



Department
for Environment
Food & Rural Affairs

Building 14
MOD Stafford
Beaconside
Stafford
ST18 0AQ

T: [REDACTED]
helpline@defra.gsi.gov.uk
www.gov.uk/defra

[REDACTED]
RSK ADAS Limited
Spring Lodge
Helsby
Cheshire
WA6 0AR

Your ref: ecm_53642
Our ref: proj_24698
Date: 29 Nov 2018

Dear Sirs

Award of contract for the supply of Efficacy of DNA sequencing on samples of terrestrial invertebrates 2018-19

Following your tender/ proposal for the supply of Efficacy of DNA sequencing on samples of terrestrial invertebrates 2018-19 to Natural England, we are pleased to award this contract to you.

This letter (Award Letter) and its Annexes set out the terms of the contract between Natural England as the Customer and RSK ADAS Limited as the Contractor for the provision of the Services. Unless the context otherwise requires, capitalised expressions used in this Award Letter have the same meanings as in the terms and conditions of contract set out in Annex 1 to this Award Letter (the “**Conditions**”). In the event of any conflict between this Award Letter and the Conditions, this Award Letter shall prevail. Please do not attach any Contractor terms and conditions to this Award Letter as they will not be accepted by the Customer and may delay the conclusion of the Agreement.

For the purposes of the Agreement, the Customer and the Contractor agree as follows:

- 1) The Services shall be performed at RSK ADAS Limited’s premises, Spring Lodge, Helsby, Cheshire, WA6 0AR
- 2) The charges for the Services shall be as set out in Annex 2.
- 3) The specification of the Services to be supplied is as set out in Annex 3.
- 4) The Term shall commence on 29 November 2018 and the Expiry Date shall be 28 February 2019 unless extended or subject to early termination.
- 5) The address for notices of the Parties are:

Customer

Contractor

Natural England
Level 2
Apex Court
City Link
Nottingham
NG2 4LA

RSK ADAS Limited
Spring Lodge
Helsby
Cheshire
WA6 0AR

Attention: [REDACTED]

Attention: [REDACTED]

Email: [REDACTED]

Email: [REDACTED]

6) The following persons are Key Personnel for the purposes of the Agreement:

Name: [REDACTED]

Title: [REDACTED]

Name: [REDACTED]

Title: [REDACTED]

Name: [REDACTED]

Title: [REDACTED]

7) The Customer may require the Contractor to ensure that any person employed in the provision of the Services has undertaken a Disclosure and Barring Service check. The Contractor shall ensure that no person who discloses that he/she has a conviction that is relevant to the nature of the Services, relevant to the work of the Customer, or is of a type otherwise advised by the Customer (each such conviction a “**Relevant Conviction**”), or is found by the Contractor to have a Relevant Conviction (whether as a result of a police check, a Disclosure and Barring Service check or otherwise) is employed or engaged in the provision of any part of the Services.

Payment

All invoices should be sent, quoting a valid purchase order number (PO Number), to: Accounts-Payable.def@sscl.gov.uk or Shared Services Connected Limited, PO Box 790, Phoenix House, Celtic Springs Business Park, Newport, Gwent, NP10 8FZ. Within 10 Working Days of receipt of your acceptance of this letter via Bravo, we will send you a unique PO Number. You must be in receipt of a valid PO Number before submitting an invoice.

To avoid delay in payment it is important that the invoice is compliant and that it includes a valid PO Number, PO Number item number (if applicable) and the details (name and telephone number) of your Customer contact (i.e. Contract Manager). Non-compliant invoices will be sent back to you, which may lead to a delay in payment. If you have a query regarding an outstanding payment please contact our Accounts Payable section either by email to Accounts-Payable.def@sscl.gov.uk or by telephone 0845 603 7262 between 09:00-17:00 Monday to Friday.

Liaison

For general liaison your contact will continue to be [REDACTED].

We thank you for your co-operation to date, and look forward to forging a successful working relationship resulting in a smooth and successful supply of the Goods.

Acceptance of the award of this contract will be made by electronic signature carried out in accordance with the 1999 EU Directive 99/93 (Community framework for electronic signatures) and the UK Electronic Communications Act 2000. Acceptance of the offer comprised in this Agreement must be made within 7 days from the date of this Award Letter and the Agreement is formed on the date on which the Contractor communicates acceptance on the Customer's electronic contract management system ("Bravo"). No other form of acknowledgement will be accepted. Please remember to quote the reference number above in any future communications relating to this contract.

Yours sincerely

[Redacted signature block]



Department
for Environment
Food & Rural Affairs

Short Form Contract

Contract for Efficacy of DNA sequencing on samples of terrestrial invertebrates 2018-19

Contract Reference ecm_53642

November 2018

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1. Interpretation

1.1 In these terms and conditions:

Term	Description
“Agreement”	means the contract between (i) the Customer acting as part of the Crown and (ii) the Contractor constituted by the Contractor’s acceptance of the Award Letter via Bravo;
“Award Letter”	means the letter from the Customer to the Contractor printed above these terms and conditions;
“Bravo”	means the Customer’s electronic contract management system
“Central Government Body”	means a body listed in one of the following sub-categories of the Central Government classification of the Public Sector Classification Guide, as published and amended from time to time by the Office for National Statistics: Government Department; Non-Departmental Public Body or Assembly Sponsored Public Body (advisory, executive, or tribunal); Non-Ministerial Department; or Executive Agency;
“Charges”	means the charges for the Services as specified in the Award Letter;
“Confidential Information”	means all information, whether written or oral (however recorded), provided by the disclosing Party to the receiving Party and which (i) is known by the receiving Party to be confidential; (ii) is marked as or stated to be confidential; or (iii) ought reasonably to be

	considered by the receiving Party to be confidential;
“Contractor”	means the person named as Contractor in the Award Letter;
“Controller”	has the meaning given in the GDPR;
“Customer”	means the person identified in the letterhead of the Award Letter;
“Data Loss Event”	means any event that results, or may result, in unauthorised access to Personal Data held by the Contractor under this Agreement, and/or actual or potential loss and/or destruction of Personal Data in breach of this Agreement, including any Personal Data Breach;
“Data Protection Impact Assessment”	means an assessment by the Controller of the impact of the envisaged processing on the protection of Personal Data;
“Data Protection Legislation”	means (i) the GDPR, the LED and any applicable national implementing Laws as amended from time to time (ii) the DPA 2018 to the extent that it relates to processing of personal data and privacy; and (iii) all applicable Law about the processing of personal data and privacy;
“Data Protection Officer”	has the meaning given in the GDPR;
“Data Subject”	has the meaning given in the GDPR;
“Data Subject Request”	means a request made by, or on behalf of, a Data Subject in accordance with rights granted pursuant to the Data Protection Legislation to access their Personal Data;
“DPA 2018”	means the Data Protection Act 2018;
“Expiry Date”	means the date for expiry of the Agreement as set out in the Award Letter;
“FOIA”	means the Freedom of Information Act 2000;
“GDPR”	means the General Data Protection Regulation (Regulation (EU) 2016/679);

