

Africanized Bee Situation Report **UDAF Plant Industry, March 2010**



Background

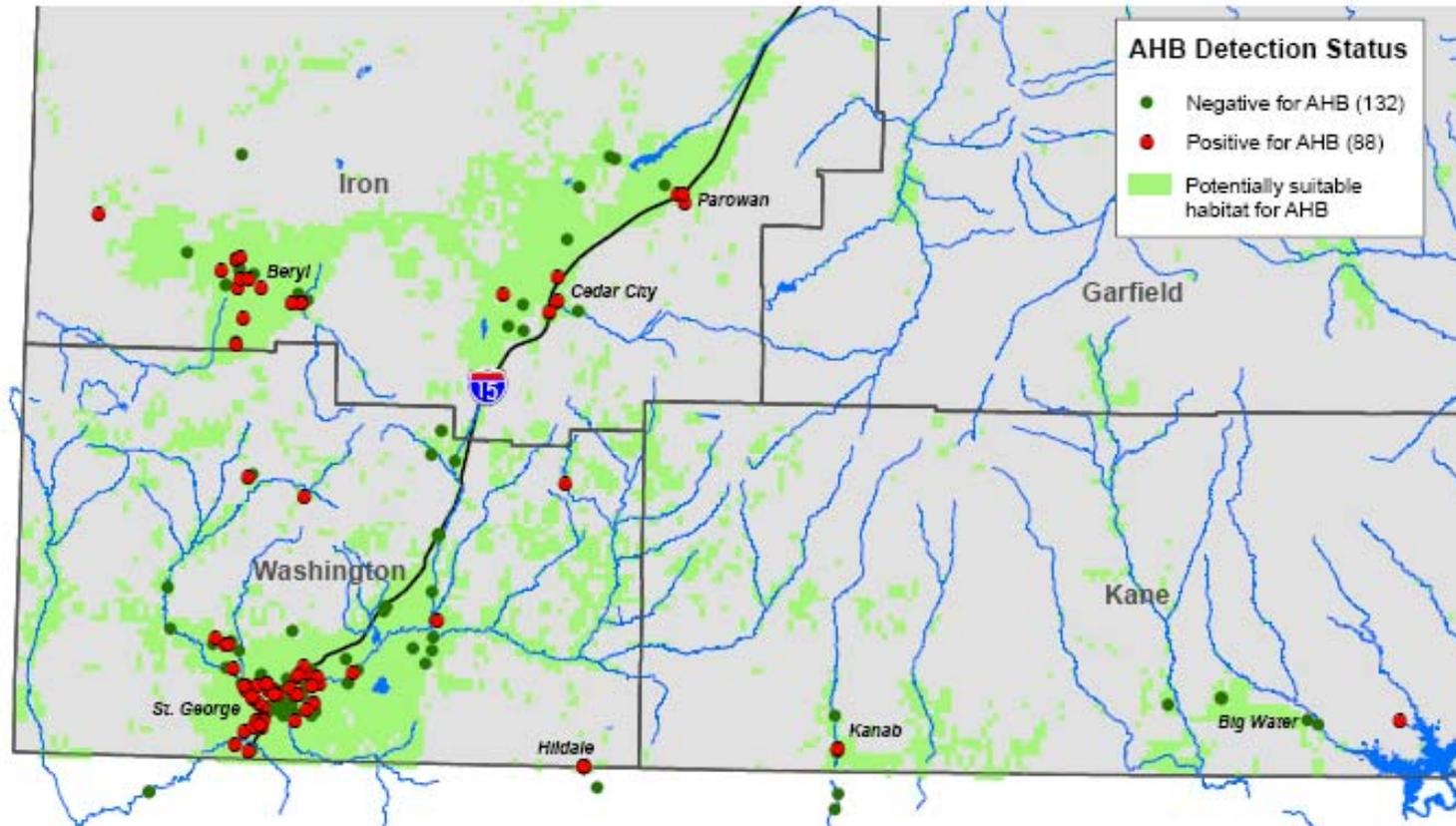
UDAF has monitored for the AHB since its advance from Texas in the 1990's. Late in 2008, seven colonies sampled were determined to be Africanized. Some of these were in managed beekeeping operations and some were caught in our bucket traps. In 2009, UDAF released this information to the public, and revitalized education efforts throughout Utah to inform the public about AHB risks. UDAF also expanded survey and trapping in Washington County, sampled many feral colonies, and contacted pest controllers and the fire department to make sure colonies discovered are sampled and tested to determine the extent of AHB populations in Washington, Iron and Kane Counties.

It should be noted that there are many managed bees in these areas, with 22 registered beekeepers in Washington, Iron and Kane Counties. These bees (nearly 1000 colonies) and beekeepers are the best way to maintain European bee stock in habitat that would otherwise be colonized by AHB. UDAF works with these beekeepers to encourage best management practices, locate and sample feral hives, destroy Africanized colonies and relocate European colonies discovered in traps or feral locations.

