Advance Contract Award Notice – Effects of Polyunsaturated Fatty Acids Associated with Biofilm on Migratory Flight Performance of Western Sandpipers

1. Advance Contract Award Notice (ACAN)

An ACAN is a public notice indicating to the supplier community that a department or agency intends to award a contract for goods, services or construction to a pre-identified supplier, thereby allowing other suppliers to signal their interest in bidding, by submitting a statement of capabilities. If no supplier submits a statement of capabilities that meets the requirements set out in the ACAN, on or before the closing date stated in the ACAN, the contracting officer may then proceed with the award to the pre-identified supplier.

2. Definition of the requirement

Environment and Climate Change Canada (ECCC) intends on entering into a contract with Western University to test the effects of dietary omega-3 polyunsaturated fatty acids (PUFAs) on migration performance of Western Sandpipers.

Background:

The Western Sandpiper is a small shorebird species that migrates long distances from its non-breeding grounds in southern United States and Latin America to its breeding grounds in Alaska. During its migration through the Salish Sea (Fraser River Delta and other locales, British Columbia), Western Sandpipers feed extensively on intertidal biofilm, which is a thin layer of diatoms, bacteria and other micro-organisms embedded in a mucilaginous matrix that sits on surfaces of mudflats. This biofilm and associated invertebrates can be a rich source of fatty acids that provide essential fuel for migrating Western Sandpipers.

Omega-3 PUFAs, such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are found in high abundance in marine intertidal biofilm, and have been hypothesized to enhance migratory flight performance of shorebirds by affecting muscle membrane properties and biochemical pathways for fatty acid oxidation. Thus, these dietary components could be important for successful migration by sandpipers, but this hypothesis has never been directly tested. However, direct testing of this hypothesis has not been attempted. The Advanced Facility for Avian Research (AFAR) located at the University of Western Ontario is uniquely capable to keep captive shorebirds, manipulate the fatty acid composition of their diets, measure endurance flight performance in the AFAR hypobaric wind tunnel, and study effects on biochemical pathways, gene expression and oxidative damage.

Objective:

ECCC requires the services of a contractor who is a qualified expert on fatty acids and bird migration who must experimentally test the effects of dietary omega-3 PUFAs on migration performance of Western Sandpipers and prepare documents for publication in scientific journals. This Work will definitively examine the role of dietary omega-3 PUFAs obtained from biofilm in enhancing migration in Western Sandpiper and other shorebirds and so illuminate the importance of high biofilm sites for the conservation of migratory coastal shorebirds.

Scope of Work:

The Contractor will work with ECCC to conduct the following research:

1. Experimentally manufacture experimental diets differing in fatty acid composition.
2. Capture sandpipers in British Columbia and transport them to the AFAR in July 2020 where they will be fed diets differing in fatty acid composition.

3. Conduct wind tunnel studies to measure endurance flight performance.
4. Conduct biochemical and gene expression analysis of sandpiper tissues.

Deliverables:

The Contractor must provide the following to the Technical Authority:

1. Progress and interim reports including interim result summary; and
2. A final report detailing results and interpretations in a format ready for submission to a scientific journal.

3. Criteria for assessment of the Statement of Capabilities (Minimum Essential Requirements):

Any interested supplier must demonstrate by way of a statement of capabilities that it meets the following requirements:

- Greater than 5 years of experience of research on the physiology of bird migration as follows:
  - Demonstrated experience in formulating diets palatable for wild birds in captivity (greater than 5 years of experience)
  - Demonstrated experience in conducting wind tunnel experiments with captive birds (greater than 5 years of experience)
  - Demonstrated experience in acquiring necessary federal scientific permits and animal use permits captivity (greater than 5 years of experience)
- Access to a facility that can safely house and maintain captive birds

4. Justification for the Pre-Identified Supplier

Western University's Advanced Facility for Avian Research (AFAR) is the only suitable laboratory in the world with the required animal care facilities, equipment, and expertise for the required studies. Dr. Christopher Guglielmo from Western University has the knowledge, training and experience to provide the services described and complete the tasks required for this contract. Dr. Guglielmo is a leading authority in Canada on research dealing with the fatty acid composition of tissues of migrating birds. The contractor is very familiar with the species involved and conducted his Ph.D. dissertation research on the topic and has since published numerous scientific papers on fatty acids and migration of Western Sandpipers and other species. The proposed contractor can quickly and efficiently conduct the tasks required with no training and minimal supervision. Finally, the proposed contractor is available to conduct this project during the specified time period which is a major requirement for this contract.

5. Government Contracts Regulations Exception(s):

The following exception(s) to the *Government Contracts Regulations* is *(are)* invoked for this procurement under subsection 6(d) –

"only one person is capable of performing the contract"

6. Ownership of Intellectual Property

Ownership of any Foreground Intellectual Property arising out of the proposed contract will vest in the Contractor.

7. Period of the proposed contract or delivery date

The proposed contract is from contract award to March 31, 2022 inclusive.

Schedule:

Deliverable / Milestones	Timeline
Project Initiation	Contract Award
Progress Report 1	1 October 2020
Interim report	31 March 2021
Progress Report 2	1 October 2021
Final Report	31 March 2022

8. Cost estimate of the proposed contract

The estimated value of the contract is $80,000.00 applicable taxes extra.

9. Name and address of the pre-identified supplier

Western University
1151 Richmond St. N.
London, Ontario N6A 5B7

10. Suppliers' right to submit a statement of capabilities

Suppliers who consider themselves fully qualified and available to provide the goods, services or construction services described in the ACAN may submit a statement of capabilities in writing to the contact person identified in this notice on or before the closing date of this notice. The statement of capabilities must clearly demonstrate how the supplier meets the advertised requirements.

11. Closing date for a submission of a statement of capabilities

The closing date and time for accepting statements of capabilities is June 19, 2020 at 3:00 P.M EDT.

12. Inquiries and submission of statements of capabilities

Inquiries and statements of capabilities are to be directed to:
Heidi Noble
Procurement and Contracting
Environment and Climate Change Canada
867 Lakeshore Road
Burlington, Ontario L7S 1A1
Telephone: 905-319-6982
Email: heidi.noble@canada.ca