



Version 2015-03-10

## **COST Action ES1304 (24/10/2013 – 23/10/2017)**

**European network on invasive parakeets (ParrotNet): understanding invasion dynamics and risks to agriculture and society**

### **PROGRESS REPORT 1 (Action start date – 24/10/2013 Report date – May 2015)**

**This report is submitted by the MC Chair on behalf of the Management Committee and is validated by the Scientific Committee of the COST Association.**

**Confidentiality:** the document will be made available to the public via the Action page on the COST website except for Section II.D.

#### **Executive summary of the Progress Report:**

ParrotNet (COST Action ES1304) is now into its second year and has grown in size from 12 to 18 participating countries and has grown in membership from 35 to over 100 participants.

The Action objectives are to (i) Define and quantify the current impacts of parakeets on European agro-economy, society and wildlife and also to evaluate the social and ecological feasibility of different policies aiming to reduce those impacts; (ii) create a virtual European Monitoring Centre to monitor spread of parakeets and other invasive parrot species in order to predict future impacts on European agro-economy, society and wildlife and characterise 'risk-profiles' involving scenario-based projections to make EU-level policy recommendations; (iii) integrate all available evidence to determine what factors limit distribution, abundance and population growth rate of parakeets across Europe, in order to inform policy and (iv) integrate all available evidence to establish extent and nature of evolutionary change by parakeets and prioritize utility of information for predicting future invasion pathways, in order to evaluate their response to climate change across the EU landscape.

The network has organised three 3-day MC+Working Group 1-4 meetings (Canterbury, UK, 10-12th February 2014; Seville, Spain, 8-10th October 2014; Heidelberg, Germany, 10-12th February 2015) and four workshops (Zielona Gora, Poland; 27th March 2014; Leeds, UK, 10th July, 2014; Canterbury, UK, 11-12th September 2014; Paris, France, 2nd-3rd March 2015).

The network has produced 5 collaborative publications from across the network, has supported 13 STSMs, has developed and launched the virtual ParrotNet European Monitoring Centre, has developed a piloted version of a mobile phone application (for public dissemination and education about invasive parakeets) and has attracted wide media coverage regarding the launch of ParrotNet.

Networking activities between Action participants, made possible by the 13 STSMs and the total eight meetings/workshops, have enabled considerable progress in the following research areas; integration of evolutionary genetic information into bioclimatic envelope models used to predict spread of invasive parakeets across Europe (WG4); initiation of quantitative social science study of public perception of invasive parakeets (WG1); initiation of a systematic review of evidence for impacts of invasive parakeets (WG1); coordination of collection of parakeet feathers from across the native and invasive range of invasive parakeets to facilitate genetic studies of evolutionary adaptation (WG4), and collation and updating of information on distribution of invasive parakeets and drivers of population growth and spread (WG3). Membership of ParrotNet's three IPCs (Mauritius, Argentina, South Africa; where two STSMs are currently scheduled) are facilitating a global reach which reflects the global nature of the European problems being experienced by invasive parakeets.

The ParrotNet COST Action is facilitating much-needed networking and collaboration amongst the natural and social sciences communities involved in invasive alien species science and policy.



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### **Summary assessment of Progress Review by Action Rapporteur:**

Invasive Alien Species (IAS) present an increasingly urgent economic, societal and environmental problem. Being invasive species, parakeets pose a number of risks to Europe's economy and society, which are likely to increase as global climate change creates a warmer Europe. This COST Action ES1304 is not important only for solving the problems with invasive parrots, but also represents a model for fighting a great number of some other invasive species.

ParrotNet (COST Action ES1304) is now into its second year and has grown in size from 12 to 18 participating countries and in membership from 35 to over 100 participants.

The Action objectives are to (1) define and quantify the current impacts of parakeets on European agro-economy, society and wildlife, and also to evaluate the social and ecological feasibility of different policies aiming to reduce those impacts; (2) create a virtual European Monitoring Centre to observe the spread of parakeets and other invasive parrot species in order to predict future impacts on European agro-economy, society and wildlife and to characterise 'risk-profiles' involving scenario-based projections which could form the basis of EU-level policy recommendations; (3) integrate all available evidence to determine which factors limit distribution, abundance and population growth rate of parakeets across Europe, in order to inform policymakers and (4) integrate all available evidence to analyse the extent and nature of the evolutionary change caused by parakeets. These actions make it possible to predict future invasion pathways and the parrots' response to climate change across the EU landscape.

Networking activities between Action participants have resulted in considerable progress in reaching the objectives: the virtual ParrotNet European Monitoring Centre has been launched, a piloted version of a mobile phone application (for public dissemination and education about invasive parakeets) has been developed and a wide media coverage regarding the launch of ParrotNet has been attracted.

Through successful efforts of Action participants, made possible by 13 STSMs and ten meetings/workshops, the following research areas have been advanced: initiation of quantitative social science study of public perception of invasive parakeets (WG1); initiation of a systematic review of evidence for impacts of invasive parakeets (WG1); collation and updating of information on distribution of invasive parakeets and drivers of population growth and spread (WG3); integration of evolutionary genetic information into bioclimatic envelope models used to predict spread of invasive parakeets across Europe (WG4) and coordination of collection of parakeet feathers from native and invasive parakeets which facilitates genetic studies of evolutionary adaptation (WG4). The membership of ParrotNet's three IPCs (Argentina, South Africa - where two STSMs are scheduled and Mauritius) are facilitating a global reach which reflects the global nature of problems related to invasive parakeets experienced in Europe.

The network has organised three 3-day MC+Working Group 1-4 meetings, four workshops, and has produced 5 collaborative publications.

According to what is stated above, this Action has reached the MoU objectives so far and no corrective measures need to be implemented.

