 and used for comparison.

11-19-21

Post Session

Pist Motherlode and

Video test.

Did not start VideoStream.

No video recorded.

Lesson learned.

11-30-21

Review of KC Motherlode video
 & KCB video.

Video: 2000 0101, 214151-2002, KC

Motherlode, confirmed 3

separate exposures of scallops
 in bioherm bed sediments.

UGA

12-20-21

Attempts to cruise to ReefCCA aborted, twice. Dec. 1, Dec. 8. No more attempts to be made in 2021. Offshore conditions will be more predictable in spring months of 2022. SKTD returned of ship's decision in letter to John Bickley, cc: Carol Alexander. 12/10/21

UGA

12-15-21

Dropped off 2.2 g. Sample of Bison Bison fossil. 00-16-01 Sample to dated w/ AMS-RC. Date will be compared to previous age determined by ETH RC 18h (AMS). RCYBP 6007-10; 6074 BP 7160-6790

UGA

12-17-21

Review of Reef h videos.

UGA

12-27-21

Routes for redrawing of Bison Bison bone (00-16-04).

UGA 5th SR ID MATERIAL Page 8P
56040 FS 12121 Bone 10480 1/50

13C, ‰ = -24.09

Bottom types -

- beached wave
- miflo @ McMurdo
- "dune-like" medium sand @ L
- Sand w/ few specks of bio-furbed fossils @ KC @

USA

2-8-22

Soft re-open of lab.

Friday cool down

by JCV,

update RCV control software.

USA Post Session 2-11-22

5 1/2 hr Post Session @ Marine Science Post.

Downloaded Transfer Function. Videos sent to Jeff (Ginger & Blue Robotics).

In attempt to update Fixtuck software (ArduSub), connectivity communication lost. Ended Post session and returned vehicle to lab.

USA Lab

2-14-22

Emily Jones & I addressed

vehicle ArduSub software update.

Removed SD card from Raspberry Pi on RCV. Updated software and reinstalled in vehicle.

USA Lab

2-14-22

cont. -

Vehicle Function restored after ArduSub update.

Attempt to check in line updates failed b/c vehicle connection could not be affected. Called FOIT.

USA wireless does not function like Blue Robotics' protocol. No user manual on GPR page.

FOIT suggests to ask EIT's for temp. bug in .datalog.

Alternative idea: Take vehicle's laptop home and use local wireless. No username.

NOTE: RCV battery down to low cell levels. Charge would just charge. Checked Blue Robotics Q&A on this issue. Understand ground and battery connections changed.

Lab

2-15-2022

Test tank drained and cleaned.

Soil/Sediment from Matherlode
site, Grab #5, dried.

Lab

2-16-2022

• Matherlode Grab 5

Collin &
Emily

100 g

- ground

- put in shaker for ~10 min

Dry Munsell: 6/10-1

Grab 5

card: 206 g
paper:

#	Weight (g)	μm
5	0	4000
10	0.2	2000
18	1	1000
35	2	500
60	13.9	250
120	79.4	125
230	2.7	63
230+	.2	
Total	99.4	

100 g lost

% lost: .06%

- archived 2/15/2022

2/18/2022

Finished Sediment analysis for

Mothulode Grab 5

→ mainly fine sand

(Mothulode Grab 3 was mainly

medium sand)

← archived
the sand

• ROV testing in tank

- reversed motors 2, 5, 7

forward up/down

- depth hold + stabilize

seem to work now ;)

promising

- Changing motor 3 did not work,

motor 2 worked ~~up~~ reversed

motor 3 going back still had

some turn, but forward

looked promising

- Pool test set for Monday @ 11 AM

2/21/2022

• Pool test, 11:50 AM

- testing thrusters, mobility,
depth hold, + stabilize

- 7 un-reversed, reversed
8 instead → worked.

- depth hold works, up/down
works, forward/backwards
works

- reversed 1+2, now going
forwards and backwards
correctly; does have issues
turning though, but can
turn, just difficult

reversed thrusters: 1, 2, 5, 8

↳ pool test successful

- forward/backward + side → side
movement on left joystick;
up/down + turning on right
joystick (rotating)
(or)

- issues w/ gripper, not camera

though *not in the Room*

Lab

2-21-22

Gripper issue may be mechanical. Connection may have been affected by update of SD card last week. Will open housing to check.

Did "eye ball" check of Fixtank connection. Looks okay w/o opening enclosure. Next:

Check: Groundconnection!

Reviewed 2-21-22 ROV HD Video file. Locate video in VIDEO under 4:23 3:35 minutes of good test. Good quality.

Lab

2-28-2022

Gripper fixed

- had to reassign its button
- used "servo_3-max_momentary" and "servo_3-min_momentary"
- set it at the usual buttons (shift + camera toggle)

- need to use the "momentary" setting to allow us control of how long we want the gripper

Camera toggle

- "camera up" and "camera down" buttons got switched? I reprogrammed them to match our labels on the controller

Ping & Sonar

- > Documents > Ping Viper > Sensor_log
- saves data logs as binary files
- on display menu, make sure "enable replay menu" is on (?)
- don't know how to ~~read~~ record
- > records when activated?
- > pool test?

File in the future

ROV Testing

- Ran in tub for ~25 minutes
- tested up/down = smooth
- tested forward/reverse = smooth
- both joystick functions worked
- switched from manual to depth hold
- held 6m depth ~5 mins
- gripper open & closed properly
- all thrusters functioning

checked "handshake" in PDS Sonar software w/ device (ROV)

Ping viewer on @ good sound.

No connection, ~~cannot~~ initiate "init ping".

ROV depth hold good, gripper function good.

Camera recording good.

Light function: No, Reset

NOIS: Thruster #5 runs more than #7, #8. Thruster #6 less frequently than all the other 4. Thrusters in Depth hold.

Switched PDS to UDP connection, no ping function.

Note in the future.

Lab

3/17/22

- checked ping connections
 - endonura harness & USB appear okay
 - tried firmware update, auto. No connection.
 - Tried UDP, IP changed port to 9090, No Joy.
- Problem seems to be IP/port recognition in Pixhawk software
- Lab 3-18-22
- Emily update firmware for companion Ver. 3+
 - Recommended direct update of Pixhawk via USB - USB connection w/ computer, No PWS in loop.
 - Purchased USB-USB cable and ready for transfer.

