

USING OF MAPPING TECHNIQUE

For Displaying the Relative Distribution and
Abundance of Larval Fishes

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Objectives

- ▶ To display the outcomes of larval fishes identification in term of relative distribution and abundance
- ▶ To keep digital mapping as your database
- ▶ Three Mapping techniques will be introduced
 - 1) Graphic Software (Excel, DeltaGraph, etc) with Map-Image Overlay
 - 2) Graphic Software with Map-Image Overlay on Google Earth via Internet
 - 3) Use Quantum GIS (Open Source GIS) by *Mr Wirote L.*

Technique 1:

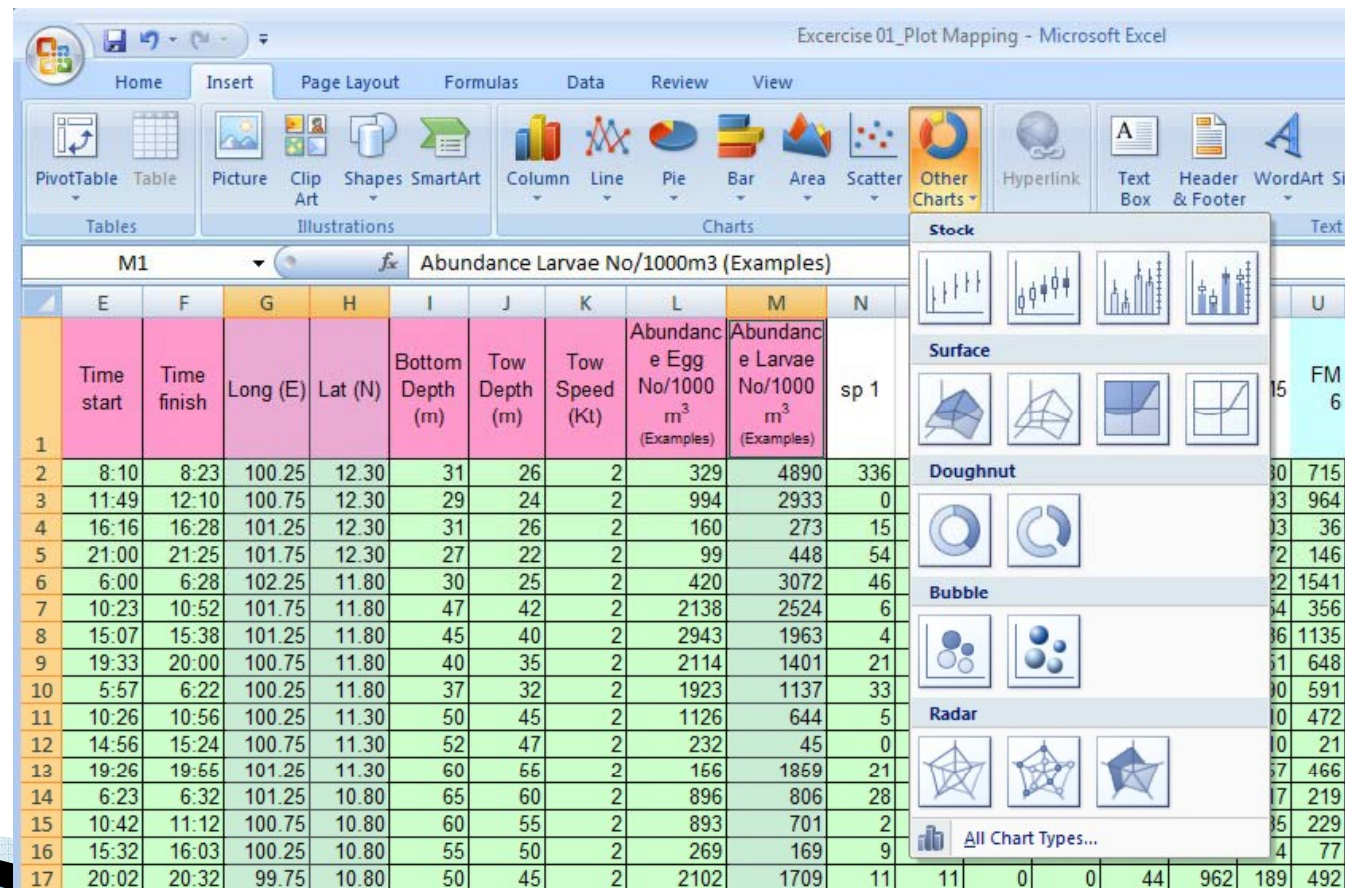
- ▶ **Graphic Software (Excel, DeltaGraph, etc) with Map-Image Overlay**