## I. Progress Report

### I.A. COST Action Profile

#### Objective/ Aim

The rose-ringed parakeet is listed amongst the top 100 worst alien species in Europe, and since the 1970s has rapidly established itself in over 100 cities across the continent and beyond. They have begun to pose problems in urban and rural areas such as disturbance to humans (including potential to transmit diseases to livestock and humans), competition with native wildlife and, increasingly, as an agricultural pest, already prompting changes in national policies. Worryingly, farming practices that adapt to global climate change and a warmer Europe facilitate the continued expansion of parakeet populations, amplifying the problems parakeets pose for European agro-economy. More generally, a temporal, spatial and social perspective of biological invasion is crucial to address, understand and solve the alien species problem but is lacking. This Action will help to (i) better understand why some species such as parakeets are highly successful invaders, (ii) harmonise methodologies to predict agricultural, economic, societal and ecological impacts across Europe, and the means to mitigate them, (iii) create a virtual European Monitoring Centre for all invasive parrot species, and (iv) transfer results to policy and society. The Action fulfils EU 2020 Biodiversity Strategy, Convention on Biological Diversity and Syracuse Charter recommendations on invasive species.

#### Details

|                    |            |                  |            |
|--------------------|------------|------------------|------------|
| MoU:               | 013/13     | Start of Action: | 24/10/2013 |
| CSO approval date: | 16/05/2013 | End of Action:   | 23/10/2017 |

#### COST Member Countries and Cooperating State having accepted the MoU

Austria, Belgium, Bulgaria, Denmark, Estonia, France, Germany, Greece, Israel, Italy, Netherlands, Poland, Portugal, Slovenia, Spain, Switzerland, Turkey, United Kingdom

Intentions to Accept the MoU

0

#### Other participants:

| Institution Name  | Country      |
|---|--------------|
| Mauritius Wildlife Foundation                                   | Mauritius    |
| University of the Witwatersrand, Johannesburg                   | South Africa |
| Universidad Nacional del Centro de la Provincia de Buenos Aires | Argentina    |

#### Contacts

##### Chair/ Vice Chair

| Position    | Name                | Contact details  | Country        | Date of PhD: | Gender |
|-------------|---------------------|--|----------------|--------------|--------|
| Chair:      | Dr Jim Groombridge  | University of Kent<br>Durrell Institute of Conservation and Ecology (DICE)<br>School of Anthropology and Conservation,<br>Marlowe Building<br>University of Kent<br>CT27NR Canterbury<br>United Kingdom<br>+441227824097<br><a href="mailto:J.Groombridge@kent.ac.uk">J.Groombridge@kent.ac.uk</a> | United Kingdom | 2000         | Male   |
| Vice Chair: | Dr Diederik Strubbe | University of Antwerp<br>Evolutionary Ecology Group<br>Middelheimcampus G.V.323b<br>2020 Antwerp<br>Belgium<br>+32477445568<br><a href="mailto:diederik.strubbe@uantwerpen.be">diederik.strubbe@uantwerpen.be</a>  | Belgium        | 2009         | Male   |

### Working Group Leaders

| WG# | WG Title   | WG Leader        | Country        | Date of PhD: | Gender | Number of participants |
|-----|--|------------------|----------------|--------------|--------|------------------------|
| 1   | <b>Impacts on society/economy/environment, and public perception</b> | Assaf Shwartz    | Israel         | 2011         | Male   | 37                     |
| 2   | <b>European Monitoring Centre</b>                                    | Simon Tollington | United Kingdom | 2012         | Male   | 29                     |
| 3   | <b>Drivers of population distribution and growth</b>                 | Martina Carrete  | Spain          | 2002         | Female | 20                     |
| 4   | <b>Evolutionary change and prediction of invasion</b>                | Diederik Strubbe | Belgium        | 2009         | Male   | 22                     |

### Other positions if applicable (STSM Coordinator, WG Vice Leader, Task Force Leader...)

| Position          | Name             | Country        | Date of PhD: | Gender |
|-------------------|------------------|----------------|--------------|--------|
| STSM Coordinator  | Martin Dallimer  | United Kingdom | 2001         | Male   |
| Core Group Member | Martin Dallimer  | United Kingdom | 2001         | Male   |
| Core Group Member | Simon Tollington | United Kingdom | 2012         | Male   |
| Core Group Member | Martina Carrete  | Spain          | 2002         | Female |
| Core Group Member | Diederik Strubbe | Belgium        | 2009         | Male   |
| Core Group Member | Assaf Shwartz    | Israel         | 2011         | Male   |

|                        |   |
|------------------------|---|
| <b>Action website:</b> | <a href="http://www.kent.ac.uk/parrotnet/">http://www.kent.ac.uk/parrotnet/</a> |
|------------------------|---|

## I.B. Progress with MoU objectives and deliverables and additional outputs

### MoU objectives

| MoU objective  | Achieved Yes/ Partially/ No | Evidence of (partial) achievement including hyperlink to enable assessment of the achievement <sup>1</sup> . Justification if full achievement is not foreseen   |
|--|-----------------------------|--|
| Define and quantify the current impacts of parakeets on European agro-economy, society and wildlife and also evaluate the social and ecological feasibility of different policies aiming to reduce those impacts.  | Partially                   | <p>All folders and files referred to are contained in the ParrotNet Google Drive, which is accessible to ParrotNet participants (please contact the Action Chair, Jim Groombridge, to join the Action).</p> <p>A working group (WG1) meeting in February 2013 aimed to define the current impacts of parakeets on society, wildlife and agriculture. ParrotNet experts gathered together to assess the impacts of parakeets using recognised assessment guidelines. A publication detailing the results of this workshop is in preparation and will be delivered before the end of December 2015. A further workshop is arranged to be held in Tallinn, Estonia in Year-2 in order to develop and design methods to quantify damage to agriculture by parakeets. A ParrotNet participant and PhD student at the University of Kent is formulating a social perception questionnaire which aims to evaluate the perception of the public concerning different policies of reducing the impacts. This activity is a collaboration with Danish partner Dr Thomas Lundhede who has already completed an STSM (Denmark to UK) contributing to this theme (STSMs Y1). The questionnaire, facilitated by an STSM to an early career researcher to be performed in 2015 (UK to Denmark), will be distributed before the end of 2015 and a report/publication is expected in 2016. Two ParrotNet participants (Mori and Menchetti) have published a peer-reviewed publication of the impacts of parrots across the world in which COST is acknowledged (Publications: Menchetti and Mori 2014).</p> |
| Create a virtual EMC to monitor spread of parakeets and other invasive parrot species in order to predict future impacts on European agro-economy, society and wildlife and characterise 'risk-profiles' involving scenario-based projections to make EU-level policy recommendations. | Partially                   | <p>The European Monitoring Centre (EMC) has been created and is hosted by the University of Kent on the ParrotNet website.<br/> <a href="http://www.kent.ac.uk/parrotnet/map.html">http://www.kent.ac.uk/parrotnet/map.html</a> This resource presents records of occurrences of non-native parrots across Europe and enables policy-makers and the general public to contribute their own observations. The creation of the EMC was facilitated by an STSM to Rachel White, an ECR, (UK to Germany) and is the first step towards predicting future impacts and characterising risk-profiles. The EMC also has the functionality to visualise temporal patterns of spread from 1967-2014 (see 'timeline' on EMC toolbar). The EMC will be populated with more comprehensive data in 2015 as WG2 explore the possibility of combining data from National Monitoring schemes across Europe. Following the MC+WGs meeting in Heidelberg in February 2015 and the launch of the EMC, National Monitoring scheme coordinators have been approached to explore opportunities for including datasets. Furthermore, additional datasets will be incorporated into the EMC for additional species of invasive parrots. The EMC has also created a library of literature available for all ParrotNet participants to access via the ParrotNet Google Drive (ParrotNet Library).</p>   |
| Integrate all available evidence to determine what factors limit distribution,   | Partially                   | <p>All available evidence concerning current distribution and abundance of parrots in Europe has been collated and is available to all participants via the ParrotNet Google Drive (Useful online datasets). This resource was identified at the initial MC+WGs meeting in Canterbury, UK, as an important resource for all WGs and participants. It was facilitated via two STSMs involving Early Career Researchers, Rachel White (UK to Germany) and Liviu Parau</p>  |

