GFOI

Satellite Coverage Assessment Report
Vietnam

The Global Forest Observations Initiative

Version 1.0
September 2015

CEOS

GEO
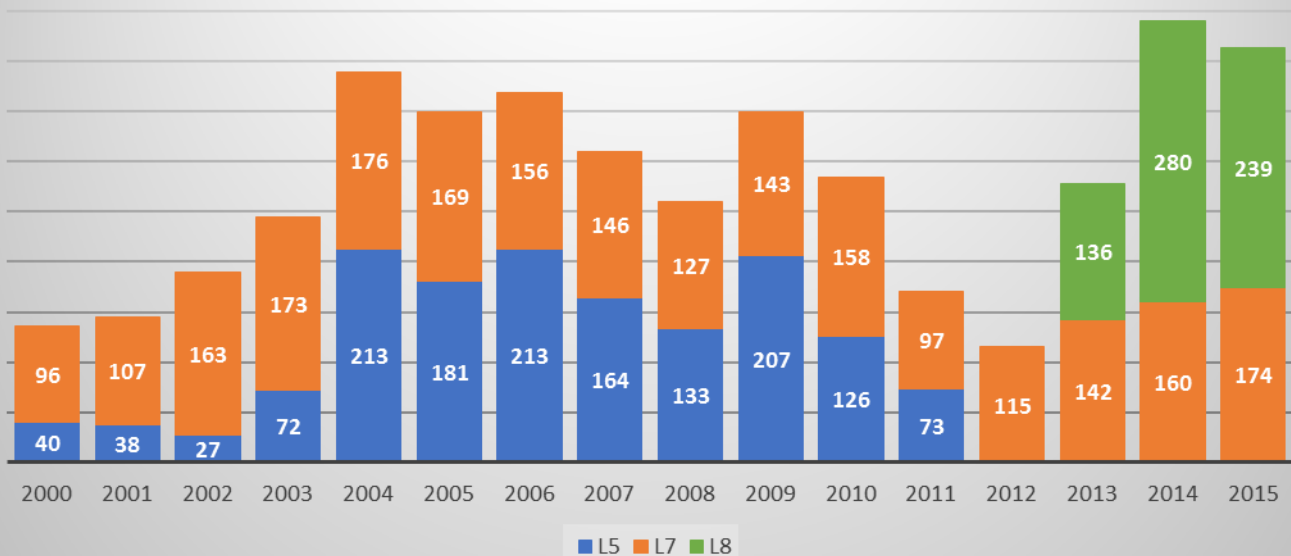
Satellite Coverage Assessment Report for Vietnam
Brian Killough and Paul Kessler, CEOS Systems Engineering Office
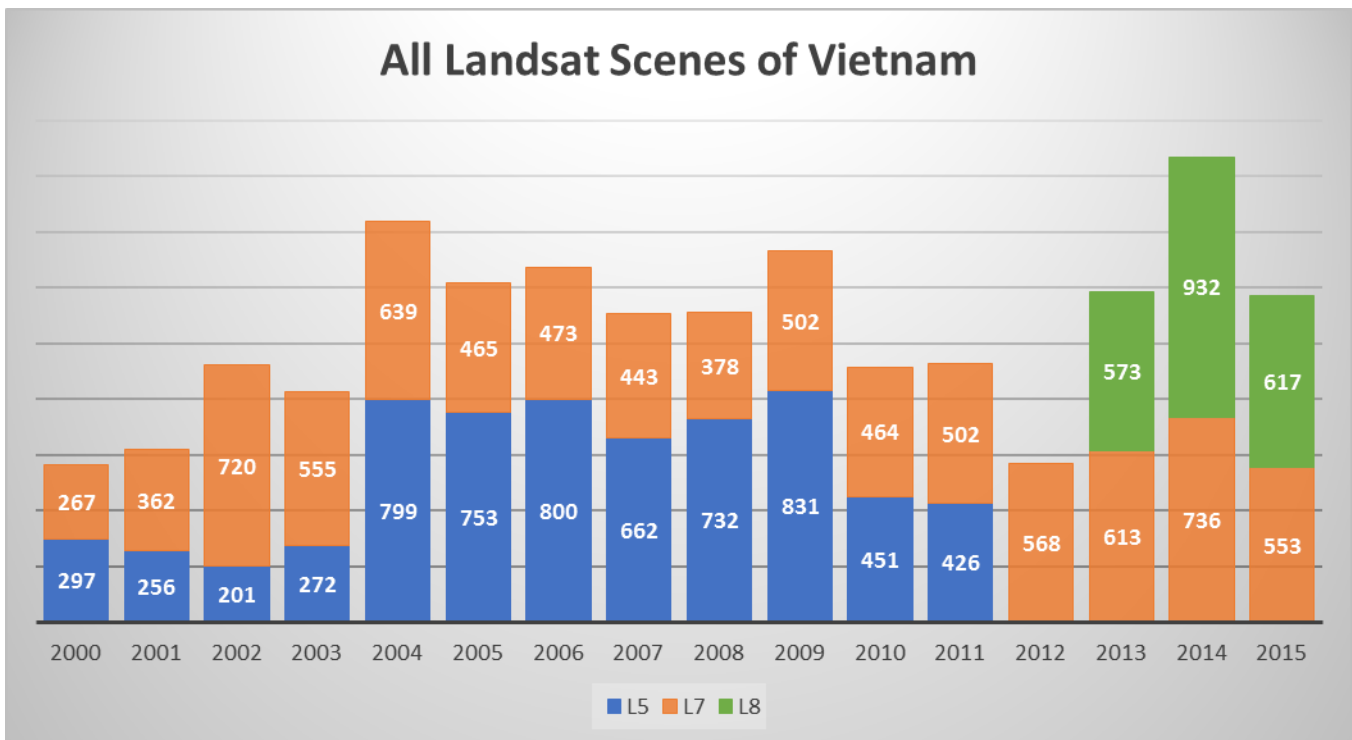September, 2015