Step 1: General Data Arrangements

Cruise	Area	Station	MM_DD_YYYY	Time start	Time finish	Long (E) X	Lat (N) Y	Bottom Depth (m)	Tow Depth (m)	Tow Speed (Kt)	Abundance Egg No/1000 m ³ (Examples)	Abundance Larvae No/1000 m ³ Z (Examples)	sp 1	sp 2	FAM 1	FAM 2
32	GOT	1	4/24/1996	8:10	8:23	100.25	12.30	31	26	2	329	4890	336	0	15	0
32	GOT	2	4/24/1996	11:49	12:10	100.75	12.30	29	24	2	994	2933	0	0	60	24
32	GOT	3	4/24/1996	16:16	16:28	101.25	12.30	31	26	2	160	273	15	0	0	21
32	GOT	4	4/24/1996	21:00	21:25	101.75	12.30	27	22	2	99	448	54	0	8	0
32	GOT	5	4/25/1996	6:00	6:28	102.25	11.80	30	25	2	420	3072	46	12	0	7
32	GOT	6	4/25/1996	10:23	10:52	101.75	11.80	47	42	2	2138	2524	6	6	6	3
32	GOT	7	4/25/1996	15:07	15:38	101.25	11.80	45	40	2	2943	1963	4	7	11	2
32	GOT	8	4/25/1996	19:33	20:00	100.75	11.80	40	35	2	2114	1401	21	13	8	8
32	GOT	9	4/26/1996	5:57	6:22	100.25	11.80	37	32	2	1923	1137	33	30	9	45
32	GOT	10	4/26/1996	10:26	10:56	100.25	11.30	50	45	2	1126	644	5	8	0	0
32	GOT	11	4/26/1996	14:56	15:24	100.75	11.30	52	47	2	232	45	0	0	0	0
32	GOT	12	4/26/1996	19:26	19:55	101.25	11.30	60	55	2	156	1859	21	50	9	0
32	GOT	13	4/27/1996	6:23	6:32	101.25	10.80	65	60	2	896	806	28	12	0	0
32	GOT	14	4/27/1996	10:42	11:12	100.75	10.80	60	55	2	893	701	2	2	0	0
32	GOT	15	4/27/1996	15:32	16:03	100.25	10.80	55	50	2	269	169	9	0	0	0
32	GOT	16	4/27/1996	20:02	20:32	99.75	10.80	50	45	2	2102	1709	11	11	0	0
32	GOT	17	4/28/1996	5:57	6:26	99.75	10.30	48	43	2	3697	3099	25	111	7	0
32	GOT	18	4/28/1996	10:10	10:40	100.25	10.30	55	50	2	985	706	0	0	0	0
32	GOT	19	4/28/1996	14:39	15:07	100.75	10.30	60	55	2	124	48	0	2	0	0
32	GOT	20	4/28/1996	18:53	19:22	101.25	10.30	65	60	2	329	37	0	0	0	0
32	GOT	21	4/29/1996	5:57	6:28	101.25	9.80	70	65	2	15	3	0	0	0	0
32	GOT	22	4/29/1996	10:21	10:50	100.75	9.80	60	55	2	373	343	0	3	5	0
32	GOT	23	4/29/1996	14:36	15:04	100.25	9.80	35	30	2	1874	1489	147	29	50	0
32	GOT	24	4/29/1996	18:42	19:13	100.25	9.30	30	25	2	7358	5877	667	59	147	5
32	GOT	25	1/5/1996	5:55	6:23	100.75	9.30	37	32	2	979	1115	19	5	0	0
32	GOT	26	1/5/1996	10:28	10:57	101.25	9.30	65	60	2	3	0	0	0	0	0
32	GOT	27	2/5/1996	21:45	22:15	101.75	8.80	65	60	2	269	158	0	0	0	0