Lab

3-21-22

loaded up USB-A cable to Pixhawk & laptop to do software update.

Checked cable runs & connections to TDM1 & Pixhawk boards.

Emily booted update on laptop.

Opened Pix device. O-ring seal was damaged and electronics were covered by sea water. Used contact cleaner and clean electronics. Re-sealed o-ring w/ fresh silicone grease. Opened device and re-tested laptop to check connection.

Downloaded Software update. Still no connectivity.

lab 3-21-22
Software update cont. --

Emily noted that App for USB cable will no longer show Serial. Her mom (Corydon) suggests we just replace the cable. Ordered new USB-male-male from Amazon. Arrives 3-23-22.

Have new Ping sensor (1D) ready to order (\$295) if software does not restore functionality.

Planned Ping purchase w/ BlueLink.

lab

3-22-22

Sent images of Ping cable housing for identification. Also, sent photos of Ping sensor on side. Sent to BlueLink (Jeff Corger)

lab

3-23-22

Blue Robotics would not replace Ping 1D unit under warranty. Placed order for unit w/ BlueLink. \$331. And Day Air Shipping.

lab

3-24-22

No connectivity. FDI removed, cable software.

lab

3-28-22

Ping sensor arrived @ UGA. Cabled housing. No good for delivery.

3-29-22

Ping sensor "delivered".

3-30-22

Installed Ping Sensor. Damaged Ping removed. Leak in cable.

Lab

3-30-22

Device installed at noon. E. Jones & S. Garrison, installers. All cable runs made. Penetration ring sealed & greased. All cables connected. ROV was powered up. Firmware update in progress. Function established.

- Connection works with UDP connection, code: 9090
 - have to manually connect each time flight now
 - still not connecting through Serial 9600

Labs

4-1-22

ROV Tank Test. APM.

- Had to check the seal b/c pressure gauge wouldn't go up
- checked the new connection and adjusted the wire

Lab

4-4-2022

ROV check. Flight made okay. Ping sensor functional. No immediate detection. ROV operational. USB tank test Tuesday (4-5-22).

Lab

4-8-22

Tank test of ping sensor delayed. Tank connector @ bulkhead failed. Emily & I repaired.

LNB

4-18-22

bulkhead connector repair made. Tank test done. Ping AD not functional. Drone check for software update. ROV flight controls good. No issues gripper, lights, flight software all good. Opened waterproof enclosure to check connectivity.

Lab

3-30-22

Device installed at uson. E Jones & S. Garrison, installers, All cable runs made, penetrator o-ring sealed & greased. All cables connected. ROV was powered up. Firmware update in progress. Function established.

- Connection works with UDP connection, code: 9090
 - have to manually connect each time right now
 - still not connecting through serial 9600

Labs

4-1-22

ROV Tank Test. APR.

- Had to check the seal b/c pressure gauge wouldn't go up
- checked the new connection and adjusted the wire

Lab

4-4-2022

ROV check. Flight mode okay. Ping/Beacon functional. No USB cable detection. ROV operational. USB tank test Tuesday (4-5-22).

Lab

4-8-22

Tank test of ping sensor delayed. Tank connected @ bulkhead failed. Emily & I repaired.

3-20-22

AAUS DIVE CHECK OUT

Lake Toxassee

Sc.

Scott Dookas, USA

Dive Safety Officer

Passed: Skills

Failed: Swim Test

check connectivity

4-13-22

Revised Ping Sonar.

Used Serial Display board ✓

Cable runs from panelcraft are continuous to USB-Serial board,

Revised Ping Sonar Complete

Functionality. ✓ ?

Will talk test - again - on Friday 4-15-22.

Lab4-15-22

Ping ID check out.

→ Re-set

②

View; Function. VDP.

Play back? Log.

Use;

Encoder Reeling Menu ✓
for recording data.

Camera menu? Trigger Camera?

Zenni

Pool4-18-22

ROV test

- ☒ Ping
- ☒ grabber
- ☒ thrusters
- ☒ lights
- ☒ controls
- ☒ depth hold
- ☒ camera

Check these functions

Lab

updated laptop. ✓

Lab

4-20-22

Check ASUS external

monitor function. Video

Playback 4-18-22 pool test,

Video had bandwidth issue. HD quality good on ASUS monitor.

Griffen video good quality.

lab

4-22-22

Function check 4K camera. ✓

lab

4-29-22

Installed Go Be Blues lite on ROV frame.
 Wooden box cradle avoids direct contact w/ surfaces and protects the site.

Wilmington "Hole"
 32° 00' 35" N
 81° 00' 21" W
 1000m

5-6-22

SKID

② dock 10:45 loaded again on the BIKINION. Set up ROV and monitors

departure: 11:14 am (from dock)

Stationed: 12:15 pm (at 1st site)

ROV water: 12:17 pm (when it's dropped to begin the dive)

① dive on the wall

Starting depth: 310m (when anchored)

Go pro recording Emily controlling ROV hit the bottom @ 12:19 PM stabilized until sea settled

@ 12:20 - 12:25 - coral?

@ 12:25 got into the SCOUR pit left site 1 @ 12:50

Rite in the Rain

SK10

NOTES ON SITE 1:

5/6/22

- decent video, lots of sediment though
- shells + soft coral
- battery #4 went below 9V
- possibly got down into hill - sediment made it hard to see + SONAR was acting weird - would switch b/w 20-40 m to 5-10 m in matter of seconds (?) don't know why
- Skipped Site #2, went straight for #3
- caught a glance of a decently large white spot/item on video but unable to identify
- unable to use 2nd monitor

SK10

5/6/22 95

Site 3

- couldn't anchor; too deep
- stationed @ 12:55 pm
- ROV in water @ 12:56 pm
- stationed depth: 41 m
- ping sonar unreliable; often had 0% confidence
- ROV at bottom: 12:59 pm
- depth: 14 m
- shell spotted ^{all around} 1 m
- 15.4 m: interesting item spotted on vid 2 or 3
- 16.6 m: lots of small shells
- shell spotted continuously as navigating to the pole
- voltage dropped under 11V

