

The background of the cover is a composite image. The left side shows a close-up, low-angle shot of a large tree trunk in a lush green forest, with sunlight filtering through the leaves. The right side is a satellite-style map of a forested area, showing a grid of green and brown patches, overlaid on the same forest scene.

# Satellite Coverage Assessment Report Peru

The Global Forest Observations Initiative

Version 1.0  
September 2015

## Satellite Coverage Assessment Report for Peru

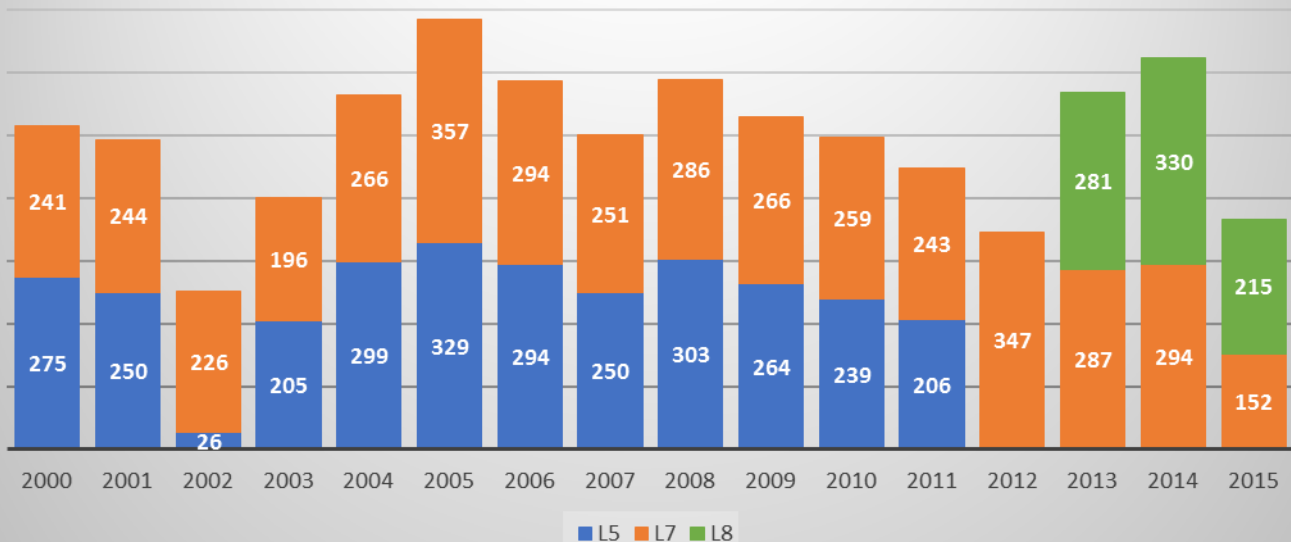
Brian Killough and Paul Kessler, CEOS Systems Engineering Office