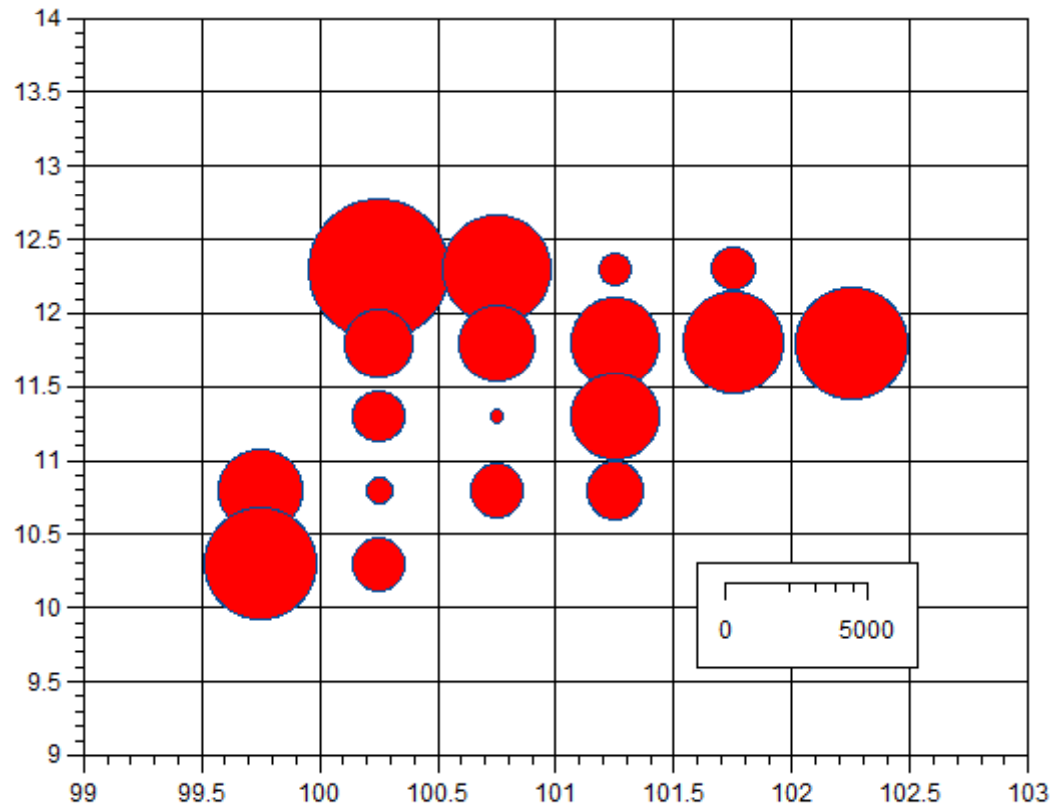
Step 2a: GRAPHIC Plotting

- ▶ Data Selecting:
 - Longitude (x) – Latitude (y) – Abundant Data (z)
- ▶ Plotting as Bubble Graphic Type