@ 1:07 pm on battery #1 *Back in the beam.*

SK10

5/10/22

- difficulty navigating because of strong currents
- ROV caught on prop @ 1:09 pm when trying to resurface
- max depth reached 50 fathoms was 16.6m
- changed battery #1 for #2 before final dive @ site 3
- all functions except sonar are working properly
- dive 3 start depth: 46/47 m ^{what the boat says}
- ROV in water @ 1:21
- bottom @ 16.6 m → 1:25 pm
 - 16.8 - seeing tiny shells
- Serious wake by big boat @ 1:27
- more small shells ^{* using Q's depth reader}

5/10/22

SK10

- ASUS Screen - not working due to messed up micro USB - will need fixing
- Heading up @ 1:31
 - possibly near the hole, did not get in though
 - max depth was ~16.8m
- finished ROV dives
- starting drop cores @ 1:38
- 1st core dropped @ 1:41 pm at depth of 53m
- core successfully retrieved from site #3 @ 1:45 pm
- 11.5m @ 100% confidence around 1:24:30 on sonar

Savannah

5-7-12

Savannah / Charleston Country
Aquatics CenterNCTE Row Competition
9AM - 2PM

Departed for Atlanta, Arrived 7:30 PM.

UGA UAS

5-9-12

99

1300 hours.

Opened 4K video on Lenovo laptop.

Opened HD video on HP laptop.

Good closeups of wall
agology & Noctua.Thursdays closures well & bottom.
Good uniaqua @ utraquas.Smiley & Rosey can interpret
video.Ring log, in BID file format,
Need reader, Replay Disk
function.VIDEOS1: HD + 4K line up @ 3 sec (HD)
and 4K (4K) - @ 12:20 PMAs HD #1 is only a few seconds
long (35 sec)

2: HD #2 start @ 12:21 PM

Match using identifier. HD2 - 4K1-11:51

HD2 ends around

12:38 PM

Saw 1st of 12:35
Saw 1st of 12:35

5/4/2022

- G0P0 4K1 - at 20:51 ^{min}sec, HD2 ends → 12:38 PM
- G0P0 4K1 ends at 25 min, meaning it ends @ 12:41 PM

G000 4K1 = 12:20 - 12:41 PM

* when @ bottom, video includes swipe + diving from ~12:17-12:20

• G0P0 4K1 = 25 min long

• G0P0 4K-2 = 2 min long

• G0P0 4K-3 = 25 min long

• G000 4K-4 = 25 min long

• G0P0 4K-5 = 8 min long

only on boat, no need for watching

12:17

+ 1:25 (95 min)

1:42 PM = end of

G0P0
sync 0 PM

G0P0 = 12:17 - 1:42 PM

5-12-2022

FOIT installed Premiere Pro on laptop & Desktop, Photos working, ASX videos edits today.

Reviewed,

5-13-2022

Ping Sonar, HD Video Files

Sent frame grabs from HD camera to SITO.

UGA Lab

5-16-2022

- Dive 1 start @ 1:02:07 (30m)
- Dive 2 start @ ()
- Dive 3 start @ ()
- Ledge seems to appear on Sonar at 8 min 25 sec around 25m
- Spike to 24m around 9 min 45 sec

UGA Lab

5/16/2022

- Spike at 10min 15 sec to 25m
- Spike sequence from 11min 45min to 12 min & sonar hits 22m
- Spike sequence from 12min 45min to 22m (maybe the ledge?)
- 12:21 pm on video } start times
- 12:40 pm on sonar }
- 12:24 pm ~ 3 min in video (CLIP)
- 12:26 pm ~ 5 min in video (CLIP)
- 12:28 pm ~ 7 min 30 sec in vid (CLIP)
- 12:29 pm ~ 8 min 30 sec in vid (CLIP)
- 12:30 pm ~ 9 min 30 sec in vid (CLIP)
- 20 min on Sonar huge depth drop to 10 min
- 13 min 30 sec to 14 min in video (CLIP)

UGA Lab

5/16/2022

- Video #3 clip @ 3:14 - 4:15
- Screen shot of station 3 dive 4 at 1:20:30 depth: 13.2m on Sonar

UGA Lab

5-19-2022

Continued video editing of Williamson River sites, Stations 1, 3,

New HDMI-USB cable arrived. Function is good, ASUS monitor back in sync w/ HP laptop.

UGA Lab

05/20/2022

continued video editing of Williamson River site Station 3
 Uploaded files to OneDrive and sent to Mike, Robinson.

UGA Lab

5-24/26/22

Received shipments of
2" plastic core tube liners;
2" plastic core catchers;
2" end caps.

Additionally, lab received
vials for Seed DNA
Samples.

Ordered new 4K external
monitor. FOIT, 19530FXGAR,

UGA Lab

5-31-22

Added "Goro" mount to
flotation collar on ROV.
Attached GoBee blue light.

UGA Lab

6-8-22

New external monitor for
field operations brought to
lab by FOIT.
Setup and test were done.
Monitor is in placement over
ASIS HD monitor.

Skidaway

6-15-22

Left Athens ca. 10:30 AM -
Arrived Skidaway (SKID)
@ 4:01 PM
Mord with Rice House,
(See note on cleaning)

Forecast is for east winds,
10 kts; Seas 2-3'.
Equipment ready -
Plan is to be @ 10:00 AM,
8:15 AM.

Destination is ReefCCA.

SKID

6-16-22

Weather just
buddled boat @ 8 A.M.

Rice House

5-10-22

chickens. And in I room?
7 roaches.

lots of dead little bugs
kitchen floor covered in
dirt upon arrival

footprints, spit dried to rock
hair stuck to the shower wall
staying in hair in shower
kitchen. water covered in white
fuzz. floor 1 room. 2 rooms
everything covered in dirt & hair

Rice House

chairs, bed, table, room
1 room

lots of wood, table, bed
kitchen, floor covered in
dirt, room, room

toothpaste, soap, dirt, the table
dirt, dirt, the table, the
dirt, dirt, the table, the

dirt, dirt, the table, the
dirt, dirt, the table, the
dirt, dirt, the table, the

Skidaway

6/16

- Departure at 8:30 am
 - Backup Monitor wouldn't turn on
 - Laptop and ROV connections work
 - Ring and Q software works
 - Paddy Clay.
- NEED*
- Return at 9:50 am
 - Unable to complete PCA site due to problems w/ boat engine
 - E wind, 10 knots
 - Seas too choppy, got worse as we got further out.

UGA

6-17-22¹⁰⁷

Checked new remote monitor. Bowers up went okay. Laptop-Monitor connection successful. HDMI-HDMI cable is required for function.

