

# **MARINe Database**

## **User Guide**

Prepared by  
Bruce Bealer and Larry Cooper  
Southern California Coastal Water Research Project

Revised by Melissa Miner  
University of California, Santa Cruz

DRAFT



# Table of Contents

<b>CONTACT INFORMATION</b> .....	7
<b>OVERVIEW</b> .....	8
<b>MARINe</b> .....	8
<b>Database Design</b> .....	8
<b>Basic Structure</b> .....	8
<b>Using the Database</b> .....	8
<b>INTRODUCTION TO OPERATIONS</b> .....	9
<b>Loading and Opening the Database</b> .....	9
<b>Saving, compacting and repairing</b> .....	9
<b>MARINe Main Menu vs. Access Main Window</b> .....	10
<b>DATA ENTRY: OVERVIEW</b> .....	11
<b>Who to send data and changes to?</b> .....	11
<b>Data Entry Sequence</b> .....	11
<b>Entering Data for the First Time</b> .....	12
<b>Entering Data for a New Season</b> .....	12
<b>DATA ENTRY: UPDATING MAINTENANCE DATA</b> .....	13
<b>Personnel Changes and Additions: luList02_Personnel</b> .....	13
<b>Plot Changes: tblPhotoPlotInfo, tblTransectInfo, tblCountSizePlotInfo</b> .....	13
<b>New Season</b> .....	14
<b>DATA ENTRY: USING THE FORMS</b> .....	15
<b>Field Log Event Data Entry Form</b> .....	15
Page 1: MARINe Rocky Intertidal Field Log.....	15
Page 2: Rocky Intertidal Monitoring Site-Wide Species Conditions.....	18
<b>Photo Plot Data Entry Form</b> .....	20
Features .....	20
Form Design.....	20
Data Entry .....	21
Controlling the Species display sequence .....	23
<b>Transects Data Entry Form</b> .....	24
Features .....	24
Form Design.....	25

Data Entry .....	25
Controlling the Species display sequence .....	26
<b>Lottia gigantea Data Entry Form.....</b>	<b>27</b>
Features .....	27
Data Entry .....	28
<b>Black Abalone Data Entry Form.....</b>	<b>30</b>
Features .....	30
Data Entry .....	31
Other Abalone .....	32
Nearest Neighbor Data.....	32
<b>Seastars Data Entry Form .....</b>	<b>34</b>
Features .....	34
Data Entry .....	35
<b>HELPFUL HINTS FOR DATA ENTRY .....</b>	<b>37</b>
<b>Using Forms Efficiently.....</b>	<b>37</b>
<b>Manipulating Tables &amp; Changing Data Directly in Tables.....</b>	<b>37</b>
<b>Querying Data.....</b>	<b>38</b>
<b>DATA ENTRY CHECKLIST .....</b>	<b>40</b>
<b>SENDING DATA .....</b>	<b>40</b>
<b>How it works .....</b>	<b>40</b>
<b>DATA ANALYSIS.....</b>	<b>41</b>
<b>QUERIES.....</b>	<b>41</b>
<b>Data Entry Aids .....</b>	<b>41</b>
qryPersonnelDropDownList .....	41
<b>Error Checking.....</b>	<b>41</b>
Queries for Checking Photoplot Percent Cover Totals.....	42
qryTOTAL_Photoplots .....	42
qryPhotoXXTotal.....	42
Queries for Checking Transect Percent Cover Totals.....	43
qryTOTAL_Transects .....	43
qryPhyllospadixTotal .....	44
Queries for Checking Count/Size Species Totals .....	44
qryTOTAL_CountSizeSpecies .....	44

<b>Correcting Errors .....</b>	<b>44</b>
<b>Data Extraction.....</b>	<b>45</b>
qryPhotoplot_NoLump .....	45
qryPhotoplotSpeciesLump .....	45
qryTransect_NoLump .....	46
qryTransectSpeciesLump.....	46
qryAbaloneSizeFreq.....	46
qryLottiaSizeFreq.....	47
qryPisasterSizeColorFreq.....	47

**MAINTENANCE DATA TABLES: HOW TO MAKE MODIFICATIONS AND ADDITIONS..... 48**

<b>Lookup Tables.....</b>	<b>48</b>
Surveying Groups (lulist01_SurveyingGroups) .....	48
Personnel (lulist02_Personnel) .....	48
Season Code (lulist03_MARINECommonSeason) .....	49
Methods (lulist04_Methods).....	49
Qualifiers (lulist05_QualifierCodes) .....	50
Units (lulist07_Units).....	50
Roles (lulist08_Roles).....	50
Islands (lulist09_Islands) .....	51
Survey Types (lulist10_SurveyTypes)—DELETE?? .....	51
Lottia Sizes (lulist11_LottiaSizes).....	51
Abalone Sizes (lulist12_AbaloneSizes).....	52
Ochre Seastars Size (lulist13_OchreSeastars) .....	52
Counties (lulist14_Counties) .....	52
Field Log Values (lulist16_FieldLogValues) .....	52
Field Abundance (lulist17_FieldAbundance).....	53
Field Appearance (lulist18_FieldConditions).....	53
Recruitment (lulist20_RecruitmentCodes) .....	54
Field Event Birds (lulist21_FieldEventBirds) .....	54
Field Event Mammals (lulist22_FieldEventMammals).....	54
Official Species List (luOfficialSpeciesList).....	55

<b>Information Tables .....</b>	<b>55</b>
Sites (tblSites) .....	55
Photo Plot Data Entry Species .....	56
Optional Photo Species (tblOptionalPhotoSpecies).....	56
Photo Plot Quadrat Information (tblPhotoPlotInfo) .....	56
Transect Data Entry Species .....	57
Optional Transect Species (tblOptionalTransectSpecies).....	57
Transect Information (tblTransectInfo) .....	58
Count and Size Information (tblCountSizePlotInfo) .....	58
<b>CHANGING DEFAULTS, MODIFYING FORMS, AND OTHER USEFUL INFORMATION.....</b>	<b>60</b>
How to view forms or queries in design view .....	60
How to order output by seasons.....	60
How change the Season default .....	60
How to change the default Group Code.....	60
How to change the default Scoring Method for Photoplot & Transect entry forms .....	60
How to change the default Method for Lottia, Seastar & Abalone entry forms ...	60
How to change the default color on the Seastar entry form.....	61
How to modify sampler/recorder dropdown lists .....	61
How to change the species display sequence.....	61
How to add optional species .....	61
How to re-order the sequence field.....	61
<b>APPENDIX A – LIST OF TABLES IN THE DATABASE.....</b>	<b>64</b>
<b>APPENDIX B –TABLE DESIGN .....</b>	<b>67</b>
Lookup Lists .....	67
Information Tables.....	71
Definitions.....	80
<b>APPENDIX C – ICONS .....</b>	<b>81</b>
<b>APPENDIX D – MOTILE INVERTEBRATE DATA .....</b>	<b>81</b>

## Contact Information

General database questions, data entry questions, and data changes should go to:

**Melissa Miner** ([mwilson@biology.ucsc.edu](mailto:mwilson@biology.ucsc.edu))

Questions about becoming a MARINe member, or incorporating new species or types of data into the database should go to:

**Jack Engle** ([j\\_engle@lifesci.ucsb.edu](mailto:j_engle@lifesci.ucsb.edu))

Send new data to be uploaded by SCCWRP to:

**Bruce Bealer** ([bruceb@sccwrp.org](mailto:bruceb@sccwrp.org))

cc: **Larry Cooper** ([larryc@sccwrp.org](mailto:larryc@sccwrp.org))

## **Overview**

### ***MARINe***

The MARINe Data Management System (MDMS) provides a uniform data acquisition, information storage and retrieval system for the Multi-Agency Rocky Intertidal Network.

Members of MARINe South survey mainland and offshore island sites twice a year, once in spring and again in fall, during the daylight low tides. MARINe North members (northern California & Oregon) sample either once (typically during the summer) or twice per year (spring/fall). Each monitoring group records information about the species in the intertidal environment. This sampling scheme provides the basic design for the MARINe Data Management System.

### ***Database Design***

The MARINe database is an event driven database, designed for the semi-annual (or annual) MARINe surveys. Data collected during the surveys are recorded in one of three “results” tables. The correct result table to use is based on the method of observation used in obtaining the results. These sets of results are recorded for each site in the MARINe system.

Each group enters new data into an entry version of the MARINe database that contains data for only their sites. Two times per year, these new data are uploaded into the main MARINe database, which contains all data for all groups. Both the individual group entry versions and the main MARINe database are available for downloading from the internal MARINe website.

### ***Basic Structure***

Each site is a geographical location defined by its longitude and latitude. Within each site, collected data are categorized by one of three method types: Photoplots, Transects, or Count and Size. Within each method, plots or transects are grouped by Target Species. There can be one or more plots associated with a target species. It is this combination of site, plot type, target species (and target species color for seastars), and plot number that provides the uniqueness of each recorded observation.

The site-specific data are combined with seasonal environmental sampling event data to provide a unique survey result record.

### ***Using the Database***

It is highly recommended that you work directly in the MARINe database only when doing seasonal maintenance or adding survey results. All analyses and investigation should be done in a copy of the database or in another Access mdb with tables linked to the MARINe database. The simple activity of adding a new table could cause automated functions to fail.

# Introduction to Operations

## ***Loading and Opening the Database***

To load the MARINe database from a zip file or a CD drive, navigate to the drive where the database is stored and drag the database onto your desktop. The disc can become your backup (see next section). The directory for your database can be:

**C:\Windows\Desktop\MARINeDatabase.mdb**

Once you have dragged the database onto the desktop you can open it.

**Note: It is extremely important that your database file exist on only one computer terminal in your office. Do not save it to your network and do not load it onto your home computer. All data must be entered at the same workstation. Do not give copies of the file to volunteers to work on.**

## ***Saving, compacting and repairing***

Each newly entered and complete record (each row) will be automatically saved to the MARINe Database file when you move to a new record, close a table or the entire database. Before you close the database (after a data entry session) it is helpful to compact and repair the database. This will reduce the amount of space that the database takes up on your hard drive. To do this go to the Tools menu and select Database Utilities, which will lead you to an expanded menu, select Compact and Repair Database. You may have to wait a few minutes for Access to compact and repair due to the large number of records it contains. When you no longer see the hourglass, close the database.

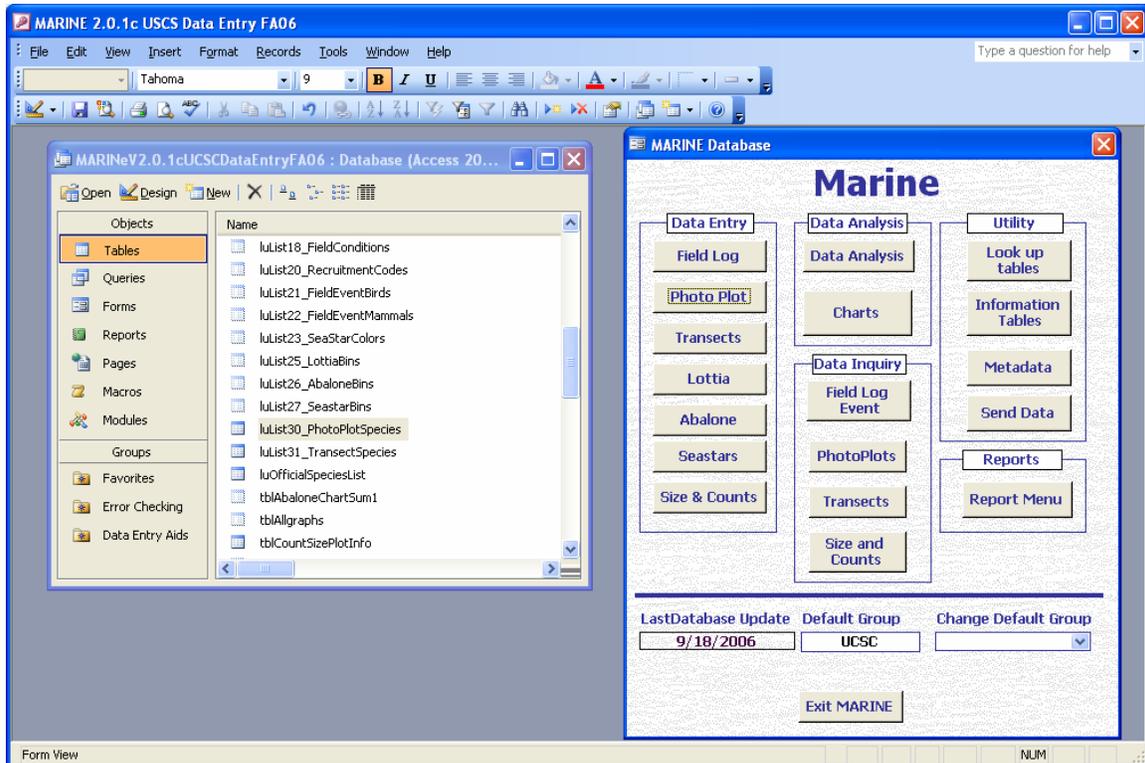
\*Back up your database each time you end a data entry session. Designate a jump drive or CD and label it "MARINe DATABASE BACKUP." Every time you complete a data entry session follow the steps below:

1. Compact and Repair (see above)
2. Close the Database
3. Insert your backup jump drive or CD into your computer
4. Open the directory to your MARINe DATABASE BACKUP disc
5. Drag the file from your desktop to your backup disc window
6. Check your backup file to ensure it contains your newly entered data
7. Record the date of the backup
8. Store your backup in a safe place
  - Do not backup your database onto another hard drive
  - Do not perform data entry on your backup file
  - Do not make changes to your backup
  - Do not save any other files to your backup
  - Do not give your backup to anyone for data viewing (make a separate copy if you need to give someone your data)

## MARINE Main Menu vs. Access Main Window

The MARINE main menu is the first screen presented after the application is launched. This menu provides access to most database functions. Note that the Data Analysis, Data Inquiry and Reports sections are not currently functioning. If the MARINE Main Menu does not appear when you open the database, select TOOLS, then STARTUP. In the “display form/page” box, select SWITCHBOARD from the drop down list. Click OK.

You may also wish to open tables or run queries directly from the main Access window, located to the left of the MARINE main menu. Here you can find lists of all the tables, queries, and forms contained in the MARINE database.



## Data Entry: Overview

### ***Who to send data and changes to***

New data are sent to Bruce Bealer ([bruceb@sccwrp.org](mailto:bruceb@sccwrp.org)) at SCCWRP two times each year, by March 1st, and July 1st to accommodate the fall and spring sampling schedule. Groups that sample only during the summer should aim to send new data in by the March 1st deadline of the following year. SCCWRP has “ownership” (only they can make changes to the database) during the months of March and July. After new data have been uploaded and any modifications to the database have been made, they will release a new version of the full MARINE database, as well as new entry versions of the database for each group. These will be available for downloading by April 1st and August 1st from the MARINE internal website. Because modifications to the structure or content of lookup and information tables sometimes occur during these updating periods, the most recent version of the MARINE entry database specific to your group should always be downloaded and used for entering new data, unless you receive confirmation that no changes have been made. You should receive notification that your data were successfully uploaded before the end of SCCWRP’s “ownership” period. If you do not receive an e-mail confirmation, contact Bruce.

All data changes and requests for database modifications should be sent to Melissa Miner ([mwilson@biology.ucsc.edu](mailto:mwilson@biology.ucsc.edu)), who has “ownership” of the database for all months other than March & July. Do not make changes to previously uploaded data in the data tables in your group’s entry version of the database because these will not be incorporated into the main MARINE database. You will be notified when your changes have been made. You can also contact Melissa with any questions you might have about data entry.

### ***Data Entry Sequence***

Tables must be loaded in a specific sequence because data in one table are dependent on data in a related table. If you are a new MARINE group, entering data for the first time, you will need to enter personnel, site & plot information that will not be required during successive data entry sessions unless changes or additions are made. Tables should be loaded in the following order:

- 1. Maintenance Data:** Enter any changes or additions to maintenance tables first. Maintenance data are recorded in Lookup tables. Lookup table names start with luListXX\_LookupName. The personnel and methods tables are examples of maintenance tables. *Add new personnel and any changes to methods or plots before entering results data.*
- 2. Information Tables:** These tables contain data specific to MARINE that are not the result of seasonal surveying activity; therefore, they will rarely need to be updated. The site table is an example of an information table.
- 3. Results Tables :** These tables record the actual results data of a field site survey. The field log event table is an example of a results table. It must be populated before the other results tables.

### ***Entering Data for the First Time***

If you are entering data for a new MARINe group for the first time, you must obtain a data entry version of the MARINe database that is specific to your group. As with all data entry sessions, data must be added in a specific sequence because most information is dependant on supporting data being previously entered. For this first data entry session, you will be required to enter information to fill in site, plot, personnel, etc. tables that will generally not be required for successive data entry sessions. The basic sequence for entering data is to enter Maintenance data, then Event data, and finally Result data. See the complete list of Maintenance data tables on page 48 and follow the guidelines for entering data into Lookup Tables and Information Tables before entering data into Results Tables.