September, 2015

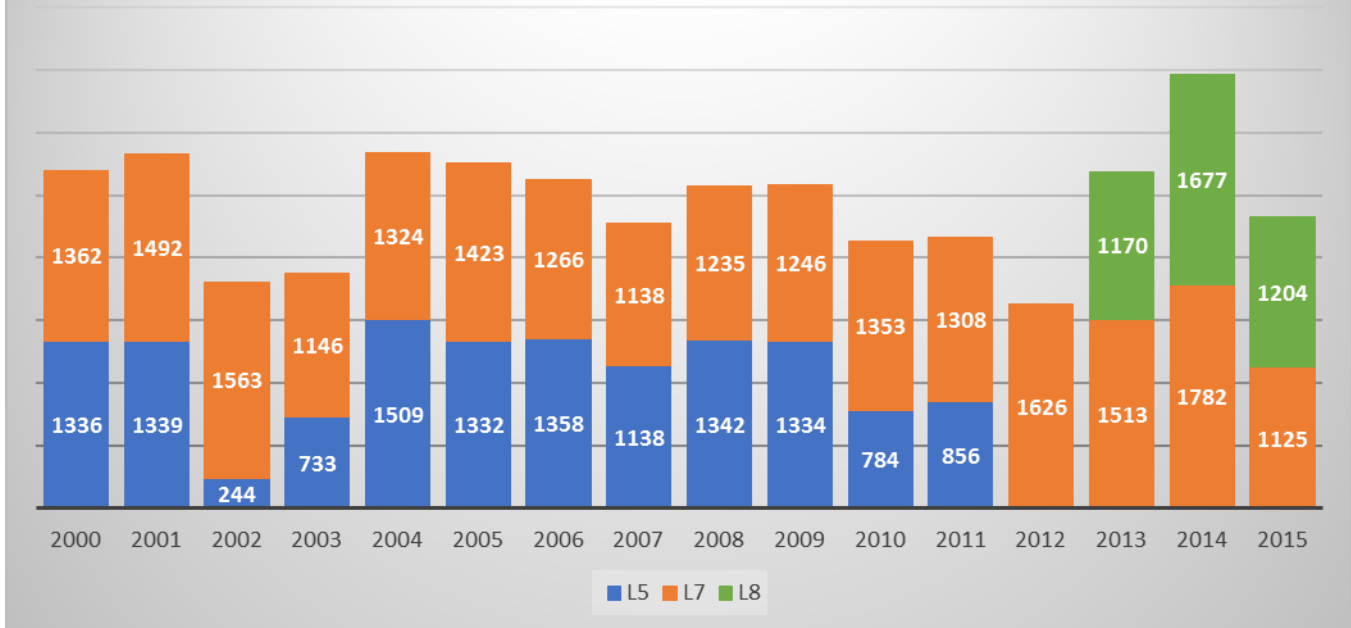
This satellite coverage assessment focuses on Landsat historical coverage over Peru since 2000. The analysis used 81 path-row regions to cover the entire country. The following results show summaries of all acquisitions with filters for cloud cover and processing levels. It is expected that scenes with <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	1336	1362	0	2698	275	241	0	516
2001	1339	1492	0	2831	250	244	0	494
2002	244	1563	0	1807	26	226	0	252
2003	733	1146	0	1879	205	196	0	401
2004	1509	1324	0	2833	299	266	0	565
2005	1332	1423	0	2755	329	357	0	686
2006	1358	1266	0	2624	294	294	0	588
2007	1138	1138	0	2276	250	251	0	501
2008	1342	1235	0	2577	303	286	0	589
2009	1334	1246	0	2580	264	266	0	530
2010	784	1353	0	2137	239	259	0	498
2011	856	1308	0	2164	206	243	0	449
2012	0	1626	0	1626	0	347	0	347
2013	0	1513	1170	2683	0	287	281	568
2014	0	1782	1677	3459	0	294	330	624
2015	0	1125	1204	2329	0	152	215	367
<b>Total</b>	<b>13305</b>	<b>21902</b>	<b>4051</b>	<b>39258</b>	<b>2940</b>	<b>4209</b>	<b>826</b>	<b>7975</b>

