

Learning to Live with Large Carnivores



WildCoast Project Primer & Guidelines

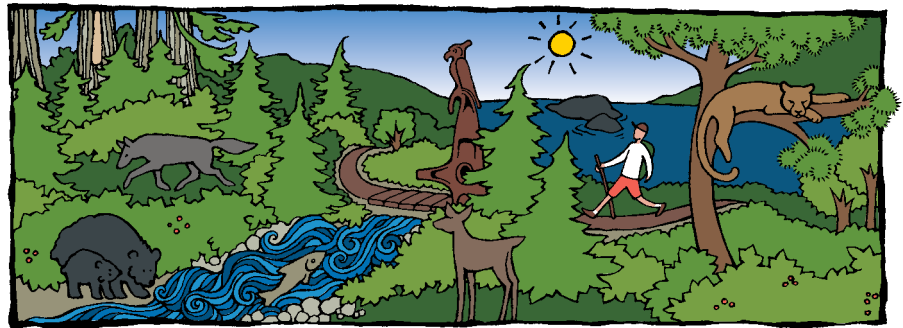
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Learning to Live with Large Carnivores:
WildCoast Project Primer & Guidelines

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Projet CÙte Sauvage

PrÉdàteurs, Proies et Personnes



WildCoast Project

Predators, Prey and People

graphic created by Marion Syme

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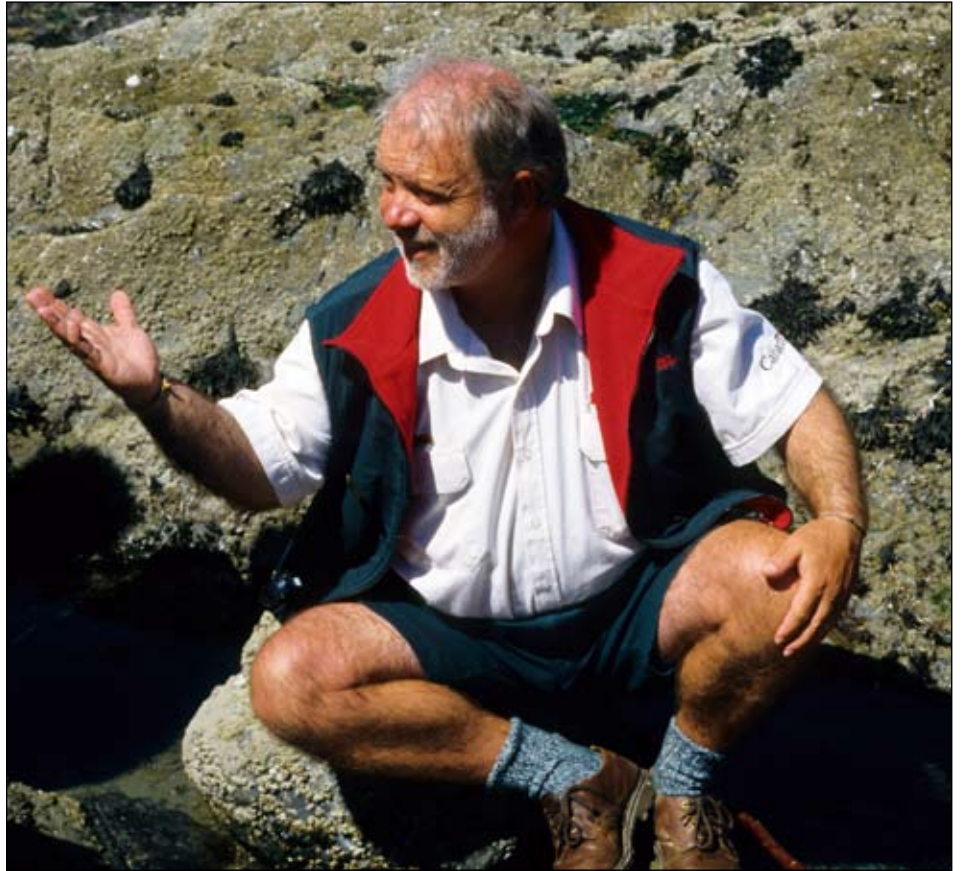
and

Pacific Rim National Park Reserve



Parks
Canada

Parcs
Canada



Doug Andrew imparted the joy of learning through his own joy as an eternal student and gifted teacher. After 25 years as a B.C. Parks interpreter, he came to Parks Canada at Pacific Rim National Park Reserve in 2002, where he continued working as a park interpreter until his premature death in 2006.

Doug's awe of the wild world only increased as his knowledge and understanding of it deepened. While his irrepressible sense of humour ensured that we often laughed while learning, he took his responsibility as an educator very seriously indeed.

Our ability to experience the natural world was enhanced when we could see it through Dougie's eyes. This was his gift; he made us see. And thanks to him, we remember.

This project is dedicated to Doug Andrew and his commitment to education.

His legacy lives on.

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photo courtesy of Tracy Moss

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In the summer of 2000, resource conservation staff at Pacific Rim National Park Reserve and others, on the outer coast of Vancouver Island, confronted a mystery that had been growing more apparent over the previous two years. They were compelled to do so by the attack on a kayaker by a wolf in Clayoquot Sound.



photo courtesy of jacquelinewindh.com

Aggressive encounters with this top predator have been exceptionally rare in North America. In fact, there may well be only one documented case of a person being killed by a wolf in the wild.

Nevertheless, by 2003, from all three park units: the West Coast Trail, Broken Group Islands and Long Beach, reports suggested that the encounters were increasing in frequency and intensity. At the same time, other reports suggested a similar trend with another of the park's large carnivores: the cougar.

But were aggressive encounters really increasing in and around Pacific Rim National Park Reserve or was this just an impression? If they were, why would this be? For park staff, these were critical questions. The answers would provide invaluable guidance as how best to reduce the risk of encounters and conflict. Concerned for the welfare of people and predators, the Wildlife-Human Conflict Specialist at the park brought together a diverse assembly of natural and social science researchers, along with knowledgeable residents, to enlist their assistance in solving the mystery confronting him. The initiative was called the WildCoast Project – a study of the links between predators, prey, people and landscape dynamics.

STUDY AREA(S)



The pages that follow present brief summaries of the WildCoast research projects to-date, along with implications for management. These are then translated into a set of guidelines developed for park staff, eco-tourism operators and guides, resort owners, and school administrators and teachers. Taken as a whole, the WildCoast Primer aims to reduce the risk of conflict between people and predators in a large region on the outer west coast of Vancouver Island.

The Primer is a “living” document, meaning that it will continue to evolve as new research is completed and the findings added to the growing database. Later versions will present insights drawn from Local Ecological Knowledge (LEK) studies that are currently being conducted. A draft of a technical version providing greater details on research methodologies and results has been developed for Parks Canada staff and others seeking more detail.

WildCoast Study Design Workshop, University of Victoria (2004)

~ Jennie Sparkes, Human Dimensions Section, Parks Canada

★ [Click here for more detail on this research](#)

Objectives

- In 2004, academics, researcher and Parks Canada staff interested in carnivore-human interactions came together for a workshop. Workshop objectives included creating awareness of how the ecological and social sciences could contribute to the better understanding of carnivore-human interactions, and ultimately, help manage the issue. The multi-disciplinary study design for the WildCoast Project resulted from the workshop.

Specific questions discussed at the workshop:

- What kind of research can help us better understand carnivore-human interactions?
- What method(s) can be used to undertake the research?
- How will information resulting from the research contribute to management?
- What resources will be required to conduct the research and implement a monitoring strategy?

Methods

- A three-day workshop was held 18-20 September, 2004 at the University of Victoria.
- Participants addressed the above-mentioned questions.



photo courtesy of Geoff Carrow

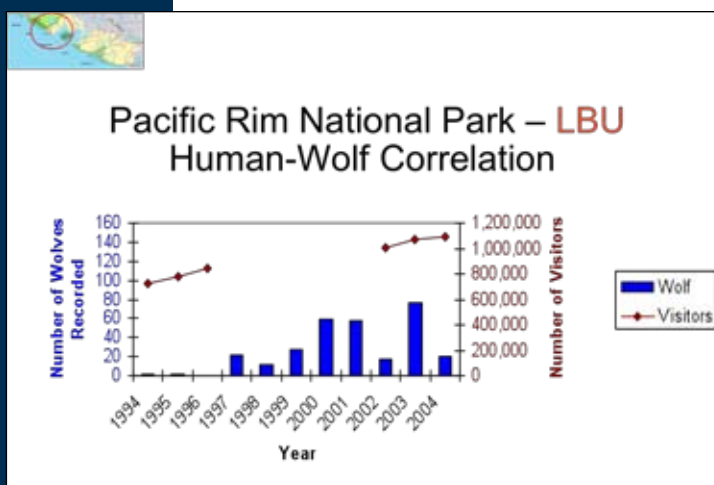
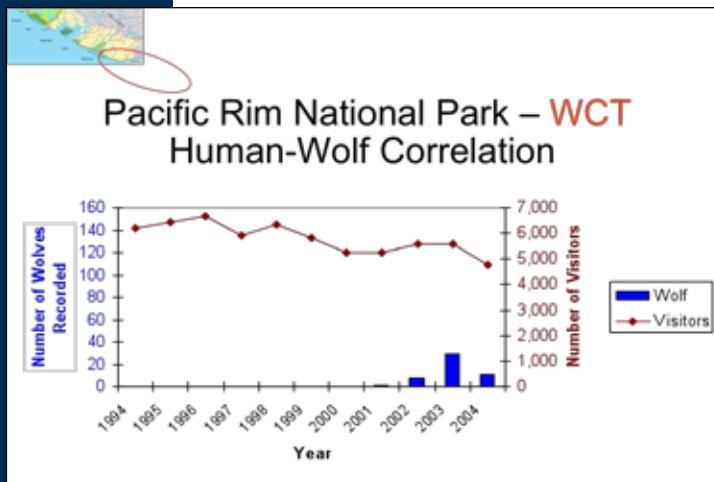
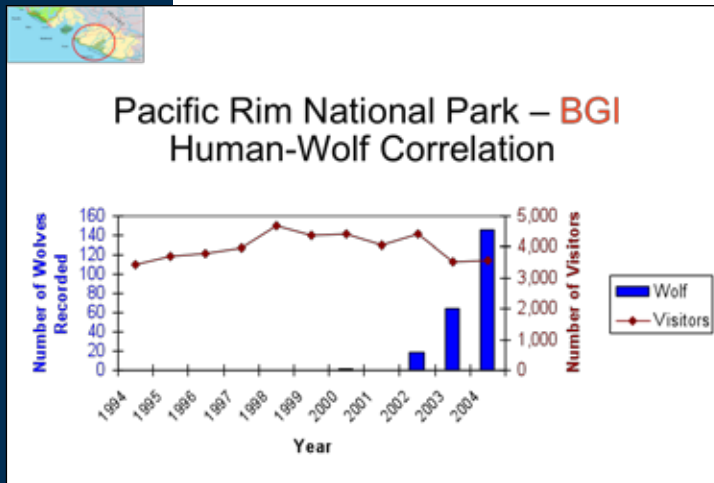
Results

A summary of discussions, including:

- Problem statements
- Research questions
- Ideas related to specific research
- A framework which describes how ecological and social science will proceed together in an integrated way
- A list of potential funding sources for social science research

For ecological research, the following research questions were identified:

- What is the abundance and distribution of wolves and cougars within the park region?
- What influences the distribution of wolves and cougars?
- What are key characteristics of wolf and cougar habitat in Pacific Rim National Park Reserve (PRNPR)?



graphs courtesy of Jennie Sparkes

human-carnivore interactions. Results of research will lead to this better understanding, and ultimately, effective ways to manage human-carnivore interactions.

