Cloud Data update

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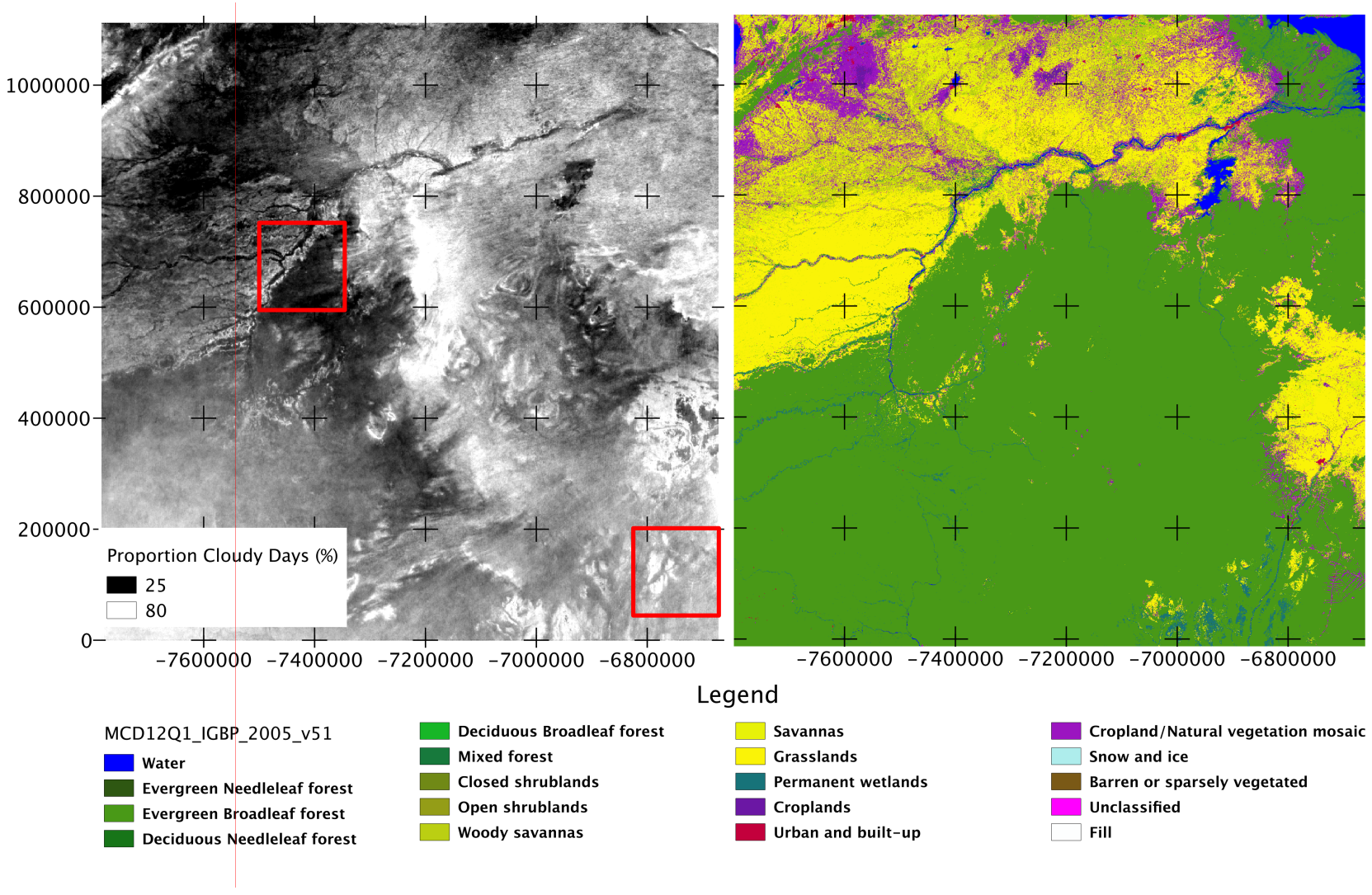
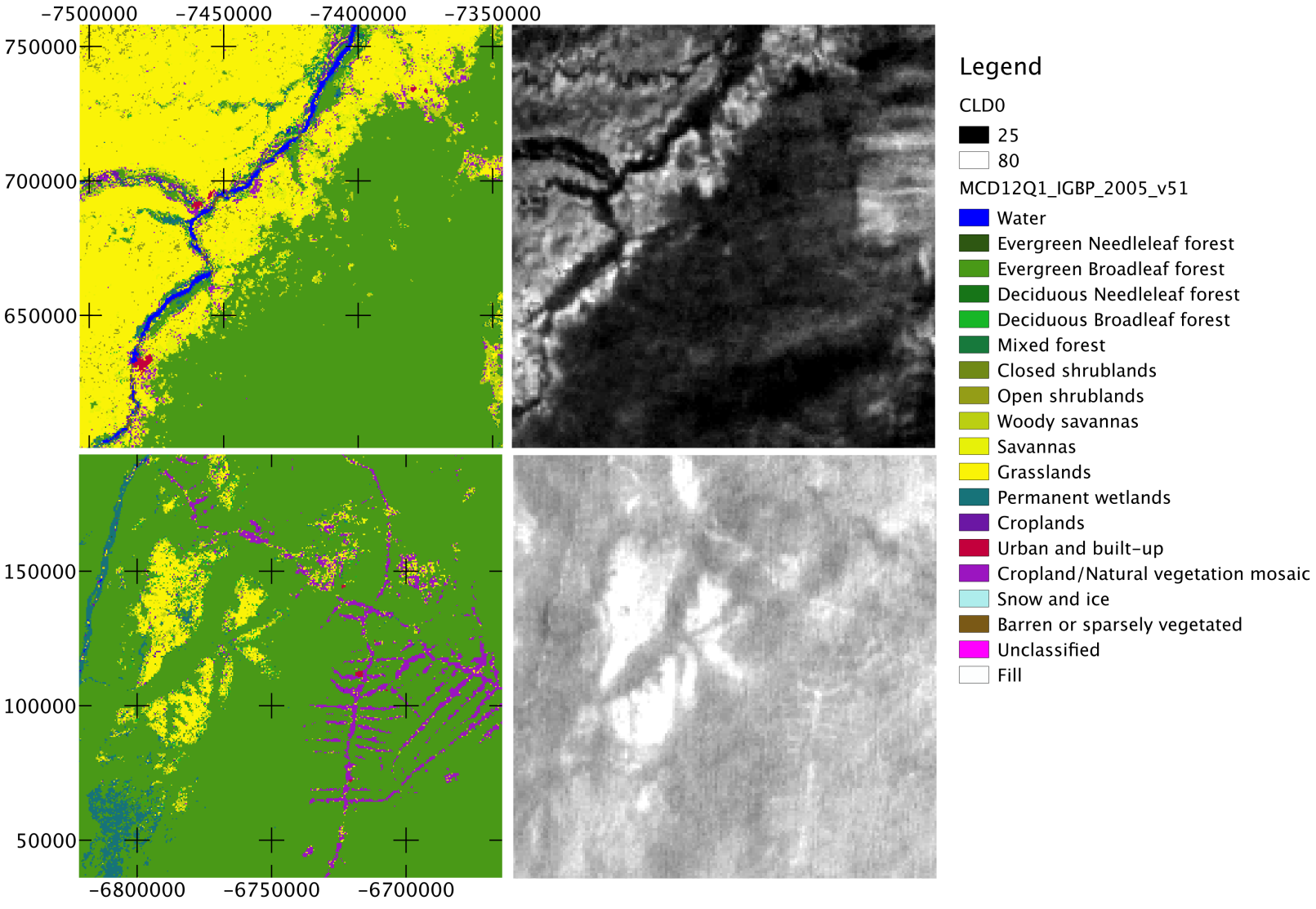
April 8, 2013