If you are entering data for the first time for a site newly added by an existing MARINe group you will need to add information to a subset of the tables listed in the Maintenance Data section beginning on page 48 to incorporate the new site information.

### ***Entering Data for a New Season***

Data for a new season must be added in a specific sequence because most information is dependant on supporting data being previously entered. The basic sequence for entering data for a new season is to enter Maintenance data, then Event data, and finally Result data. Data entry specifics are outlined in the following sections.

## Data Entry: Updating Maintenance Data

Maintenance data are typically infrastructure data such as new sites, changes to plots, or personnel changes, which have occurred since the last survey season. Below is list of likely maintenance actions to be performed each time, before adding results data. See p.48 for a complete list of Maintenance Tables and instructions on modifying them. New maintenance data can be entered through the forms in the “Utility” section of the MARINe switchboard under either the “Lookup Tables” or the “Information Tables”, but changes and deletions can currently only be made directly to the tables. Thus, instructions for modifying the tables directly are listed here.

### ***Personnel Changes and Additions: luList02\_Personnel***

The Personnel lookup table can be found under “Objects”, “Tables” in the main Access Menu. This is a hidden table, so you may need to go to Tools—Options—View—and check “Hidden objects” in order to view it.

- 1. Additions:** Scroll through the table to find the last Personnel record added for your group. Your new PersonnelID # will be the next consecutive #.
  - Add new personnel so their names will be available in the various dropdown lists by pressing the new record button (arrow\*) at the bottom of the table. This will give you a blank row.
  - Enter a unique Personnel ID—your group code plus 4 digits (e.g. UCSC0001).
  - Enter your GroupCode and the first and last name of your new personnel. All other fields are optional, although a first date is useful.
- 2. Changes:** Find the personnel record and make the desired changes, then delete the “activity date”. This will ensure that the change is incorporated into the main MARINe database.
- 3. Removals:** Enter last dates for personnel no longer available and delete the “activity date” so that the change is incorporated into the main MARINe database. This will prevent them from appearing in dropdown lists, but retain their information for historical purposes. Do not remove a personnel record from the luList02\_Personnel table for any reason.

### ***Plot Changes: tblPhotoPlotInfo, tblTransectInfo, tblCountSizePlotInfo***

All plot information (e.g. plot #'s, target species, date established), including loss of plots or addition of new plots, is stored in one of the three information tables listed above. A “plot” refers to any of the sampling methods used to monitor species (photoplot, transect, irregular plot, etc.). tblPhotoPlotInfo stores information on photoplots, tblTransectInfo stores information on *Phyllospadix* and other types of transects, and tblCountSizePlotInfo stores information on all plots in which counts and sizes are recorded. These tables are located under “Objects”, “Tables” in the main Access Menu.

## 1. Additions

- Add new plots so they will be available in the various dropdown lists by pressing the new record button (arrow\*) at the bottom of the table. This will give you a blank row.
- Fill in the required fields (Surveying Group, Site ID, Target Species, Quad Number, and Date Established) and other fields as desired using exactly the same format & case as was used for prior entries for your group. Use the dropdown lists for Surveying Group & Site ID, and copy Target Species names from previous records to paste into your new record to ensure consistency in the entries for each field.

## 2. Plot Loss

- If a plot is lost due to rock breakout or some other reason, add an Effective End Date to “close” the plot and delete the “activity date” so that the change is incorporated into the main MARINE database. This will prevent it from appearing in dropdown lists, but retain its information for historical purposes. Do not remove a plot record from an information table for any reason.

## ***New Season***

Generally this information will be added by SCCWRP during their routine database maintenance in March and July. However, if you go to the “Season” dropdown list on a data entry form and your sampling season code is not present, it may need to be added to luList03\_MARINECommonSeason. See instructions for how to do this on p. 49.

Note: if you are entering data for the summer season, you may be able to simply type in your season code (e.g. SU07) since the drop down list is designed to show only the FA & SP seasons. See p. 60 for how to change the default from SP/FA to SU.

After you have entered the required Maintenance data to reflect any changes or additions that were made to your group’s plots or personnel for the season(s) you are entering, you can begin entering data into the Results Tables using the forms outlined in the next section.

# Data Entry: Using the Forms

## Field Log Event Data Entry Form

The Field Log Event Data Entry form is actually two forms, the Field Log form and Site-Wide Species Conditions form. When you complete the Field Log form, click the “Continue” button and the Site-Wide Conditions form will open. These forms must be loaded before the other results tables. Only the group, season, site, and date fields are required, but once the form is closed it cannot be added to, so all available information should be entered at the same time. The survey dates entered here appear in dropdown boxes on the other forms.

Note: The Field log and the Site-Wide Species Conditions must be completed together once started.

### Page 1: MARINE Rocky Intertidal Field Log

This form is best navigated by tabbing from one field to the next thus allowing the auto-dropdown feature to be activated.

**MARINE Database V2.0.1e**

File Edit View Insert Format Records Tools Window Help

MS Sans Serif 8 B I U

**MARINE Field Log**

**MARINE Rocky Intertidal Field Log**  
(Fill in all blanks: ND=No Data; 0=None; L=Low; M=Med; H=High; or Actual Value)

Group: **SCCWRP** Season Site Date Start Time End Time

Low Tide: **+0.0** (ft) at (hr) Other Participants:

Participants: Recorder:

**Weather and Sea Conditions** (affecting quality of sampling)(use codes listed above)

Surge **ND** Wind: **ND** Rain: **NI** RecentRain: **ND** Water Temperature **ND** (°C)

**Substratum Changes** (sediment=sand, gravel, cobble) (magnitude at site)

Sediment Level: **ND** Scour: **ND** Rock Movement: **ND**

**Debris and Pollutants** (magnitude at site)

Plant Wrack: **ND** Driftwood: **ND** Shell Debris: **ND** Dead Animals **ND** Trash: **ND** Oil Tar: **ND**

**Notes on Physical Conditions:**

Birds		Mammals	
Species	Count	Mammal	Count
	0		0

**Bird and Mammal Notes**

**Humans** (maximum # seen at any one time during the sampling; note behaviour) Reef: **0** Sand: **0**

**Plot Marker Loss/Repair Notes:**

**Other Notes**

Select a surveying group NUM

## ***Features***

- Default Group code automatically entered. This can be overridden.
- Tab between fields will activate the Auto dropdown feature for selection lists, which speeds data entry.
- Unlimited number of participants can be recorded
- Condition dropdown lists can accept either a value from the dropdown list or an actual value.
- Multiple Birds and Mammals can be entered.
- Basic data entered on this form is carried over to the Site-Wide Conditions form.

## **Basic Information** (note that only 1-4 are required)

1. **Group Code** — Open the Field Log Event Data Entry form by clicking on the Field Log button in the Data Entry group on the MARINe Main menu. The Field Log Event Data Entry form opens with the group field populated with the default group and the cursor in the Season dropdown box. To change the default Group see: How to change the default parameters on p. 60.
2. **Survey Season** — Select the season for the data you are entering. If you do not see the current season then see: How to add a new season year on p. 49..
3. **Site ID** — Tab to the Site ID field. The dropdown box opens and a list of all MARINe sites is displayed. Select your site or type in site code (faster).
4. **Survey Date** — Enter the survey date. This date will appear in the Survey Date dropdown list on the other forms. You can enter it in any common form. Dates are displayed in dd-mmm-yyyy. A date entered as 04/10/2003 would be displayed as 10-APR-2003.
5. **Start Time** — Enter the time the survey started. Times are recorded in the 24-hour format. You must enter a leading 0 for times before 10:00. It is not necessary to enter the colon, the computer will add it if it is missing.
6. **End Time** — Enter the time the survey ended.
7. **Low Tide** — Enter the low tide in feet and the time of the low tide. Decimal places are allowed for the low tide. A plus sign will be added to all positive low tide values.
8. **Recorder** — Select the recorder name from the dropdown list. See p. 41 “qryPersonnelDropDownList” to restrict this list to just names in your group.
9. **Other Participants** — Select the names of other participants from the dropdown list. Multiple participants can be added.

## **Weather and Sea Conditions**

10. **Surge** — Select L/M/H relative levels of water movement over seaward portion of site

11. **Wind**— Enter estimated wind. Use this scale **L** = ≤10 knots **M** = 11-20 knots **H** => 20 knots
12. **Rain** — Enter L/M/H relative amounts of precipitation at the site during the survey.
13. **Recent Rain** — Evidence or knowledge of L/M/H amounts of rain at the site within the past few days.
14. **Water Temp** — Actual seawater temperature (°C) or L = ≤14°C (57°F), M = 15-18°C, H = >18°C (64°F).

#### **Substratum Changes**

15. **Sediment Level** — L/M/H relative levels of unconsolidated sand/gravel/cobble along reef/sediment interfaces.
16. **Scour** — L/M/H relative extent of scoured reef surfaces within the defined site boundaries.
17. **Rock Movement** — L/M/H relative extent of overturned boulders or bedrock breakouts.

#### **Debris and Pollutants**

18. **Plant Wrack** — L/M/H levels of unattached algae or other drift plants within the site.
19. **Driftwood** — L/M/H levels of sticks, branches, and logs within the site.
20. **Shells** — L/M/H levels of dead shells, especially mussel shells.
21. **Dead Animals** — L/M/H levels of dead invertebrates, fish, birds, or mammals.
22. **Trash** — L/M/H levels of human debris including cans, bottles, plastics, and metal items.
23. **Oil/Tar** — L/M/H relative extent of fresh or weathered oil/tar within the site.
24. **Notes on Physical Conditions** — Enter any notes here about the physical conditions at the site.

#### **Birds and Mammals**

25. Select core categories and record the maximum number of birds or mammals seen at any one time during the sampling event, preferably upon arrival at site. Species not in the dropdown list can be added if necessary.
26. **Bird and Mammal Notes** — Enter any notes regarding the birds and mammals seen.

#### **Humans**

27. **Reef** — Record maximum number of people seen at any one time on the reef.
28. **Sand** — Enter the maximum number of people seen on the sand.
29. **Notes on Humans** (this heading not on the form) — Note in the space below the humans the relative behavior and notes on people up coast and down coast from the site.

## Plot Marker Loss/Repair and Other Notes

30. Enter any notes related to marker loss or repair.

\*When finished loading page 1 press the “Continue” button to go to page 2\*

## Page 2: Rocky Intertidal Monitoring Site-Wide Species Conditions

This form is best navigated by tabbing from one field to the next thus allowing the auto-dropdown feature to be activated.

### Features

- The Group code, Site, and Date are carried forward from the Field Event Log form.
- All fields have default values. These are not displayed to make it easier to see the data you have entered.
  - The defaults are:
    - Abundance — 0 = Absent
    - Appearance — ND = No Data
    - Recruitment — ND = No Data
- Form scrolls down to display remaining species
- Additional species can be added at the bottom of the form.

**Rocky Intertidal Monitoring Site-Wide Species Conditions**

Group:  Site:  Date:

Species	Abundance	Appearance			Recruitment	Notes
		Fertile/Flowers	Bleached	Damaged		
Intertidal Zone	ND=No Data 0=Absent				ND=No Data 0=Absent	
H=High	R=Rare				L=Low level	
M=Mid	U=Uncommon				M=Med level	
L=Low	P=Present				H=High level	
<b>Target Species in bold</b>	C=Common					
	A=Abundant					
cladophora columbiana						
ulva/enteromorpha						
<b>egregia menziesii</b>						
eisenia arborea						
endarachne/petalonia						
fucus gardneri						
halidrys dioica/cystoseira spp						
<b>hesperophycus californicus</b>						
<b>pelvetiopsis limitata</b>						
<b>postelsia palmaeformis</b>						
sargassum muticum						
scytophion spp						
<b>silvetia compressa</b>						
<b>endocladia muricata</b>						
chondracanthus canaliculatus						
mastocarpus papillatus						
mazzaella affinis						

Scroll Down for more species    Enter next Site    Save

Add Additional Species at bottom

Record: 1 of 1

### **Basic Information**

1. **Abundance** — Enter qualitative estimates of abundance or cover of species, in 5 levels, with “Present” representing the middle level. Consider only the optimum zone(s) for each species throughout the site.
2. **Appearance** — Score L/M/H relative levels of reproductive appearance (F) (macrophytes showing evidence of fertility), bleaching (B) (macrophytes only: e.g., appearing pale or translucent or red algae appearing greenish), or damage (D)(plants & animals: e.g., abraded, torn, broken, withered, diseased, injured, or dead individuals). To indicate that a species was typical /“healthy” in appearance enter “OK” in the “Damaged” field.
3. **Recruitment** — For appropriate species when evident, score L/M/H relative levels of recruit abundances (settlers that have become obvious since the previous sampling). This category is not practical for turf or other non-discrete algae and some invertebrates where determination would be too time-consuming.
4. **Notes** — Add any notes for the species found or not found.

### **Additional Species (or optional species)**

To add species not on the form, scroll to the bottom of the form and add them in the Additional Species area. Add the species Name, Abundance, Appearance, and Recruitment levels and any notes. There is no limit to the number of additional species that can be added. The species name field is linked to luOfficialSpeciesList, so any species added must be included in this table. Contact Melissa Miner to add a species to luOfficialSpeciesList.

**\*NOTE: DO NOT USE THE “ENTER NEXT SITE” BUTTON AT THE END OF THE SITE-WIDE SPECIES CONDITIONS FORM. It does not work properly and will result in the loss of previously entered data. Instead, save your data, close the form, and re-open to enter data for the next site.**

## **Photo Plot Data Entry Form**

Use this form to enter summarized photoplot data, that is, data that have been converted to percent (%) cover for selected target species plots.

### **Features**

- Default Group code automatically entered. This can be overridden.
- When you tab to a selection list it automatically drops down
- Move cursor over the six-letter Species label and full species name will appear.
- Target species automatically filtered for site selected.
- Quadrat list automatically filtered for target species selected.
- The form automatically totals the percentages entered and displays the total at the bottom of the screen. If the total exceeds 100%, the total turns red. If the total is not 100% when the SAVE button is clicked, a message will appear asking if you're sure this is correct. If it is, click OK. If not, click CANCEL and adjust the problem.
- The order of display of species can be changed to put the species found most often at the top of the list or to match the order on your datasheet to speed data entry.
- Optional species are controlled by a separate table allowing dynamic changes to the Optional Species list.
- Only the optional species for the group selected will be displayed.
- One screen generates records for all Core and Optional Species.
- A row of data is written for each species and optional species. It is not necessary to enter a zero for species not found.
- Enter one Quadrat at a time.
- "Not Sampled" button automatically enters a record for each species with a null value for the results. Use to show a quad was not sampled.

### **Form Design**

The photoplot data entry form is designed to enter results one plot at a time. When the Save button is clicked one row of data is written to the database for each core and optional species. A species for which no count was entered by default writes a record with a quantity of zero. This "No Count" entry is not the same as a "Not Sampled" entry. A No Count entry is for species looked for and not found. A zero is written to the database. All result fields default to a "No Count", zero entry, in the result field. A "Not Sampled" entry indicates that the species was not looked for. It is recorded by removing the zero from the result box and adding a qualifier of "Not Sampled" in the Qualifier box.

## Data Entry

### *Basic Information*

1. **Group Code** — Open the photoplot form by clicking on the Photoplot button in the Data Entry group on the MARINE Main menu. The photoplot data entry form opens with the group field populated with the default group and the cursor in the Season dropdown box. To change the default group value see p. 60: How to change the default parameters.
2. **Survey Season** — Select the season for the data you are entering. If you do not see the current season, see p. 49 for instructions on how to add a season code.
3. **Site ID** — The dropdown list opens and a list of all MARINE sites is displayed. Select your site from the list or type in the site's code (faster).
4. **Survey Date** — The Survey date dropdown list displays the available survey dates for the group, season, and site entered. These dates come from the Field Log Event table. If no dates are displayed, verify that the Field Log events have been entered.
5. **Target Species** — Select a target species from the list displayed. The target species list comes from the Photoplot Info table and is filtered by the chosen Group, Season, and Site ID.

6. **Quad** — Select the quadrat number. The quad list is populated from the Photoplot information table based on the site selected. If a plot has been recently added to a particular site, that plot's information will need to be added to tblPhotoPlotInfo before results data can be entered.

### ***Core Species***

1. **Species Result & Qualifier** – The species label above the qualifier and result boxes is the six-letter code assigned to the species. To view the full species name move the cursor over the six-letter code.
  - o **Result** — Enter the percent cover for a species in the result box. The result boxes default to zero. If you do not enter a result value, a row with a zero quality will be written to the database. A running total is maintained in the “Total % Cover” box at the bottom of the form. This total changes to red when the total is over 100%.
  - o **Qualifier** — The qualifier is used to “Qualify” the result. An example of qualifiers are < “less than” and > “greater than”. For a complete list of qualifiers see “luList05\_QualifierCodes”. For faster data entry when qualifiers are not needed, check “Skip Qualifier Tab” box in lower left corner of form. This enables you to tab through only result boxes and leave the qualifier boxes blank.
2. **Scoring Method** — Select the scoring method. The default is “Lab—Digitally”, but this can be changed. For instructions, see p. 60
3. **Scorer** — Select the scorer from the dropdown list. See p. 41 “qryPersonnelDropdownList” to restrict this list to just names in your group.
4. **Comments** — Enter any comments you would like to include with the data record. The comments will be repeated for each species and optional species record for that quadrat. For example, if part of a plot broke out that season, write the information into the comments section. That comment will be repeated with every data record for that plot. **\*Important\*** if you continue to enter data for successive plots, you must remove your comment or it will show up for these plots as well.