“Information”	has the meaning given under section 84 of the FOIA;
“Key Personnel”	means any persons specified as such in the Award Letter or otherwise notified as such by the Customer to the Contractor in writing;
“Law”	means any law, statute, subordinate legislation within the meaning of section 21(1) of the Interpretation Act 1978, bye-law, enforceable right within the meaning of section 2 of the European Communities Act 1972, regulation, order, regulatory policy, mandatory guidance or code of practice, judgment of a relevant court of law, or directives or requirements of any regulatory body with which the relevant Party is bound to comply;
“LED”	means Law Enforcement Directive (Directive (EU) 2016/680);
“Party”	the Contractor or the Customer (as appropriate) and “Parties” shall mean both of them;
“Personal Data”	has the meaning given in the GDPR;
“Personal Data Breach”	has the meaning given in the GDPR;
“Processor”	has the meaning given in the GDPR;
“Protective Measures”	means appropriate technical and organisational measures which may include: pseudonymising and encrypting Personal Data, ensuring confidentiality, integrity, availability and resilience of systems and services, ensuring that availability of and access to Personal Data can be restored in a timely manner after an incident, and regularly assessing and evaluating the effectiveness of the such measures adopted by it;
“Purchase Order Number”	means the Customer’s unique number relating to the order for Goods to be supplied by the Contractor to the Customer in accordance with the terms of the Agreement;
“Request for Information”	has the meaning set out in the FOIA or the Environmental Information Regulations 2004 as relevant (where the meaning set out for the term “request” shall apply);

“Services”	means the services to be supplied by the Contractor to the Customer under the Agreement;
“Specification”	means the specification for the Services (including as to quantity, description and quality) as specified in the Award Letter;
“Staff”	means all directors, officers, employees, agents, consultants and contractors of the Contractor and/or of any sub-contractor of the Contractor engaged in the performance of the Contractor’s obligations under the Agreement;
“Staff Vetting Procedures”	means vetting procedures that accord with good industry practice or, where applicable, the Customer’s procedures for the vetting of personnel as provided to the Contractor from time to time;
“Sub-processor”	means any third party appointed to process Personal Data on behalf of the Contractor related to this Agreement;
“Term”	means the period from the start date of the Agreement set out in the Award Letter to the Expiry Date as such period may be extended in accordance with Clause 4.2 or terminated in accordance with the terms and conditions of the Agreement;
“VAT”	means value added tax in accordance with the provisions of the Value Added Tax Act 1994; and
“Working Day”	means a day (other than a Saturday or Sunday) on which banks are open for business in the City of London.

- 1.2 In these terms and conditions, unless the context otherwise requires:
- 1.2.1 references to numbered clauses are references to the relevant clause in these terms and conditions;
 - 1.2.2 any obligation on any Party not to do or omit to do anything shall include an obligation not to allow that thing to be done or omitted to be done;
 - 1.2.3 the headings to the clauses of these terms and conditions are for information only and do not affect the interpretation of the Agreement;

- 1.2.4 any reference to an enactment includes reference to that enactment as amended or replaced from time to time and to any subordinate legislation or byelaw made under that enactment; and
- 1.2.5 the word 'including' shall be understood as meaning 'including without limitation'.

2. Basis of Agreement

- 2.1 The Award Letter constitutes an offer by the Customer to purchase the Services subject to and in accordance with the terms and conditions of the Agreement.
- 2.2 The offer comprised in the Award Letter shall be deemed to be accepted by the Contractor on receipt by the Customer of the Contractor's notification of acceptance via Bravo within [7] days of the date of the Award Letter.

3. Supply of Services

- 3.1 In consideration of the Customer's agreement to pay the Charges, the Contractor shall supply the Services to the Customer for the Term subject to and in accordance with the terms and conditions of the Agreement.
- 3.2 In supplying the Services, the Contractor shall:
 - 3.2.1 co-operate with the Customer in all matters relating to the Services and comply with all the Customer's instructions;
 - 3.2.2 perform the Services with all reasonable care, skill and diligence in accordance with good industry practice in the Contractor's industry, profession or trade;
 - 3.2.3 use Staff who are suitably skilled and experienced to perform tasks assigned to them, and in sufficient number to ensure that the Contractor's obligations are fulfilled in accordance with the Agreement;
 - 3.2.4 ensure that the Services shall conform with all descriptions and specifications set out in the Specification;
 - 3.2.5 comply with all applicable laws; and

- 3.2.6 provide all equipment, tools and vehicles and other items as are required to provide the Services.
- 3.3 The Customer may by written notice to the Contractor at any time request a variation to the scope of the Services. In the event that the Contractor agrees to any variation to the scope of the Services, the Charges shall be subject to fair and reasonable adjustment to be agreed in writing between the Customer and the Contractor.

4. Term

- 4.1 The Agreement shall take effect on the date specified in Award Letter and shall expire on the Expiry Date, unless it is otherwise extended in accordance with clause 4.2 or terminated in accordance with the terms and conditions of the Agreement.
- 4.2 The Customer may extend the Agreement for a period of up to 6 months by giving not less than 10 Working Days' notice in writing to the Contractor prior to the Expiry Date. The terms and conditions of the Agreement shall apply throughout any such extended period.

5. Charges, Payment and Recovery of Sums Due

- 5.1 The Charges for the Services shall be as set out in the Award Letter and shall be the full and exclusive remuneration of the Contractor in respect of the supply of the Services. Unless otherwise agreed in writing by the Customer, the Charges shall include every cost and expense of the Contractor directly or indirectly incurred in connection with the performance of the Services.
- 5.2 All amounts stated are exclusive of VAT which shall be charged at the prevailing rate. The Customer shall, following the receipt of a valid VAT invoice, pay to the Contractor a sum equal to the VAT chargeable in respect of the Services.
- 5.3 The Contractor shall invoice the Customer as specified in the Agreement. Each invoice shall include such supporting information required by the Customer to verify the accuracy of the invoice, including the relevant Purchase Order Number and a breakdown of the Services supplied in the invoice period.
- 5.4 In consideration of the supply of the Services by the Contractor, the Customer shall pay the Contractor the invoiced amounts no later than 30 days after

verifying that the invoice is valid and undisputed and includes a valid Purchase Order Number. The Customer may, without prejudice to any other rights and remedies under the Agreement, withhold or reduce payments in the event of unsatisfactory performance.

- 5.5 If there is a dispute between the Parties as to the amount invoiced, the Customer shall pay the undisputed amount. The Contractor shall not suspend the supply of the Services unless the Contractor is entitled to terminate the Agreement for a failure to pay undisputed sums in accordance with clause 16.4. Any disputed amounts shall be resolved through the dispute resolution procedure detailed in clause 19.
- 5.6 If a payment of an undisputed amount is not made by the Customer by the due date, then the Customer shall pay the Contractor interest at the interest rate specified in the Late Payment of Commercial Debts (Interest) Act 1998.
- 5.7 Where the Contractor enters into a sub-contract, the Contractor shall include in that sub-contract:
- 5.7.1 provisions having the same effects as clauses 5.3 to 5.6 of this Agreement; and
- 5.7.2 a provision requiring the counterparty to that sub-contract to include in any sub-contract which it awards provisions having the same effect as 5.3 to 5.7 of this Agreement.
- 5.8 In this clause 5.8, “sub-contract” means a contract between two or more Contractors, at any stage of remoteness from the Authority in a subcontracting chain, made wholly or substantially for the purpose of performing (or contributing to the performance of) the whole or any part of this Agreement.
- 5.9 If any sum of money is recoverable from or payable by the Contractor under the Agreement (including any sum which the Contractor is liable to pay to the Customer in respect of any breach of the Agreement), that sum may be deducted unilaterally by the Customer from any sum then due, or which may come due, to the Contractor under the Agreement or under any other agreement or contract with the Customer. The Contractor shall not be entitled to assert any credit, set-off or counterclaim against the Customer in order to justify withholding payment of any such amount in whole or in part.