MODIS Cloud Mask Landcover Bias (Venezuela)

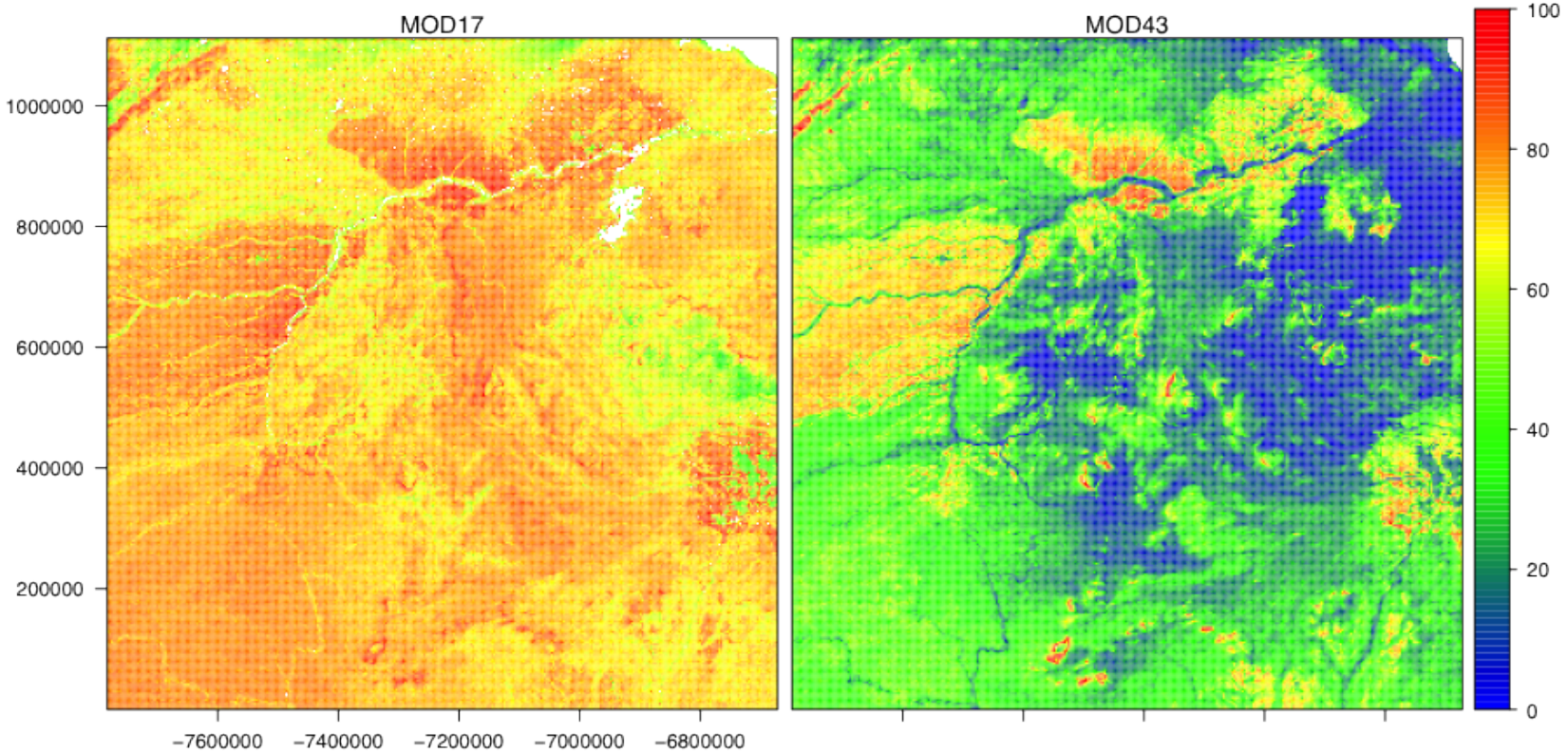


MODIS Cloud Mask Landcover Bias (Venezuela)



MODIS NPP (MOD17[1]) and BRDF Reflectance (MOD43)

Percent missing data for tile h11v08 (Venezuela)



2em1[1] Zhao et al., 2005

MOD35 Collection 6 (2012)

Collection 6 (2012) MOD35 Changes:

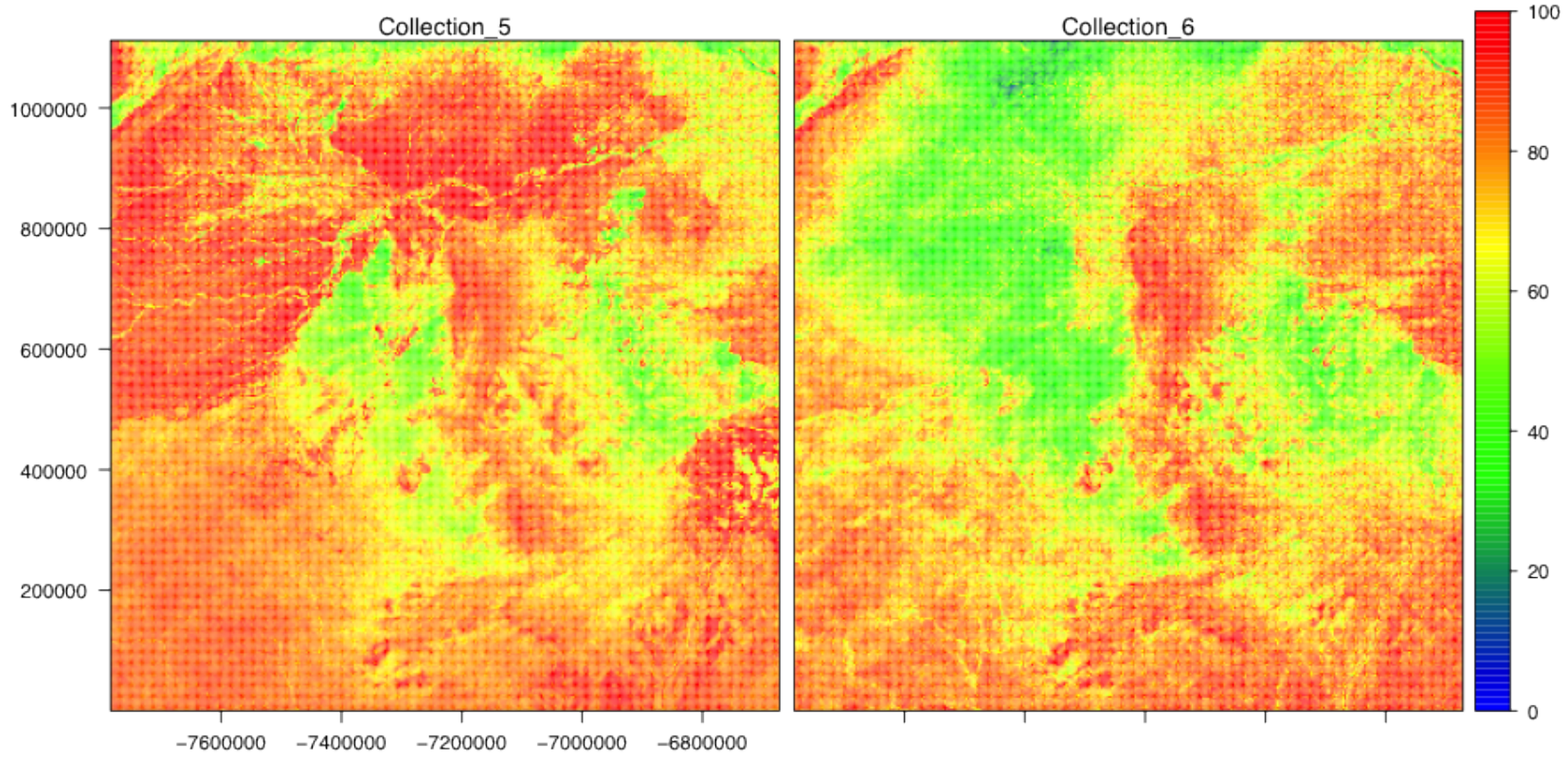
- NDVI$<$0.3 rather than categorical "desert"
- Refine "desert" algorithm

Impacts:

- reduces the fraction of pixels processed as "desert"
- reduces the frequency of clear-sky restorals (cloudy $\rightarrow$ clear)
- decreases numbers of probably cloudy and probably clear results in vegetated regions under clear skies

MOD35 Collection 6 (2012)

Frequency of cloudy days from MOD35 collection 5 (left) and collection 6 (right)



March (2000-2012)

