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Memo to: Mike Armstrong, Andrew King and Robyn Niver

From: Mark Ford *Mark*

Subject: Kaleidoscope 4.1.0

Below are the returned p -values on the estimates of presence or absence of bats in the New York and West Virginia community composition datasets (also with runs of northern long-eared bats *Myotis septentrionalis* removed or Indiana bats *Myotis sodalis* removed) for the 0, 1, and -1 sensitivity settings each at 2 and 5 pulse minimum inputs. For all species examined, values at $p < 0.05$ where the species was actually present or values $p > 0.05$ where the species is actually absent is denoted in yellow. Conversely at those acceptance levels, false negatives and false positives are denoted in pink. All settings returned positive findings for Indiana bats when in fact present, though for all settings when Indiana bats were removed for the West Virginia dataset, the program returned false positives. Conversely, only settings with northern long-eared bats removed were correct – all others returned false negatives at the $p < 0.05$ level (though as showed by p -values < 1 , the software did throughout the datasets identify individual files as northern long-eared bats when they in fact were present. Per the U.S. Fish and Wildlife Service guidelines, this version on all sensitivity settings would be acceptable for use to determine Indiana bat presence. However, it would not be acceptable for determining northern long-eared bat presence. We would also note the continued difficulty in accurately determining eastern small-footed bat (*Myotis leibii*) presence and silver-haired bat (*Lasiorycteris noctivagans*) presence.

cc: A. Silvis

0 setting 2 pulses									
Bats of North America 4.1.0 S/A: 0	EPFU	LABO	LACI	LANO	MYLE	MYLU	MYSE	MSYO	PESU
TESTNY	0	0	0	1	0.0919677	0	0.7864554	0.0000002	0.0002643
TESTNY - no MYSE	0	0	0	1	0.0778828	0	1	0.0000015	0.0003657
TESTNY - no MYSO	0	0	0	1	1	0	0.6108515	0.042467	0.0003502
TESTWV	0	0	0	1	0.0555217	0	0.2588683	0	0
TESTWV - no MYSE	0	0	0	1	0.0481951	0	1	0	0
TESTWV - no MYSO	0	0	0	1	0.0555217	0	0.2588683	0	0
0 setting 5 pulses									
Bats of North America 4.1.0 S/A: 0	EPFU	LABO	LACI	LANO	MYLE	MYLU	MYSE	MSYO	PESU
TESTNY	0	0	0	1	0.0914424	0	0.7862977	0.0000002	0.0002644
TESTNY - no MYSE	0	0	0	1	0.077883	0	1	0.0000015	0.0003656
TESTNY - no MYSO	0	0	0	1	1	0	0.6108519	0.0424673	0.0003501
TESTWV	0	0	0	1	0.0555217	0	0.2588683	0	0
TESTWV - no MYSE	0	0	0	1	0.0481951	0	1	0	0
TESTWV - no MYSO	0	0	0	1	0.0555217	0	0.2588683	0	0
1 setting 2 pulses									
Bats of North America 4.1.0 S/A:+1	EPFU	LABO	LACI	LANO	MYLE	MYLU	MYSE	MSYO	PESU
TESTNY	0	0	0	1	1	0	0.6885795	0.0000336	0.0002585
TESTNY - no MYSE	0	0	0	1	1	0	1	0.000028	0.0002513
TESTNY - no MYSO	0	0	0	1	1	0	0.516078	0.1631807	0.0002459
TESTWV	0	0	0	1	1	0	0.8937477	0	0
TESTWV - no MYSE	0	0	0	1	1	0	1	0	0
TESTWV - no MYSO	0	0	0	1	1	0	0.8937477	0	0
1 setting 5 pulses									
Bats of North America 4.1.0 S/A:+1	EPFU	LABO	LACI	LANO	MYLE	MYLU	MYSE	MSYO	PESU
TESTNY	0	0	0	1	1	0	0.6885795	0.0000336	0.0002585
TESTNY - no MYSE	0	0	0	1	1	0	1	0.000028	0.0002513
TESTNY - no MYSO	0	0	0	1	1	0	0.516078	0.1631807	0.0002459
TESTWV	0	0	0	1	1	0	0.8937477	0	0
TESTWV - no MYSE	0	0	0	1	1	0	1	0	0
TESTWV - no MYSO	0	0	0	1	1	0	0.8937477	0	0
minus 1 setting 2 pulses									
Bats of North America 4.1.0 S/A:-1	EPFU	LABO	LACI	LANO	MYLE	MYLU	MYSE	MSYO	PESU
TESTNY	0	0	0	1	0.0000003	0	0.2974225	0.0000002	0.0001725
TESTNY - no MYSE	0	0	0	1	0.0000003	0	1	0.0000003	0.0001253
TESTNY - no MYSO	0	0	0	1	0.0000218	0	0.1488045	0.0357796	0.000159
TESTWV	0	0	0	1	0.0730047	0	0.0443391	0	0.0000001
TESTWV - no MYSE	0	0	0	1	0.0553447	0	1	0	0.0000001
TESTWV - no MYSO	0	0	0	1	0.0730047	0	0.0443391	0	0.0000001
minus 1 setting 5 pulses									
Bats of North America 4.1.0 S/A:-1	EPFU	LABO	LACI	LANO	MYLE	MYLU	MYSE	MSYO	PESU
TESTNY	0	0	0	1	0.0000003	0	0.2974228	0.0000002	0.0001724
TESTNY - no MYSE	0	0	0	1	0.0000003	0	1	0.0000003	0.0001253
TESTNY - no MYSO	0	0	0	1	0.0000218	0	0.1488047	0.0357799	0.000159
TESTWV	0	0	0	1	0.0729338	0	0.1380695	0	0.0000001
TESTWV - no MYSE	0	0	0	1	0.0553447	0	1	0	0.0000001
TESTWV - no MYSO	0	0	0	1	0.0729338	0	0.1380695	0	0.0000001