

Centre for Coastal Health

Integrating human, animal and environmental health since 1996

Annual report



2003-2004

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Registered British Columbia
Non-Profit Organization
S-38553

Director's report



I was at our Centre for Coastal Health barbeque this August and realized how fortunate I have been. Not only had the work of the CCH been able to attract a group of personable, fun and very bright researchers and students, but also we were involved in interesting and important work that spanned the country as well as having inroads internationally. With the return of Dr. Fraser from maternity leave, and the presence of dedicated and energetic graduate and undergraduate students, the energy and capabilities of the Centre swelled this past year.

Increasingly, I am seeing the influence of the CCH at the local and national level and am pleased to see our perspective of linking human, animal and environmental health being increasingly recognized as an essential area of health research.

Last year's work has nicely set up next year to be one of continued growth. Part of the growth that I would like to see this coming year is in our ability to provide unique training opportunities for students. Already, our national zoonotic disease teleconference rounds are attracting faculty and students from across Canada. Our Animal Determinants of Emerging Diseases network is proving to be an exciting way to link medical, veterinary and biological researchers. Externs, undergraduate and graduate students are increasingly asking for opportunities to come and work with the Centre for Coastal Health. Applications are in for a Canada Research Chair and a Canadian Foundation for Innovation grant with Malaspina University-College, which if successful, will provide core funding for the director as well as establish a local laboratory. Acquiring this infrastructure will allow the CCH to more confidently make long-term commitments to partners for research and training. Finally, efforts are afoot to attract a third core scientist at the CCH's main office on Vancouver Island.

The CCH has become a key partner in national and international initiatives such as a regional ecosystem project in Washington State and the development of a School of Public Health in Saskatchewan. My goal



C. Stephen and J. Mountifield: wildlife necropsies

next year is to continue to have our staff and affiliates play lead roles in developing a "One Health" model that crosses disciplinary and species barriers by working on multidisciplinary projects with partners and continuing to serve as a successful model of integration intended to help promote healthy relations between people, animals and their shared environment.

Craig Stephen, DVM PhD

Board of directors

Craig Stephen DVM PhD (President and Director)

Carl Ribble DVM MSC PhD (Vice-President)

Professor and Chair—Population Medicine
Ontario Veterinary College

Rick Mathias MD FRCPC (Secretary Treasurer)

Professor—Health Care and Epidemiology, UBC

Bill Eaton MSc PhD

Senior Vice President
Penninsula College

Ray Copes MD MSc FRCPC

Medical Director, Environmental Health
BC Centre for Disease Control

Who are we ?

Director

Craig Stephen DVM PhD

Researchers

Erin Fraser BSc DVM MSc

Mark Sheppard DVM

Craig Stephen DVM PhD

Graduate Students

Colleen Duncan BScH DVM (MSc)

Research Assistants

Jenny Dawson-Coates

Julie Mountifield

Nadia Plamondon

We are an independent not-for-profit organization that pulls together a network of investigators interested in the interactions of human, animal and environmental health. The Centre for Coastal Health provides objective solutions to health issues and does not take advocacy positions. Our projects are funded through competitive grants, contribution agreements with government, and fee-for-service contracts.

We are located in Nanaimo, British Columbia on the campus of Malaspina University-College. However, our network members are found across Canada. Founding members of our network include: the Department of Health Care and Epidemiology (Faculty of Medicine - University of British Columbia), Western College of Veterinary Medicine (University of Saskatchewan), Malaspina University-College, and the Vancouver Aquarium and Marine Science Centre. Through our network, we are able to work on local, national and international projects.

What do we do?

Research

Through competitive grants or fee-for-service contracts, the CCH conducts independent academic research primarily in the areas of public health and fish and wildlife health.

Risk Assessments

CCH members are involved in assessing risks to the health of people, animals and environments and in developing integrated risk management plans.

Outbreak Investigations

The CCH can provide consultation on the design and analysis of disease outbreak investigations as well as independently investigate disease problems.

Health Intelligence

The CCH can gather an

array of information to develop a coherent understanding of complex health issues. This includes the development of surveillance programs.

Policy Evaluation

Our network of expertise can review the health, ecological, social and economic implications of health and environmental management policies.

Research Planning

The CCH is frequently called upon by governments, health organizations, industry and universities to develop, help to plan, implement and evaluate research projects.

Education

The CCH designs and offers educational programs and opportunities for professionals, graduate and under-graduate students, government organizations and the public on issues associated with human, animal and environmental health interactions.