6. Premises and equipment

- 6.1 If necessary, the Customer shall provide the Contractor with reasonable access at reasonable times to its premises for the purpose of supplying the Services. All equipment, tools and vehicles brought onto the Customer's premises by the Contractor or the Staff shall be at the Contractor's risk.
- 6.2 If the Contractor supplies all or any of the Services at or from the Customer's premises, on completion of the Services or termination or expiry of the Agreement (whichever is the earlier) the Contractor shall vacate the Customer's premises, remove the Contractor's plant, equipment and unused materials and all rubbish arising out of the provision of the Services and leave the Customer's premises in a clean, safe and tidy condition. The Contractor shall be solely responsible for making good any damage to the Customer's premises or any objects contained on the Customer's premises which is caused by the Contractor or any Staff, other than fair wear and tear.
- 6.3 If the Contractor supplies all or any of the Services at or from its premises or the premises of a third party, the Customer may, during normal business hours and on reasonable notice, inspect and examine the manner in which the relevant Services are supplied at or from the relevant premises.
- 6.4 The Customer shall be responsible for maintaining the security of its premises in accordance with its standard security requirements. While on the Customer's premises the Contractor shall, and shall procure that all Staff shall, comply with all the Customer's security requirements.
- 6.5 Where all or any of the Services are supplied from the Contractor's premises, the Contractor shall, at its own cost, comply with all security requirements specified by the Customer in writing.
- 6.6 Without prejudice to clause 3.2.6, any equipment provided by the Customer for the purposes of the Agreement shall remain the property of the Customer and shall be used by the Contractor and the Staff only for the purpose of carrying out the Agreement. Such equipment shall be returned promptly to the Customer on expiry or termination of the Agreement.
- 6.7 The Contractor shall reimburse the Customer for any loss or damage to the equipment (other than deterioration resulting from normal and proper use) caused by the Contractor or any Staff. Equipment supplied by the Customer shall be deemed to be in a good condition when received by the Contractor or relevant Staff unless the Customer is notified otherwise in writing within 5 Working Days.

7. Staff and Key Personnel

- 7.1 If the Customer reasonably believes that any of the Staff are unsuitable to undertake work in respect of the Agreement, it may, by giving written notice to the Contractor:
- 7.1.1 refuse admission to the relevant person(s) to the Customer's premises;
 - 7.1.2 direct the Contractor to end the involvement in the provision of the Services of the relevant person(s); and/or
 - 7.1.3 require that the Contractor replace any person removed under this clause with another suitably qualified person and procure that any security pass issued by the Customer to the person removed is surrendered,
- and the Contractor shall comply with any such notice.
- 7.2 The Contractor shall:
- 7.2.1 ensure that all Staff are vetted in accordance with the Staff Vetting Procedures;
 - 7.2.2 if requested, provide the Customer with a list of the names and addresses (and any other relevant information) of all persons who may require admission to the Customer's premises in connection with the Agreement; and
 - 7.2.3 procure that all Staff comply with any rules, regulations and requirements reasonably specified by the Customer.
- 7.3 Any Key Personnel shall not be released from supplying the Services without the agreement of the Customer, except by reason of long-term sickness, maternity leave, paternity leave, termination of employment or other extenuating circumstances.
- 7.4 Any replacements to the Key Personnel shall be subject to the prior written agreement of the Customer (not to be unreasonably withheld). Such replacements shall be of at least equal status or of equivalent experience and skills to the Key Personnel being replaced and be suitable for the responsibilities of that person in relation to the Services.

8. Assignment and sub-contracting

- 8.1 The Contractor shall not without the written consent of the Customer assign, sub-contract, novate or in any way dispose of the benefit and/ or the burden of the Agreement or any part of the Agreement. The Customer may, in the granting of such consent, provide for additional terms and conditions relating to such assignment, sub-contract, novation or disposal. The Contractor shall be responsible for the acts and omissions of its sub-contractors as though those acts and omissions were its own.
- 8.2 Where the Customer has consented to the placing of sub-contracts, the Contractor shall, at the request of the Customer, send copies of each sub-contract, to the Customer as soon as is reasonably practicable.
- 8.3 The Customer may assign, novate, or otherwise dispose of its rights and obligations under the Agreement without the consent of the Contractor provided that such assignment, novation or disposal shall not increase the burden of the Contractor's obligations under the Agreement.

9. Intellectual Property Rights

- 9.1 All intellectual property rights in any materials provided by the Customer to the Contractor for the purposes of this Agreement shall remain the property of the Customer but the Customer hereby grants the Contractor a royalty-free, non-exclusive and non-transferable licence to use such materials as required until termination or expiry of the Agreement for the sole purpose of enabling the Contractor to perform its obligations under the Agreement.
- 9.2 All intellectual property rights in any materials created or developed by the Contractor pursuant to the Agreement or arising as a result of the provision of the Services shall vest in the Contractor. If, and to the extent, that any intellectual property rights in such materials vest in the Customer by operation of law, the Customer hereby assigns to the Contractor by way of a present assignment of future rights that shall take place immediately on the coming into existence of any such intellectual property rights all its intellectual property rights in such materials (with full title guarantee and free from all third party rights).
- 9.3 The Contractor hereby grants the Customer:

9.3.1 a perpetual, royalty-free, irrevocable, non-exclusive licence (with a right to sub-license) to use all intellectual property rights in the materials created or developed pursuant to the Agreement and any intellectual property rights arising as a result of the provision of the Services; and

9.3.2 a perpetual, royalty-free, irrevocable and non-exclusive licence (with a right to sub-license) to use:

- a. any intellectual property rights vested in or licensed to the Contractor on the date of the Agreement; and
- b. any intellectual property rights created during the Term but which are neither created or developed pursuant to the Agreement nor arise as a result of the provision of the Services,

including any modifications to or derivative versions of any such intellectual property rights, which the Customer reasonably requires in order to exercise its rights and take the benefit of the Agreement including the Services provided.

9.4 The Contractor shall indemnify, and keep indemnified, the Customer in full against all costs, expenses, damages and losses (whether direct or indirect), including any interest, penalties, and reasonable legal and other professional fees awarded against or incurred or paid by the Customer as a result of or in connection with any claim made against the Customer for actual or alleged infringement of a third party's intellectual property arising out of, or in connection with, the supply or use of the Services, to the extent that the claim is attributable to the acts or omission of the Contractor or any Staff.

10. Governance and Records

10.1. The Contractor shall:

10.1.1. attend progress meetings with the Customer at the frequency and times specified by the Customer and shall ensure that its representatives are suitably qualified to attend such meetings; and

10.1.2. submit progress reports to the Customer at the times and in the format specified by the Customer.

- 10.2. The Contractor shall keep and maintain until 6 years after the end of the Agreement, or as long a period as may be agreed between the Parties, full and accurate records of the Agreement including the Services supplied under it and all payments made by the Customer. The Contractor shall on request afford the Customer or the Customer's representatives such access to those records as may be reasonably requested by the Customer in connection with the Agreement.

11. Confidentiality, Transparency and Publicity

- 11.1. Subject to clause 11.2, each Party shall:

11.1.1. treat all Confidential Information it receives as confidential, safeguard it accordingly and not disclose it to any other person without the prior written permission of the disclosing Party; and

11.1.2. not use or exploit the disclosing Party's Confidential Information in any way except for the purposes anticipated under the Agreement.