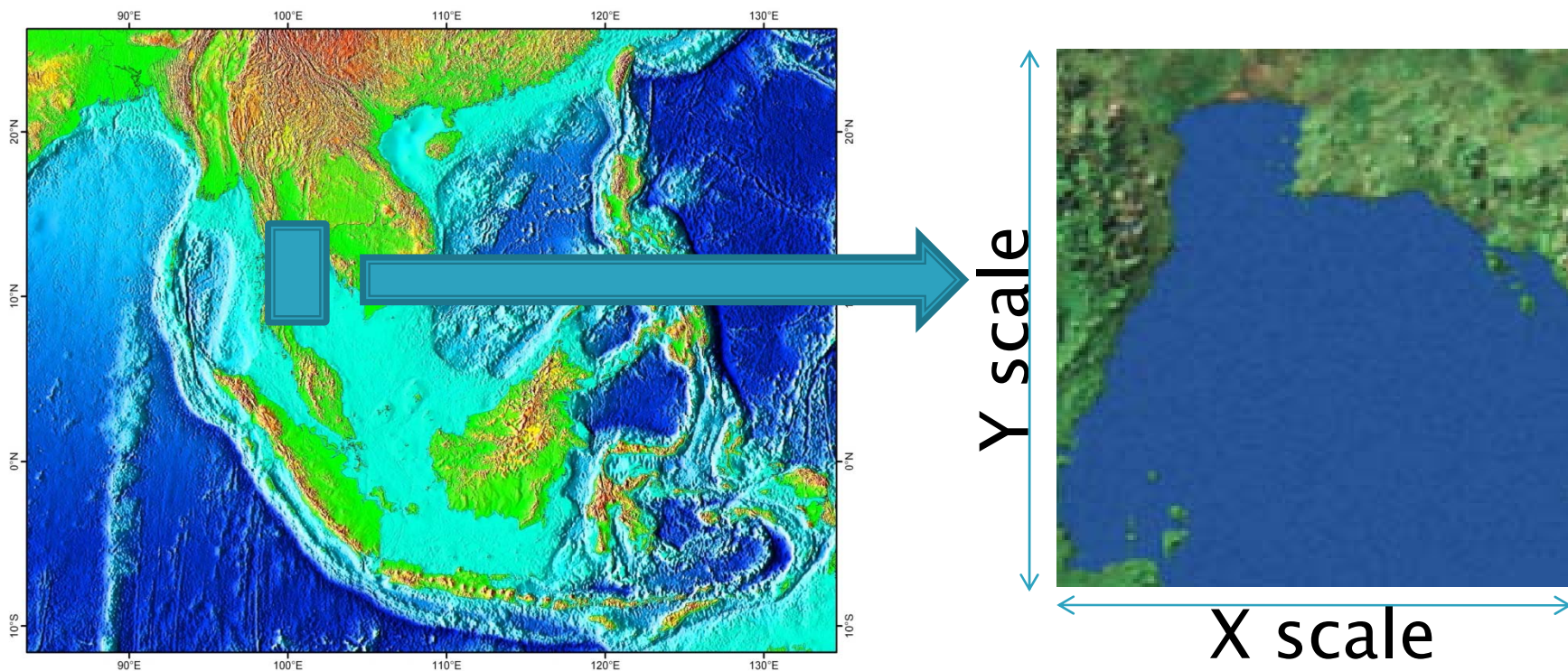
Step 2b: GRAPHIC Plotting

- ▶ Adjust the Scale Longitude and Latitude
- ▶ Adjust the Legend scale
- ▶ Format the Graphic Image background as: transparent

