"Linking social network dynamics and demographic change in wild populations" project DMP

Plan de gestion de données créé à l'aide de DMP OPIDoR, basé sur le modèle "Science Europe : modèle structuré" fourni par Science Europe.

Renseignements sur le plan

Titre du plan	"Linking social network dynamics and demographic change in wild populations" project DMP
Livrable	D1
Version	Version initiale
Objet/périmètre du plan	Data management plan for H2020-MSCA-IF-2020 project NETDEM
Domaines de recherche (selon classification de l'OCDE)	Biological sciences (Natural sciences), Earth and related environmental sciences
Langue	eng
Date de création	2022-05-30
Date de dernière modification	2022-06-15
Identifiant	NETDEM_DMP
Type d'identifiant	Handle
Licence	Creative Commons Attribution Non Commercial No Derivatives 4.0 International

Renseignements sur le projet

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Titre du projet	Linking social network dynamics and demographic change in wild populations
Acronyme	NETDEM
Résumé	Quantifying the interplay of demography and social structure is a key challenge in diverse research fields from ecology to sociology. Social relationships, and the way they are interconnected to form the social network of a population, are closely linked to population dynamics. Changes in population size can change these networks, with implications for important ecological or evolutionary processes, such as cooperation, conflict and infectious disease spread. For example, links between social structure and demography can influence whether a population acts as a reservoir host of diseases with societal impacts, or shape how social animals respond to sudden human-induced environmental change. However, due to the complexity of quantifying the demography and social network structure of wild populations, we still understand little about how interplay between the two arises or when it is important. The objectives of the proposal are to develop a modelling framework that allows the integration of demography and social network structure, and apply it to gain insights into social and disease dynamics in European badgers. Through cross-disciplinary collaboration, I will integrate cutting-edge statistical approaches in the modelling of social networks and population dynamics, and produce software to make these new tools widely available to other researchers. The host lab, led by Dr Gimenez has world-leading expertise in mathematical ecology, animal demography and conservation. The candidate, Dr Silk, is an expert in applying social network analysis to study behavioural dynamics and infectious disease transmission. This combined skillset will enable the development of innovative statistical tools that can be applied across research disciplines (e.g. ecology, sociology, public health), as well as address timely questions at the interface of population biology and behavioural ecology that have wide-reaching implications for wildlife conservation and management.
Date de début	2022-01-03
Date de fin	2024-01-02

Produits de recherche :

1. Data generated from simulation analyses using custom-written software code in R
2. Long-term ecological data from a study run by the Animal and Plant Health Agency (APHA) on European badgers at Woodchester Park, Gloucestershire. (Jeu de données)

Contributeurs

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Nom	Affiliation	Rôles
Silk Matthew		• Coordinateur du projet • Personne contact pour les données (Simulation data, Badger data) • Responsable de la conservation à long terme des données (Simulation data, Badger data) • Responsable de la documentation des données (Simulation data) • Responsable de la production ou de la collecte des données (Simulation data) • Responsable de la qualité des données (Simulation data, Badger data) • Responsable des questions éthiques (Badger data) • Responsable du dépôt et de la diffusion des données (Simulation data) • Responsable du plan de gestion de données • Responsable du stockage des données (Simulation data, Badger data) • Responsable du traitement et de l'analyse des données (Simulation data)
Gimenez Olivier		

Droits d'auteur :

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"Linking social network dynamics and demographic change in wild populations" project DMP

1. Description des données et collecte ou réutilisation de données existantes

Data generated from simulation analyses using custom-written software code in R

Nom	Data generated from simulation analyses using custom-written software code in R
Description	The NETDEM project will generate data as part of simulation analyses using custom-written software code in the R programming environment; Simulation data (and code) generated by the project is anticipated to be relatively small scale (less than 1TB overall and less for any individual project or use). Simulation data will be useful predominantly for replication of analyses in published papers and R package testing. The existing dataset used is already publicly available by request from the APHA, meaning there will be limited direct use of the data provided specifically for the NETDEM project beyond replication.
Mots clés (texte libre)	
Langue	eng
Type d'identifiant	identifiant local
Contient des données personnelles ?	Non
Contient des données sensibles ?	Non
Prend en compte des aspects éthiques ?	Oui

Justification	No existing data will be used for R package development and simulation work.

Titre de la méthode	Simulations for model development
Description	Data will be generated as part of simulation analyses using custom-written software code in the R programming environment. Simulations will be used to test R packages developed during the fellowship as well as in the development of novel statistical models. Simulation data generated by the project is anticipated to be relatively small scale (less than 1TB overall and less for any individual project or use). Simulation data will be useful predominantly for replication of analyses in published papers and R package testing.
Nature des données	Simulation

Long-term ecological data from a study run by the Animal and Plant Health Agency (APHA) on European badgers at Woodchester Park, Gloucestershire.

