



GFBioField

Groundfish Trawl Surveys Electronic Data Acquisition System

2011 edition...



Fisheries and Oceans
Canada

Pêches et Océans
Canada

GFBioField

- Electronic Data Acquisition System (EDAS)
- Updates
 - NMEA logging
 - Integrated GIS expanded
 - Bridge Log “Wizard”
 - Integrated sample selection protocol
 - Integrated length-frequency weights
 - Webcams for QA
 - Bluetooth boards

GFBioField

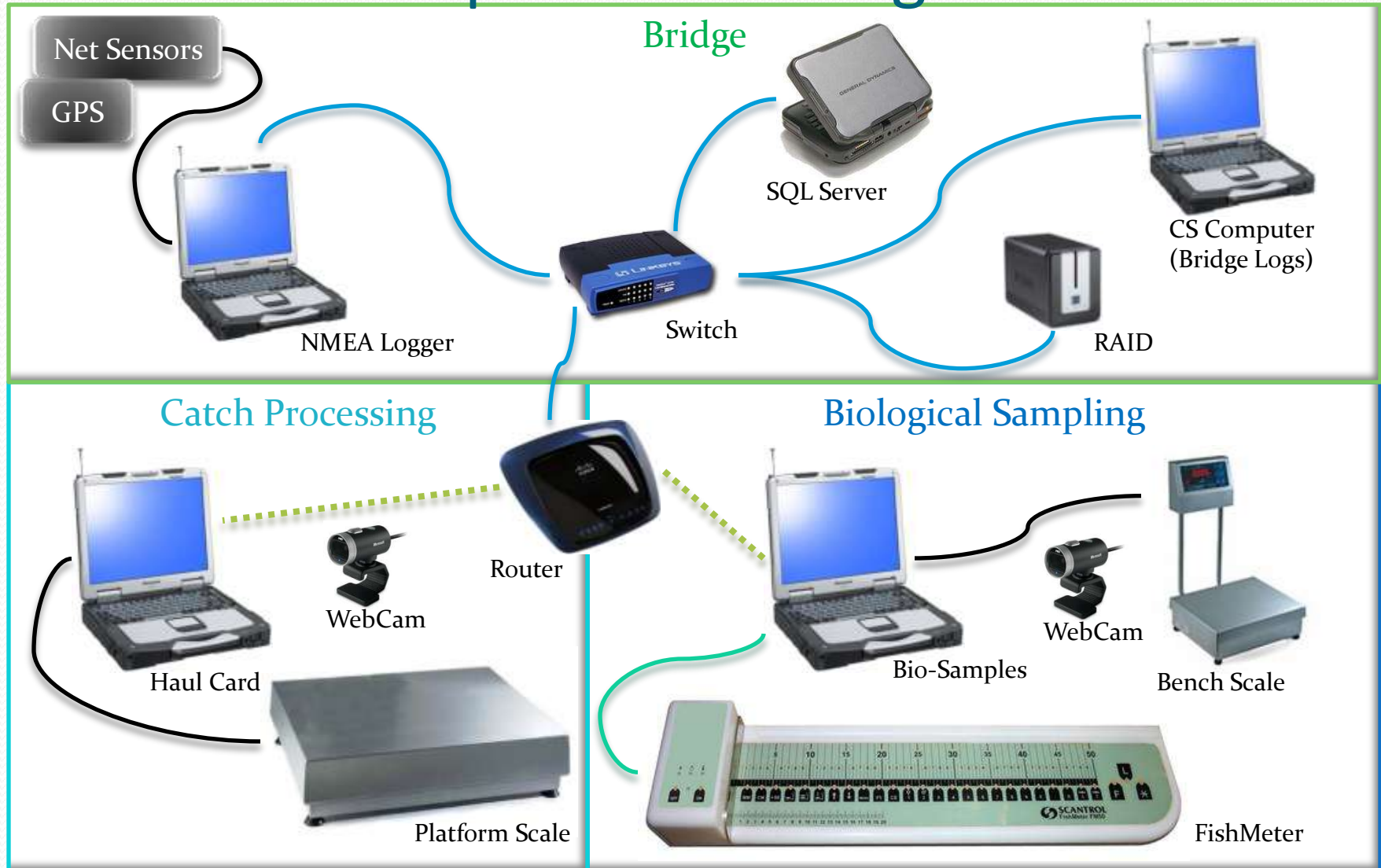
- Hardware
- Software
- Survey Operations

