

Data Acquisition Standard Operating Procedures

Atlantic Oceanographic and Meteorological Laboratory (AOML) South Florida Program Synoptic Shipboard Surveys (ID# 3)

Last Updated: 2/17/2024

Program Summary

Water chemistry

URLs

- Program - <http://www.aoml.noaa.gov/phod/sfp/index.php>
- DDI - <https://data.florida-seacar.org/programs/details/3>

Contacts

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Data Tables

- Data_3A_Final
- Data_3A_Load
- Data_3B_Final
- Data_3B_Load

Data Stored Procedures

- usp_Data_3A_Load_insert
- usp_Data_3B_Load_insert
- usp_combined_wq_wc_nut_insert_3A
- usp_combined_wq_wc_nut_insert_3B

Data Acquisition Standard Operating Procedures: ProgramID 3

Date Created: 11/19/2018

Created By: *Claude Kershaw*

Date Modified: 04/21/2022

Modified By: *Jennifer Baker*

Data File Paths:

1. Data: "U: \CAS-WI\Misc Projects\SEACAR_FDEP\Data\ID_3_NOAA_Shipboard\DataToLoad\AOML_SFP_bays_WQ_surface_v1.xls"
2. Data: [U:\CAS-WI\Misc Projects\SEACAR_FDEP\Data\ID_3_NOAA_Shipboard\DataToLoad\AOML_SFP_regional_WQ_surface_v6.xlsx](#)
3. Data: U:\CAS-WI\Misc Projects\SEACAR_FDEP\Data\ID_3_NOAA_Shipboard\DataToLoad\AOML_SFP_regional_WQ_surface_v10.xlsx"

DDI URL: <http://dev.seacar.waterinstitute.usf.edu/datadiscovery/programs/details/3>

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Procedure Overview:

1. Remove/replace spaces and special characters from the column headers (the geodatabase creation process requires no spaces or non-alphanumeric characters except for underscores).
2. Use SQL Server Import Export Wizard to load data from file "AOML_SFP_bays_WQ_surface_v1.xls" into **Data_3A_Load**.
3. Use SQL Server Import Export Wizard to load data from file "AOML_SFP_regional_WQ_surface_v6.xlsx" and "AOML_SFP_regional_WQ_surface_v10.xlsx" into **Data_3B_Load**.
4. Execute procedure `usp_Data_3A_Load_insert` to load the data into table **Data_3A_Final**.
5. Execute procedure `usp_Data_3B_Load_insert` to load the data into table **Data_3B_Final**.
6. The Monitoring Location information can be found in the Load tables **Data_3A_Load** and **Data_3B_Load**.
7. Create unique Monitoring Location IDs for each set of coordinates and add a StationID column to both **Data_3A_Load** and **Data_3B_Load**. (scripts are in ETL folder) **Note to clean up any

positive longitudes found. (we generally wipe and load this program's locations because we generate the IDs based on a "hash" of unique latitudes and longitudes.

8. Add new Monitoring Locations into the **SampleLocation_Point** table.
9. Add new Monitoring Locations into the **SampleLocation** table. This will generate a LocationID for each Monitoring Location.
10. Update the **SampleLocation_Point** table with the LocationID generated in the **SampleLocation** table. Run procedure `usp_SampleLocation_Point_update` to do this.
11. Update the LocationID column in table **Data_3A_Final** with the LocationID in the **SampleLocation** table. Join on the [StationID] columns in **Data_3A_Final** and the ProgramLocationID column in **SampleLocation**.
12. Update the LocationID column in table **Data_3B_Final** with the LocationID in the **SampleLocation** table. Join on the [StationID] columns in **Data_3B_Final** and the ProgramLocationID column in **SampleLocation**.
13. Run the two combine procedures to push the data into the **combined_wq_wc_nut** table.

Data Tables

1. Data_3A_Load
2. Data_3A_Final
3. Data_3B_Load
4. Data_3B_Final

Data Stored Procedures

1. `usp_Data_3A_Load_insert`
2. `usp_Data_3B_Load_insert`
3. `usp_SampleLocation_update @programID = 3`
4. `usp_combined_wq_wc_nut_insert_3A`
5. `usp_combined_wq_wc_nut_insert_3B`