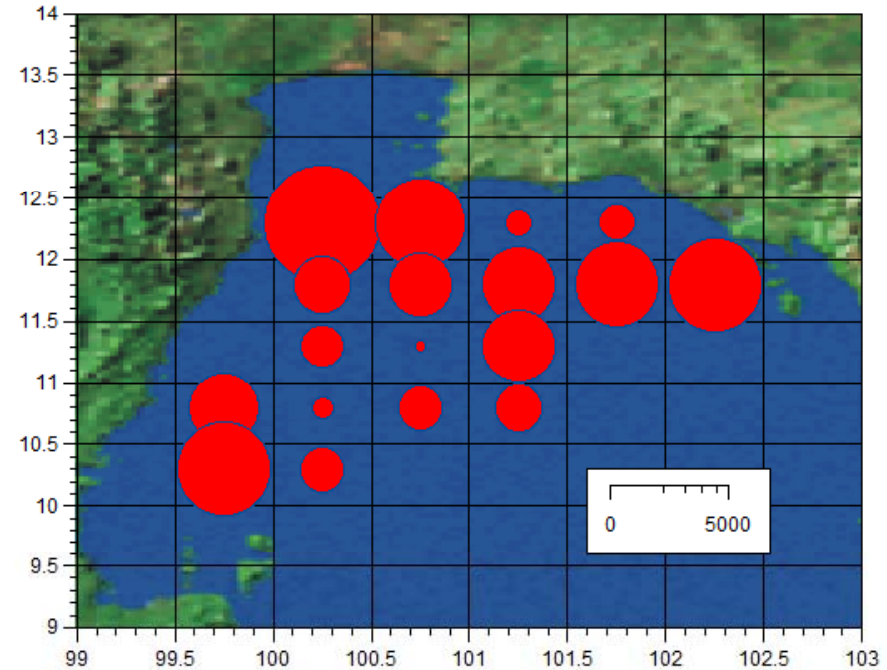
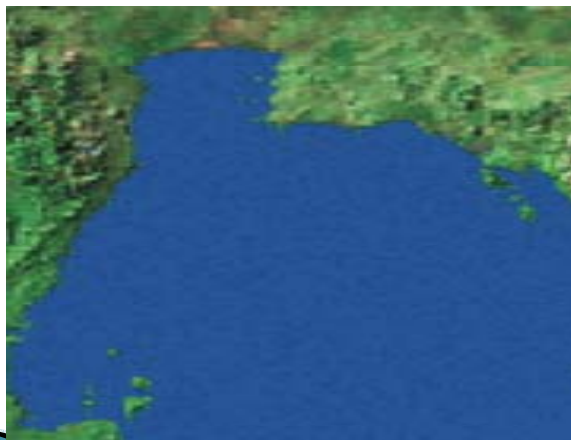
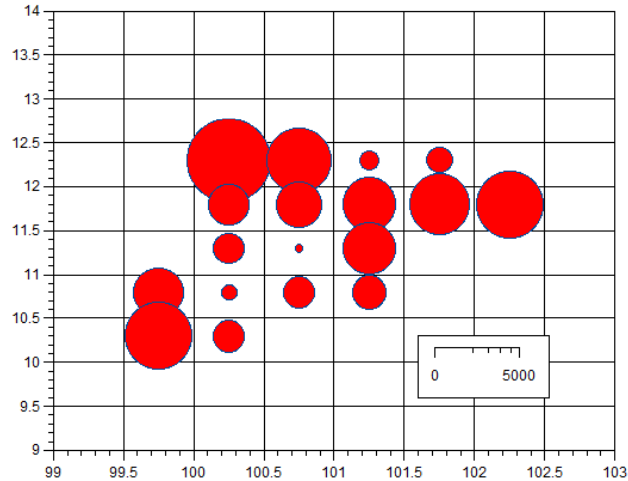


Step 3: Map-Image Preparation

- ▶ Map Cropping based on X and Y scale of Graphic Image:
 - Fixed Longitude range (x)
 - Fixed Latitude range (y)