11.2. Notwithstanding clause 11.1, a Party may disclose Confidential Information which it receives from the other Party:

11.2.1. where disclosure is required by applicable law or by a court of competent jurisdiction;

11.2.2. to its auditors or for the purposes of regulatory requirements;

11.2.3. on a confidential basis, to its professional advisers;

11.2.4. to the Serious Fraud Office where the Party has reasonable grounds to believe that the other Party is involved in activity that may constitute a criminal offence under the Bribery Act 2010;

11.2.5. where the receiving Party is the Contractor, to the Staff on a need to know basis to enable performance of the Contractor's obligations under the Agreement provided that the Contractor shall procure that any Staff to whom it discloses Confidential Information pursuant to this clause 11.2.5 shall observe the Contractor's confidentiality obligations under the Agreement; and

11.2.6. where the receiving Party is the Customer:

- a) on a confidential basis to the employees, agents, consultants and contractors of the Customer;
- b) on a confidential basis to any other Central Government Body, any successor body to a Central Government Body or any company to which the Customer transfers or proposes to transfer all or any part of its business;
- c) to the extent that the Customer (acting reasonably) deems disclosure necessary or appropriate in the course of carrying out its public functions;
or
- d) in accordance with clause 12.

and for the purposes of the foregoing, references to disclosure on a confidential basis shall mean disclosure subject to a confidentiality agreement or arrangement containing terms no less stringent than those placed on the Customer under this clause 11.

- 11.3. The Parties acknowledge that, except for any information which is exempt from disclosure in accordance with the provisions of the FOIA, the content of the Agreement is not Confidential Information and the Contractor hereby gives its consent for the Customer to publish this Agreement in its entirety to the general public (but with any information that is exempt from disclosure in accordance with the FOIA redacted) including any changes to the Agreement agreed from time to time. The Customer may consult with the Contractor to inform its decision regarding any redactions but shall have the final decision in its absolute discretion whether any of the content of the Agreement is exempt from disclosure in accordance with the provisions of the FOIA.
- 11.4. The Contractor shall not, and shall take reasonable steps to ensure that the Staff shall not, make any press announcement or publicise the Agreement or any part of the Agreement in any way, except with the prior written consent of the Customer.

12. Freedom of Information

- 12.1 The Contractor acknowledges that the Customer is subject to the requirements of the FOIA and the Environmental Information Regulations 2004 and shall:

- 12.1.1 provide all necessary assistance and cooperation as reasonably requested by the Customer to enable the Customer to comply with its obligations under the FOIA and the Environmental Information Regulations 2004;
 - 12.1.2 transfer to the Customer all Requests for Information relating to this Agreement that it receives as soon as practicable and in any event within 2 Working Days of receipt;
 - 12.1.3 provide the Customer with a copy of all Information belonging to the Customer requested in the Request for Information which is in its possession or control in the form that the Customer requires within 5 Working Days (or such other period as the Customer may reasonably specify) of the Customer's request for such Information; and
 - 12.1.4 not respond directly to a Request for Information unless authorised in writing to do so by the Customer.
- 12.2 The Contractor acknowledges that the Customer may be required under the FOIA and the Environmental Information Regulations 2004 to disclose Information concerning the Contractor or the Services (including commercially sensitive information) without consulting or obtaining consent from the Contractor. In these circumstances the Customer shall, in accordance with any relevant guidance issued under the FOIA, take reasonable steps, where appropriate, to give the Contractor advance notice, or failing that, to draw the disclosure to the Contractor's attention after any such disclosure.
- 12.3 Notwithstanding any other provision in the Agreement, the Customer shall be responsible for determining in its absolute discretion whether any Information relating to the Contractor or the Services is exempt from disclosure in accordance with the FOIA and/or the Environmental Information Regulations 2004.

13. Protection of Personal Data and Security of Data

- 13.1. The Parties acknowledge that for the purposes of the Data Protection Legislation, the Customer is the Controller and the Contractor is the Processor unless otherwise specified in Schedule 1. The only processing that the Contractor is authorised to do is listed in Schedule 1 by the Customer and may not be determined by the Contractor.
- 13.2. The Contractor shall notify the Customer immediately if it considers that any of the Customer's instructions infringe the Data Protection Legislation.

- 13.3. The Contractor shall provide all reasonable assistance to the Customer in the preparation of any Data Protection Impact Assessment prior to commencing any processing. Such assistance may, at the discretion of the Customer, include:
- a. a systematic description of the envisaged processing operations and the purpose of the processing;
 - b. an assessment of the necessity and proportionality of the processing operations in relation to the Services;
 - c. an assessment of the risks to the rights and freedoms of Data Subjects; and
 - d. the measures envisaged to address the risks, including safeguards, security measures and mechanisms to ensure the protection of Personal Data.
- 13.4. The Contractor shall, in relation to any Personal Data processed in connection with its obligations under this Agreement:
- a. process that Personal Data only in accordance with Schedule 1 unless the Contractor is required to do otherwise by Law. If it is so required the Contractor shall promptly notify the Customer before processing the Personal Data unless prohibited by Law;
 - b. ensure that it has in place Protective Measures which are appropriate to protect against a Data Loss Event, which the Customer may reasonably reject (but failure to reject shall not amount to approval by the Customer of the adequacy of the Protective Measures), having taken account of the:
 - i. nature of the data to be protected;
 - ii. harm that might result from a Data Loss Event;
 - iii. state of technological development; and
 - iv. cost of implementing any measures;
 - c. ensure that :
 - i. the Staff do not process Personal Data except in accordance with this Agreement (and in particular Schedule 1);

- ii. it takes all reasonable steps to ensure the reliability and integrity of any Staff who have access to the Personal Data and ensure that they:
 - 1. are aware of and comply with the Contractor's duties under this clause;
 - 2. are subject to appropriate confidentiality undertakings with the Contractor or any Sub-processor;
 - 3. are informed of the confidential nature of the Personal Data and do not publish, disclose or divulge any of the Personal Data to any third party unless directed in writing to do so by the Customer or as otherwise permitted by this Agreement; and
 - 4. have undergone adequate training in the use, care, protection and handling of Personal Data; and

- d. not transfer Personal Data outside of the European Union unless the prior written consent of the Customer has been obtained and the following conditions are fulfilled:
 - i. the Customer or the Contractor has provided appropriate safeguards in relation to the transfer (whether in accordance with the GDPR Article 46 or LED Article 37) as determined by the Customer;
 - ii. the Data Subject has enforceable rights and effective legal remedies;
 - iii. the Contractor complies with its obligations under the Data Protection Legislation by providing an adequate level of protection to any Personal Data that is transferred (or, if it is not so bound, uses its best endeavours to assist the Customer in meeting its obligations); and
 - iv. the Contractor complies with any reasonable instructions notified to it in advance by the Customer with respect to the processing of the Personal Data;

- e. at the written direction of the Customer, delete or return Personal Data (and any copies of it) to the Customer on termination of the Agreement unless the Contractor is required by Law to retain the Personal Data.

- 13.5. Subject to clause 13.6 the Contractor shall notify the Customer immediately if, in relation to any Personal Data processed in connection with its obligations under this Agreement, it:
- a. receives a Data Subject Request (or purported Data Subject Request);
 - b. receives a request to rectify, block or erase any Personal Data;
 - c. receives any other request, complaint or communication relating to either Party's obligations under the Data Protection Legislation;
 - d. receives any communication from the Information Commissioner or any other regulatory authority;
 - e. receives a request from any third party for disclosure of Personal Data where compliance with such request is required or purported to be required by Law; or
 - f. becomes aware of a Data Loss Event.
- 13.6. The Contractor's obligation to notify under clause 13.5 shall include the provision of further information to the Customer in phases, as details become available.
- 13.7. Taking into account the nature of the processing, the Contractor shall provide the Customer with full assistance in relation to either Party's obligations under Data Protection Legislation in relation to any Personal Data processed in connection with its obligations under this Agreement and any complaint, communication or request made under Clause 13.5 (and insofar as possible within the timescales reasonably required by the Customer) including by promptly providing:
- a. the Customer with full details and copies of the complaint, communication or request;
 - b. such assistance as is reasonably requested by the Customer to enable the Customer to comply with a Data Subject Request within the relevant timescales set out in the Data Protection Legislation;
 - c. the Customer, at its request, with any Personal Data it holds in relation to a Data Subject;