- What influences the distribution of deer?
- What influences the distribution of people?
- What roles do carnivore behavior and human behaviour play in the seriousness of encounters?
- What factors would predict a negative encounter?

For social science, the following research questions were identified:

- What influences choices when people are in a wilderness setting/on holidays?
- What human actions (e.g. feeding, taking photos, touching) lead to habituation and food-conditioning, and why do humans do these activities?
- What role does fear play in people's choices?
- How can humans have a healthy wariness for carnivores and vice versa?
- What is the role of media in influencing choices when people a) venture into natural areas; and b) encounter carnivores in nature?
- How are carnivores behaving in response to how humans act during encounters?
- What does 'wilderness' mean to people and how does this meaning influence people's choices when a carnivore is present?
- Is Parks Canada effectively communicating how to act in an encounter with a carnivore?
- What percentage of visitors to PRNPR is having encounters, and does this differ from encounters in other areas outside the park?

Implications for Management

The workshop helped identify key research questions, research methods, and funding sources to better understand



2004

2010

Address
Gaps

WildCoast Project Overview

increase understanding of wildlife-human conflict
reduce wildlife-human conflict

Multi-disciplinary Approach

*Human
Dimensions*

*Ecological
Dimensions*

Attitudes, Values, Knowledge, Awareness, Behaviours	Nuu-chah-nulth First Nations TEK	Carnivore-Human Interactions Analysis	Deer Habitat Availability	Wolf & Cougar Ecology Research	Engage Communities LEK & Predator-Prey Surveys
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Synopsis

Knowledge Mobilization

Carnivore-Human Conflict Management Strategies

Science - TEK - LEK - based
Communications / Education / Operations / Visitor Experience

Implementation / Monitoring

Project Outcomes

- Inform Land Use Planning
- Positive Change - Human Behaviour / Visitor Experience
- Adaptive Management Informed by Project Results
- Reduced Carnivore-Human Conflict

A Case History of Wolf-Human Encounters in and Around Pacific Rim National Park Reserve (1978-2003)

~ Todd Windle, University of Northern British Columbia

★ [Click here for more detail on this research](#)

Objectives

- Review all wolf encounters in and around Pacific Rim National Park Reserve (PRNPR) found in the Park Wildlife Database.

Methods

- The PRNPR Wildlife Database was queried for records of wolf encounters.
- Records were categorized as either 'aggressive' or 'non-aggressive'. An additional category, 'aggression towards dogs' was added due to the high number of records containing this behaviour.

Results

- 52 records of wolf encounters were documented between 1983 and 2003.
- Encounters were categorized as follows: 22 aggressive, 13 non-aggressive, 17 aggressive towards dogs.
- Descriptions of each encounter were given.

Implications for Management

- Understanding the number and types of wolf-human interactions is important to help guide park management decisions.



photo courtesy of Joel Sartore

Cougar-Human Interactions on the West Coast of Vancouver Island (2005-2006)

~ Danielle Thompson, MSc., University of Victoria



Click here for more detail
on this research

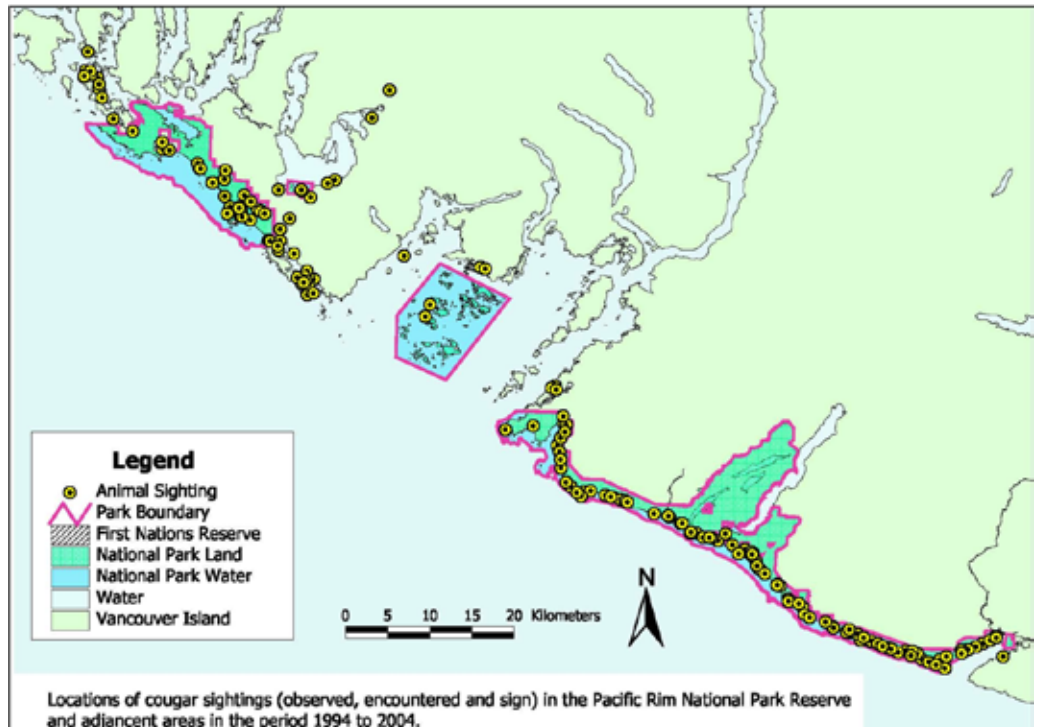
Objectives

- Increase our knowledge of factors that influence cougar-human interactions.
- Increase our understanding of the relationships between cougars, habitat, and humans.
- Field test non-invasive survey methods for monitoring cougars that are effective and practical in coastal environments.
- Locate potential hot spots for cougar-human interactions by identifying important cougar habitat characteristics and areas of human activity.

Methods

- The study area was located in Pacific Rim National Park Reserve (PRNPR) and the Clayoquot Sound UNESCO Biosphere Reserve (CSUBR).
- Field observations were carried out during May-August of 2005 in the Long Beach Unit (LBU) and during May-August of 2006 in the LBU and West Coast Trail (WCT).
- Indirect methods for detecting cougars (track and scat surveys, scented rub pads, remote-triggered cameras and scat detector dog) were tested at various sites to see which methods were useful in detecting cougar presence in coastal environments.
- Surveys were conducted along the WCT to determine characteristics of various habitat types.

MAP OF COUGAR SIGHTINGS



map courtesy of Danielle Thompson

- In 2006, hikers were counted along the entire WCT to collect information about when and where people were in relation to the predator and prey sign.

Results

- Several cougar-human interaction hotspots were identified in the WCT. These locations were associated with high human use (campground) areas in close proximity to logging activity on the park boundary. Further analysis will help determine if logging influences prey populations and/or cougar access to coastal areas restricted by dense vegetation.
- Hotspots of cougar-human activity were found at or near large river drainages. Further analysis will help us understand if habitat characteristics influence where cougars are found and if there is a potential risk of cougar-human interactions in other habitats.
- Track and scat surveys were determined to be the most effective method for studying cougars in coastal environments. Cougars were not detected by the detector dog, rub pads or remote-triggered cameras.

Implications for Management

- A greater understanding of cougar-human conflict will help managers foresee and mitigate the effects of increasing human activity within protected areas.
- Sign surveys were the most successful non-invasive method to detect cougars. They were also the least expensive in terms of equipment costs and field time. Sign surveys may be the most attractive method for parks managers to monitor cougars over the long term.



photo courtesy of Bob Hansen

Carnivore-Human Interactions in Relation to Patterns of Human Use (1972-2005)

~ Danielle Edwards, Consultant, Pacific Rim National Park Reserve

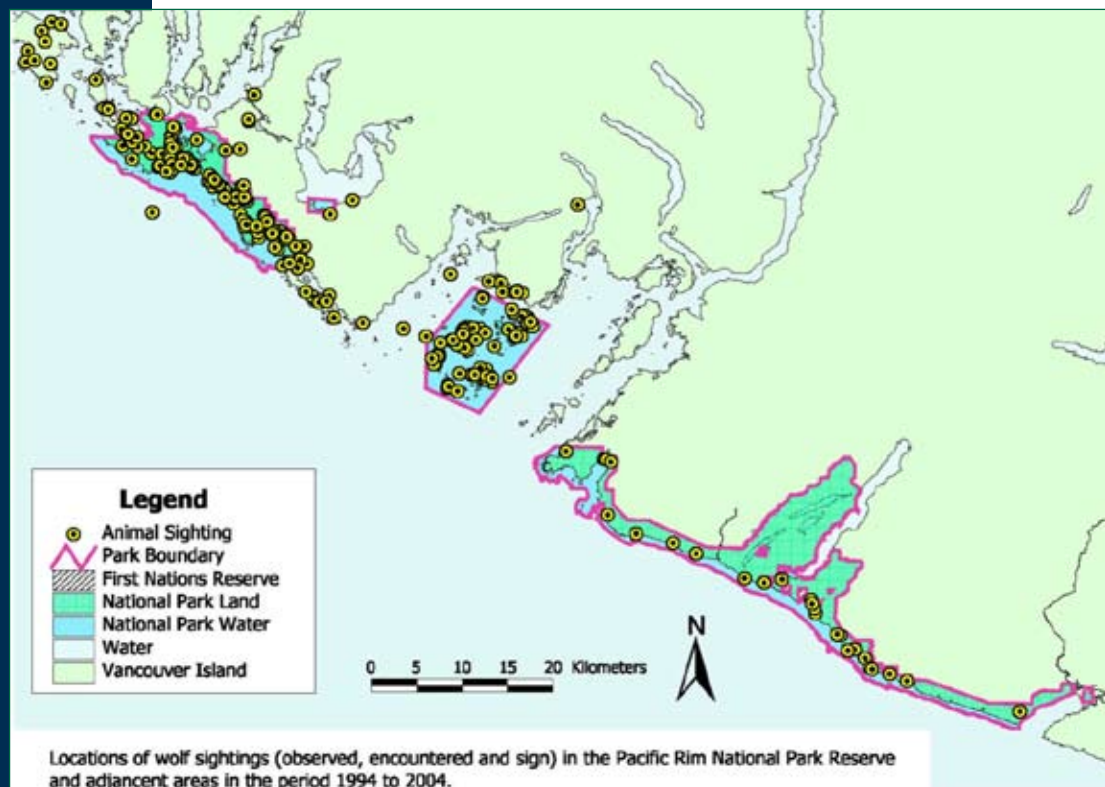
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Objectives

