Technique for Estimating Area of coverage of plants and animals on Tunicate Plate Sampling

Tutorial for using Image J software

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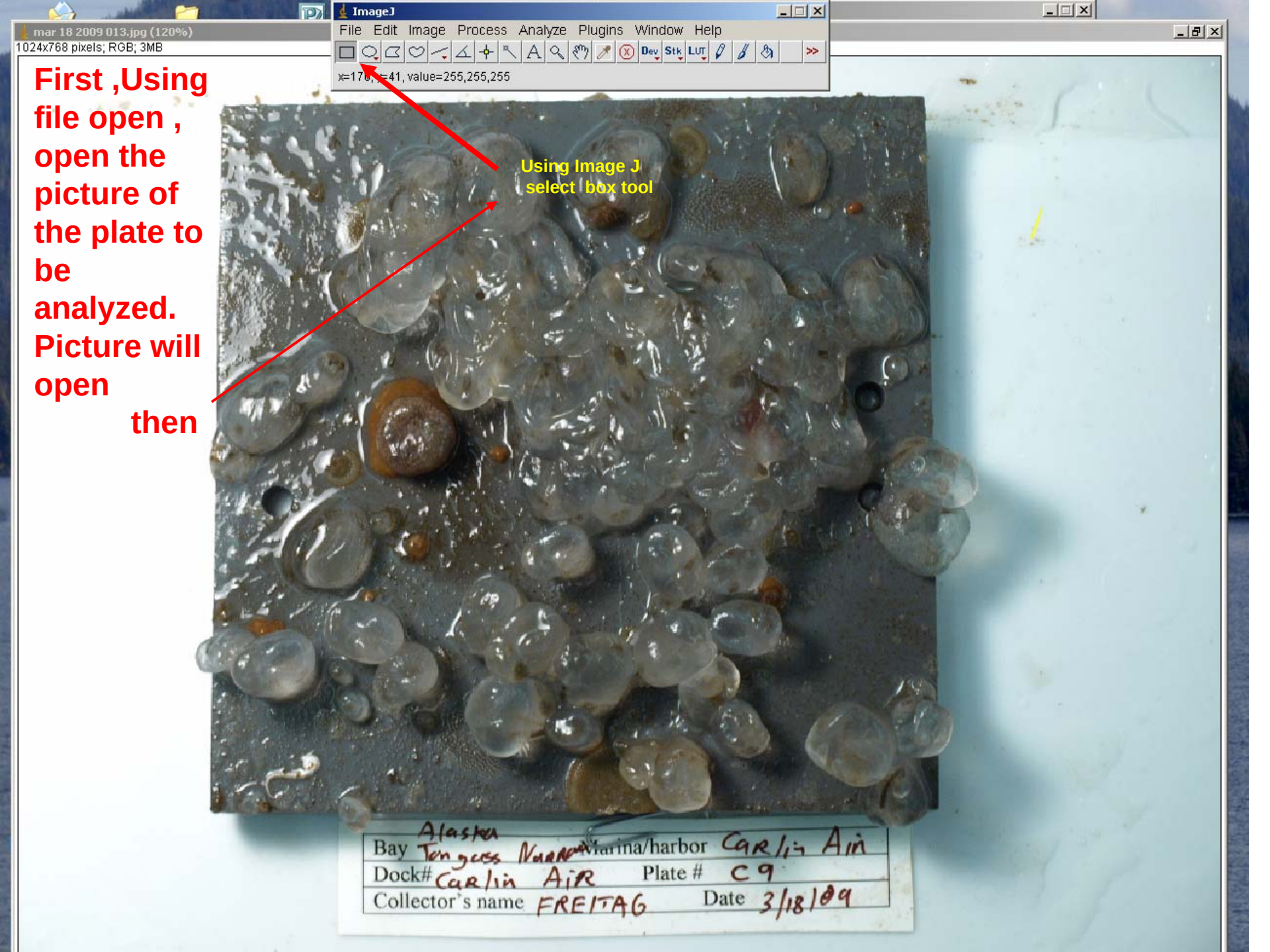
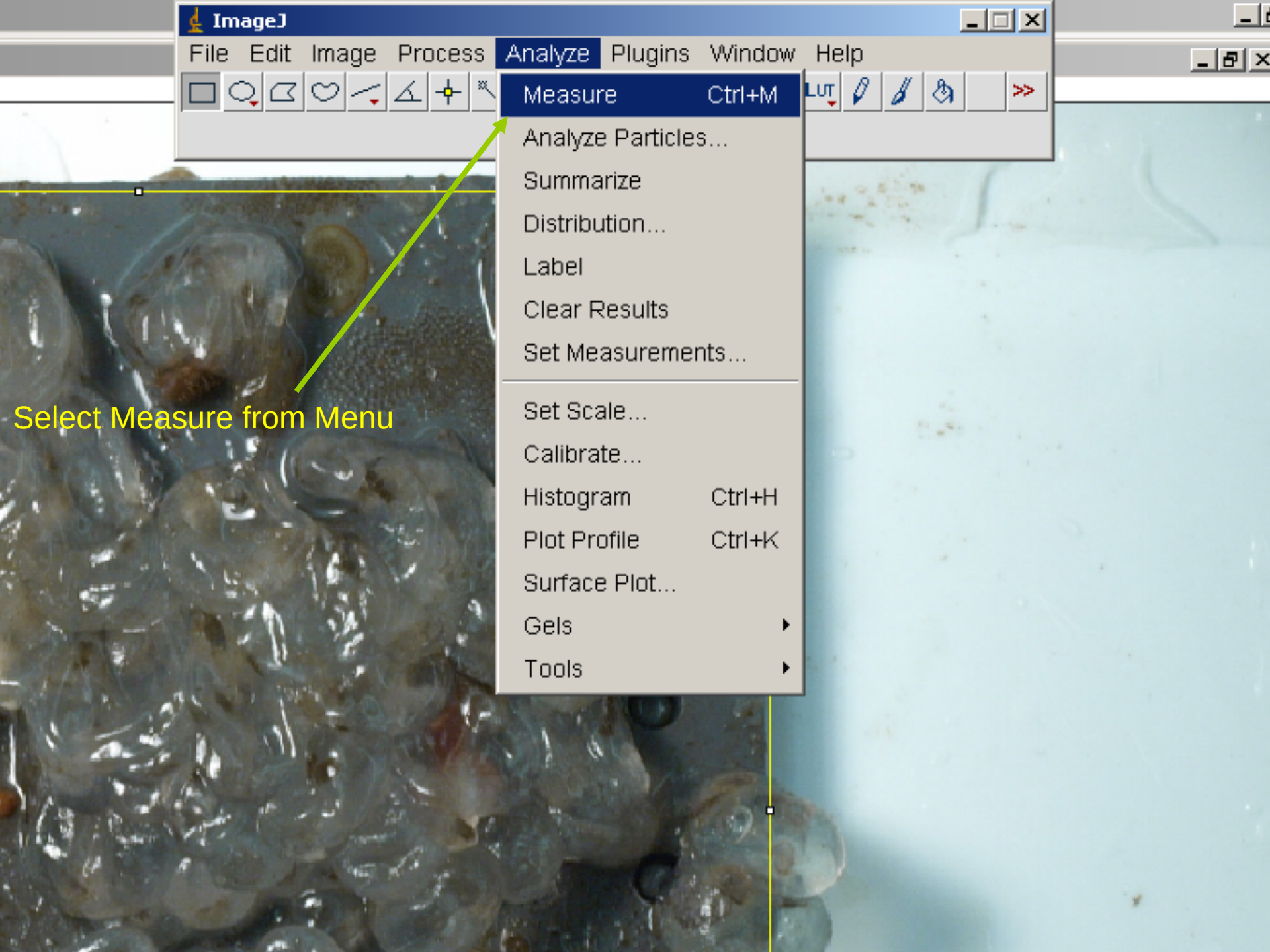
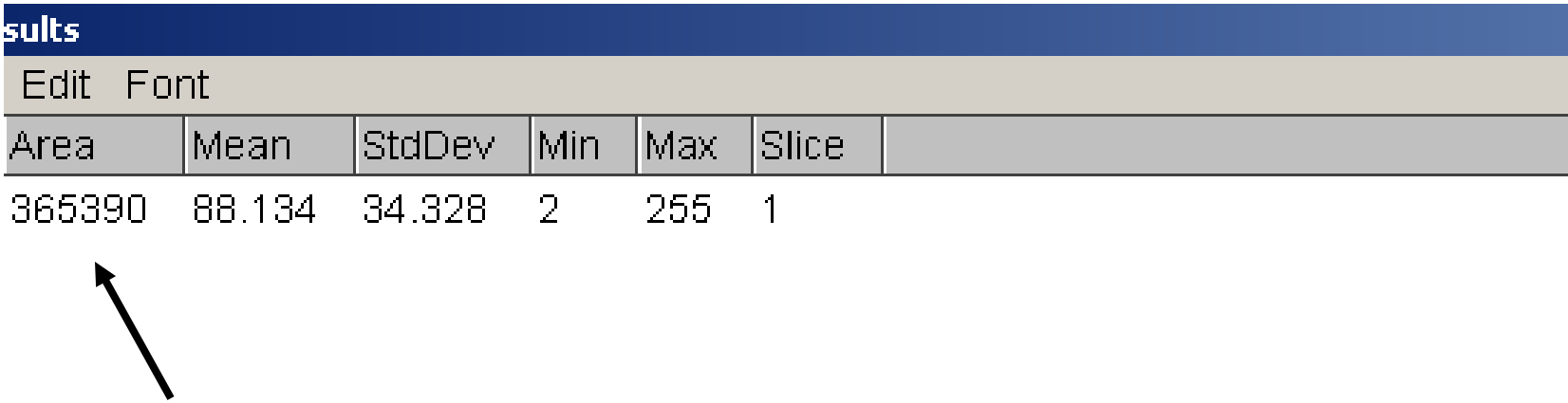
Image J can be downloaded as public domain software at
http://rsbweb.nih.gov/ij/

