

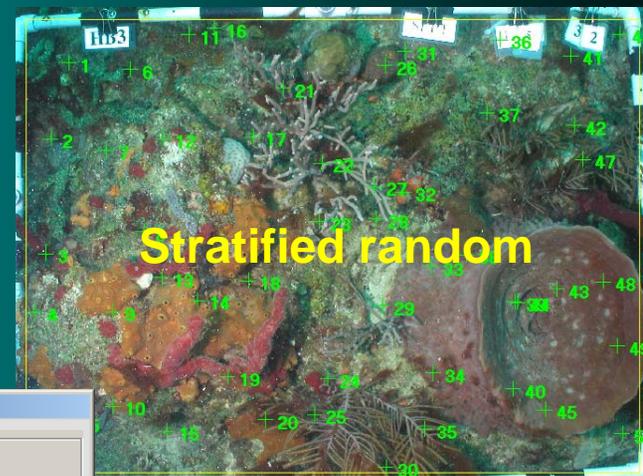
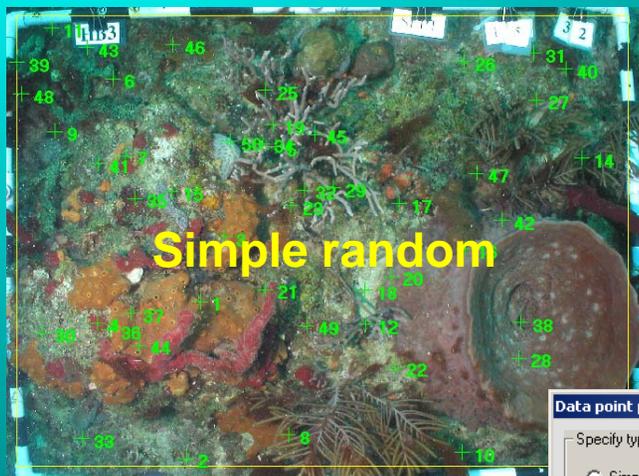
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**Data point positions**

Specify type of data point distribution (500 points maximum)

Simple random  
Number of random points:

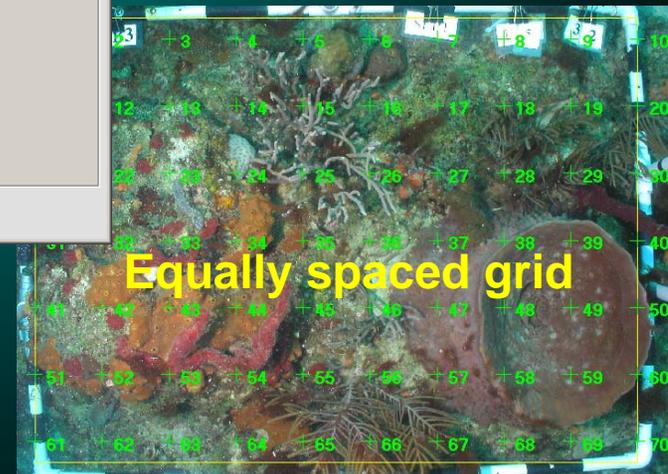
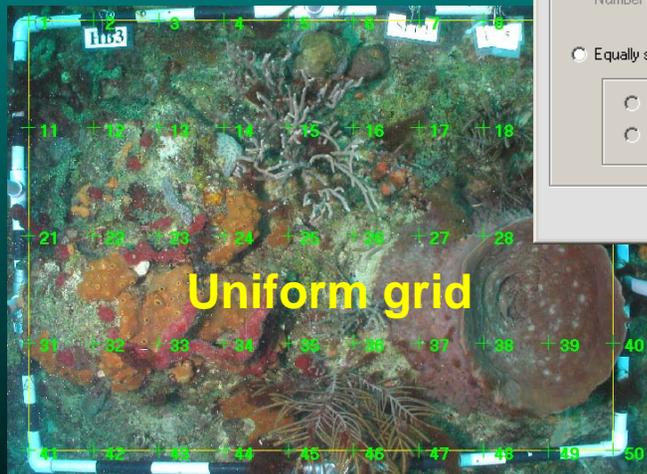
Stratified random  
Number of rows:  Number of columns:  Number of random points per cell:

Uniform grid (dx does not necessarily equal dy)  
Number of rows:  Number of columns:

Equally spaced grid (dx equals dy)

Fit horizontally Number of columns:

Fit vertically Number of rows:



# DATA ENTRY

Point Data

Zoom Box

Point Data (50)

POINT ID	NOTES
1	AL
2	AG
3	FF
4	PP
5	PAL
6	MFAV
7	MC
8	IS
9	MA
10	MACA
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