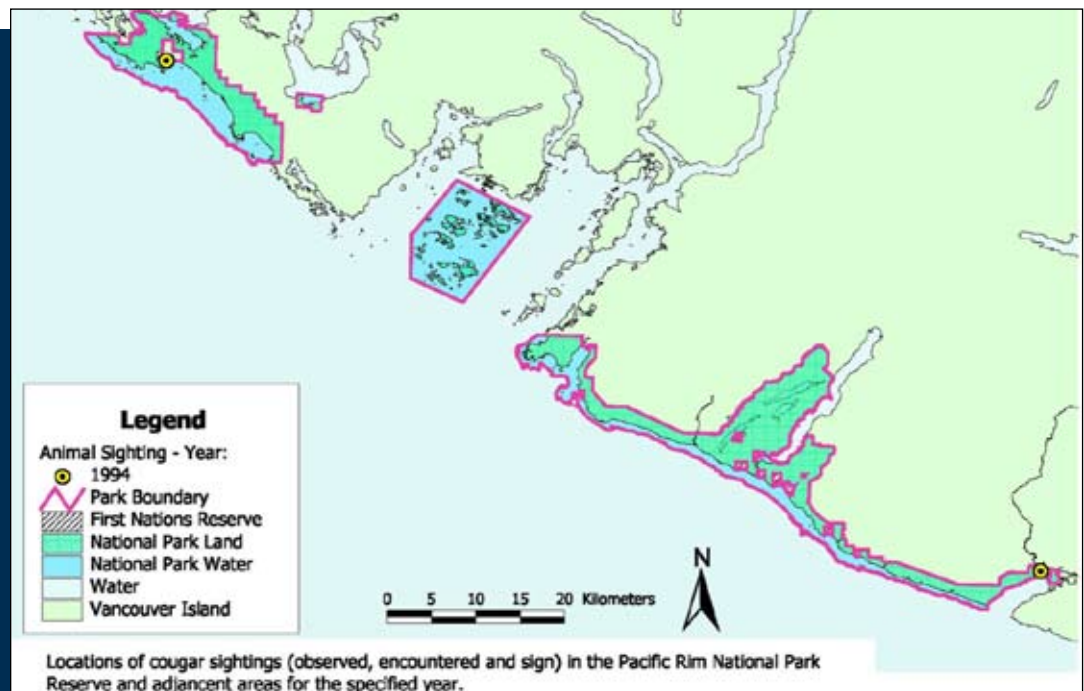
- Compile the available carnivore observation and encounter data.
- Collect the available visitor data for the region.
- Investigate relationships between increased carnivore incidents and numbers of visitors.

Methods

- Park visitor data from a number of sources was compiled in 2005.
- Outside the park boundaries, visitor data is collected by the Ucluelet and Tofino Chamber of Commerce Information Centers. This information was also used.
- Wolf and cougar data were taken from Pacific Rim National Park Reserve's (PRNPR) Wildlife Observation Database. Information has been recorded in this database since 1996. Historical records of extraordinary carnivore observations dating back to 1972 were also included in this project.
- The number of animals recorded for each encounter was compared to visitor data for each of the three park units.



map courtesy of Danielle Edwards



Results

map courtesy of Danielle Edwards

- The number of visitors to the Long Beach Unit (LBU) has increased in all months over the last several years. Annual LBU has reached just under 800,000 visitors per year
- The number of user nights in the Broken Group Islands (BGI) has been stable over the past 10 years and has even declined in recent years.
- The number of overnight hikers on the WCTU declined from the mid 90s and then stabilized over recent years.
- The WCTU and the BGIUs have the highest levels of backcountry overnight use in the Canadian national park system. Current levels are estimated at 10,000 plus user nights for the BGIU and nearly 30,000 user nights for the WCTU.
- The number of wolf and cougar encounters has increased significantly since 1994.
- Cougar observations have been sporadic but wolf observations and encounters began in large numbers in 1999 and have risen each year since 2000.
- There has been an increased trend of wolves behaving indifferently, following and approaching people and attacking pets.
- There was no evident relationship found between the number of visitors and the number of carnivore reports.

Implications for Management

A number of suggestions resulted from the project including:

- Make additional changes to the Wildlife Database.
- Develop the visitor database and keep the data standardized and in a central location.
- Calibrate trail counters to help gather finer scale data on visitor numbers and activities.
- Conduct exit surveys at LBU trails to help collect information on visitor characteristics.
- Standardize boat surveys in the BGI to estimate the number of non-permit (day use) visitors to the park.

Human Encounters with Wolves and Cougars in the Pacific Rim National Park Reserve Area: Summary and Analysis of Behaviour (1983-2006)

~ Michelle Theberge, Pacific Rim National Park Reserve

★ [Click here for more detail on this research](#)

Objectives

- Minimize the risk of negative encounters between humans and carnivores by trying to understand more about the behaviour of these animals during encounters.
- Interpret behaviours of wolves and cougars during human encounters to minimize the risks to public safety.
- Review and re-classify the documented encounters between people and wolves/cougars that have occurred in the Pacific Rim National Park Reserve (PRNPR) region.
- Create a method for evaluating the animals' behaviour during the encounters.



photo courtesy of Steve Diggon

Methods

- 1370 cougar and wolf observations/encounters from 1983 to 2006 were reviewed. An encounter was defined as when an animal interacts with people, vehicle, vessel or place or is in an area of high human activity such as a town or campground. Encounters are not considered negative or positive; they are simply an acknowledgement between the animal(s) and person(s).
- The data was re-organized into different encounter types.
- Flow charts were created to further break down the encounter behavior.

Results

- A series of flowcharts were created to break down wolf and cougar encounter behaviour and to help interpret carnivore behaviour.
- 48 encounters involving cougars and humans and/or pets and 120 encounters with wolves and humans and/or pets were evaluated for behaviour.
- Case histories of the encounters were given.

Implications for Management

- The flowcharts will guide interviews with people who have observed and/or encountered a cougar or wolf. This will facilitate obtaining the most accurate information possible to record in the PRNPR Wildlife Database.
- Information will offer insight into carnivore behaviour. This will help prevent unnecessary removal of "problem" animals and help detect habituated or food-conditioned animals before they become a "problem."

Social Science Annotated Bibliography on Human-Carnivore Interactions (2005) ~ Cecile LaCombe, Optimal Environments Inc.



Click here for more detail
on this research

Objectives

- Summarize literature relevant to wolf and cougar management in Pacific Rim National Park Reserve (PRNPR) with particular emphasis on:
 - * Learning about human-carnivore encounters from previous research;
 - * Understanding factors that lead to negative encounters;
 - * Identifying effective management and communication strategies.

Methods

- Extensive literature searches were made in several on-line databases. Documents were obtained as on-line documents, from the University of Victoria library, through interlibrary loans, and directly from researchers.

Results

- A searchable database which includes sections for encounters, human factors associated with encounters and management.
- An annotated literature review.
- A collection of referenced documents.

Summary of Literature

Encounters – describes human-wolf and human-cougar encounters. Key findings in the literature include:

- Information that exists on carnivore attacks on humans is fragmented.
- Most wolf attacks were by rabid animals. There was an increased risk of attacks by wolves that had lost their fear of humans; by wolves in highly modified environments with low prey abundance; and in areas with high human density.
- Victims of predatory attacks were mostly young children. Pets (dogs) also attracted wolves and lead to negative encounters.

Human factors associated with encounters – describes research related to inappropriate behaviours in parks, trends in ecotourism, and individual attitudes toward, beliefs about and knowledge of carnivores. Also includes the following topics:

- Reduction in habitat.
- Increasing human populations near carnivore territory.
- Inappropriate human behaviours including feeding, frequent and repeated approaches such as taking photos.
- Social pressure and tourism trends (tourist expectations).
- Attitudes, knowledge and beliefs.

Management – *describes management strategies undertaken to change inappropriate behaviours and provides examples of wolf and cougar management plans.* Key findings in the literature include:

- Most effort has focussed on changing negative attitudes toward carnivores.
- Most management strategies rely on scientific theories about changing human behaviours.
- Management strategies to change inappropriate human behaviours are not commonly tested.

Implications for Management

- Understanding trends in human-carnivore encounters and the human factors associated with these encounters can help park management minimize conflict.
- Successful management strategies and educational programs used elsewhere can guide PRNPR in implementing strategies to change human behaviour.



Visitor Behaviour and Perception of Bears, Wolves and Cougars at Pacific Rim National Park Reserve (2005)

~ *Sasha Wade, BSc. Honours Project, University of Victoria*



[Click here for more detail on this research](#)

Objective

- To determine whether visitor behaviour towards wolves and cougars can be predicted by the level of risk visitors perceive towards these animals, the emotions they attribute to them, and their level of knowledge (both the level of knowledge visitors think they have and what they actually have).

Methods

- The study area included the Long Beach Unit (LBU) of Pacific Rim National Park Reserve (PRNPR).
- Surveys were distributed to visitors in November 2004.

Results

- The level of risk and level of knowledge people perceived they had of wolves and cougars were related to people's interactions with these animals. It was possible to predict human interactions with carnivores based on emotions people attributed to animals.
- The distance visitors wanted to stay from an animal was furthest for cougars, second for wolves and closest for bears.
- Visitors perceived the greatest risk to be from bears.
- The less fear visitors had of an animal, the greater the hope they had to see it.
- Most people thought they knew more about bears than cougars and wolves.
- 40% of respondents who did not act according to recommended behaviour during an encounter with a bear, wolf or cougar did so because they believed interacting with nature was part of their connection with nature; another 20% did so because they believed their one interaction did not hurt the animal.
- The level of risk a visitor perceived was most influenced by the potential of being hurt.
- The level of knowledge visitors thought they had of carnivores influenced how they would react during an encounter.
- The emotions visitors attributed towards an animal significantly influenced their reason for not acting according to recommended behaviour.

