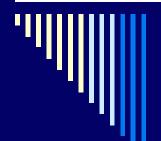


## Pelagic Longline

Set & Haul Information and Catch Composition



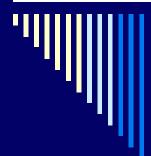
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### Introduction

### **Data Collection Duties**

- 1. Estimate effort for each gear deployment;
- 2. Identify every individual caught and assess catch condition and fate;
- 3. Collect biological information on target and other identified species as requested;
- Record all sightings and interactions with marine mammals and sea turtles;
- 5. Record vessel and fishing gear characteristics.



### Objectives

- List 8 elements on the Set & Haul Information form and describe how each is collected
- Define fishing effort
- Describe the catch composition sampling process for pelagic longlining
- Describe 2 situations when you can modify the standard catch composition sample and describe the modification for each
- List 4 pieces of information that must be collected from every animal caught
- List 3 pieces of gear needed on deck for catch composition sampling
- Demonstrate ability to complete the Set & Haul Information and Catch Composition forms



### Set & Haul Information Form

- □ Fishing effort time & amount of gear fished
- □ 1 per set

### ''||||||||| Set & Haul Information Form

					S	et and l	Haul Inform	nati	on - Pe	agic Lo	ongline							
	ver code <b>34</b>		Vessel cod	032 4	156	Trip ID	1 Set No		larget <b>BE</b>	T					Page _	of		
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		Set							Distai betwee					Mea	asured I	ength		
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	Rel	oaited												Hod	ok type*			
	Mon	itored				Weight	t (g) V	/eigh	t placeme	ent				Т	otal set			
	*from L	LD Gea	ır Desci	ription fo	orm													

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	Tended Rebaited														Hod	ok type*			
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	*from L	LD Gea	ır Desci	ription fo	orm														

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					S	et and l	Haul	Inforn	nati	on - Pel	agic l	ongl	ine							
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### ''||||||||| Set & Haul Information Form

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e t	End																	_	
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	- 11					S	et and	Haul	Infor	mati	on - Pel	lagic I	ong	line							
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	*from L	LD Gea	r Descr	ription fo	orm																

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e t	End																			
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### "||||||||| Set & Haul Information Form

							_				_					_	
Bait							Lig	ht devices									
Species							-	Гуре codes (ciro	cle one) –	0 No	ne		2 GI	ow be	ad		
kg								. , , , , , , , , , , , , , , , , , , ,	/	1 Lig	ht stic	:k	3 01	her			
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							Нον	v many?									
	Mainlir	ne length		nmi				Color Code	%								
Gear co	ndition		0 – No pr	ndition Co oblems problems	odes					<b></b> 1 - \		<b>des</b> 16 - Red - Clear				$\mathbb{H}$	
Gear	parted	Y/N	2 – Major	problems								8 - Ora ⊒9 - Ya					
Gea	Gear parted Y/N Gear lost? Y/N		4 – Gear	conflicts	damaged/lo					5 - 1	3lue □1	0 - Oth	ner			┚	
			5 – Other	– explain	in comment:	S										$\bot$	
Other dev	/ices?		TDRs		Hook tim	ners		Surface light	s	Ot	her						

# Set & Haul Information Form

Bait							Lig	ht devices								
Species							١,	Гуре codes (circle (	one) (	None		2	Glow	bead		
kg								. , , , , , , , , , , , , , , , , , , ,		Light s	tick	3	Othe	r		
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			_	ondition C	odes					Color C 1 - White	<b>odes</b> e⊟6 - Re	ed				
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Gea	r parted	Y/N	2 – Majo	r problems	, domogodi	loot				4 - Gree	k	ellow				
Ge	Gear lost? Y / N 4-Gear completely damaged/lost.									5 - Blue	□10 - Otl	her			┦.	
			5 – Othe	r — explain	in comment	s										
Other de	vices?		TDRs		Hook tin	ners		Surface lights		Other	-					