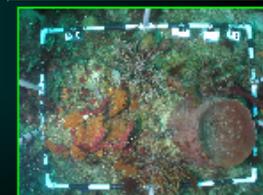
## Category code list

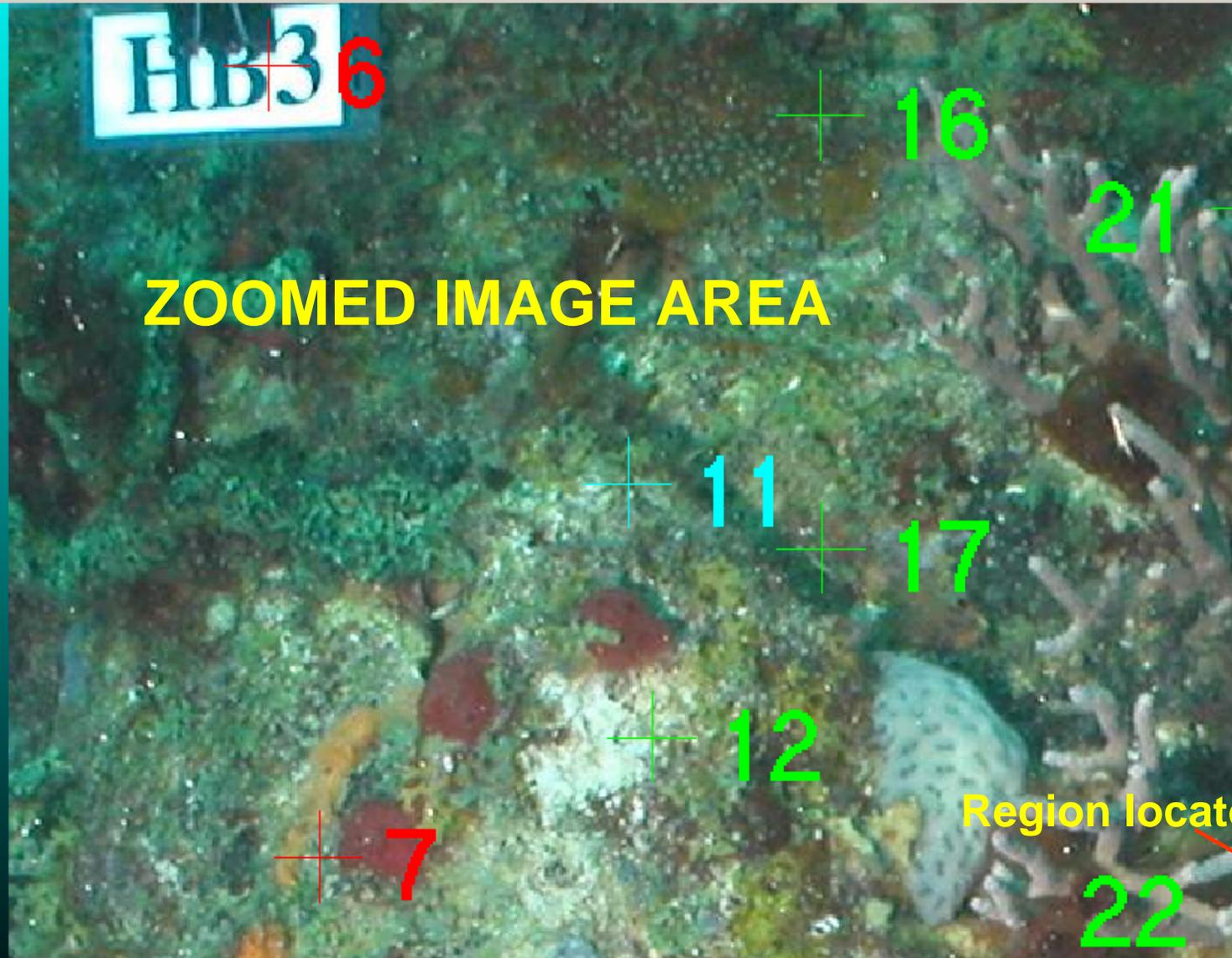
AA	AC	AF	AG	AL	AMP	AP	APR	ASC	AT	AU	BRI	CALG	CB	CN	CORAL	CORJU	DC	DCY	DL	DS
DST	EF	ERY	EUN	FF	GORG	ICIL	IS	LC	MA	MACA	MAL	MAN	MAR	MC	MD	MDA	MF	MFAV	MFRN	
MILA	MILC	MILS	ML	MM	MME	MOPS	MUR	OD	PA	PAD	PAL	PAURA	PB	PD	PF	PP	POR	PRELA	PSDP	
PSPT	PTER	P	R	S	SB	SC	SH	SL	SM	SPO	SR	SS	STY	TA	TURB	TURF	WRAN	DICT	LIAG	LOBO
SCHIZ	HALI	SARG	UNK	O	DG	DCOR	DCA	RDC	ODC	TAPE	WAND	SHAD	ASP	BL	BBD	OD	PLA	WBD	YBD	

Zoom: 100%

Left click Right click

100% 300% 600%





ZOOMED IMAGE AREA

Point Data (50)

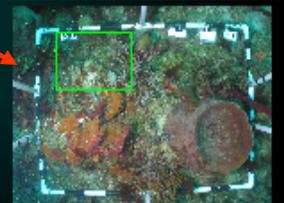
POINT	ID	NOTES
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