This satellite coverage assessment focuses on Landsat historical coverage over Vietnam since 2000. The analysis used 41 path-row regions to cover the entire country. The following results show summaries of all acquisitions with filters for cloud cover and processing levels. It is expected that scenes with <20% cloud cover will provide excellent imagery for forest mapping and classification due to limited cloud issues.

Year	All Scenes				<20% Cloud Cover			
	L5	L7	L8	Total	L5	L7	L8	Total
2000	297	267	0	564	40	96	0	136
2001	256	362	0	618	38	107	0	145
2002	201	720	0	921	27	163	0	190
2003	272	555	0	827	72	173	0	245
2004	799	639	0	1438	213	176	0	389
2005	753	465	0	1218	181	169	0	350
2006	800	473	0	1273	213	156	0	369
2007	662	443	0	1105	164	146	0	310
2008	732	378	0	1110	133	127	0	260
2009	831	502	0	1333	207	143	0	350
2010	451	464	0	915	126	158	0	284
2011	426	502	0	928	73	97	0	170
2012	0	568	0	568		115	0	115
2013	0	613	573	1186		142	136	278
2014	0	736	932	1668		160	280	440
2015	0	553	617	1170		174	239	413
Total	**6480**	**8240**	**2122**	**16842**	**1487**	**2302**	**655**	**4444**