<sup>1</sup> The links to the outputs and deliverables will be used by the Action Rapporteur in assessing the progress.

|   |           |  |
|---|-----------|--|
| abundance and population growth rate of parakeets across Europe, in order to inform policy.   |           | (Netherlands To Germany). The reports from these STSMs can be found on the ParrotNet Google Drive (STSMs Y1). Analysing the limiting factors of distribution, abundance and growth rate will continue in 2015 and 2016; a number of ParrotNet outputs/publications (e.g. Output 1) demonstrate the progress being made.  |
| Integrate all available evidence to establish extent and nature of evolutionary change by parakeets and prioritize utility of information for predicting future invasion pathways, in order to evaluate their response to climate change across the EU landscape. | Partially | Several projects have been instigated relating to this objective including a study to examine morphological variation between native and invasive populations conducted by Diederik Strubbe, an Early Career Investigator, utilising an STSM (Belgium to UK) (see Google Drive, STSMs Y1). An STSM by Jamie Taylor (UK to Italy) shared methods with Italian researchers for surveying for parakeet feathers, paving the way for genetic research on genetic adaptation. Other participants are initialising a study concerning behavioural studies of invasive parakeets (Edelaar [Spain] and Franz [Germany]) and timing of breeding behaviour. A peer-reviewed publication (Output 1) has been produced by four members of ParrotNet concerning niche structure of invasive parakeets (Publications: Strubbe et al 2015). Two additional publications (Outputs 1, 4) have provided important information on genetic make-up of invasive ringneck parakeets, the genetic contributions made by escaped pet birds and the role of climatic influences, and on the effects of invasive parakeets on phylogenetic diversity. An important finding is that European climate appears to have had a substantial effect (in the form of natural selection) on determining which ancestral lineages comprise today's invasive populations of ringneck parakeets. |

#### MoU deliverables

| MoU deliverable   | Level of progress <sup>1</sup> | Evidence of (partial) delivery achievement including hyperlink to enable assessment of the delivery <sup>1</sup> . Justification if full achievement is not foreseen |
|---|--------------------------------|--|
| Create a virtual EMC to monitor spread of parakeets and other invasive parrot species | Ongoing                        | The EMC has been launched and is functioning. <a href="http://www.kent.ac.uk/parrotnet/map.html">http://www.kent.ac.uk/parrotnet/map.html</a>                        |

#### Co-authored publications and FP7/ H2020 proposals

The co-authored publications and FP7/ H2020 proposals/ projects resulting from the Action are listed on the page following the “Additional outputs and achievements” section

#### Additional outputs and achievements

|  |
|--|
| <p>Please describe any other outputs and achievements that have resulted or are in progress, focusing in particular on those that contribute to the COST mission of “COST enables break-through scientific developments leading to new concepts and products and thereby contributes to strengthen Europe’s research and innovation capacities.”</p> <p>ParrotNet continues to progress with a number of other outputs and achievements which aim to contribute to the COST mission. In an effort to increase the dissemination power of ParrotNet and to engage Early-Career Researchers, ParrotNet has teamed up with students from the University of Kent’s Master’s degree programme ‘Mobile Application Design’. This is the second year that students registered on this degree have participated with ParrotNet in developing a freely downloadable mobile phone application which will raise public awareness of the issues associated with invasive species, and help to disseminate ParrotNet outputs using the latest technological methods. Further embracing the current increasing trend in technology and social media use ParrotNet has also established a healthy following of 130 users on its Twitter account where up to date news and information regarding issues concerning invasive species can be shared with a global audience <a href="https://twitter.com/parrotneteu">https://twitter.com/parrotneteu</a></p> <p>ParrotNet has been very active in collaborating with other COST Actions. Through the networking opportunities provided by COST ParrotNet has welcomed the Chairs of ES1305 and TD1209, (Dr Jason</p> |
|--|

Chapman and Dr Helen Roy respectively) as members. A collaboration between eight participants of ParrotNet and Alien Challenge (TD1209: Chaired by Dr Helen Roy) has produced a manuscript concerning the new EU regulations on invasive species which has recently been submitted to *Conservation Letters* (see below). Both COST Actions (TD1209 and ES1304) have benefitted from their shared interests and a number of participants attend meetings organised by both networks allowing expertise to be transferred between Actions.