Region locator

Zoom: 100%

Left click Right click

100% 300% 600%



AA	AC	AF	AG	AL	AMP	AP	APR	ASC	AT	AU	BRI	CALG	CB	CN	CORAL	CORJU	DC	DCY	DL	DS
DSQ	DST	EF	ERY	EUN	FF	GORG	ICIL	IS	LC	MA	MACA	MAL	MAN	MAR	MC	MD	MDA	MF	MFAV	MFRN
MILA	MILC	MILS	ML	MM	MME	MOPS	MUR	OD	PA	PAD	PAL	ZO	PAURA	PB	PD	PF	PP	POR	PRELA	PSDP
PSPT	PTER	P	R	S	SB	SC	SH	SL	SM	SPO	SR	SS	STY	TA	TURB	TURF	WRAN	DICT	LIAG	LOBO
SCHIZ	HALI	SARG	UNK	O	DG	DCOR	DCA	RDC	ODC	TAPE	WAND	SHAD	ASP	BL	BBD	OD	PLA	WBD	YBD	

# POINT DATA ENTRY TOOLS

Select all points  
with blank ID field

Swap selected and  
non-selected  
points

Hide/view points

Clear selected data points

Codes & Notes

Select all points  
with blank NOTES  
field

Save to .CPC file

Isolation Mode

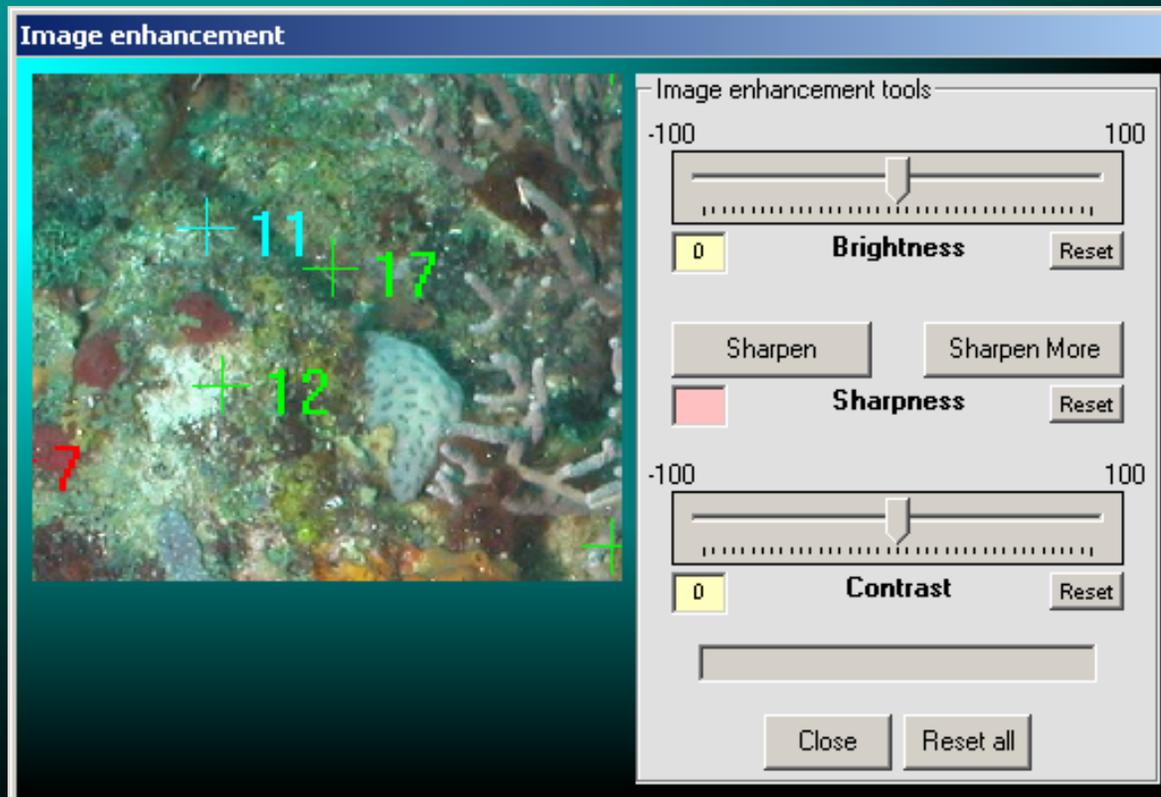
The screenshot shows a software window titled "Point Data (10)". It contains a table with two columns: "POINT ID" and "NOTES". The rows are numbered 1 through 10. To the left of the table is a vertical toolbar with icons for selecting all points with blank ID, swapping selected and non-selected points, and hiding/viewing points. To the right is another vertical toolbar with icons for "Codes & Notes" and selecting all points with blank NOTES. Below the table is a horizontal toolbar with icons for saving to .CPC file, clear selected data points (a 'C' icon), and Isolation Mode (a gear icon).