### ***Optional Species***

Enter results and qualifiers for any optional species. A group's optional species list must be defined prior to data entry. See p. 56 “How to add optional species”.

### ***Not Sampled***

Use this button when a quad was not sampled for a season. It will create a record for each species with a null value (blank) for the results instead of a zero. A zero indicates that a species was looked for and not found. A null value indicates that a species was not looked for.

When all results for the core and optional species have been entered, click on the “Save” button and a “DATA SAVED” message will be displayed. Use the “Return” button to return to the main menu only after saving data, otherwise data will be lost.

If you have another quadrat to enter, click on the “Continue” button. The photoplot data entry screen will be returned and the Basic Information will be retained. Be sure to change the quadrat number to the new number and remove any comments before adding new data for the next plot.

### **Controlling the Species display sequence**

The display sequence of the species across the form can be changed to allow the user to put the most common species at the beginning of the form to speed data entry. To change the display sequence, see p. 56: “How to change the species display sequence”. Changes need to be made before data entry if you want the order to take effect for your next entry.

## Transects Data Entry Form

This screen is for entering summarized transect data, that is, data that have been converted to percent (%) encountered for selected target species.

### Features

- Default Group code automatically entered. This can be overridden.
- When you tab to a selection list it automatically drops down.
- Move cursor over six-letter Species label and the full species name appears.
- Target species automatically filtered for site selected.
- Transect list automatically filtered for target species selected.
- The form automatically totals the percentages entered and displays the total at the bottom of the screen. If the total exceeds 100%, the total turns red.
- The order of display of species can be changed to put the species found most often at the top of the list or to match the order on your datasheet to speed data entry.
- Only optional species for the group selected will be displayed.
- One screen generates records for all Core and Optional Species.
- “Not Sampled” button automatically enters a record for each species with a null value for the results. Use to show a transect was not sampled.

**MARINE Database V2.0.1e - [Transects Data entry]**

File Edit View Insert Format Records Tools Window Help

Type a question for help

**MARINE Transects Data Entry**

Group: UCSC Season: FA07 Site ID: Survey Date: Target Species: Transect:

**Core Species**

PHYUND	PHYOYE	EGRMEN	EISARB	HALGYS	SARMUT	CRUCOR	NONCRU	ARTGOR	OTHRED	OTHBRO	OTHGRE
Qualifier Result:											
▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0

OTHPLA	ANTELE	PHRCAL	MYTCAL	BARNAC	OTHINY	ROCK	SAND	TAR	UNIDEN	OTHSUB
Qualifier Result:										
▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0

Comments: Total Phyllo % Cover: 0 Method: Scorer: Transect 10 Meter 100 points

**Optional Species**

CHOCAN	FILRED	GASSUB	GELSPP	HEDSES	MAZSPP	NEOLAR	ODOFLO	PRISPP
Qualifier Result:								
▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0	▼   0

Buttons: Skip Qualifier tab Not Sampled Return Save Total % Cover: 0

Form View NUM

## Form Design

The transect data entry form is designed to enter results one transect at a time. Clicking the “Save” button causes one row of data to be written to the database for each core and optional species. A species for which no count was entered writes a row with a quantity of zero. This “No Count” entry is not the same as a “Not Sampled” entry. A No Count entry is for species looked for and not found. A zero is written to the database. All result fields default to a “No Count”, zero entry in the result field. A “Not Sampled” entry indicates that the species was not looked for. It is recorded by removing the zero from the result box and adding a qualifier of “Not Sampled” in the Qualifier box.

## Data Entry

### *Basic Information*

1. **Group Code** — Open the Transects Data Entry form by clicking on the Transects button in the Data Entry group on the MARINE Main menu. The transects data entry form opens with the group field populated with the default group and the cursor in the Season dropdown list. To change the default group value see p. 60: How to change the default parameters.
2. **Survey Season** — Select the season for the data you are entering. If you do not see the current season, see p. 49 for instructions.
3. **Site ID** — The dropdown list opens and a list of all MARINE sites is displayed. Select your site from the list or type in the site’s code.
4. **Survey Date** — The Survey date dropdown list displays the available survey dates for the group, season, and site entered. These dates come from the Field Log Event table. If no dates are displayed, verify that the Field Log events have been entered.
5. **Target Species** — Select a target species from the list displayed. The target species list comes from the Transects Information table and is filtered by the selected Group, Season, and Site ID.
6. **Transects** — Select the appropriate transect. The transect list is populated from the Transects table based on the site selected. If a transect has been recently added to a particular site, that transect’s information will need to be added to tblTransectInfo before results data can be entered.

### *Core Species*

7. **Species Result & Qualifier** – The species label above the qualifier and result boxes is the six-letter code assigned to the species. To view the full species name move the cursor over the six-letter code.
  - **Result:** — Enter the species count in the result box. The result boxes default to zero. If you do not enter a result value, a row with a zero quality will be written to the database. A running total is maintained in the “*Total % Cover*” box at the bottom of the form. This total changes to red when the total is over 100%.

- **Qualifier** — The qualifier is used to “Qualify” the result. An example of qualifiers are < “less than” and > “greater than”. For a complete list of qualifiers see “luList05\_QualifierCodes”. For faster data entry when qualifiers are not needed, check “Skip Qualifier Tab” box in lower left corner of form. This enables you to tab through only result boxes and leave the qualifier boxes blank.
8. **Scoring Method** — Select the scoring method. The default is “Transect 10 Meter 100 points”. See p. 60 for how to change the default.
  9. **Scorer** – Select the scorer from the dropdown list. See p. 41 “qryPersonnelDropDownList” to restrict this list to just names in your group.
  10. **Comments** — Enter any comments you would like to include with the data record. The comments will be repeated for each species and optional species record for that transect. For example if part of a transect broke out that season, write the information into the comments section. That comment will be repeated with every data record for that transect. **\*Important\*** if you continue to enter data for successive plots, you must remove your comment or it will show up for these plots as well.

### ***Optional Species***

Enter results and qualifiers for any optional species. A group’s optional species list must be defined prior to data entry. See p. 57 “How to add optional species”.

### ***Not Sampled***

Use this button when a transect was not sampled for a season. It will create a record for each species with a null value (blank) for the results instead of a zero. A zero indicates a species looked for and not found. A null value indicates a species was not looked for.

When all the results for the core and optional species have been entered, click on the “Save” button and a “DATA SAVED” message will be displayed. Use the “Return” button to return to the main menu only after saving data, otherwise data will be lost.

If you have another transect to enter, click on the “Continue” button. The transect data entry screen will be returned and the Basic Information will be retained. Choose the next transect and enter the new data. Be sure to change the transect number to the new number and remove any comments before adding new data for the next transect.

### **Controlling the Species display sequence**

The display sequence of the species across the form can be changed to allow for faster data entry. To change the display sequence, see p. 57: “How to change the species display sequence.” Changes need to be made before data entry if you want the order to take effect for your next entry.

## Lottia gigantea Data Entry Form

This form is for entering summarized size and count information that has been totaled for each size class of *Lottia gigantea*.

### Features

- Default Group code automatically entered. This can be overridden.
- When you tab to a selection list it automatically drops down.
- The date dropdown box lists available survey dates based on Field Log Events previously entered for Group, Season, and Site selected.
- The plot list is filtered based on prior entries.
- More than one plot can be added on the same screen. (Saving entered data does not refresh the screen—continue entry for new plots or sites below last entered record).
- Basic Information is retained for each size count entry.
- The method is set to a default, but can be changed
- The size unit “MM” for millimeters is automatically entered
- Continuous form allows for an unlimited number of Size & Count entries
- Multiple measures and recorders can be entered.

**MARINE Database V2.0.1e - [frmLottiaGiganteaDataEntry : Form]**

File Edit View Insert Format Records Tools Window Help

Tahoma 9 B I U

**MARINE Lottia gigantea Data Entry**

**Basic Information**

Group: SCCWRP Season: SP07 Site: Test Date: 01-Jan-07 Time:

Plot: 2 Method: Circular Plot - 1 meter radius

**Size & Counts**

Size(mm)	Qualifier	Count	Comments
15		3	
*			

**Measurers**

Larry Cooper

Record: 1

**Recorder**

Bruce Bealer

Record: 1

Return (and Save) Save Record

Record: 1 of 1

The name of the person doing the recording. NUM

## Data Entry

### *Basic Information*

1. **Group Code** — Open the *Lottia gigantea* form by clicking on the Lottia button in the Data Entry group on the MARINe Main menu. The *Lottia gigantea* data entry form opens with the group field populated with the default group and the cursor in the Season dropdown list. To change the default group value, see p. 60: How to change the default parameters.
2. **Survey Season** — Select the season for the data you are entering. If you do not see the current season, see p. 49 for instructions.
3. **Site ID** — The dropdown box opens and a list of all MARINe sites is displayed. Select your site from the list or type in the site's code.
4. **Survey Date** — The Survey date dropdown list displays the available survey dates for the group, season, and site entered. These dates come from the Field Log Event table. If no dates are displayed, verify that the Field Log events have been entered.
5. **Time** — Enter the time the survey was conducted in 24-hour format. You do not need to enter the colon with the time.
6. **Plot** — Select the plot number. The plot list is populated from tblCountSizePlotInfo based on the site selected. The plot number can be changed after completing data entry for one plot to enter data for successive plots. You do not need to “Save” the records, simply select the new plot number and continue entering more size and count data into the next empty size and count fields. Pressing the tab key will move the cursor to the Size field. The Method field is skipped because it is set to the default method.
7. **Method** — The method code is set to the default method. The cursor does not tab to it. To change the method used, click on the arrow on the dropdown list or see p. 60 for how to change the default.

### *Size & Counts*

8. **Size** — Select a size from the dropdown list or enter a size directly. Note—if entering a size <10mm, you must first enter a “0” (e.g. 08, not 8). Also, the same size cannot be entered twice for the same plot, even if the qualifier is different (e.g. 15 no qualifier and 15 qualifier < will register as duplicates), so for sizes < 15 mm, either enter the actual size, or enter as 14 <.
9. **Qualifier** — Enter a qualifier if necessary, or leave blank (most common).
10. **Count** — Enter the total count for the size selected.
11. **Comments** — Enter any comments that you'd like to have associated with this size and count record.

**Note: If you start a new size count row and you decide you do not want it press the Escape (Esc) key ONCE to go back to the last record. You must be in a completed row to go to the Measurer or Recorder area.**

### *Measurers and Recorders*

12. **Measurers** — After all size and count data are entered for a site, click on the down arrow in the Measurers field and select the measurers' name. More than one measurer can be added. Samplers are not associated with plot numbers, so if you have different samplers for different plot numbers just enter them all together at the end. See p. 41 “qryPersonnelDropdownList” to restrict this list to just names in your group.
13. **Recorders** — Select recorders in the same manner as the Measurers.

Continue adding size and count records until all information has been entered. This form works different than the Photoplots and Transects forms. On those forms data are not recorded until the save button is clicked. On this form each time you move the cursor to the next size & count row a record is written to the database. If you make a mistake in an entry, scroll up to the size or count field on the form to be corrected and make the necessary changes. The new information will write over the old. You can also click in the size or count field for that record to change the plot number.

The SAVE RECORD button at the bottom of the screen is offered as reassurance to the data enterer. When SAVE is clicked, the form retains all information. No fields are reset. To enter data for additional plots or additional sites, tab to the empty record box at the end of the form, or click on it with your mouse, change the plot number and site if appropriate, and then enter new data. When you are done with data entry, press “Return and Save”.

**Note: There is no “Not Sampled” button for Lottia.** To indicate that a site or plot was not sampled, enter the appropriate Group, Season, Site, Date (fictitious if necessary), and Plot information, then enter Size = -99, Qualifier = NS, Count = null. You can enter your name for the measurer or leave this field blank.

## Black Abalone Data Entry Form

This form is for entering summarized size and count data that have been totaled for each size class of *Haliotis cracherodii*.

**\*NOTE—remember to enter 0's where they are real.** For example, if you have 3 abalone in plot 1, 0 in plot 2, and 5 in plot 3, remember to enter count = 0 in plot 2 (size = -99).

### Features

- Default Group code automatically entered. This can be overridden
- When you tab to a selection list it automatically drops down.
- Sites automatically filtered for Group selected.
- The date dropdown list displays the available survey dates based on Field Log Events previously entered for Group, Season, and Site selected.
- The plot list is filtered based on prior entries.
- More than one plot can be added on the same screen. (Saving entered data does not refresh the screen—continue entry for new plots or sites below last entered record).
- Basic Information is retained for each Size & Count entry.
- Continuous form allows for an unlimited number of Size & Count entries.
- The size unit “MM” for millimeters is automatically entered.
- Multiple measures and recorders can be entered.

The screenshot shows a software window titled "MARINE Database V2.0.1e - [frmAbaloneDataEntry : Form]". The window contains a form with the following sections:

- Basic Information:** Includes dropdown menus for Group (SCCWRP), Season (SP03), Site (Test), and Date (01-Jan-03). There is also a Plot dropdown and a Method dropdown (Timed Search 30 Minute) with a Time Period for Search field.
- Size & Counts:** Titled "Black Abalone", it features a table with columns: Size (mm), Size Qual., Count, and Comments. Two rows are visible, each with input fields for these columns.
- Recorder and Sampler:** Two separate sections, each with a dropdown menu and a "Record:" counter set to 1.
- Buttons:** "Return (and Save)" and "Save current record".
- Status Bar:** Shows "Record: 1 of 1" and "Form View".

## Data Entry

### *Basic Information*

1. **Group Code** — Open the Abalone form by clicking on the Abalone button in the Data Entry group on the MARINe Main menu. The Abalone data entry form opens with the group field populated with the default group and the cursor in the Season dropdown list. To change the default group value, see p. 60.
2. **Survey Season** — Select the season for the data you are entering. If you do not see the current season, see p. 49 for instructions.
3. **Site ID** — The dropdown list opens and a list of sites for the Group code selected is displayed. Select your site from the list or type in the site's code.
4. **Survey Date** — The Survey date dropdown list displays the available survey dates for the group, season, and site entered. These dates come from the Field Log Event table. If no dates are displayed, verify that the Field Log events have been entered.
5. **Plot** — Select the plot number. The plot list is populated from tblCountSizePlotInfo based on the site selected. The plot number can be changed after completing data entry for one plot to enter data for successive plots. You do not need to “Save” the records, simply select the new plot number and continue entering more size and count data into the next empty size and count fields. Pressing the tab key will move the cursor to the Size field. The Method field is skipped because it is set to the default method.
6. **Method** — The method code is set to the default method. The cursor does not tab to it. To change the method used, click on the arrow on the dropdown list or see p. 60 for how to change the default.
7. **Time Period for Search** — If a timed search is used then enter the beginning time in the first box and the end time in the second box. Times are always entered in the 24-hour format. Times can be entered with or without the colon.

### *Size & Counts*

8. **Size** — Select a size from the dropdown list or enter a size directly. Note—if entering a size <10mm, you must first enter a “0” (e.g. 05, not 5).
9. **Count** — Enter the total count for the size selected.
10. **Comments** — Enter any comments that you'd like to have associated with this size and count record.

**Note: If you start a new size count row and decide you do not want it press the Escape (Esc) key ONCE to go back to the last record. You must be in a completed row to go to the Sampler or Recorder area.**

### *Samplers and Recorders*

11. **Samplers** — After all size and count data are entered for a site, click on the down arrow in the Sampler field and select the sampler's name. More than one sampler can be added. Samplers are not associated with plot numbers, so if you have different

samplers for different plot numbers just enter them all together at the end. See p. 41 “qryPersonnelDropDownList” to restrict this list to just names in your group.

## 12. **Recorders** — Select recorders in the same manner as the Samplers.

Continue adding size and count records until all information has been entered. This form works different than the Photoplots and Transects forms. On those forms data are not recorded until the save button is clicked. On this form each time you move the cursor to the next size & count row a record is written to the database. If you make a mistake in an entry, scroll up to the size or count field on the form to be corrected and make the necessary changes. The new information will write over the old. You can also click in the size or count field for that record to change the plot number.

The SAVE RECORD button at the bottom of the screen is offered as reassurance to the data enterer. When SAVE is clicked, the form retains all information. No fields are reset. To enter data for additional plots or additional sites, tab to the empty record box at the end of the form, or click on it with your mouse, change the plot number and site if appropriate, and then enter new data. When you are done with data entry, press “Return and Save”.

**Note: There is no “Not Sampled” button for Abalone.** To indicate that a site or plot was not sampled, enter the appropriate Group, Season, Site, Date (fictitious if necessary), and Plot information, then enter Size = -99, Qualifier = NS, Count = null. You can enter your name for the measurer or leave this field blank.