# | | Set & Haul Information Form

Bait							ight devices									
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Gea	condition ar parted ear lost?	Y/N	Gear Co 0 – No p 1 – Mino 2 – Majo 3 – Gear 4 – Gear	ondition C roblems ir problems ir problems r completely r conflicts	y damaged/lost.		Surface lights		1 - V 2 - P 3 - B 4 - G	White □6 - Fi ink □7 - Cle llack □8 - C Preen □9 - V	ear )range Yellow					

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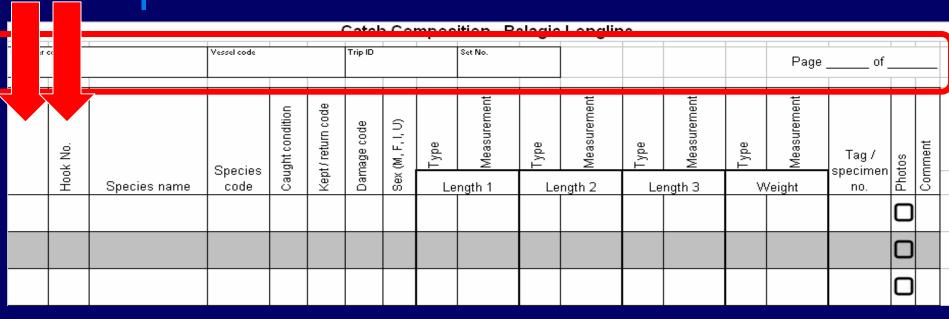
Bait						Light devices							T
Species						Type codes (circle one)	0	Nor	ne	2	Glov	v bead	
kg						.,,,,		Ligh	nt stick	3	Othe	er 📗	
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Other de	vices?		TDRs	Hook timers		Surface lights		Oth	ner				



### Set & Haul Information Form

- Questions on Set & Haul information?
- □ Practice exercise





### Common Species

SKJ Skipjack tuna YFT Yellofin tuna **BET** Bigeue tuna ALB Albacore tuna SWO Swordfish

BSH Blue shark SMA Shortfin make shark

### Caught condition

A1 Active , not bleeding

A2 Active , bleeding/ obvious injury

X Inactive

U Unknown.

\*More codes for MM & turtles

### Kept/return codes

K Kept

A1 Active, not bleeding

X Dead, inactive

F Finned

I Injured

U Unknown

### Damage codes

Blank No damage

NI Did not inspect

C Cookie cutter shark

M Marine mammal

Shark

Sex codes

Unknown source

Length types (combine # & letter)

**01** Fork C Curved

02 Total S Straight

03 Standard E Estimated

**04** Eve to fork

05 Lower jaw to fork

11 Disc width

Blank - no weight A Actual

01 Whole

E Estimated

Weight types (combine # & letter)

02 Gilled & autted

03 Gilled & headed

04 Headed & gutted

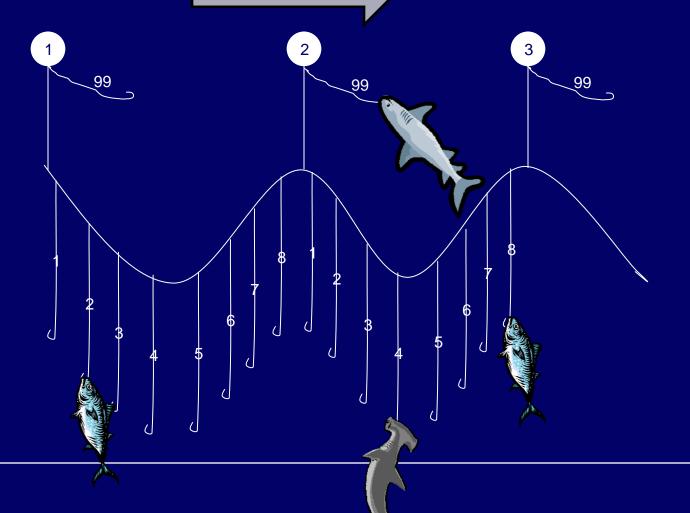
99 Other, describe in comment

M Male F Female I Indeterminate U Unknown (not inspected)