UGA lab

7-13-22

ROV tank test (proper functioning)

- Monitor & computer runs properly; Q and Ring both operated smoothly
- UV light tested with and without filter; appears to illuminate the minerals expected
- GoPro camera & ROV camera capturing properly
- Vacuum pump broken, being replaced @ Harbor Freight.

VGA lab

7-13-22

- uploaded GoPro video to computer
- charged all ROV batteries

Downloaded GoPro video and reviewed. BlueLight fluoresced the minerals in rock #1. Felt spar sample ~~did not~~ turned pink. Fossil turned orange-brown. BlueLight works.

* Rock #1 turned reddish-coral w/ gray areas between.

Lab

7-18-22

Test of vrsol/black filter on Ricoh w/ camera. Test tank.

Samples:

1. large fossil bone
2. fossil scallop

Lab

7-18-22

BlueLight test cont. -

3. Small fossil bone
4. Modern cut bone - chicken?

Camera: Ricoh Caplio 500SE
VISO: Yellow back filter

Method:

- a. direct, high illumination
- b. indirect, high illumination

Changed from hand-held to tripod for stability.

Reset small fossil & large fossil bones.

Still have blurring of images.

Changed Ricoh camera settings:
Anti-blur: on
Power function: 1MB → 3MB

Note on the Ricoh

lab

7-18-22

Boudis test cont. -

3rd session w/ these
to sell and re-set
camera parameters.

Added scalloped set,

{ No block filter on Nikonos
film camera.

Used as additional
imaging. Ricoh
500 Bz Principal
camera.

Sequence:

a) white light
b) direct headlight
c) indirect headlight

Results are superior to
all previous attempts.

Excellent focus & light

performance.

NOTE: Overd faint to
expose daylight.

lab

7.18.22

111

New block filter arrived,

lab

7.21.22

Found filters for Akaso
and Go Pro cameras
ordered and will test
upon arrival.

lab

7.22-22

Block filter test w/ Minolta &
Nikon film cameras.

Tests on random minerals &
fossils.

Used Bausch and w)

shell impressions

various South Dakota. Hand
pick of veins (quartz).

Used bone fossil, small.

Crinoid used in filter
tests w/ R-2th 500.

7.22.22

One more 'rock' melted. It was an unsuccessful melted mudstone w/ small shell. The material inside the test tank with will have to be drained.

Took complete set of Nikon (30 Xposure) Minolta has frames left on tel.

LAB

Fossil

OBJECT (P/F)	LIGHT DISTANCE	INTEN. LIGHT	#	CAM.	NOTES
Fossil bone R	110 cm	1	1	GP	
Fossil oyster R	110 cm	1	1	GP	
Projectile - R	110 cm	2	2	GP	
PPK - F	110 cm	2	2	GP	
Bone - Pits. R	110 cm	3	3	GP	
Bone - P - F	110 cm	3	3	GP	
Mixed Dg	160 cm	1	4	GP	
Mixed Lg	160 cm	3	5	GP	
Scallop R	160 cm	3	6	GP	001755
↓	80 cm	3	7	GP	
Scallops R	210 cm	1	8	GP	High up Box #1
↓	210 cm	3	9	GP	

Pies. = Piestocene

Lg = light grey

Dg = dark grey

PPK = projectile point

GP = GP Pro

→ Film camera shutter speed too slow. need tripod

Took 3 pics at end of all items on fuel w/ normal light and blue light

• upgraded test photos to laptop

Notes on Lab

8/3/22

How to review SONAR footage:

- Open PingViewer (shortcut)
- Click the CD icon in bottom left corner
→ click "replay data!"
- That opens our SONAR files (.bin) —
choose the date of the file you want
- Data will open and begin playing

* .bin files can only be opened within the program

Results of Yellow Filter test

- FLIP Filter does a great job of blocking the blue light and illuminating ~~the~~ interior minerals only
- Camfix = everything is still blue

8/3/22

GoPro Yellow Filter test

- 2 filters: Amazon → Camfix ①
★ BNH → Flip ②★
- Test: try both filters w/ GoPro and blue light to see if there are any differences or if one is better
- Setting: computer room in lab, lights off, using teaching-photograph (TP) tank

- Subject: 00-17-18, scarp shell fossil; dated 7-7-04 from GKNMS station #20, from Box 17A

Results

← @ 100 cm distance of light

5-6 = Camfix

7-8 = Flip

9-10 = Camfix

← @ 120 cm light distance

11-12 = Flip

★ Camfix yellow filter does not work for us — FLIP = ✓

Adrian McLean

8/3/22

MORE PHOTOS

*Only using FLIP(YF)

*all done on light setting 1 at 120 cm light distance

*compare UV to Blue light

*take photos of other fossils from

Box 17A

Photo #	Light	Fossil #	NOTE
1-3	BL	00-17-18	YF Scaup 120 cm
4-6	UV	00-17-18	Scaup 120 cm YF
7-9	UV	00-17-18	No Yellow Filter + light distance @ 70 cm
10-12	UV	00-17-08	No Y.F. + light distance = next to beaker
13-15	BL	00-17-08	120 cm YF
16-18	N/A	00-17-08	regular pics
19-21	N/A	00-17-01	regular pics
22-24	BL	00-17-01	YF + 120 cm
25-27	UV	00-17-01	No YF + next to beaker

BL + YF = the best

UV by itself = lights up lighter bits

of fossils

UV YF = does NOT work

8/3/22 117

Photo #	Light	Fossil #	NOTE
1-3	BL @ 120 cm	00-16-24	YF
4-6	BL @ 120 cm	00-16-21	YF
1-3	BL @ 120 cm	00-16-21	YF
4-6	BL @ 60 cm	00-16-21	YF

showed interior minerals

too far away to show interior minerals

all at low intensity

hAB

8-15-22

Unlinked GPS Review

Recovered Setup & Quickstart
documentation for system.~~Calibration~~

hake Chapman

figure 8

8-16-22

GIS Calibration:

Personnel

locater box on

K. Gonen

cables dis connected

M. Williams

turn box in a circle

E. Jones

3 turns (25%)

E. Garrison

multiple figure 8s

keep in constant motion
until it gets to 100%

point box N, stand still

reconnect wires (near

A1, locater)

Need wires to get extra

depth calibrated

will complete GPS setup @ SKTO dock
next trip. Wifi needed to finish
calibration.