ParrotNet members have been actively disseminating the work of the Action in numerous European countries since its inception. These outputs include an article published in *International Innovation* (funded by COST, Publications: *International Innovation* article), press coverage in Russia (<http://russiannewsonline.blogspot.co.uk/2014/08/scientists-invasion-of-parrots-in.html>), Poland (<http://naukawpolsce.pap.pl/aktualnosci/news,401464,naukowcy-inwazja-papug-w-polsce-jest-tylko-kwestia-czasu.html>) and a feature in the Newsletter of the EU-office, Bavaria (Publications: NEUS 21).

**Co-authored publications and FP7/ H2020 proposals**

**Co-authored publications**

Enter in the table below only publications on the topic of the Action, co-authored by at least two Action participants from two different countries participating in the Action and for which the Action networking added value. A maximum of ten publications may be entered. If the Action has more than ten such publications the Core Group should select the ten most significant ones to include in the table below.

| NO. | Bibliographic data (including: Title, Authors, Title of the periodical or the series, Issue number or volume, Publisher, Year of publication, Relevant pages)  | Main author      | Number of authors | Action participants listed among the authors (Name, country and role <sup>2</sup> )  | WGs involved in publication | Date of submission (must be after Action start date) | Expected date of publication (if not already published) | Persistent link to publicly available version of the paper (if available) or the abstract   | Is/Will open access <sup>3</sup> provided to this publication? | Is/ will COST be cited/ acknowledged in the publication? | Are/ will COST funds (be) implicated in this publication | Relevance to H2020 Societal Challenges <sup>4</sup> ?  | Is it peer-reviewed? | Was the added value of the Action Networking necessary for the publication | In Fa app |
|-----|--|------------------|-------------------|--|-----------------------------|--|---|---|--|--|--|--|----------------------|--|-----------|
| 1   | Strubbe, D., Jackson, H., Groombridge, J., & Matthysen, E. (2015). Invasion success of a global avian invader is explained by within - taxon niche structure and association with humans in the native range. <i>Diversity and Distributions</i> .   | Diederik Strubbe | 4                 | Strubbe Belgium, Vice-Chair, Jackson, UK, MC substitute, Groombridge, UK, Chair and Matthysen, Belgium, MC Member  | 4, 3                        |  |   | <a href="http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1472-4642/earlyview">http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1472-4642/earlyview</a>   | no   | yes  | no   | This publication is highly relevant to understanding how species move under changing climate.                                | yes                  | yes  | 5.4       |
| 2   | Tollington, S., Turbe, A., Groombridge, J., Roy, H., Rabbitsch, W., Scalera, R., Essl, F., Schwartz, A. (submitted) The new Invasive Alien Species policy in Europe will require Member States to take the lead. Manuscript submitted to <i>Conservation Letters</i> .   | Simon Tollington | 8                 | Tollington, UK, MC Member, Turbe, France, WG Member, Groombridge, UK, Chair, Rabbitsch, Austria, MC Member, Scalera, Italy, WG Member, Shwartz, Israel, MC Member, | 1,2,                        | 28/3/15  | July 2015   |   | Yes  | Yes  | Yes  | If published, this paper will inform European policy concerning invasive species.  | Yes                  | Yes  | 5.0       |
| 3   | Groombridge, J., Strubbe, D. and Shwartz, A. (2014) Avian aggregation: pesky parakeets. <i>International Innovation</i> . 146, pp92-93   | Jim Groombridge  | 3                 | Groombridge, UK, Chair, Strubbe Belgium, Vice-Chair, Shwartz, Israel, MC   | 1,4                         | 20/6/2014  | 17/7/2014   | <a href="http://digimag.internationalinnovation.com/launch.aspx?eid=e67260c3-ee02-47d8-842e-d9a3006b9e33&amp;pnum=94&amp;utm_campaign=170714+EF32+issue+146+-+referred+contacts+email+Jim+Groombridge&amp;utm_source=emailCampaign&amp;utm_medium=email&amp;utm_content=">http://digimag.internationalinnovation.com/launch.aspx?eid=e67260c3-ee02-47d8-842e-d9a3006b9e33&amp;pnum=94&amp;utm_campaign=170714+EF32+issue+146+-+referred+contacts+email+Jim+Groombridge&amp;utm_source=emailCampaign&amp;utm_medium=email&amp;utm_content=</a> | yes  | yes  | yes  | Climate action, environment, resource efficiency and raw materials   | no                   | yes  | NA        |
| 4   | Jackson, H., Strubbe, D., Tollington, S., Prys-Jones, R., Matthysen, E. & Groombridge, J.J. (submitted) Ancestral origins and invasion pathways of the globally invasive ring-necked parakeet ( <i>Psittacula krameri</i> ), correlate with climate and influences from the pet bird trade. Manuscript submitted to <i>Molecular Ecology</i> . | Hazel Jackson    | 6                 | Strubbe Belgium, Vice-Chair, Jackson, UK, MC substitute, Groombridge, UK, Chair and Matthysen, Belgium, MC Member, Tollington,                                     | 4                           | 01/11/14   | 31/07/15  |   | No   | Yes  | No   | If published, this publication is highly relevant to understanding how species move under changing climate and the influence | Yes                  | Yes  | 5.8       |

<sup>2</sup>MC Member/ MC Substitute/ MC Observer/ WG Member/ Training School Trainee/ STSM Recipient/ Other Action Participant

<sup>3</sup>Open Access is defined as free of charge access for anyone via Internet. Please answer "yes" if the open access to the publication is already established and also if the embargo period for open access is not yet over but you intend to establish open access afterwards.

