



SJDAWC News

NUMBER 27—FALL 2011

SIR JAMES DUNN ANIMAL WELFARE CENTRE *at the Atlantic Veterinary College*



PROMOTING ANIMAL WELFARE THROUGH RESEARCH, SERVICE, AND EDUCATION

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AVC team competes at 2011 Animal Welfare Judging Contest —Michigan State University

Congratulations to the AVC team of Alexander Burrows, Michael Walker, Emma Vaasjo, Stephanie Simpson, and Nicole Mayne (pictured above with contest judge Dr. Temple Grandin), who placed third in the Veterinary Student Division of the 11th Annual Intercollegiate Animal Welfare Judging & Assessment Contest, held at Michigan State University, USA, November 19-20, 2011. Each student was provided with contrasting scenarios for the management of farrowing pigs, racehorses, and caged birds. They were required to assess and evaluate the welfare of the animals in each situation and present their reasoning to a judge. There was also a practical “on-farm” assessment of dairy cattle. Dr. Michael Cockram was the team coach with specialist coaching from other AVC faculty: Dr. Heather Ayles (pigs), Dr. Erica Koch (horses), Dr. Marion Desmarchelier (parakeets), and Dr. Reny Lothrop (dairy cows).

Funding for the students’ expenses was provided through the SJDawc Student Project Fund, the American Veterinary Medical Association, and the Universities Federation for Animal Welfare, UK.

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From the coordinator's desk

Welcome to the fall 2011 edition of *SJDAWC News*, the newsletter of the Sir James Dunn Animal Welfare Centre (SJDAWC) at the Atlantic Veterinary College, University of Prince Edward Island. You will notice a new look—we are excited about our redesign. Please let us know at animalwelfare@upe.ca if you would prefer to receive the newsletter by e-mail (in full colour!).

In this issue you will find a feature on the 2011 Animal Welfare in Practice conference—Lameness in Dairy Cattle; as well as write-ups on 2011-funded SJDAWC projects and those completed in 2011; a profile of Lauren Collins, winner of the 2011 Christofor Award in Animal Welfare; and information on various other SJDAWC initiatives.

AVC Chair in Animal Welfare, Dr. Michael Cockram, continues to provide expertise in the revision of the Canadian National Farm Animal Care Council (NFACC) codes of practice (nfacc.ca/codes-of-practice). The codes are national guidelines for the care and handling of the different species of farm animals. Dr. Cockram represents research/academia and the Canadian Veterinary Medical Association (CVMA) on the Equine Welfare Code Development Committee. He chairs the Sheep Welfare Code Scientists' Committee (representing the International Society for Applied Ethology – ISAE) and sits on the Sheep Welfare Code Development Committee.

For more information about the SJDAWC, please go to upe.ca/awc



CONFERENCE NEWS

Animal Welfare in Practice

Lameness in Dairy Cows

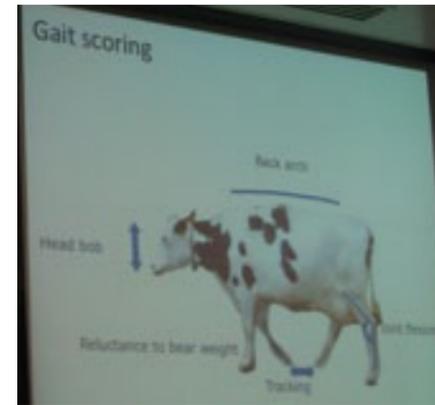
The seventh annual “Animal Welfare in Practice” conference took place at the Atlantic Veterinary College September 30–October 1, 2011, with a Friday evening presentation and, on Saturday, three talks, a round-table discussion, and a choice of two practical sessions (gait scoring video workshop and hoof trimming demonstration and practice). The speakers’ presentations are posted at upe.ca/awc/animal-welfare-conference:

- Keynote speaker Dr. Dan Weary (Professor and NSERC Industrial Research Chair in Animal Welfare at the University of British Columbia) “Lameness and Cow Comfort” and “Gait Scoring”
- Dr. Shawn McKenna (Assistant Professor, Health Management, and Farm Service Chief, AVC) “Risk Factors and Prevalence of Lameness in Dairy Herds” and “Management of Lameness”
- Dr. Kip Lemke (Professor of Anaesthesiology, AVC) “Pathophysiology of Perioperative Pain” and “Pain Management in Dairy Cattle”



Key messages from the conference

1. Studies consistently show a very high prevalence of lameness among dairy cows. (Dr. McKenna quoted a working average of 30 per cent, culled from numerous studies.)
2. Trained observers will detect lameness about 2.5–3 times as often as those not trained in detection, which means a significant proportion of lame cows are not identified.
3. Scientists evaluating cow comfort use a wide range of approaches—detailed observation of behaviour; measurement of injury and disease; preference testing (offering cows a choice and assessing usage of different stall designs, for example); and assessing the effects of stall design and management factors such as neck rail position, bedding (amount, type, moisture content), stocking density, and housing system on lying and standing behaviour, lameness, and cleanliness.
4. There are many factors that may influence lameness—environment (flooring, bedding, stalls, housing), cow (conformation, age, stage of lactation), and causative agent (infectious, metabolic, nutritional). Attention to cow comfort, cow hygiene and cow movement around the farm will all reduce lameness.
5. Early treatment is crucial to prevent the development of chronic pain, which is much harder to manage. [See Dr. Lemke’s presentations for information on pain pathways and treatment approaches in dairy cattle.]
6. **The focus needs to be on prevention of lameness.** Housing that provides a comfortable, dry location for cows to lie down and stand reduces the risk of lameness.
7. Regular hoof trimming is a crucial component of good dairy management (i.e., on a regular maintenance schedule as opposed to when a cow is noticed to be lame).
8. Providing lameness data to farmers from their farms will motivate changes in practice.