**Set Direction** 

Hook number assigned based on setting direction





		•																
						Catch	Co	mpos	ition - P	elagic	Longlin	е						
Observer	code	1	Vessel code			Trip ID			Set No.						Page .	of _		
	k No.		Species	ght condition	Kept/return code	Damage code	(M, F, I, U)	Туре	Measurement	Туре	Measurement	Туре	Measurement	Туре	Measurement	Tag /	tos	Comment
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SKJ Skipjack tuna YFT Yellofin tuna **BET** Bigeye tuna ALB Albacore tuna SWO Swordfish

**BSH** Blue shark SMA Shortfin make shark

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A2 Active , bleeding/

obvious injury

X Inactive U Unknown

\*More codes for MM & turtles

A1 Active, not bleeding

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F Finned

I Injured

U Unknown

|Blank\_No damage|

NI Did not inspect

C Cookie cutter shark

M Marine mammal

Shark

Unknown source

02 Total S Straight

03 Standard E Estimated

04 Eye to fork

05 Lower jaw to fork

11 Disc width

Blank - no weight

01 Whole

E Estimated

02 Gilled & autted

03 Gilled & headed

04 Headed & gutted

99 Other, describe in comment

Sex codes M Male F Female I Indeterminate U Unknown (not inspected)



ode		Vessel code		_	TripID	1 Col	mpos	Set No.	elagic	Longiin	ne			Page .	of _		
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### Common Species

SKJ Skipjack tuna YFT Yellofin tuna BET Bigeue tuna ALB Albacore tuna SWO Swordfish

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U Unknown

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C Cookie cutter shark

M Marine mammal

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Sex codes

Unknown source

### Length types (combine # & letter)

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S Straight

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02 Total

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11 Disc width

Blank - no weight A Actual E Estimated

Weight types (combine # & letter)

01 Whole

02 Gilled & gutted

03 Gilled & headed

04 Headed & gutted

99 Other, describe in comment

M Male F Female I Indeterminate U Unknown (not inspected)



Pageof	Observer o	ode		Vessel code			Catch	n Coi	mpos	ition - Po	elagic	Longlin	e						
																Page	of .		
호 Species name code 호 호 호 호 호 호 C C C C C C C C C C C C C		2		Species	ught condition		nage code	(M, F, I,	Туре	Measurement	Туре	Measurement	Туре	Measurement	Туре	Measurement		otos	nment
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																		0	

### Common Species

SKJ Skipjack tuna YFT Yellofin tuna BET Bigeue tuna ALB Albacore tuna SVO Swordfish

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### Caught condition

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A2 Active , bleeding/

obvious injury X Inactive

U Unknown.

\*More codes for MM & turtles

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K Kept

A1 Active, not bleeding

X Dead, inactive

F Finned

I Injured

U Unknown

### Damage codes

Blank No damage

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### Length types (combine # & letter)

01 Fork C Curved

02 Total S Straight

03 Standard E Estimated

04 Eye to fork

05 Lower jaw to fork

11 Disc width

Blank - no weight A Actual E Estimated

01 Whole

02 Gilled & gutted

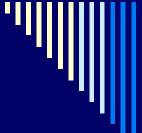
03 Gilled & headed

04 Headed & gutted

99 Other, describe in comment

Weight types (combine # & letter)

Sex codes M Male F Female I Indeterminate U Unknown (not inspected)



		-1			(		n Coi	mpos	ition - Pe	elagic	Longlin	ie						
Observer	:ode		Vessel code						Set No.						Page .	of _		
	Hook No.		Species	Caught condition	Kept / return code	Damage code	x (M, F, I, U)	Туре	Measurement	Туре	Measurement	Туре	Measurement	Туре	Measurement	Tag /	Photos	Comment
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### Common Species