SKTO

8-24-22

Dock @ SKA. Setup ROL.

PC updates took almost an
hour.

Checked vehicle function.

Link to PC dropped, ROL

not connected, and

When back @ lab, check sensors

to try to get it to work w/ ROL.

Try to reprogram video camera

to 32 bit to better communicate

w/ ROL

- CPU (HTP) freezing up even w/ wifi

connection upon restart. Link on

EX FTI kept falling out

On 8/24 @ 11:15 AM

Depth @ tide gauge: 51'

ROL still down. Link not stable.

Going off.

8/24/2022

PONAR Drops

grabbed coral

released

Grab

CCA #1 : 31° 42.027" N = NOTHING

80° 42.04 W

=> maybe

Grab

CCA #2 : 31° 42.03" N

80° 42.05" W

Closely to
Grab #2 local
we moved some
core (?)

Grab

CCA #3 : 31° 42.03" N

80° 42.05" W

Grab

CCA #4 : 31° 42.038" N

80° 42.052" W = sand

CCA Grab #5 : 31° 42.0354" N

80° 42.0523" W

CCA Grab #6 : 31° 42.0354" N

80° 42.0523" W

CCA Grab #7 : 31° 42.0343" N

80° 42.0533" W

-HARD BOTTOM = NOTHING

8/24/22

DROPPED CORE (KB)

W"

= what the
cap is labelled

☐

Drop 1, CCA #1 : 31° 42.0343" N

80° 42.0533" W

☐

Drop 2, CCA #2 : 31° 42.0352" N

80° 42.0561" W

☐

Drop 3, CCA #3 : 31° 42.0341" N

80° 42.0577" W

seen sterile

☐

Drop 4, CCA #3 : hit sand

31 42.0301" N

80 42.0609" W

sterile drop

should be labeled
for 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

sterile drop

☐

PONAR Drop : 31° 42.0301" N

80° 42.0609" W

HARD BOTTOM, NO GRAB

PONAR Drop : 31° 42.0292" N

80° 42.0614" W

Grab #8

Angelising +

Glycymeris

Stellis

PONAR DROP → same spot as Grab #8

31° 42.0292" N

80° 42.0614" W

Grab #9

KB

Drop Cone #5, "CCA #3"

31° 42.0355" N = sterile

80° 42.0633" W drop

PONAR

Drop, Grab #10:

31° 42.0231" N

80° 42.0646" W

Shells

KB

Drop Cone #6, "CCA #3"

31° 42.0234" N

80° 42.0636" W

Sterile, hard bottom

- we had tubes "CCA #3" and

"CCA #4" that were

either sterile or unused

Left stop @ 1:37 PM

handling Mounds @ 2:30

for Fred.

Offloaded van A.M. Van gossip.
3.11 kg of sediment samples.

Fathom-X box link dropped.

Contacted Blue link.

Sending possible fixes.

Lab

8-26-22

A.M. Ocean DIT handling

tools, w/ bleach.

Dr. Cornin, K. Williams, & E. Greenham

sampled grabs & sorted for

analyses.

Ms. Williams notified Dr. Brindley

@ 1:30 PM. Briefed her on

protocol for sample preparation.

* washed Van - mud!

8/24/22

④ PONAR DROP → same spot as Grab #8

31° 42.0942" N

80° 42.0614" W

Grab #9

⑤

KB

Drop Core #5, "CCA #3" N

31° 42.0355" N = Sterile

80° 42.0633" W

drop

⑥

KB

PONAR Drop, Grab #10:

31° 42.0231" N

80° 42.0646" W

Shell

⑦

KB

KB Drop Core #6, "CCA #3" N

31° 42.0234" N

80° 42.0646" W

Sterile, hard bottom

- we had tubes "CCA #3" and

"CCA #1" that were

either sterile or unused

Left stage @ 1:37 PM

handing Maria @ 2:30

for food.

Lab

8-25-22

123

⑧ Floated van A.M. Van Gassdep.
3.11 kg of dead nest sample.

Fathom-X per link drop in

contacted Blue link.

Sending possible fixes.

lab

8-26-22

AM. Ocean DVA handling
took off beach

Dr. Cronin, K. Williams, & E. Gensler
sampled grabs & sorted for
analyses.

Mr. Williams not w/ Dr. Cronin
@ 1:30 PM. Briefed person
protocol for sample preparation.

* washed Van - mud! *

Notes in the Rain.

Lab cont, -

8-25-22

Sold 4 vials for pollen
for National Paleontological Service
& Paleoresearch Institute.

Sold 2 vials for Kelsey
Williams & Pollen Corp.

⁸⁵
Gabel spk to National Pkno.
~~X Gabel spk to Paleoresearch~~

Sent Fund Transfer info to
SKTD = \$2000+

Did informal PSK of CCA
Core #2 sediment.

Primarily coarse & medium sand
No material in *930 screen.

8.9.125

lab

CCT Core #2

PSA

#5 20.1g (1 shell)

#10 0.2g (shell)

#35 1.0g (coarse sand
& small)

#60 0.5g Medium Sand

#120 10.1 Fine Sand

≈ 1.9g.

LAB DNA

08/29/22

- two samples from grab #9 (CCA)
- collect into two vials

SD40389 and SD40474

- gloved & masked

- bleach all utensils to sterilize

- fill, cap, and wipe caps

- bag & label CCA grab #9 & vial #5

Lab conf. -

8-25-22

Selected 4 vials for pollen
for National Paleontologic Service
& Paleoresearch Institute.

Selected 2 vials for Kasey
Williams & Pollen Corp.

8.5
Grabs sp. to National Paleo.

~~X Grab sp. to Paleoresearch~~

Sent Fund Transfer info to
SKID = \$2000 +

Did informal PSA of CCA
Core #2 sediment.

Primarily coarse & medium sand
No material in #30 screen.

cf. P. 125

lab

CC Core #2

PSA

#5 20.1g (1 shell)

#10 0.2g (shell)

#35 10.9g (coarse sand
& small)

#60 0.5g Medium Sand

#120 10.1g Fine Sand

≈ 1.9g.

