



Wildlife Disease & Contaminant Monitoring & Surveillance Network

WILDCOMS (Wildlife Disease & Contaminant Monitoring and Surveillance network)¹

Annual Report- 2011-2012

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Predatory Bird Monitoring Scheme
<http://pbms.ceh.ac.uk/>



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Executive Summary

This is the first annual report from WILDCOMS, a collaborative Knowledge Exchange network between nine national surveillance schemes that monitor disease and contaminants in wild vertebrates. The overall aim of the WILDCOMS network is to foster and facilitate knowledge exchange, harmonisation towards best practice and productive collaboration between: (i) partner organisations; (ii) surveillance schemes and end-users. WILDCOMS aims to facilitate development of a more cost-effective and integrated evidence base for assessing environmental disease and contaminant risk that will benefit end-users and underpin regulatory policy.

This report describes the activities of the WILDCOMS network in its first year (2011-12) including the establishment and implementation of communication tools (wiki, website, quarterly and annual reports for stakeholders) and activities, such as articles in specialised “in-house” publications of key stakeholders and presentations at national and international conferences. This report also describes how: WILDCOMS has started to facilitate increased collaboration and sharing of resources between surveillance schemes in the network; the development of inventories of sample collection activities across all partners’ schemes; the facilitation of new linkages at the European scale.

Overall, WILDCOMS is on track to meet its original goals set out in the grant proposal that was supported by NERC funding. WILDCOMS has established itself as a Knowledge Exchange network with a website that has up to 600 visits per day and a mailing list of some 300 stakeholders to date. The establishment of the network has facilitated greater collaboration and sharing of resources between WILDCOMS partners, and with the GB Wildlife Disease Surveillance Partnership, and increased awareness of the schemes amongst stakeholders. Over the next two years, WILDCOMS will continue its work to provide information to stakeholders on the activities and resources of its component partners’ schemes and holistic overviews on topics of current concern. It will also seek to further increase the efficient sharing of resources between partners, and further develop linkages with stakeholders through its stakeholder partners meetings.

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1. Introduction

Disease and contaminants can pose major risks to wildlife and human populations. Disease is a natural factor that affects wildlife, but some diseases warrant particular attention because they cause major mortalities that lead to population crashes, threaten wildlife species of high conservation concern, or pose a potential threat to Man. Environmental contaminants can also pose a risk to wildlife. This has been repeatedly demonstrated in the past, such as the catastrophic impact of organochlorine pesticides on predatory bird and mammal populations and the effects of diclofenac on vultures in south-east Asia. In the UK, various surveillance schemes monitor disease and contaminants in vertebrates.

WILDCOMS is a collaborative network formed between such schemes with the following aims:

- (i) to provide a focal point for disease and contaminant monitoring in wild vertebrates;
- (ii) to provide an integrated overview of the health status of UK wild vertebrates;
- (iii) to facilitate collaboration between WILDCOMS network partners;
- (iv) to facilitate identification of disease and contaminants of emerging concern.

2. Objectives

The overall aim of the WILDCOMS network is to foster and facilitate knowledge exchange, harmonisation towards best practice and productive collaboration between: (i) partner organisations; (ii) surveillance schemes and end-users. It will facilitate development of a more cost-effective and integrated evidence base for assessing environmental disease and contaminant risk that will benefit end-users and underpin regulatory policy.

The specific objectives are to: 1) develop and maintain a sustainable WILDCOMS network; 2) increase effectiveness of information integration, sharing and dissemination across partner schemes, and between schemes and national and international stakeholders; 3) increase harmonisation, collaboration and efficiency of resource utilisation between schemes.

The project has four Work Packages (WPs) and the milestones for each WP are outlined in a Gantt chart (Fig 1). The progress of the activities and outputs for the first year of the network are described below within the context of these four WPs.

Financial year	2011-2012				2012-2013				2013-2014			
Calendar year	2011		2012		2013		2014					
start date: July 1st 2011	Project Yr 1				Proect Year 2				Project Year 3			
within year quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
WP1. Developing the network												
WILDCOMS advisory group formed												
start-up meeting												
Web site maintenance and expansion												
Telecon review of progress												
WILDCOMS Partners Meetings												
Stakeholder's Forum												
ID & incorporate new members												
Develop sustainable funding models												
Bids for further funding												
WP2 Communication strategy												
Web domain established												
Wiki established												
Establish web site & initial pages												
Web site maintenance and expansion												
Formulate comms strategy												
Quarterly reports												
Annual reports												
Web site maintenace												
WP3. Best practice guidelines and operational harmonisation												
3.1: Sample collection and processing												
3.2 Autopsy methods and recording												
3.3 Specimen archiving and inventory												
Review of WP3 and implementation of												
WP4. European linkages												
Target conferences for WILDCOMS												
Attend EURAPMON steering committees												
Attend EURAPMON workshops												

