

## Alaska Earthworms (September 2011)

### Specimen Identifiers:

- #9 – Swan Lake, West canoe entrance (KNWR 7098)
- #10 – Sterling Highway, North of Jean Lake (KNWR 7051)
- #11 – Merganser Lake boat launch (KNWR 7063)
- #12 – Swanson River Road, South of Dolly Varden Lake (KNWR 7214)
- #13 – Fish Lake, East of trail (KNWR 7203)

### Nucleotide Blast (blastn) Results:

- #9 – 99% identity to *Lumbricus terrestris*
- #10 – 98% identity to *Dendrodrilus rubidus*
- #11 – 99% identity to *Lumbricus terrestris*
- #12 – 98% identity to *Dendrodrilus rubidus*
- #13 – 96% identity to *Lumbricus terrestris*

### Universal CO1 Primers:

LCO (forward) 5'-GGTCAACAAATCATAAAGATATTGG -3'

HCO (reverse) 5'-TAAACTTCAGGGTGACCAAAAAATCA -3'

### Combined (forward and reverse) CO1 Sequences in FASTA Format

>AK\_9 Combined CO1

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ATAAAGATATTGGAACTCTATACTTCATTCTTGGAGTGTGAGCTGGCATGGTGGGAGCCG
GAATAAGACTTCTTATCCGTATCGAGCTAAGACAACCTGGTGCATTCTTAGGCAGTGACC
AATTATACAATAACAATCGTTACTGCGCACGCATTTGTTATAATTTTCTTCCCTAGTAATAC
CAGTCTTCATCGGCGGGTTTGGAACTGACTTCTTCCCCTAATACTGGGTGCTCCCGATA
TAGCATTTCCGCGACTTAATAACATAAGATTTTGACTTCTACCACCCTCTCTAATTCTCT
TAGTTTCCCTCAGCTGCCGTAGAAAAGGAGCCGGAACAGGGTGAACCGTATATCCCCCTC
TTGCCAGAAATCTCGCCCATGCCGGCCATCTGTAGATTTAGCTATTTTTTCCCTCCATT
TAGCAGGTGCATCCTCTATTCTGGGGGCTATTAATTTTATTACTACTGTAGTCAACATAC
GTTGAAATGGGTTACGACTAGAACGAATCCCTCTGTTTGTCTGAGCTGTATTAATTACAG
TAGTTCTCCTTCTTCTATCCCTCCCTGTGCTTGCCGGAGCTATCACAATACTCCTAACAG
ATCGAAATCTGAATACTTCATTTTTTCGACCCCGCTGGTGGGGGAGATCCAATTTTATACC
AACACCTTTTC
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>AK\_10 Combined CO1

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AACACTATACTTCATTTTAGGCGTCTGAGCTGGCATAGTCGGCGCTGGAATAAGACTTCT
AATTTCGAATTGAACTAAGACAGCCGGGAGCCTTTCTAGGAAGAGATCAACTGTATAATAC
AATTGTAACAGCCCATGCATTTGTAATAATCTTCTTTCTAGTTATGCCCGTATTTATTGG
AGGGTTTGGAAATTGACTTCTCCCTTTAATACTAGGTGCTCCTGATATAGCATTCCCCCG
TCTAAATAACATAAGATTTTGACTACTACCCCTGCACTTATTCTCTTAGTATCTTCTGC
TGCAGTAGAAAAGGGGCTGGGACCGGGTGAAGTGTACCCCTTTATCCAGAAACAT
TGCGCATGCTGGGCCCTCTGTAGATCTAGCAATTTTCTCTCTTCAATTTAGCTGGAGCATC
CTCAATTCTCGGTGCCATTAACCTTATTACAACAGTTATTAATATAACGATGAAGGGGCCT
ACGTCTAGAACGTATCCCTTATTTGTATGAGCAGTATTAATTAAGTGTAGTGTACTTCT
TCTCTCTTTACCAGTTCTTGCTGGGCGCAATTAATACTTCTTACAGACCGAAACCTAA
ACACCTCATTCTTTGATCCTGCAGGGGGTGGAGACCCAATTCRTACCAACATTTATTC
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>AK\_11 Combined C01