MOD35 C6 Climatologies

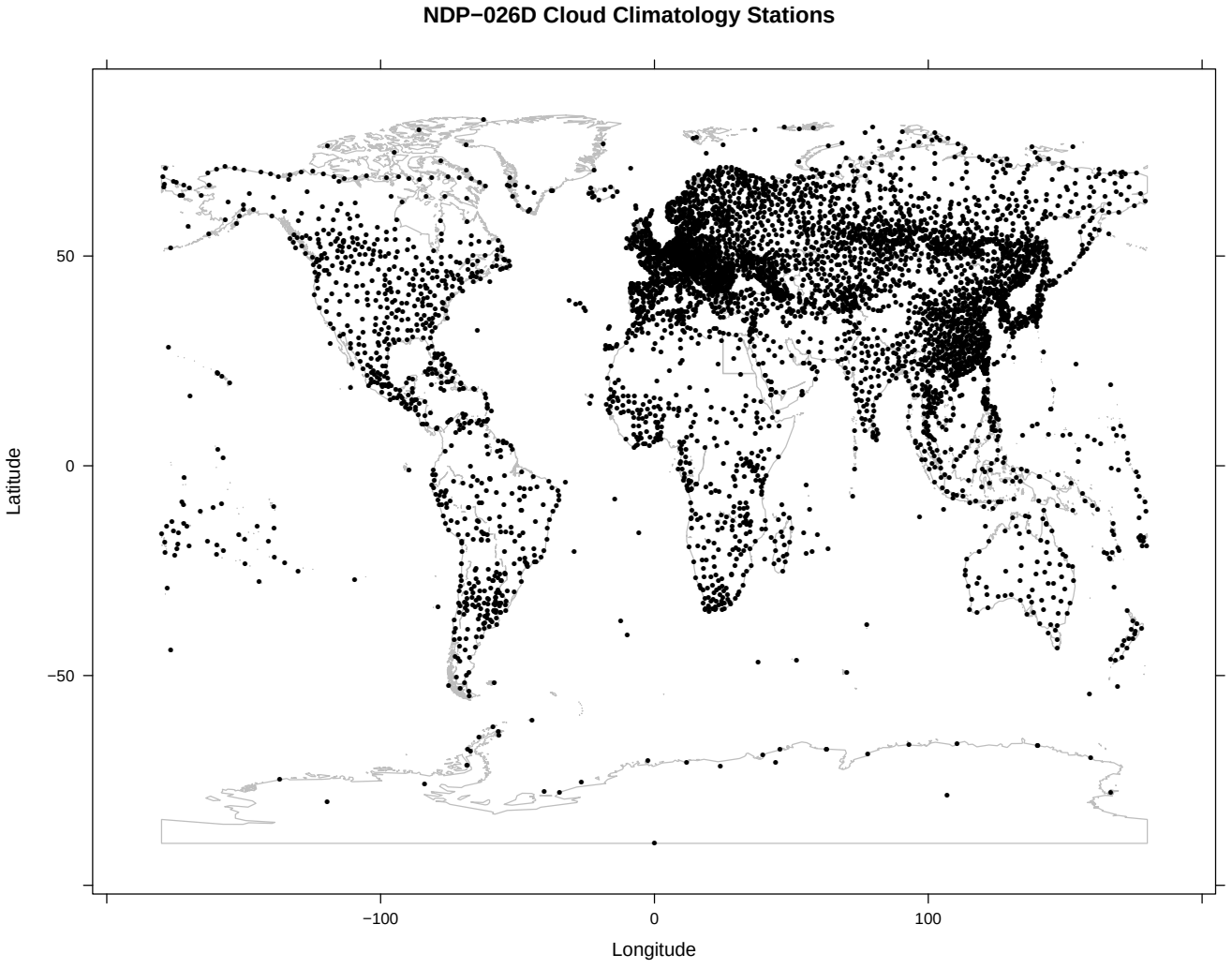
MOD35 Data:

1. Suite of $\approx$ 20 binary cloud tests
2. Summarized as "Probability of clear" (0%, 66%, 95%, 99%)
3. Available $\approx$ 4x / day (Terra and Aqua)

