

What does a satellite study of Baghdad neighborhoods reveal about the effectiveness of troop increases in Iraq?

Shining New Light on **THE SURGE**



By Meg Sullivan

Early in 2007, the Bush Administration ordered the deployment of more than 20,000 soldiers into Iraq, while extending the tour of more than 4,000 U.S. Marines. Known as “the surge,” the plan was designed to help Iraqis in Baghdad and Al Anbar Province to clear and secure neighborhoods and protect the local population.

But did the surge work?

By tracking the amount of light emitted by Baghdad neighborhoods at night, a team of UCLA geographers has uncovered evidence that the surge may not have been as effective at improving security as administration officials have maintained.

Night light in neighborhoods populated primarily by embattled Sunni residents declined dramatically just before the surge and never returned, suggesting that ethnic cleansing by rival Shiites may have been largely responsible for the decrease in violence, the team reported in a new study based on publicly available satellite imagery.

“Our interpretation is that violence has declined in Baghdad because of intercommunal violence that reached a climax as the surge was beginning,” said lead author John Agnew, a UCLA professor of geography and authority on ethnic conflict.

“By the launch of the surge, many of the targets of conflict had either been killed or fled the country, and they turned off the lights when they left.”

The night-light signature in four other large Iraqi cities—Kirkuk, Mosul, Tikrit and Karbala—held steady or increased between the spring of 2006 and the winter of 2007, the UCLA team found. None of these cities were targets of the surge.

Baghdad’s decreases were centered in the southwestern Sunni strongholds of East Rashid and West Rashid, where the light signature dropped 57 percent and 80 percent, respectively, during the same period.

By contrast, the researchers found that the night-light signature in the Shiite-dominated Sadr City remained constant, as it did in the American-dominated Green Zone. Light actually increased in Shiite-dominated New Baghdad.

Until just before the surge, the night-light signature of Baghdad had been steadily increasing overall.

“If the surge had truly worked, we would expect to see a steady increase in night-light output over time, as electrical infrastructure continued to be repaired and restored, with little discrimination across neighborhoods,” said co-author Thomas



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Gillespie, associate professor in the Department of Geography.

The effectiveness of the surge deployment had already been debated before the UCLA study. In a report to Congress that September, General David Petraeus said “the military objectives of the surge are, in large measure, being met.”

However, a report the same month by an independent military commission headed by retired U.S. General James Jones attributed the decrease in violence to areas being overrun by either Shiites or Sunnis.

Reasoning that an increase in power use would represent an objective measure of stability in the city, Agnew and Gillespie led a team of UCLA undergraduate and graduate students in political science and geography that pored over publicly available night imagery captured by weather satellite F16 of the Defense Meteorological Satellite Program.

“The surge really seems to have been a case of closing the stable door after the horse has bolted,” Agnew said.

In addition to casting doubt on the efficacy of the surge in general, the study calls into question the success of a specific strategy of the surge, namely separating neighborhoods of rival sectarian groups by erecting concrete blast walls between them.

The researchers found that the differences in light signatures had already started to appear by the time American troops began erecting the walls under Gen. Petraeus’ direction.

“The U.S. military was sealing off neighborhoods that were no longer really active ribbons of violence, largely because the Shiites were victorious in killing large numbers of Sunnis or driving them out of the city all together,” Agnew said. “The large portion of the refugees from Iraq who went during this period to Jordan and Syria are from these neighborhoods.”

Previous research has used satellite imagery of night-light saturation to measure changes in the distribution of populations in a given area, but the UCLA project is believed to be the first to study population losses and migration due to sectarian violence. The outgrowth of an undergraduate course in the use of remote sensing technologies in the environment, the UCLA project was inspired by a desire to bring empirical evidence to a long-running debate.

“We had no axe to grind,” said Agnew. “If we had found that the situation was different, we would’ve reported it. Our main goal was to bring objective and unobtrusive measures to a particularly contentious issue.” 