Hardware Components

- Ruggedized laptops
- Scantrol FishMeter Board
- Marel Scales
- Wireless Router
- Network Switch
- RAID Backup Device
- WebCams
- Bluetooth Headphones



Hardware Components Configuration

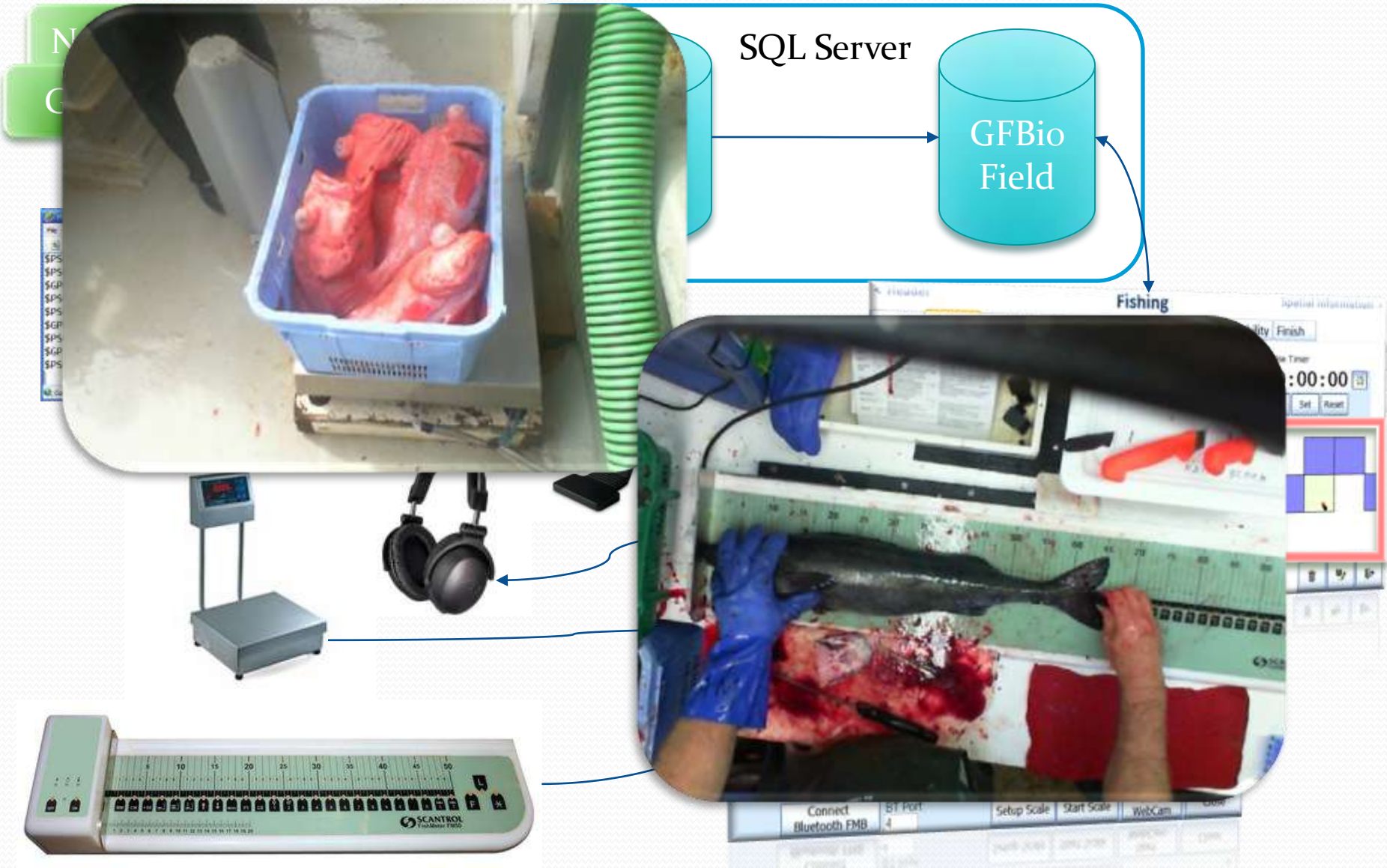


Software Components

- HyperSlurm Data Logger
- Microsoft SQL Server 2008
- Microsoft Access 2007
 - Add-Ins:
 - Microsoft Text-to-Speech Synthesis
 - Scantrol FishMeter Control
 - MapWindow GIS Control
 - WebCam Control
 - Serial and TCP Clients



