DIAGNOSTIC SERVICES SECTION

FINAL REPORT

SOUTHEASTERN COOPERATIVE WILDLIFE DISEASE STUDY (SCWDS)
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CASE NUMBER CC36-10
DATE RECEIVED February 8, 2010
DATE OF REPORT February 25, 2010

STATE GA **COUNTY** Troup **AREA** West Point Lake

SPECIES (NO.) Ivory Gull (1) **SEX** M **AGE** Adult **WEIGHT** Not Recorded

CASE HISTORY: This bird constitutes the first record of an ivory gull in the state of Georgia. They are typically arctic birds that don't venture much further south than Greenland. Because of this birds rarity it received a great deal of attention from the bird-watching community when it turned up at West Point Lake. It was observed for at least four days before it was found dead. Several individuals reported that the bird seemed to be "panting" presumably indicating dyspnea.

The carcass was taken to a taxidermist who skinned the bird before Steve Holzman, of the US Fish and Wildlife Service, submitted the remainder of the carcass to SCWDS. Mr. Holzman is concerned about the cause of death and levels of persistent contaminants. Individuals of this species have been reported with levels of organochlorines and brominated flame retardants.

The carcass was received on February 8, 2010, and a necropsy was performed the following day.

FINAL DIAGNOSIS: Aspergillosis

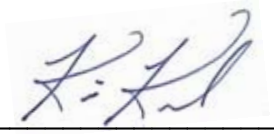
COMMENTS: The fungal infection was the cause of the death of this bird. It is possible that the bird was severely stressed by being so far displaced from its normal habitat. Such stress could predispose the bird to aspergillosis. The infestations by renal trematodes and gastric nematodes were mild and would not have been of any clinical significance.

Contaminants analysis revealed low levels of two organochlorines (DDE and HCB) and two polychlorinated biphenyls (PCBS; aroclor 1254 and aroclor 1260). Heavy metals, including lead, were not present at significant concentrations.

WILDLIFE IMPLICATIONS: Aspergillosis occurs sporadically in gulls and usually affects individual animals. Birds may be predisposed by stress, exposure to an exceptionally heavy burden of spores or other environmental factors that can predispose them to respiratory disease.

PUBLIC HEALTH IMPLICATIONS: None.

LIVESTOCK IMPLICATIONS: None.

DIAGNOSTICIAN 
Kevin Keel, DVM, PhD, DACVP

DISTRIBUTION: SCWDS File, Forster, Whitney, Garrison, Harris, Nims, Ozier, Kramer, Holzman, Stanton, Ballmann, Badsby, White, Piccirilli, Demarest, Cobb, Arza, Surle

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GROSS FINDINGS: This is an adult male ivory gull (Figure 1) in poor nutritional condition. The bird has been previously skinned and both wings and feet have been removed. The keel is readily visible but not prominent. However, the epaxial muscles and muscles of the pelvic limb are markedly atrophied. The right thoracic airsac, right clavilcular airsac and vertebral airsacs contain five, 0.5- to 1-cm-diameter plaques of white to gray mold. The left lung is nearly completely consolidated. The right lung is approximately 60% consolidated and contains a 0.3-cm-diameter cystic space in the cranial end that is lined by gray mold (Figure 2).

Abdominal and thoracic airsacs contain approximately 50, 1- to 2-mm-diameter, tan nodular to semi-flattened plaques scattered over all surfaces. The kidney only partially fills the renal fossa. No other significant lesions are observed.

Figure 1. The subject observed in the wild before death. Photo courtesy of Darlene Moore.

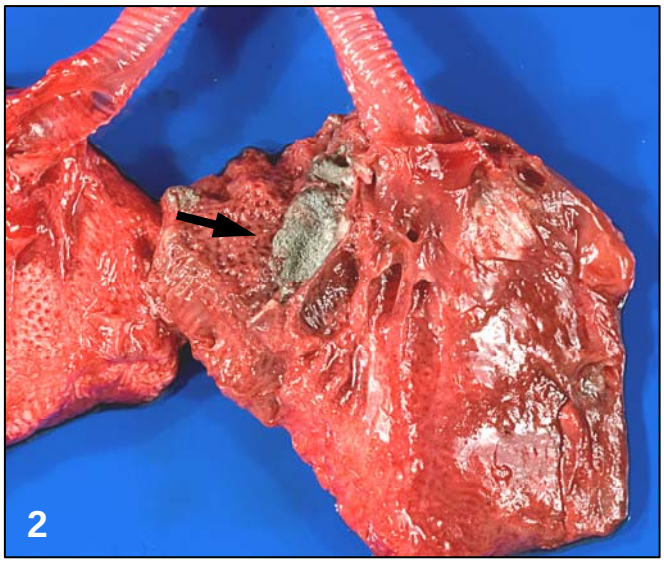

Figure 2. Lungs with a cystic space (possibly an airway) lined by mold (arrows).

MICROSCOPIC FINDINGS (W10-57):

Lungs: Parabronchi are expanded by necrotic debris and mats of branching, nonpigmented, thin, septate, fungal hyphae, with parallel walls and dichotomous branching. In the center of some airways the fungus forms fruiting bodies with refractile condiophores with a flask-shaped vesicle, elongate phialides over the terminal and disto-lateral aspects of the surface, and small round conidia (consistent with *Aspergillus fumigatus*). Fungal hyphae invade structures deep to the mucosa. Inflammatory cells cannot be identified due to autolysis and freeze/thaw artifact.

Airsacs: At multiple foci the airsac walls and epithelium are obliterated by fungal mats with hyphae and fruiting bodies as previously described.

Kidneys: Rare tubules contain cross-sections of trematodes with thick-walled operculate eggs in the uterus. Scattered tubules have mineralized debris in the lumina.

Proventriculus: Two cross sections of nematodes are present on the mucosa. They have moderately sized hypodermal cords, polymyarian coelomyarian musculature and a gastrointestinal tract lined by approximately 25 circumferential mononucleate epithelial cells.

Heart, liver, adrenal glands, spleen, ventriculus, small intestine, large intestine and eye: No significant lesions.

Laboratory Results Continue on Page 3

MORPHOLOGIC DIAGNOSES:

Respiratory Tract: Severe, acute, multifocal, necrotizing pneumonia and airsaculitis with intralesional fungi (*Aspergillus* sp.)

Kidney: Mild, chronic, multifocal, intratubular trematodiasis

Proventriculus: Mild, chronic nematodiasis

BACTERIOLOGY RESULTS: Attempts to culture *Aspergillus* spp. from a swab of the right thoracic airsac resulted in the identification of A. fumigatus based on colony morphology and the microscopic appearance of fruiting bodies.

TOXICOLOGY RESULTS: Levels of heavy metals in the kidney were within normal limits. A screen for organochlorine insecticides and PCB's revealed low levels of HCB (0.13 ppm), DDE-p.p (0.75 ppm), aroclor 1254 (3.2 ppm) and aroclor 1260 (1.1 ppm). We were unable to test for brominated flame retardants.