Figure 1. Gantt chart for WILDCOMS

3. Developing and operating the WILDCOMS network – WP 1

3.1. WILDCOMS advisory group

An Advisory Group (AG) for WILDCOMS has been formed. It is comprised of a chairperson- Jennifer Best (SEPA), a representative from the ESKTN (Environmental Sustainability Knowledge Transfer Network) who will facilitate linkage with industry, and Prof Robbie McDonald (Exeter University) from academia. Some discussions with RSPB have also been held and they may join the AG representing NGOs.

3.2. Partners meetings

A start-up meeting to launch the network was held in September 2011 at CEH Lancaster and was attended by the chairperson of the Advisory Group and a representative from each WILDCOMS partner scheme. At the meeting, we agreed plans for implementing the network, activities, operational procedures and timetables. The partner schemes ([link](#)) involved in WILDCOMS are:

- Predatory Bird Monitoring Scheme (PBMS)- run by the Centre for Ecology & Hydrology (CEH)
- The Wildlife Incident Investigation Scheme (WIIS)- run by the Food and Environment Research Agency (Fera)
- Scottish Wildlife Incident Investigation Scheme – run by the Scottish Agricultural Science Agency (SASA)
- Diseases of Wildlife Scheme - run by the Animal Health and Veterinary Laboratories Agency (AHVLA)
- Clean Seas Environment Monitoring Programme- run by the Centre for Environment, Fisheries and Aquaculture (CEFAS)
- Cardiff University Otter Monitoring Project- (CUOP) run by Cardiff University
- Disease Risk Analysis and Health Surveillance Programme- run by Institute of Zoology (IoZ)
- UK Cetacean Strandings Investigation Programme- run by Institute of Zoology (IoZ)
- Scottish Environment Protection Agency (SEPA) Lipophilic Monitoring Network – run by the Scottish Environment Protection Agency (SEPA)

WILDCOMS Partners Meetings took place in Q2 (January) 2012 and Q4 (July 2012) of the project as planned. These were held at the SEPA offices in Edinburgh and in London, respectively. A partners teleconference was held in April 2012 to review progress against tasks set at the partners meetings.

3.3. Stakeholder's Forum

The overall aim of the stakeholders' forum is to facilitate knowledge exchange between WILDCOMS partners and a wide range of stakeholders and, as a consequence, refine WILDCOMS activities to ensure the network remains relevant to changing pressures and stakeholder priorities.

The WILDCOMS network has agreed that stakeholders meetings (one per year) should be held in London, Wales and Scotland, to maximise attendance of stakeholders from national and devolved regional bodies. These meetings are smaller than originally conceived in the grant proposal but feedback from the Advisory Group strongly emphasised that smaller, more focused, meetings would be more effective and relevant for regulators and policymakers. The first full stakeholders' meeting will occur in London in November 2012. This has been delayed [from Project Year 1, Q4] as a meeting in the summer of the London Olympics was unlikely to be well attended. The stakeholders to participate at this meeting have already been identified and invited to the meeting.

An additional *ad hoc* stakeholder meeting was also held in January 2012, prior to the January partners meeting. This meeting was arranged to exchange information between two WILDCOMS partners (PBMS, WIIS-Scotland) and their relevant stakeholders in SEPA and Scottish National Heritage (SNH). At this meeting, the WILDCOMS PI (Richard Shore) and coordinator (Gloria Pereira) also gave a presentation that described WILDCOMS.

3.4. Long term sustainability of the network

The sustainability document to address future funding and membership of the WILDCOMS network will start in the next 3 months. We will attempt to identify different models to run the network, from a zero budget, (partners find own funding for minimum number of activities to maintain the network) to full economic support.

4. *Development and delivery of a communication plan – WP2*

This WP has two key communication tools and a three part communication plan.

4.1. Key tools for the WILCOMs network communication

4.1.1. *Website (<http://www.wildcoms.org.uk/>)*

The website domain had already been secured when this project started and a simple webpage mounted. Subsequently, the website has been redesigned and expanded (Fig 2). We have created new logos to brand the WILDCOMS network and thereby enhance its identity and visibility; these logos are now incorporated into the webpages. The website provides an overview of the role of disease and contaminant surveillance in the UK, describes the WILDCOMS network and activities, has links to the partners' schemes, and is used to disseminate WILDCOMS publications and outputs, including the Quarterly Reports (QR) which are discussed in [Section 4.2.1](#).