Gait scoring

Dr. Weary spoke about the advantages of gait scoring to identify lameness. It has been well-established that gait scoring systems have high reliability and validity and that detecting lameness via gait scor-

ing improves with training. It is easy to pick out cows that are severely lame (4 or 5 on a 5-point gait scale), but the aim of training is to pick out moderately lame cows (2 or 3 on the scale) and to intervene earlier to fix the problem, thus reducing the severity and cost of lameness and improving the welfare of dairy cattle. Gait scoring is done from a distance by observation of cows walking singly on a good, straight surface in a familiar environment. Criteria used in gait scoring are the back (flat or arched), head carriage, symmetry of gait, joint flexion, tracking-up, and distribution of weight during walking and standing.

Conference participants had the opportunity to try out what they had learned when Dr. Weary led a gait scoring workshop using videos of cows with varying degrees of lameness. [Dr. Weary’s gait

scoring handout—including the numerical rating system and what constitutes a good gait scoring environment—is at upei.ca/awc/animal-welfare-conference.]

There were about 70 attendees at the conference, including veterinarians, hoof trimmers, producers, a few NSAC students, and AVC students (the majority). Feedback was very positive.

The conference was co-hosted by the SJDABC and the AVC Animal Welfare Club, with practical assistance from the AVC Bovine Club and Dr. Shawn McKenna, as well as generous support from the Animal Welfare Foundation of Canada.

While at AVC, Dr. Weary also gave a lecture in the first-year Animal Behaviour and Animal Welfare course on “Scientific Assessment of Pain and Distress in Animals.”

CATS

SURGICAL PROCEDURE	PREOPERATIVE MANAGEMENT	INTRAOPERATIVE MANAGEMENT	POSTOPERATIVE MANAGEMENT	COMMENTS
CASTRATION (Protocol 1)	Pre-medication • Acepromazine 0.1-0.2 mg/kg, IM • Butorphanol 0.2-0.4 mg/kg, IM	Induction and maintenance • Ketamine 2-10 mg/kg, IM	• Ketoprofen 2.0 mg/kg, SC immediately after recovery from anaesthesia	Mild pain
CASTRATION (Protocol 2)	Pre-medication • Dexmedetomidine 0.008-0.012 mg/kg, IM • Butorphanol 0.2-0.4 mg/kg, IM	Induction and Maintenance • Ketamine 2-10 mg/kg, IM • 2.0% Lidocaine 0.1-0.2 ml/stock • Do not exceed a total dose of 8 mg/kg	• Meloxicam 0.2 mg/kg, SC immediately after recovery from anaesthesia • Tetracaine block • Do not exceed a total dose of 8 mg/kg	Mild pain Neural blockade reduces anaesthetic requirements and improves analgesia.
OVARIO-HYSTERECTOMY (Protocol 1)	Pre-medication • Acepromazine 0.1-0.2 mg/kg, IM • Hydroxyzine 0.05-0.1 mg/kg, IM	Induction • Thiopental 8-12 mg/kg, IV to effect Maintenance • Isoflurane 1.5-2.0%	• Ketoprofen 2.0 mg/kg, SC immediately after recovery from anaesthesia • Ketoprofen 1.0 mg/kg, PO once daily for 2-4 days	Moderate pain Some patients will require opioids postoperatively.
OVARIO-HYSTERECTOMY (Protocol 2)	Pre-medication • Dexmedetomidine 0.008-0.012 mg/kg, IM • Hydroxyzine 0.05-0.1 mg/kg, IM • Glycopyrrolate 0.01 mg/kg, IM	Induction • Thiopental 8-12 mg/kg, IV to effect	• Meloxicam 0.2 mg/kg, SC immediately after recovery from anaesthesia • Meloxicam 0.05 mg/kg, PO once daily for 2-4 days	Moderate pain Some patients will require opioids postoperatively.
DENTISTRY WITH AN UPPER CANINE EXTRACTION	Pre-medication • Acepromazine 0.1-0.2 mg/kg, IM • Hydroxyzine 0.05-0.1 mg/kg, IM	Induction • Thiopental 8-12 mg/kg, IV to effect	• Ketoprofen 2.0 mg/kg, SC immediately after recovery from anaesthesia • Ketoprofen 1.0 mg/kg, PO once daily for 2-4 days	Moderate pain Neural blockade reduces anaesthetic requirements and improves analgesia.
ONYCHECTOMY (control of pain only after resolution of the problem of recurring claw disease when associated with onychodysplasia)	Pre-medication • Dexmedetomidine 0.008-0.012 mg/kg, IM • Hydroxyzine 0.05-0.1 mg/kg, IM • Glycopyrrolate 0.01 mg/kg, IM	Induction • Thiopental 8-12 mg/kg, IV to effect	• Ketoprofen 2.0 mg/kg, SC immediately after recovery from anaesthesia • Ketoprofen 1.0 mg/kg, PO once daily for 2-4 days	Moderate pain Neural blockade reduces anaesthetic requirements and improves analgesia.

Examples of Anaesthetic and Pain Management Protocols for Healthy Cats and Dogs*

Kip A Lemke DVM MS DACVA, Alice D Crook BSc DVM
Atlantic Veterinary College
University of Prince Edward Island

*Some of these drugs are not approved for use in cats or dogs in Canada. Veterinary products should always be used as directed.