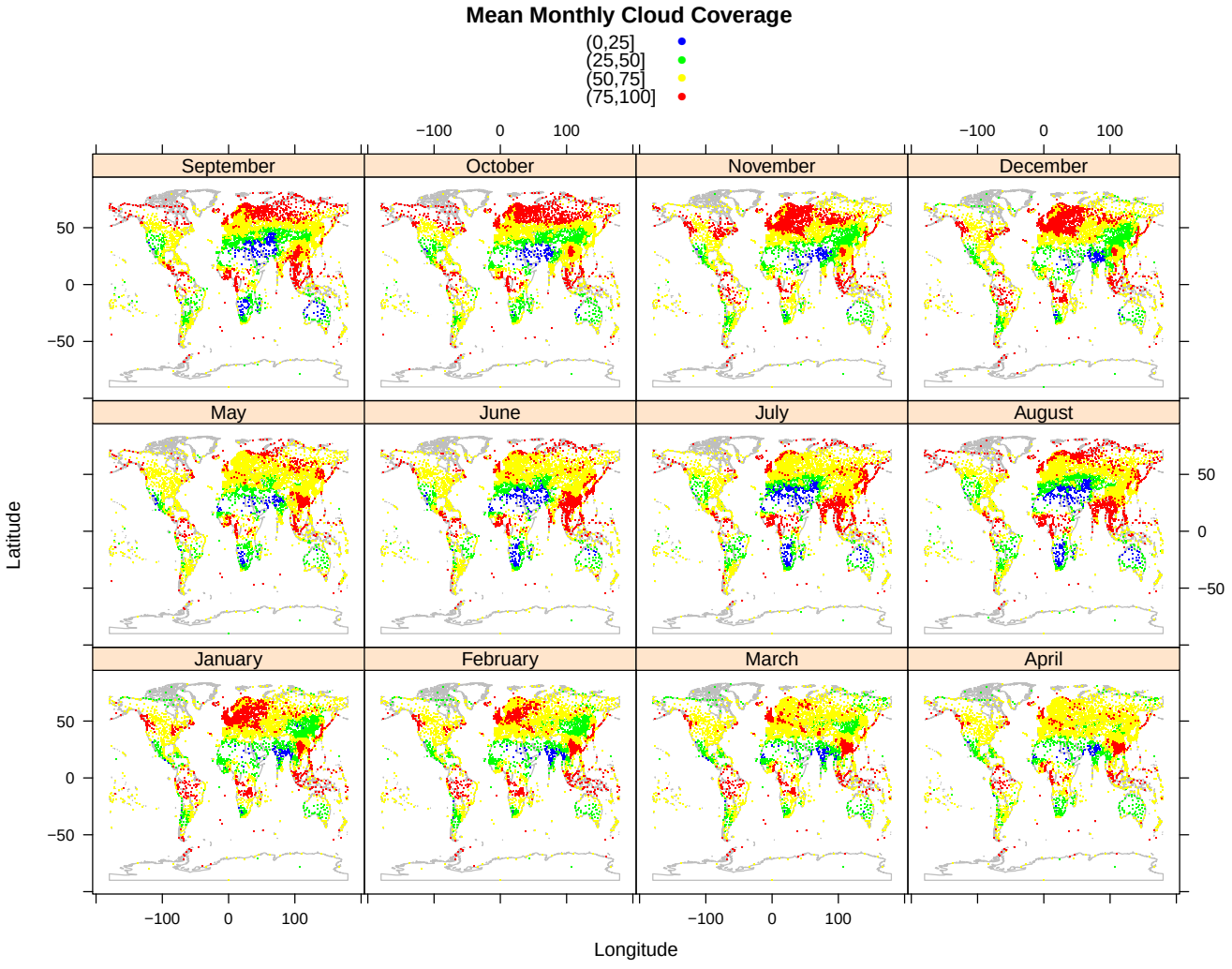
Output:

- Cloud Frequency Monthly Climatologies (% Cloudy Days)
- Cloud Frequency Monthly Timeseries (% Cloudy Days)