The webpages are maintained and updated regularly with news and activities from the WILDCOMS partner schemes, as well as other relevant information. To increase public awareness concerning the network, the WILDCOMS also has a page on the social network Facebook.

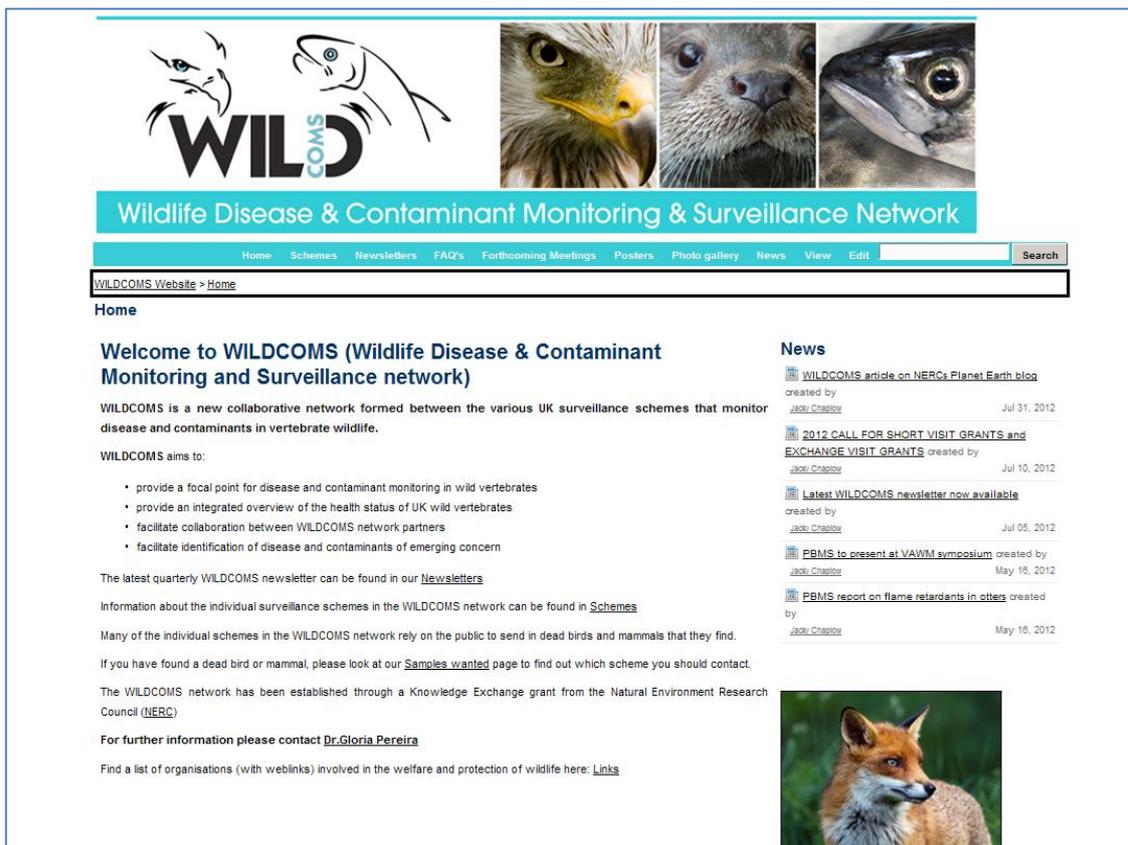


Figure 2. Screenshot of the WILDCOMS website home page

The new webpage was re-launched in mid January 2011, at the same time as the first [QR](#) was published. As can be seen in Fig. 3, the number of visitors to the site varies daily and the highest daily number to date is 600.

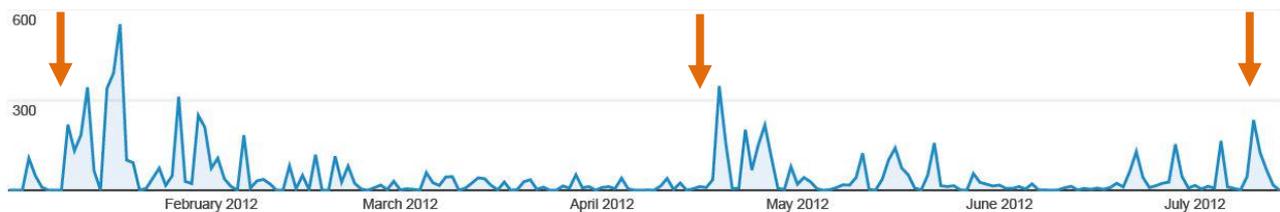


Figure 3. Daily number of visitors to the WILDCOMS website. Orange arrows indicate approximate date of QR publication.

