

# DIAGNOSTIC CASE REPORT

U. S. GEOLOGICAL SURVEY-BIOLOGICAL RESOURCES DIVISION  
NATIONAL WILDLIFE HEALTH CENTER-HONOLULU FIELD STATION  
P. O. BOX 50167, 300 ALA MOANA BLVD., Rm. 8-132  
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**Case Number:** 21497

**Submitter Name:**

Mr. John Klavitter  
US Fish and Wildlife Service  
PO Box 50167  
Honolulu, Hawaii 96850  
United States

**Species submitted (n):**

Duck: Green-Winged Teal (1)  
Duck: Laysan (37)  
Duck: Northern Pintail (5)  
Tern: Least (4)

**SPECIMENS SUBMITTED:** Carcass-Frozen

These ducks were part of a USFWS freezer cleanout and encompassed mortalities that occurred in 2010 and 2009.

Acc	Date_Coll	Animal	Age	Sex	Location	Diagnosis
1	6/29/2010	Duck: Laysan	Adult	Male	Communicatio	Botulism type C
2	10/9/2010	Duck: Laysan	Adult	Male	Midway Atoll	Botulism type C s
3	7/3/2010	Duck: Laysan	After hatch y	Male	Sunset	Botulism type C
4	9/23/2009	Duck: Laysan	Hatch year	Male	Midway Atoll	Botulism type C
5	7/1/2010	Duck: Laysan	Adult	Male	Midway Atoll	Botulism type C
6	10/7/2010	Duck: Northern Pi	Adult	Male	Midway Atoll	Botulism type C s
7	10/7/2010	Duck: Northern Pi	Adult	Male	Mauka-makai	Botulism type C
8	9/24/2009	Duck: Laysan	After hatch y	Male	Monument	Botulism type C s
9	9/24/2009	Duck: Laysan	After hatch y	Femal	Monument	Botulism type C s
10	8/13/2010	Duck: Laysan	After hatch y	Male	Sunrise	Botulism type C
11	8/5/2010	Duck: Laysan	Adult	Male	Mauka-makai	Botulism type C s
12	9/23/2009	Duck: Laysan	Second year	Femal	Rolando	Botulism type C s
13	8/21/2010	Duck: Laysan	Hatch year	Male	Mauka-makai	Botulism type C s
14	8/24/2010	Duck: Laysan	Hatch year	Male	Mauka-makai	Botulism type C
15	8/17/2009	Duck: Laysan	Hatch year	Male	Mauka-makai	Botulism type C s
16	11/4/2009	Duck: Laysan	After hatch y	Femal	Radar	Botulism type C s
17	8/15/2010	Duck: Laysan	Hatch year	Male	Catchment	Botulism type C
18	9/19/2009	Duck: Laysan	After hatch y	Femal	Aviary	Botulism type C s
19	8/16/2010	Duck: Laysan	After hatch y	Femal	Mauka-makai	Botulism type C s
20	8/9/2010	Duck: Laysan	After hatch y	Male	Mauka-makai	Botulism type C s
21	7/24/2010	Duck: Laysan	Hatch year	Male	Brackish	Botulism type C s
22	8/11/2009	Duck: Laysan	After second	Male	Mauka-makai	Botulism type C
23	7/30/2010	Duck: Laysan	Hatch year	Male	Sunset	Botulism type C s
24	10/4/2010	Duck: Laysan	After hatch y	Femal	Mauka-makai	Botulism type C s
25	8/15/2009	Duck: Laysan	Hatch year	Male	Mauka-makai	Botulism type C s
26	10/10/2009	Duck: Laysan	Hatch year	Male	Rolando	Botulism type C s
27	9/22/2009	Duck: Laysan	Hatch year	Male	Monument	Botulism type C s
28	8/12/2010	Duck: Laysan	After hatch y	Male	Catchment	Botulism type C s
29	8/18/2010	Duck: Laysan	After hatch y	Male	Radar	Botulism type C
30	10/9/2010	Duck: Laysan	Adult	Femal	Midway Atoll	Botulism type C s
31	7/1/2010	Duck: Laysan	Adult	Male	Mauka-makai	Botulism type C s
32	6/26/2010	Duck: Laysan	Hatch year	Unkno	Communicatio	Botulism type C s
33	8/10/2010	Duck: Laysan	Adult	Femal	Monument	Botulism type C
34	10/15/2009	Duck: Northern Pi	Adult	Femal	Fuel Farm	Botulism type C s
35	10/4/2010	Duck: Northern Pi	Adult	Femal	Mauka-makai	Botulism type C s
36	10/4/2010	Duck: Northern Pi	Adult	Femal	Mauka-makai	Botulism type C s
37	5/5/2010	Duck: Green-Winge	Adult	Male	Radar	Botulism type C s
38	6/21/2010	Duck: Laysan	Hatch year	Femal	Sunrise	Botulism type C s
39	9/9/2009	Duck: Laysan	Hatch year	Femal	Midway Atoll	Botulism type C
40	8/16/2009	Duck: Laysan	Adult	Male	Mauka-makai	Botulism type C
41	8/16/2009	Duck: Laysan	Hatch year	Male	Mauka-makai	Botulism type C s
42	6/21/2009	Duck: Laysan	Neonate	Unkno	Sunrise	Undetermined
43	6/21/2009	Duck: Laysan	Neonate	Unkno	Sunrise	Undetermined
44	7/15/2010	Tern: Least	Adult	Male	Catchment	Undetermined

45	7/1/2010	Tern: Least	Adult	Male	Catchment	Undetermined
46	7/1/2010	Tern: Least	Adult	Male	Catchment	Undetermined
47	7/1/2010	Tern: Least	Adult	Male	Catchment	Undetermined

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**Comments:** Botulism or suspect (s) botulism were the cause of death in all cases examined; we could not determine cause of death in neonates and terns because insufficient material was available to test for botulism. Forty one birds tested negative for avian influenza. All samples submitted for botulism testing were positive.

**Management:** In the future, it would be more useful if birds were submitted as they were dying rather than sitting in freezers for >year. It is also evident that botulism continues to kill Laysan ducks at Midway at least in 2009 and 2010 and continues to be widespread. For management recommendations, please see [www.nwhc.usgs.gov/hfs/Botulism.htm](http://www.nwhc.usgs.gov/hfs/Botulism.htm).

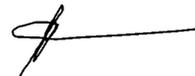
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**Report Date (mm/dd/yyyy):** 12/3/2010

**Necropsy report:** Available upon request

**Copies of this report sent to:**

Dr. Loyal Mehrhoff (USFWS)  
Dr. Michelle Reynolds (USGS)



If you have questions regarding this case, contact Thierry M. Work MS, DVM, MPVM at 808-792-9520. Include above Case Number. Diagnostic findings may not be used for publication without the pathologist's knowledge and consent.

**NOTE: Information in this report supersedes any information from previous reports regarding this case .**