	POINT ID	NOTES
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

# IMAGE ENHANCEMENT

File Mark border Point Overlay Tools Image Enhancement Options Help

- Select image area to enhance
- Alter brightness, sharpness, and/or contrast



## Change color, size, shape of data points

**Data point graphical parameters**

Data point shape options:

Circle  Diameter (pixels)

Circle/crosshairs

Box

Triangle  Side length (pixels)

Crosshairs

Line thickness (pixels):   Filled

---

Data point color options

Click on the color to change:

Frame border  Unassigned data point  Assigned data point  Current focus data point

## GENERAL OPTIONS

Data point graphical parameters

Color code codename category boxes

Specify coral code file

---

Letter symbols

Number symbols

---

Auto-advance point

Auto-follow

---

Maintain zoom

## Color code category boxes

**Category code colors**

This form allows you to colorcode the codename categories. Click on the dropdown menu to choose the desired category. To change colors, click on the color boxes.

Current color file: C:\PROGRAM~1\NCPCE\10CATE~1.CLR

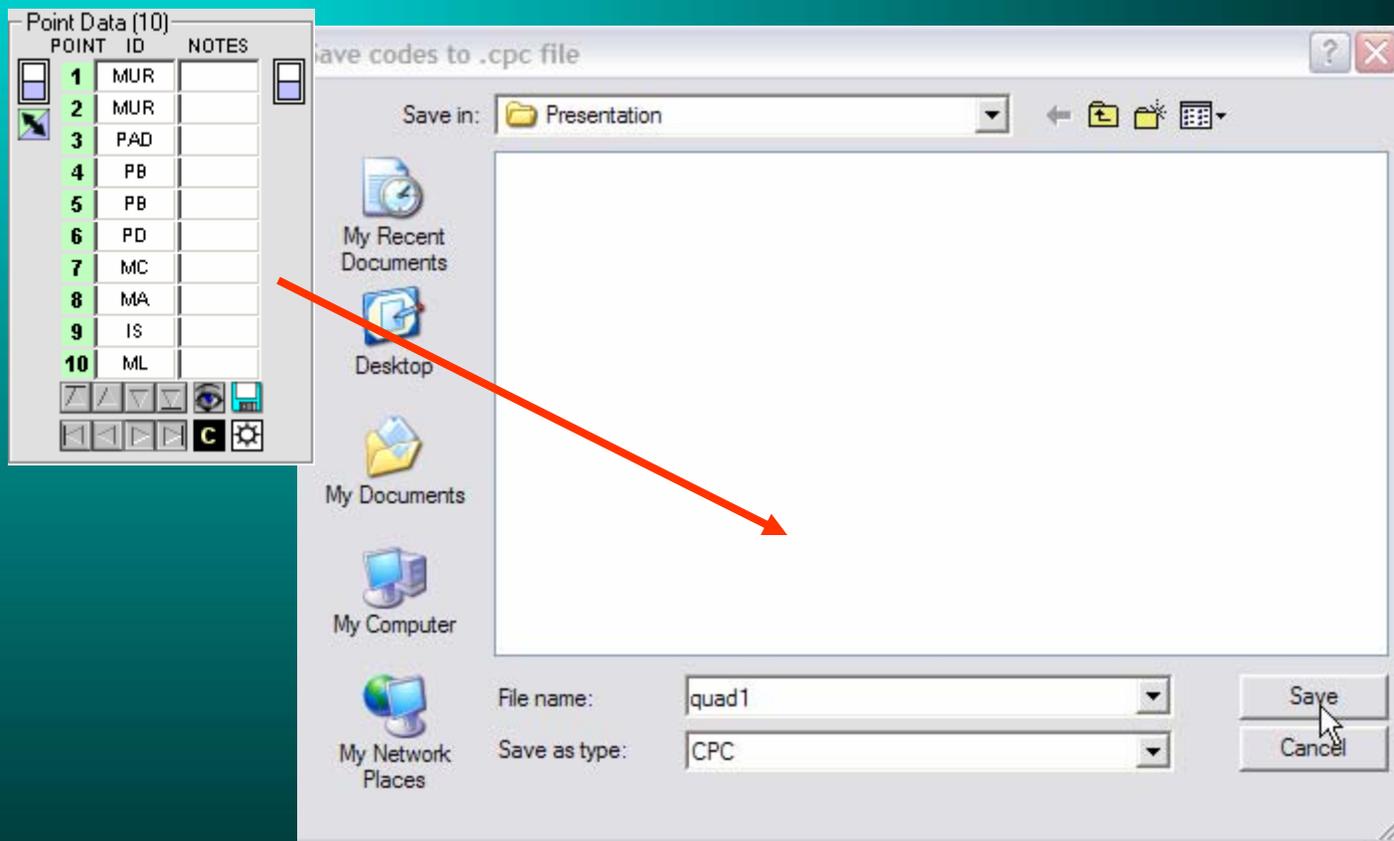
COLOR	CATEGORY
<input type="color" value="cyan"/>	[Coral (C)]
<input type="color" value="yellow"/>	[Sand, pavement, rubble (SPR)]
<input type="color" value="orange"/>	[Gorgonians (G)]
<input type="color" value="red"/>	[Tape, wand, shadow (TWS)]
<input type="color" value="green"/>	[Macroalgae (MA)]
<input type="color" value="magenta"/>	[Sponges (S)]
<input type="color" value="pink"/>	[Zoanthids (Z)]
<input type="color" value="white"/>	[ ]
<input type="color" value="white"/>	[ ]
<input type="color" value="white"/>	[ ]