AACTTTATACTTCATTCTTGGGGTATGGGCTGGCATGGTGGGAGCCGGAATAAGACTTCT  
TATCCGTATTGAGCTAAGACAACCTGGTGCATTCCTAGGAAGTGACCAATTATACAATAC  
AATCGTACTGCGCACGCATTTGTTATAATTTTCTTCCTAGTGATACCAGTCTTCATTGG  
CGGGTTTGGGAACTGACTTCTTCCCCTAATACTGGGCGCTCCTGATATAGCATTCCCACG  
CCTTAATAACATAAGATTTTGACTTCTACCCCCCTCTCTTATTCTCCTAGTTTCCTCAGC  
TGCCGTAGAGAAGGGAGCCGGAACAGGCTGAACAGTGTACCCCCCTTTGCCAGAAATCT  
CGCCCATGCTGGGCCATCTGTAGATTTAGCTATTTTTTCCCTTCATCTAGCAGGTGCGTC  
ATCTATTCTAGGGGCTATTAATTTTATTACCACTGTAATCAACATACGCTGAAGTGGGTT  
ACGACTAGAACGAATCCCTCTGTTTGTCTGAGCTGTATTAATTACAGTAGTTCTCCTCCT  
CCTATCCCTTCCTGTACTTGCCGGAGCAATCACAATACTCCTAACAGATCGAAATCTTAA  
TACCTCATTTTTTCGACCCCGCTGGTGGAGGGGATCCAATTTTATATCAACACCTTTTCC

>AK\_12 Combined C01

AACACTATACTTCATTTTAGGCGTCTGAGCTGGCATAGTCGGCGCTGGAATAAGACTTCT  
AATTGGAATTGAACTAAGACAGCCGGGAGCCTTTCTAGGAAGAGATCAACTTTATAATAC  
AATTGTAACAGCCCATGCATTTGTAATAATCTTCTTTCTAGTTATGCCCGTATTTATTGG  
AGGGTTTGGAAATTGACTTCTCCCTTTAATACTAGGTGCTCCTGATATAGCATTCCCCCG  
TCTAAATAACATAAGATTTTGACTACTACCCCCCTGCACTTATTCTCTTAGTATCTTCTGC  
TGCAGTAGAAAAGGGGGCTGGGACTGGGTGAACTGTTTACCCCCCTTTATCCAGAAACAT  
TGCGCATGCTGGGCCCTCTGTAGATCTAGCAATTTTCTCTCTTCATTTAGCTGGGGCATC  
CTCAATTCTCGGTGCCATTAACTTTATTACAACAGTTATTAATATACGATGAAGGGGCCT  
ACGTCTAGAACGTATTCCTTATTTGTATGAGCAGTATTAATTACTGTAGTGTTACTTCT  
TCTCTCTTTACCAGTTCTTGCTGGCGCAATTACTATACTTCTTACAGACCGAAACCTAAA  
CACCTCATTCTTTGATCCTGCAGGGGGTGGAGACCCAATTCTGTACCAACATTTATTC

>AK\_13 Combined C01

AACTCTATACTTCATTCTCGGAGTGTGGGCTGGCATGGTAGGGGCCGGAATAAGACTTCT  
TATCCGTATTGAACTAAGACAACCTGGTGCATTTCTAGGCAGTGACCAATTATACAATAC  
AATCGTACTGCGCACGCATTTGTTATAATTTTCTTCCTAGTAATACCAGTCTTCATTGG  
CGGGTTTGGGAACTGACTTCTTCCCCTAATACTGGGCGCTCCTGATATAGCATTCCCACG  
CCTTAATAACATAAGCTTTTGACTTCTACCTCCCTCTCTCATTCTCCTAGTTTCCTCAGC  
TGCCGTAGAAAAAGGAGCCGGAACAGGGTGAACAGTATAACCCCCCTTGCCAGAAATCT  
CGCCCATGCCGGGCCATCTGTAGATTTAGCTATTTTTTCCCTCCATTTAGCAGGTGCATC  
CTCTATTCTGGGGGCTATTAATTTTATTACTACTGTAATCAACATACGTTGAAGTGGGTT  
ACGACTAGAACGAATCCCTCTGTTTGTATGAGCTGTATTAATTACAGTAGTCCTTCTCCT  
CCTATCTCTTCCTGTGCTTGCCGGAGCAATCACAATACTCCTAACAGATCGAAATCTTAA  
TACTTCATTTTTTCGACCCCGCTGGTGGAGGGGATCCAATTTTATATCAACACCTTTTC