Biology

The Africanized bee (AHB) sting is the same as the European bee (EHB) sting. The AHB lifestyle is almost identical to EHB, but it will live in smaller cavities with little or no insulation, it has smaller colonies and it reproduces faster, by producing multiple swarms all season (one colony can produce up to 20 swarms). Most importantly, these bees are much more aggressive to defend their nests which can result in massive stinging events. They can only be reliably distinguished by genetic testing.

Each bee can sting just once, and she leaves the stinger in her victim to continue to pump venom in and also to mark the invader with an alarm signal. This signal will cause other bees to attack. African bees produce more alarm pheromone and they are much more sensitive to this signal, they will pursue a victim for a quarter mile or more. For this reason, it is very important that people know to leave the area if they are stung. Get in a car or house as quickly as possible.



Suitable Habitat Model

Currently NASA is gathering data to model and map suitable habitat for AHB spread throughout the USA. Utah data is contributing to the model, and we are using the model to choose our trap locations for AHB detection. The green shaded areas are calculated to be suitable habitat for AHB. The colored points are places we have trapped bees, red points are confirmed AHB catches. Our traps in Southeast Utah did not catch bees, so we are very interested in bee samples from that area whenever possible.

Cooperators

Sample collection, trapping and monitor, public outreach: Jeremy Peterson, St. George Ag Inspector; St. George Fire Department and Public Works; Pest Controllers; Utah Beekeepers Association and local beekeepers in Washington, Iron and Kane Counties.

Determination of AHB/ EHB: USDA-ARS Tucson Bee Lab; University of Arkansas Social Insects Genetics Lab.

Model and map suitable AHB habitat: Dr. Wayne Esaias, NASA.

Data Collected



UDAF has established over 40 bee traps, in Washington, Iron, Kane, Garfield, Beaver, Grand and San Juan Counties. The trap is a fiber bucket, hung in a tree, with pheromone that is attractive to bees. This trap does not catch individual bees, but will catch a swarm looking for a home, which moves in and builds comb. We have also sampled over 100 feral colonies, many of which have tested Africanized. Most of these colonies have been found in and around St. George, but also in Cedar City, Parowan, LaVerkin, Beryl, Modena and Kolob. All but one colony has been discovered within the NASA-predicted habitat range. The exception is a colony found in a cabin on Kolob Mountain, probably transported by a beekeeper.

<u>County</u>	<u>Colonies sampled</u>	<u>#Africanized</u>
Washington	92	56
Iron	45	30
Kane	9	4
Sevier	1	0
Utah	1	0
Salt Lake	2	0
San Juan	2	0
Millard	13	0
Carbon	1	0
Grand	10	0

Africanized colonies have been discovered within the predicted migration corridor in colder areas: Cedar City, Parowan and Kolob. Feral colonies have also been found outside that corridor near Kanab and Big Water. For this reason, more traps will be set in Iron and Kane Counties to determine the extent of AHB spread. Our samples are also submitted for genetic testing to distinguish separate populations of Africanized bees within the US. This project, at the University of Arkansas, could indicate the source of AHB found in Utah and show whether there have been multiple introductions or natural migration.

Bee samples can be collected in alcohol, and submitted to the Salt Lake office with a date, location, and any knowledge about how old the colony is (to know if it survived winter in that location).

Impact

The advent of AHB discovery in Utah was awaited with trepidation, for fear of public panic and backlash against beekeepers and beneficial insects. To date this has not been the case. Public cooperation has been outstanding, including the support and assistance of beekeepers, pest controllers, firefighters and concerned citizens. Fortunately, few of the Africanized colonies encountered have been extremely aggressive. Even so, they are unpredictable and reproduce quickly, so Africanized colonies in our traps have all been destroyed. Feral colonies determined to be Africanized are strongly recommended to be destroyed (see attached letter example). Colonies determined to be European have been given to beekeepers to adopt whenever possible.

Plan of Action

UDAF will continue to collect samples from traps and from feral colonies wherever possible. UDAF appreciates reports of feral colonies and swarms, which can be sampled with only 5 bees collected in alcohol. In particular, we need to sample bees found in the Southeast part of Utah, we have few samples from these areas predicted to be suitable AHB habitat. UDAF is also taking samples from beekeepers in areas with AHB potential, to ensure that their stock is European. These samples are processed free of charge.

More traps will be set in Kane, Iron, Beaver, San Juan and Grand Counties using the suitable habitat model. Current information will be released to the media and on our website, including answers to frequently asked questions about Africanized bees, honey bees in general and updates about the extent of the AHB population. UDAF will also work with Counties to provide training and education, and to share information about monitoring AHB populations.

Any reports of swarms or feral colonies in or near the predicted habitat area should be sampled if possible. Removal of bees is typically referred to a registered pest controller, or beekeepers who are willing to do these jobs, which can be found on www.utahbeekeepers.com