Implications for Management

- It may be useful to consider the consequences of actions in carnivore education strategies. This includes stressing the consequence of people NOT following recommended behaviour.
- Information may not be enough of a motivating factor for visitors to follow recommended behaviour around carnivores. Messages may be more effective if they focus on emotions which were found to influence visitor behaviour.

- Educational materials focusing on preventing carnivore-human interactions, include messaging that fosters an appreciation that wolves and cougar can present a safety risk. The risk is low but real (especially for cougar). They are top level predators deserving of a healthy wariness from people.
- Produce educational signs or some other proactive method of reaching visitors who are either new or don't visit PRNPR often.
- Promote use of carnivore information sources that are already popular (such as the Parks Canada website).
- Methods of teaching visitors how to behave responsibly in 'carnivore country' need to produce more memorable messages so that visitors can retain the information.



photo courtesy of Bob Hansen

Residents' Attributions, Attitudes, and Support for Human-Wildlife Conflict Management (2005)

~ Christine Jackson, BSc. Honours Project, University of Victoria



[Click here for more detail on this research](#)

Objectives

- Gain knowledge about human-wildlife conflicts to assist in the effective management of these interactions.
- Learn about the values, attitudes, knowledge and past experience of residents near the Long Beach Unit (LBU) of Pacific Rim National Park Reserve (PRNPR) have toward carnivores.
- Examine how residents' experiences with, and attitudes toward, carnivores affect their perceptions of why interactions happen.
- Look at how environmental attitudes and knowledge about current management strategies predict residents' support for various solutions.

Methods

- Questionnaires were randomly distributed to residents of Tofino and Ucluelet.

Results

- Environmental attitudes and knowledge about currently used strategies did not strongly influence residents' behaviour.
- Most residents believed their interactions with carnivores to be exciting and positive.
- Residents attributed the main cause of wildlife problems to waste management practices.
- The most favoured solutions to human-wildlife conflicts were those strategies that require humans to change their behaviour.
- Residents were not very knowledgeable about local wildlife management strategies.
- 60% of local residents do not believe there is a problem with wolves or cougars.
- Most residents believed they are being educated about wolves and cougars.

Implications for Management

- Results suggest that residents will support solutions when they believe the solutions will work.
- To gain support for management solutions, there needs to be education about the causes of human-carnivore conflicts and the consequences of human actions.
- Signs are not an effective way to influence resident behaviour.
- It may be important to consider emotions when creating education and management strategies because this study found that emotions may influence behaviour more than knowledge.
- Results suggest that to motivate changes in residents' behavior a healthy wariness for powerful predators needs to be developed.
- Education about the effects of residents' actions may be more important than education about management strategies.

Wild Wolves? Understanding Human-Wolf Interactions in a Coastal Canadian National Park Reserve (2005)

~ Jennifer Smith, MSc., Lakehead University

★ [Click here for more detail on this research](#)

Objectives

- To understand what wolves mean to paddlers in the Broken Group Islands (BGI) and why.
- To learn what factors influence paddlers' perceptions and attitudes about wolves.
- To learn what paddlers' think of Parks Canada's wolf management strategies in the BGI.



photo courtesy of Bob Hansen

Methods

- The study was done in the BGI, Pacific Rim National Park Reserve (PRNPR) during July-August 2005.
- Questionnaires were used to measure paddlers' attitudes toward wolves.
- Interviews were conducted to explore what wolves meant to paddlers' in the BGI and why.

Results

- Most visitors to the BGI did not know wolves were present in the islands. Less than 25% sought out visitor information before entering the park.
- When survey results were considered relative to the annual number of BGI visitors, data showed that more recreational paddlers knew about wolves before entering the BGI than did commercial paddlers (specifically the clients).
- Most of the visitors who were aware of wolves in the BGI said this awareness had nothing to do with their decision to visit the islands.

- Paddlers from urban areas had a greater negative attitude towards wolves than did paddlers from rural areas.
- Education levels influenced the attitudes paddlers had toward wolves.
- Generally, paddlers in the BGI had a strong interest in the ecological value of wolves.
- Wolves meant different things to different people and at the same time meant different things depending on the situation and context.
- Most of the paddlers in the BGI chose education as a management strategy to reduce human-wolf interactions.
- Co-existence between people and wolves was considered possible if visitor awareness was increased, and if food conditioning of wolves was decreased.

Implications for Management

Results of this work provide Parks Canada with information that can be used to improve educational programs that address negative human-wolf encounters. It can also help park managers develop effective strategies to reduce wolf-human conflict. The following are recommendations based on this research:

- PRNPR should continue providing commercial outfitters with information about wolves in the BGI so that they can continue sharing this information with their clients and promote a positive attitude about wolves and humans co-existing.
- Giving information about wolves to visitors when they are already in the islands may be an effective method of delivering messages.
- Canadian paddlers should be targeted with educational strategies that increase the ecological value of wolves.
- Paddlers coming from urban areas should be targeted with messages intended to reduce fear, dislike and indifference towards wolves, and paddlers from rural areas should be targeted with messages related to ecological values of wolves and the importance of discouraging human-wolf interactions.
- Paddlers who have not previously encountered a wolf could benefit from information that emphasizes the ecological role of wolves and outlines what to do in the event of an encounter.
- Younger paddlers (18 to 25 year olds) require more education about the presence of wolves in the BGI and how to respond to a wolf-human interaction.
- Education programs would be most effective to reduce fear, dislike and indifference towards wolves if they targeted paddlers with an education level of high school or less, or who had completed graduate school.
- First-time paddlers and long-time repeat visitors to the BGI could benefit from messages that focus on the ecological value of wolves and how to avoid encounters with them.
- Food storage and garbage management practices in the BGI should be reviewed and updated.



photo courtesy of Doug Andrews (PRNPR)

Attitudes, Perception and Knowledge: Understanding the Human-Cougar Nexus on the West Coast Trail (2004)

~ Geoff Carrow, MSc., Royal Roads University

★ [Click here for more detail on this research](#)



photo courtesy of Pacific Rim National Park Reserve

Objectives

- Develop an understanding of attitudes, perspectives and knowledge of hikers visiting the West Coast Trail (WCT) unit of Pacific Rim National Park Reserve (PRNPR).
- Understand hikers' attitudes towards cougars.
- Learn hikers' perception of various carnivore management strategies.
- Examine the level of knowledge hikers have about cougar ecology and traveling in cougar country.

Methods

- The study area consisted of the WCT unit of PRNPR.
- A questionnaire-style survey was distributed by park visitor services staff to hikers at both WCT trailheads. Completing the 10-minute survey was voluntary.
- Questionnaires were distributed in August and September of 2004.

Results

- Hikers' attitudes towards cougars were affected by previous encounters with cougars and how well Parks Canada informed hikers about travelling in cougar country.
- Hikers' perception of cougar management was influenced by having previously hiked the WCT.
- There was strong support for non-lethal wildlife management options.
- Hikers' knowledge of cougar ecology and park messages was affected by residence type. Rural residents were more informed, and hikers living in cougar country were more knowledgeable about cougar ecology. Those who had previously encountered a cougar and those who previously prepared for travelling in cougar country were knowledgeable about cougar ecology and protocols.

Implications for Management

- Because past cougar encounters were found to be the most significant



photo courtesy of Parks Canada Agency

variable influencing hikers' attitudes, education programs that highlight co-existence could be a strong management tool for influencing peoples' opinions.

- Results suggest that to gain public support for management strategies, more information about the implications of managing carnivore-human interactions is needed.
- Wildlife managers should consider the effect of wildlife management actions on public opinion.
- Communications strategies to inform the public about cougar conservation would benefit by targeting urban residents to achieve the highest impact on knowledge, and therefore on attitudes.



photo courtesy of Bob Hansen

Black-Tailed Deer Ecology in and Around Pacific Rim National Park Reserve (2007)

~ Christian Engelstoft, MSc., Alula Biological Consulting



Click here for more detail
on this research

Objectives

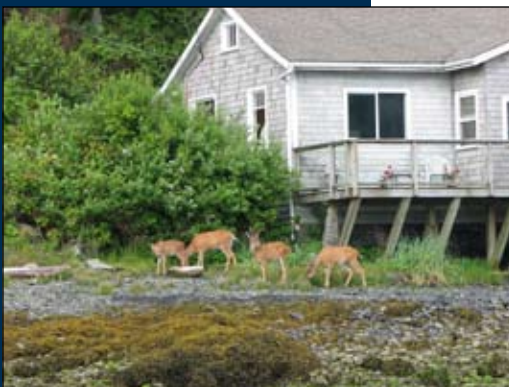
- Provide an overview of deer ecology.
- Describe the potential density of Black-tailed deer in different forest stand ages on the west coast of Vancouver Island.

Methods

- The scientific literature was reviewed and Black-tailed deer experts were interviewed.
- Estimates of the potential deer densities that could be supported by various habitat types on the west coast of Vancouver Island were compiled.

Results

- Deer ecology consists of 5 seasons: birth (May-June), spring (June), summer (July-August), hunting and rut (September-November), and winter (December-February).
- Deer use forest cover for a number of reasons, including security and protection from the elements.
- Migration of deer is seasonally controlled by elevation, closure of the forest canopy, density of vegetation on the forest floor, and lichen density.
- Deer habitat includes forest stands of various ages. They prefer young forests over old and are least likely to choose open forests (clear cuts).
- Migration takes three forms: resident deer don't migrate, some deer migrate inconsistently, and other deer migrate consistently every year.
- Deer appear to establish home ranges based on their mother's home range.
- Deer appear to remember good feeding areas and return to these areas.
- Deer density adjacent to PRNPR is estimated to be very low, between 0.4 and 1.8 deer/km². Elsewhere on Vancouver Island estimates range from 5 to 20 deer/km².
- Cougar and wolf predation is the largest cause of deer mortality.
- Two years following logging, a clear cut can produce deer forage for 20-30 years.
- Salal-huckleberry sites were the most important sites in spring and summer; sword fern sites provided food in winter; and skunk cabbage sites were important during the spring.



photos courtesy of Bob Hansen

Implications for Management

- The information provided in this report is intended to provide Parks Canada with information that can be used to assist in assessing the availability of good deer habitat in the region.