Notes:

## User-specified code file

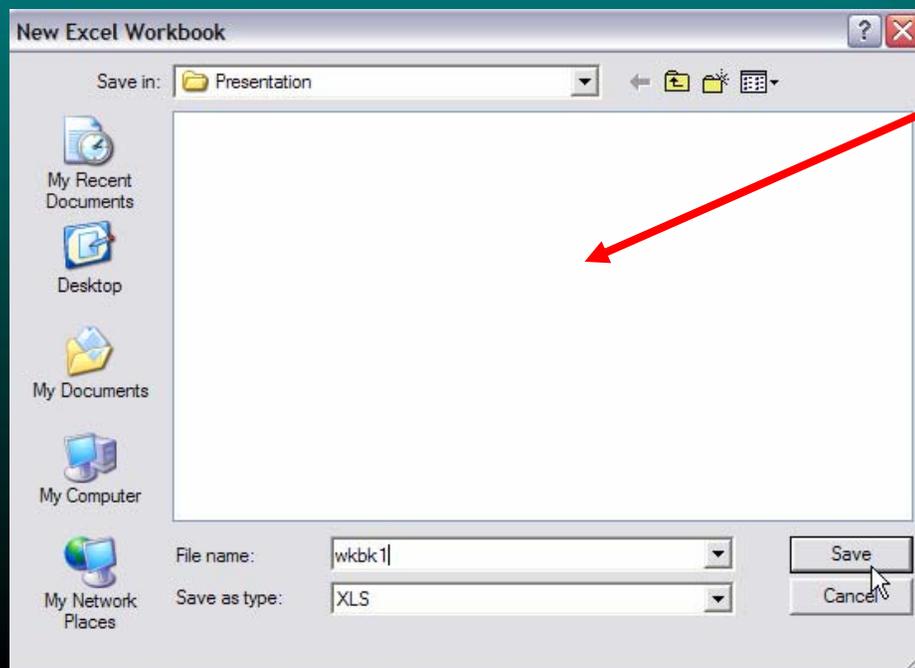
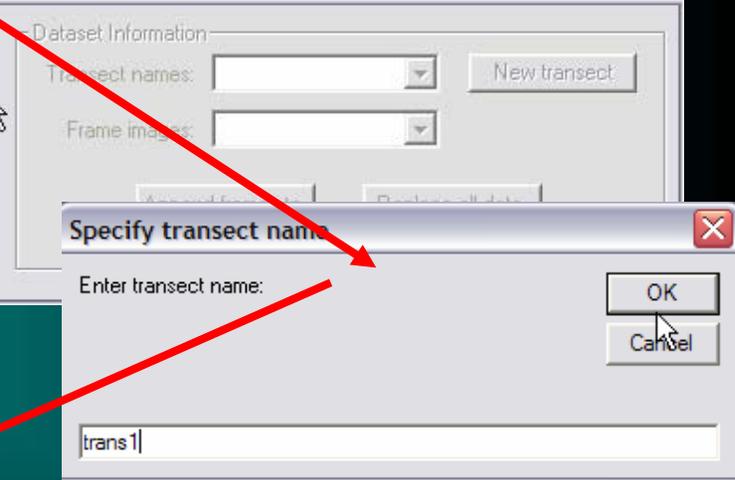
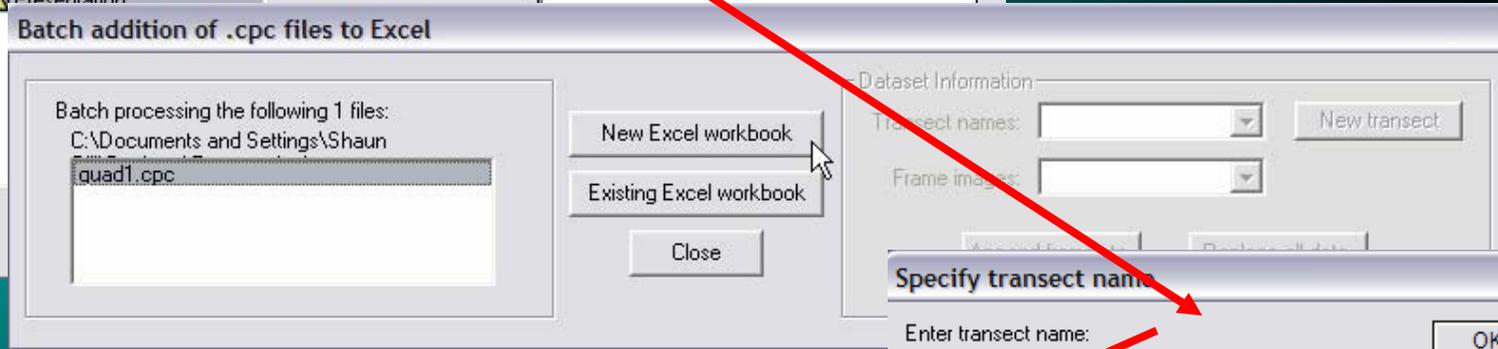
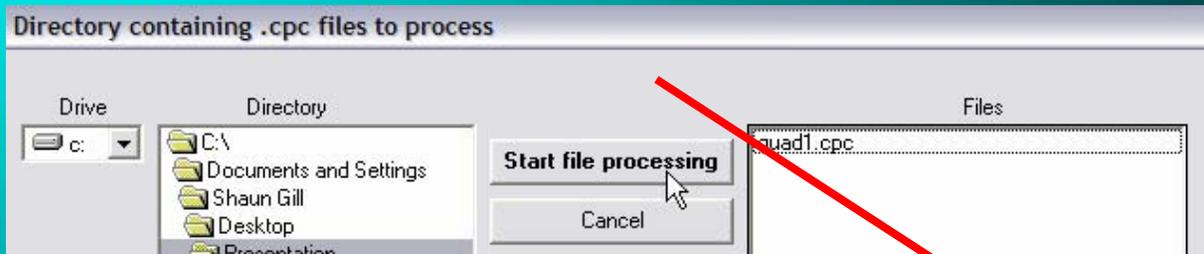
## Maintain zoom level between data points