DOGS

SURGICAL PROCEDURE	PREOPERATIVE MANAGEMENT	INTRAOPERATIVE MANAGEMENT	POSTOPERATIVE MANAGEMENT	COMMENTS
CASTRATION (Protocol 1)	Pre-medication • Acepromazine 0.05-0.1 mg/kg, IM • Butorphanol 0.2-0.4 mg/kg, IM	Induction • Propofol 2-3 mg/kg, IV to effect Maintenance • Isoflurane 1.5-2.0%	• Meloxicam 0.2 mg/kg, SC immediately after recovery from anaesthesia • Meloxicam 0.1 mg/kg, PO once daily for 2-4 days	Mild pain
CASTRATION (Protocol 2)	Pre-medication • Dexmedetomidine 0.004-0.006 mg/kg, IM • Hydroxyzine 0.2-0.4 mg/kg, IM • Glycopyrrolate 0.005-0.01 mg/kg, IM	Induction • Thiopental 8-12 mg/kg, IV to effect Maintenance • Isoflurane 1.5-2.0%	• Carprofen 4.0 mg/kg, SC immediately after recovery from anaesthesia • Carprofen 4.0 mg/kg, PO once daily for 2-4 days	Mild pain Neural blockade reduces anaesthetic requirements and improves analgesia.
OVARIO-HYSTERECTOMY (Protocol 1)	Pre-medication • Acepromazine 0.05-0.1 mg/kg, IM • Hydroxyzine 0.05-0.1 mg/kg, IM	Induction • Thiopental 8-12 mg/kg, IV to effect Maintenance • Isoflurane 1.5-2.0%	• Carprofen 4.0 mg/kg, SC immediately after recovery from anaesthesia • Carprofen 4.0 mg/kg, PO once daily for 2-4 days	Moderate pain Some patients will require opioids postoperatively.
OVARIO-HYSTERECTOMY (Protocol 2)	Pre-medication • Dexmedetomidine 0.004-0.006 mg/kg, IM • Hydroxyzine 0.05-0.1 mg/kg, IM • Glycopyrrolate 0.005-0.01 mg/kg, IM	Induction • Thiopental 8-12 mg/kg, IV to effect Maintenance • Isoflurane 1.5-2.0%	• Carprofen 4.0 mg/kg, SC immediately after recovery from anaesthesia • Carprofen 4.0 mg/kg, PO once daily for 2-4 days	Moderate pain Some patients will require opioids postoperatively.
DENTISTRY WITH AN UPPER CANINE EXTRACTION	Pre-medication • Acepromazine 0.05-0.1 mg/kg, IM • Hydroxyzine 0.05-0.1 mg/kg, IM	Induction • Thiopental 8-12 mg/kg, IV to effect Maintenance • Isoflurane 1.5-2.0%	• Carprofen 4.0 mg/kg, SC immediately after recovery from anaesthesia • Carprofen 4.0 mg/kg, PO once daily for 2-4 days	Moderate pain Some patients will require opioids postoperatively.
CRUCIATE REPAIR	Pre-medication • Acepromazine 0.05-0.1 mg/kg, IM	Induction • Thiopental 8-12 mg/kg, IV to effect Maintenance • Isoflurane 1.5-2.0%	• Meloxicam 0.2 mg/kg, SC immediately after recovery from anaesthesia • Meloxicam 0.1 mg/kg, PO once daily for 4-6 days	Moderate pain Neural blockade reduces anaesthetic requirements and improves analgesia. Most patients will require opioids postoperatively.

Sites of Action of Anaesthetic and Analgesic Drugs

A recognizes that there are acceptable alternative protocols.

Small Animal Pain Management poster Second edition 2011

The SJDABC and the Animal Welfare Committee of the Canadian Veterinary Medical Association (CVMA) collaborated recently to produce a second edition of the 2005 poster “Examples of Anaesthetic and Pain Management Protocols for Healthy Dogs and Cats.” The 2011 edition (Lemke K and Crook A) has been updated to include new analgesic drugs and protocols. The poster and accompanying handout “Fundamental Points in Perioperative Pain Management,” were distributed to all small and mixed animal practices in Canada with the October issue of the *Canadian Veterinary Journal*, as well as to Canadian veterinary colleges. The poster is available in English and French at upei.ca/awc/Outputs/Veterinary_education. A hard copy may be obtained from animalwelfare@upei.ca.



Marissa Herzog and Christina Zeoli with young patient

COMPLETED PROJECTS 2011

SERVICE

Chinook Project—providing veterinary care to northern communities (2011)

chinookproject.ca
L Miller, J Magrath, M Hopson

Funded since 2006, the Chinook Project responds to requests for veterinary care from isolated communities in Canada's North. On a voluntary basis, two or three veterinarians, four or five senior veterinary students, and one coordinator or AVC technician travel to the community where they set up a temporary clinic that provides basic veterinary care, including spaying and neutering, vaccination, and deworming. Other objectives are to educate members of the community in basic

veterinary care, provide a contact for further information, and provide vaccines and medication to allow for vaccination and emergency care after the initial visit.

In previous years, the Chinook Project visited Kimmirut, Cambridge Bay, and Kugluktuk (all in Nunavut), and Natuashish, Labrador. This past summer (2011), at the request of the communities, they returned to Natuashish and then travelled to Makkovik, also in northern Labrador.

The following piece was written by AVC student Amy Lowe about her experiences with Chinook in June 2011.