### **Other Abalone**

Use the Species Count Size Form to enter data for other species of abalone.

### **Nearest Neighbor Data**

Nearest neighbor category counts are entered into a database separate from the MARINE database, called “AbaloneNearestNeighbor.mdb”. To obtain a copy of this database, contact Melissa Miner. Before entering nearest neighbor data you must complete all size/count abalone data entry in the MARINE database because data from the MARINE database are used to populate the AbaloneNearestNeighbor database.

The AbaloneNearestNeighbor database contains two tables. The first, tblAbaloneNearestNeighbor, is the table where you will enter your nearest neighbor information. The second tblSpeciesCountSize, is a linked table from the MARINE database. The link to this table must be updated each time you update your entry version of the MARINE database (typically before each data entry session for a new season). To update the link go to: Tools → Database Utilities → Linked Table Manager. Check the box next to tblSpeciesCountSize and also the box at the bottom that says “Always prompt for a new location”, then press OK. You will be asked to select the new location of tblSpeciesCountSize; find your current version of the MARINE entry database, select it and press Open. You should get a message that says “All selected linked tables were successfully refreshed”. Press OK and then close the linked table manager. This step ensures that you will have access to your newly entered abalone size/count data.

The next step is to populate tblAbaloneNearestNeighbor with the current season’s abalone size/count data. To do this, go to Queries and open

qryAppendNewSizeCountDataToNNTTable in design view. Do not double click on the query, as this will cause it to run. Instead, right click on it and select “Design View”. In the first, “GroupCode” column, check to make sure that your group code is listed in the criteria box. Next, in the “SamplingSeasonCode” column, change the season code to the code for which you will be entering data (e.g. SP07). If you are entering two season’s of data, you can enter them both, separated with an “or” statement (e.g. SP07 or FA07).

Finally, run the query. You may first want to check to make sure that you will be appending the correct data by pressing the “Datasheet View” symbol in the upper left corner (looks like a tiny datasheet just under “File”). This will show you all the records that will be appended to tblAbaloneNearestNeighbor. Return to Design View (triangle/ruler/pencil symbol in upper left—see Appendix C Icons) and run the query by pressing the red exclamation point. You will get a warning message that says that you are about to append XX# of rows. Check to make sure that this # seems about right and then press “Yes”.

Now open tblAbaloneNearestNeighbor and you should see your most current abalone data appended to the end of the table. Nearest neighbor categories will contain 0’s; change these 0’s to the appropriate values for each nearest neighbor category in each record. There is no need to save the table when you are finished entering nearest neighbor data—all changes are saved when the table is closed.

## Seastars Data Entry Form

This form is for entering summarized size and count information that has been totaled for each size class of *Pisaster ochraceus* and for entering count data for other seastar species.

**\*NOTE—remember to enter 0's where they are real.** For example, if you have 5 “Other than Orange” *Pisaster* and 0 “Orange” *Pisaster* in a plot, remember to enter color = “Orange”, size = -99, count = 0 (don't just skip it).

### Features

- Default Group code automatically entered. This can be overridden.
- When you tab to a selection list it automatically drops down.
- The date dropdown list displays the list available survey dates based on Field Log Events previously entered for Group, Season, and Site selected.
- The plot list is filtered based on prior entries.
- More than one plot can be added on the same screen. (Saving entered data does not refresh the screen—continue entry for new plots or sites below last entered record).
- Basic Information is retained for each size count entry.
- Continuous form allows for an unlimited number of entries.
- Multiple samplers and recorders can be entered.

The screenshot shows the MARINE Seastars Data Entry form. The window title is "MARINE Database V2.0.1e - [frmSeastarDataEntry : Form]". The menu bar includes File, Edit, View, Insert, Format, Records, Tools, Window, and Help. The toolbar contains various icons for file operations and data entry. The main form area is titled "MARINE Seastars Data Entry" and is divided into sections: "Basic Information" with dropdowns for Group (SCCWPR), Season (SP07), Site (test name), and Survey Date; and "Size & Counts" with a table. The table has columns for Species, Color, Size (mm), Count, and Comments. Two rows are visible: one for "pisaster ochraceus" with color "orange", size "20", and count "5"; and another for "pisaster ochraceus" with color "Not Sampled". Below the table are sections for "Recorder" and "Sampler", each with a dropdown and a "Record" field. At the bottom are "Return and Save" and "Save" buttons, and a status bar showing "Record: 1 of 1" and "Form View".

## Data Entry

### *Basic Information*

1. **Group Code** — Open the Seastars form by clicking on the Seastars button in the Data Entry group on the MARINe Main menu. The Seastars data entry form opens with the group field populated with the default group and the cursor in the Season dropdown list. To change the default group value see Section 60 for instructions.
2. **Survey Season** — Select the season for the data you are entering. If you do not see the current season, see p. 49 for instructions.
3. **Site ID** — Next tab to the Site ID field. The dropdown list opens and a list of all MARINe sites is displayed. Select your site from the list or type in the site's code and tab to the Survey date field.
4. **Survey Date** — The Survey date dropdown list displays the available survey dates for the group, season, and site entered. These dates come from the Field Log Event table. If no dates are displayed, verify that the Field Log events have been entered.
5. **Plot** — Select the plot number. The plot list is populated from tblCountSizePlotInfo based on the site selected. The plot number can be changed after completing data entry for one plot to enter data for successive plots. You do not need to “Save” the records, simply select the new plot number and continue entering more size and count data into the next empty size and count fields. Pressing the tab key will move the cursor to the Size field.
6. **Method** — The method code is set to the default method. The cursor does not tab to it. To change the method used, click on the arrow on the dropdown list or see p. 60 for how to change the default.
7. **Time Period for Search** — If a timed search is used then enter the beginning time in the first box and the end time in the second box. Times are always entered in the 24-hour format. Times can be entered with or without the colon.

### *Size & Counts*

8. **Species** — Select a species. The default is “Pisaster ochraceus”.
9. **Color** — Select a color or “not sampled”. If you are recording *P. ochraceus* color, data entry is quickest if “other than orange” is your default color, since this is typically the most common color category. Also, when you enter your “orange” records you can simply tab to the Color field and enter an “O” to get “orange” to appear (rather than selecting from the dropdown list). See p. 61 for how to change the default color.
10. **Size** — Select a size from the dropdown list or enter a size directly. Note—entering a size <10mm, you must first enter a “0” (e.g. 05, not 5).
11. **Count** — Enter the total count for the size selected.
12. **Comments** — Enter any comments that you'd like to have associated with this size and count record. When you move the cursor to the next size field, either by tabbing or by selecting with the cursor a record is written to the database.

**Note: If you start a new size count row and decide you do not want it press the Escape (Esc) key ONCE to go back to the last record. You must be in a completed row to go to the Sampler or Recorder area.**

### *Samplers and Recorders*

13. **Samplers** — After all size and count data are entered for a site, click on the down arrow in the Sampler field and select the sampler's name. More than one sampler can be added. Samplers are not associated with plot numbers, so if you have different samplers for different plot numbers just enter them all together at the end. See p. 41 “qryPersonnelDropdownList” to restrict this list to just names in your group.
14. **Recorders** — Select recorders in the same manner as the Samplers.

Continue adding size and count records until all information has been entered. This form works different than the Photoplots and Transects forms. On those forms data are not recorded until the save button is clicked. On this form each time you move the cursor to the next size & count row a record is written to the database. If you make a mistake in an entry, scroll up to the size or count field on the form to be corrected and make the necessary changes. The new information will write over the old. You can also click in the size or count field for that record to change the plot number.

The SAVE RECORD button at the bottom of the screen is offered as reassurance to the data enterer. When SAVE is clicked, the form retains all information. No fields are reset. To enter data for additional plots or additional sites, tab to the empty record box at the end of the form, or click on it with your mouse, change the plot number and site if appropriate, and then enter new data. When you are done with data entry, press “Return and Save”.

**Note: There is no “Not Sampled” button for Seastars.** To indicate that a site or plot was not sampled, enter the appropriate Group, Season, Site, Date (fictitious if necessary), Plot, Method, and Species information, then enter Color = Not Sampled, Size = -99, Qualifier = NS, Count = null. You can enter your name for the measurer or leave this field blank.

## Helpful Hints for Data Entry

*\*\*Note: If you change data in a table, form or query, Access saves that change through the entire database.*

### **Using Forms Efficiently**

- Use the tab key to move to next field (rather than your mouse) for faster data entry.
- If you made a mistake in a record and are still in that record, to get out of it just press “ESC” on your keyboard.
- Remember to check the “skip qualifier tab” button on the Photoplot and Transect data entry forms.
- Order species names on the Photo & Transect data entry forms to match your datasheet for faster data entry.
- If you know your site codes, it may be quicker to type them into the “site” field, rather than searching through the dropdown list.
- Similarly, if you have numerous personnel, it may be faster to begin typing their names into the “sampler” & “recorder” fields, rather than searching for them in the dropdown lists. Their name should come up after typing just a few letters (to restrict your dropdown list to personnel from your group only, run qryPersonnelDropDownList (see p. 41).
- Changing the default settings of a form may speed data entry (e.g. changing the default SurveySeasonCode from FA/SP to SU for summer samples). See p. 60 for a complete list of instructions on changing defaults and modifying forms.
- Keep a list of any changes that you make to the default settings in the data entry forms or queries that you run to make data entry quicker (e.g. qryPersonnelDropDownList). You will likely need to download a newer version of the MARINe data entry version for your group in the future, and it will be much faster to make the necessary modifications if you have a list to work from.
- When you exit the database it automatically saves new complete records. It is a good idea to save it anyway.

### **Manipulating Tables & Changing Data Directly in Tables**

Once data entry forms are closed, data are saved to one of the three main data tables and cannot be changed through the entry forms. Changes can be made to **new** data (no associated activity date) directly in the data tables or by using queries to change a subset of data (see below). Always use caution when changing data directly in the tables to ensure that no errors are introduced (e.g. spelling, case), as there is often no built in check for many types of errors. Use the guidelines below to aid in data manipulation within tables.

- Do not leave tables open while entering data as this may result in errors.

- See the list of Access icon definitions on p. 81, Appendix C for help with data manipulation in tables.
- If you need to enter data into a field that duplicates the data in that field from the row above, hold the Control key and press the Signal Quote key (Ctrl + ' ).
- If you want to sort a field in a table, right click on the field heading and select “sort ascending” or “sort descending”
- To show only records from your group in a table, click on any box containing your group’s code under the GroupCode field and then filter the records using the symbol that looks like a funnel with a lightning bolt (see icons in Appendix C) at the top of the page. Filtering can be done multiple times, and for multiple fields (e.g. you could filter out just records for UCSC FA06 mytilus plots). To remove the filter, click on the button that looks like a funnel (no lightning bolt).
- Don’t use spaces, periods, slashes or other symbols in naming conventions. Instead use underscores or capital letter characters. Access is case insensitive so they will not affect your reporting or results. However, make sure that species names, plot names etc. are consistent with previous entries. Many statistical programs are case sensitive, so case consistency is important.

## **Querying Data**

Often, the quickest way to find data records that require correction is to design a simple query that will return a subset of records based on the information that you provide in the query fields. For example, you can include SiteID, SamplingSeasonCode, PlotID, and TargetSpecies fields in a query, and specify particular criteria for each of these fields to get only the records that require changing. When you run the query, you will get a “table” containing a subset of records, and any changes that you make to these records will be reflected in the main data table where the records originate from. Use the guidelines below to aid in query design. See “Queries” on p. 41 for examples.

- See the list of Access icon definitions on p. 81, Appendix C for help with data manipulation using queries
- Move columns within queries by highlighting and dragging to desired location.
- To sort by multiple fields, arrange the field columns in the order that you’d like to sort them from left to right, and then select Sort—Ascending for each field.
- If you want to see better what you have typed into a criteria box, right click and select “zoom”.
- If you have a systematic error in data that have not yet been uploaded by SCCWRP (these will have no activity date in the table), you can fix it by running an update query. Put your incorrect name/data in the “criteria” box and the correct name/data in the “update to” box. For example, if you are recording reconnaissance data for Pachygrapsus and you spelled it wrong when entering it on the form, you would enter “Pachygrapsis” in the “criteria” box and Pachygrapsus in the “update to” box. It is a good idea to always run a select query (using “Pachygrapsis” in the “criteria” box in this ex.) before running an update query to ensure that only the records requiring change are being updated. You can check the # of records returned in your

select query against those being changed in your update query to make sure they match.

- To query a range of dates or values use the tools in the examples below in the expression builder:

<b>Expression</b>	<b>Meaning</b>
>234	Numbers greater than 234
Between #2/2/93# And #12/1/93#	Dates from 2-Feb-93 through 1-Dec-93
<100	Numbers less than 100
>="Callahan"	All names from Callahan through the end of the alphabet
UCSC or PISCO	Returns all records for UCSC <b>and</b> PISCO
not PISCO	Returns all records except those for PISCO group
like "myt*"	Returns all records beginning with "myt"

## Data Entry Checklist

Use the following list to error-check your data before sending in to SCCWRP

1. Were 0's were entered where appropriate (e.g. 0 orange Pisaster in plot 3)?
2. Were the error-checking queries run (see below)?
3. Do the number of new records in each of the 3 main tables (tblPhotoPlots, tblTransects, tblSpeciesCountSize) seem about right? See "Helpful Hints for Data Entry" above for how to filter out records for a single season, or query data records for the newly entered season(s).
4. Do cases match other records in the database for site codes, sampling season codes, etc.? This is only an issue for groups importing data from their own database or for changes made directly within tables. Entry via the MARINE data-entry forms ensures standardization.
5. Are all fields consistent with the database format (e.g. use numerical data only in PlotID field)? This will only be an issue if you have added or changed plot information in the information tables.
6. If possible, make quick graphs of target species to check for erroneous data. If trends don't appear to agree with what you think is correct for a site, double check your data.

## Sending Data

After data entry is complete, and data have been error-checked (see queries below) and corrected if necessary, you are ready to send your data to SCCWRP to be uploaded to the main MARINE database. The Send Data button is used to select data that have not been sent to SCCWRP and create an Access database file to store it in that can be sent as an email attachment. Do not press the "Send Data" button until your data entry is complete for a season.

### *How it works*

- When you click on the "Send Data" button, the first thing the database does is select the records to send. Each table has an "Activity Date" field, which is empty for records not yet transmitted to SCCWRP. The program selects all the records without an Activity date and creates a new Access database with tables for each MARINE database table in which it found records without an activity date. All tables are checked, not just result tables. This way we can capture changes to the lookup and information tables. It then loads the tables with the new records and creates a file that can be attached in an e-mail to SCCWRP.
- After pressing the "Send Data" button, you will get a message that tells you what the file name is, and where it can be found.
- The file name is constructed by concatenating the Default user group code and a timestamp. Thus, your file name should be your group code plus today's date and the time at which you created the file. An example is "SCCWRP 22042003100811",

created by SCCWRP on 4/22/2003 at 10:08. If you did not write down your file name, you should be able to figure it out from the date/time code.

- New data files are stored in your “My Documents” folder. An example file path is: *C:\Documents and Settings\Bruceb\My Documents\SCCWRP 22042003102210.mdb*
- Attach your new data file to an e-mail with “New Data to Upload” as the subject and send to: [bruceb@sccwrp.org](mailto:bruceb@sccwrp.org), and cc: [larryc@sccwrp.org](mailto:larryc@sccwrp.org).
- It is very important that “activity dates” are not removed, as this will cause duplicate data to be sent. The exception to this is if you change an information or lookup table record. You will be required to open the table and remove the activity date so the changed data can be transmitted.

## Data Analysis

These features are currently not functioning in the MARINe database but a set of queries have been added (next section) to aid in data extraction for analysis in other statistical programs.

## Queries

Below are a series of queries designed to aid you in data entry, error checking, and data extraction. You can also write queries that are more specifically tailored to your needs. To share queries with others, or to move queries from an old version of the MARINe database to a new one, go to the SQL view and copy the SQL language. You can then send this as a text file, or paste it into a blank query form to add it to a new database version.

### Data Entry Aids

#### qryPersonnelDropdownList

This query allows you to shorten your Personnel list to just those names in your group by adding an end date to all names not in your group. This change will only affect your group’s entry version of the database, not the main MARINe database. It is located under “Groups”—“Data Entry Aids” in the Access window (to the left of the MARINe Main Menu).

To run the query:

1. Right click on qryPersonnelDropdownList from the “Data Entry Aids” folder and open in design view.
2. Under the “GroupCode” criteria field, enter “not + your group code” (e.g. “not UCSC”).
3. Run the update query. You will get the warning message: “You are about to update X # of rows”—click ok.

### Error Checking

The following queries can all be found under “Groups”—“Error Checking” in the Access window (to the left of the MARINe Main Menu) and are designed to aid you in spot-checking your data for glaring errors before they are sent in to SCCWRP for uploading.