SKJ Skipjack tuna YFT Yellofin tuna BET Bigeue tuna ALB Albacore tuna SWO Swordfish

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\*More codes for MM & turtles

### Kept/return codes

K Kept

A1 Active, not bleeding

X Dead, inactive

F Finned

I Injured

U Unknown

### Damage codes

Blank No damage

NI Did not inspect

C Cookie cutter shark

M Marine mammal

Shark

Unknown source

Length types (combine # & letter)

01 Fork C Curved

S Straight

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02 Total

05 Lower jaw to fork

11 Disc width

Blank - no weight A Actual 01 Whole E Estimated

Weight types (combine # & letter)

02 Gilled & gutted

03 Gilled & headed

04 Headed & gutted

99 Other, describe in comment

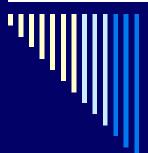
Sex codes Milimale Filipernale I Indeterminate U Unknown (not inspected)



- often only head remains
- Widely spaced tooth punctures
- Often on multiple fish
- Jagged bite edges







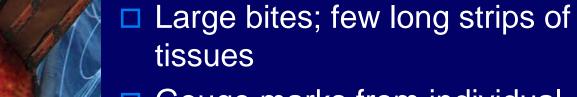
## Damage – Cookie cutter



circular / oval – cleanedges





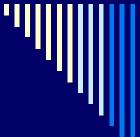


Gouge marks from individual teeth – look more like lacerations

Frequently multiple bites



Images: Chapman et al. 2006



		- 11																
						Catch		mpos	ition - P	elagic	Longlin	e						
Observer	code		Vessel code			Trip ID			Set No.						Page	of _		
	k No.		Damage code	(M, F, I, U)	Туре	Measurement	Туре	Measurement	Туре	Measurement	Туре	Measurement	Tag /	tos	Comment			
	Hook	Species name	Dam	Sex	Le	ngth 1	Le	ngth 2	Le	ngth 3	٧	Veight	specimen no.	Photos	Com			
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																	0	
Commoi SKJ Skipja YFT Yello	ack tuna fin tuna	Caught conditi A1 Active , not A2 Active , blee	codes : bleedin	Нв		codes damage t inspect	- 11	Length typ 01 Fork 02 Total	CO	ibine #&let urved traight	H	Weight type Blank - no w 01 Whole		e # & Actual stimal	ı			

C SI YI BET Bigeye tuna ALB Albacore tuna SWO Swordfish

**BSH** Blue shark SMA Shortfin make shark

obvious injury

X Inactive U Unknown

\*More codes for MM & turtles

X Dead, inactive

F Finned

I Injured

U Unknown

C Cookie cutter shark

M Marine mammal

Shark

Unknown source

03 Standard E Estimated

04 Eye to fork

05 Lower jaw to fork

Disc width

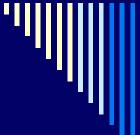
02 Gilled & gutted

03 Gilled & headed

04 Headed & gutted

99 Other, describe in comment

M Male F Female I Indeterminate U Unknown (not inspected) Sex codes



		- 14																
						Catch	Co	mpc	on - P	elagic	Longlin	ie						
Observer	code		Vessel code			Trip ID			No.						Page .	of _		
	Hook No.		Species	Caught condition	Kept/return code	Damage code	x (M, F, I, U)	Туре	Measurement	Туре	Measurement	Туре	Measurement	Туре	Measurement	Tag /	Photos	Comment
	Ĭ	Species name	code	ర	_ <u>~</u>	ے ا	Sex	Le	ngth 1	Le	ngth 2	Le	ngth 3	V	/eight	no.	0	<u> </u>
Commo	n Sneci	es   Caught conditi	on H	Kept/r	eture 4	rodes	Нь	amage	codes		Length typ	es (com	hine # 2 let	ter) H	/eight type	es (combine	a # 2 le	etter)