Diet of Carnivores in Greater Pacific Rim National Park of Canada Ecosystem (2000-2005)*~ Song Horng Neo, Consultant, Pacific Rim National Park Reserve*[Click here for more detail on this research](#)

Objectives

- To determine the most common prey items of wolves and cougars.
- To determine which prey species are the most common in different sections of the study area.

Methods

- The study site included all of Pacific Rim National Park Reserve (PRNPR) and southern Clayoquot Sound.
- Scat was collected from 2000-2005 and organized by species (cougar and wolf).
- Scat was analyzed by sterilizing, straining it to remove debris, and then drying.
- Remains were examined visually and large prey items were removed for identification.
- The relative proportion of each prey species was then estimated.

*photo courtesy of Song Horng Neo*

Results

- Five prey species were found in wolf scats. Deer was the major prey item followed by river otter and raccoon. Harbour seal and California sea lion were minor prey items in wolf scat.
- Only three prey species were found in cougar scats. Deer was the major prey item for cougar. Raccoon and river otter were also consumed.
- In the Long Beach Unit (LBU) cougars and wolves primarily preyed on raccoons.

Implications for Management

- Raccoons are known to be in areas close to human activity. If areas used by humans are also frequently used by carnivores, the chance for carnivore-human interactions increases.
- If areas frequented by both predators and people are known, Parks Canada is in a better position to mitigate risks.



images retrieved from pc.gc.ca/pn-np/bc/pacificrim/natcul/natcul2c.aspx

Table 4. Prey species consumed by carnivores in Pacific Rim National Park Reserve of Canada.

Scientific name	Common name	Number of samples	Percent occurrence
Clayoquot Sound			
<i>Lutra canadensis</i>	River otter	3	60.0%
<i>Odocoileus hemionus hemionus</i>	Black-tailed deer	1	20.0%
<i>Zalophus californianus</i>	California sea lion	1	20.0%
	Total	5	100%
Long Beach			
<i>Procyon lotor</i>	Raccoon	16	42.1%
<i>Odocoileus hemionus hemionus</i>	Black-tailed deer	10	26.3%
<i>Phoca vitulina</i>	Harbour seal	4	10.5%
<i>Lutra canadensis</i>	River otter	3	7.9%
<i>Ursus americanus</i>	Black Bear	3	7.9%
--	Vegetation	2	5.3%
	Total	38	100%
Barkley Sound			
<i>Odocoileus hemionus hemionus</i>	Black-tailed deer	21	60.0%
<i>Lutra canadensis</i>	River otter	8	22.9%
<i>Phoca vitulina</i>	Harbour seal	2	5.7%
--	Bird	2	5.7%
<i>Zalophus californianus</i>	California sea lion	1	2.9%
--	Vegetation	1	2.9%
	Total	35	100%
West Coast Trail			
<i>Odocoileus hemionus hemionus</i>	Black-tailed deer	5	55.6%
<i>Lutra canadensis</i>	River otter	2	22.2%
<i>Mustela vison</i>	Mink	1	11.1%
<i>Procyon lotor</i>	Raccoon	1	11.1%
	Total	9	100%

Carnivore Scat Diet Composition Analysis - Continued (2005-2007)

~ Billy Wilton, Consultant, Clayoquot Biosphere Trust



Click here for more detail on this research

Objectives

- To better understand the diet of cougars and wolves in PRNPR and Clayoquot Sound.

Methods

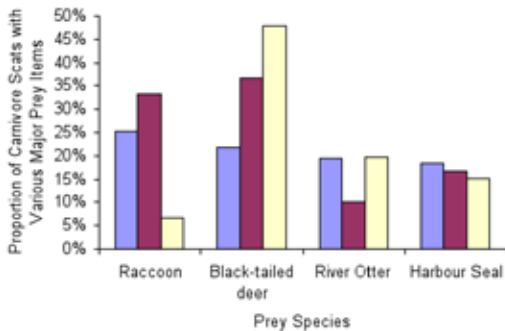
- The study was located from the northwest part of Clayoquot Sound to the southeast section of PRNPR. The area of interest included the Clayoquot Sound Biosphere Reserve (CSBR) and the three units of PRNPR: Long Beach unit (LBU), Broken Group Islands (BGI), and the West Coast Trail (WCT).
- Sign surveys were carried out – searching for cougar and wolf tracks and scat.
- Scat was collected and observations about the scat itself and the habitat it was found in were made.
- The scat was analyzed by sterilizing it in an autoclave (pressure cooking it!); rinsing and straining it (to remove debris); and air drying it for one week. Random subsamples were selected and then observed under a dissecting microscope. Prey items were identified and relative proportions of each prey item were estimated.

Results

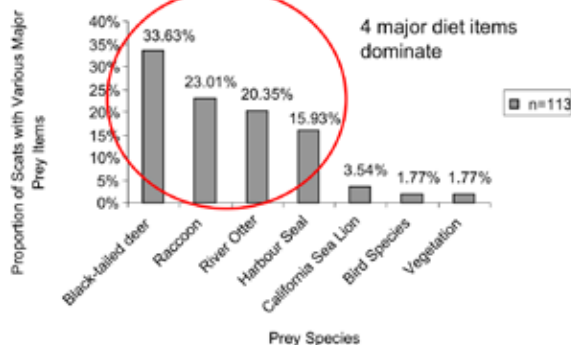
- Cougar and wolf diet included six prey: raccoon, river otter, harbour seal, California sea lion, mink and black bear.
- Wolf diet consisted primarily of black-tailed deer, raccoon, river otter and harbour seal.
- Cougar diet consisted primarily of raccoon, harbour seal, black-tailed deer and river otter.
- The large overlap in cougar and wolf diet indicates both species are competing for the same food items.
- From 2005 to 2007 there was a shift from deer to smaller prey items in cougar and wolf diets.

Implications for Management

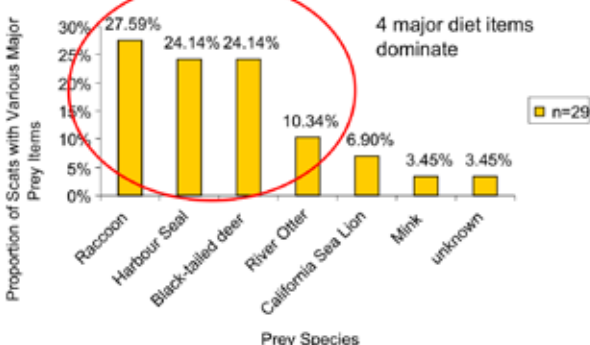
- Studying scats increases our understanding of how carnivores use the landscape in PRNPR.
- Wolves and cougar are preying primarily on four species which are all found in areas near human activity. Targeting black-tailed deer, raccoon, river otter and seals therefore increases the chance for predator-human interactions.



DIET BY PARK UNIT



WOLF DIET



COUGAR DIET

Predator-Prey Sign Survey Report (2003-2004)

~ Todd Windle, University of Northern British Columbia

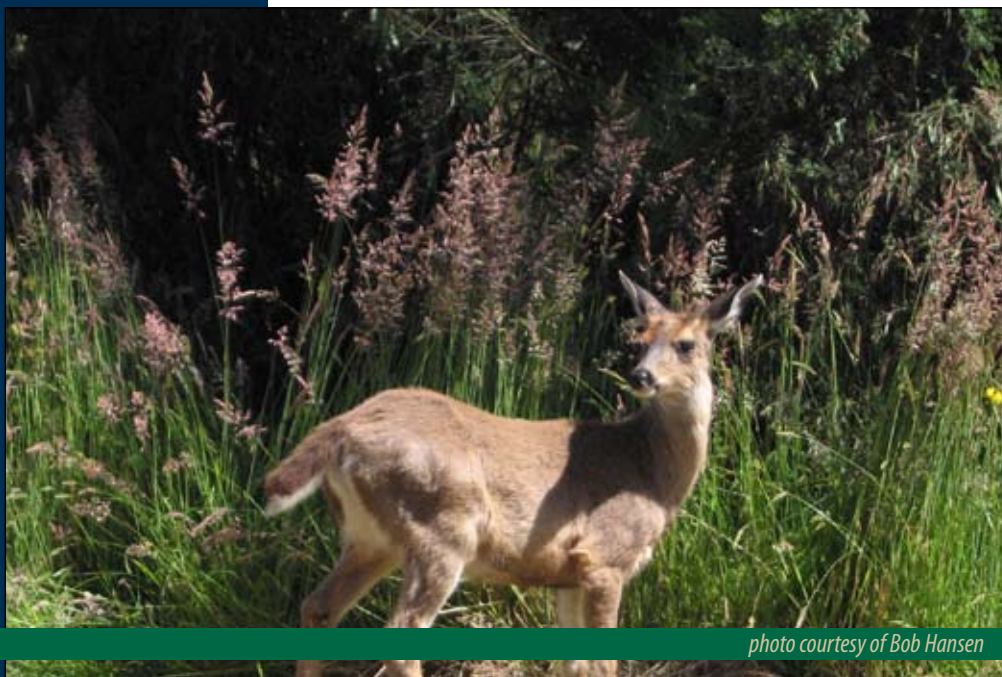
[Click here for more detail on this research](#)

Objectives

- Document the presence of wolves, deer, cougar and bear throughout the Long Beach Unit (LBU).
- Estimate the number of wolves occupying the LBU.
- Estimate wolf diet in the LBU.

Methods

- A sign-survey (looking for scat and tracks) was conducted in the LBU during November and December to document the presence of carnivores and deer.
- The sign-survey focused on the presence of wolves and how it overlapped with the presence of deer, cougar, and black bear, as well as the location of potential den or rendezvous sites.

*photo courtesy of jacquelinewindh.com**photo courtesy of Bob Hansen*

- The following data were recorded during surveys: tracking conditions (muddy or dry), transect type (road, beach, etc.), and habitat type (sandy beach, roadside). Locations were marked frequently with a GPS. Presence of carnivore and prey scat and tracks were documented, as were carnivore scratching and kill sites. Sign locations were recorded, carnivore tracks were measured and wolf scat was collected for future diet analysis and DNA testing. The number of wolf scats per kilometre on each transect was also calculated.
- The PRNPR Wildlife Database was reviewed to estimate the number of wolves occupying the LBU in 2003 and to estimate their diet. A total of 58 records of wolves in the LBU were examined in 2003. The database was searched for all records related to wolf diet (for all three units of the park) for 1978 to 2003.

Results

- Presence of wolf and deer were detected on more than half of the surveys.
- Wolf sign was detected on all surveys that deer were found.
- Records documented between 1978 and 2003 show wolves targeting nine different prey sources. Starting in late 1990 records show attacks on dogs increased dramatically.
- Records suggest there is one pack of wolves, consisting of an adult male and an adult female, occupying the LBU.

