

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

Tutorial for using Image J software
Freitag Ketchikan

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

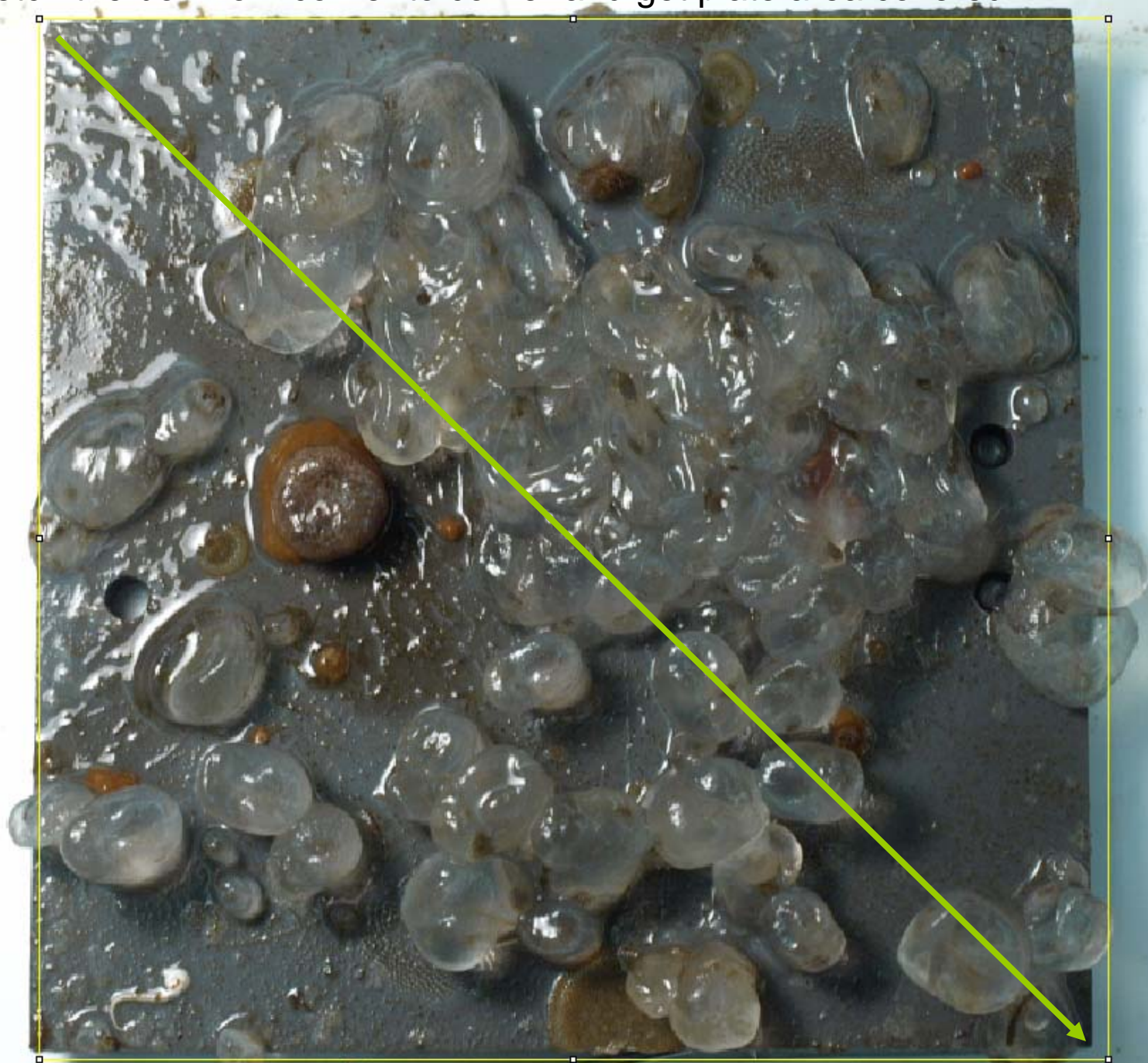


First ,Using file open , open the picture of the plate to be analyzed. Picture will open then

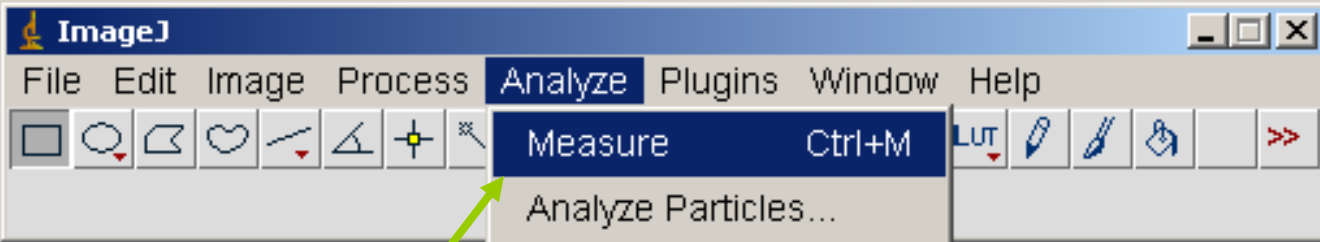


Using Image J select box tool

Alaska	Marina/harbor	Carlita Air
Bay Tengross	Plate #	C9
Collector's name	FREITAG	Date 3/18/09