Make sure to **run all queries on a copy of your entry version of the MARINE database** in case changes to the data accidentally occur when the queries are run. Make sure to give this copy a name that easily distinguishes it from your main MARINE entry version (e.g. MARINEV2.0.1UCSCDataEntryFA06\_ErrorCheck). Accidental changes are unlikely, as they can occur only if select queries (all in this section) are changed to another type of query (e.g. update, delete), but not worth the risk. If you do find errors in your data, make sure that the necessary changes are made in your main entry version of the MARINE database, not in the copy you are using for error checking. After error-checking is complete, it is a good idea to delete the copy of the database used for error-checking to avoid future confusion.

## Queries for Checking Photoplot Percent Cover Totals

### qryTOTAL\_Photoplots

This query will give you the total % cover for each photoplot, as well as for individual species, for a specified sampling season. This is an extra check (in addition to the total given on the entry form) to allow you to verify that all plots total to 100 (or less than 100 if points were missing).

To run the query:

1. Right click on qryTOTAL\_Photoplots from the “Error Checking” folder and open in design view.
2. Under the GroupCode criteria field, enter your group’s code.
3. Under the SamplingSeasonCode criteria field, enter the desired code.
4. Run the select query & check to make sure that all totals=100 (or make sense if they do not).

### qryPhotoXXTotal

These queries will give you the total number of points for the target species plus one or two additional species for a specified plot type (TargetSpecies) and sampling season (SamplingSeasonCode). The purpose is to allow you to quickly verify that the percent cover of select species are approximately what you’d expect, based on your knowledge of the plots (e.g. is there high cover of mussels in the mussel plots? If not, does that make sense for the site?). Obviously this data check will only be useful to those familiar with their group’s sites. There is one query for every possible Target Species, so select only those queries that are appropriate for your group.

Complete list of queries for checking percent cover of individual photoplot species:

#### Algae

qryPhotoSilvetiaTotal  
 qryPhotoPelvetiopsisTotal  
 qryPhotoHespTotal  
 qryPhotoFucusTotal  
 qryPhotoEndoTotal  
 qryPhotoMastoTotal  
 qryPhotoMazzTotal  
 qryPhotoNeorhodomelaTotal  
 qryPhotoRedAlgaeTotal

#### Invertebrates

qryPhotoAnthoTotal  
 qryPhotoBarnTotal  
 qryPhotoTetraclitaTotal  
 qryPhotoSemibalTotal  
 qryPhotoPollTotal  
 qryPhotoMytilusTotal

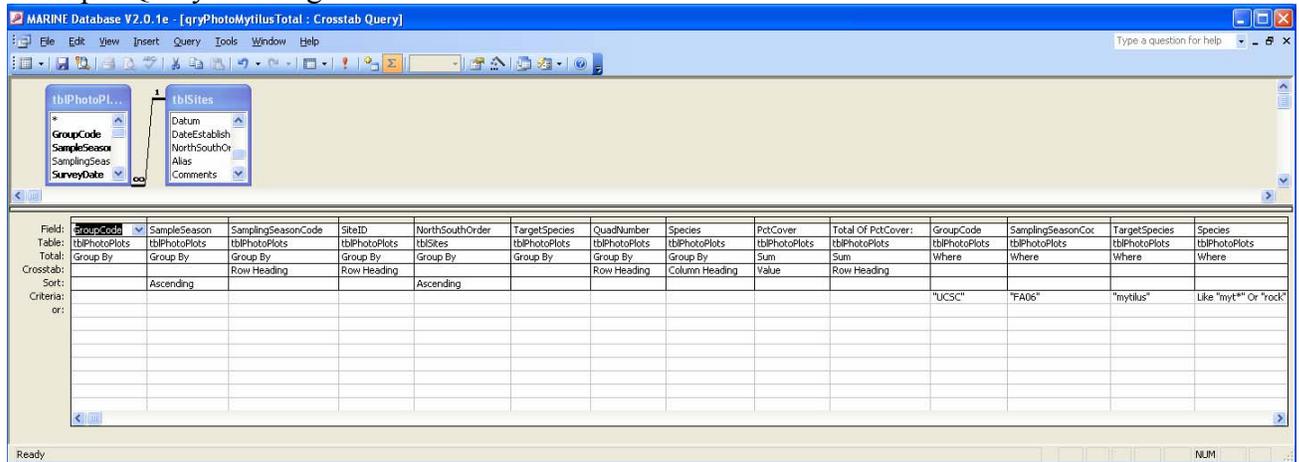
#### Other

qryPhotoRecoveryTotal  
 qryPhotoTarTotal

To run the queries:

1. Right click on desired query (e.g. qryPhotoMytilusTotal) from the Error Checking folder under “Groups” in the Access window and open in “design view”.
2. Under the GroupCode criteria field, enter your group’s code.
3. Under the SamplingSeasonCode criteria field, enter the desired code.
4. Under Species, check to see that the Species names listed in the Criteria field are appropriate for your plots. You can more easily see this box by right clicking on it and selecting “zoom”. If changes are made, make sure to use correct spellings or abbreviations or no records will return.
5. Run the select query (press ! on toolbar) & check to make sure that all totals are approximately what you’d expect, based on your knowledge of the site (e.g. are there barnacles in the barnacle plots?)

### Example Query in Design View



This example will give you the percent cover for *Mytilus californianus* and rock in the *Mytilus* plots for UCSC sites sampled in FA06. By using Like “myt\*” in the Species field, you do not have to type in the full name of the species that you would like to check. This saves time and potential frustration, because it is easy to make spelling errors when long species names are typed in.

## Queries for Checking Transect Percent Cover Totals

### qryTOTAL\_Transects

This query will give you the total percent cover for each transect, as well as for individual species, for a specified sampling season. This is an extra check (in addition to the total given on the entry form) to allow you to verify that all transects total to 100 plus the number of understory *Phyllospadix* points.

To run the query:

1. Right click on qryTOTAL\_Transects from the Error Checking folder and open in design view.

2. Under the GroupCode criteria field, enter your group's code.
3. Under the SamplingSeasonCode criteria field, enter the desired code.
4. Run the select query & check to make sure that all totals=100 plus the # of *Phyllospadix* understory points (or make sense if they do not).

### **qryPhyllospadixTotal**

This query will give you the total percent cover of *Phyllospadix* overstory and understory so that you can quickly assess whether the values are approximately correct, based on your knowledge of the site (e.g. do you expect cover to be high or low?)

To run the query:

1. Right click on qryPhyllospadixTotal from the Error Checking folder and open in design view.
2. Under the GroupCode criteria field, enter your group's code.
3. Under the SamplingSeasonCode criteria field, enter the desired code.
4. Run the select query & check to make sure that all totals are about what you'd expect for each site.

### **Query for Checking Count/Size Species Totals**

#### **qryTOTAL\_CountSizeSpecies**

This query allows you to check your *Lottia gigantea*, seastar, and black abalone totals against your field data sheet totals.

To run the query:

1. Right click on qryTOTAL\_CountSizeSpecies and open in design view.
2. Under the GroupCode criteria field, enter your group's code.
3. Under the SamplingSeasonCode criteria field, enter the desired code.
4. Run the select query & check to make sure that all totals agree with field data sheet totals for each site.

### **Correcting Errors**

If errors in new data are found using the above queries or other error checking methods before they are sent to SCCWRP to be uploaded, they can be changed directly in the tables by either finding the record that requires changing in the table itself, or by running a select query to locate the incorrect data, and changing them in the query result table (contact Melissa Miner for details on how to do this). If errors are found in historical data, or in data that have already been sent to SCCWRP, send a change request to Melissa Miner.

## **Data Extraction**

The following queries can be used to extract data in a format that is compatible with many statistical programs. They can be found under the “Data Extraction” folder under “Groups” in the Access window.

### **qryPhotoplot\_NoLump**

This query returns Photoplot data for all species in all plot types for a specified sampling period, using original species codes. Species are not lumped, so the user can see exactly which species were scored over time, but there will be many null records for species that were not scored or were scored under different name codes over time.

To run the query:

1. Right click on qryPhotoplot\_NoLump and open in design view.
2. Under the GroupCode criteria field, enter your group’s code (or leave blank for all groups).
3. Under the SampleSeason criteria field, enter the range of sample #'s for which you would like to extract data or leave blank for all. See luList03\_MARINECommonSeason for a complete list of sample season #'s (listed in Marine Season column), and their associated sample season codes (e.g. FA06 = 103).
4. If a subset of TargetSpecies is desired, enter the name(s) of these TargetSpecies in the criteria field of this column. Otherwise, leave blank for all.
5. Run the query.

### **qryPhotoplotSpeciesLump**

This query returns Photoplot data for all species categories listed in the PhotoLump column of luOfficialSpeciesList (the species that all MARINE groups have agreed to score) in all plot types for a specified sampling period. Species are lumped, but scoring was historically not consistent among or within groups over time, so there will be null records for species that were not historically scored.

To run the query:

1. Right click on qryPhotoplotSpeciesLump and open in design view.
2. Under the GroupCode criteria field, enter your group’s code (or leave blank for all groups).
3. Under the SampleSeason criteria field, enter the range of sample #'s for which you would like to extract data or leave blank for all. See luList03\_MARINECommonSeason for a complete list of sample season #'s (listed in Marine Season column), and their associated sample season codes (e.g. FA06 = 103).
4. If a subset of TargetSpecies is desired, enter the name(s) of these TargetSpecies in the criteria field of this column. Otherwise, leave blank for all.
5. Run the query.

### **qryTransect\_NoLump**

This query returns Transect data for all species and all transect types for a specified sampling period, using original species codes. Species are not lumped, so the user can see exactly which species were scored over time, but there will be many null records for species that were not scored or were scored under different name codes over time.

To run the query:

1. Right click on qryTransect\_NoLump and open in design view.
2. Under the GroupCode criteria field, enter your group's code (or leave blank for all groups).
3. Under the SampleSeason criteria field, enter the range of sample #'s for which you would like to extract data or leave blank for all. See luList03\_MARINECommonSeason for a complete list of sample season #'s (listed in Marine Season column), and their associated sample season codes (e.g. FA06 = 103).
4. If a subset of TargetSpecies is desired, enter the name(s) of these TargetSpecies in the criteria field of this column. Otherwise, leave blank for all.
5. Run the query.

### **qryTransectSpeciesLump**

This query returns Transect data for all species categories listed in the TransectLump column of luOfficialSpeciesList (the species that all MARINE groups have agreed to score) in all plot types for a specified sampling period. Species are lumped, but scoring was historically not consistent among or within groups over time, so there will be null records for species that were not historically scored.

To run the query:

1. Right click on qryTransectSpeciesLump and open in design view.
2. Under the GroupCode criteria field, enter your group's code (or leave blank for all groups).
3. Under the SampleSeason criteria field, enter the range of sample #'s for which you would like to extract data or leave blank for all. See luList03\_MARINECommonSeason for a complete list of sample season #'s (listed in Marine Season column), and their associated sample season codes (e.g. FA06 = 103).
4. If a subset of TargetSpecies is desired, enter the name(s) of these TargetSpecies in the criteria field of this column. Otherwise, leave blank for all.
5. Run the query.

### **qryAbaloneSizeFreq**

This query returns black abalone size and count data for all plots over a specified sampling period.

To run the query:

1. Right click on qryAbaloneSizeFreq and open in design view.

2. Under the GroupCode criteria field, enter your group's code (or leave blank for all groups).
3. Under the SampleSeason criteria field, enter the range of sample #'s for which you would like to extract data or leave blank for all. See luList03\_MARINECommonSeason for a complete list of sample season #'s (listed in Marine Season column), and their associated sample season codes (e.g. FA06 = 103).
4. Run the query.

### **qryLottiaSizeFreq**

This query returns *Lottia gigantea* size and count data for all plots over a specified sampling period.

To run the query:

1. Right click on qryLottiaSizeFreq and open in design view.
2. Under the GroupCode criteria field, enter your group's code (or leave blank for all groups).
3. Under the SampleSeason criteria field, enter the range of sample #'s for which you would like to extract data or leave blank for all. See luList03\_MARINECommonSeason for a complete list of sample season #'s (listed in Marine Season column), and their associated sample season codes (e.g. FA06 = 103).
4. Run the query.

### **qryPisasterSizeColorFreq**

This query returns *Pisaster ochraceus* color, size, and count data for all plots over a specified sampling period. It can be modified to return count data for additional seastar species by removing "pisaster ochraceus" from the Species criteria field.

To run the query:

1. Right click on qryPisasterSizeColorFreq and open in design view.
2. Under the GroupCode criteria field, enter your group's code (or leave blank for all groups).
3. Under the SampleSeason criteria field, enter the range of sample #'s for which you would like to extract data or leave blank for all. See luList03\_MARINECommonSeason for a complete list of sample season #'s (listed in Marine Season column), and their associated sample season codes (e.g. FA06 = 103).
4. Run the query.

## Maintenance Data Tables: How to Make Modifications and Additions

Maintenance data are infrastructure data such as site names and locations, plot sizes and sampling methods, and personnel names. If this is the first time that data are being entered for your group, you will need to populate many of the tables listed below with the required information. You may also need to modify a subset of maintenance tables if changes to your group's sites occur. Maintenance data must be entered before adding results data. Most utility tables have their own form for adding new records, but changing existing records or deleting records must be done in the tables themselves. Maintenance data forms can be found under the "Utility" section of the MARINe switchboard under either the "Lookup Tables" or the "Information Tables". Tables without forms need to be opened directly to modify, and are located under "Objects", "Tables" in the Access menu. Some tables may be hidden files. To view them go to Tools—Options—View—and check "Hidden objects".

### **Lookup Tables**

Lookup tables are used to provide for speed of data entry and accuracy of the data input. They are lists of values that usually don't change. The lookup table Maintenance menu provides access to the individual maintenance forms for many lookup tables. Use these forms to add new records. Changes and deletions should be made directly to the tables. Lookup table names are listed next to each data type below. Alternatively, you can send changes to Melissa Miner to be updated directly in the main MARINe database.

### **Surveying Groups (lulist01\_SurveyingGroups)**

Make any changes to the Surveying Group records. If adding a new Group you must first obtain the Group code from the MARINe Data Manager.

- **Adding a new record** – To add a new record, click on the new record button on the bottom of the form (right arrow followed by the asterisk ►\* ). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** –To change information for an existing record, open the table and make the necessary changes. Then delete the activity date so that the change is incorporated into the main MARINe database.

### **Personnel (lulist02\_Personnel)**

Add or change personnel records. Personnel records are never deleted. When a person is no longer associated with a group a "Last Date" is entered. Records with a last date do not appear on any personnel dropdown lists.

1. **Additions:** Scroll through the table to find the last Personnel record added for your group. Your new PersonnelID # will be the next consecutive #.

- Add new personnel so their names will be available in the various dropdown lists by pressing the new record button (arrow\*) at the bottom of the table. This will give you a blank row.
  - Enter a unique Personnel ID—your group code plus 4 digits (e.g. UCSC0001).
  - Enter your GroupCode and the first and last name of your new personnel. All other fields are optional, although a first date is useful.
2. **Changes:** To change information for an existing record, open the table and make the necessary changes. Then delete the activity date so that the change is incorporated into the main MARINE database.
  3. **Removals:** Open the table and add an “End Date” to the personnel record. Then delete the activity date so that the change is incorporated into the main MARINE database. The End Date will prevent names from appearing in dropdown lists, but retain their information for historical purposes. Do not remove a personnel record from the luList02 Personnel table for any reason.

### Season Code (luList03\_MARINECommonSeason)

There is no entry form for adding seasons, so it must be added directly to the table. When adding a new season year you must add a record for all four seasons. To add a new season year open the table and scroll to the bottom and in the new record add the next consecutive number to the MARINE Season. Next, add the year. The season seq is used to sort the seasons within a year in proper order. It is also used so that only spring and fall seasons show up in the dropdown lists. Finally, enter the season code and name. Do not enter an activity date.

Note: if you are entering data for the summer season, your season code may be present in the luList03\_MARINECommonSeason table, but not show up in the drop down lists on data entry forms because they are designed to show only the FA & SP seasons. If this is the case, you can either manually type your season code (e.g. SU07) into the season code box each time, or you can change the drop down list so that the summer seasons appear. The default setting can be changed by opening qryluSeasons in the design view and changing the criteria under the field “SeasonSeq” to “2” instead of “1 or 3”.

### Methods (luList04\_Methods)

Add or change methods. Do not delete any methods, as they may be part of the historical records. Some drop down method lists are limited, or subset, by queries to limit the list of methods to those appropriate for the particular surveying type. A list of all queries can be found in table 2 of Appendix A

- **Adding a new record** – To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.

## Qualifiers (lulist05\_QualifierCodes)

Qualifier codes are used to “Qualify” numeric entries. Make changes to qualifier codes on this form. Do not remove any qualifier codes.

- **Adding a new record** – To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.
- **Sequence field** – The sequence field is used to control the order in which the items are displayed in a dropdown list. See: “How to re-order the sequence field in lookup lists” on p. 61 for instructions on changing the order of dropdown items.

## Units (lulist07\_Units)

Units are used to indicate what unit of measure a value is recorded in. Add or change records. Do not delete any records as there may be historical records referencing them.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.