Implications for Management

- Communication strategies, to make people aware of frequent wolf activity, should target visitors at all access points to the LBU, and include residents in adjacent communities.
- Knowledge of, or the ability to predict den and rendezvous sites, is important so that they can be protected, during the breeding season. Den and rendezvous sites were not found during this study.



photo courtesy of Bob Hansen



photo courtesy of Todd Windle

Summary of the Predator-Prey Sign Survey Program - Continued (2005-2007)

~ Billy Wilton, Consultant, Parks Canada

★ Click here for more detail on this research



Objectives

- To better understand the ecology of cougars and wolves in Pacific Rim National Park Reserve (PRNPR) and Clayoquot Sound.

Methods

- The study area was located from the northwest part of Clayoquot Sound to the south-east section of PRNPR. The area of interest included the Clayoquot Sound Biosphere Reserve (CSBR) and the three units of PRNPR: Long Beach unit (LBU), Broken Group Islands (BGI), and the West Coast Trail (WCT).
- Regular sign (track and scat) surveys were carried out along transects.
- Each of the three units of the park was surveyed in an attempt to find the presence of large terrestrial carnivores and their prey.
- Prey signs (deer, small mammals, black bears) were searched for.
- Data collected included biological information (species identification, track measurement, scat sample) and habitat data.
- Location of signs and amount of time spent searching were recorded with a GPS.
- The PRNPR Wildlife Database, which includes each reported observation of a wildlife sighting or observation of a wildlife sign, was searched for wolf and cougar records.

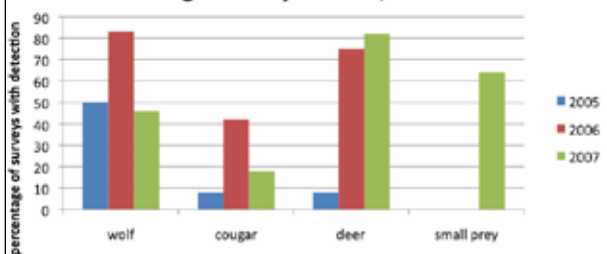
Results

- Between 2005 and 2007, more than 750 records of wolves and 122 records of cougars (representing all three park units) were found in the PRNPR Wildlife Database.
- Trends: large predators and prey are present only intermittently in each of the three units of the park.
- Wolves and cougar tend to travel alone when detected.
- Wolf activity within the park fluctuates from year to year.

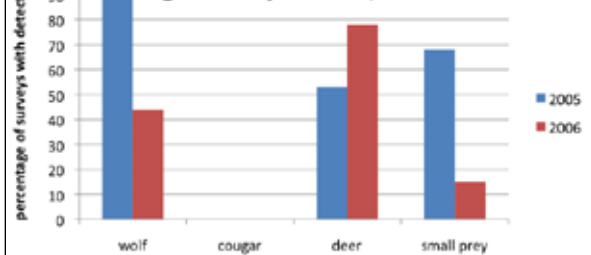
Implications for Management

- Sign surveys can be used to show which areas are used by predators and their prey.
- If areas used by predators are also frequently used by people, the chance for predator-human interactions increases.
- Parks Canada can mitigate risks and interactions if areas frequently used by both predators and people are known.

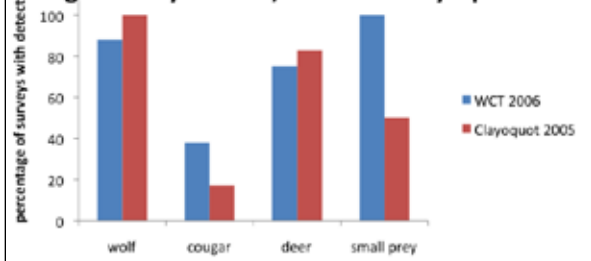
Sign Survey Results, LBU



Sign Survey Results, BGI



Sign Survey Results, WCT and Clayoquot



graphs courtesy of Wendy Szaniszlo

Preliminary Spatial Analysis: Mammal Sign on the WildCoast (2005)

~ Simone Runyan, MSc., University of British Columbia and Summit Environmental



Click here for more detail
on this research

Objectives

- Investigate the distribution patterns of animal sign (scat and tracks).
- Investigate which biotic and abiotic factors influence the distribution of wolves in and around Pacific Rim National Park Reserve (PRNPR).
- Determine if wolf sign is likely to be associated with the sign of other animals.
- Determine if wolves, deer, bears and mustelids (river otter, marten and mink) prefer certain steepness of slope and certain slope aspects (north, south, east, west).

Methods

- Field work was conducted in PRNPR from mid May to mid August, 2005.
- Notes were recorded regarding tracks, scats, visual sightings and other observations such as hair, bones, and carcasses.
- Data was analysed to determine if deer, bear, and mustelid sign was associated with wolf sign.
- The location of each mammal sign was analysed to determine preference for terrain of a certain slope and of a particular aspect.

Results

Different trends were found in spring and summer. Deer sign was near wolf sign more often than expected in the spring but less than expected in the summer. On the other hand, bear sign was near wolf sign less often than expected in spring, and more often in summer. Only the mustelid sign was consistently near wolf sign in both spring and summer.

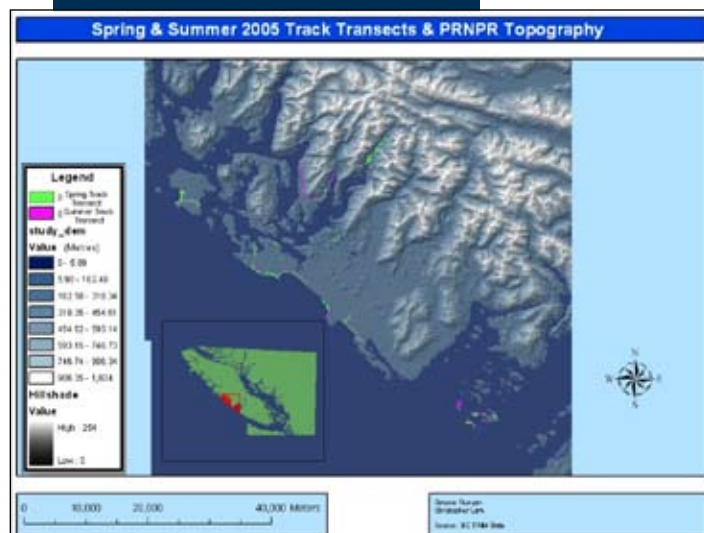
- In spring, both wolf and bear sign were found on steep slopes. In summer, deer, mustelid and wolf sign were all found on steep slopes.
- Deer and bears consistently preferred south-facing areas, while wolves and mustelids had little preference for aspect.

Implications for Management

- Knowledge of habitat preference can help predict carnivore presence across the landscape. Being able to predict locations used by wolves can assist park managers in anticipating human-wildlife conflicts.



maps courtesy of Simone Runyan



Results of DNA Analysis from Carnivore Scats - University of Calgary, University of Saskatchewan (2002-2007)

~ Erin Navid, B.Sc., M.E.Des (Environmental Science), University of Calgary

★ Click here for more detail on this research

Objectives

- Collect genetic information and population structure of Pacific Rim National Park Reserve (PRNPR) and Clayoquot Sound wolves.
- Evaluate non-invasive sampling methods for collecting genetic information from elusive animals.



photo courtesy of Todd Windle

Methods

- The study area consisted of all three units of PRNPR (Long Beach, Broken Group Islands and the West Coast Trail) and Clayoquot Sound.
- Over 300 wolf scat samples were collected from the study area between 2002 and 2007 at various times of year.
- DNA was extracted from samples.
- Genetic structure was examined.

Results

- Isolated wolf populations were not found.
- 44 individual wolves were identified in the study area.
- Three population clusters (groups with similar genetic make-up) were found: Broken Group Islands (BGI), Long Beach (LBU) and Clayoquot Sound.
- Samples from wolves in the BGI appear to have the most genetic isolation.
- High genetic mixing is occurring between the LBU and Clayoquot Sound wolves, suggesting movement is taking place between these areas.
- There appears to be moderate gene flow between the LBU and BGI wolves.
- There is limited gene flow between the Clayoquot Sound and BGI wolves.

Implications for Management

- The topography of the area – terrain and stretches of ocean, may be responsible for the isolation of genetic groups. Maintaining connectivity throughout the landscape will allow for dispersal of wolves, their gene flow, and ultimately maintenance of genetic diversity.



Have you found this document useful?
Email your thoughts and comments to
bob.hansen@pc.gc.ca
Your feedback is appreciated!

While it is an incredible experience to see a wolf or cougar, the key to your safety and to the continued survival of these animals, is for you to teach them to be wary of people.

Keep Your Distance - shout, wave your arms and chase them away.

Space is Safe!



graphic created by Marion Syme

Conclusion

So what does the research reveal so far? Is there really a trend of increasing conflicts? If so, what is causing it?

The research confirms that the incidence of encounters in and around Pacific Rim National Park Reserve has been increasing over the past twelve years. So, too, has the degree of boldness and, at times, aggressiveness displayed by cougar and wolves. As to what is driving the trend, that question does not have a quick and simple answer, as the preceding ecological and social science studies have revealed. Instead, they give rise to an emerging impression of immense complexity involving changes on the physical landscape and within human attitudes towards wildlife.

Much of the greater ecosystem surrounding Pacific Rim National Park Reserve has been extensively clearcut harvested over the past half century. During the early stages of recovery, young trees and shrubs re-colonize the logged areas presenting high-quality browse (leaves, shoots, etc.) for ungulates such as the black-tailed deer. With all other things being equal, their population grows in response to the greater availability of food. But, as the conifer trees in replanted areas grow taller, they soon form a dense canopy that blocks life-giving sunlight from reaching the forest floor. Only the most shade tolerant plants, such as mosses or ferns, can tolerate the low light conditions; however, these are not preferred food sources for deer. As a consequence, they are forced to seek out other areas for foraging.

Just as seen with clearcuts, newly disturbed areas in and around the expanding communities of Ucluelet and Tofino, along with the outlying resorts, present rich and abundant browse that serves as a powerful attractant for deer. Is it any wonder then that the wolves and cougars which prey on them soon show up?

In addition to the changes over the larger landscape, there has been a profound shift in public attitudes towards wildlife. Not so long ago, in fact up to the mid-60s, predators, such as wolves and cougars, were routinely persecuted to the point where local populations were wiped out. This occurred even within the national parks. The general sentiment was that these animals were vermin and cold-blooded killers.