- d. assistance as requested by the Customer following any Data Loss Event;
 - e. assistance as requested by the Customer with respect to any request from the Information Commissioner's Office, or any consultation by the Customer with the Information Commissioner's Office.
- 13.8. The Contractor shall maintain complete and accurate records and information to demonstrate its compliance with this clause 13. This requirement does not apply where the Contractor employs fewer than 250 staff, unless:
- a. the Customer determines that the processing is not occasional;
 - b. the Customer determines the processing includes special categories of data as referred to in Article 9(1) of the GDPR or Personal Data relating to criminal convictions and offences referred to in Article 10 of the GDPR; or
 - c. the Customer determines that the processing is likely to result in a risk to the rights and freedoms of Data Subjects.
- 13.9. The Contractor shall allow for audits of its Personal Data processing activity by the Customer or the Customer's designated auditor.
- 13.10. Each Party shall designate its own Data Protection Officer if required by the Data Protection Legislation.
- 13.11. Before allowing any Sub-processor to process any Personal Data related to this Agreement, the Contractor must:
- a. notify the Customer in writing of the intended Sub-processor and processing;
 - b. obtain the written consent of the Customer;
 - c. enter into a written agreement with the Sub-processor which give effect to the terms set out in this clause 13 such that they apply to the Sub-processor; and
 - d. provide the Customer with such information regarding the Sub-processor as the Customer may reasonably require.
- 13.12. The Contractor shall remain fully liable for all acts or omissions of any of its Sub-processors.

- 13.13. The Customer may, at any time on not less than 30 Working Days' notice, revise this clause by replacing it with any applicable controller to processor standard clauses or similar terms forming part of an applicable certification scheme (which shall apply when incorporated by attachment to this Agreement).
- 13.14. The Parties agree to take account of any non-mandatory guidance issued by the Information Commissioner's Office. The Customer may on not less than 30 Working Days' notice to the Contractor amend this Agreement to ensure that it complies with any guidance issued by the Information Commissioner's Officer.
- 13.15. When handling Customer data (whether or not Personal Data), the Contractor shall ensure the security of the data is maintained in line with the security requirements of the Customer as notified to the Contractor from time to time.
- 13.16. This clause 13 shall apply during the Term and indefinitely after its expiry.

14. Liability

- 14.1 The Contractor shall not be responsible for any injury, loss, damage, cost or expense suffered by the Customer if and to the extent that it is caused by the negligence or wilful misconduct of the Customer or by breach by the Customer of its obligations under the Agreement.
- 14.2 Subject always to clauses 14.3 and 14.4:
- 14.2.1 the aggregate liability of the Contractor in respect of all defaults, claims, losses or damages howsoever caused, whether arising from breach of the Agreement, the supply or failure to supply of the Services, misrepresentation (whether tortious or statutory), tort (including negligence), breach of statutory duty or otherwise shall in no event exceed a sum equal to 125% of the Charges paid or payable to the Contractor; and
- 14.2.2 except in the case of claims arising under clauses 9.4 and 18.3, in no event shall the Contractor be liable to the Customer for any:
- a) loss of profits;
 - b) loss of business;
 - c) loss of revenue;

- d) loss of or damage to goodwill;
 - e) loss of savings (whether anticipated or otherwise); and/or
 - f) any indirect, special or consequential loss or damage.
- 14.3 Nothing in the Agreement shall be construed to limit or exclude either Party's liability for:
- 14.3.1 death or personal injury caused by its negligence or that of its Staff;
 - 14.3.2 fraud or fraudulent misrepresentation by it or that of its Staff; or
 - 14.3.3 any other matter which, by law, may not be excluded or limited.
- 14.4 The Contractor's liability under the indemnity in clause 9.4 and 18.3 shall be unlimited.

15. Force Majeure

- 15.1 Neither Party shall have any liability under or be deemed to be in breach of the Agreement for any delays or failures in performance of the Agreement which result from circumstances beyond the reasonable control of the Party affected. Each Party shall promptly notify the other Party in writing when such circumstances cause a delay or failure in performance and when they cease to do so. If such circumstances continue for a continuous period of more than two months, either Party may terminate the Agreement by written notice to the other Party.

16. Termination

- 16.1 The Customer may terminate the Agreement at any time by notice in writing to the Contractor to take effect on any date falling at least 1 month (or, if the Agreement is less than 3 months in duration, at least 10 Working Days) later than the date of service of the relevant notice.
- 16.2 Without prejudice to any other right or remedy it might have, the Customer may terminate the Agreement by written notice to the Contractor with immediate effect if the Contractor:

- 16.2.1 (without prejudice to clause 16.2.5), is in material breach of any obligation under the Agreement which is not capable of remedy;
- 16.2.2 repeatedly breaches any of the terms and conditions of the Agreement in such a manner as to reasonably justify the opinion that its conduct is inconsistent with it having the intention or ability to give effect to the terms and conditions of the Agreement;
- 16.2.3 is in material breach of any obligation which is capable of remedy, and that breach is not remedied within 30 days of the Contractor receiving notice specifying the breach and requiring it to be remedied;
- 16.2.4 undergoes a change of control within the meaning of section 416 of the Income and Corporation Taxes Act 1988;
- 16.2.5 breaches any of the provisions of clauses 7.2, 11, 12, 13 and 17;
- 16.2.6 becomes insolvent, or if an order is made or a resolution is passed for the winding up of the Contractor (other than voluntarily for the purpose of solvent amalgamation or reconstruction), or if an administrator or administrative receiver is appointed in respect of the whole or any part of the Contractor's assets or business, or if the Contractor makes any composition with its creditors or takes or suffers any similar or analogous action (to any of the actions detailed in this clause 16.2.6) in consequence of debt in any jurisdiction; or
- 16.2.7 fails to comply with legal obligations in the fields of environmental, social or labour law.
- 16.3 The Contractor shall notify the Customer as soon as practicable of any change of control as referred to in clause 16.2.4 or any potential such change of control.
- 16.4 The Contractor may terminate the Agreement by written notice to the Customer if the Customer has not paid any undisputed amounts within 90 days of them falling due.
- 16.5 Termination or expiry of the Agreement shall be without prejudice to the rights of either Party accrued prior to termination or expiry and shall not affect the continuing rights of the Parties under this clause and clauses 2, 3.2, 6.1, 6.2, 6.6, 6.7, 7, 9, 10.2, 11, 12, 13, 14, 16.6, 17.4, 18.3, 19 and 20.7 or any other

provision of the Agreement that either expressly or by implication has effect after termination.

16.6 Upon termination or expiry of the Agreement, the Contractor shall:

16.6.1 give all reasonable assistance to the Customer and any incoming Contractor of the Services; and

16.6.2 return all requested documents, information and data to the Customer as soon as reasonably practicable.

17. Compliance

17.1 The Contractor shall promptly notify the Customer of any health and safety hazards which may arise in connection with the performance of its obligations under the Agreement. The Customer shall promptly notify the Contractor of any health and safety hazards which may exist or arise at the Customer's premises and which may affect the Contractor in the performance of its obligations under the Agreement.

17.2 The Contractor shall:

17.2.1 comply with all the Customer's health and safety measures while on the Customer's premises; and

17.2.2 notify the Customer immediately in the event of any incident occurring in the performance of its obligations under the Agreement on the Customer's premises where that incident causes any personal injury or damage to property which could give rise to personal injury.