NG

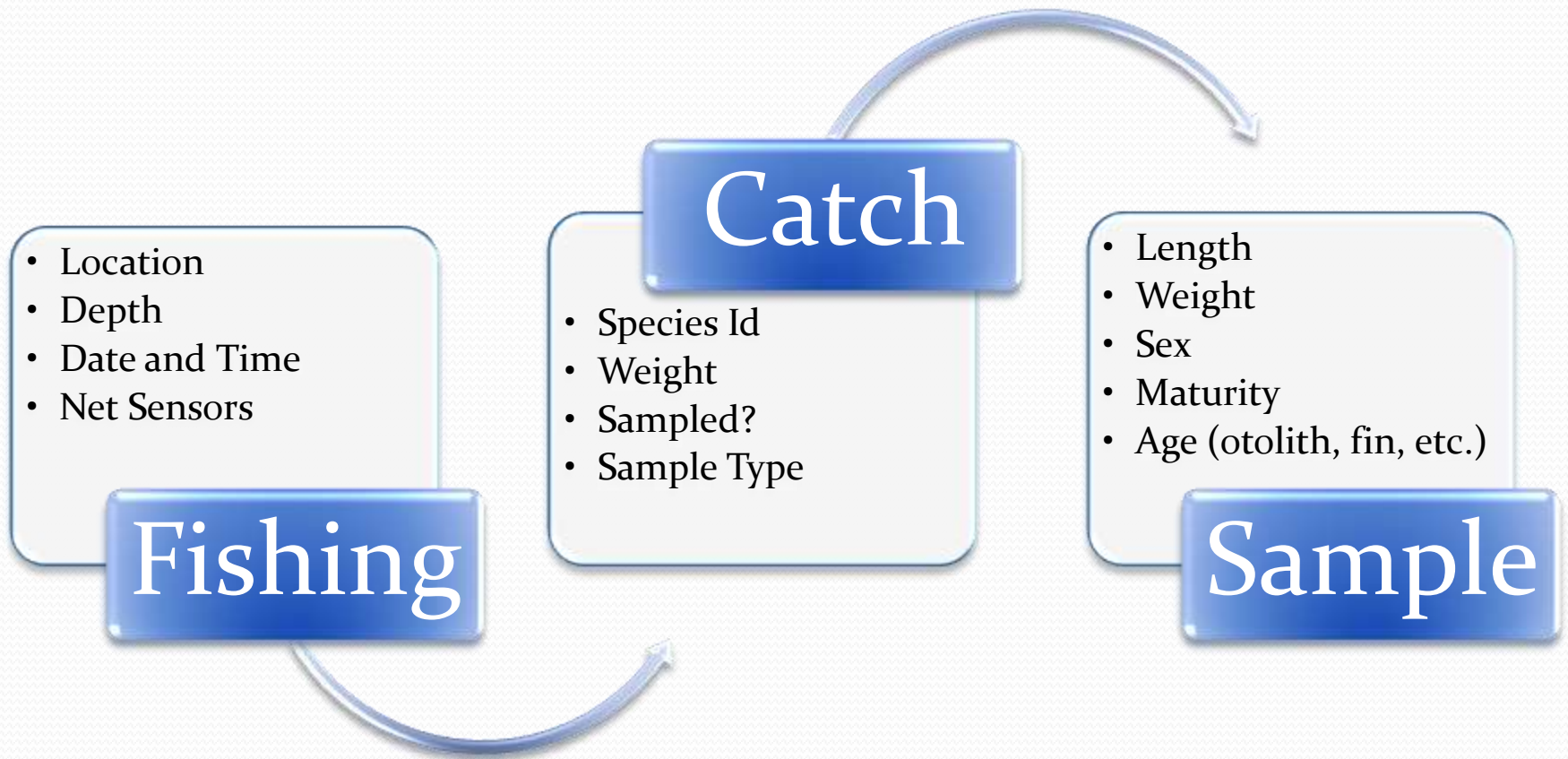


Survey Operations

- Fishing
- Catch Processing
- Biological Sampling



Data Streams



Bridge Log

< Spatial Information

Trawl Specifications

Depths >

Warp Length	250	Fathor	▼
Trawl Speed	4.8	Kmph	▼
Doorspread	74.7	m	
Mouth Height	5.8	m	
Mouth Width		m	
Sweep Length		m	
Codend Mesh		cm	