But, for the most part, this attitude has since given way in recent decades to one which, on the surface, appears to be more positive. Many people now see these species as icons and embodiments of a wildness that is all too quickly vanishing from the land. Forgetting that wolves and cougars are potentially very dangerous, some of these people take ill-conceived chances. They seek to get the full-frame head shot with a camera incapable of shooting from far away. They let their dogs run loose. They use food as an inducement to close distances. Instead of instilling a healthy wariness of people, these behaviours teach large carnivores two very bad things: one, that we're nothing to be afraid of, and two, that people are frequently associated with a food reward, whether it is a hand-out, food and garbage left out in a campsite or a dog running ahead of it's owner off-leash down a beach or trail.

Reducing the risk of conflict with large carnivores requires us to learn to live with them. They are clearly adapting to our presence. Now we must learn to adapt to theirs. When it comes to these animals, **KEEP YOUR DISTANCE. Space is Safe!** If the animal approaches, create or maintain space by appearing as large as you can be and as scary as you can be. We need to re-instill wariness for their sake...and ours.

Guidelines

Wolves and cougars are predators native to Vancouver Island and are vital to maintain the health of the coastal ecosystem. They may be encountered anywhere in Pacific Rim National Park Reserve and the surrounding region.

Wolves and cougars are usually shy and are rarely seen by people. However, individual animals may be more comfortable in the presence of human activity. Once animals become accustomed to people, they are in danger of losing their 'wariness.' Unwary wolves and cougar increases concern for the safety of people and puts the predators at risk as well.

You don't need to live in fear, but you can protect yourself by becoming informed on what you can do to reduce the chances of encountering a wolf or cougar and educated on what to do if you do happen to encounter one of these large carnivores.

You can minimize your risk in wolf and cougar country.

Below are some guidelines to help you stay safe and keep wildlife wild. On the following pages you will find four similar, yet differing sets of guidelines intended for the specific informational needs of the following audiences:

- Residents
- Eco-Tourism & Hospitality Industry
- Park Staff (information for park visitors)
- School Districts



Click here to
download the PRNPR
*You are in Wolf
and Cougar Country*
brochure



photo courtesy of jacquelinewindh.com



photo courtesy of Pacific Rim National Park Reserve



photo courtesy of Pacific Rim National Park Reserve



photo courtesy of Tracy Moss



Wolves and cougars are shy and generally avoid humans.

They can, however, become accustomed to and lose their fear of people.

Once wolves and cougars lose this fear, they may approach people, homes and camping areas.

This increases the possibility for conflict and threatens safety of each.

Living with Cougars and Wolves

PERSONAL PREPAREDNESS

Be Predator Aware (safety tips for avoiding predators):

✓ STAY ALERT.

Predators may be in the area at any time.

✓ BE AWARE.

Watch for signs of predators. Signs include tracks and droppings.

✓ Watch for and respect 'wildlife warning' signs.

They indicate that the chance of an encounter is higher in that area.

✓ Do not enter closed areas.

Areas are legally closed when there is an elevated risk to people and the wildlife.

✓ Avoid hiking alone, especially at dawn, dusk or night.

If you choose to hike alone, tell someone where you are going and when you plan to return.

✓ Keep children close.

Discuss cougar and wolf safety with children.

✓ Carry deterrents:

Walking stick, small air horn or pepper spray (know how to use it, test it, check expiry date).

✓ Do not wear headphones (IPODs, etc.).

✓ Keep your dog on a leash.

Unleashed dogs are not only attractive to prey, they may lead a predator back to you and trigger an attack.

✓ Do not rely on cell phones.

Backcountry areas may not have cell phone reception.

Preventing Conflicts

- ★ Do not leave food, garbage, pet food or items smelling of food outside and available to wildlife. Keep all food, garbage and other attractants locked in wildlife-proof storage containers or vehicles.
- ★ Feed pets indoors.
- ★ Don't leave pets unattended outside, especially at dawn and dusk: dogs and cats are easy prey for carnivores.
- ★ Never approach, entice or feed wildlife.
- ★ **KEEP YOUR DISTANCE FROM WOLVES AND COUGARS - SPACE IS SAFE** - Keep as much distance as possible (ideally 100 plus metres or 10 bus lengths).
- ★ Whenever you see a wolf or cougar, scare the animal away immediately. Avoid scaring the animal into the path of other people.
- ★ Remove heavy brush from near the house and play areas.
- ★ Install motion-activated lights outdoors.
- ★ Deer proof your garden. Deer attract predators!
- ★ Keep areas around bird feeders clean.
- ★ If you see a wolf or cougar on the road, honk your horn to scare the animal off the road. This will reduce the risk to the animal and other motorists. Be careful not to scare the animal into the path of on-coming traffic.



Contact Us

Please report wolf and cougar sightings and encounters in Pacific Rim National Park Reserve to Parks Canada staff at **250.726.7165**. For encounters outside the park call **1.877.952.7277**.

Report inappropriate carnivore - people interactions (e.g. close approaches, feeding, enticement, etc.)

Check for wolf or cougar information at Park Information Centres and the Resource Conservation Office.

IF YOU SEE A COUGAR OR WOLF...

If you Encounter a Wolf or Cougar:

DO NOT RUN.

- Pick up small children.
- Gather the group together.
- Do not crouch down.
- Make and maintain eye contact.
- Back away slowly.
- Wave your arms and shout.
- Do all you can to appear larger and to scare the animal away.
- Use a noise maker like an air horn or throw things if necessary.



If a Wolf or Cougar Holds its Ground:

BE AGGRESSIVE!

- Convince wolves and cougars that you and your group are not prey and that you are dangerous!
- Do not turn your back.
- Maintain eye contact.
- Wave your arms and shout.
- Use a noise maker like an air horn.
- Back slowly away and return to your vehicle.
- Create and maintain space between you and the animal.

If a Wolf or Cougar Approaches You:

- Throw sticks and stones etc. or use pepper spray (be sure you know how to use it beforehand).
- If the aggression escalates, fight back with a stick, your fists or whatever is at hand.
- Hit the animal in the eyes and nose.

Wolves and cougars are shy and generally avoid humans.

They can, however, become accustomed to, and lose their fear of, people.

Once wolves and cougars lose this fear they may approach people, homes and camping areas.

This increases the possibility for conflict and threatens the safety of both parties.



Guidelines for Eco-Tourism & Hospitality Industry

Living with Cougars and Wolves

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Predators may be in the area at any time.

✓ **BE AWARE.**

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✓ **Watch for and respect 'wildlife warning' signs.**

They indicate that the chance of an encounter is higher in that area.

✓ **Do not enter closed areas.**

Areas are legally closed when there is an elevated risk to people and the wildlife.

✓ **Avoid hiking alone, especially at dawn, dusk or night.**

✓ **Keep children close.**

Discuss cougar and wolf safety with children.

✓ **Carry deterrents.**

Walking stick, small air horn or pepper spray (know how to use it, test it, check expiry date).

✓ **Keep your dog on a leash.**

Unleashed dogs are not only attractive to prey, they may lead a predator back to you and trigger an attack.

✓ **If you see a predator kill (e.g. a deer carcass) leave the area immediately and notify Park staff.**

✓ **Do not rely on cell phones.**

Backcountry areas may not have cell phone reception.

Preventing Conflicts

- ★ Do not leave food, garbage, pet food or items smelling of food outside and available to wildlife. Keep all food, garbage and other attractants locked in wildlife-proof storage containers or vehicles, especially at night.
- ★ Never approach, entice or feed wildlife.
- ★ **KEEP YOUR DISTANCE FROM WOLVES AND COUGARS - SPACE IS SAFE** - Keep as much distance as possible (ideally 100 plus metres or 10 bus lengths).
- ★ Whenever you see a wolf or cougar, scare the animal away immediately. Avoid scaring the animal into the path of other people.
- ★ If you encounter wolf pups or cougar kittens leave the area immediately.



CAMPING

- ★ Cook and eat meals a good distance from your tent.
- ★ Do not sleep in the clothes that you wore while cooking.
- ★ Store clothes that you wore while cooking with your food.
- ★ Store all food and related items securely.
- ★ Pack out garbage and discard fish remains in the sea – well away from land.

Contact Us

Please report wolf and cougar sightings and encounters in Pacific Rim National Park Reserve to Parks Canada staff at **250.726.7165**
For encounters outside the park call **1.877.952.7277**

Report inappropriate carnivore - people interactions (e.g. close approaches, feeding, enticement, etc.)

Check for wolf or cougar information at Park Information Centres and the Resource Conservation Office.

IF YOU SEE A COUGAR OR WOLF...

Driving

If you see a wolf or cougar on the road, honk your horn to scare the animal off the road. This will reduce the risk to the animal and other motorists. Be careful not to scare the animal into the path of on-coming traffic.

If you Encounter a Wolf or Cougar:

DO NOT RUN.

- Pick up small children.
- Gather the group together.
- Do not crouch down.
- Make and maintain eye contact.
- Back away slowly.
- Wave your arms and shout.
- Do all you can to appear larger and to scare the animal away.
- Use a noise maker like an air horn or throw things if necessary.

If a Wolf or Cougar Holds its Ground:

BE AGGRESSIVE!

- Convince wolves and cougars that you and your group are not prey and that you are dangerous!
- Do not turn your back.
- Maintain eye contact.
- Wave your arms and shout.
- Use a noise maker like an air horn.
- Back slowly away and return to your vehicle.
- Create and maintain space between you and the animal.

If a Wolf or Cougar Approaches You:

- Throw sticks and stones etc. or use pepper spray (be sure you know how to use it beforehand).
- If the aggression escalates, fight back with a stick, your fists or whatever is at hand.
- Hit the animal in the eyes and nose.

Are you a guide?
Lead by example!
Instruct clients on safety information



Wolves and cougars are predators native to Vancouver Island and are vital to maintain the health of the coastal ecosystem. They may be encountered anywhere in Pacific Rim National Park Reserve and the surrounding region.

Wolves and cougars are usually shy and are rarely seen by people; however, individual animals may become more comfortable in the presence of human activity.

Once they become accustomed to and lose their fear of people, wolves and cougars may approach people, homes and camping areas. This increases the possibility for conflict and threatens the safety of both parties.

Guidelines for Park Staff *(Important information to relate to park visitors)*

Living with Cougars and Wolves

DO NOT FEED WILDLIFE! It is illegal to feed wildlife in a national park. Wildlife find their healthiest food in their natural environment. Once they become accustomed to being fed by people, they spend less time looking for their natural foods. These food-conditioned predators put themselves at risk and are a threat to public safety.

Unfortunately, options are limited when dealing with a food-conditioned cougar or wolf that has become a public safety hazard. In the end, it is often the wildlife that pays, with its life, for human mistakes.