# SAVING DATA



## Output: CPC files

- Basic output unit of CPCe
- Contains point coordinates, data codes, name and location of image file
- Does not contain actual image, hence compact file size
- ASCII format



## Exporting CPC Files to Excel

Microsoft Excel - tester.xls

File Edit View Insert Format Tools Data Window Help Acrobat

Arial 10 B I U

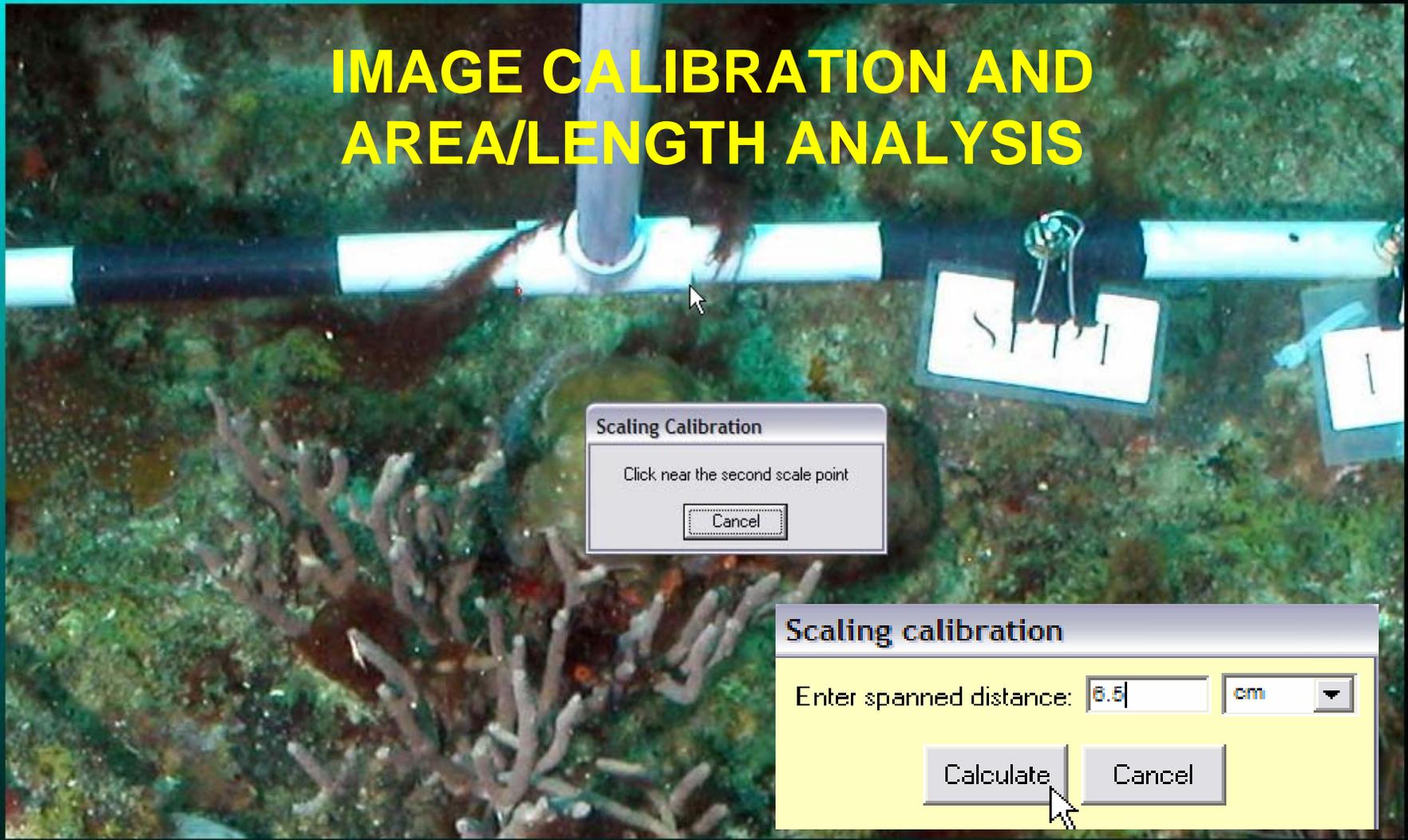
N86 =

6	TRANSECT NAME	trans1	trans2	trans3										
7	<b>Number of frames</b>	<b>3</b>	<b>1</b>	<b>1</b>										
8	<b>Total points</b>	<b>60</b>	<b>20</b>	<b>20</b>										
9	<b>Total points (minus tape+wand+shadow)</b>	<b>60</b>	<b>20</b>	<b>20</b>										
10	<b>MAJOR CATEGORY (% of transect)</b>				<b>MEAN</b>	<b>STD. DEV.</b>	<b>STD. ERROR</b>							
11	CORAL	53.33	55.00	85.00	64.44	17.82	10.29							
12	GORGONIANS	23.33	25.00	0.00	16.11	13.98	8.07							
13	SPONGES	0.00	0.00	0.00	0.00	0.00	0.00							
14	ZOANTHIDS	0.00	0.00	0.00	0.00	0.00	0.00							
15	MACROALGAE	15.00	20.00	5.00	13.33	7.64	4.41							
16	OTHER LIVE	0.00	0.00	10.00	3.33	5.77	3.33							
17	DEAD CORAL W/TH ALGAE	0.00	0.00	0.00	0.00	0.00	0.00							
18	CORALLINE ALGAE	5.00	0.00	0.00	1.67	2.89	1.67							