<sup>4</sup> H2020 Societal Challenges are "Health, demographic change and wellbeing"; "Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy"; "Secure, clean and efficient energy"; "Smart, green and integrated transport"; "Climate action, environment, resource efficiency and raw materials"; "Europe in a changing world - inclusive, innovative and reflective societies"; "Secure societies - protecting freedom and security of Europe and its citizens"

|   |   |               |   |  |   |         |         |   |    |     |    |                         |     |     |      |
|---|---|---------------|---|--|---|---------|---------|---|----|-----|----|-------------------------|-----|-----|------|
|   |   |               |   | UK, MC Member  |   |         |         |   |    |     |    | of the pet bird trade.. |     |     |      |
| 5 | Jackson, H., Jones, C.G., Agapow, P., Tatayah, V. and Groombridge, J. (2015) Micro-evolutionary diversification among Indian Ocean parrots: temporal and spatial changes in phylogenetic diversity as a consequence of extinction and invasion. <i>Ibis</i> . In Press. | Hazel Jackson | 5 | Jackson, UK, MC substitute, Groombridge, UK, Chair, Tatayah, Mauritius, IPC. | 4 | 6/11/14 | 25/4/15 | <a href="http://onlinelibrary.wiley.com/doi/10.1111/ibi.12275/abstract">http://onlinelibrary.wiley.com/doi/10.1111/ibi.12275/abstract</a> | No | Yes | No |                         | Yes | Yes | 1.80 |

**Additional publications which acknowledge COST**

M. Menchetti & E. Mori (2014) Worldwide impact of alien parrots (Aves Psittaciformes) on native biodiversity and environment: a review, *Ethology Ecology & Evolution*, 26:2-3, 172-194, DOI: 10.1080/03949370.2014.905981

Edelaar, P., Roques, S., Hobson, E.A., Gonçalves da Silva, A., Avery, M.L., Russello, M.A., Senar, J.C., Wright, T.F., Carrete, M. & Tella, J.L. (2015) Shared genetic diversity across the global invasive range of the monk parakeet suggests a common restricted geographic origin and the possibility of convergent selection. *Molecular Ecology*, 24, 2164-2176.

Dailos Hernandez-Britoa,\_, Álvaro Lunab, Martina Carretec, José L. Tella (2015) Alien rose-ringed parakeets (*Psittacula krameri*) attack black rats (*Rattus rattus*) sometimes resulting in death. *Italian Journal of Mammalogy* <http://www.italian-journal-of-mammalogy.it/article/view/10992/pdf>

Herna´ndez-Brito D, Carrete M, Popa-Lisseanu AG, Iba´n´ ez C, Tella JL (2014) Crowding in the City: Losing and Winning Competitors of an Invasive Bird. *PLoS ONE* 9(6): e100593. doi:10.1371/journal.pone.0100593.

Mattia Menchettia, Riccardo Scalerab, Emiliano Mori (2014) First record of a possibly overlooked impact by alien parrots on a bat (*Nyctalus leisleri*). *Hystrix, the Italian Journal of Mammalogy* <http://www.italian-journal-of-mammalogy.it/article/view/9989/pdf>

**FP7/ H2020 Proposals and projects**

This table contains FP7/ H2020 proposals/ projects spinning off from Action activities and including in the proposing consortium at least three Action participants from at least three different countries participating in the Action.

| NO.              | Title  | Name and country of main proposer | Number of proposers | Action participants listed among the proposers (Name, country, role <sup>3</sup> in the Action) | Funding agency submitted to | Date submitted | Date results expected | Result | Call identifier | Relevance to H2020 Societal Challenges <sup>4</sup> ? | Was the added value of the Action Networking necessary for the publication |
|------------------|--|-----------------------------------|---------------------|---|-----------------------------|----------------|-----------------------|--------|-----------------|---|--|
| <b>Projects</b>  |  |                                   |                     |   |                             |                |                       |        |                 |   |  |
| 1                | List FP7/ H2020 projects resulting from the Action in this section of the table            |                                   |                     |   |                             |                |                       |        |                 |   |  |
| 2                |  |                                   |                     |   |                             |                |                       |        |                 |   |  |
| <b>Proposals</b> |  |                                   |                     |   |                             |                |                       |        |                 |   |  |
|                  | List FP7/ H2020 proposals submitted as a result of the Action in this section of the table |                                   |                     |   |                             |                |                       |        |                 |   |  |
|                  |  |                                   |                     |   |                             |                |                       |        |                 |   |  |
|                  |  |                                   |                     |   |                             |                |                       |        |                 |   |  |

### I.C. Networking

|   |
|---|
| <p><b>Added value of the Networking</b></p> <p>Please describe here the added value of the networking, highlighting in particular anything that would not have happened without the Action networking.</p> <p>ParrotNet has to date funded 13 STSMs. All of these have involved Early Career researchers visiting institutions in order to facilitate knowledge exchange and broadening skill sets that would otherwise not have occurred if it were not for the grants provided by ParrotNet. Further benefits derived from the networking of ParrotNet participants include the collaboration of multiple COST Actions. Network tools provided by COST have enabled scientists from TD1209, ES1304 and ES1305 to participate in cross-Action activities resulting in the submission of a European policy-related paper concerning invasive species, this would not have been possible if it were not for COST-funded networking. Dissemination events have also provided the opportunity for ParrotNet participants to network with a global scientific and political audience. Two ParrotNet participants attended and spoke at international conferences in 2014 (Turkey and Japan). This lead directly to the recruitment of two extra IPCs; South Africa and Argentina).</p>  |
| <p><b>Extent of the networking</b></p> <p>Describe the extent of the networking among the participants in the Action. Were all participants integrated into the networking equally? Were those targeted by COST policies on Inclusiveness Target Countries (ITCs), Early Career Investigators (ECIs)/ Young Researchers, and gender balance fully integrated into the Action networking?</p> <p>All participants have been given equal chance to participate in the networking activities of ParrotNet. Of the 18 countries to have signed the MoU four are ITCs (Bulgaria, Slovenia, Estonia and Poland). Management Committee members from Turkey have recently signed the MoU as a result of networking at an Action meeting organised by TD1209. All of these countries have been well represented at ParrotNet meetings and one meeting was hosted by an ITC in 2014 (Poland). The Chair has made a direct effort to increase the participation of these countries by requesting that all the available slots for Management Committee members and substitutes are filled for these countries. Part of our strategy for encouraging inclusiveness is promotion of ECIs to prominent roles in the Action; for example, 3 out of the 4 WG leaders are ECIs.). Furthermore, in addition to the 3 ITCs in ParrotNet, the Action also includes Turkey (an EU candidate country) and Portugal (a country that complies with the criteria for ‘Spreading Excellence and Widening Participation’).</p> <p>As previously stated, all of the STSMs completed to date have been carried out by ECIs/ young researchers. Both conference attendees were also ECIs. The Chair and MC continue to actively support and promote gender balance wherever possible.</p> |

