

## **Discarded Fish Measurements Form**

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### **Introduction**

In 2003 the RecFIN Program began the collection of lengths and weights for fish that are not retained by anglers. These fish are available to be measured during fishing on board observed boats or during an interview on shore. This form was developed to fill a need for measurement of discards so that mean weights and estimates for total discards by weight could be developed.

### **Data Processing**

One form should be used for each onboard observed PC trip with one boat. Multiple onboard-observed PC trips would require separate forms for each PC boat. For shore modes (MM, BB) and shore sampling of private boats (PR), the form may be used for multiple assignments during the week or month and may be submitted weekly to monthly.

This form cannot be used to calculate catch rates or assign catch to anglers. Only trips aboard PC boats will be merged with a sampling assignment. The purpose of merging PC trips is to get the location, depth and other data for the discard measurements.

The measurement data will be summarized by species, fishing mode and area to calculate mean weights for a wave (or month time period) of data. Weights may be calculated from lengths, so the priority is to collect accurate lengths. The data may be used to calculate appropriate weight estimates for the estimates of fish reported by anglers as discarded alive or dead.

### **Eligible Fish**

There are three main dispositions of fish that may be measured for this form:

- Retained by boat (disposition 0)

- Thrown back alive (disposition 1)
- Thrown back dead (disposition 6)

*\* Please note: You may include disposition 6 fish from a Type 3 record, but only if they were NOT measured on the MRFSS interview form. Avoid double measurements.*

The base interview and creel census of anglers may include counts of discarded fish listed as type 2 records. Type 2 records are counts of fish reported by the angler as normally unavailable for examination by the sampler. The Discarded Fish form is the place to record the lengths and weights of type 2 fish that are examined.

Priority should be given to fish that are under management control. These would be fish thrown back because they are not legal. Your supervisor has a list of these species of concern.

## **Ineligible Anglers**

The form is unique and would seem to have some angler eligibility exceptions relative to the intercept form, such as:

- Recording measurements of fish that will be thrown back dead or alive by *any* angler encountered (including uninterviewed anglers).
- Including measurements of discarded fish that are retained by the boat crew. Sometimes referred to as “boat fish”, these fish are not thrown overboard.

## **Ineligible Fish**

Never list a discarded fish on this form if it has already been measured as a Type 3 record on an angler interview). Also, fish that are cut up for bait (disposition 4), filleted (disposition 3), taken home or given to others (disposition 5) are NOT discarded fish and should not be listed on this form.

## **Collecting Discards Aboard Boats**

Most of the data using this form are expected to come from observed party or charter boat trips, since the sampler will have access to discarded fish during fishing. You should inform anglers of your intention to measure discarded fish before they are thrown back. It may be difficult or impossible to keep up with the discarded fish at times. If fish discards are excessive, then many may be thrown back before you measure them. Do not allow live fish to remain aboard too long waiting to be measured, as this may give the impression that we are allowing fish to die needlessly.

It is very important to record the STOP # for all the fish on PC trips.

## **Collecting Discards Ashore**

It is not expected that you will get many discards from shore anglers and from dockside boat anglers since they are often not encountered until their fishing is complete. However, there will

be occasions when you will witness a fish being thrown back alive. In this case record a type 2 fish coded to the species and record the *measurement* on the Discarded Fish form. Do not record a more general taxonomic level than what you have identified, since “species specific” information is the goal.

## **Avoiding Duplicate Measurements**

It is important not to record two measurements for one fish. There is a possibility of recording the measurements of the same fish on a type 3 record as well as on the Discarded Fish form (disposition 6 fish are a good example). In these cases, Type 3 records take priority over the Discarded Fish form for the listing of fish measurement.

## **Numbers of Fish vs. Measurements of Fish**

Fish from the Discarded Fish form can be recorded as type 2 (and, in some cases, Type 3 records) and vice versa.. Since only measurements (not the *number* of fish) are listed on the discarded fish form, consider measurements as the only source of possible duplicates. Numbers of fish on type 2 or type 3 records should not be changed because of a measurement on the Discarded Fish form.