Trawl Type	Standard Bottom Tr	▼
Net Type	Atlantic Western Iii	▼
Net Sounder	Scanmar	▼
Mens. Dev.	Scanmar	▼
Door Type	Thyboron 107	▼
Door Weight	900	Kg

◀ Previous

Next ▶



2



Bridge Log

< Header Fishing >

Date	11/09/2010	←
Set Number	3	←
Recorder	Wyeth, Malcolm	}
Fishing Master	West, Brian	
Fishing Gear	Bottom Trawl	

☐ Use these defaults and continue

◀ Previous Next ▶ ? ⏮ ⏪ 3 ⏩ ⏭ ⏮ ⏭ ⏭ 🗑️ 📄 📧

Bridge Log

< Header

Fishing

Spatial Information >

☐ Let me skip this section

1. Start Gear Deployment	11/09/2010 13:21:31
2. Start Fishing	11/09/2010 13:31:20
3. End Fishing	11/09/2010 13:33:45
4. End Gear Retrieval	11/09/2010 13:41:55

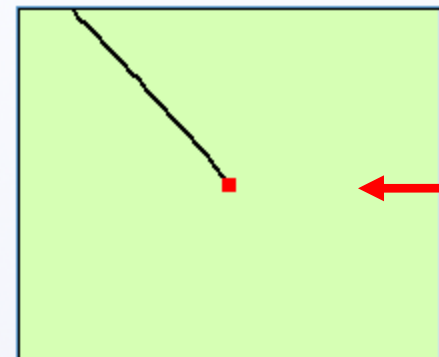
	Latitude
Start	53 13.374
End	53 13.292

	Longitude
Start	132 48.175
End	132 48.041

☒ Use Timer

00:00:00

Start Set Reset



< Previous

Next >



3



Bridge Log

< Fishing

Spatial Information

Trawl Specifications >

Major Stat 09

Minor Stat 31

Locality 7

PFMA 142

PFMA Sub 2

Fishing Ground Marble Island

Auto-Populate

Distance Traveled 0.21 km

Direction of Set (°T) 139

Grouping (Stratum) 153

Block Designation 2577

< Previous

Next >



3



Bridge Log

< Spatial Information

Trawl Specifications

Depths >

Warp Length 250 Fathom

Trawl Speed 5.6 Kmph

Doorspread 70.5 m

Mouth Height 3.8 m

Mouth Width m

Sweep Length m

Codend Mesh cm

Trawl Type Standard Bottom Trawl

Net Type Atlantic Western Iii

Net Sounder Scanmar

Mens. Dev. Scanmar

Door Type Thyboron 107

Door Weight 900 Kg

< Previous

Next >



3



Bridge Log

< Trawl Specifications

Depths

Environment >

Bottom Depths

Beginning	615
Ending	571
Minumum	569
Maximum	615
Average	588

Gear Depths

Beginning	611
Ending	633
Minimum	611
Maximum	633
Average	621

Depth Verification Method Ek500 Sounder ▾ Depth Units Metres ▾

◀ Previous

Next ▶



3



Bridge Log

< Depths

Environment

Fishing Results >

Water Temperature

Surface 11.5°C at 2m by Thermosalinograph

Bottom 4.25°C at 621m by Scanmar Scanbas Sru 06 / Sgm 1

Wind

Direction 225 Speed (knts) 7 Beaufort Scale 3

Sea

Swell Height 2 Tide Flood % Cloudy 25 Sun Shining ☒

Sky

< Previous

Next >



3



Bridge Log

< Environment

Fishing Results

Finalize >

Was this tow a success? ☐ Yes ☒ No

If no, please indicate why from the list below

Other (describe in the comments below). 

Snagged a yellow submarine. Paul was dead.