Nadia Plamondon : mosquito surveillance for West Nile virus

Projects



Research

- Development of an interagency and interdisciplinary research unit investigating the animal determinants of emerging infectious disease. Base funding granted by the Michael Smith Foundation for Health Research.
- Effects of biosolids exposure on levels of dioxin-like chemicals in beef cattle
- Evaluating the ecosystem health impacts of decommissioning a hydroelectric dam

Risk Assessments

- Necropsies of wildlife for evidence of toxin exposure and other anthropogenic impacts
- Communicable disease risks to wildlife from camelids in British Columbia

Outbreak Investigations

- Multispecies outbreak of *Cryptococcus* on Vancouver Island

Health Intelligence

- Surveillance of horses, dogs, cats and wildlife on Vancouver Island for *Cryptococcus neoformans gattii*
- West Nile vector surveillance on Vancouver Island
- Retrospective surveillance of wildlife disease in BC
- Extracting BC wildlife disease data for the Canadian Cooperative Wildlife Health Centre

Policy Evaluation

- Impacts of management decisions on risks of wildlife shedding zoonotic protozoa into a watershed
- Evaluation of Canada's ability to meet OIE requirements for shellfish export

- Membership on BC Antimicrobial Resistance Working Committee
- Expert review of policy and practices for Australian aquaculture
- Role of disease in species at risk management

Research Planning and Management

- Critical review of study methodology for project on the food safety risk of biosolids use on cattle range
- Fish health research coordination for the Science Council of British Columbia
- Operation of the Federal-Provincial fish health advisory committee

Education

- Undergraduate courses in fish health and diseases of fish and shellfish
- Graduate lectures on measurements of health in human populations
- Graduate research on cryptococcosis
- Undergraduate summer research assistantships on West Nile and wildlife surveillance
- Externship on aquatic health
- Contributor to curriculum development at the University of Saskatchewan Master of Public Health program

Animal Determinants of Emerging Disease research unit members



Dr. Harvey Artsob
Dr. William Bowie
Dr. Peter Buck
Dr. Erin Fraser
Dr. Judy Isaac-Renton
Dr. Ted Leighton
Dr. Ron Lewis
Dr. Richard Mathias
Dr. Muhammad Morshed
Dr. Corinne Ong
Dr. David Patrick
Dr. Carl Ribble
Dr. Craig Stephen

Project collaborators



BC Centre for Disease Control
BC Ministry of Water, Land and Air Protection
Canadian Cooperative Wildlife Health Centre
Canadian Wildlife Service
Capital Regional District Water Department

Health Canada
Ontario Veterinary College
Science Council of BC
Vancouver Island Health Authority
University of British Columbia

Presentations

Invited Presentations

Stephen C. 2004. Ecology and environmental health in public health. Visiting Scholar program - Studium Generalum. Peninsula College. Washington. June 3.

Stephen C. 2004. The role of ecology, the environment and ecosystem health in veterinary research. RG Thomson Lecture. University of PEI. May 18.

Stephen C. 2004. Emerging infectious diseases: What is the message? BC Health Educators Group. May 5.

Stephen C. 2004. Animal determinants of emerging infectious disease. UBC Infectious Disease Rounds. May 3

Stephen C. 2003. In Search of the One Health Model: Commentary on Community Health in Clayoquot Sound. Clayoquot Symposium 2003: Citizen Science and Community Health. Tofino.

Stephen C. 2003. Emerging diseases panel. –Plenary speaker. BC Women's and Children's Hospital. Vancouver (Sept)

Stephen C. 2003. Cryptococcosis on Vancouver Island. Mid-Island Veterinary Academy. Parksville.

Stephen C. 2003. Veterinary aspects of West Nile. Vancouver Island Health Authority (Nanaimo and Campbell River).

Stephen C. 2003. Are veterinarians leaders in animal health? Rausch Visiting Professor Plenary Presentation. Western College of Veterinary Medicine. Saskatoon.

Stephen C. 2003. Addressing the call for alternative careers in veterinary medicine. Rausch Visiting Professor Presentation. Western College of Veterinary Medicine. Saskatoon.



Julie Mountfield: wildlife mortality survey

Conference presentations

Van Hamm K, Stephen C, Kempe R, Suggitt H. 2004. Determining Dioxins in Beef from Biosolids-Fertilized Fields in Beautiful BC. Northwest Biosolids Management Association Meeting Sept. Welches Oregon.

Duncan C, Bartlett K, Stephen C. 2003. Descriptive epidemiology of a multispecies outbreak of *Cryptococcus gattii* on Vancouver Island. International Society for Veterinary Epidemiology and Economics. Santiago, Chile.