## **Representative Sampling**

There may be times when the numbers of discards to measure or the opportunity to measure discards changes. The numbers of fish and sizes available may also affect your chance and opportunity to measure fish. It is important not to let the size of the fish influence your decision to measure a discard. Unusually small or large size fish should not affect your decision to measure the discard.

For example, there may be times when there are many small fish and other times when there are fewer larger fish of a species being discarded. Under varying conditions, it would be best to use uniform systematic sampling rates (every Nth fish) to collect a representative selection. Measurements should be representative of the numbers of fish being discarded. Therefore, in the above example, it would NOT be proper to sample *all* of the larger fish, but only a *few* of the smaller fish. Doing so may over-estimate the mean weight of a species of discarded fish.

## **Major Mode and Area**

The MODEX and AREAX are known as the *major mode* and *major area* and are used for estimation or assignment allocation

The *major modes*: 1 = Man Made (MM), 2 = Beach/Bank (BB), 6 = Party/Charter boats (PC) and 7 = Private/Rental boats (PR).

The *major areas*: 1 = Ocean outside of three miles (EEZ - Exclusive Economic Zone), 2 = Ocean inside of three miles (STS - State Territorial Seas) and 5 = Inland areas (bay, river, sound, etc.).



**\*Modex** is the *major mode* code of the type of fishing 1,2,6 or 7. *Note: The four major modes differ from the “mode” used on the intercept form.* See definitions on the bottom of the Discard Form.

**\*Areax** is the *major area* code of the type of fishing 1,2, or 5. *Note: The three major areas differ from the “area” used on the intercept form.* See the definitions on the bottom of the Discard Form.

**\*Fork Length** is the length (in mm) of the discarded fish. The measuring procedure is the same measuring board method as that used for Type 3 fish.

**Weight** is the weight (in kg) of the discarded fish. This is an optional measurement since the weighing procedure may harm the gills of the fish. Do not guess the weight of fish under rough sea conditions or if the fish is struggling.

**\*Disposition** is the fate outcome of this fish 0,1,6 or 8. See the definitions on the bottom of the Discard Form. Fish that are alive but are obviously not going to survive (due to severe wounding or projecting air bladder, for example) may be coded as dead.

**Sex** is the gender (1 = Male, 2 = Female) of the fish. This item is optional because (for many species) the sex cannot always be easily determined.

**CPFV Stop** is the fishing location “stop” number copied from the CPFV Location Form. Onboard PC observers will collect the bulk of the discard length data. The stop number is necessary for analysis of depth and location for the discards and is required for PC mode.

\* These above items are NEVER left blank.

## **Coding Examples**

These examples serve to illustrate complete and correctly coded forms. There are various time saving shortcuts that may be used to avoid repeated coding or coding of not applicable items.

- Arrows or quotes may be used to show repeats of data (so long as the arrow cannot be easily mistaken for “1”).
- Blank cells may be used to show missing non-key items.
- A dash line may be used to indicate that a weight was not collected.
- Shorthand may be used to code the various common names.
- Leading zeros may be omitted from lengths, weights and CPFV stops.



**Example 2.** A possible *shore* side form showing the use of shorthand common names, use of arrows and quotes for data repeats and blank cells and dashed lines for missing non-key items (weights and CPFV stops).

## Justification and Purpose of Data

The data may serve many purposes (some of which will not have been anticipated) and cannot all be listed here. The primary purpose of this data collection is to estimate the total metric tons of fish *discarded* alive and *discarded* dead more accurately than has been done in the past. In the past, the mean weights of kept fish were used to calculate all weight estimates. However, due to regulations, the size of discarded fish may differ from retained catch leading to a potential bias.

Differing management measures have differing effects on the size of discarded fish. Species with minimum size restrictions cause smaller fish to be discarded. Species with area closures by depth may have the opposite (or no) effect on the mean weight of discards. Illegal fish may have no kept catch. Therefore, the only sources of measurements for illegal fish may be through discards.

Lengths have a priority of measurement because weighing has the potential of increasing mortality more than getting a length measurement. Weights can be calculated from lengths based on regressions of lengths and weights of kept fish collected over the years. Total harvest can be adjusted for fish discarded dead as well as fish discarded alive with an appropriate hooking mortality rate.

