

BL4266 Conservation Research Methods

(BL4266 online module handbook version 18)

Credits: 15

Semester: 1

Module Organiser

Prof Will Cresswell

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01334 463010

Pre-requisite Modules:

Before taking this module you must pass BL3309

Anti-requisite Modules:

Post-requisite Modules:

Additional Module

Information:

Please [check MMS](#) regularly for additional module information



image: An individually marked redshank - when animals become individuals we can estimate survival rates and population estimates accurately

The conservation of animal and plant populations relies initially on information of population sizes and trends. This information can only be collected by fieldwork. This module teaches the basic field techniques that underpin the monitoring of populations. Each week the theory behind a different technique is introduced, then the technique is practiced in the field, and finally data collected by the technique are analysed and discussed in a workshop at the end of the week, so that a full understanding of a technique and its proper application is gained. The module ends with students carrying out a project applying and integrating the techniques they have learnt.

[View the current Biology Online Module Catalogue for BL4266](#)

[BL4266View BL4266 \(2018/9\) in the University of St Andrews Module Catalogue](#)

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BL4266: Timetable

Legend (not all modules have every event type):

lecture	tutorial	workshop	practical	other
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Semester 1: Week -1

DATE & TIME	VENUE	STAFF	EVENT
Friday 14-09-2018 09:00 to 09:30	Bute Building Lecture Theatre D	Prof Will Cresswell Prof Philip Hammond	Lecture L1: Introduction meeting 2018-9_BL4266_L1

Semester 1: Week 1

DATE & TIME	VENUE	STAFF	EVENT
Monday 17-09-2018 10:00 to 11:00	St Mary's College Seminar Room 2	Prof Will Cresswell	Lecture L2: Sampling design: random, stratified sampling, biases 2018-9_BL4266_L2
Tuesday 18-09-2018 12:00 to 13:30	Other St Andrews Castle Beach	Prof Will Cresswell	Practical P1: Field trip St Andrews rocky shore below the Castle 2018-9_BL4266_P1
Friday 21-09-2018 11:00 to 13:00	Bute Building Computer Lab	Prof Will Cresswell	Workshop W1: Analysis of field data - stratified sampling and bootstrapping 2018-9_BL4266_W1

Semester 1: Week 2

DATE & TIME	VENUE	STAFF	EVENT
Monday 24-09-2018 10:00 to 11:00	St Mary's College Seminar Room 2	Prof Will Cresswell	Lecture L3: Counts: variation between observers and techniques; assessing necessary sampling effort, confidence limits 2018-9_BL4266_L3
Tuesday 25-09-2018 09:00 to 11:00	Other Eden Estuary	Prof Will Cresswell	Practical P2: Field trip to Eden Estuary - learning field counting methods 2018-9_BL4266_P2
Friday 28-09-2018 11:00 to 13:00	Bute Building Computer Lab	Prof Will Cresswell	Workshop W2: Analysis of field data - modelling count data 2018-9_BL4266_W2

Semester 1: Week 3

DATE & TIME	VENUE	STAFF	EVENT
Monday 01-10-2018 10:00 to 11:00	St Mary's College Seminar Room 2	Prof Will Cresswell	Lecture L4: Behavioural sampling - focal and continuous techniques 2018-9_BL4266_L4
Tuesday 02-10-2018 13:30 to 15:30	Other Eden Estuary	Prof Will Cresswell	Practical P3: Field trip to Eden Estuary - learning field behavioural sampling methods 2018-9_BL4266_P3
Friday 05-10-2018 11:00 to 13:00	Bute Building Computer Lab	Prof Will Cresswell	Workshop W3: Analysis of field data - modelling behavioural data 2018-9_BL4266_W3

Semester 1: Week 4

DATE & TIME	VENUE	STAFF	EVENT
Monday 08-10-2018 10:00 to 11:00	St Mary's College Seminar Room 2	Prof Philip Hammond	Lecture L5: Line transect sampling: an introduction 2018-9_BL4266_L5
Tuesday 09-10-2018 09:00 to 11:00	Other East Sands (grass by beach)	Prof Philip Hammond	Practical P4: Line transect survey (field practical) 2018-9_BL4266_P4
Friday 12-10-2018 14:00 to 16:00	St Mary's College Lecture Room 3	Prof Philip Hammond	Workshop W4: Line transect data analysis (data analysis practical) 2018-9_BL4266_W4