Landsat Scenes of Vietnam <20% Cloud Cover

All Landsat Scenes of Vietnam

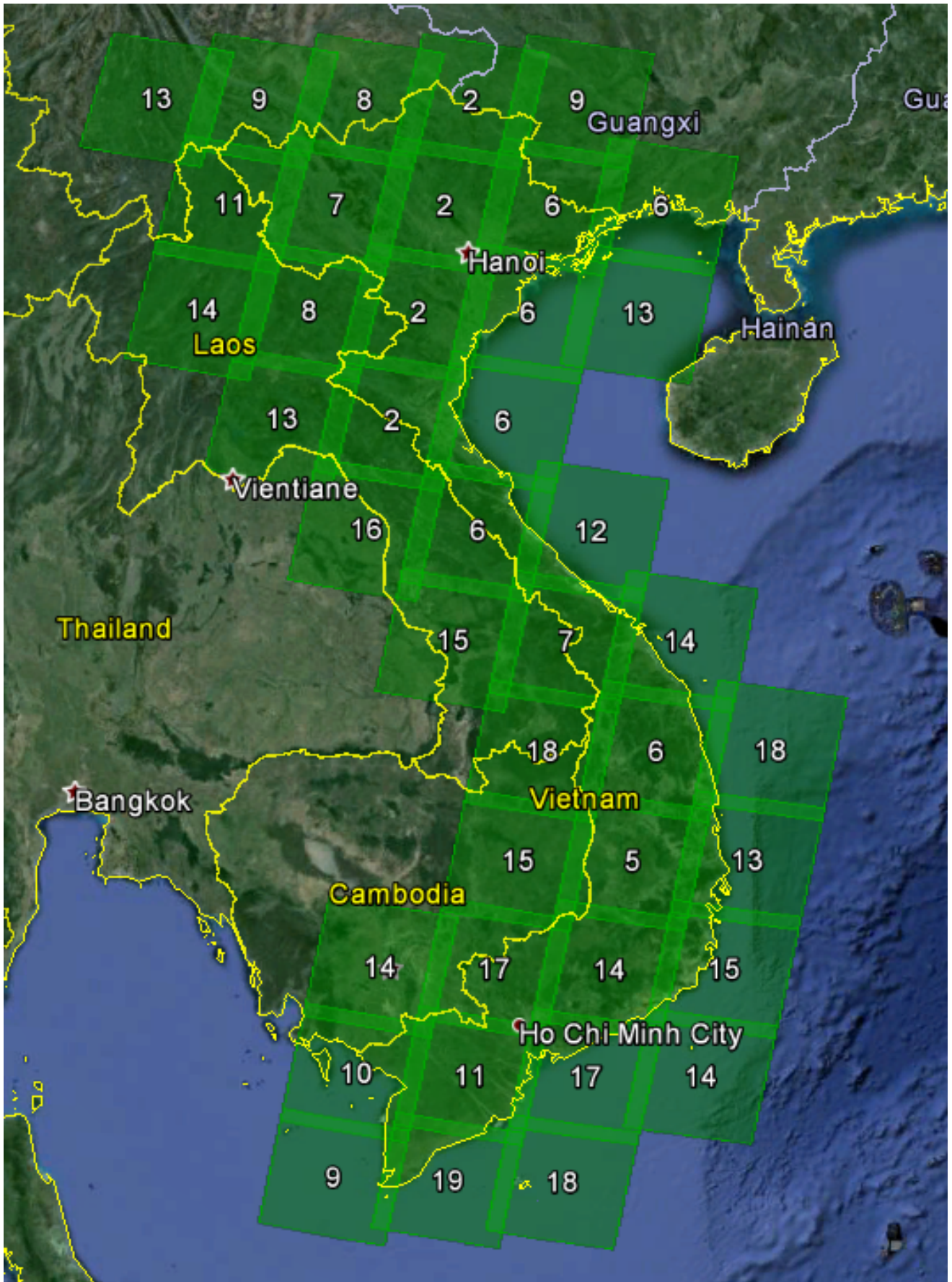| Year	L5	L7	L8
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2001	256	362	
2002	201	720	
2003	272	555	
2004	799	639	
2005	753	465	
2006	800	473	
2007	662	443	
2008	732	378	
2009	831	502	
2010	451	464	
2011	426	502	
2012		568	
2013		613	573
2014		736	932
2015		553	617