This past June, I returned with the Chinook team to Natuashish and from there we travelled to Makkovik, also in northern Labrador. These communities are accessible only by boat or plane, and those of us with weak stomachs had a healthy stack of Gravol for the ride in on the tiny Air Labrador plane.



AVC students Chris McLaughlin, Amy Lowe, Courtney Dwyer, Christina Zeoli, and Marissa Herzog in Makkovik, Labrador—Chinook 2011

Our first stop was Natuashish, a community consisting mostly of Innu, where the number of dogs almost equals the about 800 community members. The majority of these dogs live outside and “belong” to one or a few community members who feed them. We spent our first night transforming the local fire hall into our makeshift clinic including two operating rooms, a recovery area, and a drug cart conveniently located on the back of a four-wheeler. A local resident was employed to catch and bring dogs to the clinic, using sedative-injected sandwiches. We also had the local police take us out on their four-wheelers to catch and bring dogs in ourselves. We spent the rest of our time in Natuashish performing as many spays and neuters as we could, staying at the clinic from 9 am until 11:30 pm some days. The fact that the sun didn't set until 10:30 or 11 pm made this a little easier!

After five busy clinic days in Natuashish, we packed up our supplies and boarded the tiny plane for Makkovik, an Inuit community of about 375 people. We noticed right away that this community was strikingly different from Natuashish—for one thing, we were quite aware of the lack of stray dogs running around. Upon arrival, we were given a list of every dog and cat in the community and what they needed. This made for a very efficient week, as we were able to schedule exactly how many spays and neuters we wanted in a day, and when they should come in, rather than having a roomful of dogs that may all need to be spayed. For residents of Makkovik, the only option they have for spaying or neuter-

ing their animals is to send them by plane to Goose Bay, costing upwards of \$600-1000 for transportation, kennelling, and veterinary care. Therefore, we were welcomed with open arms! We set up our clinic in the community hall, and had many volunteers to help us, including some aspiring veterinarians. We hosted an information and call-in show on the local radio station, and gave a presentation to about 20 local youths (we were very impressed, as the K-12 school only has about 50 students!) about basic animal care and opportunities in veterinary medicine.

In just under a week and a half, we completed 130 operations (including one eye enucleation, a few mass removals, and, of course, lots of spays and neuters) between the two communities. We also saw another 80 dogs and cats for non-surgical appointments, which included check-ups and vaccinations. In Natuashish, we revaccinated many of the dogs that had been sterilized the year before.

Participating in an experience such as this is invaluable in many ways, the most obvious being the concentrated amount of veterinary experience obtained in a short amount of time. Also, one of the most important lessons we learned is that you don't need to leave the borders of Canada or North America to find communities and animals that are in need of veterinary care. Although these communities were just a short plane ride away from each other, they were very different, which required the Chinook team to approach the provision of veterinary care in different ways. We encourage any vet students who are interested to become involved in projects such as this one, as it is an experience you will never forget!

Amy Lowe, AVC 2012

2011 was a memorable year for the Chinook Project. The team exceeded their targets for animal surgeries in both Labrador communities. As previously, the veterinarians and students met significant practical difficulties with good cheer and optimism—providing not only veterinary service, but also hope to primarily aboriginal communities that continue to face a host of interrelated challenges.

For information on earlier Chinook clinics, please see cbc.ca/pei/features/chinook-project, a blog kept by AVC students in 2009 while in Kugluktuk and Cambridge Bay.



Amy Lowe and Courtney Dwyer with patient

Support for Chinook

Travel and shipping of supplies to northern communities are extremely expensive. In addition to the many companies, communities, and individuals who support the project (please see Sponsors, page 12), the Chinook Project has recently received a very generous multi-year commitment from Ann McCain Evans.

“While there are many worthwhile projects to support, this one is really special. It is important work on so many levels,” stated Ms. Evans, who has made a personal three-year commitment to support the project's work in Nunavut and Labrador. UPEI's Atlantic Veterinary College received the news of this support with much enthusiasm and appreciation.

Based on the considerable need for veterinary care in Canada's North, AVC's Chinook Project will begin two rotations for senior students in 2012–13. This would not be possible without generous supporters like Ann McCain Evans.

AVC humane dog training programme (2009–2011)

N Guy, AM Carey, B MacLean

This project—a collaboration between AVC and the PEI Humane Society—has been funded bi-annually since 2001, when it was initiated by Dr. Norma Guy to provide positive training for dogs at the shelter, thereby enriching their lives and improving their adoptability. Through this project, AVC student trainers, working with Drs. Guy and Carey and with PEIHS Shelter Manager Beckie MacLean, provide the following:

- Behavioural assessments of dogs on the adoption floor, and on the receiving floor as requested by the shelter manager.
- Behavioural enrichment and basic training, including addressing any issues identified in the assessment process.
- Interaction with shelter visitors and potential adopters, to educate them about pet behaviour and act as adoption counselors.
- Follow-up advice to adopters when required.
- Maintenance of accurate records regarding assessments and training.
- Assistance to the shelter with educational programmes or media events that benefit from student participation (when the students' time permits).
- Educational material for within the shelter and on the website.

Over the past two years, 773 dogs were adopted out by the PEIHS, of which 454 received positive (clicker) training. Only 29 dogs were euthanized while on the adoption

floor, typically due to reasons of deteriorating health, often in combination with a change in behaviour. Dogs are not euthanized for reasons of inadequate space.

The decision to train individual dogs is based on their behaviour and need. Generally, very little training is done with young litters of puppies as they are housed with their littermates, tend to adapt well to the shelter environment, and are usually adopted quickly. Adolescent and older dogs require more attention to ensure that they do not suffer excessively from kennel stress and that they present themselves well to potential adopters.