The number of visitors to the website increases just after the publication of a QR (Fig. 3) and the attraction of the QR in drawing people into the webpages is also reflected in the monthly counts of website visits. The number of visitors to the WILDCOMS site on a month without publication of the QR varies between 412 and 1081 whereas in a month with the report publication the website can have 3000 visitors (Fig 4.). The total number of unique pageviews also shows an increase in the months when a QR is published (Fig 4). (Unique page views are the number of sessions during which the page is browsed one or multiple times).

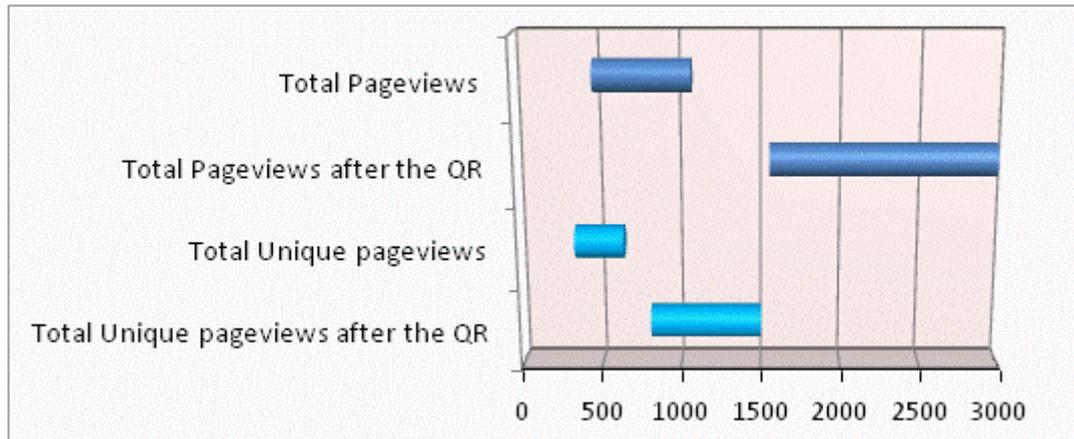


Figure 4. Range of monthly visitors to the WILDCOMS website (total and unique pageviews) in the months with and without publication of a QR.

4.1.2. Wiki

The wiki has been established with a structure agreed by all WILDCOMS partners. The wiki is hosted by CEH, and is a web-based area that allows partners collaboration on WPs and other projects.

4.2. Three part communication plan

4.2.1. Reports

In the proposal for WILDCOMS, two types of reports were planned: a quarterly report (QR) and an annual report. However, the reports structures were not defined in the project proposal and the formats for both were agreed at the WILDCOMS start-up meeting.

The quarterly report (QR) consists of: i) a “spotlight” that focuses on a specific area or topic and brings together information from multiple schemes to present a more holistic overview; ii) news from the partner schemes; iii) news of WILDCOMS activities and events. The QR is intended to usually be 1 to 2 pages long and so can be rapidly assimilated by its readership. It can be read on-line or a pdf version can be downloaded and/or printed. An example is given in Fig. 5.

We have published four QRs on the [website](#). So far, the “spotlights” have been on “PCBs”, “Emerging hazards and risks”, “wildlife and zoonosis”, and “rodenticides”.



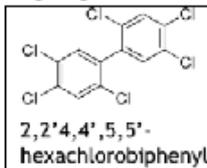
Wildlife Disease & Contaminant Monitoring & Surveillance Network

NEWSLETTER: Number 1

Winter SPOTLIGHT 2011

Polychlorinated biphenyls (PCBs)

PCBs, widely used by industry and in commercial products, have escaped from open sources and damaged/degraded closed sources



to cause global contamination of food chains. PCBs are toxic, persistent, bioconcentrate in top predators and have been associated with adverse effects, particularly on reproduction. PCB production was banned in the US and some European countries in the 1970s and the EU Council Directive 96/59/EC set a 2010 deadline for complete disposal or decontamination of equipment containing PCBs. Wildlife have been monitored to see how effective the ban has been in removing PCBs from the environment. We summarise information from multiple WILDCOMS partners to provide an holistic UK synthesis of how environmental contamination by PCBs has changed.