- Summarize by Morning/Afternoon or Day/Night?

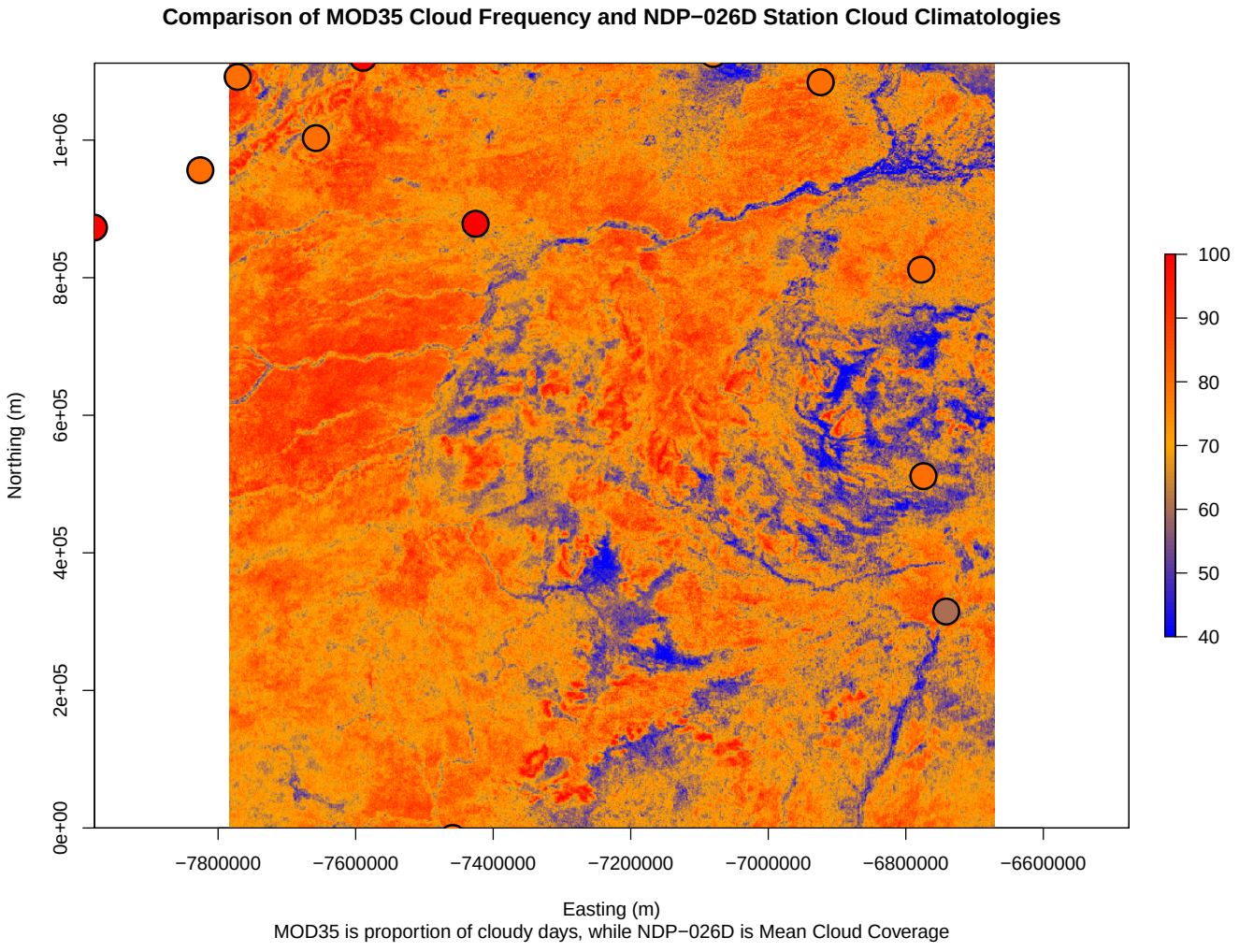
Preliminary Validation Using Station Data