GIS Procedures

1. The Monitoring Location information can be found in the Load tables **Data_3A_Load** and **Data_3B_Load**.
2. Complete steps 6 through 12 in the "Procedure Overview" section of this document.

```
SET ANSI_NULLS ON
SET QUOTED_IDENTIFIER ON
```

```
CREATE PROC [dbo].[usp_combined_wq_wc_nut_insert_3A]
```

```
AS
```

```
BEGIN
```

```
SET NOCOUNT ON;
```

```
SET XACT_ABORT ON;
```

```
-- Constants - PLEASE SET NOW!!
```

```
DECLARE @dataLoadCode varchar(10) = '3A';
```

```
DECLARE @combinedTable varchar(50) = 'Combined_WQ_WC_NUT';
```

```
DECLARE @ParameterID int;
```

```
-- Setup data load
```

```
DECLARE @runBy varchar(50) = SYSTEM_USER;
```

```
DECLARE @programID int, @dataStreamID int;
```

```
SELECT @dataStreamID = DataStreamID,
```

```
@programID = ProgramID
```

```
FROM DataStreamProcedure
```

```
WHERE DataLoadCode = @dataLoadCode;
```

```
ÿ
```

```
--delete existing data
```

```
exec usp_delete_combined @datastreamID, 'Combined_WQ_WC_NUT'
```

```
-- Insert data
```

```
Set @ParameterID = 12 -- Light Extinction coefficient
```

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID,
```

```
SampleDate, Acti vityDepth_m, Relati veDepth, Resul tVal ue, DateAdded)
```

```
SELECT @programID, @dataStreamID, @ParameterID, a. LocationID, a. Date, NULL, 'Surface', a. Kt,
```

```
GETDATE()
```

```
FROM Data_3A_Final a
```

```
WHERE NULLIF(a.kt, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
```

```
@dataStreamID = @dataStreamID, @Combi nedTabl eName = @combi nedTabl e, @NumRowsFi nal = @@ROWCOUNT,
```

```
@LastUpdateBy = @runBy
```

```
-- Insert data
```

```
Set @ParameterID = 4 -- pH
```

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID, SampleDate,
```

```
Acti vityDepth_m, Relati veDepth, Resul tVal ue, DateAdded)
```

```
SELECT @programID, @dataStreamID, @ParameterID, a. LocationID, a. Date, NULL, 'Surface', a. pH,
```

```
GETDATE()
```

```
FROM Data_3A_Final a
```

```
WHERE NULLIF(a.pH, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
```

```
@dataStreamID = @dataStreamID, @Combi nedTabl eName = @combi nedTabl e, @NumRowsFi nal = @@ROWCOUNT,
```

```
@LastUpdateBy = @runBy
```

```
ÿ
```

```
-- Insert data
```

```
Set @ParameterID = 13 -- CDOM
```

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID,
```

```
SampleDate, Acti vityDepth_m, Relati veDepth, Resul tVal ue, DateAdded)
```

```
SELECT @programID, @dataStreamID, @ParameterID, a. LocationID, a. Date, NULL, 'Surface',
```

```
a. CDOM_QSU, GETDATE()
```

```
FROM Data_3A_Final a
```

```
WHERE NULLIF(a. CDOM_QSU, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
```

```
@dataStreamID = @dataStreamID, @Combi nedTabl eName = @combi nedTabl e, @NumRowsFi nal = @@ROWCOUNT,
```

```
@LastUpdateBy = @runBy
```

ÿ

-- Insert data

Set @ParameterID = 8 -- TSS

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID,
SampleDate, ActivityDepth_m, RelativeDepth, ResultValue, DateAdded)
SELECT@programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface',
a.TSS_mgL, GETDATE()
FROM Data_3A_Final a
WHERE NULLIF(a.TSS_mgL, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,
@LastUpdateBy = @runBy
```

-- Insert data

Set @ParameterID = 3 -- Temp

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID,
SampleDate, ActivityDepth_m, RelativeDepth, ResultValue, DateAdded)
SELECT@programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface', a.temp,
GETDATE()
FROM Data_3A_Final a
WHERE NULLIF(a.temp, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,
@LastUpdateBy = @runBy
```

-- Insert data

Set @ParameterID = 18 -- NH4

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID,
SampleDate, ActivityDepth_m, RelativeDepth, ResultValue, DateAdded)
SELECT@programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface', a.NH4,
GETDATE()
FROM Data_3A_Final a
WHERE NULLIF(a.NH4, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,
@LastUpdateBy = @runBy
```

-- Insert data

Set @ParameterID = 9 -- CHL_a Uncorr

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID,
SampleDate, ActivityDepth_m, RelativeDepth, ResultValue, DateAdded)
SELECT@programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface',
a.Chl_a_ugl, GETDATE()
FROM Data_3A_Final a
WHERE NULLIF(a.Chl_a_ugl, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,
@LastUpdateBy = @runBy
```

-- Insert data

Set @ParameterID = 17 -- NO2+3

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID,
SampleDate, ActivityDepth_m, RelativeDepth, ResultValue, DateAdded)
SELECT@programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface',
a.N_plus_N, GETDATE()
FROM Data_3A_Final a
WHERE NULLIF(a.N_plus_N, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,
@LastUpdateBy = @runBy
```

```
-- Insert data
```

```
Set @ParameterID = 20 -- P04
```

