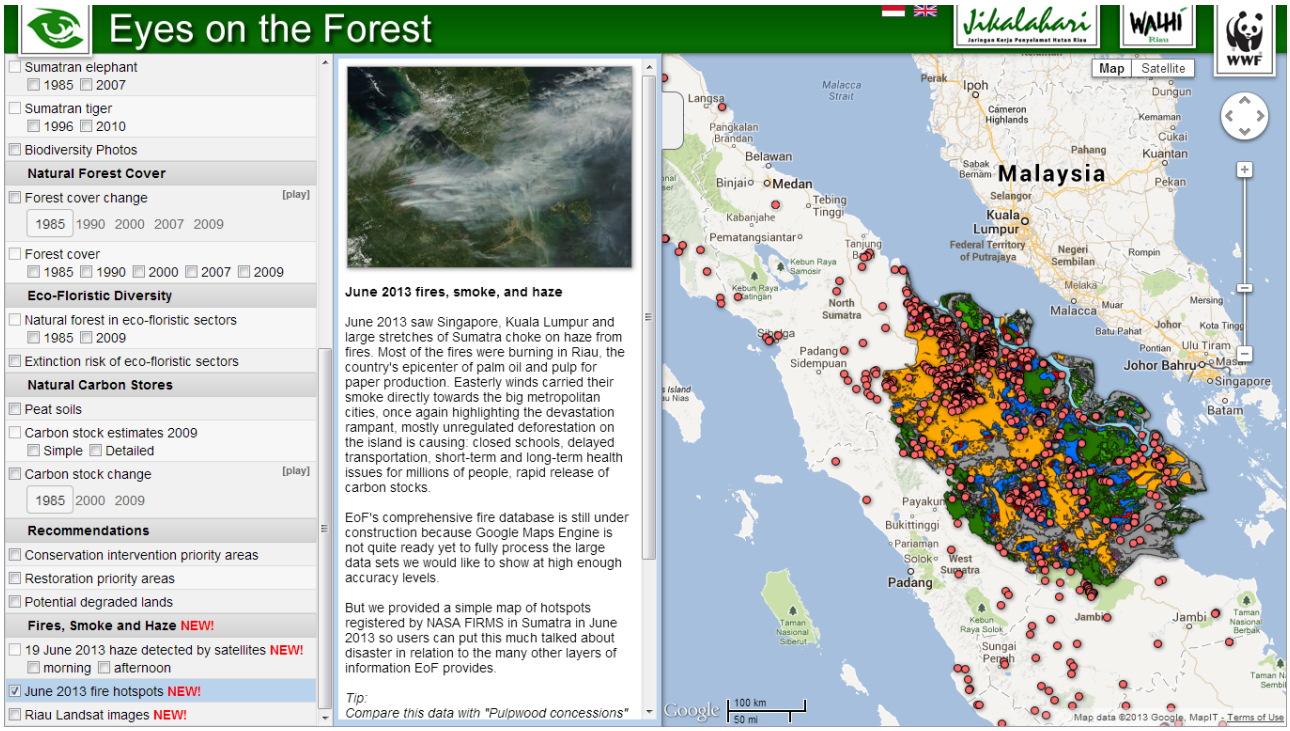
EYES ON THE FOREST

27 June 2013

Fires, smoke and haze - new in EoF's online database

EoF News (PEKANBARU)—Sumatra's Riau province is suffering Indonesia's worst fire season in recent years with serious smoke choking the region and neighboring Singapore and southern Malaysia. Eyes on the Forest has been tracking forest and land cover change and those who drive it in Riau since the early 1990s. Today it published several new data layers on its Google Earth based interactive maps.



Who drove deforestation?

9.3 million hectares Riau province lost almost 3 million hectares of natural forests between 1990 and 2007 and an additional 880,000 hectares until 2012 (30% loss). Just over 2 million hectares (22%) of natural forest remained.

WWF Indonesia published a detailed analysis of deforestation between 1990 and 2007. New data published today on Riau's deforestation until 2012 including historical data on the deforestation of Riau's islands show that the pulp & paper industry remains the key deforestation driver. The industry is dominated by the Sinar Mas Group/Asia Pulp & Paper and Royal Golden Eagle/APRIL conglomerates and their respective wood suppliers. Second most important deforestation driver was the palm oil sector with its many corporate and other players, including the so-called "wild cutters" which do not even stop at national park boundaries to grow their oil palms. Of the areas deforested between 2007 and 2012:

- 21% had become pulpwood plantations.
- 11% had become commercial oil palm plantations.
- 35% showed exposed soil, often located inside pulpwood concessions. This indicates

either new deforestation or harvesting of young acacia planted after 2007.
- 20% showed exposed soils with sometimes light vegetation cover not following regular patterns. Ground surveys frequently found this to be young oil palms. Examples are Tesso Nilo National Park and the 'Protection Forest' zones connecting Bukit Tigapuluh National Park and Rimbang Baling Wildlife Sanctuary.

Where are the hotspots detected by NASA located?

NASA's FIRMS MODIS fire locations data recorded 9,001 hotspots in Sumatra between 1 and 24 June. 89% were recorded in Riau province (8,055 hotspots), with two peaks on 19 June with (2,607) and on 21 June (1,137). NASA's fire locations are indicative, the satellites may miss fires because of all the smoke their sensors have to look through and the algorithms used to determine hotspot locations may not necessarily identify the exact spot of the fire.

EoF compared NASA's fire hotspot maps with the maps of Riau's 2012 land covers, pulpwood concessions and protected areas as well as with Landsat images taken in May and June 2013 published on EoF's Google Earth interactive map. The comparison only identifies the probable location of fires. Only burn scars visible on future satellite images may show where the fires actually burned and field investigations may reveal who actually started the fires.

- 2,432 (30%) hotspots showed inside pulpwood concessions, 1,027 in SMG/APP and 1,075 in RGE/APRIL wood suppliers' concessions. Some hotspots showed deep inside the concessions with Landsat images showing exposed soil, where either acacia or natural forest had been logged.
- 696 (9%) hotspots showed in what 2012 satellite images indicate are well-managed large scale oil palm plantation areas. These areas likely overlap at least in part with concession boundaries of large oil palm companies available on Government web sites. EoF has not re-published these data because it has not yet verified them.
- 1,651 (20%) hotspots showed in what was natural forest in 2012, suggesting recent deforestation activities for whose "clean-up" these fires may have been started.
- 2,331 (29%) hotspots showed in areas with fully exposed soil, 1,157 (14%) in cleared areas that had some vegetation and 1,239 (15%) in areas with no natural forest consisting of various land covers which were not pulpwood or oil palm plantations in 2012.
- 7,106 (88%) showed in peatlands, suggesting huge carbon emissions. Worst hit were areas surrounding Senepis, Giam Siak Kecil and Libo forest blocks.
- Interestingly, just 7 hotspots showed in Sumatra's only FSC certified PT. Diamond Raya Timber concession. Worst hit selective logging concessions were PT. Hutani Sola Lestari and PT. Siak Raya Timber concessions in the Tesso Nilo forest complex with serious encroachment issues. Together with Tesso Nilo National Park, the complex had 6% (449) of Riau's hotspots.

See the map