Duncan C, Stephen C. 2003. Update on *C. gattii* outbreak: Veterinary aspects. BC Zoonoses Group Annual Meeting. Vancouver

Stephen C, Plamondon N. 2003. Survey for West Nile Vectors on Vancouver Island. BC Zoonoses Group Annual Meeting. Vancouver

Stephen C, Plamondon N. 2003. Survey for West Nile Vectors on Vancouver Island. BC Parasitologist Meeting. Nanaimo

Raverty S, Stephen C, Fyfe M, Bartlett K. 2003. Cryptococcosis in marine mammals. 3rd International Conference of the Cryptococcus Genome. Vancouver.

Duncan C, Lester S, Bartlett K, Fyfe M, Stephen C. 2003. Non-human animal aspects of a multispecies outbreak of Cryptococcus. 3rd International Conference of the Cryptococcus genome. Vancouver.

Raverty S, Stephen C, Fyfe M, McDougall L. Cryptococcosis due to *Cryptococcus neoformans gattii* in stranded Harbor and Dall's porpoises in the Pacific Northwest. American College of Veterinary Pathology Annual Meeting. June. 2003.

Saksida S, Jones S, Karreman GA, and C Stephen. *Kudoa thyrsites* in Atlantic salmon: an industry wide study to generate testable hypotheses (part 1). Western Fish Disease Conference. Seattle, July 2003.

Karreman GA, Saksida S, Jones S and C Stephen. *Kudoa thyrsites* in Atlantic salmon: an industry wide study to generate testable hypotheses (part 2). Western Fish Disease Conference. Seattle, July 2003.

Mann ED, Irwin R, Dore K, Dutil L, Kellar J, Read S, Muckle A, Pollari F, Stephen C, Middleton A. 2003. Surveillance of exposure – an integrated enteric pathogen surveillance program (IEPS). 4th International Conference on Emerging Zoonoses. Ames.

Upcoming Conferences

Mak S, Duncan C, Fyfe M, Bartlett K, Stephen C. 2004. The use of GIS in the investigation of an outbreak of cryptococcosis in British Columbia. Conference on GIS in Veterinary Medicine. Guelph.

Publications

Refereed Publications

Fraser E, Stephen C, Bowie WR, Wetzstein M. 2004. Availability and estimates of veterinary antimicrobial use in British Columbia, Canada. *Canadian Veterinary Journal*. 45: 309-311.

Stephen C, Thorburn M. Formulating a vision for fish health research. *Guelph Ichthyology Reviews* (accepted May, 2003)

Technical Reports

Stephen C, Olaloku N. 2004. Zoonotic Protozoal Parasites of Wildlife Origin: Relevance to the Capital Regional District Water Supply Area. Report to the Capital Regional District Water Department.

Schwantje H, Stephen C. 2003. Communicable disease risks to wildlife from camelids in British Columbia. Report to the Ministry of Water, Air and Land Protection.

Works Submitted

Stephen C, Artsob H, Bowie WR, Drebot M, Fraser E, Leighton T, Patrick D. Perspectives on emerging zoonotic disease research and capacity building in Canada. Submitted for joint publication in the *Canadian Journal of Infectious Diseases* and the *Canadian Veterinary Journal*.

Fyfe M, MacDougall L, Bartlett K, Romney M, Kidd S, Stephen C, Starr M, Pearce M, Mak S, Kibsey P. Unprecedented Multi-Species Outbreak and Emergence of *Cryptococcus neoformans* var. *gattii* in a Temperate Climate, Vancouver Island, Canada. *New England Journal of Medicine*

Work in Progress

Duncan C, Stephen C, Lester S and Bartlett KH. Sub-clinical infection and nasal colonization of dogs and cats with *Cryptococcus spp.* *Medical Mycology*

Budget 2004-2005

The Centre for Coastal Health is funded through a variety of sources including competitive grants, government contribution agreements, and service contracts. Funds for the CCH are managed, in part, by the Centre for Coastal Health Society and, in part, by our academic partners. The past fiscal year saw \$313,550 worth of research and consulting funds used by the CCH. An audit of the funds managed by the CCH Society is available on request.

Item	Income	Expenses	Balance
Salary and benefits	275,000	200,000	75,000
Administrative costs	30,000	25,000	5,000
Travel	10,000	9,000	1,000
Supplies and equipment	40,000	40,000	0
Miscellaneous research support	100,000	100,000	0
Total	455,000	374,000	81,000

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