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Nom	Long-term ecological data from a study run by the Animal and Plant Health Agency (APHA) on European badgers at Woodchester Park, Gloucestershire.
Description	An existing long-term ecological datasets on European badgers *Meles meles* naturally infected with bovine tuberculosis from Woodchester Park, Gloucestershire, UK will be used in the second part of the project. Newly developed statistical models will be applied to this dataset to provide novel insights into the relationships between social structure, population dynamics and infectious disease spread. The existing database is a relatively small Microsoft Access (<100Mb) database consisting of multiple inter-related tables incorporating capture data, individual life-history data and diagnostic test data. The existing dataset used is already publicly available by request from the APHA, meaning there will be limited direct use of the data provided specifically for the NETDEM project beyond replication.
Type	Jeu de données
Workpackage	WP2; WP3
Mots clés (texte libre)	European badger; bovine tuberculosis; diagnostic test resutst; life-history; capture-recapture
Langue	eng
Contient des données personnelles ?	Non
Contient des données sensibles ?	Non
Prend en compte des aspects éthiques ?	Oui

Justification	An existing long-term ecological datasets on European badgers *Meles meles* naturally infected with bovine tuberculosis from Woodchester Park, Gloucestershire, UK will be used in the second part of the project. Newly developed statistical models will be applied to this dataset to provide novel insights into the relationships between social structure, population dynamics and infectious disease spread. The existing database is a relatively small Microsoft Access (<100Mb) database consisting of multiple inter-related tables incorporating capture data, individual life-history data and diagnostic test data. The existing dataset used is already publicly available by request from the APHA, meaning there will be limited direct use of the data provided specifically for the NETDEM project beyond replication.
Données réutilisées	• Badger Data :

2. Documentation et qualité des données

Data generated from simulation analyses using custom-written software code in R

Description	Code and data associated with any publications/reports arising from the research will be deposited on Zenodo (https://zenodo.org/) and so have a Digital Object Identifier (DOI) assigned. Descriptive and structural metadata will be created to provide information about all publication-associated datasets that result from NETDEM. Metadata will provide information on the size of the dataset and provide descriptions of all variables to assist with reproduction of existing analyses. Standard R naming conventions will also be used throughout for publicly shared data and code. DOI association between the publication, archived datasets and GitHub repositories will help ensure the accessibility of the data. Further, search keywords will be available for all data and code archived on Zenodo. Full development histories will be available on GitHub with version numbers provided for archived R package developments as well as for datasets used in publications.
Code langue des métadonnées	eng

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Description	Shared data will be made fully interoperable through being provided with full descriptive metadata and fully documented R code for conducting subsequent analyses (for reproducibility) as well as for data generation (simulation results only). Stored data will use standard text file format (e.g. .csv) and/or standard R naming conventions and object structures. Inter-disciplinary interoperability will be ensured by taking advantage of the cross-disciplinary project team to ensure all R code and data is accessible to different research disciplines. It is unlikely that uncommon or project-specific ontologies or vocabularies will be developed. Further, all R code will be fully documented or made available as R packages with manuals/vignettes. All deposited datasets will have fully described metadata.

Long-term ecological data from a study run by the Animal and Plant Health Agency (APHA) on European badgers at Woodchester Park, Gloucestershire.

Description	Code and data directly associated with any publications/reports arising from the research will be deposited on Zenodo (https://zenodo.org/) and so have a Digital Object Identifier (DOI) assigned. Descriptive and structural metadata will be created to provide information about all publication-associated datasets. Metadata will provide information on the size of the dataset and provide descriptions of all variables to assist with reproduction of existing analyses. Standard R naming conventions will also be used throughout for publicly shared data and code. DOI association between the publication, archived datasets and GitHub repositories will help ensure the accessibility of the data. Further, search keywords will be available for all data and code archived on Zenodo.
Code langue des métadonnées	eng
Description	Shared data will be made fully interoperable through being provided with full descriptive metadata and fully documented R code for conducting subsequent analyses (for reproducibility) as well as for data generation (simulation results only). Stored data will use standard text file format (e.g. .csv) and/or standard R naming conventions and object structures. It is unlikely that uncommon or project-specific ontologies or vocabularies will be developed. All deposited datasets will have fully described metadata.

3. Exigences légales et éthiques, code de conduite

Data generated from simulation analyses using custom-written software code in R

Description	No personal data is associated with the project.
Description	There are no issues with data sensitivity, personal data, confidentiality etc. associated with simulation data generated by the project
Description	The only new data generated by the NETDEM project will be generated using simulations. Appropriate steps will be taken to minimise computation times and replications to reduced the potential climate impact of computationally-intensive work.

Long-term ecological data from a study run by the Animal and Plant Health Agency (APHA) on European badgers at Woodchester Park, Gloucestershire.