## Roles (lulist08\_Roles)

Roles are activities or positions that are associated with personnel. Roles allow the recording of which person performed which activities during a surveying event. There is no entry form for personnel roles, so changes and additions must be made directly to the table.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.

## Islands (lulist09\_Islands)

Islands are associated with sites. The island of “Mainland” allows us to separate island sites from mainland sites. Use this form for additions and changes. Do not delete any islands.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.

## Survey Types (lulist10\_SurveyTypes)

A lookup list of the types of surveys; these are currently not associated with any data tables and thus do not require changing.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.

## Lottia Sizes (lulist11\_LottiaSizes)

This table populates the size class lookup list on the *Lottia gigantea* Data Entry form. Add size classes as needed.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.
- **Sequence field** – The sequence field is used to control the order in which the items are displayed in a dropdown list. See: “How to re-order the sequence field in lookup lists” on p. 61 for instructions on changing the order of dropdown items.

## Abalone Sizes (lulist12\_AbaloneSizes)

This table populates the size class lookup list on the Abalone Data Entry form. Add or remove size class as needed.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.

## Ochre Seastars Size (lulist13\_OchreSeastars)

This table populates the size class lookup list on the Ochre Seastars Data Entry form. There is no entry form for seastar size classes, so additions must be made directly to the table.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.

## Counties (lulist14\_Counties)

Counties are associated with sites. Add or change counties as needed. Do not delete any counties.

- **Adding a new record** – To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – To change information for an existing record, open the table and make the necessary changes. Then delete the activity date so that the change is incorporated into the main MARINE database.

## Field Log Values (lulist16\_FieldLogValues)

These values are used to populate the “Condition” dropdown lists on the Field Log form. Use the sequence field to control the order of display in the drop down list.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new

record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.

- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.
- **Sequence field** – The sequence field is used to control the order in which the items are displayed in a dropdown list. See: “How to re-order the sequence field in lookup lists” on p. 61 for instructions on changing the order of dropdown items.

### **Field Abundance (lulist17\_FieldAbundance)**

This list populates the “Abundance” drop down list on the “Site-Wide Conditions” form. Use the sequence field to control the order of display in the drop down list.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.
- **Sequence field** – The sequence field is used to control the order in which the items are displayed in a dropdown list. See: “How to re-order the sequence field in lookup lists” on p. 61 for instructions on changing the order of dropdown items.

### **Field Appearance (lulist18\_FieldConditions)**

This table populates the “Appearance” dropdown list on the Site-Wide Conditions form. Use the sequence field to control the order of display in the drop down list.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.
- **Sequence field** – The sequence field is used to control the order in which the items are displayed in a dropdown list. See: “How to re-order the sequence field in lookup lists” on p. 61 for instructions on changing the order of dropdown items.

## Recruitment (lulist20\_RecruitmentCodes)

Recruitment codes populate the recruitment dropdown list on the Site-Wide Conditions form. Use the sequence field to control the order of display in the drop down list.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.
- **Sequence field** – The sequence field is used to control the order in which the items are displayed in a dropdown list. See: “How to re-order the sequence field in lookup lists” on p. 61 for instructions on changing the order of dropdown items.

## Field Event Birds (lulist21\_FieldEventBirds)

This table populates the lookup list for birds on the field event form. Use the sequence field to control the order of display in the drop down list.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.
- **Sequence field** – The sequence field is used to control the order in which the items are displayed in a dropdown list. See: “How to re-order the sequence field in lookup lists” on p. 61 for instructions on changing the order of dropdown items.

## Field Event Mammals (lulist22\_FieldEventMammals)

This table populates the lookup list for mammals on the field event form. Use the sequence field to control the order of display in the drop down list.

- **Adding a new record** – Because there needs to be consistency among all groups for this table, check with Melissa Miner before adding a new record. To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – Changes to existing records should generally not be made in this lookup table without consulting Melissa Miner.

- **Sequence field** – The sequence field is used to control the order in which the items are displayed in a dropdown list. See: “How to re-order the sequence field in lookup lists” on p. 61 for instructions on changing the order of dropdown items.

### **Official Species List (luOfficialSpeciesList)**

This Official Species List does not have a change form, and should not be modified in any way without first consulting Melissa Miner, and receiving approval from Jack Engle. This table lists all species and species name derivations present throughout the entire MARINE database. If a species is not included in this table, it cannot be entered into the database. The primary functions of the Official Species List table are to 1) ensure consistency of species (and proper spelling) present throughout the database and 2) allow for consistency of species lumping (across time or across sites) when data are extracted for analysis.

If your group is sampling a species that is not included in the Official Species List, and you would like to enter data for that species in the MARINE database, contact Melissa & Jack about adding its name to the table and incorporating the new data into the database.

### **Information Tables**

Information tables contain information used by various parts of the MARINE data system but not usually as sources for dropdown lists. Information tables can contain data or be used as sources of information to populate forms. The Information Table Maintenance menu provides access to the individual maintenance forms for many information tables. Use these forms to add new records. Changes and deletions should be made directly to the tables. Information table names are listed next to each data type below. Alternatively, you can send changes to Melissa Miner to be updated directly in the main MARINE database.

### **Sites (tblSites)**

The site table lists all the surveying sites. Before entering a new site obtain a site ID from the MARINE data manager (Melissa or Jack). Site ID's are unique for the entire MARINE data system.

Longitude and Latitude are expressed in decimal degrees. Decimal degrees are decimal representation of fractions of degrees. A longitude: 40 degrees, 30 minutes, would be expressed as 40.5 degrees. Use this formula to convert decimal minutes to decimal degrees:

$$\text{Decimal degrees} = \text{Degrees} + (\text{Decimal minutes} / 60)$$

- **Adding a new record** – To add a new record, click on the new record button on the bottom of the form (▶\*). A new blank record will appear. Enter the new record information. Click the new record button to save the current record and add another record or, if finished, click on the return button to return to the main menu.
- **Changing a record** – To change information for an existing record, open the table and make the necessary changes. Then delete the activity date so that the change is incorporated into the main MARINE database.

## Photo Plot Data Entry Species

This form is used to populate the species displayed on the Photo Plot Data Entry Form. The Photo Plot Data Entry Form is populated according to the sequence. You can control the display order of the species on the photoplot form by modifying the sequence number. Re-ordering items is a little tricky because duplicate values are not allowed in the sequence field. See p. 61 “How to Re-order the Sequence Field” for instructions. Note: you cannot add or delete records in this form—there must always be 43 species.

## Optional Photo Species (tblOptionalPhotoSpecies)

This form controls the species and sequence for optional species. Each group has its own optional species list. Up to 20 optional species per group are allowed. To enter a new optional species for your group, click on the new record button at the bottom of the form (►\*). It is essential that your new optional species is 1) present in luOfficialSpeciesList, and 2) spelled exactly the same (both the full name & the 6 letter code) as in luOfficialSpeciesList. To avoid mistakes, it may be easiest to copy the species name and code from luOfficialSpeciesList and paste them into the form.

Unfortunately, it is not yet possible to control the sequence of the optional species. This option should be available in a future version of the MARINE database.

To change the order in which your optional species appear on the Photoplot data entry form, simply type in the correct order for the species in your group. This form does not have the same duplicates issue as the form for the core Photoplot species, so no middle step is required for re-ordering. The application does not check the sequence field for duplicate numbers or numbers out of sequence so it is a good practice to review the any changes before returning to the main menu.

## Photo Plot Quadrat Information (tblPhotoPlotInfo)

This table stores configuration information about the photoplot quadrats at each site.

### *Features*

- Photoplot Information is organized by Group, Site, and Target Species.
- Records plot configuration for a period of time.
- Maintains historical configuration over a period of time.
- Used to populate the target species list on the Photoplot Data entry form.
- Used to populate the Quad number list on the Photoplot Data Entry form.

### *Data Entry*

To enter a new record click on the new record button at the bottom of the form (►\*) and enter the information listed below. To change or close an existing record open tblPhotoPlotInfo and make changes there, then delete the activity date so the change is incorporated into the main MARINE database.

- **Surveying Group** — The group responsible for surveying and maintaining the quad. Select the group from the dropdown list. Only groups flagged as a monitoring group in luList01\_SurveyingGroups will appear in the drop down list.

- **SiteID** — Select the site ID for the quad. The site list is not filtered by the group so all sites for MARINe will appear.
- **Target Species** — Enter the target species for the quad. This field will accept any value so it is essential that you enter the target species name exactly as it appears in previous records, including case.
- **Quad** — Enter the quad number (no letters)
- **Area** — Enter the area of the quad (not required).
- **Units** — Select the unit of measure for the area (not required).
- **Date Established** — Enter the date the quad was established.
- **End Date** — Enter an “End Date” when a Quad configuration is no longer valid. This must be done directly in the table, and the activity date must be deleted for the change to be incorporated into the main MARINe database.
- **Comments** — Enter any comments. Comments are helpful to explain why a configuration was changed.

## Transect Data Entry Species

This form is used to populate the species displayed on the Transect Data Entry Form. The Transects Data Entry Form is populated according to the sequence. You can control the display order of the species on the Transect form by modifying the sequence number. Re-ordering items is a little tricky because duplicate values are not allowed in the sequence field. See p. 61 “How to Re-order the Sequence Field” for instructions. Note: you cannot add or delete records in this form—there must always be 23 species.

## Optional Transect Species (tblOptionalTransectSpecies)

This form controls the species and sequence for optional species. Each group has its own optional species list. Up to 20 optional species per group are allowed. To enter a new optional species for your group, click on the new record button at the bottom of the form (►\*). It is essential that your new optional species is 1) present in luOfficialSpeciesList, and 2) spelled exactly the same (both the full name & the 6 letter code) as in luOfficialSpeciesList. To avoid mistakes, it may be easiest to copy the species name and code from luOfficialSpeciesList and paste them into the form.

Unfortunately, it is not yet possible to control the sequence of the optional species. This option should be available in a future version of the MARINe database.

To change the order in which your optional species appear on the Transect data entry form, simply type in the correct order for the species in your group. This form does not have the same duplicates issue as the form for the core Transect species, so no middle step is required for re-ordering. The application does not check the sequence field for duplicate numbers or numbers out of sequence so it is a good practice to review the any changes before returning to the main menu.

## Transect Information (tblTransectInfo)

This table stores configuration information about the transects at each site.

### *Features*

- Transect Information is organized by Group, Site, and Target Species.
- Records plot configuration for a period of time.
- Maintains historical configuration over a period of time.
- Used to populate the target species list on the Transect Data entry form.
- Used to populate the Transect number list on the Transect Data Entry form.

### *Data Entry*

To enter a new record click on the new record button at the bottom of the form (▶\*) and enter the information listed below. To change or close an existing record open tblTransectInfo and make changes there, then delete the activity date so the change is incorporated into the main MARINE database.

- **Surveying Group** — The group responsible for surveying and maintaining the transect. Select the group from the dropdown list. Only groups flagged as a monitoring group in luList01\_SurveyingGroups will appear in the drop down list.
- **SiteID** — Select the site ID for the transect. The site list is not filtered by the group so all sites for MARINE will appear.
- **Target Species** — Enter the target species for the transect. This field will accept any value so it is essential that you enter the target species name exactly as it appears in previous records, including case.
- **Transect** — Enter the transect number (no letters)
- **Method Code** — Enter the method used to sample the transect (not required).
- **Date Established** — Enter the date the transect was established.
- **End Date** — Enter an “End Date” when a Transect configuration is no longer valid. This must be done directly in the table, and the activity date must be deleted for the change to be incorporated into the main MARINE database.
- **Comments** — Enter any comments. Comments are helpful to explain why a configuration was changed.

## Count and Size Information (tblCountSizePlotInfo)

The Count and Size information table contains the configuration information about each size and count plot.

### *Features*

- Count and Size Information is organized by Group, Site, and Target Species.
- Records plot configuration for a period of time.
- Maintains historical configuration over a period of time.
- Used to populate the Plot number lists on the Abalone, Lottia, Seastar and Size & Counts Data Entry forms.

### *Data Entry*

To enter a new record click on the new record button at the bottom of the form (▶\*) and enter the information listed below. To change or close an existing record open tblCountSizePlotInfo and make changes there, then delete the activity date so the change is incorporated into the main MARINe database.

- **Surveying Group** — The group responsible for surveying and maintaining the plot. Select the group from the dropdown list. Only groups flagged as a monitoring group in luList01\_SurveyingGroups will appear in the drop down list.
- **SiteID** — Select the site ID for the plot. The site list is not filtered by the group so all sites for MARINe will appear.
- **Target Species** — Enter the target species for the plot. This field will accept any value so it is essential that you enter the target species name exactly as it appears in previous records, including case.
- **Plot ID** — Enter the plot number (no letters)
- **Area**—Enter the plot area (not required)
- **Method**— Enter the method used to sample the plot (not required).
- **Date Established** — Enter the date the plot was established.
- **End Date** — Enter an “End Date” when a plot configuration is no longer valid. This must be done directly in the table, and the activity date must be deleted for the change to be incorporated into the main MARINe database.
- **Comments** — Enter any comments. Comments are helpful to explain why a configuration was changed.

## Changing Defaults, Modifying Forms, and Other Useful Information

**Note—because some of the operations described below are critical to proper database function, it is essential that you are extremely careful when making these and other modifications.** If you are not sure how to perform a change or feel uncomfortable working with Access, contact Melissa Miner before attempting for further instruction.

### How to view forms or queries in design view

Open the form or query that you wish to modify and then go to the upper left-most icon on the toolbar (see icon list in Appendix C) and select “design view” from the drop down list. Or, find the form or query in the list in the Access menu, right click on it, and select “design view”.

### How to order output by seasons

Each of the results tables has a season field and a season code field. The season field is a consecutive sample season number starting from the first sample included in the MARINe database. Use this field to sort by sample season. The season code is a four-character code denoting the season and year. The first two letters denote the season. Although we usually only conduct surveys in Spring and Fall we also have codes for Summer and Winter. The codes are SP – Spring, SU – Summer, FA—Fall, and WN – Winter.

Joining a table with the luList3\_ MARINeCommonSeason table in a query will provide a year field, a season name column, and a Season sequence field that allows for proper season name sequencing. See luList3\_ MARINeCommonSeason in Appendix B for table design.

### How to change the Season default

The default setting can be changed from spring & fall to summer by opening qryluSeasons in the design view and changing the criteria under the field “SeasonSeq” to “2” instead of “1 or 3”. If a new season code needs to be added, see p. 49

### How to change the default Group Code

Go to the bottom of the MARINe main menu and under “Change Default Group”, type in your group’s code or select it from the list.

### How to change the default Scoring Method for Photoplot & Transect entry forms

Open the form in design view (see “How to view forms in design view” above) and right click on the box under “Scoring Method” that says “Unbound”. Go to “Properties”. Under “Data” change “Default Value” from current code (e.g. “LBD” for “Lab—digitally”) to desired code (e.g. “FD” for “Field”). See luList04\_Methods for codes.

### How to change the default Method for Lottia, Seastar & Abalone entry forms

Open the form in design view (see “How to view forms in design view” above) and right click on the box to the right of “Method” that says “Method Code”. You may need to

first move the “Data Saved” message to access the “Method Code” box. Go to “Properties”. Under “Data” change “Default Value” from current code (e.g. “CP1” for “Circular—1m radius”) to desired code (e.g. “CP15” for “Circular—1.5m radius”). See luList04\_Methods for codes.

### **How to change the default color on the Seastar entry form**

Open the form in design view (see “How to view forms in design view” above) and right click on the box below “Color” that says “SeaStar Color” and choose “Properties”. Under “Data” change “Default Value” from “Orange” to “Other than Orange”. See luList23\_SeaStarColors for all color code options.

### **How to modify sampler/recorder dropdown lists**

Open qryPersonnelDropDownList in design view and under GroupCode type in “not <your group name>” and then press “run”. This will add end dates to all personnel names except those in the group(s) specified and thus remove them from your lists. For example to get only UCSC names in your sampler/recorder dropdown lists, type in “not UCSC” under GroupCode.

### **How to change the species display sequence**

See p. 56 for making changes to the species order on the Photo Plot and Transect data entry forms.

### **How to add optional species**

See p. 56 & 57 for adding optional species to the Photo Plot and Transect data entry forms.

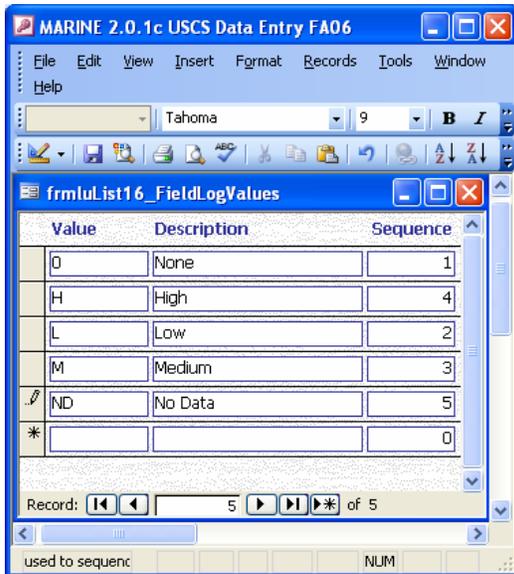
### **How to re-order the sequence field**

The sequence field controls the order in which items appear in dropdown lists or on entry forms. You can change the order to speed data entry by having the value chosen most often at the top of the list for quick selection or match the order of species names to that on your data sheet. Re-ordering items is a little tricky because duplicate values are not allowed in the sequence field. Thus, for example, if you wanted to re-order the list of field log values below so that “No Data” appeared at the top, you could not simply replace the “5” next to “No Data” with a “1” because this would create a duplicate record with the “1” next to “None”. One way around this is to have a middle step, where you create “dummy” values that are much larger than any number you will use in your final sequence order, and then fill in the correct values. See example below.

