

**2015 Annual Report for  
Cyanotech Corporation Conservation Plan for  
Hawaiian Stilt (*Himantopus mexicanus knudseni*)**



**Prepared by J. Scott Waddington**

**Ho'omalūo LLC**

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## **Introduction**

**Cyanotech is a 36.4 hectare Aquaculture facility located in the North Kona District on the Island of Hawaii. Cyanotech opened at the Natural Energy Labs Hawaii Authority (NELHA) at Keahole Point in 1985 with four experimental production raceways. The raceways were first constructed to cultivate *Spirulina pacifica* a micro-algae with high vitamin and health benefits. Over the next 11 years Cyanotech expanded to 70 production raceways with approximately 20.2 hectare of the facility in production raceways. That same year (1996) Cyanotech staff observed a few stilt nests and recovered several hatchlings from raceways. Cyanotech contacted U.S. Fish and Wildlife service and has been working cooperatively with all agencies involved since. In 1997 Cyanotech began work on a second species of micro-algae *Haematococcus pluvialis* that synthesizes astaxanthin, a potent antioxidant. The production raceways for both micro-algal species are maintained at approximately 20 cm depth, proved to be an attractive nuisance by supporting a few species of invertebrates that are a food source for the stilts.**

**As a result of working with the wildlife agencies and during the development of the Habitat Conservation Plan (HCP) for Cyanotech, in 1998, Cyanotech created a 0.69 hectare nesting habitat at their facility. Cyanotech managed the habitat for five years until it was agreed by all parties to close the habitat in an effort to have the stilts frequenting the facility to disperse to other wetland sites here along the Kona Coast of West Hawaii. The nesting habitat produced a total of 237 Hawaiian Stilt fledglings during the five years of management.**

**Cyanotech's current HCP incidental take permits are set to expire in March of 2016. Cyanotech has formally requested the opportunity to amend the current HCP for another 10 years.**

## **Facility Management**

### **Former Nesting Habitat**

**Efforts are made to maintain the former nesting habitat in a manner that does not encourage stilts to frequent it. The basin was monitored daily as part of normal operations. The use of deterrents (pyrotechnics) and mylar tape was utilized when needed and appropriate. The use of pyrotechnics was very limited the past year at the facility as a whole. A large solar array has been installed in the former nesting habitat basin and occupies approximately 80% of the basin floor (0.69 hectares).**

### **Production and Processing Areas**

**In addition to the daily monitoring of the former nesting habitat, the entire facility is monitored as part of daily operations. Cyanotech staff checks the production raceways, both *Spirulina* and *Astaxanthin* each morning. Surveying the raceways for debris is conducted daily in an effort to protect the mechanical and harvest systems of the production raceways.**

Surveying the raceways visually is conducted first thing in the morning, before the paddlewheels are turned on.

## **Nesting and Incidental Take**

Past hazing efforts have been successful in reducing the numbers of stilts frequenting the facility especially during the day. The numbers of stilts frequenting the facility at night has remained steady this past year. The number of stilts roosting at the facility rarely exceeded 10 individuals this past year. Stilt activity at the Cyanotech facility coincides with increased usage by stilts of Kapo`ikai (Opae`ula) wetland to the north of the facility (7.7 km), increased stilt activity and nesting at Kohanaiki, a luxury beach and golf community to the south of the Cyanotech facility (3.0 km) and the continued use by stilts at Kealakehe wastewater treatment plant further to the south (8.3 km).

### **Nesting**

There were three nests, with 10 eggs total and four hatchlings at the facility. The staff was informed not to disturb the nesting pairs and nests and not to alter or use the basin until the nesting is completed. One nest with two eggs and was in the former nesting habitat. A second nest with four eggs was found on the top of the former nesting habitat adjacent to another property to Cyanotech. The third nest was found above the Spirulina hold lake adjacent to the former nesting habitat. The third nest had four eggs as well and four hatchlings. The four hatchlings are still present at the Spirulina hold lake at the time of writing and are approximately one week old. No hatchlings were observed from the first two nests and the fate of the eggs is unknown.

At a facility adjacent to Cyanotech, two stilt nests with a total of seven eggs, six hatchlings, three fledglings and three hatchlings remaining at the facility at the time of writing have been located. Officials at NELHA were notified and a meeting with the facility Owner/Manager was arranged to insure that conditions for the stilt hatchlings could remain as constant and with as little disturbance as possible.

### **Incidental Take**

There was one stilt recovered this past year. A mortality report (Exhibit A) was submitted to the wildlife agencies as required. The stilt was collected, bagged, labeled and frozen. State of Hawaii division of Forestry and Wildlife personnel took the recovered stilt to Honolulu on May 18<sup>th</sup>, 2015 to assess the suitability for necropsy.

## **Property Outside of Cyanotech Boundaries**

### **Lava Field of Keahole International Airport**

The lava field adjacent to the Cyanotech facility, where stilts had nested in past years, is

monitored weekly during the nesting season for nesting activity. Surveys were conducted every Monday during the nesting season. Zeiss 10 x 40 binoculars are used to survey the lava field. There were no nests observed in the lava field of Keahole International Airport. It is suspected that the stilts are moving between the Cyanotech facility and the water treatment plant at Keahole International Airport.

**Exhibit A**

**DOWNED WILDLIFE FORM  
LISTED SPECIES**

Please be as descriptive as possible. Complete and accurate information is important.

Observer Name:	[REDACTED]
Date of Incident:	3-24-2015
Date of report:	5-6-2015
Species (common name):	Hawaiian Stilt
Age (Adult/Juv), if known:	Sub-adult
Sex (if known):	Unknown
Incidental or Routine Search:	Routine search
Time Observed (HST):	7 AM
Time Initially Reported (HST):	8 AM
Time Responders Arrive (HST):	7 AM 3-25-2015
General Location:	Cyanotech Corporation
GPS Coordinates (specify units and datum):	19 43'50.82 N 156 03'15.45 W WGS84
Date Last Surveyed:	3-23-2015
Closest structure (e.g. Turbine #):	4 meters paddlewheel
Distance to Base of closest structure and/or nearest WTG:	4 meters
Bearing from Base of closest structure and/or nearest WTG:	South
Ground Cover Type:	Spirulina media (water)
Wind Direction and Speed (mph):	East 3 MPH
Cloud Cover (%):	0%
Cloud Deck (magl):	N/A
Precipitation:	None
Temperature ( <sup>0</sup> F):	70

Condition of Specimen [include a description of the animal's general condition, as well as any visible injuries, be specific ( e.g., large cut on right wing tip.)]:

No visible injuries

Probable Cause of Injuries and Supportive Evidence [attach photos and map] Be descriptive, e.g., 'teeth marks visible on upper back,' or 'found adjacent to tire marks in mud.':

May have flown into paddlewheel fell into pond

Action Taken (include names, dates, and times):

Rob Dempsey and Danial Keliiaa recovered bagged and labeled stilt and called wildlife monitor.

Additional Comments:

## References

Evans, K. and Uyehara, K. 2001. A Conservation Plan for Hawaiian Stilt at Cyanotech Aquaculture Facility Keahole Point, Hawaii. Ducks Unlimited Inc. 76 p.