Semester 1: Week 5

DATE & TIME	VENUE	STAFF	EVENT
Monday 15-10-2018 10:00 to 11:00	St Mary's College Seminar Room 2	Prof Philip Hammond	Lecture L6: Mark-recapture: an introduction <small>2018-9_BL4266_L6</small>
Friday 19-10-2018 11:00 to 13:00	St Mary's College Lecture Room 3	Prof Philip Hammond	Workshop W5: Mark-recapture estimation of population size I (data analysis practical) <small>2018-9_BL4266_W5</small>
Friday 19-10-2018 14:00 to 16:00	Bute Building C26	Prof Philip Hammond	Workshop W6: Mark-recapture estimation of population size II (data analysis practical) <small>2018-9_BL4266_W6</small>

Semester 1: Week 7

DATE & TIME	VENUE	STAFF	EVENT
Monday 29-10-2018 10:00 to 11:00	St Mary's College Seminar Room 2	Prof Philip Hammond	Lecture L7: Life tables and survival analysis <small>2018-9_BL4266_L7</small>
Thursday 01-11-2018 11:00 to 13:00	St Mary's College Seminar Room 1	Prof Philip Hammond	Workshop W7: Life table analysis (data analysis practical) <small>2018-9_BL4266_W7</small>
Friday 02-11-2018 11:00 to 13:00	Bute Building C26	Prof Philip Hammond	Workshop W8: Mark-recapture estimation of survival rates (data analysis practical) <small>2018-9_BL4266_W8</small>

Semester 1: Week 8

DATE & TIME	VENUE	STAFF	EVENT
Monday 05-11-2018 10:00 to 11:00	St Mary's College Seminar Room 2	Prof Will Cresswell Prof Philip Hammond	Workshop W9: Project proposal meeting <small>2018-9_BL4266_W9</small>
Thursday 08-11-2018 11:00 to 13:30	Bute Building Lecture Theatre A	Prof Will Cresswell	Other O1: Project proposal presentations <small>2018-9_BL4266_O1</small>

BL4266: Reading List

[BL4266 Click for BL4266 reading list](#)

BL4266: Assessment

Coursework = 100%

Assessment:	Oral presentation
Due by:	08/11/2018 23:59
Feedback due by:	29/11/2018 23:59
Type:	Single Upload
Weight:	25%

Assessment:	Project Proposal
Due by:	13/11/2018 23:59
Feedback due by:	04/12/2018 23:59
Type:	Turnitin
Weight:	25%

Assessment:	Research project
Due by:	30/11/2018 18:00
Feedback due by:	21/12/2018 18:00
Type:	Turnitin
Weight:	50%

(MMS assessment data cached: 24 April 2019
23:20:18.)

The following related information applies to all
Biology modules:

School of Biology Marking Criteria:	See School of Biology Undergraduate Handbook
Late submission of continuous assessment work:	All late submissions of coursework that do not require electronic submission should be made via the late submissions box in the Biomolecular Science Building (beside the Teaching Office)
Exam details:	See School of Biology Undergraduate Handbook
Exam timetable:	see http://www.st-andrews.ac.uk/students/academic/examinations/examtimetable/current/
Expected attendance:	See School of Biology Undergraduate Handbook for detailed attendance requirements.
Good Academic Practice & Avoiding Academic Misconduct:	See School of Biology Undergraduate Handbook
University Student Handbook:	University Student Handbook
School and University regulations in the School and University Undergraduate Handbook relating to absence reporting, penalties and rules for late submission of work, extensions for coursework, return of coursework, S-coding, good academic practice and Academic Alerts.:	School of Biology Undergraduate Handbook University Student Handbook

Who to ask

(Information in this section applies to all Biology Modules)

Questions about different aspects of the module should be directed to different people:

Questions about

General teaching matters
Rescheduled or cancelled events
Lecture or practical content
Completing assessed practical assignments
Completing assessments

Marking on continuous assessment

Marking on exams

Rearranging practical days

Absence and/or extensions

Difficulties with academic progress which impact more than one module:

Overall performance, progress or future directions:

Disability:

For advice and support on any issue e.g. academic, financial, international, personal or health matters, or if you are unsure of who to go to for help:

University assistance with urgent matters out of office hours:

Contact

Biology Teaching Office (bioteach@st-andrews.ac.uk)

Check your University email

The lecturer who presented the material

The lecturer who set the assignment

Module Organiser (Prof Will Cresswell wrlc@st-andrews.ac.uk)