Freshwater habitats: Nine PCB congeners (105, 118, 128, 138, 153, 156, 170, 180 and 187) have been detected frequently in Eurasian otters (*Lutra lutra*) from England and Wales. All, except congeners 128 and 170 have shown clear progressive declines between 1992 (start of monitoring) and 2009. PCBs 128 and 170 also declined in concentration up until 2005 but then increased; the cause of this is unclear. Data from the Cardiff University Otter Project (CUOP).



Marine habitats: The summed concentration of a standard suite of 25 PCB congeners in UK-stranded marine mammals (mainly harbour porpoises, *Phocoena phocoena*) declined in the early 1990s but has remained constant since 1997. This contrasts sharply with organochlorine pesticides (DDTs, dieldrin, etc.) that have declined steeply in a range of marine species including harbour porpoises. Increased susceptibility to infectious disease and mortality is strongly associated with the most highly contaminated porpoises. Even higher PCB levels are found in UK-stranded bottlenose dolphins (*Tursiops truncatus*) and killer whales (*Orcinus orca*) and are potential drivers of population declines in these species. Data from the UK Cetacean Strandings Investigation Programme (CSIP) in collaboration with CEFAS.

Gannet (*Morus bassanus*) eggs from Bass Rock (North Sea) and Ailsa Craig (eastern Atlantic) have been monitored for 36 PCB congeners since 1990. PCBs 153, 138, 180, 118 and 170 predominate. Concentrations of all these congeners declined over time in eggs from Ailsa Craig, whereas some congeners (PCB 153, 180) remained stable over time or increased slightly (PCB 170) in eggs from Bass Rock. Data from the Predatory Bird Monitoring Scheme (PBMS).

Terrestrial habitats: PCBs have been monitored in three avian top predators, the sparrowhawk (*Accipiter nisus*) from lowland and upland habitats, and the merlin (*Falco columbarius*) and golden eagle (*Aquila chrysaetos*) from the rural uplands. Analysis of 36 PCB congeners in sparrowhawk livers has been carried out since 1990 and the predominant congeners are PCBs 153, 180, 187 and 138. There has been no significant change since 1990 in the summed congener concentration. In contrast, summed PCB congener concentrations have declined over time in merlin eggs and in the eggs of inland-nesting golden eagles. Egg PCB concentrations for coastal nesting golden eagles have not declined over time and are higher than those of birds that nest inland. Data from the PBMS.



Summary of patterns over time

PCBs 153, 138, 180, 118 and 170 are the dominant congeners in vertebrates across different UK habitats. Declines have been observed in most but not all congeners in vertebrate sentinels for marine and freshwater systems. The picture is more mixed for the terrestrial environment. Summed PCB congener concentrations have declined in species from upland, remote areas (perhaps reflecting decreased long range transport and deposition) but not in sparrowhawks that are from rural and more urbanised areas (which may also have localised inputs). Overall, current PCB levels in biota may represent those maintained by current diffuse inputs and historic contamination and future declines may only be slow.

Scheme News

Predatory Bird Monitoring Scheme (PBMS). The Royal Society for the Protection of Birds (RSPB) has recently become one of the funding stakeholders of the PBMS (<http://pbms.ceh.ac.uk/news.asp>).

Wildlife Incident Investigation Scheme. Following an investigation by WIIS in England a pest control company was fined a total of £3,350 for not taking all reasonable precautions during a rodent control treatment. <http://www.pesticides.gov.uk/approvals.asp?id=3064>

Scottish Wildlife Incident Investigation Scheme. SASA has contributed to the book "Carbofuran and Wildlife Poisoning: Global Perspectives and Forensic Approaches" published in November 2011 ISBN: 978-0-470-74523-6 (<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470745231.html>)

Cardiff University Otter Monitoring Project. DNA sequencing has confirmed the presence of *Pseudamphistomum truncatum* in the aquatic snail *Radix balthica*, a previously unreported intermediate host for this parasite.

WILDCOMS events

The WILDCOMS website <http://www.wildcoms.org.uk/> is currently under construction and some pages have yet to be populated. All future outputs from WILDCOMS will be published on the website.

Prof Richard Shore (CEH), the principle Investigator for the PBMS, was an invited speaker at the 4th SETAC Europe Special Science Symposium in Brussels (25th-26th October 2011) on *The Environmental Risk Assessment of Biocides: Regulatory Challenges and Scientific Solutions*. Richard gave a presentation on "Anticoagulant rodenticides, relating field measurements to protection goals" and highlighted the role of WILDCOMS in integrating the information gained from different surveillance and monitoring schemes. The presentation can be downloaded at http://sesss04.setac.eu/embed/sesss04/Shore_Richard.pdf

Dr Thomas Maes (CEFAS), the representative for the Clean Seas Environment Monitoring Programme in the WILDCOMS network, will present a poster outlining the aims and activities of WILDCOMS at the Society of Environmental Toxicology and Chemistry's 6th World Congress in Berlin (20-24 May 2012).