Bay Alaska
Temperatures Near Marina/harbor Carliz Ann



- 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

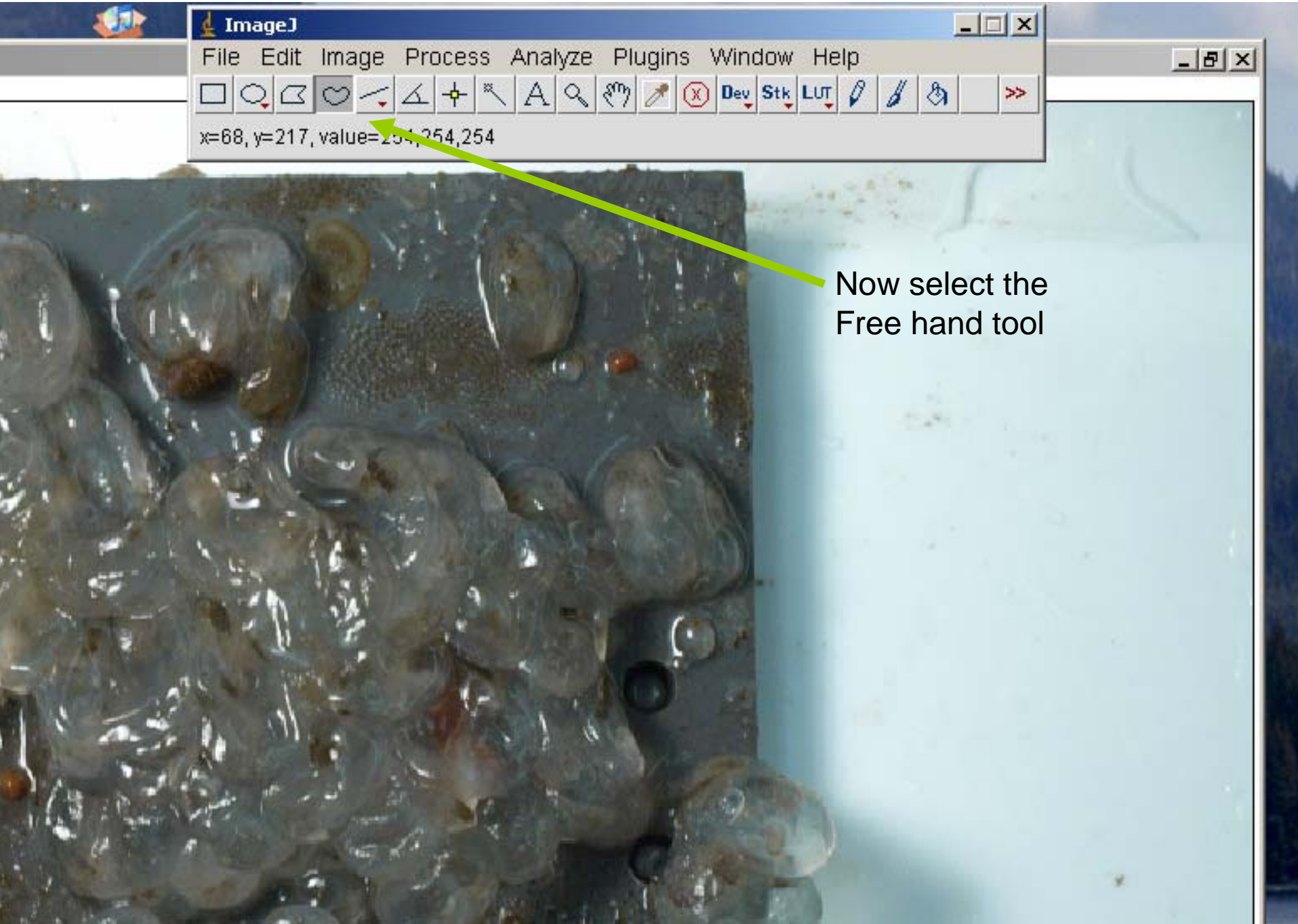
sults

Edit Font

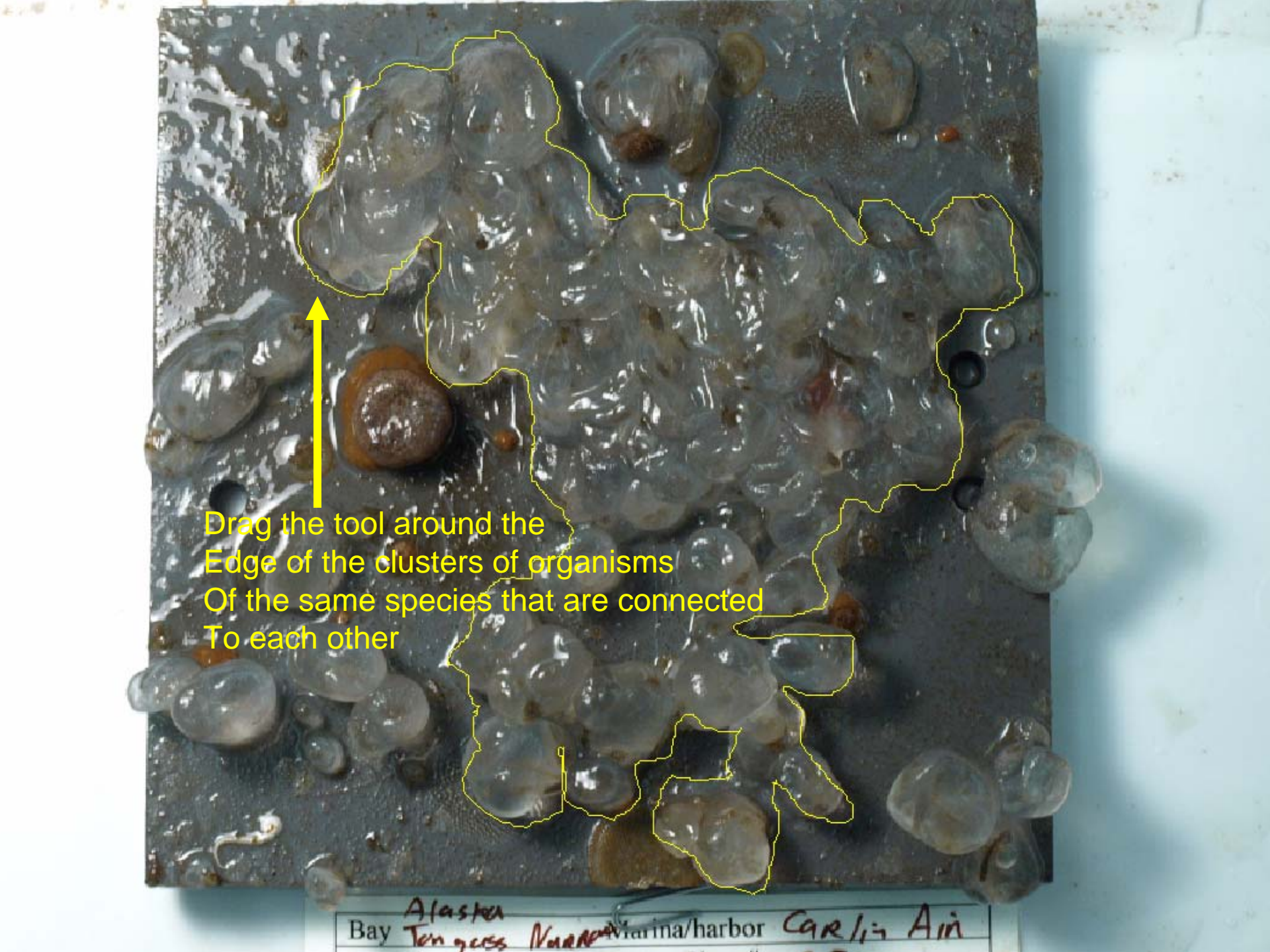
Area	Mean	StdDev	Min	Max	Slice
365390	88.134	34.328	2	255	1



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



Now select the
Free hand tool



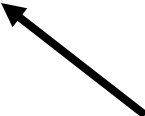
Drag the tool around the
Edge of the clusters of organisms
Of the same species that are connected
To each other

Alaska
Bay Tenness Narrows Marina/harbor Carlin Ain

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



Bay Alaska
K...ina/harbor
Caplin Ain

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
1	365390	88.134	34.328		2	255
2	138549	91.821	27.967		17	255
3	5803	90.025	26.581		30	253
4	2642	82.105	19.375		36	254
5	9054	80.763	20.148		21	251
6	5992	100.074	23.288		31	247
7	4917	120.759	31.019		34	255
8	4803	102.453	20.674		42	247
9	4180	94.18	29.982		44	255
10	6604	112.535	40.729		34	255
11	5287	78.248	30.883		11	252
12	2927	64.347	24.953		21	249
13	1191	72.088	16.835		25	196

Not used

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.