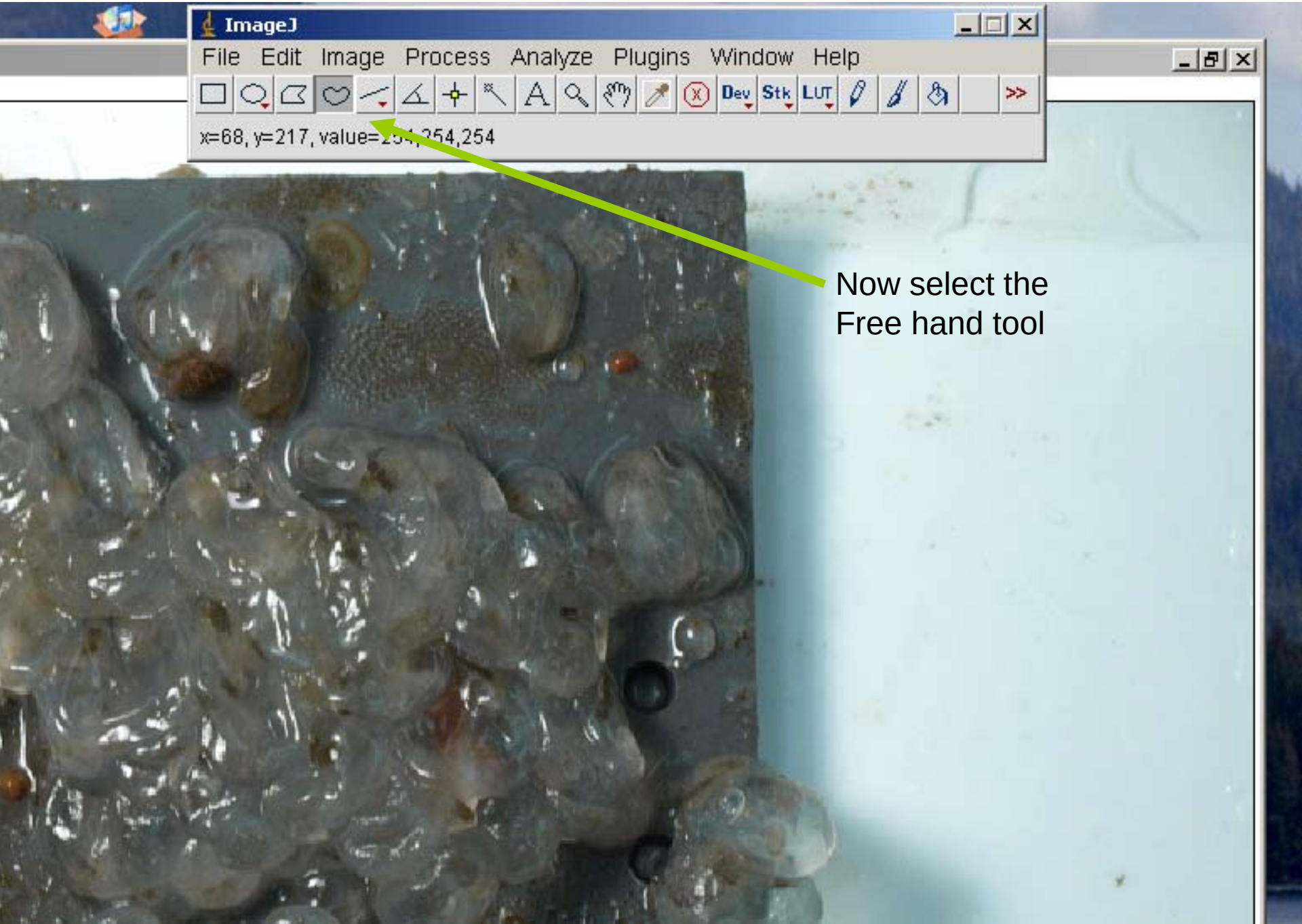

ImageJ
File Edit Image Process Analyze Plugins Window Help
x=170, y=41, value=255,255,255
mar 18 2009 013.jpg (120%)
1024x768 pixels; RGB; 3MB
First ,Using file open , open the picture of the plate to be analyzed. Picture will open then
Using Image J select box tool
Bay Alaska Tongass Narrows Marina/harbor Carlin Air
Dock# Carlin Air Plate # C9
Collector's name FREITAG Date 3/18/09

Bay Alaska Marina/harbor Garlic Air


ImageJ
File Edit Image Process Analyze Plugins Window Help
Measure Ctrl+M
Analyze Particles...
Summarize
Distribution...
Label
Clear Results
Set Measurements...
Set Scale...
Calibrate...
Histogram Ctrl+H
Plot Profile Ctrl+K
Surface Plot...
Gels
Tools
Select Measure from Menu



The program will generate a results table with a pixel area Measurement. The other info will be discarded.

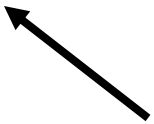

ImageJ
File Edit Image Process Analyze Plugins Window Help
Dev Stk LUT >>
x=68, y=217, value=254,254,254
Now select the
Free hand tool

Bay Alaska Marina/harbor CARlin Air

sults

Edit Font

Area	Mean	StdDev	Min	Max	Slice
365390	88.134	34.328	2	255	1
138549	91.821	27.967	17	255	1



The program will add a line of data with the pixel area
Of the free hand drag around the cluster


Continue around other clusters
Or other species. Keep track if
You change species
Alaska

Results

File Edit Font

	Area	Mean	StdDev	Min	Max	Slice
1	365390	88.134	34.328	2	255	1
2	138549	91.821	27.967	17	255	1
3	5803	90.025	26.581	30	253	1