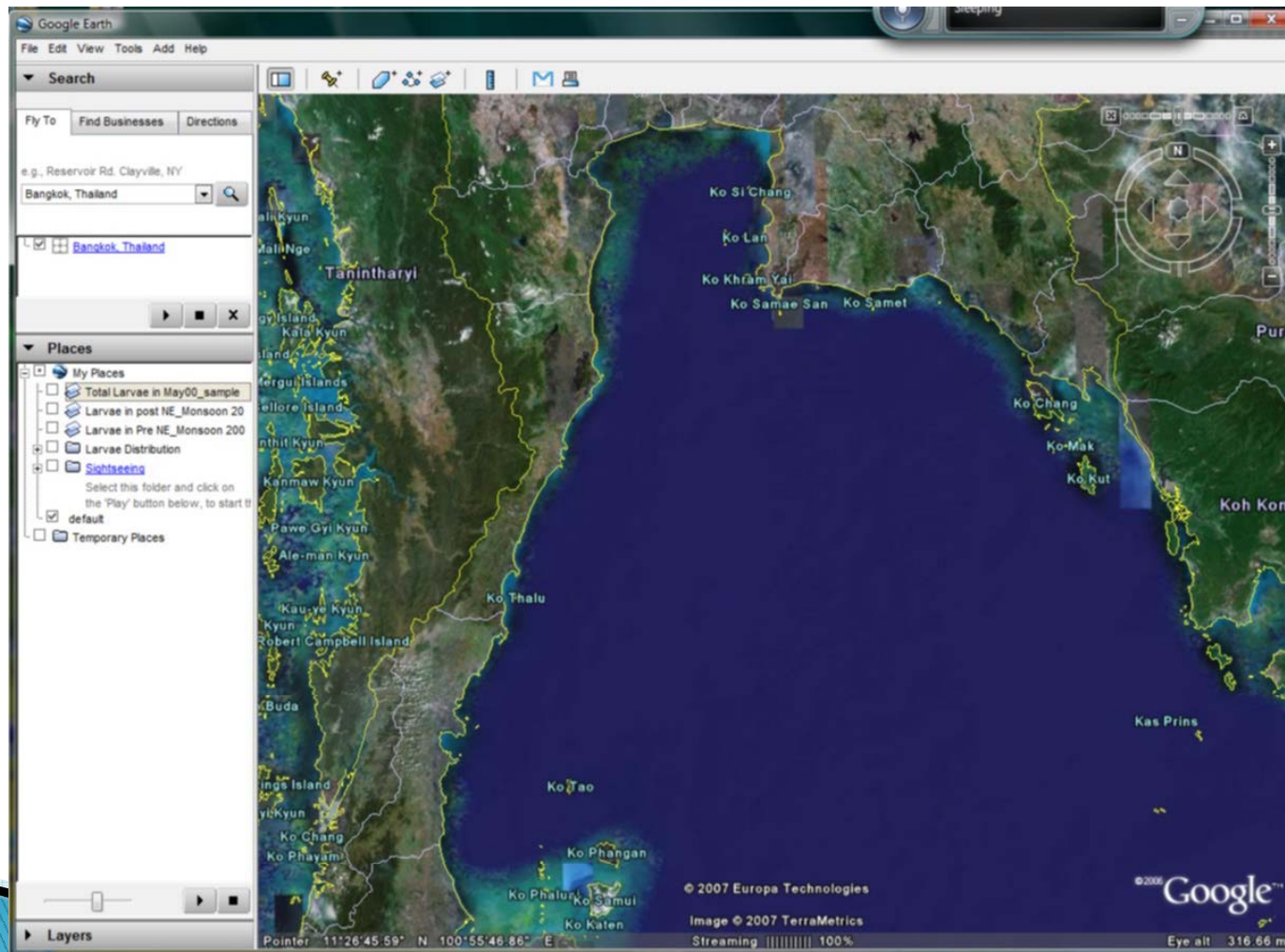


Step 4: Overlay with Image