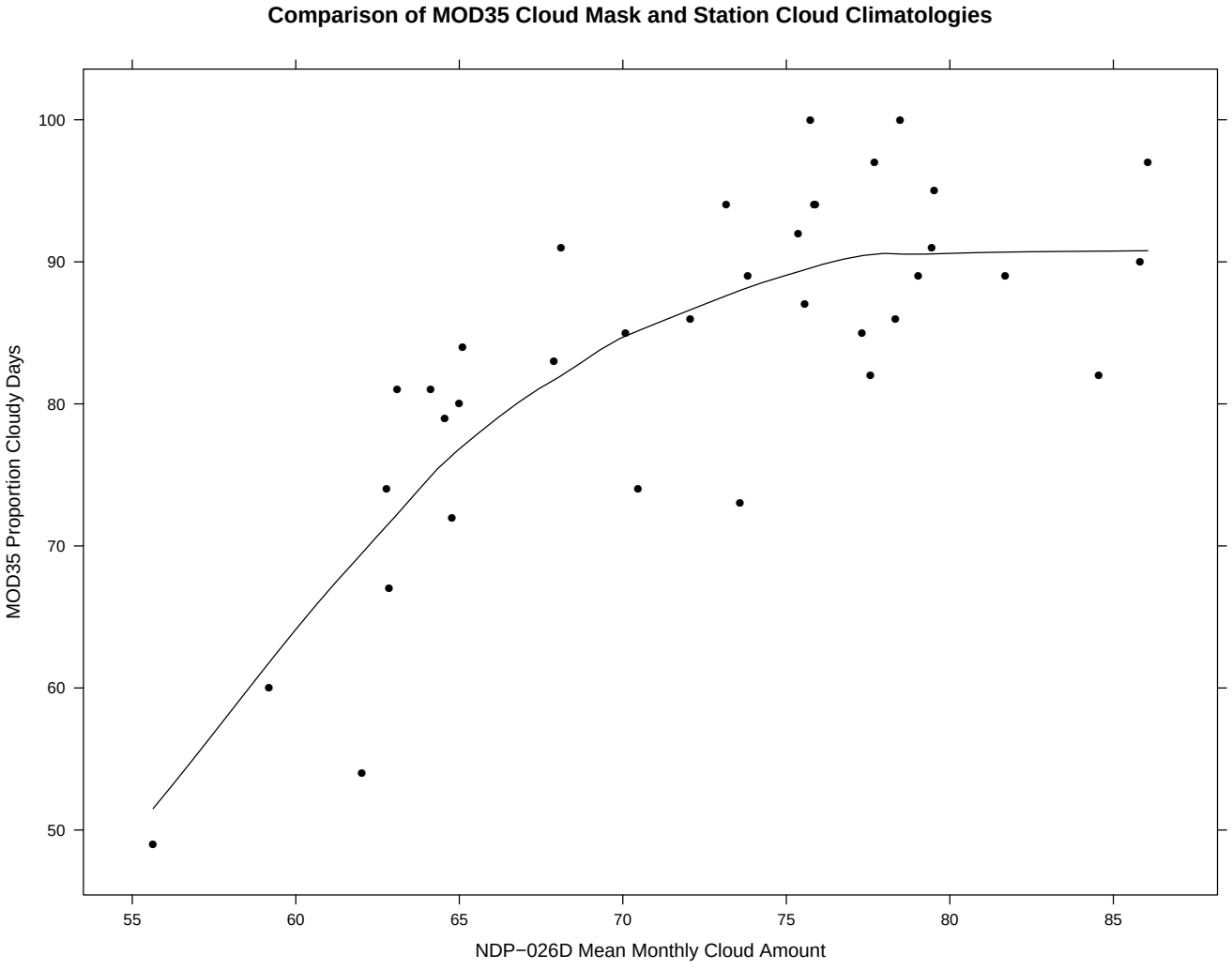
Preliminary Validation Using Station Data