LAB DNA

08/29/22

- two samples from grab #9 (cca)
- collect into two vials

SD40389 and SD40474

- gloved & masked
- bleach all utensils to sterilize
- fill, cap, and wipe caps
- bag & label CCA grab #9 & vial #5

LAB

08/28/22

- Vial S040474 CCA grab #9 collected first

- grabbing mainly sediment to ensure most DNA collected
- small amount of water left in top of vial to keep out oxygen

- Vial S040389 CCA grab #9 collected second

- did not bleach bc same sample
- collecting from various sections of sample bags to ensure variety and chance for DNA

- both vials & sample in fridge
- utensils bleached to sterilize
- put on new gloves ~~repeated~~ ^{time} each

- Vial S040401 CCA grab #5

first

- collected from bottom of sample to give best chance and least amount oxidation
- collected from multiple areas of sample
- less water due to dehydration in fridge

- S040401

LAB

08/29/22

- Vial S040453 CCA grab #10

- collected from around the sample and from the bottom
- water on top to keep out oxygen

- sample & tray returned to fridge

- vials placed in fridge door

- After collection, vials packaged in mailers to send to Boulder for DNA extraction

- 2 other vials for pollen to Houston

- all vials packaged & ready to send

Return to Lab

8/29/2022

FXTI Troubleshooting

- J. Longer told us to try removing the Ethernet cable and directly connecting USB to the computer.
 - ↳ this did not work. Did not even show power coming to the FXTI Box when connecting through USB
- We opened up the FXTI, using the Ethernet cable, the link is stable and the connection is not dropping
 - ↳ our current theory is that something came loose?
- Garrison tightened bulkhead connector for tether - seems to be the weak point right now

Set UP Lenovo for ROV

- IP Address: 192.168.2.1
- Subnet Mask: 255.255.255.0
- connected!

Installed new version of QGC (4.3.2)

9/1/22

Goals for the day:

- Calibrate new joystick ✓
- Continue working on QGC on Lenovo
- ArctPro coordinates
- We are having issues with parameters on this version of QGC - attempting to troubleshoot. We might need IT to come in. For now, we are using the HTP
- Tank test w/ new remote/joystick ⇒ success!

FLIGHT PLANS ORDER:

- CCA
- J1 (Sagebrush)
- KTV

Atlantic Ocean (CCA)

9/7/2022

Arr Dock $\approx$ 8:00Seas $\sim$ 2.95 ft

Loaded

long swell,
no chop

ROV hooked up!

see how it goes

Depart for CCA @ 8:40

Goals for Research/Summary

Video

Panoramas of SCAR site (visibility dependent)

6 sediment cores

Return to 31°42.0292
80°42.0614 to video

Arr CCA

31°42.0292

80°42.0614

unable to complete on 9/7 trip due
to rough sea conditions and potentially
unreliable tether connection to ROV

transfer these goals to next trip
on 9/19-9/20 if conditions allow

Kelsey, Andrew, Kelly, and Emily are
all available for these dates if trip
is confirmed and planned

9/7/22

Boat Atlantic Ocean - CCA 9/7/22

Departure @ 8:40 am *had video

- Computer HP started w/ no problems

- monitor turned on & set up fine

- ROV all good when prepped

Seas at 3ft, swells are 11 sec apart

Slight breeze and partly cloudy; 70°F

Grupe Reef Bouy Forecast 8:50am

Air temp: 82°F

Water temp: 85°F

Wave height: 2.95 ft ESE

Wind speed: 11 km

forgot UV light for ROV in van :/

made it halfway out at 9:21am (cca)

- calling it off because of rocking

and rougher than comfortable seas

- concerned about ability to drop

ROV properly and maintaining

tether securely & personal stability

- got progressively happier as we

made it out further

- 3ft seas too rough for future ref.

Back in the future

BOAT Atlantic Ocean - CCA 9/7/22

- * need to replace tether connector to the ROV and to box
- wigged out and disconnected from ROV just from the boat ride from the dock to halfway out to CCA (30 minutes away)
- Returned to dock @ 10:21 am
- plan to leave SKID at 11:00 am to return to Athens/LAB
- discussed with Mike and Bennett about sea conditions before leaving the dock; checked w/ Dr. G as well
- discussed with Kelly, Emily, Bennett, Kelsey when deciding to call off CCA
- topped off boat fuel before getting back to the dock
- reloaded van & double checked things

Lab

9-12-22

K. Williams picked up pollen samples to process in Dr. Forinquier's lab.

Dr. Forinquier doubts a viable pollen sp. can be extracted from grab samples from CCA.

Returned to lab and recovered sieved fractions from I-Reef. sp. #1: I-Reef 00-15-10.

Prepared PST for I-Reef, 7-2018 fossil site sediments. (250g). Should double 63 μ fraction to do pollen analysis.

Lab 9-13-22

Emily, Kelsey, Kelly, Alex

Sieved sediment to isolate 63 μ m fraction
 for pollen 7-2008 J-heat Kessen site

10 min shaking weight	size fraction
11.2g	4,000 μ m (#5)
5.4g	2000 μ m (#10)
3.6g	1,000 μ m (#18)
4.019g	500 μ m (#35)
31.3g	250 μ m (#60)
134.0g	125 μ m (#120)
33.4g	63 μ m (#230)
30.6g	< 63 μ m (catch pan)

Total sample weight (from adding above) = 259.4g

check against original sample down from 2008

Plotted sed data in Stratigraph

Pool - 9:15 am

9-16-22

Dr G, Kelsey, Emily, Kelly, Alex, Andrew

- 2nd monitor having issues starting
- HP being slow; might need restart
- all ROV connections secure
- testing grabber with pool rings
- Q not loading well on HP
- man need to load excess files on to flashdrive (back & go) to help the computer load faster
- link disconnected even when everything is hooked up properly
- potentially still a short tether issue when connecting ROV to EXTL box.
- link active and both green lights on but video still unavailable
- ping not connecting either
- potentially a computer problem
- switched ends of tether to see if a connection formed - NO
- shutting down HP to fully restart

Back in the future.