You can minimize your risk in wolf and cougar country. Your responsible behaviour affects the survival of wildlife and your own safety. Below are guidelines to help you stay safe and keep wildlife wild.

As a visitor to a national park you are sharing the area with many species of wildlife that depend on it for their survival. Even if you never see wildlife, your actions can affect them. It is Parks Canada's responsibility to protect the environment, wildlife and the safety of the public. As a national park visitor, it is your responsibility to minimize the impact you have on the wildlife and the environment.

PERSONAL PREPAREDNESS

Be Predator Aware (safety tips for avoiding predators):

✓ **STAY ALERT.**

Predators may be in the area at any time.

✓ **BE AWARE.**

Watch for signs of predators. Signs include tracks and droppings.

✓ **Watch for and respect 'wildlife warning' signs.**

They indicate that the chance of an encounter is higher in that area.

✓ **Do not enter closed areas.**

Areas are legally closed when there is an elevated risk to people and the wildlife.

✓ **Avoid hiking alone, especially at dawn, dusk or night.** If you choose to hike alone, tell someone where you are going and when you plan to return.

✓ **Keep children close.**

Discuss cougar and wolf safety with children.

✓ **Carry deterrents.**

Walking stick, small air horn or pepper spray (know how to use it, test it, check expiry date).

✓ **Keep your dog on a leash.**

Unleashed dogs are not only attractive to prey, they may lead a predator back to you and trigger an attack.

✓ **If you see a predator kill (e.g. a deer carcass) leave the area immediately and notify Park staff.**

✓ **Do not wear headphones (IPODs, etc.).**

✓ **Do not rely on cell phones.**

Backcountry areas may not have cell phone reception.

Preventing Conflicts

- ★ Do not leave food, garbage, pet food or items smelling of food outside and available to wildlife. Keep all food, garbage and other attractants locked in wildlife-proof storage containers or vehicles, especially at night.
- ★ Never approach, entice or feed wildlife.
- ★ **KEEP YOUR DISTANCE FROM WOLVES AND COUGARS - SPACE IS SAFE** - Keep as much distance as possible (ideally 100 plus metres or 10 bus lengths).
- ★ Whenever you see a wolf or cougar, scare the animal away immediately. Avoid scaring the animal into the path of other people.
- ★ If you encounter wolf pups or cougar kittens leave the area immediately.

CAMPING

- ★ Cook and eat meals a good distance from your tent.
- ★ Do not sleep in the clothes that you wore while cooking.
- ★ Store clothes that you wore while cooking with your food.
- ★ Store all food and related items securely.
- ★ Pack out garbage and discard fish remains in the sea – well away from land.



IF YOU SEE A COUGAR OR WOLF...

Driving

If you see a wolf or cougar on the road, honk your horn to scare the animal off the road. This will reduce the risk to the animal and other motorists. Be careful not to scare the animal into the path of on-coming traffic.

If you Encounter a Wolf or Cougar: DO NOT RUN.

- Pick up small children.
- Gather the group together.
- Do not crouch down.
- Make and maintain eye contact.
- Back away slowly.
- Wave your arms and shout.
- Do all you can to appear larger and to scare the animal away.
- Use a noise maker like an air horn or throw things if necessary.

Report carnivore sightings, encounters and inappropriate human behaviours (e.g. close approaches, feeding, enticement, etc.) to Resource Conservation staff.

If a Wolf or Cougar Holds its Ground: BE AGGRESSIVE!

- Convince wolves and cougars that you and your group are not prey and that you are dangerous!
- Do not turn your back.
- Maintain eye contact.
- Wave your arms and shout.
- Use a noise maker like an air horn.
- Back slowly away and return to your vehicle.
- Create and maintain space between you and the animal.

If a Wolf or Cougar Approaches You:

- Throw sticks and stones etc. or use pepper spray (be sure you know how to use it beforehand).
- If the aggression escalates, fight back with a stick, your fists or whatever is at hand.
- Hit the animal in the eyes and nose.





Living with Cougars and Wolves

Carnivores and Kids

Children are more at risk than adults to have encounters with carnivores because of their small size, high-pitched voices, and erratic movements. Carnivores may mistake them for prey.

- Don't leave small children unattended outdoors.
- Talk to children and teach them what to do if they encounter a cougar or wolf (see "preventing conflicts"; "if you encounter a wolf or cougar"; "if a wolf or cougar holds its ground"; and "if a wolf or cougar approaches you" below).
- Encourage children to play outdoors in groups.
- Make sure children are home before dusk and stay inside until dawn.
- Noise usually deters cougars. Consider playing music outside when children are playing.
- Modify the habitat around schools, parks and homes. Remove or prune trees and shrubs around children's play areas. Avoid landscaping with plants that deer prefer to eat.
- Consider erecting a fence around play areas.
- Install lights around schools, parks, and bus stops as a general safety precaution.
- If carnivores have been sighted, escort children inside. Accompany children to bus stops early in the morning. Keep vegetation cleared around bus stops.

Wolves and cougars are shy and generally avoid humans.

They can however, become accustomed to and lose their fear of people.

This increases the possibility for conflict and threatens safety of each.



PREVENTING CONFLICTS

Be Predator Aware (safety tips for avoiding predators):

✓ STAY ALERT.

Predators may be in the area at any time.

✓ BE AWARE.

Watch for signs of predators. Signs include tracks and droppings.

✓ **Do not leave food, garbage or items smelling of food outside and available to wildlife.** Keep all food, garbage and other attractants locked in wildlife-proof storage containers or vehicles, especially at night.

✓ **Never approach, entice or feed wildlife.**

✓ **Do not wear headphones (IPODs, etc.).**

✓ **KEEP YOUR DISTANCE FROM WOLVES AND COUGAR - SPACE IS SAFE** - Keep as much distance as possible (ideally 100 plus meters or 10 bus lengths).

✓ **Whenever you see a wolf or cougar, scare the animal away immediately.**



IF YOU SEE A COUGAR OR WOLF...

If you Encounter a Wolf or Cougar:

DO NOT RUN.

- Pick up small children.
- Gather the group together.
- Do not crouch down.
- Make and maintain eye contact.
- Back away slowly.
- Wave your arms and shout.
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If a Wolf or Cougar Approaches You:

- Throw sticks and stones etc. or use pepper spray (be sure you know how to use it beforehand).
- If the aggression escalates, fight back with a stick, your fists or whatever is at hand.
- Hit the animal in the eyes and nose.

Contact Us

Please report wolf
and cougar sightings
and encounters in
Pacific Rim National
Park Reserve to
Parks Canada staff at
250.726.7165
For encounters outside
the park call
1.877.952.7277

Report inappropriate
carnivore - people
interactions
(e.g. close approaches,
feeding, enticement, etc.)

Check for wolf or cougar
information at
Park Information
Centres and
the Resource
Conservation Office.



photo courtesy of Bob Hansen

Acknowledgements

The WildCoast Project has, since it was first envisioned in 2003, been a highly collaborative initiative. Collaboration is still a core characteristic of the WildCoast Project as demonstrated by the generous support of many that has made the Primer a reality.

A list is attached that provides the names of the large cast of many individuals, First Nations, organizations, businesses and government departments that have made the WildCoast Project possible. Contributions have included:

- Formal expressions of support to assist in acquiring initial funding
- Funding at each critical juncture
- In-kind contributions of knowledge and expertise
- Data and other resources
- Volunteer fieldwork and lab hours (1000 plus)
- On-going support through the years and continuing support today

These contributions enabled a dedicated team of researchers to undertake and complete a broad scope of multi-disciplinary research. The projects profiled in the Primer have revealed many insights about wolves and cougar, the landscape and our relationship with them.

Apologies to those that have been inadvertently missed in the lists. You can be assured that your efforts were valued.

The Primer is the latest milestone in the WildCoast Project. It would not have been achieved without the inspired offer by Rick Searle (EKOS Communications, Inc.) to use his particular expertise and that of his team. The vision was to create an easily accessible portal into the considerable body of work that is the WildCoast Project. The result is this Primer.

Thanks to Rick and his team of Wendy Szaniszlo and Starr Munro for their creativity and tireless efforts.

Thanks to all those acknowledged on the sponsorship page who have contributed the essential resources to create this innovative knowledge mobilization tool.

Thanks to Parks Canada Innovations Fund and the staff and management of Pacific Rim National Park Reserve and the Coastal British Columbia Field Unit for past and ongoing support of the WildCoast Project.

The core goal of the WildCoast Project, as it has been from the start, is to use what is learned to improve our abilities to live with wolves and cougar in ways that prevents conflict and helps to retain these large carnivores on the landscape. The Primer is another important step forward.

~ Bob Hansen

Wildlife-Human Conflict Specialist and WildCoast Project Coordinator
Pacific Rim National Park Reserve of Canada

A special thanks to everyone that contributed their knowledge and expertise in the development of *Learning to Live with Large Carnivores: A WildCoast Primer & Guidelines*.

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Parks
Canada

Parcs
Canada

Pacific Rim National Park Reserve (PRNP) is a national park which presents the rich natural and cultural heritage of Canada's west coast. Due to increases in human to large carnivore interactions in the park and nearby community, park officials have implemented the WildCoast Research Project. Biologists are studying the carnivores and the coastal ecosystem to better understand wolf and cougar populations, their prey and related behaviours and interactions with humans. Researchers aim to monitor the health of predators and prey over the long term. Social scientists are studying visitors' attitudes, examining their values and behavior with respect to large carnivores. The program also includes an awareness campaign to teach vacationers and park users to avoid these animals. For more information visit pc.gc.ca.

WILDCOAST PROJECT SUPPORTERS

Initial Study Proposal Supporters (2004)

Parks Canada
Clayoquot Biosphere Trust
Clayoquot Central Regions Board
Ahousaht First Nation
Ditidaht First Nation
Hupacasath First Nation
Huu-ay-aht First Nation
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BC Ministry of Water, Land and Air Protection
Clayoquot Alliance for Research, Education and Training
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University of California, Wildlife Extension
University of Calgary, Environmental Design
Remote Passages, Tofino
Natural Sciences and Engineering Research
Council of Canada

Project Start-Up

(Those who helped to get the project off the ground!)

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Sponsors

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WildCoast Project Primer
& Guidelines*

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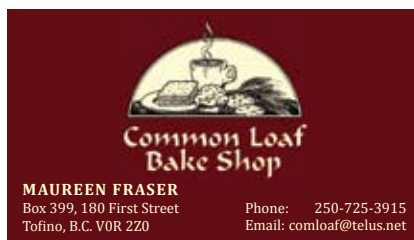
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