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID,
SampleDate, ActivityDepth_m, RelativeDepth, ResultValue, DateAdded)
```

```
SELECT@programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface', a.P04,
GETDATE()
```

```
FROM Data_3A_Final a
```

```
WHERE NULLIF(a.P04, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,
@LastUpdateBy = @runBy
```

```
-- Insert data
```

```
Set @ParameterID = 2 -- Salinity
```

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID,
SampleDate, ActivityDepth_m, RelativeDepth, ResultValue, DateAdded)
```

```
SELECT@programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface',
a.salinity, GETDATE()
```

```
FROM Data_3A_Final a
```

```
WHERE NULLIF(a.salinity, '') IS NOT NULL
```

```
exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,
@LastUpdateBy = @runBy
```

```
/*
```

```
SELECT *
```

```
FROM Combined_WQ_WC_NUT
```

```
SELECT *
```

```
FROM Combined_Data_Tracking
```

```
SELECT *
```

```
FROM Data_3A_Final
```

```
SELECT *
```

```
FROM Combined_Parameters
```

```
SELECT *
```

```
FROM DataStreamProcedure
```

```
WHERE ProgramID = 3
```

```
SELECT a.*
```

```
FROM Combined_Parameters a
```

```
join Indicator b on a.IndicatorID = b.IndicatorID
```

```
where b.Habitat Like '%Water Column%'
```

```
exec usp_delete_combined 32, 'Combined_WQ_WC_NUT'
```

```
*/
```

```
END
```



```
SET ANSI_NULLS ON
SET QUOTED_IDENTIFIER ON
```

```
CREATE PROC [dbo].[usp_combined_wq_wc_nut_insert_3B]
```

```
AS
BEGIN
SET NOCOUNT ON;
SET XACT_ABORT ON;
```

```
-- Constants - PLEASE SET NOW!!
```

```
DECLARE @dataLoadCode varchar(10) = '3B';
DECLARE @combinedTable varchar(50) = 'Combined_WQ_WC_NUT';
DECLARE @ParameterID int;
-- Setup data load
DECLARE @runBy varchar(50) = SYSTEM_USER;
DECLARE @programID int, @dataStreamID int;
```

```
SELECT @dataStreamID = DataStreamID,
@programID = ProgramID
FROM DataStreamProcedure
WHERE DataLoadCode = @dataLoadCode;
```

```
ÿ
--delete existing data
exec usp_delete_combined @datastreamID, 'Combined_WQ_WC_NUT'
```

```
-- Insert data
```

```
Set @ParameterID = 18 -- NH4
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID, SampleDate,
ACTIVITYDEPTH_m, RelativeDepth, ResultValue, DateAdded)
SELECT @programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface',
a.NH4_umol_L, GETDATE()
FROM Data_3B_Final a
WHERE NULLIF(a.NH4_umol_L, '') IS NOT NULL
and isnumeric(a.NH4_umol_L)=1
```

```
--exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,
@LastUpdateBy = @runBy
```

```
-- Insert data
```

```
Set @ParameterID = 9 -- CHL_a Uncorr
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID, SampleDate,
ACTIVITYDEPTH_m, RelativeDepth, ResultValue, DateAdded)
SELECT @programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface', a.Chl_a,
GETDATE()
FROM Data_3B_Final a
WHERE NULLIF(a.Chl_a, '') IS NOT NULL
and isnumeric(a.Chl_a+'e0')=1
```

```
--exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,
@LastUpdateBy = @runBy
```

```
-- Insert data
```

```
Set @ParameterID = 17 -- NO2+3
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID, SampleDate,
ACTIVITYDEPTH_m, RelativeDepth, ResultValue, DateAdded)
SELECT @programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface',
COALESCE(CAST(a.NO3_mol_L as Float), 0.0)+COALESCE(CAST(a.NO2_umol_L AS FLOAT), 0.0), GETDATE()
FROM Data_3B_Final a
WHERE NOT (NULLIF(a.NO3_mol_L, '') IS NULL AND NULLIF(a.NO2_umol_L, '') IS NULL)
```

```
ÿ
--exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,
```



```
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,  
@LastUpdateBy = @runBy
```

```
-- Insert data
```

```
Set @ParameterID = 20 -- P04
```

```
INSERT INTO Combined_WQ_WC_NUT (ProgramID, DataStreamID, ParameterID, LocationID, SampleDate,  
ACTIVITYDEPTH_m, RelativeDepth, ResultValue, DateAdded)
```

```
SELECT@programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface',  
a.P04_umol_L, GETDATE()
```

```
FROM Data_3B_Final a
```

```
WHERE NULLIF(a.P04_umol_L, '') IS NOT NULL
```

```
and ISNUMERIC(a.P04_umol_L)=1
```

```
--exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,  
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,  
@LastUpdateBy = @runBy
```

```
-- Insert data
```

```
Set @ParameterID = 2 -- Salinity
```

```
INSERT INTO Combined_WQ_WC_NUT(ProgramID, DataStreamID, ParameterID, LocationID, SampleDate,  
ACTIVITYDEPTH_m, RelativeDepth, ResultValue, DateAdded)
```

```
SELECT@programID, @dataStreamID, @ParameterID, a.LocationID, a.Date, NULL, 'Surface', a.SSS,  
GETDATE()
```

```
FROM Data_3B_Final a
```

```
WHERE NULLIF(a.SSS, '') IS NOT NULL
```

```
and ISNUMERIC(a.SSS) =1
```

```
--exec usp_combined_data_tracking_insert @parameterID = @ParameterID, @ProgramID = @programID,  
@dataStreamID = @dataStreamID, @CombinedTableName = @combinedTable, @NumRowsFinal = @@ROWCOUNT,  
@LastUpdateBy = @runBy
```

```
/*
```

```
SELECT *  
FROM Combined_WQ_WC_NUT
```

```
SELECT *  
FROM Combined_Data_Tracking  
where programid = 3
```

```
SELECT *  
FROM Data_3B_Final
```

```
SELECT *  
FROM Combined_Parameters
```

```
SELECT *  
FROM DataStreamProcedure  
WHERE ProgramID = 3
```

```
SELECT a.*  
FROM Combined_Parameters a  
join Indicator b on a.IndicatorID = b.IndicatorID  
where b.Habitat Like '%Water Column%'
```

```
exec usp_delete_combined 33, 'Combined_WQ_WC_NUT'
```

```
*/
```

```
ÿ
```

```
END
```