CONTACT US:

If you would like to see a particular topic in the "spotlight" section of the WILDCOMS quarterly bulletin, or would like to contact us about other WILDCOMS related matters, please e-mail the WILDCOMS coordinator, Dr Gloria Pereira (mdgds@ceh.ac.uk)

Figure 5. Example of a Quarterly report

When a new QR is published on the WILDCOMS website, an e-mail alert is sent to stakeholders that include a wide range of governmental and non-governmental organisations, academics and

other interested parties (Fig 6.). The alert list is currently comprised of about 300 individuals/organisations. Some 16% have requested to receive the e-mail alert while the remainder have been identified by the WILDCOMS partners as individuals that are interested in their activities. All recipients of the alert are given the choice to opt out from receiving future alerts but only one person has chosen this option to date.

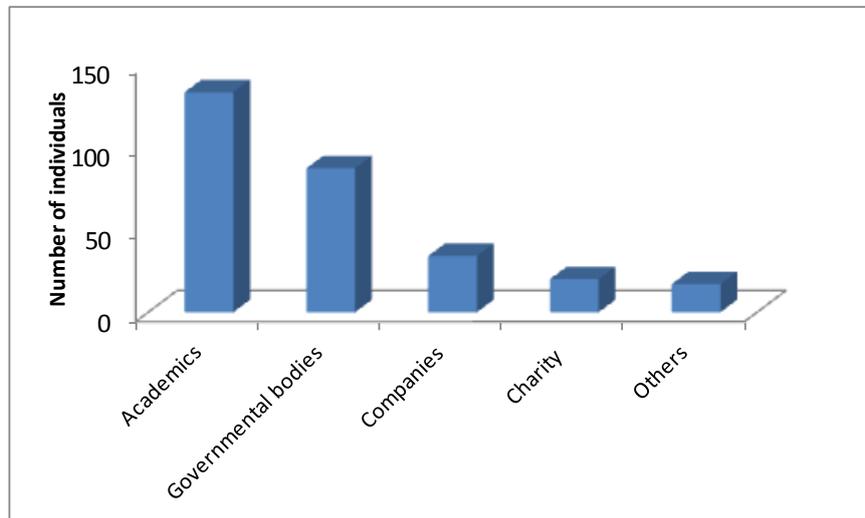


Figure 6. Distribution of organisations to which the newsletter alerts is sent.

Annual Reports synthesise WILDCOMS activities and outputs for each year. The current report is the first annual WILDCOMS report and it covers the year 2011-2012. This report is downloadable from the WILDCOMS website and is archived in the NERC Open Research Archive (NORA), which facilitates access using standard bibliographic searching methods.

4.2.2. Trade magazines and press releases

This part of the communication plan deals with WILDCOMS communications and outputs which are presented in trade magazines and press releases. The aim is to widen the range of people and sectors of activity that are aware of the WILDCOMS network and may want to interact with partner schemes. The overall target is publication of five articles for in-house or trade journals over three years. So far an article entitled ["Corpses needed for environmental assessment"](#) has been published on the NERC's [Planet Earth Online](#) blog and an online article, entitled "[Wild things. New partnership creates a 'one-stop-shop' for monitoring disease among wildlife](#)" was published on [Defra Landscape](#) in October 2012. An article on WILDCOMS has also been accepted by the British Ecological Society Bulletin (BES) and should be published in late November 2012.

Various other outlets have been identified as possible outlets for publications on WILDCOMS. These include British Wildlife magazine, SEPA's bimonthly chemistry newsletter and their weekly bulletin. Other organisations that may be interested in publishing information on WILDCOMS will also be contacted and include: Chemical Business Association (CBA), European Chemical Industry Association (CEFIC), the RSPB and Friends of the Earth.

4.2.3. National conferences and meetings

This task was designed to widen dissemination about WILDCOMS through presentation of posters and oral presentations at national conferences and meetings. It was agreed at the WILDCOMS start-up meeting that, for logistical ease, this task would be incorporated into WP4.