SKJ Skipjack tuna YFT Yellofin tuna BET Bigeye tuna ALB Albacore tuna SWO Swordfish

**BSH** Blue shark SMA Shortfin make shark

A1 Active , not bleeding

A2 Active , bleeding/

obvious injury

X Inactive

U Unknown

\*More codes for MM & turtles

K Kept

A1 Active, not bleeding

X Dead, inactive

F Finned

I Injured

U Unknown

Blank No damage

NI Did not inspect

C Cookie cutter shark

M Marine mammal

Shark

Sex codes

Unknown source

M Male F

**01** Fork C Curved

02 Total S Straight

03 Standard E Estimated

04 Eye to fork

05 Lower jaw to fork

11 Disc width

lank - no weight A Actual 1 Whole E Estimated

2 Gilled & autted

3 Gilled & headed

4 Headed & gutted

9 Other, describe in comment

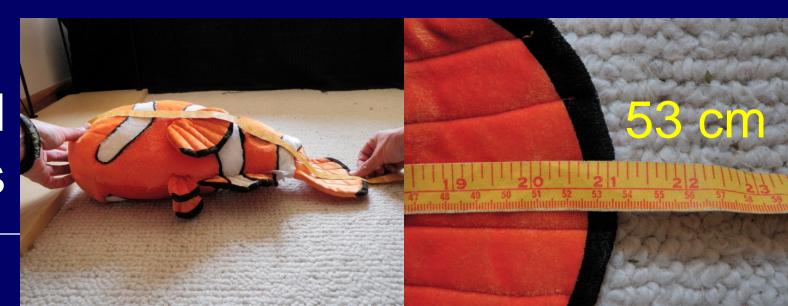
not inspected)

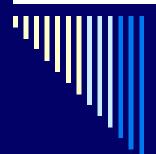


# Straight

VS.

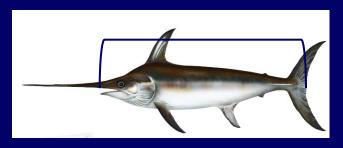
# Curved lengths





### Length Rule of Thumb

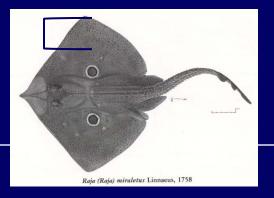
□ Swordfish and billfish – lower jaw to fork length, curved (type 05C)

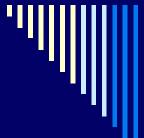


□ Tunas, sharks & most other fish – straight fork length (type 01S)



□ Rays – disc width (type 11S)





		1				Catch	ı Coı	mpos	ition - P	elagic	Longlin	ie						_
Observer o	:ode		Vessel code			Trip ID			Set No.						Page _	of _		_
	Hook No.	Species name	Species code	Caught condition	Kept / return code	Damage code	Sex (M, F, I, U)	Туре	Measurement Measurement	Type	Measurement Measurement 2	Type	Measurement Measurement	Type	Weasurement Measurement	Tag / specimen no.	Photos Comment	
													.g 5		oig		0	
																	0	

### Common Species

SKJ Skipjack tuna YFT Yellofin tuna BET Bigeue tuna ALB Albacore tuna SWO Swordfish

**BSH** Blue shark SMA Shortfin make shark

### Caught condition

A1 Active , not bleeding

A2 Active , bleeding/

obvious injury

X Inactive

U Unknown

\*More codes for MM & turtles

### Kept/return codes

K Kept

A1 Active, not bleeding

X Dead, inactive

F Finned

I Injured

U Unknown

### Damage codes

Blank No damage

NI Did not inspect

C Cookie cutter shark

M Marine mammal

Shark

Sex codes

Unknown source

### Length types (combine # & letter)

**01** Fork

02 Total

S Straight

03 Standard E Estimated

04 Eye to fork

05 Lower jaw to fork

M Male F Female I Indeterminate U Unknow

11 Disc width

C Curved

Blank - no weight A Actual

01 Whole

E Estimated

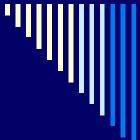
Weight types (combine # & letter)

