TIME: 1300 EDT August 12, 2009
TO: NOAA SSC Brad Benggio
FROM: NOAA Office of Response and Restoration, Emergency Response Division Seattle, WA

SUBJECT: Tar balls on Boca Raton Beach

For additional information, please contact Chris Barker,
NOAA Emergency Response Division, Seattle, WA.
Phone: (206) 526-4911.

Per your request, we have looked at trajectory implications of tar balls found on the Beach in the vicinity of Boca Raton, FL.

On the afternoon of Sunday, August 9th, Sector Miami received a report of tar balls on the beach in Boca Raton, FL. Approximately 500 tar balls were counted on Baco Raton Beach, between latitude 26°15'31.11"N and 26°20'09.58"N. The next day, Monday, Aug 10th, there were fewer tar balls found in that location, and 200-250 tar balls were found at the John U Lloyd State Park Beach, between 26°03'11.88"N and 26°05'32.05"N, about 15 miles to the south. On Tuesday, Aug 11th, a smaller number of tar balls were found on the Ft. Lauderdale beach, located between the two previous locations. It is not clear if the Ft. Lauderdale beach has been searched before that day. The tar balls have been described as fairly fresh.

1) WEATHER:

For the period form Aug 8th to 11th, the winds were primarily from the east at 3 to 10 knots, except for a brief period of northerly winds the morning of the 11th.

2) TRAJECTORY:

The easterly winds would have served to move any floating tar balls toward the beach. With the easterly winds, we expect that there were both a wind-driven near-shore current and wave-driven long shore current to the south during the period of interest. This suggests that the tar balls likely arrived at the northern location the day of Aug 9th, then some were re-floated with the high tide, and moved to the south. It is not clear exactly when the tar balls washed ashore in either location, so another possibility is that the tar balls were released at more than one location, perhaps by a ship moving to the south.

Where the tar balls may have been released is highly dependent on when they were released. In these situations, it is very difficult to know how long the tar balls had been in the water before they were discovered. However, on scene observer s report the tar balls as being fairly fresh, probably only a day or two in the water.

If the tar balls were released less than 24 hours before being found, the source location is most likely to be to the north of Boca Raton, and to the east within about 5 miles from shore. If they had been in the water longer than about 24 hours, then the source would likely have been in the Gulf Stream, and the tarballs would have been carried with the currents from the south.

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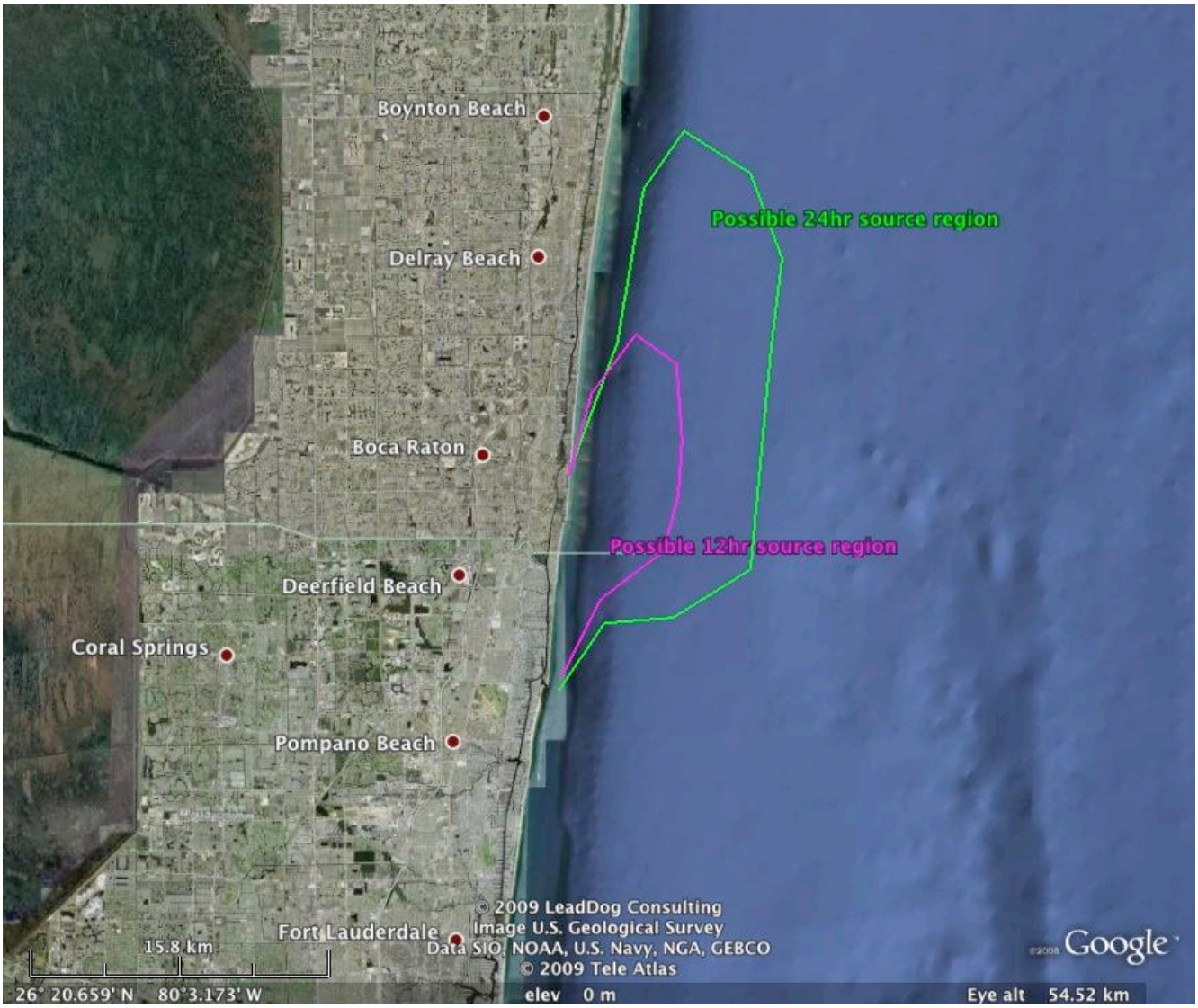

This map delineates the regions where is it most likely that the oil was released if it were released within 12 hours (purple line) or 24 hours (green line) of washing up on the beach.