17.3 The Contractor shall:

17.3.1 perform its obligations under the Agreement in accordance with all applicable equality Law and the Customer's equality and diversity policy as provided to the Contractor from time to time; and

17.3.2 take all reasonable steps to secure the observance of clause 17.3.1 by all Staff.

17.4 The Contractor shall supply the Services in accordance with the Customer's environmental policy as provided to the Contractor from time to time.

17.5 The Contractor shall comply with, and shall ensure that its Staff shall comply with, the provisions of:

17.5.1 the Official Secrets Acts 1911 to 1989; and

17.5.2 section 182 of the Finance Act 1989.

18. Prevention of Fraud and Corruption

18.1 The Contractor shall not offer, give, or agree to give anything, to any person an inducement or reward for doing, refraining from doing, or for having done or refrained from doing, any act in relation to the obtaining or execution of the Agreement or for showing or refraining from showing favour or disfavour to any person in relation to the Agreement.

18.2 The Contractor shall take all reasonable steps, in accordance with good industry practice, to prevent fraud by the Staff and the Contractor (including its shareholders, members and directors) in connection with the Agreement and shall notify the Customer immediately if it has reason to suspect that any fraud has occurred or is occurring or is likely to occur.

18.3 If the Contractor or the Staff engages in conduct prohibited by clause 18.1 or commits fraud in relation to the Agreement or any other contract with the Crown (including the Customer) the Customer may:

18.3.1 terminate the Agreement and recover from the Contractor the amount of any loss suffered by the Customer resulting from the termination, including the cost reasonably incurred by the Customer of making other arrangements for the supply of the Services and any additional expenditure incurred by the Customer throughout the remainder of the Agreement; or

18.3.2 recover in full from the Contractor any other loss sustained by the Customer in consequence of any breach of this clause.

19. Dispute Resolution

19.1 The Parties shall attempt in good faith to negotiate a settlement to any dispute between them arising out of or in connection with the Agreement and such efforts shall involve the escalation of the dispute to an appropriately senior representative of each Party.

- 19.2 If the dispute cannot be resolved by the Parties within one month of being escalated as referred to in clause 19.1, the dispute may by agreement between the Parties be referred to a neutral adviser or mediator (the “Mediator”) chosen by agreement between the Parties. All negotiations connected with the dispute shall be conducted in confidence and without prejudice to the rights of the Parties in any further proceedings.
- 19.3 If the Parties fail to appoint a Mediator within one month, or fail to enter into a written agreement resolving the dispute within one month of the Mediator being appointed, either Party may exercise any remedy it has under applicable law.

20. General

- 20.1 Each of the Parties represents and warrants to the other that it has full capacity and authority, and all necessary consents, licences and permissions to enter into and perform its obligations under the Agreement, and that the Agreement is executed by its duly authorised representative.
- 20.2 A person who is not a party to the Agreement shall have no right to enforce any of its provisions which, expressly or by implication, confer a benefit on him, without the prior written agreement of the Parties.
- 20.3 The Agreement cannot be varied except in writing signed by a duly authorised representative of both the Parties.
- 20.4 The Agreement contains the whole agreement between the Parties and supersedes and replaces any prior written or oral agreements, representations or understandings between them. The Parties confirm that they have not entered into the Agreement on the basis of any representation that is not expressly incorporated into the Agreement. Nothing in this clause shall exclude liability for fraud or fraudulent misrepresentation.
- 20.5 Any waiver or relaxation either partly, or wholly of any of the terms and conditions of the Agreement shall be valid only if it is communicated to the other Party in writing and expressly stated to be a waiver. A waiver of any right or remedy arising from a breach of contract shall not constitute a waiver of any right or remedy arising from any other breach of the Agreement.
- 20.6 The Agreement shall not constitute or imply any partnership, joint venture, agency, fiduciary relationship or other relationship between the Parties other than the contractual relationship expressly provided for in the Agreement.

Neither Party shall have, nor represent that it has, any authority to make any commitments on the other Party's behalf.

- 20.7 Except as otherwise expressly provided by the Agreement, all remedies available to either Party for breach of the Agreement (whether under the Agreement, statute or common law) are cumulative and may be exercised concurrently or separately, and the exercise of one remedy shall not be deemed an election of such remedy to the exclusion of other remedies.
- 20.8 If any provision of the Agreement is prohibited by law or judged by a court to be unlawful, void or unenforceable, the provision shall, to the extent required, be severed from the Agreement and rendered ineffective as far as possible without modifying the remaining provisions of the Agreement, and shall not in any way affect any other circumstances of or the validity or enforcement of the Agreement.

21. Notices

- 21.1 Any notice to be given under the Agreement shall be in writing and may be served by personal delivery, first class recorded or, subject to clause 21.3, e-mail to the address of the relevant Party set out in the Award Letter, or such other address as that Party may from time to time notify to the other Party in accordance with this clause:
- 21.2 Notices served as above shall be deemed served on the Working Day of delivery provided delivery is before 5.00pm on a Working Day. Otherwise delivery shall be deemed to occur on the next Working Day. An email shall be deemed delivered when sent unless an error message is received.
- 21.3 Notices under clauses 15 (Force Majeure) and 16 (Termination) may be served by email only if the original notice is then sent to the recipient by personal delivery or recorded delivery in the manner set out in clause 21.1.

22. Governing Law and Jurisdiction

- 22.1 The validity, construction and performance of the Agreement, and all contractual and non contractual matters arising out of it, shall be governed by English law and shall be subject to the exclusive jurisdiction of the English courts to which the Parties submit.

SCHEDULE 1 - PROCESSING, PERSONAL DATA AND DATA SUBJECTS

1. This Schedule shall be completed by the Customer, who may take account of the view of the Contractor, however the final decision as to the content of this Schedule shall be with the Customer at its absolute discretion.
2. The contact details of the Customer Data Protection Officer are:

DGC.GDPR@defra.gsi.gov.uk
3. The contact details of the Contractor Data Protection Officer are:

 RSK ADAS Limited
 Spring Lodge
 Helsby
 Cheshire
 WA6 0AR

 Email:
4. The Contractor shall comply with any further written instructions with respect to processing by the Customer.
5. Any such further instructions shall be incorporated into this Schedule.

Data Processing descriptor	Narrative
Identity of the Controller and Processor	The Parties acknowledge that for the purposes of the Data Protection Legislation, the Customer is the Controller and the Contractor is the Processor in accordance with Clause 13.1.
Subject matter of the processing	<p>For the purposes of this Contract this is any personal data controlled by the Authority or, as the case may be, the relevant Customer, for the purposes of carrying out its duties and enforcing its rights under this Contract.</p> <p>No personal data will be gathered, held or processed during this project. All data will be anonymised by data suppliers prior to their provision to the contractors.</p> <p>The data to be processed is in relation to the requirement to establish the efficacy of DNA sequencing and how it compares to hand identification of invertebrates.</p>

Duration of the processing	For the duration of the Contract.
Nature and purposes of the processing	<p>The nature of the processing means any operation such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction of data (whether or not by automated means) etc. Storage and use of Personal details of Contacts of the Provider, and third parties working to the specification for purposes of providing services in accordance with the Contract. Data to be analysed relates to the following contract objectives:</p> <ul style="list-style-type: none"> • How reliable and accurate is DNA species identification? • How much does each method cost (in time and money)? • How long does the identification process take? • Can abundance be inferred as part of DNA sequencing? • How reliable is BOLD, or other databases available to the contractor, for undertaking invertebrate identification? A reference collection will not be made available. • Is there a need to review collection and storage methods for DNA sequencing of terrestrial invertebrates?
Type of Personal Data	None
Categories of Data Subject	None
Plan for return and destruction of the data once the processing is complete	The Provider will store relevant personal data in an electronic file in its central document management system which is stored, backed up and supported within the UK. Some hard copy documentation may also be stored in a physical matter file in the UK. The data will be incorporated into the final report as an output of the requirement. Supplied data will be returned to the customer upon completion of the project.