GO

```
SET ANSI_NULLS ON
SET QUOTED_IDENTIFIER ON
CREATE PROC usp_Data_3A_Load_insert
AS
BEGIN
SET NOCOUNT ON
SET XACT_ABORT ON

INSERT INTO Data_3A_Final (Record_Num, Cruise_ID, Date, Station, Region, Long_Deg, Long_Min,
Longitude, Lat_Deg, Lat_Min, Latitude, Temp, Salinity, Zp, Zcol, Perc_Xmis, CDOM_QSU, Tripton_mgL,
NH4, PO4, N_plus_N, NO2, NO3, Si, TDP, DOP, pH, TDN, DON, DIN, DIC, Chl_a_ugL, Phaeo_ugL, Kt,
TSS_mgL)
SELECTRecord_Num, Cruise_ID, Date, Station, Region, Long_Deg, Long_Min, Longitude, Lat_Deg,
Lat_Min, Latitude, Temp, Salinity, Zp, Zcol, Perc_Xmis, CDOM_QSU, Tripton_mgL, NH4, PO4, N_plus_N,
NO2, NO3, Si, TDP, DOP, pH, TDN, DON, DIN, DIC, Chl_a_ugL, Phaeo_ugL, Kt, TSS_mgL
FROMData_3A_Load
END
GO
```

```
SET ANSI_NULLS ON
SET QUOTED_IDENTIFIER ON
CREATE PROC [dbo].[usp_Data_3B_Load_insert]
AS
BEGIN
SET NOCOUNT ON
SET XACT_ABORT ON

--POR Load
TRUNCATE TABLE Data_3B_Final

INSERT INTO Data_3B_Final (Record_Num, Longitude, Latitude, Station, Depth, Date, GMT, SST, SSS,
Chl_a, Phaeophytin, NH4_umol_L, PO4_umol_L, NO3_plus_NO2_umol_L, NO2_umol_L, NO3_mol_L, Si_umol_L)
SELECTRecord_Num, Longitude, Latitude, Station, Depth, Date, GMT, SST, SSS, Chl_a, Phaeophytin,
NH4_umol_L, PO4_umol_L, NO3_plus_NO2_umol_L, NO2_umol_L, NO3_mol_L, Si_umol_L
FROMData_3B_Load

END

GO
```