The programme operated with one full-time student coordinator in the summer and three additional part-time students during the school year. There are weekly meetings with the student trainers, Drs. Guy and Carey, B MacLean, and Erin Mullen (PEIHS adoption counselor). These meetings provide the opportunity to exchange ideas on each of the dogs, make training suggestions, and keep everyone updated on any disease issues within the shelter. Erin and the student trainers work together very closely in assessing dogs within the shelter, educating and counseling members of the public on behavioural concerns in their home (whether they are adopters or not), and establishing and initiating enriching and stimulating activities for animals within the shelter.

With each passing year, the relationship between AVC students and the shelter has become stronger. A large number of students foster animals for the shelter on a regular basis, and some students have spontaneously de-



Karyn Carlson and Tucker

veloped fund-raising campaigns. The PEIHS regularly receives positive feedback about the services offered to the public by the student trainers. Several people who have interacted with the student trainers in the past two years have reported that they wouldn't have been able to keep their dog with their family had it not been for the kind, useful, and compassionate advice the student trainers had provided. The fact that there is at least one student in every graduating AVC class who has worked at the shelter gives all of their classmates a window into the shelter world that they might not otherwise have. This may result in more dogs being successfully treated for behavioural problems in private practice, thereby reducing the chance of being relinquished to a shelter.

Pegasus feral cat neuter programme (2010-11)

A Crook, M MacLean

Feral cats are neutered on Fridays at the AVC hospital through this project, which is funded by the Pegasus Family Foundation through the Silicon Valley Community Foundation. Procedures are carried out as established by Dr. Peter Foley in consultation with the PEI Cat Action Team (CAT) for the SJDAWC-funded project *Neutering feral cats on PEI* (below). Over the past year, procedures were carried out by senior veterinary students primarily under the supervision of Dr. Anne Marie Carey. Additional feral cats are neutered at participating Island veterinary clinics with funds privately raised by CAT. This neuter programme benefits the individual cats by decreasing fighting activity associated with mating and by preventing the spread of disease. On a broader level, the programme is also decreasing the proportion of reproducing feral cats on PEI, with the ultimate goal of achieving negative population growth.

In 2010-11, 296 feral cats were neutered through the Pegasus neuter programme, which represents the largest component of the activities of CAT. Since 2001, almost 7,000 feral cats have been spayed and neutered using funds provided by the Pegasus Family Foundation and the Sir James Dunn Animal Welfare Centre, as well as other funds raised by CAT.

Neutering feral cats on PEI (2009-2011)

P Foley

The main objective of this project (funded bi-annually since 2000) is to decrease the birth rate of the feral cat population on PEI, through trapping, neutering, and releasing (TNR) of feral cats over the age of six weeks. Additional objectives are to test these cats for feline leukemia virus (FeLV) and feline

immunodeficiency virus (FIV) in order to gather data on the prevalence of these viruses on PEI, and to decrease the prevalence by removing infected cats from the feral population.

Seven neuter Saturdays were carried out over 18 months, during which 232 cats (61.2% male, 38.8% female) were handled by volunteer veterinary students and veterinarians at AVC, in conjunction with the community-based Cat Action Team (CAT). All FeLV and FIV negative cats were spayed or neutered; vaccinated against feline panleukopenia virus, rhinotracheitis virus, calicivirus, and rabies virus; treated for parasites; and tattooed with a numeric tattoo (left ear) for future identification. One cat was euthanized due to poor body condition and a non-resectable mass on its paw. The prevalences of FeLV and FIV were 0.9% and 3.9%, respectively, with two cats (0.9%) testing positive for both viruses. All cats that tested positive for FeLV and FIV were euthanized. Possibly as a result of this policy, there has been a decrease in the prevalence of these fatal cat viruses in the feral cat population over the last 10 years from 5.2% (FeLV) and 7.3% (FIV) in the first year of the programme, to the figures above in 2011.

A collaborative project, funded through the AVC Companion Animal Trust Fund, used blood samples, fecal samples, and hair combings from these cats to investigate the prevalence of *Toxoplasma gondii*, *Bartonella henselae*, and *Mycoplasma hemofelis* in feral cats on PEI. In another collaborative project, Dr. Oriana Raab is testing feral cat feces for the prevalence of *Trichostrongylus axei*.

Assessing the decline in birth rate of the total feral cat population on PEI over the last 10 years is difficult. All the cats in most of the smaller colonies were sterilized within one to three years. The larger colonies are more difficult to control, but even these have seen decreasing numbers of feral cats brought in to be neutered over several years. Most of the feral cats being neutered now come from new colonies (in different areas), as opposed to ongoing neutering of cats in older colonies.

Another indirect measure of the impact of this programme on the feral cat population is the number of cats surrendered annually to the PEI Humane Society, which has declined by approximately 50 per cent over the course of the last 10 years as the number of cats being neutered by the Cat Action Team has risen. This includes cats neutered by CAT using other funds (e.g., *Pegasus feral cat neuter programme* above).

Although feral cats survive with little to no help from humans, they still have an impact on our communities and our pets. Society is increasingly resistant to mass

¹ Stojanovic V, Foley P. 2011. Infectious disease prevalence in a feral cat population on Prince Edward Island, Canada. *Can Vet J* 52:979-982.