### Ex. of how to re-order sequence field:

#### Field Log Values table—initial Sequence of values

We want to change the order so that “No Data” is 1<sup>st</sup>, “None” is 2<sup>nd</sup>, etc.

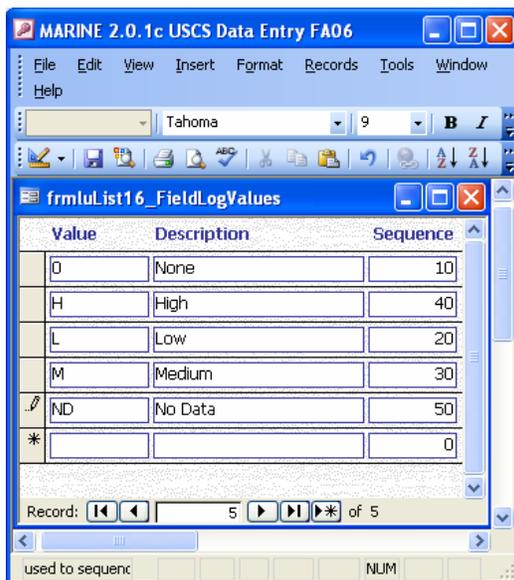


The screenshot shows the MARINE 2.0.1c USCS Data Entry FA06 application window. The main window displays a table titled "frmluList16\_FieldLogValues" with the following data:

Value	Description	Sequence
0	None	1
H	High	4
L	Low	2
M	Medium	3
ND	No Data	5
*		0

The table is displayed in a grid format with a status bar at the bottom indicating "Record: 5 of 5".

We need to have a middle step where we fill in “dummy” sequence values that will allow us to enter the correct sequence values without getting an error message. In this example we add 0’s to existing sequence #s to make them larger than the real sequence #s that we plan to use.



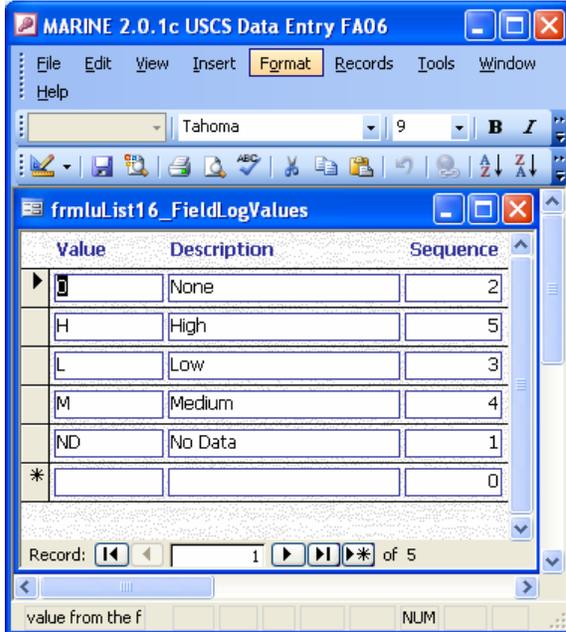
The screenshot shows the MARINE 2.0.1c USCS Data Entry FA06 application window. The main window displays a table titled "frmluList16\_FieldLogValues" with the following data:

Value	Description	Sequence
0	None	10
H	High	40
L	Low	20
M	Medium	30
ND	No Data	50
*		0

The table is displayed in a grid format with a status bar at the bottom indicating "Record: 5 of 5".

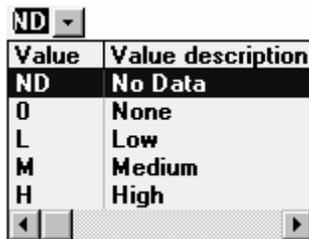
## Field Log Values table—Corrected Sequence of values

In this final step, we've replaced the “dummy” sequence values with the correct order.



## Dropdown list

The field log values table above produces the dropdown list below.



The technique used in the example above can be used to re-order all dropdown lists and species names on the Photoplot and Transect entry forms.

## Appendix A – List of tables in the database (note: some table names were left out because they will likely be deleted from the d.b.)

Table 1

TABLE_NAME	DESCRIPTION
luList01_SurveyingGroups	A list of participating groups.
luList02_Personnel	A list of current and past personnel.
luList03_MARINeCommonSeason	MARINe sampling season information. Use this to provide proper order to the seasons.
luList04_Methods	Comprehensive list of all sampling methods used by all MARINe groups
luList05_QualifierCodes	Codes used to "Qualify" a measurement.
luList07_Units	List of units of measurement.
luList08_Roles	List of roles personnel can perform.
luList09_Islands	List of Islands for sites
luList10_SurveyTypes	List of Survey types
luList11_LottiaSizes	Used to populate Lottia size dropdown list
luList12_AbaloneSizes	Used to populate Abalone size dropdown list
luList13_OchreSeastars	Used to populate Ochre Seastars size dropdown list
luList14_Counties	List of counties in which MARINe sites occur
luList16_FieldLogValues	List of values used with the field log data
luList17_FieldAbundance	Description of abundance codes used on page 2 of Field Log sheet
luList18_FieldConditions	Description of conditions used on page 2 of the Field Log sheet.
luList20_RecruitmentCodes	List of recruitment codes.
luList21_FieldEventBirds	List of birds displayed on frmFieldLogEvent
luList22_FieldEventMammals	List of birds displayed on frmFieldLogEvent
luList23_SeaStarColors	List of color categories used for Pisaster ochraceus
luList25_LottiaBins	List that can be used to group Lottia sizes into 5mm bin categories
luList26_AbaloneBins	List that can be used to group black abalone sizes into 10mm bin categories

TABLE_NAME	DESCRIPTION
luList27_SeastarBins	List that can be used to group Pisaster ochraceus sizes into 10mm bin categories
luList30_PhotoPlotSpecies	List of all core Photoplot species and the sequence numbers used to order them on the Photoplot data entry form
luList31_TransectSpecies	List of all core Transect species and the sequence numbers used to order them on the Transect data entry form
luOfficialSpeciesList	List of all species, and derivations of species' names spellings, contained in the MARINe database
tblCountSizePlotInfo	Plot information for species counted and measured (e.g. abalone, Lottia, seastars)
tblDataTransmission	Log of data sent dates and filenames.
tblEventBirds	Bird species and counts for each site and season.
tblEventMammals	Mammal species and counts for each site and season.
tblEventParticipants	Associates events with the personnel who participated in the event.
tblFieldLogEvent	Records environmental data present at the surveying event.
tblOptionalPhotoSpecies	Contains optional photo species scored by each group. Used to load the Photo Plot Data Entry form
tblOptionalTransectSpecies	Contains optional transect species scored by each group. Used to load the Transect Data Entry form
tblParameters	Database Parameters
<b>tblPersonnelRoles</b>	<b>This table is used to associate personnel with the roles they perform.</b>
tblPhotoPlotInfo	Photoplot Information
tblPhotoPlots	Photo Plot data
tblReconnaissance	Page 2 of the field data sheets
tblRecruteSpecies	Used to populate page 2 of the field data sheet
tblSeaStarSpecies	Used to populate seastar species dropdown list
tblSites	All Survey Sites in the project
tblSpeciesCountSize	Contains size, abundance, and color data for abalone, seastars, Lottia, and other count size species.
tblSurveyDataCollectors	This table records who worked in the field, during a survey, and what their role was.
tblTransectInfo	Transect configuration Information
tblTransects	Transect data.

List of queries in the database. (there are many other queries not included here—delete from d.b. or add here?)

TABLE_NAME	DESCRIPTION
qryBasicSpeciesList	Basics Species List
qryBasicSpeciesListByOrgName	Species list by name
qryBasicSpeciesListBySixLetterCode	Species list by six letter code
qryBasicSpeciesListUnique	Unique species list.
qryluCollectionRoles	Lists Collection roles
qryluLottiaMethods	Lists Lottia methods
qryluPrincipallInvestigator	Provides list of personnel with a role of PI.
qryluRecorder	Provides list of personnel with a role of recorder.
qryluSampler	List of measures.
qrySSTargetSpeciesList	Species System Target species list.
qrySSTargetSpeciesListUnique	Species System Target species list.

**Appendix B –Table Design –Do we want all of this in here, or just good instructions on how to access this info. in the database. It is all redundant with what is there already & takes up a lot of space here. If we leave here, add missing tables.**

**Lookup Lists**

**TABLE\_NAME** luList01 SurveyingGroups

Field Name	Type	Required	Description
GroupCity	Text	Y	The group city.
GroupCode	Text	Y	A code used to identify each group.
GroupName	Text	Y	The group name.
GroupState	Text	Y	The group State. Default = CA
GroupStreetAddress	Text	Y	The street address of the group.
GroupZipCode	Text	Y	The group zip code
MonitoringGroup	Yes/No	Y	Is this a monitoring group? If yes, this group conducts seasonal surveys.
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.

**TABLE\_NAME** luList02 Personnel

Field Name	Type	Required	Description
GroupCode	Text	Y	A code used to identify each agency.
Remarks	Text	N	Remarks
PersonnelMiddleInitial	Text	N	Middle Initial
PersonnelLastName	Text	Y	Last Name
PersonnelInitials	Text	Y	Initials
PersonnelID	Text	Y	Unique Personnel Identifier. A combination of Group code and a four digit sequential number. example: SCCWRP0001
LastDate	Date/Time	N	The last date this person participated. If a date is present then this person will not appear on personnel lists for new records.
FirstDate	Date/Time	Y	The first date this person participated.
ContactPhoneNumber	Text	N	The contact's phone number.
ContactInternalMailCode	Text	N	The internal mail code if available
ContactFaxNumber	Text	N	The contact's fax number
ContactEMail	Memo	N	The contacts EMail.
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
PersonnelFirstName	Text	Y	First Name.

**TABLE\_NAME** luList03\_MARINeCommonSeason

Field Name	Type	Required	Description
Year	Number	Y	The four digit calendar for this season.
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
MCSSeason	Number	Y	A consecutive number used to order the surveying groups seasons. Used this field to sort the surveying seasons in calendar order.
SeasonCode	Text	Y	A four-character code to identify the Sampling season. The first two characters indicate the season and the last 2 characters indicate the year.
SeasonName	Text	Y	The common name of the season
SeasonSeq	Number	Y	The Season sequence within each year. 1=Spring, 2=Summer, 3=Fall, 4=Winter. Used with the year field as an alternate method to sort seasons in calendar order.

**TABLE\_NAME** luList04\_Methods

Field Name	Type	Required	Description
MethodCode	Text	Y	A code for the method
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
Description	Text	Y	A description of the method

**TABLE\_NAME** luList05\_QualifierCodes

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
Description	Text	Y	The description of the qualifier.
Qualifier	Text	Y	Used to modify the associated numeric field.
SeqNumber	Number	Y	Sequence Number. Use to control the sequence items appear in lists.

**TABLE\_NAME** luList07\_Units

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
Unit	Text	Y	The unit of measure used.
UnitDescription	Text	Y	The description of the unit.

**TABLE\_NAME** luList08\_Roles

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
RoleDescription	Text	N	Description of the role.

RoleID	Number	Y	Unique Identifier for each person involved in the project
RoleName	Text	Y	The name of the role.

**TABLE\_NAME** luList09 Islands

	Field Name	Type	Required	Description
	IslandName	Text	Y	The name of the island.
	IslandCode	Text	Y	The code used to identify each island.
	ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.

**TABLE\_NAME** luList10 SurveyTypes

	Field Name	Type	Required	Description
	DataSource	Text	Y	The source of the data.
	LoadDate	Date/Time	Y	The data the data was loaded.
	SurveyTypeID	Number	Y	The ID of the type of survey.
	SurveyTypeName	Text	Y	The name of the survey type.
	ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.

**TABLE\_NAME** luList11 LottiaSizes

	Field Name	Type	Required	Description
	ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
	LottiaSize	Number	Y	The size of the lottia.
	LottiaSizeQualifier	Text	N	Used to support "<10" size

**TABLE\_NAME** luList12 AbaloneSizes

	Field Name	Type	Required	Description
	ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
	LottiaSize	Number	Y	The size of the lottia.

**TABLE\_NAME** luList13 OchreSeastars

	Field Name	Type	Required	Description
	ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
	LottiaSize	Number	Y	The size of the lottia.

**TABLE\_NAME** luList14 Counties

	Field Name	Type	Required	Description
	ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
	CountyCode	Text	Y	A unique Code for each county
	CountyName	Text	Y	The county name

**TABLE\_NAME** luList16 FieldLogValues

	Field Name	Type	Required	Description
	ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
	Description	Text	Y	Description
	Sequence	Number	Y	used to sequence the drop down boxes

Value	Text	Y	Values from the field log sheet.
-------	------	---	----------------------------------

**TABLE\_NAME** luList17 FieldAbundance

Field Name	Type	Required	Description
AbundanceCode	Text	Y	The abundance code from field data sheet conditions
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
Description	Text	Y	Description
Sequence	Number	Y	Used to control the display sequence

**TABLE\_NAME** luList18\_FieldConditions

Field Name	Type	Required	Description
Sequence	Number	Y	Used to control the order of items in a list.
Description	Text	Y	Description
ConditionsCode	Text	Y	A code indicating the species condition.
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
Sequence	Number	Y	Used to control the order of items in a list.

**TABLE\_NAME** luList20 RecruitmentCode

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
Description	Text	Y	The meaning of the code.
RecruitmentCode	Text	Y	A code for the recruitment state
Sequence	Number	Y	Used to control sequence

**TABLE\_NAME** luList21 FieldEventBirds

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
BirdName	Text	Y	The common name of the bird.
Sequence	Number	Y	Used to sequence display of names in drop down lists.

**TABLE\_NAME** luList22 FieldEventMam

Field Name	Type	Required	Description
Sequence	Number	Y	Used to sequence display of names in drop down lists
MammalName	Text	Y	The common name of the mammal.
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent

**TABLE\_NAME** luList23\_SeaStarColors


## Information Tables

**TABLE\_NAME** tblCountSizePlotInfo

Field Name	Type	Required	Description
CountSizePlotTargetSpecies	Text	Y	The species the plot was set up to measure.
GroupCode	Text	Y	A code for the group responsible for the measurement. The code must come from
CountSizePlotMethod	Text	N	The method used.
CountSizePlotLoadDate	Date/Time	Y	The date the data was loaded or changed.
CountSizePlotID	Text	Y	The ID of the Plot
CountSizePlotEffectiveEndDate	Date/Time	N	The last date this plot configuration was effective.
CountSizePlotDataSource	Text	Y	The source of the data. This will be the submissionID on all new data.
CountSizePlotComments	Text	N	Additional remarks
CountSizePlotAreaUnits	Text	N	The unit of measurement for the Plot area. Default is "CM" centimeters. From luList7 Units.
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
CountSizePlotArea	Number	N	The area of the Plot.
CountSizePlotDateEstablished	Date/Time	N	The date this plot configuration became effective.
SiteID	Text	Y	The siteID of site where the measurement was taken.

**TABLE\_NAME** tblDataTransmission

Field Name	Type	Required	Description
DateStamp	Date/Time	Y	Date and Time the file was made.
SendFilename	Text	Y	Name of the file that had the data tables in it.