19	DISEASED CORALS	0.00	0.00	0.00	0.00	0.00	0.00							
20	SAND, PAVEMENT, RUBBLE	3.33	0.00	0.00	1.11	1.92	1.11							
21	UNKNOWNNS	0.00	0.00	0.00	0.00	0.00	0.00							
22	TAPE, WAND, SHADOW	0.00	0.00	0.00	0.00	0.00	0.00							
23	Sum (excluding tape+shadow+wand)	100.00	100.00	100.00										
24														
25	<b>SUBCATEGORIES (% of transect)</b>				<b>MEAN</b>	<b>STD. DEV.</b>	<b>STD. ERROR</b>							
26	<b>CORAL</b>													
27	Acropora cervicornis	0.00	0.00	25.00	8.33	14.43	8.33							
28	Acropora palmata	0.00	0.00	10.00	3.33	5.77	3.33							
29	Acropora prolifera	0.00	0.00	5.00	1.67	2.89	1.67							
30	Agaricia agaricites	0.00	0.00	5.00	1.67	2.89	1.67							
31	Agaricia fragilis	0.00	0.00	10.00	3.33	5.77	3.33							
32	Agaricia grahamae	0.00	0.00	10.00	3.33	5.77	3.33							
33	Agaricia tenuifolia	0.00	0.00	10.00	3.33	5.77	3.33							
34	Agaricia undata	0.00	0.00	0.00	0.00	0.00	0.00							
35	Agaricia lamarcki	0.00	0.00	10.00	3.33	5.77	3.33							
36	Colpophyllia breviserialis	0.00	0.00	0.00	0.00	0.00	0.00							
37	Colpophyllia natans	0.00	0.00	0.00	0.00	0.00	0.00							
38	Coral (general)	0.00	0.00	0.00	0.00	0.00	0.00							
39	Coral (unclassified)	0.00	0.00	0.00	0.00	0.00	0.00							