Harbour seal released Governors Island, PEI; June 2011

euthanasia of excess or unwanted companion animals. This TNR project is an acceptable alternative to eradication programmes, and it has been shown to be workable over the past 10 years of implementation. This method of dealing with feral cat populations accepts that animals will occupy an area where there are available resources, and works with community members towards positive solutions. It attempts to control the reproduction, improve the health, and reduce the negative impact of these cats on the people, domestic animals, and wildlife with which they come into contact.

Wildlife and marine mammal rehabilitation (2010-2011)

M Desmarchelier, H Gelens, P-Y Daoust

This project has been funded since 2000 to provide care for the many orphaned and/or injured wild birds and animals that are brought to the AVC Veterinary Teaching Hospital (VTH) annually. The project expanded significantly in June 2010 when Dr. Marion Desmarchelier (specialist in zoo, exotic, and



Piping plover chick from recovery project with Parks Canada

wildlife medicine) joined the AVC. Over the past year, more than 80 veterinary students from all four years have been involved in care and rehabilitation of more than 200 wild animals. Students gain experience in doing a thorough physical examination and carrying out routine procedures on the animals and, with the increased patient caseload, there are



opportunities to assist with more advanced procedures such as cleaning oiled birds, anesthesia, endoscopy, and surgery.

As well, a new fourth-year clinical rotation and an internship in Zoo, Exotic, and Wildlife Medicine have been created, and substantial enrichment has been carried out on the facilities where the animals are housed.

Approximately 24 per cent of patients over the last year were mammals (including grey seals, a harbour seal, foxes, a beaver, squirrels, deer mice, and snowshoe hares) and 74 per cent were avian (including bald eagles and many other raptors, songbirds, shorebirds, and dovebies). A few wild reptiles were also treated. Forty-two per cent of the cases admitted to the VTH (i.e., not euthanized on arrival due to injuries or circumstances) were successfully treated and released back into the wild.

Most of the wild animals are brought in by members of the public. Dr. Desmarchelier and her team carry out public education whenever possible in a variety of ways—to inform people about the impact of human activities on animals and about zoonotic diseases, the AVC rehabilitation programme, and endangered species conservation.

PEIVMA sponsorship of an eagle

Medical and rehabilitation costs for the care of these animals are very expensive. In recognition of the 2011 Animal Health Week theme "Protecting the Health of all Species," the PEI Veterinary Medical Association generously sponsored the care of an eagle (described below) at the AVC this summer.

A bald eagle was brought to the AVC Veterinary Teaching Hospital (VTH) in early August by a PEI fisheries and wildlife officer who reported it had been unable to fly for several days. Upon arrival, the eagle was in poor body condition and weak, with a small wound on one wing, and, indeed, could not fly. Blood work showed a moderate regenerative anemia and ruled out capture myopathy or lead toxicosis. The eagle received intensive supportive care (IV fluids, analgesic drugs, etc.). Radiographs performed under general anesthesia showed no abnormalities. The eagle started to eat rapidly and regained some strength and energy over the first days of hospitalization but required additional time to recover fully. It is impossible to know what happened—the eagle may have been affected by a bad rain storm or had a traumatic incident that kept it from flying and therefore from eating. The eagle was successfully released in Stanhope, PEI, on August 24, 2011.

Intern Dr. Adriana Nielsen releasing the eagle at Stanhope, PEI

RESEARCH

Occurrence of renal diseases associated with excess body weight in otherwise healthy dogs

D Shaw

Complications of excessive body weight in humans, such as diabetes mellitus and hypertension, can have a direct deleterious effect on the kidney. However, obese and overweight human patients without those conditions are still at increased risk of developing advanced chronic renal disease. Prior to the development of advanced chronic renal disease, these otherwise healthy obese human patients exhibit proteinuria as a result of glomerular injury. The magnitude of proteinuria correlates with the degree of obesity. Glomerular disease that occurs independent of other complications of obesity has been termed obesity-related glomerulopathy (ORG). This condition has characteristic morphologic and biochemical changes that distinguish it from other forms of glomerulopathy.

An investigation of dogs with induced obesity found pathologic changes similar to ORG. That study evaluated the dogs shortly after they became obese and did not evaluate clinical pathological parameters associated

with renal disease. ORG and proteinuria has not been investigated or characterized in otherwise healthy dogs with naturally occurring obesity. Therefore, the purpose of this study was to determine if healthy overweight and obese dogs had indicators of renal injury as evidenced by proteinuria and albuminuria.

All dogs enrolled in this study were regarded by their owners as being free from clinical signs of illness. Dogs that were receiving, or had recently received, certain medications or supplements were excluded, as well as dogs with any clinically significant abnormality on physical examination or on bloodwork, urinalysis, blood pressure measurement, or an abdominal radiograph.

Qualifying dogs were scored on a previously validated 9-point body condition scoring (BCS) system. Dogs scored as a 4 or a 5 were grouped together as controls, with dogs scored as a 6, 7, 8, or 9 grouped together in the overweight/obese category. Proteinuria and albuminuria were measured and compared between the control group

and the overweight/obese group.

Forty-two dogs were enrolled in the study (out of 61 dogs evaluated), with 22 dogs in the control category and 20 dogs in the overweight/obese category. The mean urine protein-to-creatinine and albumin-to-creatinine ratios were measured and were not found to be significantly different between the two groups.

The results of this study did not support renal injury (as evidenced by proteinuria and albuminuria) in otherwise healthy overweight and obese dogs. While dogs have been used as research models for human obesity and obesity-related conditions, species differences may limit drawing direct comparisons between humans and canines. However, limitations due to the size of the study population may have hindered the ability to detect obesity-related glomerulopathy in dogs. Evaluation of a larger number of older and more markedly obese dogs may have increased the likelihood of identifying dogs with proteinuria, if ORG does exist in dogs.