### I.D. Impacts

The impacts that have resulted, or might result from the Action are described in the following table.

| Description of the impact  | Type of impact <sup>5</sup> | Timing of impact <sup>6</sup> |
|--|-----------------------------|-------------------------------|
| Increased awareness by general public of issues regarding invasive parrots | Societal                    | Foreseen 2-5 years            |
| Increased level of activity and visibility of research on invasive parrots | Scientific                  | Foreseen 2-5 years            |

### I.E. Dissemination and exploitation of Action results

|   |
|---|
| <p>Describe the Action’s dissemination and exploitation approach as well as all activities undertaken to ensure dissemination and exploitation of Action results and the effectiveness of these activities.</p> <p>ParrotNet has supported two participants to attend international conferences and to present on relevant aspects of work. ParrotNet has nominated two MC members (from France and UK, both ECIs) to monitor the Action’s Dissemination Plan and effectiveness of activities. The Dissemination Plan is reported on at</p> |
|---|

<sup>5</sup> Scientific/ technological, Economic, Societal

<sup>6</sup> Achieved/ Foreseen within 2 years/ Foreseen 2-5 years/ Foreseen 5-10 years/ Foreseen 10+ years

each MC meeting. For example, production of laymans summaries of each invasive parrot species for dissemination via the ParrotNet website are under development. The prototype ParrotNet 'App' which has been developed also provides key layman information (such as species descriptions) for the invasive parrots and the main content/objective of the App is as a dissemination tool. ParrotNet produced a 'who we are' accessible publication in Innovation International in 2014, and this document has been circulated widely via ParrotNet and via the journal's established readership amongst the European policy and science community.

| Item/ activity  | Target audience  | Result   | Hyperlink   |
|---|--|--|---|
| Conference presentation, Tokyo, Japan.  | Members of the International Ornithology Union                                   | Increasing awareness of the ParrotNet project to a multinational audience at an international conference   | <a href="http://ioc26.jp/ioc2014_symposia.pdf#page=27">http://ioc26.jp/ioc2014_symposia.pdf#page=27</a>   |
| Conference presentation, Antalya, Turkey.   | Members of the European Group on Biological Invasions                            | Alerting professionals involved in invasive species research of the existence of ParrotNet   | <a href="http://www.neobiota.eu/wp/wp-content/uploads/NEOB_IOTA-2014-Abstract-Book.pdf">http://www.neobiota.eu/wp/wp-content/uploads/NEOB_IOTA-2014-Abstract-Book.pdf</a> |
| Innovation International  | European researchers, EU policy/science community                                | Disseminating the aims of ParrotNet, and the rationale behind the network to a broad layman audience.  | <a href="http://www.kent.ac.uk/parrotnet/publications_list.html">http://www.kent.ac.uk/parrotnet/publications_list.html</a>   |
| Invited presentation at UK COST Information Day event, London (invitation by UK CNC), 6 <sup>th</sup> February 2015 | Attendees at the London COST event, hosted at the BIS Conference Centre, London. | Disseminating the aims of ParrotNet, the rationale behind the network and an example of the potential that a COST Action can offer to researchers. | <a href="http://www.cost.eu/about_cost/who/(type)/5/(wid)/30084/(costid)/43340">http://www.cost.eu/about_cost/who/(type)/5/(wid)/30084/(costid)/43340</a>                 |

## I.F. Implementation of COST policies

| Policy implementation through specific initiatives and management of Action funds and participation (data from 01/01/2014 to 30/4/15 see Annex 2)  |  |
|--|--|
| Action expenditure on ITCs is considered Excellent if >45%, Very Good if 40-45%, Fair if 30-35%, Poor if 20-30% and Fail if <20%.  |  |
| The Action spent <b>17.5</b> % of its budget on ITCs (data at point I.1 of Annex 2).   |  |
| Please comment here on the % of Action funds spent on ITCs with respect to the expectation that half of COST funds are spent on ITCs.  |  |
| <p>This low proportion of Action Funds spent on ITCs in part reflects that only ~20% of the signatory countries of ParrotNet are ITCs. Whilst ParrotNet has attempted to recruit more ITC countries, many of the conditional demands of such countries for acceptance of the MoU at the national level are not straightforward to meet. For example, many individuals from these countries interested in joining our Action are already participants of TD1209 and in some cases are prevented from becoming Management Committee members for two different COST Actions. Furthermore, other national requirements including that of Romania (for example, the need for eight different scientists to form a consortium) makes recruiting participation from these countries difficult. Note that this spend is calculated from meetings and reimbursements and therefore does not add up to the total in table below (i.e. the expenditure stated doesn't include FSAC, OERSA, dissemination, etc.)</p> |  |
| Year Two of the Action will see meetings held in Estonia and Bulgaria, both of which are ITC countries.  |  |
| Extent of implementation   | Description of the implementation (achievement/ effort) <sup>7/</sup> comment  |
| <b>Inclusiveness Target Countries (ITC)</b>  |  |
| <input type="checkbox"/> High<br><input checked="" type="checkbox"/> Medium<br><input type="checkbox"/> Low<br><input type="checkbox"/> None   | <p>With reference to the data shown in Annex 2 in the cell to the left classify the Action's implementation of this policy as high/ medium/ low/ none and in this cell describe the Action's implementation (achievement/ effort) of this policy.</p> <p>The effort to increase this participation is and continues to be considerable.</p>  |
| <b>Early Career Investigator (ECI)</b>   |  |
| <input checked="" type="checkbox"/> High<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Low<br><input type="checkbox"/> None   | <p>With reference to the data shown in Annex 2 in the cell to the left classify the Action's implementation of this policy as high/ medium/ low/ none and in this cell describe the Action's implementation (achievement/ effort) of this policy</p> <p>Of 105 current members from COST countries, at least 40 are ECIs (PhD&lt;8years). Furthermore, all STSMs completed to this point (13) have been carried out by ECIs.</p> |
| <b>Gender balance</b>  |  |
| <input checked="" type="checkbox"/> High<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Low<br><input type="checkbox"/> None   | <p>With reference to the data shown in Annex 2 in the cell to the left classify the Action's implementation of this policy as high/ medium/ low/ none and in this cell describe the Action's implementation (achievement/ effort) of this policy</p> <p>The Action participation consists 30% female members. This proportion is considered high given the bias that already exists within this field of science.</p>            |
| <b>Contribution to the Innovation Union goals (industrial, SME cooperation)<sup>8</sup></b>  |  |
| <input type="checkbox"/> High<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Low<br><input type="checkbox"/> None<br><input checked="" type="checkbox"/> N/A   | <p>Select the extent to which and describe how the Action has contributed to the Innovation Union goals, in particular with regard to SMEs. The implementation could include meetings/ sessions dedicated to industry, STSMs to or from industry etc. If not applicable to the subject of the Action choose N/A</p>  |
| <b>International Cooperation</b>   |  |