The following figures summarize output from the COVE Coverage Analyzer (http://ceos-cove.org) tool. This tool automates the number of path-row regions to cover a country, so there were a total of 41 regions for Vietnam. One will notice that some of these regions barely cover Vietnam's borders and may not be needed. For comparison, the table and bar-charts in the previous section only include 41 path-row regions, which were determined by visual inspection to optimize country coverage.
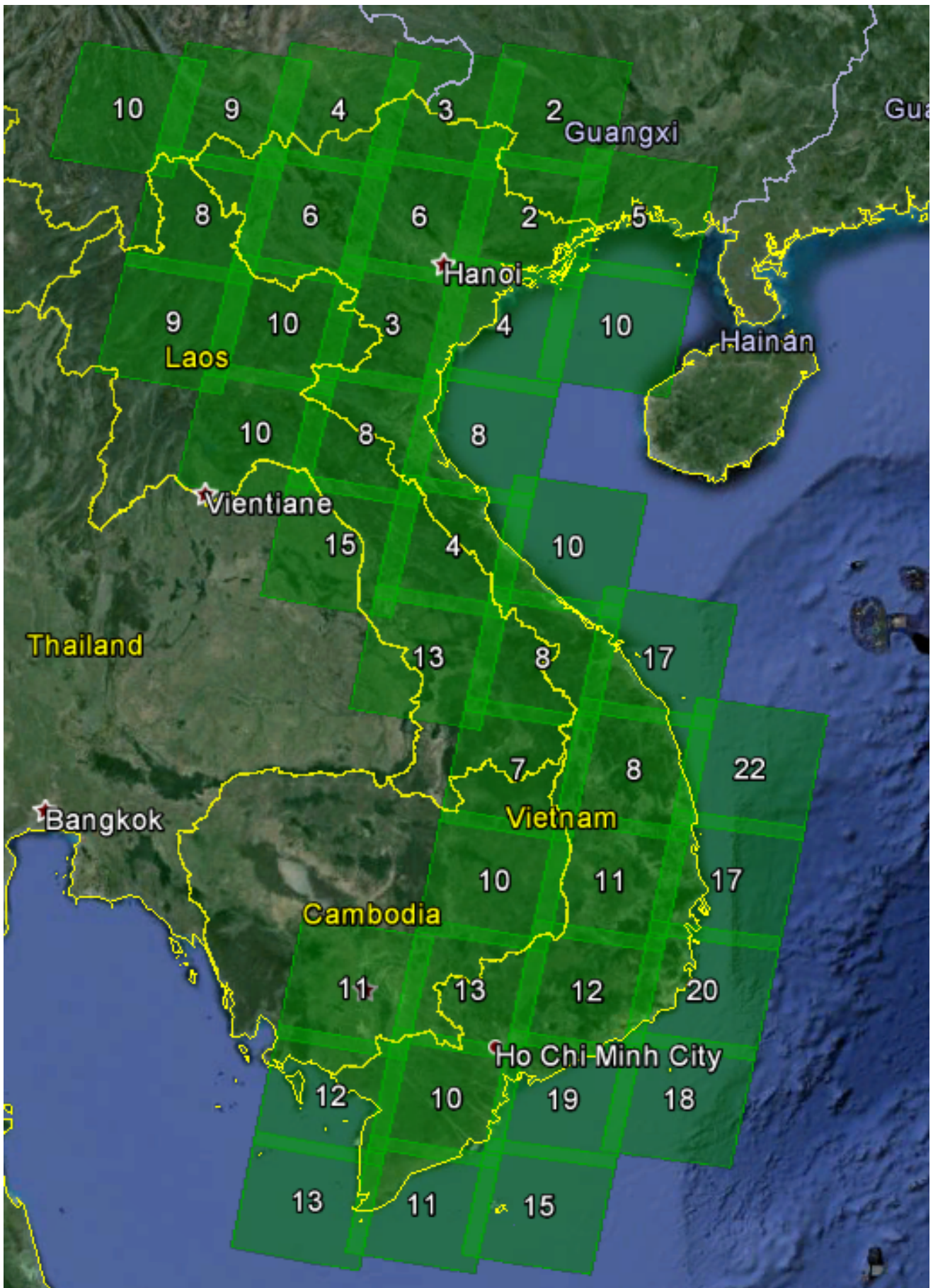
The results shown in the following figures reflect the total number of Landsat-7 and Landsat-8 acquisitions with <20% cloud cover. These figures are quite valuable for detailed assessments of path-row regions for any given year.

Year 2014: Total Landsat-7 and Landsat-8 Images with <20% Cloud Cover

Jan – Aug 2015: Total Landsat-7 and Landsat-8 Images with <20% Cloud Cover

The following table summarizes the 2014 - 2015 Landsat-7 and Landsat-8 coverage for every path-row region. There are columns for average cloud cover, the number of scenes <10% cloud cover and the number of scenes <60% cloud cover. The maximum number of scenes that can be acquired at any location is 23.