Location of discard is collected because management methods include latitude, distance from shore and depth as criteria for catch retention. The CPFV stop number can be used to summarize the discard data into these criteria to monitor and forecast management methods.

Quality control of the data is an important reason for collection of the sampler, subregion and wave for data storage and tracking purposes. The date of the data allows the data to be further tracked to a particular form for review and feedback tracking as well as allowing the data to be separated into time periods for analysis. The season of collection and sex of the fish can be used to monitor catch and releases as fish may migrate into different areas and depths during reproductive cycles.

## FAQ Quick Tips

1. Fill this form out for any fish that are discarded by the angler.
2. Fish on this form may be from any anglers interviewed or not
3. Fish on this form may NOT be measured Type 3 fish on an intercept form
4. Fish on this form CAN be Type 2 fish on an intercept form
5. Turn in this form for EACH separate PC trip with measured discards
6. Turn in this form at least monthly for all shore and PR modes with discards
7. Fill in the DATE for the PC trip or the ending date for shore and PR data
8. Leave the Weight, Sex and Stop number BLANK if not applicable

9. The LENGTH of the fish is always required
10. The coding for AREAX and MODEX differ from the intercept form
11. The SPECIES CODE may be either the 10 digit or 3 digit codes



# DISCARDED FISH

Pg#  of#

1. Interviewer

Year    Month   Day   4. Form Date

2.\*Subregion  3.\*Wave

Assign #  
5.Vessel Name

## TYPE 0 - EXAMINED DISCARDED CATCH MEASUREMENTS

	* Species Code					*Modex	*Areax	*Fork Len. (mm)	Weight (kg)	*Dispo	Sex	CPFV Stop #
1												1
2												2
3												3
4												4
5												5
6												6
7												7
8												8
9												9
10												10
11												11
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27												27
28												28
29												29
30												30

\* Dispo: What happened to the fish? - 0=Retained by boat, 1=Thrown back alive, 6=Thrown back dead

MODEx - 1=MM 2=BB 6=PC 7=PR

Sex - 1=male 2=female

AREAx - 1=Ocean < 3 miles 2=Ocean > 3 miles 5=Inland

Subregion - 1=S.CA 2=N.CA 3=OR 4=WA



Example 1

DISCARDED FISH

Pg #  of #

1. Interviewer

Year Month Day  
  4. Form Date

2.\*Subregion  3.\*Wave

Assign #  
 5.Vessel Name *Hoaktown 6*

TYPE 0 - EXAMINED DISCARDED CATCH MEASUREMENTS

	* Species Code	*Modex	*Areax	*Fork Len. (mm)	Weight (kg)	*Dispo	Sex	CPFV Stop #
1	<i>Chinook</i>	6	1	4 5 0	1 9 5	1	1	1
2				5 2 0	2 2 5			1
3				4 1 2	2 1 0			1
4				3 2 1			2	1
5				4 3 3				2
6				4 8 9				2
7				4 7 6				2

Example 2

DISCARDED FISH

Pg #  of #

1. Interviewer

Year Month Day  
  4. Form Date

2.\*Subregion  3.\*Wave

Assign #  
 5.Vessel Name

TYPE 0 - EXAMINED DISCARDED CATCH MEASUREMENTS

	* Species Code	*Modex	*Areax	*Fork Len. (mm)	Weight (kg)	*Dispo	Sex	CPFV Stop #
1	<i>Black RF</i>	1	5	2 5 0	2 6	1		1
2				2 2 0	1 5			2
3				2 1 2	1 3			3
4		2	1	2 2 1	1 4			4
5				2 3 3	1 8			5
6				2 8 9	2 5			6
7				2 7 6	2 4			7
8	<i>Redtail SP</i>	2	1	3 0 7	6 7	1	2	8
9	"			3 1 3	6 8	1	2	9
10	<i>Kelp G</i>			2 7 6	3 0	1	1	10
11	"			3 6 4	3 8	1	2	11
12	<i>Ling</i>	7	1	3 4 5		2	8	12
13	<i>Redtail SP</i>	2	1	2 9 8	6 5	1	2	13
14	<i>Kelp G</i>	2	1	1 7 9	1 0	1	2	14
15	<i>Black RF</i>	2	1	3 1 1	5 1	1	8	15