### Landsat Scenes of Peru <20% Cloud Cover



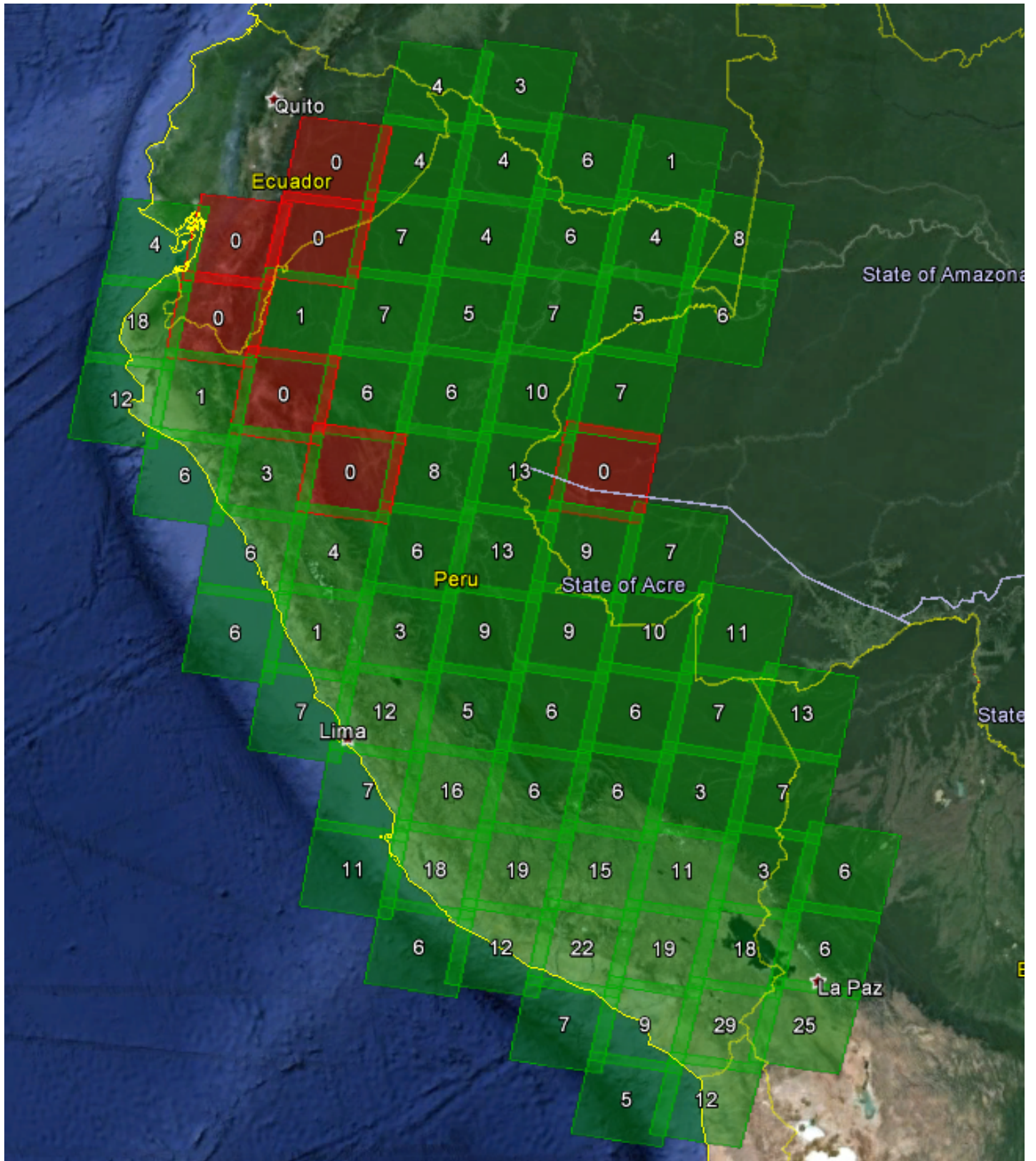
## All Landsat Scenes of Peru



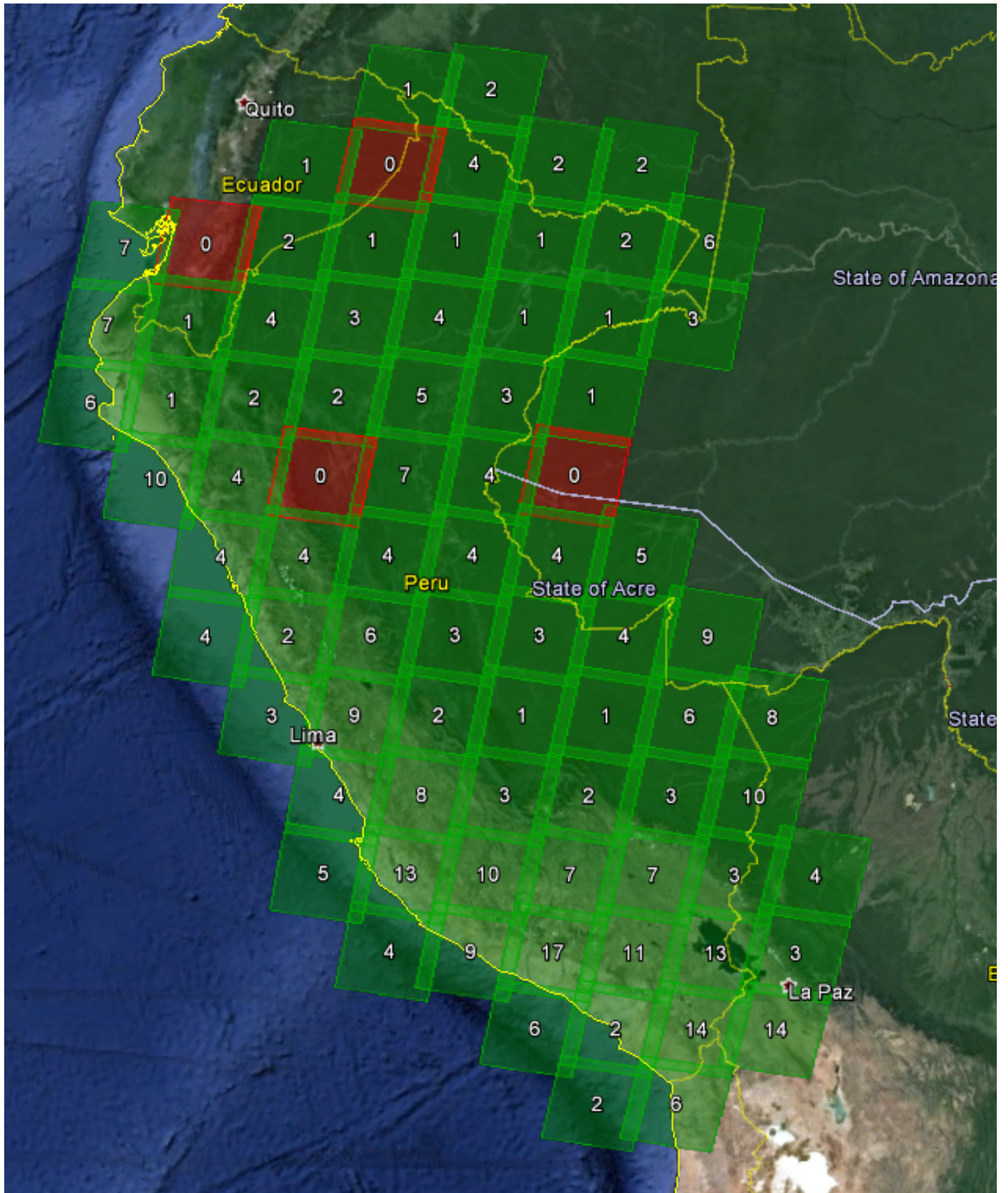
The following figures summarize output from the COVE Coverage Analyzer (<http://ceos-cove.org>) tool. This tool automates the number of path-row regions to cover a country, so there were a total of 81 regions for Peru. One will notice that some of these regions barely cover Peru's borders and may not be needed. For comparison, the table and bar-charts in the previous section only include 81 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. For example, there are three regions in Peru that did not acquire any images with <20% cloud cover in 2014 or Jan – Aug, 2015.