PROJECTS FUNDED 2011

Three research projects and one new service project were funded through the SJDawc in 2011. As well, funding was renewed for two existing service projects—*AVC humane dog training programme (2011–2013)* (A M Carey and B MacLean) and *Wildlife rehabilitation, conservation and clinical research (2011–2012)* (M Desmarchelier, H Gelens, and P-Y Daoust)—and, through the Pegasus Family Foundation, for the *Pegasus feral cat neutering programme (2011–12)* (A Crook, T Matthews, and K Ling).

Evaluation of a palpation phantom to reduce the use of live cows for the instruction of bovine transrectal palpation

B Crane, J Spears

Palpation of the reproductive tract via the rectum is a necessary and basic skill for veterinarians in large animal practice. At AVC and other veterinary and agricultural institutions, large animal instruction in palpation occurs through the use of teaching animals. Palpation phantoms offer students a realistic alternative to live animal palpation and are best used in the early learning phases. Most instructors agree that these phantoms should

not entirely replace live animal instruction, but could significantly reduce the number of live animals needed to gain proficiency.

The Breed N Betsys® are commercially available palpation phantoms currently marketed to universities throughout the world. They include anatomically correct reproductive tracts, interchangeable parts including tracts in different stages of pregnancy, different cervixes, and a water rectum. Students can visualize the anatomy *in situ* and assess their own progress; instructors can directly assess the students' progress. This should enable students to achieve a better understanding of the technique prior to attempting transrectal palpation in a live animal.

This study will compare two groups of inexperienced students, one with time to practice on the Breed N Betsy® and one without. The objective is to quantify a reduction in the use of teaching cattle following initial instruction and practice with the Breed N Betsy.

Tangible animal parts from 3-D files

R Lofstedt

It is possible to create colour three-dimensional digital files of various structures by photography or laser scanning. Whole animals, their skeletons, internal organs, their pathology and even invasive techniques practiced on those animals can be modeled



Three-dimensional computed tomographic reconstruction of an orbital fracture. Image source: Lieger, O.L. et al. 2010 *Arch Facial Plast Surg.* 2010;12:186-191.

with great accuracy. In turn, these models can be viewed using free 3-D viewers. Now, these digital models can also be made into tangible colour representations of the digital files using rigid, intermediate, or flexible characteristics. This means that students can learn anatomy and pathology and prepare themselves for surgery with minimal or no animal use at all. For example, bones can be fractured and plated and regional nerve blocks can be demonstrated and practiced without ever having to touch an animal. This translates directly and indirectly into improved animal welfare.

Dr. Lofstedt has developed a three-dimensional digital file of a mare's uterus *in situ*. Through this pilot project, he will

convert the file into a full-size tangible model to demonstrate "proof of concept." Based on the outcome, the aim is to further develop the concept of tangible animal models from 3-D files and explore their potential impact on animal welfare.

Comparison of three radiographic techniques to determine reproductive status in cats

L Pack, M Woodland, P Rist, B Crane

Many of the cats that come into feral cat spay/neuter programmes or animal shelters have an unknown medical history. In particular, it is very difficult to determine if female cats have been spayed without actually doing surgery. To avoid unnecessary surgery and the associated risks and costs, it would be advantageous to screen female cats for reproductive status. This study will compare three radiographic techniques to determine the most accurate option for determining reproductive status in cats.

OTHER NEWS

2011 Christofor Award in Animal Welfare—Lauren Collins

Fourth-year student Lauren Collins received the 2011 Christofor Award in Animal Welfare at the AVC Fall Awards and Recognition Night on October 6. Lauren was chosen from among several well-qualified applicants for putting into practice in numerous ways her belief in improving animal welfare through education and increasing awareness. To this end, she joined the Animal Welfare Club in her first year at AVC, serving as vice-president and, most recently, president. She was actively involved in mounting the annual Animal Welfare in Practice conference for the past three years. Lauren and fellow AW Club executive member, Jen Fowler, proposed and instituted an annual AVC Animal Welfare Club scholarship, which provides funding to assist third-year students to pursue external rotations in areas of animal welfare. Lauren and Jen have also initiated an "Animals on Campus" committee as an adjunct to the AW Club—to evaluate, discuss, and propose practical ideas to benefit the AVC teaching animals, using designated club funds.

Lauren was a member of the AVC team that participated in the 2009 Animal Welfare Judging Competition at Michigan State University. During her three years at AVC, she has volunteered at every opportunity to add enrichment to the teaching animals—including grooming the horses and cows, socializing with the blood donor cats, and participating in the beagle outreach programme (visiting a seniors' residence). She also volunteers



2011 Christofor Award recipient Lauren Collins and presenter Dr. Alice Crook

regularly with the AVC feral cat neutering programme.

Lauren intends to continue promoting animal welfare through education throughout her career. The SJDawc commends Lauren for putting her beliefs into practice, and congratulates her on receiving the 2011 Christofor Award.

AVC Class of 2011 Gift to Pegasus Helping Hand Fund

There is a lovely tradition at AVC whereby graduating classes leave a class gift to the College, designated as the class chooses. Funds for these gifts are raised by the classes in various ways during their years at AVC.

In addition to their official class gift at graduation earlier this year, AVC Class of 2011 recently made a substantial donation to support the ongoing operation of the Pegasus Helping Hand Fund, originally established through the SJDawc in 2004 by the Pegasus Family Foundation. The fund is used to assist pet owners on a limited income with medical or surgical care of their cat or dog. To date, 34 animals have benefited from the fund.