Excel sheets automatically generated

Ready

# IMAGE CALIBRATION AND AREA/LENGTH ANALYSIS

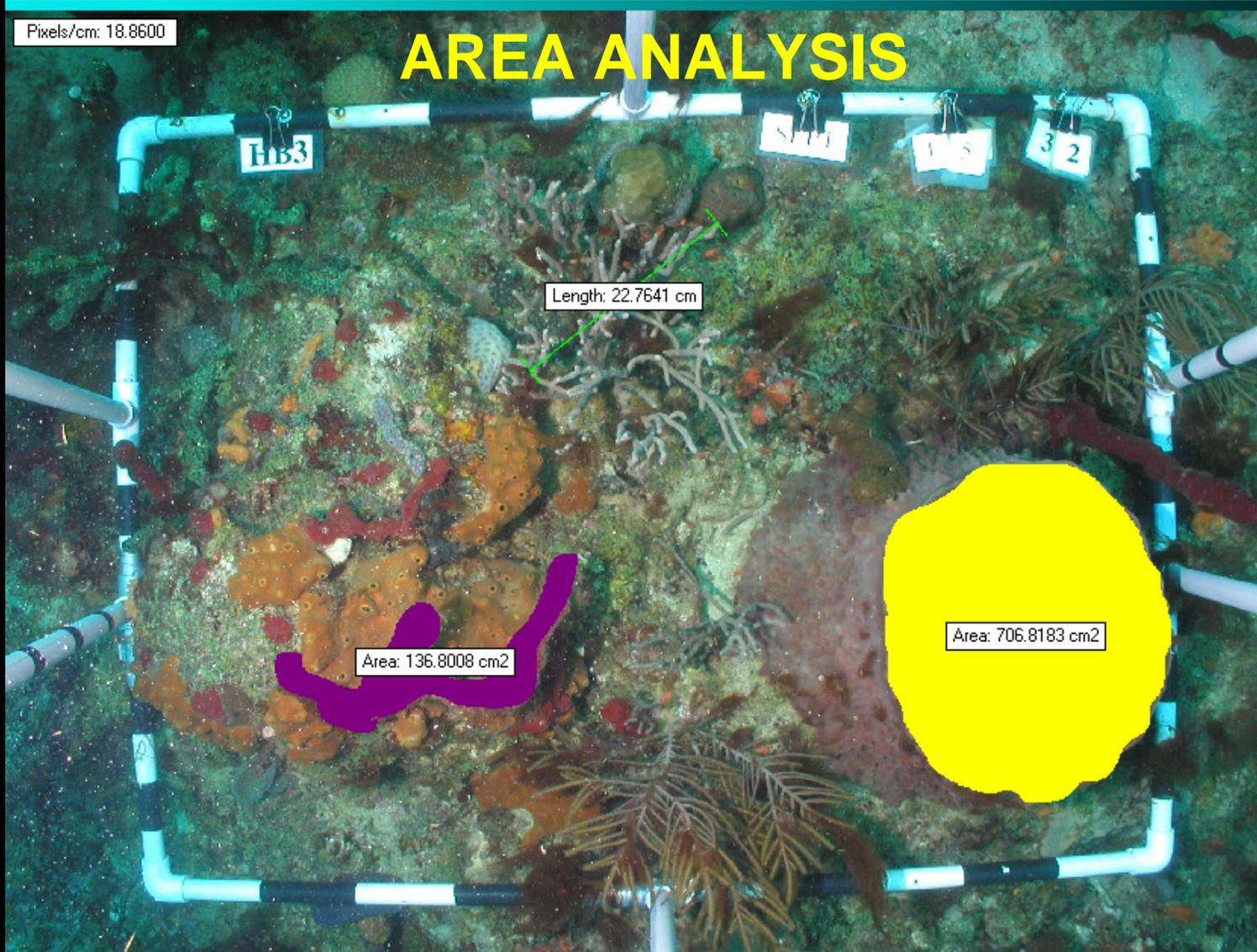


X: 968 Y: 559 R: 64 G: 78 B: 61 H: #404E3D

Pixels/cm: 18.6211  
Total image area (cm2): 11165.2100

Pixels/cm: 18.8600

# AREA ANALYSIS



To trace an outline for analysis, left-click and release at the path starting point. Move the cursor around the area perimeter to trace the path.

Left-click to temporary pause path tracing. Left-click again to resume.

To close the path and calculate the area, right-click and release.

To erase the most recent area path segment, press <ESC>.

To totally erase a partially traced area path, press Ctrl-Z.

To zoom in(out), ctrl-I(click/rolick).

To toggle between filled and outlined areas, press Shift-I(click inside the area).

Max. allowed traced areas: 20  
Max. allowed points/trace: 5000

Area  Length

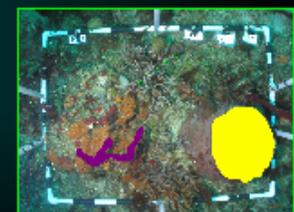
Trace indicator Fill Color



Erase all traced areas/lengths

Erase last traced area/length

Exit area analysis mode

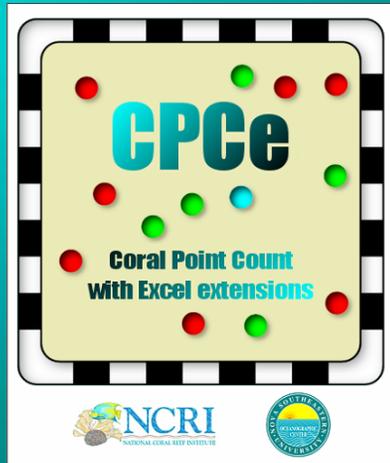


View entire image Zoom factor: 1.00 (Ctrl-left-click to zoom in, Ctrl-right-click to zoom out)

Pixels/cm: 18.8600

Total image area (cm2): 10884.1500





## CPCe Summary

- Windows-based standalone system
- Flexible, with many user customizations possible
- Under continual development
- Freely available to researchers worldwide
- User distribution list (over 300 at present) maintained for update notifications
- More information can be found at <http://www.nova.edu/ocean/cpce/>