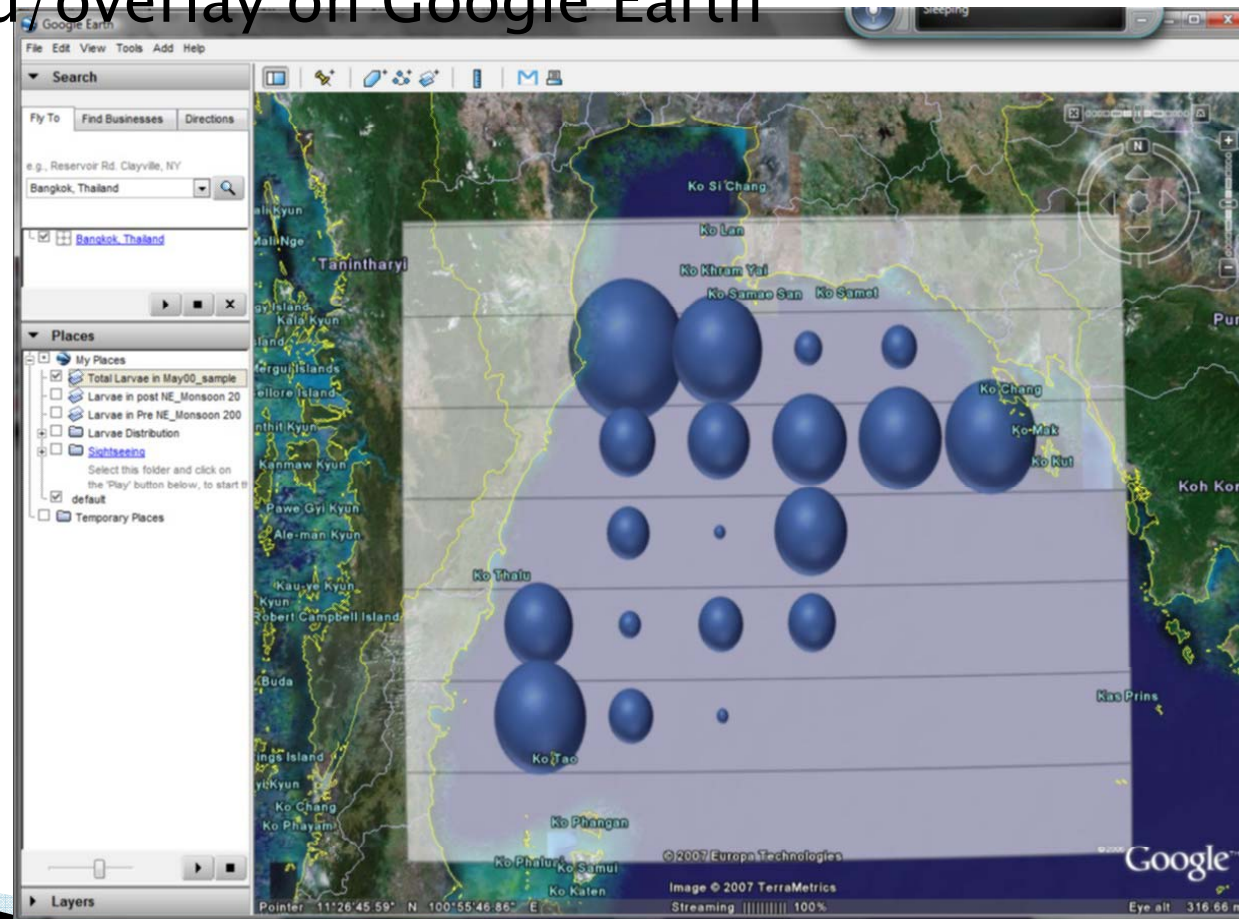
Technique 2: Display Graphic Image on Google Earth