Pool - 9:50 am

9-16-22

- Set up currently unsuccessful
- Connector on end of short tether no connecting properly
- Will need to be replaced
- after shut off, HP loading faster and green lights are on
- Q loaded but "waiting for vehicle connection" still showing
- controller plugged in → no connection
- connected to wifi → no connection
- load HP & onto flashdrive and transfer to lenovo
- maybe HP needs an updated driver
- restarting HP for the 3rd time
- tether connector not fully latching
- plastic collar on tether is cracked

Pool - 10:10 am

9-16-22

- notch on tether connector stripped
- trying to connect old FXT1
- old FXT1 connected perfectly even with messed up connector
- ROV camera working
- ROV lights working
- ROV gripper working
- Andrew, Alex, Kelly practiced driving
- Pool test complete: 10:45 am
- silver caribiner tightened too tight and needed pliers

LAB - TethyDond's tione 9-19-22

Reported cable connector
w/ Binder 770. Process very
difficult. Required precision
soldering gun & stripping of
tether cables wires.
LED ~~8~~ tether wires must be
resoldered. Done,
Time: 3+ hours.

Function Test 9-20-22
Roll connectivity OK.
All functions active; video,
compass, Temperature, etc.

Domeloe / SKTD 9-25-22 139

Met and departed from
Geochlorophyll hole @
11:30 AM,
Arrived Domeloe @ 4:35 PM.

Rigged drop line for
midwater video using
diver reel.

Scheduled to meet & depart
SKTD dock ca. 8:00 AM
9-26-22.

SKTD

9-26-22

Forecast: Sea 2', 70°F (20°C)

Bennett is Captain, Target is CCA

~~Grubbs~~ ~~#8~~ Keaton, Rough

10:00 AM, 30 mins. from site
Arrived @ 10:30 AM.

CCA

9-26-22

Anchored @ 10:45 AM

but anchor drag. Will

reset @ 10:50 AM.

36.0 ft. $\rightarrow$ 59.0' SCOW.Barge @ 57+ $\rightarrow$ 55'.Could not ~~measure~~ ~~drift~~.

Saw barge @ 11:30 AM.

Tide gauge looks negative.

- We may need to look at leaving the dock later to avoid the tide and thus avoid chop and waves on our way en route to avoid Sea-Sickness

$\rightarrow$ I think this wasn't a problem in the past due to quicker takeoff from dock?

SKID

9-26-22

Back at SKID dock @ 1 PM.

Returned to Athens.

Lab.

9-27-22

Checked equipment.

New dock cable delivered.

Discussed FTYX w/ Jeff

Conner.

Signed cruise report.

Began scheduling for next week.

Lab

9-28-22

Reconnected strain relief to frame of tether head. New snag buoys.

9/30/22

- Checked FXTI, new cable, and both computers

↳ new cable works, old FXTI works,
new FXTI does not work w/
either computer → not a cable
issue, it is an FXTI issue

- Lendro + QGC

- uninstalled version 4.2.3

- installed versions 4.0.7 and 4.1.2

↳ v. 4.0.7 had the grey
screen issues

↳ v. 4.1.2 does not have grey
screen issues and did
respond to the joystick.

Further testing needed
(tank + pool)

Checked FXTI. Old unit works.

Opened new unit. All connections
checked. No connectivity - still.

Asked Blue bird for guidance,

- Got IT to install ARPD

• ~~Sending new FXTI back~~ → fixed it!

configured
12

9/30/22

Discovered FXTI w/ Blue Robotics via
DDE Conner. Throwing FXTI units
is just "plug-and-play" process. Each
FXTI must have the IP address
entered into the desktop for it to
work.

Lab 10/3

Dried, sieved + weighed

CCA

G12.5

CCA G25.6

CCA G25.6

TW: 621.7g sieved 10min

Weight	Size Fraction
4.7g (shells)	4000 μ m
29.6g	2000 μ m
85.5g	1000 μ m
160.0g	500 μ m
190.3g	250 μ m
140.8g	125 μ m
1.7g	63 μ m
0.6g	<63 μ m

Notes on the floor

MB

CCA Grabs 5

Total weight:

sewed 10 min

30CF 22

Weight	Size
0.8 g	4,000 μ m
2.0 g	2000 μ m
4.0 g	1000 μ m
11.6 g	500 μ m
66.8 g	200 μ m
94.9 g	125 μ m
0.7 g	63 μ m
0.1 g	< 63 μ m

SKIP

10-6-22

Loaded & left dock @ 8:30 AM.

Captain John Bick

USA's: E. Garrison, S. Turner,

A. Perez, A. Coley

RAD connected & working.

57°F, Calm

1. CCA. RAD ops then
take grabs (large & small)
toward "wand" to complete
coverage.

On site @ 10 AM.

① ROV deployed @ location

31' 42.05 N

80' 42.06 W

10:01 GPS screenshot

10:10 GPS @ ROV drop.

Return to base.

CCA

10-6-22

Roll @ Seaw adjacent to
barge. Lots of plastic
rubbish in bottom. Small.

① 10:20 Surface

Take grabs in Seaw area

Grab #1 - no recovery (Large Prawn)

31.42.063

80.702.084

10:30 Seaw shot

Grab #2 - (Large Prawn)
Recovery.

31.42.062

80.702.084

Grab #3 (small Prawn)

- didn't open

- 31.700762°N

80.701028°W

Grab #4 (Small Prawn)

- 31.700762°N

80.701028°W

CCA

10/6/22

Grab #5 (small Prawn)

- 31.700762°N

80.701028°W

- NOTHING in

Grab #6

- Same

Cords

- nothing - might be
hitting steel

Grab #7

- 31.700828°N

80.701107°W

53.3 ft
depth

- recovery !!

Grab #8

- 31.700828°N

80.701107°W

recovery

Grab #9

- 31.700828°N

80.701107°W

recovery 53.5 ft
depth

Grab #10

- 31.700828°N

80.701107°W

recovery

Recovery in the bottom.

CCA

10/6/22

Grab #11

-31.700828°N
80.701107°W

-no recovery, didn't open

Grab #12

-31.700828°N 53.1 ft
80.701107°W depth

-no recovery, did open though

Grab #13

-31.700828°N
80.701107°W

-no recovery

Messed and lost anchor

④ C

31° 42.076
11:30 AM } 80 42.081

↓ PDV. Bottom w/ less rubble

PDV lost connection in water -
both sides PDV came up w/ some
water in battery cage

CCA

10/6/22

Grab #14

-31.700982°N
80.701130°W

-52.8 ft depth

-recovery

Grab #15

-31.700982°N
80.701140°W

-no recovery

Moving to IT-Sagehen
site @ 12:10 PM,lost anchor & chain,
Replaced anchor. No
chain.