<sup>7</sup> Achievement is the extent to which the policy is actually implemented in the Action, effort is the effort expended trying to implement the policy (regardless of the results)

<sup>8</sup> "Contribution to the Innovation Union goals" includes all participation of/ engagement with organisations from industry (services as well as products) that is aimed at enhancing their ability to use the outputs of the Action. Sponsorship of meetings by industrial organisations with the objective of selling products/ services to Action participants is not included.

|  |  |
|--|--|
| <input checked="" type="checkbox"/> High<br><input type="checkbox"/> Medium<br><input type="checkbox"/> Low<br><input type="checkbox"/> None | <p>Select the extent to which, and describe how, the Action has contributed to connect research communities and/ or key stakeholders beyond Europe on the basis of ascertained mutual interest. You can refer to the new knowledge generation by/via the use of networking tools by NNC and/or IPC participants</p> <p>ParrotNet has recruited three IPCs, Argentina, South Africa and Mauritius (the Mauritius Wildlife Foundation as an approved Institution). There is currently one STSM organised for an ECI to visit South Africa from Spain and a visiting speaker from Mauritius will be invited to the Management Committee meeting in Rome scheduled for October 2015.</p> |
|--|--|

### I.G Action success(es)

COST regularly communicates the successes of Actions. At this point in time what aspect(s) (outcomes and/ or impacts, rather than activities) of this Action is/ are the most suitable for communication?

|  |  |
|--|--|
| Description of the success story                   | Dimension of the success<br><input type="checkbox"/> Breakthrough: scientific, technological or socioeconomic<br><input type="checkbox"/> Policy implementation (specify which policy)<br><input type="checkbox"/> Capacity building |
| Launch of the ParrotNet European Monitoring Centre | Capacity-building  |

## II. Management Report

### II.A. Overview of expenditure

Insert below in the yellow cells the summary of figures from the Yearly Financial Reports (YFRs) of completed Grant Periods and an IFR of any incomplete Grant Period – the Totals (non-yellow cells) will automatically sum.

|                              | Grant Period 1          | Grant Period 2          | Grant Period 3                     | Grant Period 4                     | TOTAL          |
|------------------------------|-------------------------|-------------------------|------------------------------------|------------------------------------|----------------|
| GP start and end dates       | 01/01/2014-30/11/2014   | 01/12/2014-31/12/2015   | (dd/mm/yyyy-dd/mm/yyyy)            | (dd/mm/yyyy-dd/mm/yyyy)            |                |
| Grant Holder institution     | University of Kent (UK) | University of Kent (UK) | GH institution name (country code) | GH institution name (country code) |                |
| Meetings                     | EUR 71,352.23           | EUR 29,484.67           | EUR -                              | EUR -                              | EUR 100,836.90 |
| Training Schools             | EUR -                   | EUR -                   | EUR -                              | EUR -                              | EUR -          |
| STSMs                        | EUR 13,650.00           | EUR 8,510.00            | EUR -                              | EUR -                              | EUR 22,160.00  |
| Dissemination                | EUR 5,688.39            | EUR -                   | EUR -                              | EUR -                              | EUR 5,688.39   |
| OERSA <sup>1</sup>           | EUR 390.37              | EUR 264.82              | EUR -                              | EUR -                              | EUR 655.19     |
| Total Scientific Expenditure | EUR 91,080.99           | EUR 38,259.49           | EUR -                              | EUR -                              | EUR 129,340.48 |
|                              |                         |                         |                                    |                                    |                |
| FSAC <sup>2</sup>            | EUR 12,513.47           | EUR 5,699.20            | EUR -                              | EUR -                              | EUR 18,212.67  |
|                              |                         |                         |                                    |                                    |                |
| TOTAL                        | EUR 103,594.46          | EUR 43,958.69           | EUR -                              | EUR -                              | EUR 147,553.15 |

<sup>1</sup> OERSA = Other Expenses Related to Scientific Expenditure (e.g. bank charges)

<sup>2</sup> FSAC = Amount received by Grant Holder for Financial Scientific and Administrative Coordination

## II.B. Budget and Participation management

| <b>II.B.1 Budget distribution and participation per Participating COST Country</b>  |
|---|
| With reference to the data in Annex 2:  |
| 1. describe the extent to which Action funds were distributed evenly across the participating countries and explain/ justify any imbalances/ discrepancies<br>The proportion of action spend was distributed evenly across participating countries relative to participation levels and membership of the countries.  |
| 2. Describe the way in which the Networking Tools were used by the Action<br>A total of three 3-day MC+WG1-4 meetings, four workshops and 13 STSMs have been used to date (end of April 2015). The combination of MC and WG meetings ensures efficient use of COST funds and effective use of participant's time and energy; these 3-day meetings also provide key times in the year when all participants can come together. The 13 STSMs have been spread across WGs 1-4. |
| <b>II.B.2 Budget spent in relation to individuals/ institutions outside participating COST countries</b>  |
| <i>STSMs from or to institutions from countries other than Participating COST countries</i>   |
| The table below describes the added value STSMs to approved institutions in IPC or NNC or Specific Organisations and any STSMs from an approved institution in an NNC to a participating COST country.  |
| Not applicable.   |
| <i>Invited Speakers</i>   |
| The table below highlights the added value of Invited Speakers from COST countries that have not accepted the MoU and/ or non-participating NNC, IPC or Specific Organisations whose participation at a meeting or Training School was reimbursed by the Action.  |