- ▶ 1) Google Earth installed and used via Internet

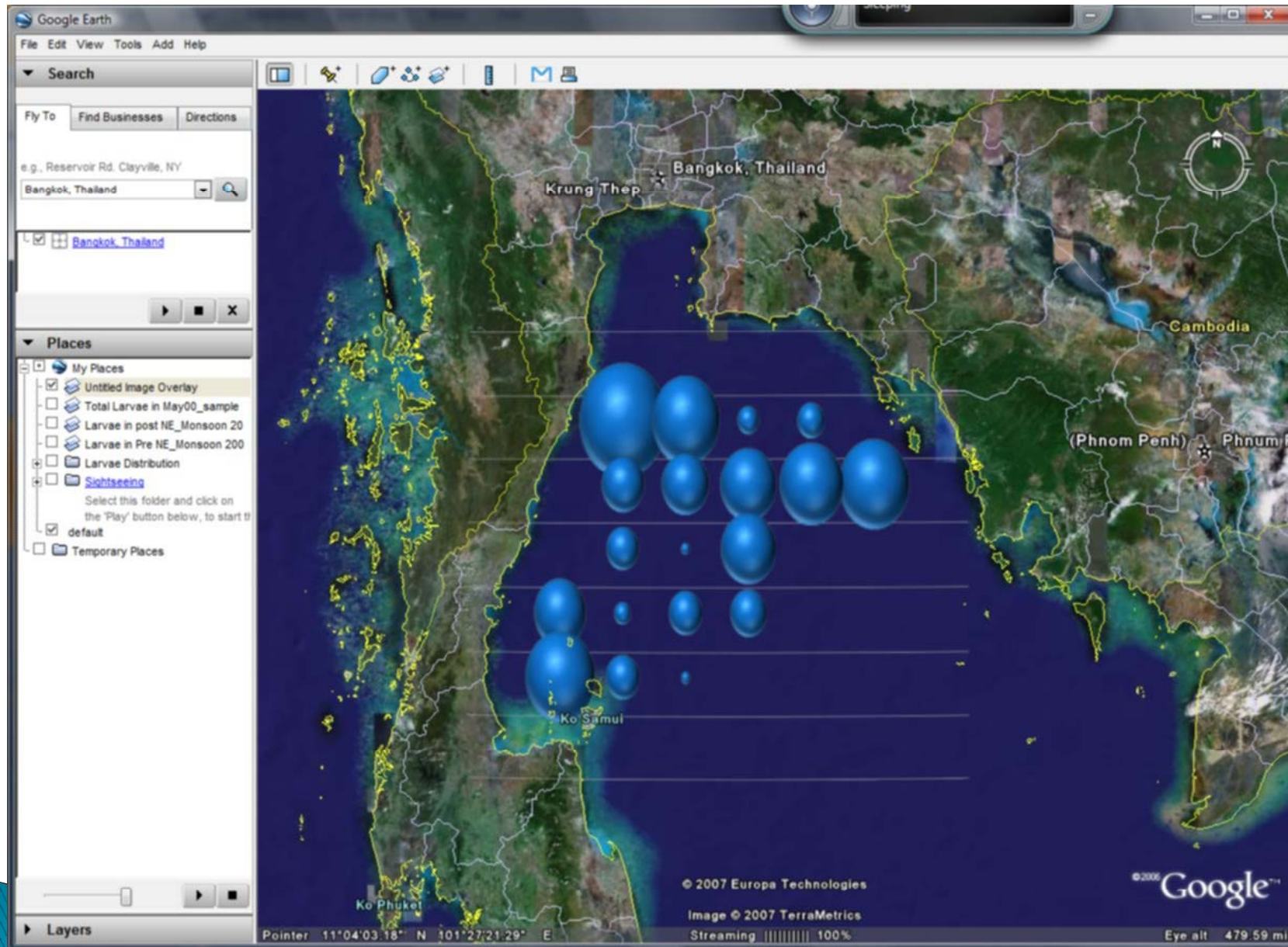


Technique 2: Display Graphic Image on Google Earth

- ▶ 2) Add Graphic Image in format “jpg, bmp, tif, tga, png, jpeg, gif” can be imported/overlay on Google Earth



In case the Graphic Image have transparent background



Sample: from the 1st technique