Arrived @ IT-Sagehen @

12:27 PM 62' 67'

Secured out of GPS

Anchored @ 12:35 PM

T-Y Sogobush

10-6-72

① ROV down @ 12:45.

Reefs Sogobush. ROV
in shall lag adjacent the

Sogobush Reef. (31.61028°N

80.797127°W

ROV in MHW to avoid
struders kicking up sediment.

Bottom is large shellbed lag.

ROV video excellent.

Will raise anchor & deploy
large PONAR to attempt to
recover shells.

① ROV up @ 1:06 PM

Sediment grains.

Grab #1 (big PONAR)

- nothing

- 31.610387°N

80.797288°W

+V =
805.71 m
drop

T-Y Sogobush

10/6/2011

Grab #2

- 31.610357°N +V (big Red)
80.797288°W

Grab #3

- 31.610411°N +V (big)
80.79725°W +V (PonAR)

Grab #4

- 31.61015°N +V BP
80.79692°W depth

Grab #5

- 31.61035°N BP
80.79689°W 68.8 ft
depth

- nothing/negative

Grab #6

- 31.61011°N BP =
80.79686°W BP → big
PonAR

- negative

Grab #7 (small PONAR) +V

- 31.60009°N
80.7969°W

Return the form.

JY-Sagebush

10/6/22

Grab #8 SP

- 31.6101° N
80.7968° W

- negative in

Grab #9 SP = small PONAR

- 31.6102° N
80.7968° W

- negative

* About JY-Sagebush video/POV:

- got a lot of sediment kick up,
not always by thrusters?
Possibly caused by turbidity
near star point

Grab #10 SP

- 31.6102° N
80.7971° W- negative $\Rightarrow$ hard bottom?

Going to Gravity core @ 1:50 PM

GIC DNP #1 $\rightarrow$ NOTHING!- 31.6102° N
80.7969° W
negative

JY-Sagebush

10/6/22

- no more gravity core, back
to small PONAR Grabs

Grab #11 SP

- 31.6102° N
80.7968° W

- negative

Grab #12 SP

- 31.6101° N
80.7969° W
70 ft. depth

- going into the waves

sideways

- negative

Grab #13 SP 70 ft. TV

- 31.6103° N
80.7976° W
depth

- further away from barge

- positive

- super fine sand, will drop
there again

IN-Sagebrush

10/6/22

Grav #14 (SP)

- 31.6102° N

SD. 7980° W

- negative

Grav #15 (SP)

- 31.6103° N

SD. 7974° W

- negative

Grav #16 (SF)

- 31.6105° N

SD. 7977° W

- negative

Left Sagebrush @ 2:30 PM

Tried Dock stop. 3:20 PM

SKID Dock: 3:50 PM approx.

KTK

10.7.22

Boat "Modena"

left dock @ 9:20 A.M.

Arrived site: 10:27 A.M.

Set anchor @ 10:43 AM

heel @ 45' (tide is up)

1 PBN @ 11:14

① SNIE#1 11:14-11:24

No bag - just sand

rougher,

Recovered RAY. Will change
battery and re-launch
RAY.② TAD: 11:40 ~ No bag,
out 11:55 ~ covered.

Retrieved RAY. 11:55 PM

Relaunch w/ 3rd battery @

31' 31.0647 N

81' 00.133 W

KTK coordinates
approximate

Return the Bay.

MEASUREMENT CONVERSIONS

U.S. to METRIC

inches x 2.54 = centimeters
 feet x 0.3048 = meters
 yards x 0.914 = meters
 miles x 1.609 = kilometers
 quarts x 0.946 = liters
 gallons x 3.785 = liters
 ounces x 28.349 = grams
 lbs x 0.454 = kilograms
 mpg x 0.425 = km/ltr
 mph x 1.609 = km/hr
 °F to °C (F - 32) x .555

METRIC to U.S.

centimeters x 0.394 = inches
 meters x 3.28 = feet
 meters x 1.094 = yards
 kilometers x 0.621 = miles
 liters x 1.057 = quarts
 liters x 0.264 = gallons
 grams x 0.035 = ounces
 kg x 2.205 = lbs
 km/ltr x 2.352 = mpg
 km/hr x 0.621 = mph
 °C to °F (C x 1.8) + 32

ENGLISH LINEAR MEASUREMENTS

12 inches = 1 foot
 36 inches = 1 yard
 3 feet = 1 yard
 1,760 yards = 1 mile statute
 2,025.37 yards = 1 mile nautical
 5,280 feet = 1 mile statute
 6,076.12 feet = 1 mile nautical
 63,360 inches = 1 mile statute
 72,913.4 inches = 1 mile nautical

MAP SCALES—ENGLISH & METRIC

SCALE	1 INCH =	1 CENTIMETER =
1:10,000	833.33 feet 254 meters	328.1 feet 100 meters
1:25,000	2,083.3 feet 635 meters	820.2 feet 250 meters
1:50,000	4,166.7 feet 1,270 meters	1,640.4 feet 500 meters
1:63,360	5,280 feet 1,609.3 meters	2,078 feet 633.6 meters
1:100,000	8,333.3 feet 2,540 meters	3,280.8 feet 1,000 meters
1:250,000	20,833 feet 6,350 meters	8,202 feet 2,500 meters
1:500,000	41,667 feet 12,700 meters	16,404 feet 5,000 meters



- ALL PENCILS
- RITE IN THE RAIN PENS
- WAX MARKERS
- CRAYONS
- OIL PASTELS / PAINT



- PERMANENT MARKERS
- STANDARD BALLPOINTS



- GEL PENS
- MOST HIGHLIGHTERS
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- WATER COLORS
- ACRYLIC PAINT



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rain heavy storms
 heavy sweat
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ALL-WEATHER TOUGH!

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 The Rite in the Rain story began a century ago in the forests of the Great Pacific Northwest. Entrepreneur Jerry Darling recognized the logging industry's need for a durable material that could be written on and survive in poor weather conditions. Jerry developed a special coating that created a unique moisture shield on the hand-dipped sheets of paper that he and his wife, Mary, processed at their home. From these humble beginnings our first all-weather paper was born. Over the many years we've perfected and patented our environmentally responsible coating process. Still located in Tacoma, our continued mission is to provide innovative products for professionals and enthusiasts who brave the outdoors.



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