| Participant name   | Institution | Country | Event date    | Topic and added value to the Action        |  |
|--|-------------|---------|---------------|--|--|
| Not applicable.  |             |         |               |  |  |
| <i>Dissemination meetings</i>  |             |         |               |  |  |
| The table below highlights the added value of Dissemination Meetings financed from Action funds. |             |         |               |  |  |
| Participant name   | Role        | Country | Date          | Location                                   | Topic and added value to the Action  |
| Simon Tollington   | Speaker     | Japan   | August 2014   | Rikkyo University, Tokyo.                  | Presentation regarding evolutionary ecology of native vs non-native parakeets in Mauritius. This presentation also described the work of the ParrotNet COST Action to an international audience. |
| Anne Turbe   | Speaker     | Turkey  | November 2014 | Çanakkale Onsekiz Mart University, Antalya | This conference took place in a COST ITC and the presentation, co-authored by 8 participants of this Action and TD1209 concerned the new European Policy regulation on invasive species.         |

## II.C. Participants

| Management Committee |              |         |  |                                     |  |
|----------------------|--------------|---------|--|-------------------------------------|--|
| Name                 |              | Country |  | Email address                       |  |
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## Annex 1

### Definitions:

|   |   |
|---|---|
| <b>COST Action Challenge (main aim)</b>             | “The research question addressed by the COST Action targeting scientific, technological, and / or socioeconomic problems”   |
| <b>COST Action Innovation</b>                       | “The creation and / or development of new or improved concepts, products, processes, services, and / or technologies that are made available to markets, governments and society”   |
| <b>COST Action objectives</b>                       | “COST Action objectives are the results that an Action needs to achieve in order to respond to meet its challenge. These are SMART (Specific, Measurable, Achievable, Relevant, Timely) and twofold: research coordination objectives and capacity building objectives.”  |
| <b>COST Action research coordination objectives</b> | “Achieving these objectives turns COST Actions from initially scattered teams into one transnational team and leverages the existing funded research. These objectives entail the distribution of tasks, sharing of knowledge and know-how, and the creation of synergies among Action participants to achieve specific outputs.”   |
| <b>COST Action capacity building objectives</b>     | “Achieving these objectives entail building critical mass to drive scientific progress, thereby strengthening the European Research Area. They can be achieved by the delivery of specific outputs and / or through network features or types and levels of participation.”   |
| <b>COST Action networking activities</b>            | “any activities organised by the COST Action (whether or not directly funded by COST) in order to achieve research coordination and capacity building objectives.”  |
| <b>COST Action networking tools</b>                 | “instruments through which eligible activities can be funded”   |
| <b>COST Action outputs</b>                          | “direct results from the COST Action activities. These can be codified knowledge, tacit knowledge, technology, and societal applications.”  |
| <b>COST Action impact</b>                           | “the short- to long-term scientific, technological, and / or socioeconomic changes produced by a COST Action, directly or indirectly, intended or unintended.”  |
| <b>COST Action deliverable</b>                      | “a distinct, expected and tangible output of the Action, meaningful in terms of the Action’s overall objectives such as a report, a document, a technical diagram, a software etc. Action deliverables are used to measure its progress and success.”   |
| <b>COST Action milestones</b>                       | “Control points in the Action that help to chart progress. They are also needed at intermediary points so that, if problems have arisen, corrective measures can be taken. A milestone may be a critical decision point in the Action where, for example, the MC must decide which of several technologies to adopt for further development (e.g. core group and MC meetings, mid-term reviews)”  |
| <b>Inclusiveness Target Country (ITC):</b>          | Current COST Member Countries targeted by the COST inclusiveness Policy (“Inclusiveness Target Countries” (ITC)): EU 13 (Bulgaria, Cyprus, Czech Republic, Estonia, Croatia, Hungary, Lithuania, Latvia, Malta, Poland, Romania, Slovenia, Slovakia), EU candidate countries (the former Yugoslav Republic of Macedonia, Republic of Serbia, Turkey) and potential EU candidate countries (Bosnia and Herzegovina). In addition, to comply with the EC criteria for ‘Spreading Excellence and Widening Participation’, Portugal and Luxemburg are included. |

## Annex 2

The following overview of Action expenditure and participation forms Annex 2 to this Interim Monitoring Progress Report.

Financial Period for Year One – Start 01/01/2014 End 30/11/14

Total Scientific Expenditure €91080.99

Total spend on ITCs:

€5022.65 Meeting held in Poland

€9288.41 Reimbursed to participants from ITC countries for meeting attendance

€1766.72 Reimbursed to a participant for attending a conference in an ITC

**€16077.78 Total spend on ITCs**

=17.65% of Total Scientific Expenditure.

Early-Career Investigators

Of 105 current members from COST countries, at least 40 are ECIs (PhD<8years). Furthermore, all 13 STSMs completed to this point have been carried out by ECIs.

Gender Balance:

ParrotNet currently has 105 members from 18 COST countries. The gender ratio is 31:77, females:males. Therefore 30% of our Action members are female.

Total spend to date (meetings and STSMs until end of April 2015) by country.

| Country      | Total spend     | Proportion of total spend |
|--------------|-----------------|---------------------------|
| AT           | 519.4           | 0.43                      |
| BE           | 8662.84         | 7.12                      |
| BG           | 4081.68         | 3.35                      |
| CH           | 4795.99         | 3.94                      |
| DE           | 7707.53         | 6.33                      |
| DK           | 1420            | 1.17                      |
| EE           | 3093.82         | 2.54                      |
| ES           | 17519.33        | 14.40                     |
| FR           | 10209.75        | 8.39                      |
| IL           | 7672.87         | 6.31                      |
| IT           | 6803.51         | 5.59                      |
| NL           | 9805.52         | 8.06                      |
| PL           | 1643.6          | 1.35                      |
| PT           | 4130.24         | 3.39                      |
| RO           | 1922            | 1.58                      |
| SI           | 2905.41         | 2.39                      |
| TR           | 751             | 0.62                      |
| UK           | 28032.21        | 23.04                     |
| <b>Total</b> | <b>121676.7</b> |                           |