4	2642	82.105	19.375	36	254	1
5	9054	80.763	20.148	21	251	1
6	5992	100.074	23.288	31	247	1
7	4917	120.759	31.019	34	255	1
8	4803	102.453	20.674	42	247	1
9	4180	94.180	29.982	44	255	1
10	6604	112.535	40.729	34	255	1
11	5287	78.248	30.883	11	252	1
12	2927	64.347	24.953	21	249	1
13	1191	72.088	16.835	25	196	1

When done with all the life on the plate you'll Have a table with each measurement.

Data from Results copied into Excell Spreadsheet and Area Calculated

Measurement #	Area	Mean	Std Dev	min	max	slice
		Not used				
1	365390	88.134	34.328	2	255	1
2	138549	91.821	27.967	17	255	1
3	5803	90.025	26.581	30	253	1
4	2642	82.105	19.375	36	254	1
5	9054	80.763	20.148	21	251	1
6	5992	100.074	23.288	31	247	1
7	4917	120.759	31.019	34	255	1
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12	2927	64.347	24.953	21	249	1
13	1191	72.088	16.835	25	196	1

Measurement #	what	Area	Sums	% coverage
1	Plate Area	365390	365390	100%
2	Main tunicate cluster	138549		
3	Small tunicates cluster	5803		
4	Small tunicates cluster	2642		
5	Small tunicates cluster	9054		
6	Small tunicates cluster	5992		
7	Small tunicates cluster	4917		
8	Small tunicates cluster	4803		
9	Small tunicates cluster	4180		
10	Small tunicates cluster	6604	182544	50.0%
11	Anemone	5287		
12	Bryazoan	2927		
13	Bryazoan	1191	4118	1.1%

Sum area of all the same Tunicate Specie Together

Sum area of all the same Bryazoan Together

To calculate area simply divide Tunicate Area (182544) by Plate area(365390)- 50%

Copy the data into excel and estimate the area covered.