02 Gilled & autted

03 Gilled & headed

04 Headed & gutted

99 Other, describe in comment



ondition ondition surement surement surement	of.		Подо			ie	Longlin	elagio	ition - P	mpos	n Col	Catcl			Vessel code	<u>'</u>	code	Observer
	hotos mment		Measurement			<u> </u>		<del>                                     </del>	•		<u> </u>	Damage code	Kept/return code	Caught condition	Species		Hook No.	
王 Species name code ర్జార్త ద్ద్రామం Length 1 Length 2 Length 3 Weight no.		rio.	/eight	VV	ngtn 3	Le	ngtn ∠	Le	ingtn i	Le	65			0	code	opecies name		

### Common Species

SKJ Skipjack tuna YFT Yellofin tuna BET Bigeue tuna ALB Albacore tuna SWO Swordfish

**BSH** Blue shark SMA Shortfin make shark

### Caught condition

A1 Active , not bleeding

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U Unknown

\*More codes for MM & turtles

### Kept/return codes

K Kept

A1 Active, not bleeding

X Dead, inactive

F Finned

I Injured

U Unknown

Damage codes Blank No damage

NI Did not inspect

C Cookie cutter shark

M Marine mammal

Shark

Sex codes

Unknown source

### Length types (combine # & letter)

**01** Fork C Curved

02 Total S Straight

03 Standard E Estimated

04 Eye to fork

05 Lower jaw to fork

11 Disc width

Weight types (combine # & letter) Blank - no weight A Actual

01 Whole E Estimated

02 Gilled & gutted

03 Gilled & headed

04 Headed & gutted

99 Other, describe in comment

M Male F Female I Indeterminate U Unknown (not inspected)



# Catch composition – sampling exceptions

Issue	Alternative
Too many fish to keep up	Reduce number of sexed lengths
Rough seas / seasick	Cease measurements but still try to watch
Hunger / toilet	Select a random subsample



- Questions on catch composition sampling?
- □ Practice exercise

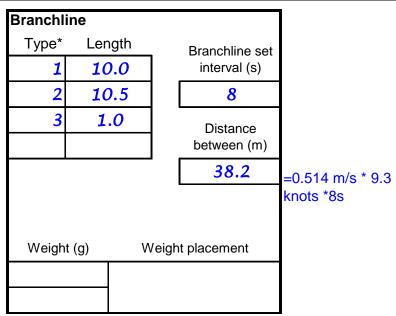
### **Set and Haul Information - Pelagic Longline**