Would you like to reject this block from the survey? ☐ Yes ☒ No

◀ Previous

Next ▶



3



Bridge Log

< Fishing Results

Print the E

View the C

< Previous

Next >



PRINT

CLOSE

Tuesday, November 09, 2010 2:09:33 PM

Bridge Log

Header

Vessel: Viking Storm Recorder: Malcolm Wyeth Date: 11/9/2010 Set Number: 3
Block Designation.: 2577 Stratum: 153 Reason Code: Reason Comment:

Gear Deployment Times

Begin Deploy: 11/9/2010 1:21:31 PM Begin Retrieve: 11/9/2010 1:33:45 PM
End Deploy: 11/9/2010 1:31:20 PM End Retrieve: 11/9/2010 1:41:55 PM

Gear

Gear Code: 1 Mouth Opening:
Net Code: 2 Height: 3.8 Sweep Length: Usability: Fail, No Usable
Door Code: 11 Doorspread: 70.5 Codend Mesh Size: Sounder Comment:
Door Weight: 900 Warp Length: 250 Sounder Code: 5

Distance and Direction

Distance Travelled: 0.21 Vessel Speed: 5.6 Direction of Set (degrees): 139
Units: km Units: Kmpl

Location

Start Latitude: 53 ° 13.374 ' End Latitude: 53 ° 13.292 '
Start Longitude: 132 ° 48.175 ' End Longitude: 132 ° 48.041 '
Fishing Ground: Marble Island Location Verification Code:

Oceanographic

CTD Reference No:
Water Surface: 11.5 Depth (m): 2 Surface Water Temp Tech Code: 5
Temp. Bottom: 4.25 Depth (m): 621
(°C) Modal:

Depths

	Bottom	Gear	Target	Capture
Start:	615	611		
End:	571	633		
Minimum:	569	611		
Maximum:	615	633		
Modal:	588	621		

Weather and Sea State

Wind Direction: 225 Swell Height: 2 Sun Shining?: Yes
Wind Speed: 7 Cloud Cover: 25 Tide: Flood
Beaufort Scale: 3 Luminescence: Weather Comment:

Survey GIS

- MapWindow GIS ActiveX Component
- Provides GIS Functionality:
 - Zooming and panning display
 - Overlays of previous survey activity
 - Overlays of commercial fishing activity
 - Display and tracking of vessel position
 - Distance measurement
- Modification of survey design
- Export of survey blocks to Nobeltec ONF format

Block Status Legend

- Not yet fished
- Rejected prior to visit
- Rejected after inspection
- Rejected after failure
- Not rejected after failure
- Omitted but not rejected
- Success after multiple tries
- Success after first try

Other Layers

- ☒ Tracks
- ☒ Blocks
- 2006
- 2007
- 2008
- Fisheries
- Dogfish
- Groundfish Trawl
- Halibut
- ☐ CHS Chart

Cursor Location:

Latitude: 53.24953

Longitude: -132.93362

Measurement Length:

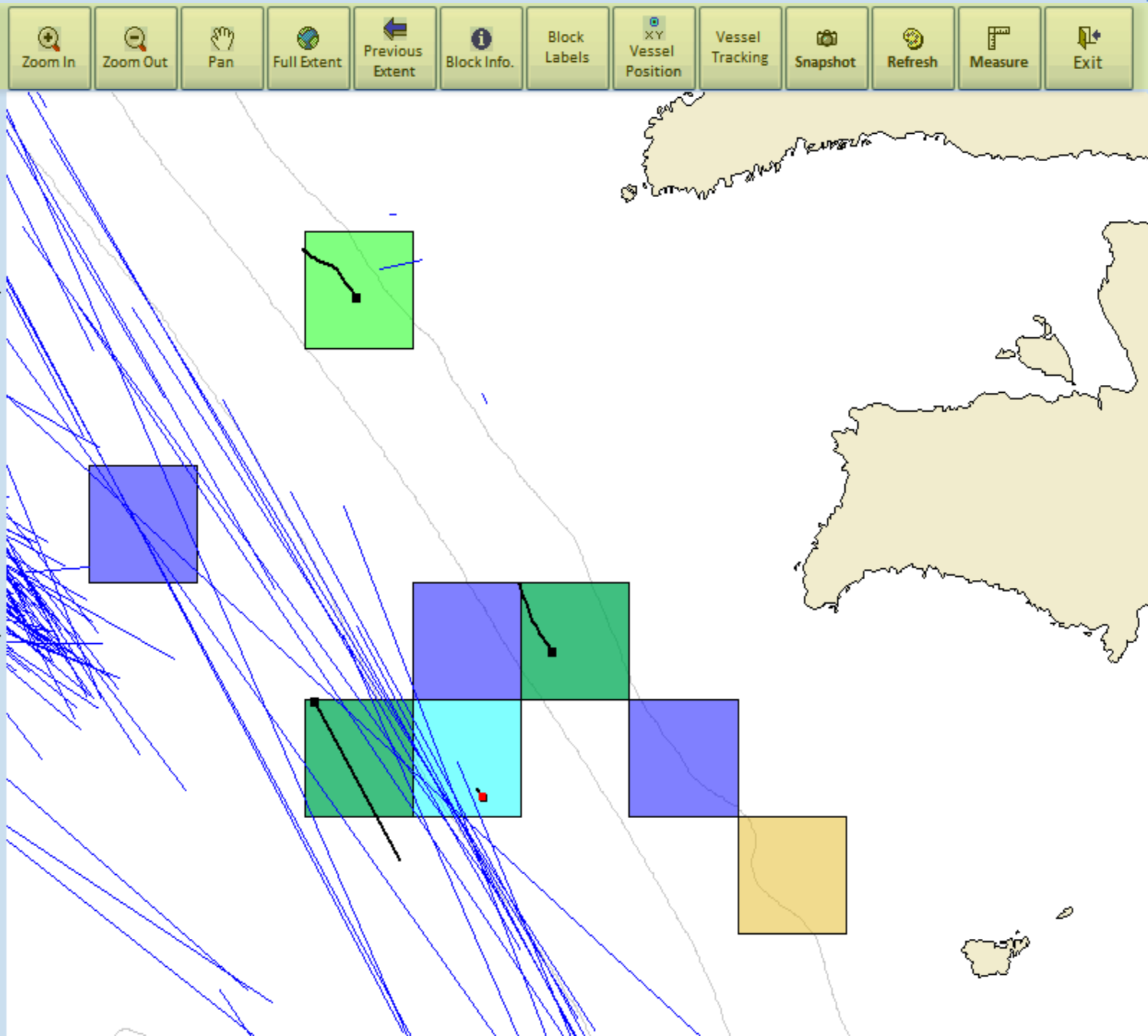
Kilometers:

Nautical Miles:

Block Status Report

Survey Design

Export to Nobeltec



Haul Card

Vessel: Haul Number: Haul Date: Haul Time:

☐ Partial Sort?

General Comm

Sorting Comm

Code	Spec	R	L	A	Sample?
▶ 437	Can	1	1	5	No
414	Gre	3	5	25	Yes A
396	Pacifi	2	10	25	No
626	Dove				No
628	Engli		5	25	No
222	Pacifi		1	10	No
455	Sable		1	25	No
059	Long		1	0	No
91G	Pacifi				No
					No

Use sam Cur

Scale Used:

of 3

Bio-Samples

AGE SAMPLE: Random catch of Greenstriped Rockfish from set 3

Sample Date: 11/09/2010

Sample Type: [Redacted]

Sampler: ? 29

Recorder: ? 106

Sample Weights -> Unknown

Specimen morphometric

Prefix	Fish No.
*	

Basket Weights

Greenstriped rockfish

R = 3 L = 5 A = 25

Weight	Count	Use	Split	Comment	Scale Id	Photo
20.03		0 - Discarded	0: No		1	<input type="checkbox"/>
23.2		3 - Age	0: No		1	<input type="checkbox"/>
		0 - Discarded	0: No		1	<input type="checkbox"/>

Use codes: 0=Discarded; 1=Length frequency; 2=Weight; 3=Age; 4=Other sample type; 5=Retained for sale; 6=Retained for Id; 7=Retained for food

Current Basket Number: 2 of 2

Press the "End" key to close this form, or click on OK:

OK

Update

Wt. ☐ Mat. ☐ Age ☐

ounted Existing Stomach

☐ ☐ ☐

Record: 1 of 1

No Filter Search

+! Record Fish

Biosample Report

LF Entry (from paper forms)

Delete Save Exit

Bio-Samples

Bio-Sample Setup

☒ Sex ☐ Dorsal Spines Collected?