Annex 3: Specification

1. Background

Natural England is the government's advisor on the natural environment. We provide practical advice, grounded in science, on how best to safeguard England's natural wealth for the benefit of everyone.

Our remit is to ensure sustainable stewardship of the land and sea so that people and nature can thrive. It is our responsibility to see that England's rich natural environment can adapt and survive intact for future generations to enjoy.

Natural England is currently exploring applications of DNA technology in survey and monitoring of terrestrial, freshwater and marine biodiversity, hopefully leading to efficiencies in our monitoring programmes.

2. Requirement

Natural England are interested in the efficacy of DNA sequencing and how it compares to hand identification of invertebrates.

Invertebrate samples collected using Natural England survey protocols (appendix 1) will be analysed using appropriate DNA techniques, to provide a comparison to traditional techniques (data will be supplied). Information will be collected to ascertain the following for each of the two methods:

- How reliable and accurate is the DNA species identification?
- How much does each method cost (in time and money)?
- How long does the identification process take?
- Can abundance be inferred as part of DNA sequencing?

In addition, the following questions should be addressed:

- How reliable is BOLD, or other databases available to the contractor, for undertaking invertebrate identification? A reference collection will not be made available.
- Is there a need to review collection and storage methods for DNA sequencing of terrestrial invertebrates?

Natural England survey protocols were used to collect samples from veteran trees in Sherwood Forest (Vane trapping) and soft rock cliff seepages (hand collecting and pit-falling) at Highcliffe, Dorset (see appendix I). Samples were identified by hand and individuals of each species were counted and recorded on an Excel spreadsheet. This data will be made available to the contractor. The time incurred for their identification and the storage methods were noted.

Vane trap samples from Sherwood Forest were collected in a 50% propylene glycol, sorted and then transferred to 50% ethanol for a few weeks. These were then

transferred to specialists for identification and storage in 95% ethanol (more exacting data will be made available).

Pitfall samples from Highcliffe were collected in a 50% propylene glycol over a two week period, sorted and then transferred to 50% ethanol for 8 weeks. These were then transferred to specialists for identification and storage in 95% ethanol.

Hand collected samples were stored in 50% ethanol for 8 weeks. These were then transferred to specialists for identification and storage in 95% ethanol.

It is fair to say that the above methods would be considered as standard approach for storage of specimens using conventional methods and no particular care was taken. Natural England are keen to see if this approach is fit for purpose or requires amendment.

Estimation of the Number of Samples and number of individuals caught

Sample type	Identification by Natural England staff	No. of samples	No. of individual specimens per sample
Sherwood			
Vane trap (beetles)	All Identified to species	22	1-20, not usually more than twenty but sometimes up to 100.
Hand collected/ Owen trap samples (mostly beetles but may contain other taxa)	All beetles identified to species	Up to 10	Usually less than 50 in each.
Highcliffe			
Pitfall (beetles & spiders)	All Identified to species	8	10-100
Hand collected samples (beetles)	All Identified to species	16	10-50

Hand collected samples (spiders)	All Identified to species	16	10-50
Sweep netting (flies)	All Identified to species	1	50-100
Total samples		63-73	

Natural England would like all beetles and bycatch to be identified to species level where possible, or the best resolution possible, using a curated reference database (BOLD or contractor held).

Natural England are interested in the efficacy of DNA sequencing and how it compares to hand identified analysis. It is important for the contractor to be clear about the methods used, the shortfalls of these methods, and a description of further work required to increase efficacy.

Main tasks:

- Transportation of samples will be arranged and paid for by the contractor. These will be made available by Natural England by November 30th 2018 at the latest. Samples can be made available in batches if preferred (but the costs will be incurred by the contractor);
- Safe storage of samples in the chance that these may re-evaluated at a future date;
- ID results to species level where possible in excel;
- if possible, an estimate of abundance (to be agreed at contract award);
- a detailed methodology of the work undertaken, including time taken to process and ease of processing;
- an analysis of this data compared to traditional techniques (the contractor will use the species list generated by Natural England specialists to undertake comparative analysis of the results);
- recommendations for changes to the current storage and handling protocols (given the limitations of the Organisation);
- recommendations for future work; pros and cons of the two methods;
- one day of time for training of up to three Natural England staff in the DNA approaches used to analyse the results. This training should be aimed at non-experts so that they can disseminate information surrounding the techniques more widely within the organisation. This time will include a visit to the laboratory;
- An appropriate written report, an initial draft of which will be supplied to NE by date w/c 7th January 2019, with a final by w/c 25th February 2019.

3. Outputs and Contract Management

Outputs:

- ID results to species level where possible, if not best possible resolution using a curated reference database, including an estimate of abundance (if possible);
- comparative analysis of the results between DNA and traditional techniques;
- recommendations for future work, pros and cons of 2 methods, suggestions for changes in methods etc;
- one day of time for training of up to three Natural England staff in the DNA approaches used to analyse the results. This time will include a visit to the laboratory;
- Final report (in Natural England template (supplied)).
- W/C 26th November– Inception meeting between project officer and supplier either face to face (Peterborough preferred) or by teleconference
- Monthly teleconferences thereafter
- W/C 7th January 2019 – Draft report due to project officer in digital format via e-mail
- w/c 4th February 2019 draft report to be returned to contractor with Natural England's comments
- W/C 25th February 2019 – Final report due to project officer
- Contract completion by 28th February 2019

Appendix 1

Natural England Invertebrate Survey Guidelines:

I. Saproxyllic beetle surveys using vane traps and other supplementary methods for site quality assessments (version 1.0)

Webb and Hackman 2018

Overview

Decaying wood in veteran trees supports an important and diverse invertebrate saproxyllic fauna. This includes beetles, flies, and smaller numbers of groups such as bees, wasps, moths and bugs.

In recent years trapping techniques have developed significantly and flight interception or vane traps in particular have proved a successful means to survey saproxyllic beetles both in the UK and across Europe. Beetles are considered to be a good indicator of habitat quality and fidelity to veteran trees.

Vane traps can be deployed over a long period of time and are a method for catching insect samples that avoids destruction of the habitat. Vane trapping is also a readily repeatable method that allows for comparative analysis between sites and samples. This guidance aims to explain how a vane trap works, how it should be installed and maintained and how to deal with the resultant collections. Vane traps are considered to be easy to manage by non-specialists. Once trapping is complete all collections are identified by an entomologist and analysed using Pantheon.

Description of the vane traps:

Vane traps are durable, most being made of plastic, and can be re-used from year to year. They are light and relatively easy to transport and assemble. There are a number of designs but the following one has been used by Natural England staff on numerous occasions. It consists of intersecting panels of Perspex, around 45cm high, connected through a funnel to a screw-on collecting bottle. A Perspex roof slots on top of the panels which has two holes at each corner. A cable tie goes through each hole to attach string, which is then tied to the other 3 strings to form a loop. The collection bottles are part-filled, usually to about 5cm (about a third of the way up) with a mixture of 50% preserving fluid (propylene glycol) and 50% water and a drop of surfactant (washing up liquid).

A layer of chicken wire is laid between the bottom of the panels and the top of the funnel to stop unwanted objects falling into the bottle and act as a barrier to larger animals. Rope is used to attach the loop of string to the tree. The traps provide a vertical barrier to insect flight that is thought to be invisible to them. On collision with the panel beetles and other insects will often drop down and fall into the collection bottle.