**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%
1	70	67%	23	2	7	54%	20	2	11	64%	13	0	7	45%	16	1	11
1	71	62%	23	0	10	50%	20	1	12	60%	13	0	8	49%	16	1	12
1	72	29%	23	5	20	13%	20	14	20	46%	13	2	7	24%	16	9	13
2	68	61%	21	3	8	45%	22	4	15	45%	14	4	9	52%	15	1	7
2	69	71%	21	2	6	45%	21	3	14	46%	14	2	8	56%	15	1	6
2	70	59%	21	0	13	48%	20	2	15	45%	14	2	12	54%	15	0	8
2	71	42%	21	4	13	28%	20	6	17	40%	14	4	10	34%	15	7	11
2	72	27%	21	4	18	15%	21	12	21	45%	14	1	9	22%	15	9	13
2	73	36%	21	6	19	36%	21	2	21	55%	14	1	8	32%	15	3	15
3	67	54%	23	6	11	41%	21	3	15	49%	12	4	6	50%	16	1	8
3	68	55%	22	3	12	50%	20	2	12	57%	12	2	6	53%	16	2	8
3	69	71%	23	0	5	56%	20	1	9	72%	12	0	4	58%	16	1	9
3	70	46%	23	1	17	37%	21	8	15	55%	12	1	7	35%	16	5	11
3	71	30%	23	7	20	20%	21	7	21	45%	12	2	8	22%	16	8	14
3	72	43%	23	2	20	40%	21	3	21	47%	12	0	10	43%	16	1	15
3	73	65%	23	2	9	77%	20	0	5	64%	12	2	6	78%	16	0	5
4	62	69%	23	4	7	50%	20	3	13	68%	13	1	4	53%	15	2	7
4	63	64%	23	2	10	54%	20	0	11	74%	13	1	3	57%	15	2	6
4	66	63%	23	1	9	48%	21	4	11	67%	13	1	5	61%	15	3	5
4	67	54%	23	2	12	46%	18	3	12	65%	14	1	6	61%	15	3	5
4	68	63%	23	1	10	52%	18	2	9	67%	15	0	6	64%	15	1	5
4	69	67%	23	1	7	51%	19	1	12	58%	14	0	6	54%	15	0	9
4	70	49%	23	4	14	30%	19	7	15	55%	14	2	7	33%	15	4	12
4	71	26%	23	4	21	20%	19	5	18	30%	14	3	12	20%	15	4	14
4	72	64%	23	0	9	75%	17	0	4	52%	14	2	7	63%	15	1	6
5	61	63%	20	0	12	63%	21	1	8	71%	13	0	4	65%	15	0	6
5	62	59%	21	1	11	62%	22	1	9	73%	14	0	3	69%	15	0	4
5	63	59%	21	1	10	59%	22	0	9	66%	14	0	6	65%	15	0	5
5	64	62%	22	2	9	51%	20	2	12	73%	14	0	4	67%	15	0	5
5	65	79%	1	0	0	0%	0	0	0	0%	0	0	0	47%	1	0	1
5	66	60%	22	4	9	47%	19	3	11	66%	14	2	4	65%	15	1	5
5	67	56%	22	4	11	44%	19	3	14	73%	14	1	4	61%	15	0	6
5	68	68%	22	1	7	51%	21	2	12	66%	14	1	4	62%	15	0	7
5	69	66%	22	0	8	53%	21	1	13	61%	14	0	7	55%	15	2	6
5	70	37%	22	5	19	22%	23	9	22	43%	14	3	10	32%	15	6	12
5	71	40%	22	4	20	39%	23	3	22	45%	14	3	10	33%	15	2	14
6	61	67%	23	1	9	50%	20	3	9	69%	15	1	3	71%	15	0	4
6	62	66%	23	1	8	43%	20	3	13	77%	13	0	2	67%	15	0	5
6	63	62%	23	2	11	54%	23	3	12	69%	14	0	4	64%	15	0	6
6	64	59%	23	2	12	55%	23	5	10	66%	14	1	6	61%	15	2	5
6	65	50%	23	6	12	55%	23	5	10	63%	14	1	6	63%	15	1	5
6	66	45%	23	5	14	49%	22	6	13	55%	14	2	7	58%	15	2	6
6	67	56%	23	2	13	49%	22	4	13	58%	14	1	8	62%	15	0	5
6	68	58%	23	2	12	49%	23	1	16	57%	14	0	7	60%	15	0	5
6	69	41%	23	2	17	31%	23	5	18	45%	14	0	10	36%	15	4	12