Description	No personal data is associated with the project.
Description	The full long-term ecological dataset used by the NETDEM project cannot be shared directly with project outputs (apart from data directly relevant to reproducing publications) and is associated with socially/politically sensitive human-wildlife conflict. However, the full dataset is publicly available by request from the Animal and Plant Health Agency (UK).
Description	No new data will be collected for the long-term study specifically for the NETDEM project

4. Traitement et analyse des données

Data generated from simulation analyses using custom-written software code in R

Description	The NETDEM project will use R for data processing and analysis. Some shared datasets will require R and required libraries to access. R is freely available open-source software. Fully documented software code will be provided along with data for all publication-associated archived datasets. For simulation datasets this will include the code used to generate the dataset.

Long-term ecological data from a study run by the Animal and Plant Health Agency (APHA) on European badgers at Woodchester Park, Gloucestershire.

Description	The NETDEM project will use R for data processing and analysis. Some shared datasets will require R and required libraries to access. R is freely available open-source software. Fully documented software code will be provided along with data for all publication-associated archived datasets. For simulation datasets this will include the code used to generate the dataset.

5. Stockage et sauvegarde des données pendant le processus de recherche

Data generated from simulation analyses using custom-written software code in R

Besoins de stockage	During the project secure cloud storage will be used for all data generated and local back-ups (on desktop computers and external hard-drives) will be made regularly. All software code written will be regularly pushed from local computers to the project GitHub repository.
Volume estimé des données	1
Unité	To
Mesures prises pour la sécurité des données	During the project secure cloud storage will be used for all data generated and local back-ups (on desktop computers and external hard-drives) will be made regularly. All software code written will be regularly pushed from local computers to the project GitHub repository.

Long-term ecological data from a study run by the Animal and Plant Health Agency (APHA) on European badgers at Woodchester Park, Gloucestershire.

Besoins de stockage	The long-term badger-bovine tuberculosis dataset is securely stored and backed up by collaborators at the Animal and Plant Health Agency. During the project secure cloud storage will be used for all local copies and derived datasets
Volume estimé des données	1
Unité	Go
Mesures prises pour la sécurité des données	During the project secure cloud storage will be used for all data generated and local back-ups (on desktop computers and external hard-drives) will be made regularly. All software code written will be regularly pushed from local computers to the project GitHub repository.

6. Partage des données et conservation à long terme

Data generated from simulation analyses using custom-written software code in R

Modalités de partage	All datasets directly required to replicate results from the project will be made openly available on GitHub and Zenodo (archived with DOI for datasets and code associated with publications). Fully documented software code will be provided along with data for all publication-associated archived datasets. For simulation datasets this will include the code used to generate the dataset. Datasets will be deposited at Zenodo with no prior arrangements required as Zenodo is a general-purpose open repository. Shared data will be made fully interoperable through being provided with full descriptive metadata and fully documented R code for conducting subsequent analyses (for reproducibility) as well as for data generation (simulation results only). Stored data will use standard text file format (e.g. .csv) and/or standard R naming conventions and object structures. Inter-disciplinary interoperability will be ensured by taking advantage of the cross-disciplinary project team to ensure all R code and data is accessible to different research disciplines. It is unlikely that uncommon or project-specific ontologies or vocabularies will be developed. Further, all R code will be fully documented or made available as R packages with manuals/vignettes. All deposited datasets will have fully described metadata. No embargos on archived datasets will be sought from the point of publication. For all simulations data can be re-generated by users and all steps from raw data to finalised datasets will be available in fully documented R code.
Entrepôt/Catalogue de données	• Zenodo : https://cat.opidor.fr/index.php/Zenodo

Justification	Data associated with any publications will be archived at Zenodo (with DOI) and also stored on GitHub after the project ends for long-term preservation. Datasets will additionally be stored locally for at least 5 years after the end of the project.
Volume estimé des données	1
Unité	To
Date de début	2024-01-02
Date de fin	2029-01-01
Archive	:

Long-term ecological data from a study run by the Animal and Plant Health Agency (APHA) on European badgers at Woodchester Park, Gloucestershire.

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Modalités de partage	The full long-term ecological dataset used in NETDEM is from a long-term study run by the Animal and Plant Health Agency (UK) and is publicly available on request from them. All datasets directly required to replicate results from the project will be made openly available on GitHub and Zenodo (archived with DOI for datasets and code associated with publications). There will be no restrictions on use of data directly related to the NETDEM project and clear directions for data requests from the APHA for the full biological dataset will be provided. Shared data will be made fully interoperable through being provided with full descriptive metadata and fully documented R code for conducting subsequent analyses (for reproducibility). Stored data will use standard text file format (e.g. .csv) and/or standard R naming conventions and object structures. All deposited datasets will have fully described metadata. No embargos on archived datasets will be sought from the point of publication. For biological datasets the rules used to extract and filter data used in analyses from full database will be fully described in the metadata and the methods section of associated publications.
Justification	Data associated with any publications will be archived at Zenodo (with DOI) and also stored on GitHub after the project ends for long-term preservation. Datasets will additionally be stored locally for at least 5 years after the end of the project.
Volume estimé des données	0
Date de début	2024-01-02
Date de fin	2029-01-02
Archive	:

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