The SJDawc gratefully acknowledges the generosity of AVC Class of 2011.

CONFERENCE NEWS

Animal Welfare in Practice

Please see page 3 for a report on the 2011 conference on Lameness in Dairy Cattle. Planning will begin early in 2012 for the eighth annual conference to be held next fall. Updates will be posted at upei.ca/awc.

WAF 2011- Assessment of Animal Welfare at Farm and Group Level

The 5th International Conference on the Assessment of Animal Welfare at Farm and Group Level (WAF) was held at the University of Guelph, Ontario, in August 2011. The focus of the meeting was assessment and auditing of welfare on farms and in groups of animals, with a European emphasis blended with research results from around the world. There was reflection on lessons learned from existing animal welfare audit schemes and on environmental and social impacts, including the influence of large buyers who insist on suppliers following specific, more welfare-friendly protocols.

During the session "Welfare assessment during transport, euthanasia, and slaughter," Dr. Cockram presented work on "Use of video recordings, a vehicle tri-axial accelerometer, and GPS system to study the effects of driving events on the stability and resting behaviour of cattle, young calves, and pigs." (Spence JY, Cockram MS; Abstract p17 of Proceedings). The SJDawc also presented a poster "Animal welfare research, service, and education at the Atlantic Veterinary College."

AVC students Emma Vaasjo and Michael Walker attended the conference and gave a talk for the AVC community on their return. See uoguelph.ca/ccsaw/waf/ for more information on the conference and to view the proceedings.

ISAE conference—July 2011

Dr. Cockram gave a presentation and doctoral students Niamh Caffrey and Jackie Ellis presented posters at the 45th Congress of the International Society for Applied Ethology in Indianapolis in July 2011. The abstracts are published in the proceedings <http://ars.usda.gov/meetings/isae2011/ISAE%202011%20Proceedings.pdf>.

- Cockram et al. Behavioural and physiological methods to evaluate fatigue in sheep following treadmill exercise. Abstract p91, *Proceedings*.
- Caffrey N et al. Best practice for euthanasia in Canadian animal shelters. Abstract p104, *Proceedings*.
- Ellis JJ et al. Stress following caging of shelter cats (*Felis silvestris catus*). Abstract p125, *Proceedings*.

Nova Scotia SPCA Animal Wellness Conference—June 2011

Graduate student Niamh Caffrey and coordinator Dr. Alice Crook gave presentations on "Best practices for euthanasia in Canadian animal shelters" and "Effective veterinary response to animal abuse," respectively, at the first Animal Wellness Conference of the Nova Scotia SPCA, in Dartmouth, NS, in June 2011.

RECENT PUBLICATIONS

Book chapter

- Cockram MS, Hughes BO. 2011. Health and Disease. Chapter 8. p 120-137. In *Animal Welfare*. 2nd edition. Eds. Appleby M, Hughes B, Mench J, Olsson A. CABI, Wallingford, UK.

Refereed journals

- Caffrey N, Mouchili A, McConkey S, Cockram MS. 2011. Survey of euthanasia practices in animal shelters in Canada. *Canadian Veterinary Journal* 52:55-61.
- Cockram MS, Shaw DJ, Milne EM, Bryce R, McClean C, Daniels MJ. 2011. Comparison of effects of different methods of culling red deer (*Cervus elaphus*) by shooting on behaviour and post-mortem measurements of blood chemistry, muscle glycogen and carcass characteristics. *Animal Welfare* 20: 211-224.

- Miedema HM, Cockram MS, Dwyer CM, Macrae AI. 2011. Changes in the behaviour of dairy cows during the 24 h before normal calving compared with behaviour during late pregnancy. *Applied Animal Behaviour Science* 131: 8-14.
- Miedema HM, Cockram MS, Dwyer CM, Macrae AI. 2011. Behavioural predictors of the start of normal and dystocic calving in dairy cows and heifers. *Applied Animal Behaviour Science* 132: 14-19.
- Nicholas F, Crook A, Sargan D. 2011. Internet resources cataloguing inherited disorders in dogs. *The Veterinary Journal* 189:132-135

Other

- Crook A, Dawson S, Côté E, Berry J, MacDonald S. Canine Inherited Disorders Database (upei.ca/cidd). 2011. Redesign and review of database (© 2000) to provide veterinarians, breeders, and dog owners with information about inherited conditions in dogs. SJDAWC and CVMA.
- Lemke K, Crook A. Examples of Anaesthetic and Pain Management Protocols for Healthy Dogs and Cats. 2nd edition 2011; CVMA and SJDAWC. (Please see page 5 for more information.)

SJDAWC

Promoting animal welfare through research, service, and education

MANY THANKS TO OUR SPONSORS!

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We also thank the following organizations and individuals for their support:

- The Pegasus Family Foundation, through the Silicon Valley Community Foundation (Pegasus projects)
- AVC Class of 2011 (Pegasus Helping Hand Fund)
- Mr. David Madren
- Mr. Glenn Loranger
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- Feral cat neutering projects: Pfizer Canada; Iams and Eukanuba
- PEI Veterinary Medical Association (Wildlife rehabilitation)
- Halifax Veterinary Hospital, Spryfield Animal Hospital, and Fairview Animal Hospital—in memory of clients' pets
- Nutrience Pet Foods

We are also grateful to the many generous individuals, veterinary hospitals, and other businesses, too numerous to mention, who have made a donation to a specific project or in memory of a beloved pet.

To learn how you can support the SJDAWC go to upei.ca/awc.

or write to:

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