Preliminary Validation Using Station Data



Preliminary Validation Using Station Data



Cloud Climatology

Clouds vital for:

- Global energy balance, latent heat flux, radiation flux (Stephens and Kummerow, 2007)
- Ecosystem Productivity (Fischer et al., 2009; Graham et al., 2003; Williams et al., 2008)
- Eco-physiology, such as activity patterns of ectotherms (Hare and Cree, 2010)
- Evapotranspiration and water loss in animals and plants
- Behavior and light availability: Clouds affecting predation exposure and foraging behavior of nocturnal animals
- Precipitation (Stephens and Kummerow, 2007)

Journal?

Mark	Rank	Abbreviated Journal Title (linked to journal information)	ISSN	JCR Data						Eigenfactor® Metrics	
				Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index	Articles	Cited Half-life	Eigenfactor® Score	Article Influence® Score
	1	B AM METEOROL SOC	0003-0007	10674	6.026	6.946	1.349	63	>10.0	0.02751	3.876
	2	INT J GREENH GAS CON	1750-5836	2023	5.111	6.551	0.411	192	2.9	0.00790	1.466
	3	ATMOS CHEM PHYS	1680-7316	18402	5.520	5.633	1.218	799	3.3	0.07537	1.617
	4	GLOBAL BIOGEOCHEM CY	0886-6236	9172	4.785	5.533	0.817	71	8.2	0.02439	2.643
	5	J CLIMATE	0894-8755	25403	4.097	5.306	0.734	413	7.3	0.08792	2.475
	6	REMOTE SENS ENVIRON	0034-4257	18449	4.574	5.276	0.654	312	7.6	0.03556	1.510
	7	CLIM DYNAM	0930-7575	7147	4.602	5.114	0.660	291	6.4	0.02838	2.492
	8	CLIMATIC CHANGE	0165-0009	8798	3.385	4.906	0.745	239	6.7	0.02635	1.845
	9	ENVIRON RES LETT	1748-9326	1417	3.631	4.154	0.416	154	2.8	0.01049	1.761
	10	AGR FOREST METEOROL	0168-1923	8615	3.389	3.991	0.719	167	7.8	0.01867	1.356
	11	CLIM PAST	1814-9324	879	3.509	3.884	0.413	92	3.1	0.00755	1.915
	12	TELLUS B	0280-6509	3458	4.382	3.818	0.616	73	8.9	0.00844	1.448
	13	J HYDROMETEOROL	1525-755X	3597	3.052	3.763	0.615	96	6.0	0.01394	1.653
	14	ATMOS ENVIRON	1352-2310	32572	3.465	3.742	0.573	854	7.1	0.06697	1.030
	15	INT J CLIMATOL	0899-8418	7869	2.906	3.457	0.703	182	6.9	0.01993	1.379
	16	ISPRS J PHOTOGRAMM	0924-2716	1879	2.885	3.435	0.323	93	6.2	0.00490	1.028
	17	ATMOS MEAS TECH	1867-1381	766	3.335	3.322	0.862	181	1.5	0.00337	1.005
	18	IEEE T GEOSCI REMOTE	0196-2892	16126	2.895	3.298	0.490	420	7.8	0.02871	0.859
	19	MON WEATHER REV	0027-0644	16821	2.688	3.004	0.635	230	>10.0	0.03260	1.418
	20	AEROSOL SCI TECH	0278-6826	4665	2.667	2.925	0.993	139	7.8	0.00891	0.939

"Top" 20 Meteorological and Remote Sensing Journals (via ISI JIF)