Observer code Y2473 Vessel code 00555 Trip ID 347 Set No. 32 Target YFT

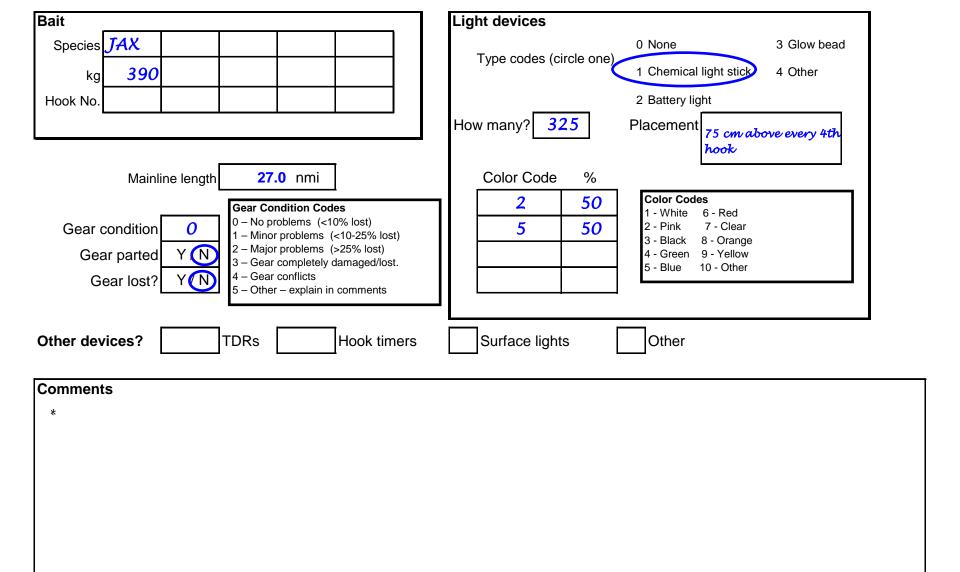
Page \_\_\_\_ of \_\_\_\_

			D	ate/Tim	е			Pos	ition									
		Day	Month	Year	Time (24-hr)	Lat-Deg	Lat-Min	S/N	Long-Deg	Long-Min	E / W	SST (°C)	Sea state	0//	Set Speed (kts)	Max.Depth (m)	Seabird Mitigation	Haul Dir.
S	Begin	10	7	10	1430	56	58.6	N	009	41.21	E	28.1	3	0	9.3	45		
e t	End	10	7	10	1730	57	5.34	N	008	23	E	28.2	3	ν	3	13	)	
H a	Begin	11	7	10	0210	57	0.01	N	009	50.25	E	28.2	4	ν			×	F
u I	End	11	7	10	1145	57	4.87	N	008	23.33	E	28.3	5	ν			2	R

Hooks	
Type*	1
Hooks / basket	13
Total baskets	100
Set	1310
Hauled	1310
Tended	0
Rebaited	0
Monitored	1310



Floats	
# 10	)1
Float line	
Type*	1
Measured le	ength
	25
Weight (g)	
•	
Shark line	on floats?
Hook type*	2
Total set	10



6/2010

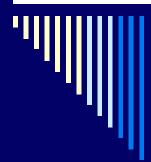
### **Catch Composition - Pelagic Longline**