5. Increased operational harmonisation – WP3

This WP focuses on increasing harmonisation, collaboration and efficiency of resource utilisation. This is related primarily to operations common to partners' schemes, namely sample collection and processing (WP 3.1 on the [Gantt chart](#), but now called task A), necropsies and recording (WP3.2, now called task B), and specimen archiving (WP3.3, now called task C). Each task comprises: (i) review and description of existing practices; (ii) recommendations on best practice where appropriate; (iii) quantification of current sharing between schemes of samples, methods and data; (iv) recommendations as to how collaboration can be increased and activities rationalised to eliminate duplication or overlap. The three tasks are to be conducted sequentially and the deliverables from each will be a report, guidelines of best practice and inventories.

In the first year, our main aim was to have an inventory compiled between WILDCOMS partners of Sample collection and processing (WP3, Task A). This information has been compiled into an Excel workbook with four worksheets that can now be accessed through the website where it is held under the "Project Outputs" area ([link](#)). The workbook contains a general overview of the partner schemes (that includes information about what is collected and why), a description of the contaminant classes that are analysed for by each scheme, and an inventory of disease screening techniques employed by different schemes.

As part of this task, we have also compiled an inventory of quantification of current sharing of samples between schemes. This information will also be made available on the website and some of this is described in [Section 7](#) of this report. Discussions of opportunities to further increase sharing of resources will be held as part of the WILDCOMS partners meeting scheduled for November 2012.

6. National and European Knowledge Exchange – WP4

WP4 was originally conceived as being the lead for extending and adapting the WILDCOMS network to a European scale. This remains an objective but this WP has also incorporated responsibility for knowledge exchange at a national level, as achieved through presentations and posters at national conferences.

The activities in this WP have focussed on two areas: i) presentations at key national and European meetings and ii) extension of WILDCOMS to the European scale.

6.1. Presentations at national and European conferences

Poster and oral presentations have been presented at seven meetings (four national, three European) meetings (Table 1) by various WILDCOMS partners and the WILDCOMS coordinator.

Table 1. List of conferences where WILDCOMS work was presented.

National	European / International
The Clean and Safe Seas Evidence Group (CSSEG)- Oral presentation in January 2011	SETAC (<i>Society of environmental toxicology and chemistry</i>) world meeting in Berlin – Poster presentation in May 2012
SEPA –January 2012- Oral presentation	European Wildlife Disease Association - Joint 61st International WDA & 10th Biennial EWDA Conference - Convergence in Wildlife Health Lyon, France- Poster presentation
58th Spring Conference & AGM of the Mammal Society- Oral presentation in April 2012	OSPAR – oral presentation in December 2011
GB Wildlife Disease Surveillance Partnership- oral presentation given in June 2012	

6.2. Extending WILDCOMS to the European scale

We have taken the first steps towards an overall vision of linking surveillance schemes across Europe following a WILDCOMS approach. WILDCOMS has so far engaged with the European Network [“Research and Monitoring for and with Raptors in Europe” \(EURAPMON\)](#). EURAPMON, is a capacity building network that aims to establish a sustainable and resource-efficient Europe-wide network for monitoring for and with raptors. Although narrower in taxonomic focus than

WILDCOMS, EURAPMON provides the key means for developing links with European stakeholders working on disease and/or contaminants in raptors and, through them, with researchers working on other species. Richard Shore (WILDCOMS PI) is an expert advisor to EURAPMON and takes part in its annual steering committees, and he also has participated in their annual meeting in February 9-10, 2012 that focussed on “Monitoring raptors across Europe. While engaged in such activities, he has promoted links between EURAPMON and WILDCOMS partners, such that the template used by WILDCOMS to catalogue the activities of partner schemes ([Section 5](#)) has been adopted and modified by EURAPMON to start cataloguing contaminant monitoring with raptors across Europe. The results from that work are expected to be completed in 2013.

EURAPMON is seeking ways to gain future funding to develop a sustainable European network and WILDCOMS is well positioned to represent UK schemes in this endeavour.

7. WILDCOMS – increasing cooperation between partner schemes

The formation of the WILDCOMS network has facilitated an increase in collaboration between partner schemes. This was one of the key objectives behind forming the network. These collaborations include:

- WILDCOMS and the GB Wildlife Disease Surveillance partnership have facilitated the sharing of samples between the PBMS and AVHVA for screening of West Nile Virus in birds. The virus is spread when a mosquito bites an infected bird and then bites a person. Samples from birds submitted to the PBMS for contaminant monitoring will now be shared with AVHVA to supplement the current extent of WNV screening in wild birds in the UK.
- WILDCOMS continues to facilitate collaboration between the PBMS and the CUOP which has included quantifying the extent of contamination in otters by heavy metals and by flame retardants ([click here for reports by Walker et al., 2011, 2012](#))²
- WILDCOMS continues to facilitate collaboration between WIIS, the PBMS and the DRAHS on the sharing and processing of red kite samples for analysis of contamination by lead and by anticoagulant rodenticides
- WILDCOMS has facilitated the collaboration between WIIS, WIIS-Scotland and the PBMS (and through EURAPMON, with several European researchers) on a study to develop statistical techniques to estimate the % of individuals in a population that are poisoned by anticoagulant rodenticides.
- WILDCOMS facilitated links between the Charlotte Robin (Animal Health Trust) and the AVHVA to further investigation of seasonal canine disorder

² Walker, L.A., et al., 2011. *Inorganic elements in the livers of Eurasian otters, Lutra lutra, from England and Wales in 2009 - a Predatory Bird Monitoring Scheme (PBMS) report*. Centre for Ecology & Hydrology, Lancaster, UK.; Walker, et al., 2012. *Polybrominated Diphenyl Ethers (PBDEs) in Eurasian otters (Lutra lutra) collected from Britain in 2010: a Predatory Bird Monitoring Scheme (PBMS) Report*. Centre for Ecology & Hydrology, Lancaster, 14pp.

- The DRAHS and the PBMS have collaborated on an EU bid with the Institute for Zoo and Wildlife Research in Berlin regarding lead poisoning
- WILDCOMS facilitated links between the Mammal Society and IoZ over investigations into myxomatosis in brown hares *Lepus europaeus*
- WILDCOMS made a response on behalf of its partner schemes to the Chemicals Regulatory Directorate as part of its stakeholder engagement on the UK National Action Plan for the Sustainable Use of Pesticides.

During 2012, there also has been an increase in the exchange of sample and information between schemes (Table 2). This has helped increase the number of analyses carried out by different schemes, thereby adding value to individual schemes.

Table 2. Exchange between WILDCOMS partner schemes during 2012

Original Scheme	Receiving Scheme	Sample Details	Purpose
PBMS	AHVLA	Brain subsamples from various species	For seasonal West Nile Virus screening
DRAHS	PBMS	Various tissue samples; predominantly from Red Kites	For rodenticide monitoring and archiving
PBMS	FERA	Muscle samples from merlins	For DNA sequencing
PBMS	FERA (WIIS)	Barn owl and red kite liver sub-samples and/or referrals	For investigation of illegal poisoning by WIIS
CUOP	PBMS	Otter liver sub-samples	For analysis for brominated flame retardants
PBMS	DRAHS	Sparrowhawk samples	Samples used for inclusion in survey of avian trichomoniasis in predatory birds

8. Conclusions

The first year of WILDCOMS has seen the clear establishment of the network, a major development of the WILDCOMS website as a tool for disseminating information, and an increase in the linkage and coordination between the partner schemes, and between WILDCOMS and the GB Wildlife Disease Surveillance Partnership. The substantial e-mail alert list for Quarterly Reports, which has grown through the year, the number of visits to the website, and the increase in traffic associated with publication of the Quarterly Reports, all indicate an increasing awareness amongst key stakeholders of WILDCOMS and its constituent schemes.

Overall, WILDCOMS is on track to meet the goals it set out in the original proposal that was supported by NERC in that: (i) the communication tools for WILDCOMS (wiki for partners, Quarterly Reports, website) have all been established; (ii) three (of a minimum target of 5 over three years) articles for in-house or trade journals have been given; (iii) and seven (out of a minimum target of six over three years) posters and presentations have already been given. The first of the WPs that provide an inventory of activities across all WILDCOMS partners' schemes ("sample collection and processing") has recently been made available on the WILDCOMS website; awareness of this availability of this information to stakeholders now needs to be promoted. Progress on collating information across partners' schemes on necropsies and recording activities (WP 3, task B) and specimen archiving (WP3 task C) is on schedule. Completion of these tasks should aid identification of further ways that WILDCOMS partners can collaborate and share resources. Finally, WILDCOMS has started to have an impact at the European level in that it has been instrumental in helping EURAPMON start to develop its inventory of activities on monitoring contaminants in raptors across Europe.

The key challenges for WILDCOMS in year 2 are to further enhance stakeholder engagement through its stakeholder workshops, and to strengthen potential links and value for industry. The first WILDCOMS stakeholder workshop in November 2012 and a presentation to industry and NGOs at Defra's November 2012 Chemical Stakeholders Forum will provide valuable feedback as to the way WILDCOMS can enhance such engagement further.