Example of a vane trap installed within a hollow in an oak tree. The Perspex panels sit above the funnel which feeds into the collecting bottle.

Choosing the location for the traps:

The approach is to hang the traps in trees which have been identified as having suitable rot and holes and at the same time ensuring the traps are safely secured. Information from previous tree surveys may help source suitable trees along with advice from an entomologist. In practice, these tend to be trees with exposed cavities containing red rot, white rot and those with cracks or fissures where sap runs out. Very hollow old trees that lack wood mould or fungal rot are possibly not as good as trees with a large amount of moist available decaying wood. Tree species will play a role, but more important is the type of rot within a tree, which can be broadly split into red rot or white rot (image?). Other issues to take into account when siting traps include potential interference from livestock or people where there is public access. This might be overcome by siting the traps a little higher or in less visible places. See appendix 1 for examples of vane traps in a variety of locations.

To date, Natural England staff have only sited traps next to cavities on veteran trees; it would be worth testing trap sitings away from cavities in the future.

As standard protocol, Natural England currently deploy 10 traps within a site on suitable trees. We have often deployed a few more than 10 (between 11 and 13 in case of unforeseen emergencies where a location might have to be discarded). These ten traps can cover the whole site, or a sub-sample of such a site. Tree species against which traps are set are chosen as a representation of the site as a whole (e.g. At Brocton Coppice in Cannock Chase, all 10 traps were sited on oaks; at Burghley Park in Lincolnshire, 5 were placed on oak and 5 on sweet chestnut). On larger sites, where resources are not such an issue, it would be possible to deploy 10 traps on one tree species and ten on another, thus creating two samples. Multiples of 10 can also be used to investigate different parts of a site.

Should be erected by early-mid April and taken down in late October. The collecting bottle on each trap is numbered with a permanent marker pen e.g. 1 to 10. The traps do not need to be spaced at any particular density.

In most cases a ladder will be required to install, service and remove the traps. There is guidance on the Natural England Intranet on how to assess and control the risks associated with working at height which includes an on-line training course. It is a two person job.

It is helpful to record if any of the chosen trees have number tags and to take a GPS grid reference and at least one photo of each tree. Then put them into document that can be taken out on future visits to help locate them again.

Servicing the traps:

The traps must be regularly serviced, ideally every 3-4 weeks. Generally about 8 visits will be required to the site over the trapping period. In periods of high rainfall it is advisable to service the bottles as and when they fill up as efficiency becomes reduced. trap servicing is at least two person job for health and safety reasons.

During the check, each bottle is removed and replaced with a fresh collecting bottle of the same number which has been filled with preserving fluid. The bottle screws on and off the trap. So prior to each site check you should ensure you fill up and take the correct number of bottles and that each is clearly numbered. When you take the lid off the fresh bottle you can reuse it to cover the bottle coming off the trap.

Try to retain all of the contents in the collecting bottle that comes off the trap even if it contains more liquid from an ingress of rain than when it was put out. Collect everything – some species can be very small. The contents from each collecting bottle should be initially sorted (be advised that some species are less than 2mm long). Some collecting bottles can be dark and difficult to look through if wood falls in so a white tray can be useful to separate things out. Even if you are intending just to look at

the beetles, keep the by catch for others. If possible separate into taxonomic groupings, at least to order in small batches under the microscope.

Once sorted, put the samples put in separate tubes with 50% ethanol or stronger if to be left longer than a couple of years. Label them with the site name, tree number and date of trap emptying. It is generally best to write details in pencil and place the label inside the container to avoid the risk of labels falling off over time. The invertebrates will be preserved quite successfully within the bottles of alcohol until they can be passed over to the entomologist for identification and interpretation. Keep the collected bottles in a cool and dry place out of direct sunlight.

Each time you change the bottles check to ensure that each trap is still in place and correctly assembled. If the trap has fallen down, the rope is broken or the piece of net above the collecting bottle has dislodged then make any necessary repairs. Take some spare rope, tape and scissors and a permanent marker pen with you on each visit and your document of tree photos, grid references and any tree tag numbers. Keep a record of the dates that you have changed the bottles.

II. Guidelines for Soft Rock Cliff Surveys

Webb, A, Drewitt & Mott 18/05/2018

Best time of year for surveys

Between first week in May to last week in June, with mid-May to mid-June being optimal as this when invertebrate activity is often presumed to be at its peak.

What is a Standard Soft Rock Cliff Sample?

Workers have used different techniques and there is no single optimum way to survey. Some techniques are rapid and do not require repeat visits whereas other methods collect more individuals but can be resource intensive. The method employed by Natural England is based on that used by previous workers, using a series of approaches with the aim of collecting a large diversity of species in a relatively short time period.

Along any given stretch of soft rock cliff, four **sample stations** associated with seepages (including pools and other vegetated damp areas) are selected within close proximity to each other (c.200m).

A Soft Rock Cliff Sample is defined by Natural England as:	
For each of four stations	30 minute hand searching
At one station usually the one with the largest area of wetland	Ten pitfall traps in place for a two-week period
<p>The combined results can be used to provide a species list for quality assessment but the results should also be retained for the individual stations for two reasons:</p> <p>a) it allows for specific interest features on the site to be identified</p> <p>b) pitfall trapping was excluded from some earlier surveys; keeping separate records of the results pitfall and hand searching allows comparisons with the results of earlier surveys.</p>	

Hand Searching

Hand searching can be a very effective method for sampling riparian invertebrates, particularly in terms of recording the smaller, cryptic species and those which are subterranean for most of the time. The method below is based on Derek Lott's protocol (Drake *et al.* 2007).

Each sample station consists of a Soft Rock Cliff seepage and its associated riparian habitat, such as eroding banks, the edges of water, vegetated sand, stretches of emergent vegetation, etc.

Each sample consists of the combined catches of three separate 10-minute sub-searches within a 30 minute period at each sample station. The aim of these separate searches is to target specific habitat types. This searching includes the time involved in transferring specimens to collecting tubes, preparing equipment etc. So the actual search time spent searching tends to be in the range of 8-5 minutes per sub-search.

At each sample station one or more of the following techniques are used to find animals, depending on the habitats present:

- Soft sediments are trampled or patted, and surface-active insects pooted up directly from the ground.

- Next to water margins, exposed sediment is splashed with water. This works best on steeper banks where a plastic kitchen sieve can be used to catch insects washed into the water or beetles can simply be pooted as they run back up the slope.
- The basal parts of plants are examined or pulled apart; tussocks can be dissected over a sheet or tray using a small hand-saw and sieve and insects then pooted.
- Litter and dense mats of fallen vegetation are sieved over a plastic sheet or tray, using a sieve with a mesh of 4 to 8 mm.
- Emergent vegetation is submerged and the insects that float to the surface are scooped up with a plastic kitchen sieve.
- Large stones can be lifted and species pooted from below and large woody debris can be broken apart before pooting.

Pitfall trapping

Based on Sadler & Bell (2000), ten small plastic cups, c. 10cm diameter, are dug into the sediment so that the rim is flush with the surface. These are filled one third full of a 50:50 mixture of commercial anti-freeze and water, with a small amount of detergent added to break the surface tension. Antifreeze both assists in sample preservation and reduces evaporation. For species that are collected for analysis via DNA meta-barcoding the current advice is to use propylene glycol rather than antifreeze.

At each site, pitfalls are placed sufficiently high up along a wetland edge to lessen the risk of flooding and/or hidden away to avoid detection. Pitfalls were left on each site for at least two weeks, and not more than four weeks, before collection and storage in 50% ethanol.