**TABLE\_NAME** tblEventBirds

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
SiteID	Text	Y	The siteID
LoadDate	Date/Time	N	The date the date was loaded or changed
GroupCode	Text	Y	The surveying group

DataSource	Text	N	The source of the data. This will be the submissionID on all new data. Initial data load
Bird Count	Number	Y	The number of birds encountered.
SurveyDate	Date/Time	Y	The date of the survey.
BirdName	Text	Y	The Bird name from the luList21_FieldEventBirds

**TABLE\_NAME** tblEventMammals

Field Name	Type	Required	Description
MammalCount	Number	Y	The number of Mammals encountered.
SiteID	Text	Y	The site ID
SurveyDate	Date/Time	Y	The date of the survey.
MammalSpeciesCode	Text	Y	The Species code from the lulist22_FieldEventMammals
GroupCode	Text	Y	The surveying group code
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
DataSource	Text	N	The source of the data. This will be the submissionID on all new data. Initial data load
LoadDate	Date/Time	N	The date the data was loaded or changed

**TABLE\_NAME** tblEventParticipants

Field Name	Type	Required	Description
LoadDate	Date/Time	N	The date the data was loaded or changed
SurveyDate	Date/Time	Y	The date of the survey
ParticipantPersonnelID	Text	Y	The personnelID of the participant. From luList2_Personnel
GroupCode	Text	Y	The surveying Group.
DataSource	Text	N	The source of the data. This will be the submissionID on all new data. Initial data load
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
SiteID	Text	Y	The Siteid

**TABLE\_NAME** tblFieldLogEvents

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
HumansReef	Number	N	The number of people on the reef
OilTar	Text	N	The level of oil or tar. From luList16_FieldLogValues
OtherNotes	Memo	N	The trip report
LoadDate	Date/Time	N	The date the data was loaded
HumansSand	Number	N	The number of people at the beach.
HumansNotes	Text	N	Notes about the humans on the beach.
GroupCode	Text	Y	The surveying group from luList01_SurveyingGroup
Driftwood	Text	N	The level of driftwood. From luList16_FieldLogValues
DeadAnimals	Text	N	The level of dead animals. From luList16_FieldLogValues
BirdMammalNotes	Memo	N	Bird/Mammal Notes
PlotNotes	Memo	N	Event metadata

DataSource	Text	N	The source of the data. This will be the submissionID on all new data. Initial data load
TideLevelTime	Date/Time	N	The time the tide level was measured
PlantWrack	Text	N	The level of plant wrack. From luList16_FieldLogValues
Wind	Text	N	Wind speed (ND=No Data; 0=None; L=Low; M=Med.; H=High; or Actual Value)
Trash	Text	N	The level of trash. From luList16_FieldLogValues
TideLevelFeet	Number	N	The tide level in feet
SurveyStartTime	Date/Time	N	The time of day the survey started.
SurveyEndTime	Date/Time	N	The time the survey ended.
SurveyDate	Date/Time	Y	The date of the survey.
Surge	Text	N	A description of the surge. From luList16_FieldLogValues
SiteID	Text	Y	The ID of the site surveyed.
ShellDebris	Text	N	The level shell debris. From luList16_FieldLogValues
RecentRain	Text	N	Level of recent rain. From luList16_FieldLogValues
WaterTemperature	Text	N	Description of water temperature or actual value. Actual value in Degrees °C
SedimentLevel	Text	N	luList16_FieldLogValues
PhysicalConditionNotes	Memo	N	Notes on physical conditions
Rain	Text	N	Rain at the site during surveying
Recorder	Text	Y	The personnelID of the recorder
RockMovement	Text	N	The level of rock movement. From luList16_FieldLogValues
SampleSeason	Number	Y	The Survey Season
SamplingSeasonCode	Text	Y	A code for the survey season. The first are the season and the last two numbers are the year. Example FA01 = Fall 2001
Scour	Text	N	The level of scour. From lu

**TABLE\_NAME** tblOptionalPhotoSpecies

Field Name	Type	Required	Description
GroupCode	Text	Y	The code of the group needing the additional (optional) species
SpeciesLong	Text	Y	The full name of the species.
Seqnum	Number	Y	This controls the order of display on the frmPhotoPlotDataEntry for optional species
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
Species	Text	Y	This is the species loaded into the label for each results on frmPhotoPlotDataEntry for optional

**TABLE\_NAME** tblOptionalTransectSpecie

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.

GroupCode	Text	Y	The code of the group needing the additional (optional) species
Seqnum	Number	Y	This controls the order of display on the frmPhotoPlotDataEntry for optional species
Species	Text	Y	This is the species loaded into the label for each results on frmPhotoPlotDataEntry for optional
SpeciesLong	Text	Y	The full species name.

**TABLE\_NAME** tblParameters

<b>Field Name</b>	<b>Type</b>	<b>Required</b>	<b>Description</b>
Value	Text	N	The parameter value.
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
Code	Text	N	The parameter code
Description	Text	N	Description

**TABLE\_NAME** tblPersonnelRoles

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
PersonnelID	Text	Y	A unique identifier for each person. From luList2_Personnel
RoleID	Number	Y	The role ID from luList8_Roles

**TABLE\_NAME** tblPhotoPlotInfo

Field Name	Type	Required	Description
EffectiveEndDate	Date/Time	N	The last date this plot configuration was effective.
TargetSpecies	Yes/No	Y	The target species the plot was set up to measure.
SiteID	Text	Y	The siteID of site where the measurement was taken.
QuadNumber	Text	Y	The replicate quadrat number.
PhotoPlotAreaUnits	Text	N	The unit of measurement for the Plot area. Default is "CM" centimeters. From luList7_Units
TargetSpecies	Text	Y	The target species the plot was set up to measure.
PhotoPlotArea	Number	N	The area of the Plot.
GroupCode	Text	Y	A code for the group responsible for the measurement. The code must come from
DateEstablished	Date/Time	N	The date this configuration or the plot was established.
DataSource	Text	Y	The source of the data.
Comments	Text	N	Additional remarks
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
LoadDate	Date/Time	Y	The date the data was loaded or changed.

**TABLE\_NAME** tblPhotoPlots

Field Name	Type	Required	Description
SampleSeason	Number	Y	Consecutive sampling number.
whoscored	Text	N	The person who scored the pictures.
TargetSpecies	Text	N	Target species that plot has been set up to monitor
TargetSpecies	Yes/No	N	Target species that plot has been set up to monitor
SurveyDate	Date/Time	N	The date the survey was taken.
Species	Text	N	Species being counted.
SiteID	Text	Y	Name of the site sampled .
ScoringMethod	Text	N	Field or Lab
SamplingSeasonCode	Text	Y	Sampling season, SP=Spring F=Fall plus the last 2 digits of the year
Qualifier	Text	N	Flag for count
QuadNumber	Text	Y	Replicate quadrat number, starting from 1 for each target species. Size: 50 cm x 75 cm
PctCover	Number	N	Percent of cover.

OriginalSpecies	Text	N	The species as originally recorded on the data sheets. Used for historical reference.
LoadDate	Date/Time	N	The date the data was loaded
GroupCode	Text	Y	Group doing the count
DataSource	Text	N	The data submission ID that supplied this data. Initial data is coded "IDL" Initial Data Load
Comments	Text	N	Additional remarks
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
SampleSeason	Number	Y	Consecutive sampling n

umber.

**TABLE\_NAME** tblPhotoSpecies

Field Name	Type	Required	Description
Species	Text	Y	The Six Letter Code from the Species System
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
SpeciesLong	Text	Y	The full name from the Species System
Seqnum	Number	Y	This field controls the display order on the Photo Plot Data Entry

**TABLE\_NAME** tblReconnaissance

Field Name	Type	Required	Description
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
Condition	Text	Y	Description of the condition. From luList18 FieldConditions
GroupCode	Text	Y	The surveying group from luList 01 SurveyingGroups
SurveyingGroups			
Notes	Text	N	Additional Remarks
Recruitment	Text	Y	The level of recruitment from luList 20 RecruitmentCodes
SiteID	Text	Y	The site id from tblSites
SpeciesName	Text	Y	The species name from the species system
SurveyDate	Date/Time	Y	The date the survey was taken expressed as dd/mmm/yyyy
Abundance	Text	Y	Description of the abundance found.

**TABLE\_NAME** tblRecruteSpecies

Field Name	Type	Required	Description
Species	Text	Y	Species name.
MidZone	Yes/No	Y	Is this found in the mid zone.
TargetSpecies	Yes/No	Y	Is this a target species
HighZone	Yes/No	Y	Is this found in the high zone.
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
DisplaySequence	Number	N	Used to control display sequence
TargetSpecies	Text	Y	Is this a target species

LowZone	Yes/No	Y	Is this found in the low zone.
---------	--------	---	--------------------------------

**TABLE\_NAME** tblSites

Field Name	Type	Required	Description
LoadDate	Date/Time	N	The date the data was loaded or changed
SiteName	Text	Y	The name of the site location. Example Crystal Cove
SiteLongitude	Number	N	The longitude of the site in decimal degrees to 5 decimal places (NAD 83) expressed as a negative number
SiteLatitude	Number	N	The latitude of the site in decimal degrees to 5 decimal places (NAD 83)
PIID	Text	N	The personnel ID of the Principal Investigator who originally established the site. Must be in the luList2_Personnel and have a role of Principal Investigator.
IslandCode	Text	Y	A code for Island or Mainland. From luList9_Islands
FundingAgency	Text	Y	The agency funding the establishment of surveys at the site
Datum	Text	N	The datum used to establish the site.
DateEstablished	Date/Time	N	The date the site was established.
DataSource	Text	Y	The source of the data. This will be the submissionID on all new data. Initial data load
CountyCode	Text	Y	The county in which the site is located. From luList14_Counties
Comments	Text	N	Comments
EstablishingGroupCode	Text	Y	The code of the surveying group responsible for the establishment of site. Must be in luList1_SurveyingGroups
SiteID	Text	Y	The Unique ID assigned to each Site

**TABLE\_NAME** tblSpeciesCountSize

	Field Name	Type	Required	Description
	Timed SearchEnd Time	Date/Time	N	The time the timed search ended.
	SiteID	Text	Y	The site ID
	TimedSearchStartTime	Date/Time	N	The time the timed search started.
	SizeUnit	Text	N	The unit of measure for the size
	SizeQualifier	Text	N	A description of the size from luList5_Qualifiers
	SpeciesCount	Number	Y	The species count
	SpeciesSize	Number	N	The size of the species found
	SurveyDate	Date/Time	Y	The date the survey was taken.
	TargetSpecies	Text	Y	From the luList6_Species
	SamplingSeasonCode	Text	Y	An alpha code for the sample season
	TargetSpecies	Yes/No	Y	From the luList6_Species
	CountSizeTime	Date/Time	N	The time the survey was taken. Not used on all surveys.
	SampleSeason	Number	Y	The Surveying Season

	Species	Text	Y	The species encountered
	Comments	Text	N	Comments
	DataSource	Text	N	The source of the data
	GroupCode	Text	Y	The surveying group
	LoadDate	Date/Time	N	The data the data was loaded
	MethodCode	Text	Y	The method used.
	OriginalSpecies	Text	N	The species as originally recorded on the data sheets. Used for historical reference.
	PlotID	Text	Y	The plot number
	SampleSeason	Number	Y	The Surveying Season
	ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.

**TABLE\_NAME** tblSurveyDataCollectors

Field Name	Type	Required	Description
LoadDate	Date/Time	N	The data the data was loaded.
SiteID	Text	Y	The siteid of the site surveyed.
TargetSpecies	Text	Y	The target species.
TargetSpecies	Yes/No	Y	The target species.
SurveySeasonCode	Text	Y	The season code for this season. From luList03_MARINeCommonSeason
SurveyDate	Date/Time	Y	The date the survey was taken.
SampleSeason	Number	Y	The MCS Season number.
SampleSeason	Number	Y	The MCS Season number.
PersonnelID	Text	Y	The personnel ID of the person doing the data collection.
GroupCode	Text	Y	The Surveying Group
DataSource	Text	N	The source of the data.
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
RoleID	Number	Y	The role ID for the type of activity the data collector preformed

**TABLE\_NAME** tblTransectInfo

Field Name	Type	Required	Description
GroupCode	Text	Y	A code for the group responsible for the measurement.
TargetSpecies	Text	N	The target species the transects was set up for.
TargetSpecies	Yes/No	N	The target species the transects was set up for.
SiteID	Text	Y	The siteID of site where the measurement was taken.
TransectNumber	Text	Y	The replicate transect number.
LoadDate	Date/Time	Y	The date the data was loaded

DateEstablished	Date/Time	N	The date this transect configuration was established.
DataSource	Text	Y	The source of the data. This will be the submissionID on all new data. Initial data load
Comments	Text	N	Additional remarks
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
MethodCode	Text	N	The method used for the transect.
EffectiveEndDate	Date/Time	N	The last date this configuration was effective

**TABLE\_NAME** tblTransects

Field Name	Type	Required	Description
SampleSeason	Number	N	Consecutive sampling number
TransectNumber	Text	Y	Replicate transect number, starting from 1. Length: 10 m
TargetSpecies	Text	Y	The initial species the transect was created.
TargetSpecies	Yes/No	Y	The initial species the transect was created.
SurveyDate	Date/Time	N	The date the survey was taken.
Species	Text	Y	The species counted FK to the luList6_SpeciesList
SiteID	Text	Y	Name of the site sampled (see Appendix A for full site names and counties). site names and counties).
SampleSeason	Number	N	Consecutive sampling number
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.
PctEncountered	Number	N	Percent Encountered. Used to be called SpeciesCount
OriginalSpecies	Text	N	The species as originally recorded on the data sheets. Used for historical reference.
MethodCode	Text	N	The method used for the transect.
LoadDate	Date/Time	Y	The data the data was loaded
GroupCode	Text	Y	The Group Conducting the count.
DataSource	Text	Y	The submission id of the data
Comments	Text	N	Supporting Remarks.
Qualifier	Text	N	A qualifier code for the counts FK to luList5_QualifierCodes
SamplingSeasonCode	Text	Y	Survey season descriptive code.

**TABLE\_NAME** tblTransectSpecies

Field Name	Type	Required	Description
SpeciesLong	Text	N	The full name from the Species System
Species	Text	N	The Six Letter Code from the Species System
Seqnum	Number	N	This field controls the display order on the Transect Data Entry
ActivityDate	Date/Time	N	Data transmission date, no date means data not sent.

**Definitions—add to this & leave as Appendix B?**

Season Code	A four-character code to indicate the sampling season. The first two letters indicate the season, SP = Spring, SU = Summer, FA = Fall and WN = Winter. The second two numbers indicate the year. Example: SP03 is spring 2003. <i>Note: Only normal surveying seasons of Spring and Fall show in the season code lists. The other seasons can be entered manually.</i>
<b>MCSeason</b>	<b>MARINE Common Season. A code created to allow sequencing of the seasons. Use this code to sort data in season order.</b>
Plots	In this document the term plot is used to identify any defined survey area within a site including transects
Site ID	The identification code assigned to each site. A site ID is unique for the entire MARINE project. When displaying the SiteID the site name is displayed in place of the code. Users do not need to know the SiteID codes to use the system.

## Appendix C – Icons

Access has icons you may not recognize from other MS programs. Below is a list of useful icons.



Open Design View (of object)



Revert to Regular View (of objects)



Open Database Window



Open Relationship Window



Add Object (to queries or relationship view)



Run a Query

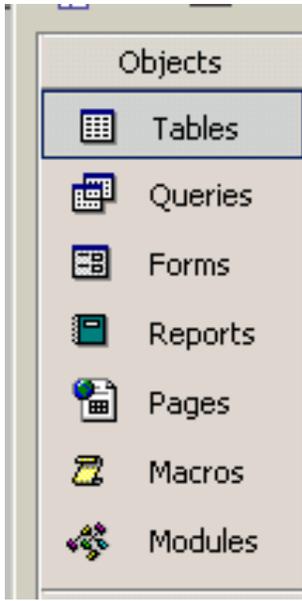


Save



Update Query

Objects with corresponding icons:



**Table open**



No.	Description	No.	Description
1	Table design	13	Order the selected field in descending order
2	Save presentation (eg ordering, widths)- not data since this is saved automatically	14	Filter by selection (find another with same value)
3	Print	15	Filter by form (find by combo boxes of existing values)
4	Print preview	16	Remove filter and show all records
5	Spelling	17	Simple search on selected field or all fields
6	Cut	18	Create a new record
7	Copy	19	Delete selected records
8	Paste	20	Main database window

9-11	Not available	21	New object (table, autoform etc)
12	Order the selected field in ascending order	22	Help

## Appendix D – Motile Invertebrate Data

Currently, all motile (terminology agreed upon by MARINe group—same as “mobile”) invertebrate data counted within photoplots in the field are entered into excel spreadsheets, separate from the MARINe database. These spreadsheets have been standardized among groups to ensure consistency in data entry, and to make uploading these data into the MARINe database as simple as possible when the time comes to do so. To obtain the templates used for data entry, contact Melissa Miner. Template descriptions and data entry instructions are included below.

### 1. field names

This spreadsheet contains the column headings from each data spreadsheet, with explanations of what each heading means. If your group is collecting data for species that do not fit into these existing column headings, you will need to submit a request to add additional field names so that all groups can add the field in an identical manner.

### 2. mobiles

This is the main spreadsheet where total counts (or sub-sampled counts multiplied out to get whole-plot values) for all species encountered in a plot are entered. Sub-sampled counts should not be entered here. Make sure that all codes for sites, samples, species, etc. **exactly** match those from the database (examples are included in the template).

### 3. limpet\_litt

Use this spreadsheet to enter counts for limpets and littorines made in sub-sampling (10 x 10 or 20 x 20) quadrats. Make sure that the formulas used to convert your sub-sampled counts to whole-plot values are correct (you may need to adjust the formulas based on the sub-sampling method used in the field). Copy data from the “total” columns (limpets = Y-AB, littorines = AC) and paste using “Paste Special—Values” into the appropriate columns in the “mobiles” spreadsheet. More detailed instructions are included at the bottom of this spreadsheet and color coded examples are given of how sub-sampled counts should be multiplied out to get whole-plot values.

### 4. nucella

This spreadsheet is an example of how all size data should be entered for motile invertebrates measured in photoplots. Use the same template for *Tegula*, *Acanthina*, *Lottia*, etc.