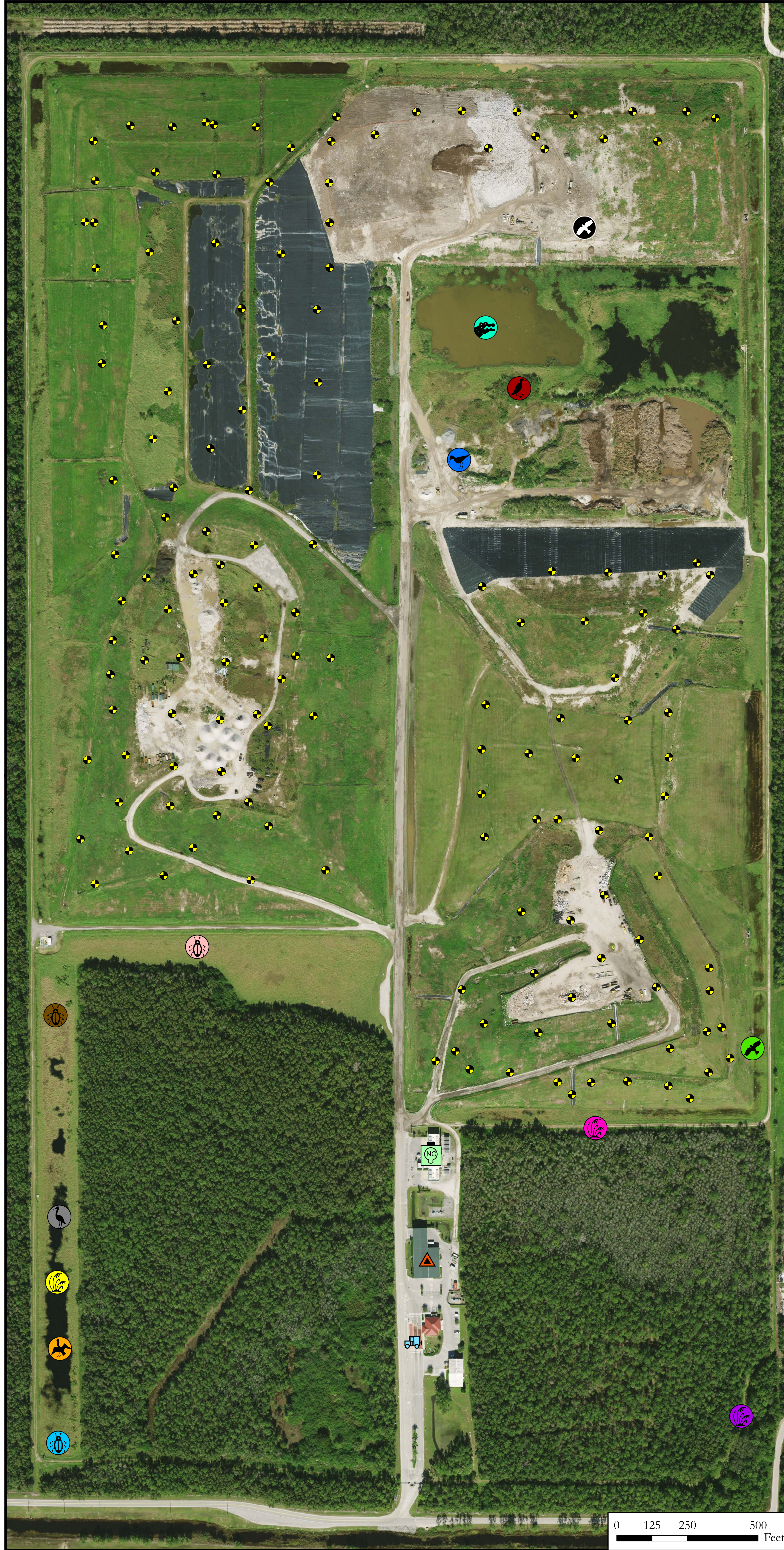
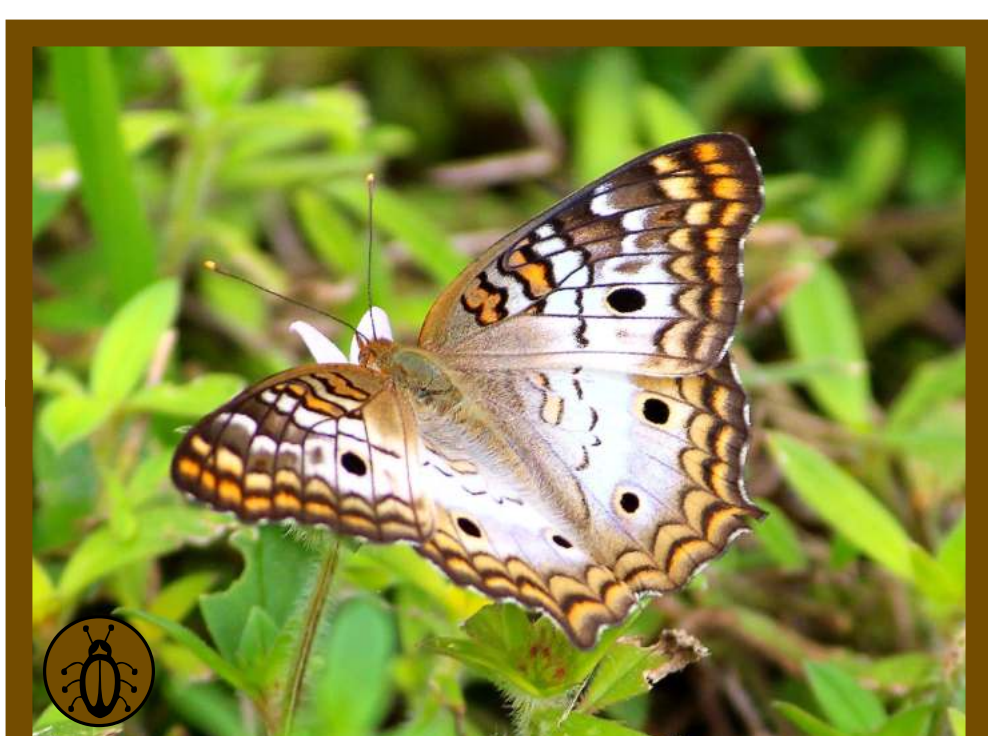