(Table continued on the next page)

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%
6	70	27%	23	4	23	21%	23	9	23	30%	14	3	13	32%	15	1	13
6	71	51%	23	1	14	72%	19	0	5	49%	14	2	9	61%	15	0	7
7	60	72%	23	1	5	62%	23	1	10	67%	15	0	5	72%	14	0	3
7	61	70%	23	1	7	65%	22	1	8	69%	15	1	6	72%	14	0	2
7	62	67%	23	1	7	63%	22	1	9	73%	15	0	4	70%	14	0	2
7	63	69%	22	1	8	57%	22	0	10	69%	13	0	4	67%	14	0	5
7	64	68%	22	3	7	56%	23	2	11	61%	13	2	5	60%	14	2	5
7	65	64%	22	1	8	54%	23	3	11	60%	14	3	6	52%	14	3	7
7	66	66%	22	0	9	55%	23	3	11	67%	15	1	6	50%	14	1	9
7	67	65%	22	0	9	49%	23	2	14	66%	15	0	6	42%	14	0	9
7	68	45%	23	0	16	41%	23	1	15	49%	15	0	10	28%	14	0	12
7	69	49%	23	3	13	51%	23	1	12	52%	15	1	8	42%	14	0	9
7	70	52%	22	5	13	51%	21	4	12	54%	15	1	8	53%	14	2	8
8	60	77%	23	2	6	63%	23	0	8	83%	14	0	1	70%	15	0	4
8	61	76%	23	0	5	66%	23	1	6	83%	14	0	2	76%	15	0	1
8	62	77%	23	1	4	63%	22	3	6	85%	15	0	1	75%	15	1	2
8	63	70%	23	2	7	65%	22	5	5	77%	15	0	2	66%	15	1	4
8	64	64%	23	1	11	65%	22	1	7	71%	15	0	5	61%	15	0	6
8	65	64%	23	0	10	67%	22	0	5	69%	15	0	5	65%	15	0	4
8	66	57%	23	1	13	61%	23	1	6	60%	15	0	5	52%	15	1	7
8	67	47%	23	0	19	42%	23	1	21	45%	15	0	13	36%	15	0	14
8	68	58%	23	3	9	71%	19	0	5	62%	15	0	6	54%	15	2	7
9	61	88%	21	0	1	71%	21	0	6	85%	16	0	1	73%	15	0	4
9	62	87%	21	0	3	73%	20	0	3	85%	16	0	3	68%	15	2	4
9	63	93%	21	0	0	71%	20	0	3	86%	16	0	1	66%	15	3	4
9	64	85%	21	0	1	73%	20	0	4	85%	16	0	1	64%	15	0	4
9	65	60%	21	0	11	48%	19	1	14	62%	16	0	6	50%	15	0	7
9	66	54%	21	2	12	51%	18	0	9	49%	16	1	10	54%	15	0	7
9	67	56%	21	3	10	69%	18	2	5	55%	15	1	7	61%	15	2	7
10	62	83%	23	0	1	69%	21	0	6	77%	14	0	2	71%	16	0	2
10	63	71%	23	0	7	54%	21	0	13	68%	14	1	4	61%	16	0	9
10	64	58%	23	0	14	48%	22	0	15	60%	14	1	7	58%	16	0	10
10	65	55%	23	3	11	55%	18	0	10	45%	14	1	10	43%	16	1	10
11	62	51%	21	0	15	51%	21	2	13	44%	16	0	12	51%	15	2	9
11	63	34%	19	4	15	27%	21	5	20	38%	16	1	12	45%	15	2	11
11	64	39%	17	7	10	56%	18	1	8	47%	9	3	4	46%	15	3	10