☒ Weight ☐ Pectoral Collected?

☒ Maturity ☐ Vertebrae Collected?

☒ Otoliths Collected? ☐ Stomachs Sampled?

☐ Genetic Samples Collected? ☐ Length Stratified?

☐ Dorsal Fins Collected?

☐ Sarcotaces Noted?

Ok Cancel

Bio-Samples

Greenstriped rockfish sample from set 3 HELP Current Fish Number:

Starting Fish Fish Prefix Otolith Tray Starting Cell

Length Type Length Unit FMB

Weight Type Weight Unit Scale

Fish	Weight	Length	Sex	Mat.	Otoliths	Tray	Cell	OtoCk	Comment
1	340	295	1	3	<input checked="" type="checkbox"/>	1	A01	<input checked="" type="checkbox"/>	
2	460	330	2	7	<input checked="" type="checkbox"/>	1	A02	<input type="checkbox"/>	
3	385	310	1	4	<input checked="" type="checkbox"/>	1	A03	<input type="checkbox"/>	
4	345	290	1	4	<input checked="" type="checkbox"/>	1	A04	<input type="checkbox"/>	
*					<input type="checkbox"/>			<input type="checkbox"/>	

Record:

BT Port:

Bio-Samples

AGE SAMPLE: Random catch of Greenstriped Rockfish from set 3 HELP

Sample Date: 11/09/2010

Sample Type: 2: Random Maturity Convention: Rockfish

Sampler: 207 Wyeth, Malcolm Sample Type Comment:

Recorder: Print Close Wednesday, November 10, 2010 9:45:38 AM

Greenstriped Rockfish 414 Page 1 of 1

Biological Sampling Report for Sample Id: 7053 Date: Nov 09, 2010

Attributes Sampled: LWSMA Tray No: 1 Set No: 3

Vessel: Viking Storm Cruise ID: Samp. Wt: 1.53

Depth: 615 to 571 Gear: Bottom Trawl Sampler: Malcolm Wyeth

Sample Type: Random Num Fish: 4 Recorder: Norm Olsen

Fish No.	Weight gram	Length millimetre	Sex	Maturity	Collected	Cell No.	Remarks
4140001	340	295	1	3 Otoliths;		1-A01	
4140002	460	330	2	7 Otoliths;		1-A02	
4140003	385	310	1	4 Otoliths;		1-A03	
4140004	345	290	1	4 Otoliths;		1-A04	

Record: 4 of 4 No Filter Search

Record Fish Biosample Report LF Entry (from paper forms) Delete Save Exit

Bio-Samples

Vessel: Haul Number: Haul Date: Haul Time:

☐ Partial Sort? Total Weight: Stratum Code: Recorder:

General Comment:

Sorting Comment:

Scale Used:

Code	Species Name	Weight	Count	Verification	Comment	R	L	A	Sample?
394	Rougheye Rockfish	37.35		1: Sorted A				Yes	L
431	China Rockfish	5.67		1: Sorted A				Yes	A
407	Copper Rockfish	25.67		1: Sorted A				No	
626	Dover Sole	67.23		1: Sorted A				No	
628	English Sole	6.99		1: Sorted A				Yes	L
455	Sablefish	78.56		1: Sorted A				Yes	A
	Rockfish	34.00		1: Sorted A				Yes	L
				1: Sorted A				No	



Bio-Samples

The screenshot displays the FishBase software interface. At the top, a dropdown menu is open, showing a list of fish species: 'Rougheye Rockfish', 'English Sole', and 'Silvergray Rockfish'. Each species is followed by the word 'False'. A red arrow points to the 'False' text next to 'English Sole'. To the right of the dropdown menu, there is a 'from set 1' label and a 'HELP' button. Further right, there is a 'Current Fish Number:' field. Below the dropdown menu, there are several buttons: 'Setup', 'Speech Options', 'Save file', 'Load file', 'View', and 'Process'. Below these buttons is a table with four columns: 'Fish', 'Length', 'Sex', and 'Comment'. The table has a header row and several empty rows. At the bottom of the interface, there is a status bar with 'Record: 1 of 1', 'No Filter', and 'Search' options. On the far right, there are buttons for 'Connect Bluetooth FMB', 'BT Port: 1', 'Start WebCam', and 'Close'.