Path	Row	Landsat 7 (2014)				Landsat 8 (2014)				Landsat 7 (2015)				Landsat 8 (2015)			
		Avg. Cloud Cover	Total # scenes acquired	# scenes <10%	# scenes <60%	Avg. Cloud Cover	Total # scenes acquired	# scenes <10%	# scenes <60%	Avg. Cloud Cover	Total # scenes acquired	# scenes <10%	# scenes <60%	Avg. Cloud Cover	Total # scenes acquired	# scenes <10%	# scenes <60%
123	50	38%	17	4	13	25%	23	11	21	23%	15	7	12	15%	15	11	14
123	51	45%	16	1	11	31%	23	8	21	30%	15	3	14	15%	15	11	14
123	52	46%	11	1	8	30%	23	6	19	24%	15	5	13	20%	15	9	13
123	53	30%	11	4	9	36%	23	6	17	27%	15	4	12	30%	15	5	11
124	49	30%	17	5	14	43%	22	5	15	23%	15	10	12	34%	16	4	12
124	50	45%	16	1	14	45%	22	2	14	39%	15	2	13	37%	16	2	13
124	51	47%	16	1	11	44%	22	3	14	47%	15	2	9	35%	16	3	13
124	52	30%	15	4	13	36%	22	4	15	38%	15	3	10	28%	16	4	13
124	53	25%	15	2	15	26%	22	7	21	28%	15	5	13	25%	16	5	13
124	54	24%	11	4	11	23%	22	8	21	38%	13	6	7	29%	16	4	14
125	45	58%	21	1	12	50%	22	0	15	62%	14	2	5	51%	15	1	8
125	46	52%	21	4	11	37%	23	7	17	36%	14	3	12	40%	15	4	11
125	48	52%	21	2	12	40%	23	6	15	51%	14	1	11	26%	15	7	13
125	49	50%	17	0	10	44%	23	1	17	64%	14	0	6	31%	15	3	11
125	50	41%	18	4	13	35%	23	6	16	53%	14	1	7	33%	15	5	14
125	51	39%	18	4	13	32%	23	5	19	44%	14	3	9	31%	15	5	13
125	52	39%	18	5	13	30%	23	5	20	37%	13	2	10	24%	15	6	12
125	53	40%	18	1	14	30%	23	2	23	38%	13	0	11	30%	15	2	14
125	54	29%	17	2	15	30%	23	5	21	24%	13	2	13	31%	14	5	10
126	44	63%	21	3	7	65%	22	4	6	82%	14	1	2	68%	15	0	5
126	45	62%	20	1	10	66%	22	3	7	72%	14	1	4	65%	15	1	5
126	46	62%	20	0	9	64%	23	3	7	51%	14	2	8	60%	15	0	7
126	47	66%	17	0	7	60%	23	1	11	49%	14	2	8	57%	15	2	6
126	48	63%	17	1	7	45%	23	2	16	41%	14	2	9	49%	15	0	11
126	49	45%	17	3	11	33%	22	9	18	26%	14	5	12	32%	15	4	12
126	52	49%	16	2	11	31%	23	6	18	38%	14	2	12	31%	15	7	11
126	53	51%	14	1	8	34%	23	2	20	40%	14	2	10	27%	15	2	14
126	54	47%	14	0	10	37%	23	2	16	32%	14	4	11	29%	15	5	13
127	44	67%	22	1	6	69%	23	0	7	46%	10	2	6	70%	15	0	6
127	45	75%	22	0	5	72%	23	0	5	45%	10	3	5	61%	15	1	7
127	46	67%	22	1	7	68%	23	1	7	40%	10	1	8	55%	15	2	7
127	47	58%	21	1	12	59%	23	1	8	27%	10	2	9	41%	15	4	11
127	48	44%	18	3	11	33%	23	7	20	22%	10	5	10	18%	15	7	14
128	44	67%	22	1	8	57%	23	1	11	65%	13	1	5	50%	15	2	9
128	45	68%	21	2	6	58%	23	1	10	65%	13	0	5	43%	15	2	8
128	46	60%	19	2	8	54%	23	1	12	57%	13	0	8	29%	15	6	12
128	47	46%	18	4	11	43%	23	4	15	48%	13	1	8	29%	15	6	11
129	44	53%	23	0	13	57%	23	4	9	47%	14	3	8	53%	14	3	5
129	45	38%	20	5	13	49%	23	4	15	48%	14	4	7	54%	14	3	6
129	46	38%	19	5	14	43%	23	3	16	49%	14	5	7	49%	14	3	7
130	44	52%	19	2	11	35%	22	6	16	50%	12	3	7	45%	15	5	9