							00		ilion - Fe									
ode }	′247	3	Vessel code	0555		Trip ID	347		Set No.	2					Page	of		
ok No.			Species	ught condition de	pt / return code	mage code	× (M, F, I, U)	Type	Measurement	Туре	Measurement	Туре	Measurement	Туре	Measurement	Tag /	lotos	Comment
윈	Spe	ecies name	code	Ca	Ke	Da	Se	Le	ength 1	Le	ngth 2	Le	ngth 3	V	/eight	no.	Ph	ပိ
1	al	bacore	ALB	A1	K		M										U	
2	bli	ue shark	BSH	u	K		F											
3	1	rigeye	BET	<i>A</i> 2	K	C	F											
4	pelag	gic stingray		и	X		F											
5	al	bacore	ALB	<i>A</i> 2	K	S	М											
6			ALV	A1	F		F										×	
7	ye	llowfin	YFT	X	κ		М										×	
8			WAH	X	X		u										×	
9	Blu	e marlín	вим	<i>A2</i>	<i>A2</i>	NI	и										0	1
10	al	bacore	ALB	<i>A2</i>	κ		F											
ojack tuna ofin tuna eye tuna acore tuna ordfish e shark		A1 Active, not bl A2 Active, bleeding/obvious X Inactive U Unknown *More codes for M	leeding A injury b C F	K Kept  A1 Active  A2 Active  bleeding/o  C Dead, i  F Finned	, not blee e , obvious i inactive	eding	BIA NI C M S U	ank No d Did no Cookie Marine Shark Unkno	lamage ot inspect e cutter shark e mammal wn source	01 02 03 04 05	Fork Total Standard Eye to fork Lower jaw t	C Cur S Stra E Estin o fork	ved night mated	Blan 01 \ 02 ( 03 ( 04 H 99 (	ok - no weight Whole Gilled & gutter Gilled & heade Headed & gutter Other, describ	A Actual E Estimated  ed ed	ed	
	ON YOOH  1  2  3  4  5  6  7  8  9  10  on Specie tuna acore tuna ordfish ee shark	Y247  ON YOUNG Species of spack tuna of species of species of species of spack tuna o	Y2473  Species name  1 albacore  2 blue shark  3 bigeye  4 pelagic stingray  5 albacore  common thresher  7 yellowfin  8 wahoo  9 Blue marlin  10 albacore  In Species plack tuna offin tuna expertuna accore tuna ordfish es shark  Species plack tuna ordfish es shark	Species name  Species name  Species code  ALB  Species name  ALB  Shue shark  Shue shark	Species name  1 albacore    ALB A1  2 blue shark    BSH U  3 bigeye BET A2  4 pelagic stingray    U  5 albacore ALB A2  6 thresher ALV A1  7 yellowfin YFT X  8 wahoo WAH X  9 Blue marlin BUM A2  10 albacore ALB A2	Y2473  Species name  Species code  1 albacore ALB A1 K  2 blue shark BSH U K  3 bigeye BET A2 K  4 pelagic stingray U X  5 albacore ALB A2 K  6 common thresher ALV A1 F  7 yellowfin YFT X K  8 wahoo WAH X X  9 Blue marlin BUM A2 A2  10 albacore ALB A2 K  Species code COMMON A1 Active, not bleeding A2 Active, bleeding/obvious injury X Inactive U Unknown  Species Sp	Y2473  O0555  Species of the species name of the species of the sp	Species name  Species code  Species code  Species code  Species name  Species code  Species name  Species code  Sp	Species name species sode species sode species sode species species sode species species sode species species sode species species species sode species specie	Species name  Species code  Sp	Species name  Naminamamal  Species name  Naminamamal  Species name  Naminamamal  Species name  Naminamamal  Species name  Species name  Naminamamal  Species name  Naminamamamamamamamamamamamamamamamamamam	Species name code code code code code code code cod	Y2473  O0555  347  32    Species name   Species   Species name   Species   S	Species name   Species   Species	Y2473  O0555  347  32  Species name  Species species species code  Species species species code  Species species species species code  Species species species species code  Species species species species species code  Species species species species species species code  Species speci	Page    Species name   Species name	Page I of  Species name Species Species name Species Code Species Species name Name Species Species Name Name Name Name Name Name Name Name	Page I of

Hook No.	Species name	Species code	Caught condition (A, D, I, U)	Kept / return code (K, A, D, F, I, U)	Damage code	Sex (M, F, I, U)	Type	Measurement 1	Type	v Heasurement	Type	wheasurement	Type	Measurement Measurement	Tag / specimen / carcass no.	Photos	Comment
11	Blue shark	вѕн	<i>A2</i>			M		9		<b>3</b>							
12	dolphinfish	DOL	A2	A2	u	М											
13	skípjack	SKJ	<b>A2</b>	K		I											
14	wahoo	WAH	A2	K		u											
15	Blue shark	BSH	A1	K		М											
16	skípjack	SKJ	A1	κ		u											
17	shortfin mako	SMA	X	u		u											
18	Seranidae, Unid	BSX	X	X		М										×	
19	swordfish	swo	A1	κ		F											
20	Blue shark	BSH	A1	κ		М											

Comments (reference by number in comments box):

1 - Fish released before landing. Estimated lower jaw to fork length at 2.5 meters



### Summary

- List the elements on the Set and Haul Information form and describe how each is collected
- □ How is fishing effort defined?
- Describe the catch composition sampling process for pelagic longlining
- when you can modify the standard catch composition sampling protocol and describe the modification for each
- List 4 pieces of information that must be collected from every animal caught
- What gear is needed on deck for catch composition sampling