The Demonstrator or Module Organiser (Prof Will Cresswell wrlc@st-andrews.ac.uk)

Module Organiser (Prof Will Cresswell wrlc@st-andrews.ac.uk)

[Grant Brown](#)

Module Organiser (Prof Will Cresswell wrlc@st-andrews.ac.uk) **and** the Biology Teaching Office (bioteach@st-andrews.ac.uk)

Year Coordinator

See [School of Biology Undergraduate student handbook](#) for list:

<http://biology.st-andrews.ac.uk/documents/UndergraduateHandbook.pdf>

Advisor of Studies

Disability Coordinator (Dr Jacqueline Nairn jn37@st-andrews.ac.uk)

Advice & Support Centre

Address: 79 North Street, St Andrews

Email: theasc@st-andrews.ac.uk

Web: <https://www.standrews.ac.uk/ask-a-question/>

Tel: 01334 462020

Tel: 01334 476161

Web: <https://www.st-andrews.ac.uk/students/advice/counselling/incrisis/>

Biology Teaching Office:

We are happy to hear from you about teaching matters. The School of Biology Teaching Office is open Monday to Friday 09.00 - 13.00 and 14.00 - 17.00. School of Biology staff will respond to your emails during these hours. Our team will provide a response to you within three working days.

Biology Teaching Office, The Biology Hive, New Technology Centre, University of St Andrews, North Haugh, St Andrews, Fife KY16 9SR

Email: bioteach@st-andrews.ac.uk

Tel: 01334 463602/3566

BL4266: Contributing Staff



[Prof Will Cresswell](#)
(Module Organiser)

Professor of Biology

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[Prof Will Cresswell](#)
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[Prof Philip Hammond](#)

Professor

psh2@st-andrews.ac.uk

BL4266: Learning Outcomes

Students completing module BL4266 successfully should be able to:

- Understand the process of designing and implementing an efficient conservation-based assessment of key population parameters.
- Use basic specific skills necessary for answering a range of conservation research questions to do with population size
- Evaluate whether methods are appropriate and efficient to address conservation research questions
- Analyse pilot data efficiently within the context of determining the limitations of the pilot data and the methods used to collect it so that they can both then be improved.
- Present and fully justify the methods chosen to most efficiently answer a conservation research question.

BL4266: Acquired Skills

Practical Skills

- Field sampling methods (Invertebrates)
- Field sampling methods (Vertebrates)
- Fieldwork safety awareness
- Species identification (Vertebrates)

Transferable Skills

- Short individual presentation on project idea (up to 15 min)
- "Full" practical write-up (Intro, Methods, Results, Discussion)
- Project report
- Research proposal
- Response to comments on proposal
- Critically evaluating sources/information
- Finding information on the web
- Finding literature
- Referencing
- Sourcing figures/tables
- Computer programming
- Generating questions
- Peer assessment
- Problem-solving questions
- ANOVA/Kruskal-Wallis test
- Calculations/equations
- Data analysis
- Data analysis (depending on project)
- Data presentation
- Deal with outliers
- Decimal places
- Descriptive statistics
- Distinguish different types of data
- Draw a line of best fit
- Generalised Linear Models
- Interpolation
- Linear regression
- Logarithms
- Non-linear fit
- Other mathematical models
- Pearson/Spearman rank correlation
- Produce graphs/figures
- Produce tables
- Scaling
- Shapiro-Wilk test for normality
- SI units
- Significant figures
- Survival analysis
- t-test/Wilcoxon test
- Two-way ANOVA

- Use Excel
- Use other data analysis software
- Use R or R Studio
- Lab or field notebook
- Critiquing experimental design
- Designing experiments
- Generate class dataset
- Managing a team
- Organising group work
- Working in pairs/small groups

Policies

(Information in this section applies to all Biology Modules)

- The procedures and regulations followed by the School of Biology are outlined in the [University Handbook](#) and in the [School of Biology Undergraduate Handbook](#) (<https://synergy.st-andrews.ac.uk/biocurrentstudent/files/2017/09/UndergraduateHandbook.pdf>).
- All coursework associated with the module must be completed and submitted by its due date.
- Specific School regulations relating to absence reporting, penalties and rules for late submission of work, extensions for coursework, return of coursework, S-coding, Good Academic Practice and Academic Alert are stated in the [School of Biology Undergraduate Handbook](#) and students are required to carefully read these regulations.
- Students are also referred to the University Handbook, available at: <http://www.st-andrews.ac.uk/studenthandbook/>