Eco-Design

Living Green at the Collier County Landfill



Hazardous Materials Collection Center

The Collier County Landfill was opened in 1976 and covers 312 acres. On average, the landfill serves approximately 300 customers per day. On average, 225,000 tons of municipal solid waste are collected and buried annually.



Landfill Gas Collection System

Landfill gas (LFG) is generated by the natural degradation of municipal solid waste by anaerobic (without oxygen) micro-organisms. Once the gas is produced it is collected through a series of wells drilled into the landfill and connected by a plastic piping system. Gas wells take gas from decaying garbage and send it to the Gas to Energy plant where the methane is cleaned and then converted via generator to electricity and sold for distribution. The landfill, as a whole, has 186 gas wells and the gas at its peak provides enough electricity to power 2,200 homes.



Gas to Energy Plant

The gas entering the gas collection system is saturated with water, which must be removed, or scrubbed, prior to further processing. The typical dry composition of the gas is 57 percent Methane (Natural Gas) and 42 percent carbon dioxide, with trace amounts of Nitrogen, Hydrogen, and Oxygen. After dewatering, the LFG can be used directly in reciprocating engines. It can also be further processed into a higher-British Thermal Unit gas suitable for use in boilers for manufacturing processes, as well as for electricity generation via gas turbines. The most important part of the scrubbing process is the removal of sulfur dioxide from the gas since it results in corrosion within the combustion equipment.



Compressed Natural Gas (CNG) Truck

The county fleet of 105 collection trucks runs entirely on CNG. Each truck saves 8,000 gallons of diesel fuel per year, reduces greenhouse gas emissions by 22 metric tons, and cuts smog-producing emissions by 50%. In addition, each CNG truck is 93% cleaner than a diesel truck and is also quieter and more efficient.



Photo Credits: Kelly Campbell

