Columbia Basin
Fish & Wildlife
Compensation Program

CBFWCP is a joint initiative between BC Hydro, the BC Government (Ministry of Water, Land and Air Protection) and Fisheries and Oceans Canada to conserve and enhance fish and wildlife populations affected by the construction of BC Hydro dams in Canada's portion of the Columbia Basin.

Spring 2006 – Number 14

Program Update

CONSERVING & ENHANCING 10 Years FISH & WILDLIFE 1995-2005

BC hydro

Restoring Grasslands in the Rocky Mountain Trench

New Blueprint for Action 2006 Strategy is Ready

Question: Do you know what's good for unglates, ranchers, species at risk and naturalists, creates healthy forests, and reduces the risk of forest fires? Answer: Ecosystem restoration. In the Rocky Mountain Trench, from Golden to the U.S. border, efforts to stem the tide of forest ingrowth and restore the region's grasslands are well underway – thanks to a coalition of partners that includes the Columbia Basin Fish & Wildlife Compensation Program.

The Rocky Mountain Trench Ecosystem Restoration Steering Committee (the Steering Committee) has been working since 1998 to restore grassland and open forest ecosystems by removing forest ingrowth. To guide its work, the Steering Committee has just released an updated strategic document – Blueprint for Action 2006 – that reports on progress and outlines future plans.

(continued on page 2)

Larry Doell

Invasive weeds like knapweed are just part of the problem in the Rocky Mountain Trench where forest ingrowth together with invasive weeds is reducing forage for a range of species. See page 9 for more on invasive weeds in the West Kootenay and what you can do to stop their spread.

BC Hydro Funding Tops $4 Million in 2006/07

Local fish and wildlife received some good news from BC Hydro. In fact, they got more than good news. Over the next 12 months $4.3 million will be spent on fish and wildlife projects in the Columbia Basin. This funding is part of BC Hydro's annual contribution toward local fish and wildlife, which now totals more than $34 million since 1995.

"We are very committed to funding projects that will help fish and wildlife impacted by the construction of BC Hydro dams in this region," says BC Hydro's Kevin Conlin, co-chair of the Compensation Program's Steering Committee. "Our partner, the Columbia Basin Fish & Wildlife Compensation Program, will deliver the projects for us."

The Columbia Basin Fish & Wildlife Compensation Program (CBFWCP) is a partnership between the Ministry of Environment and Fisheries and Oceans Canada, together with BC Hydro, to

(continued on page 3)

Contents

(continued from page 1)

Restoration is a win-win in the Rocky Mtn. Trench *continued*

"This is the right thing to do," says Greg Anderson, operations manager, Rocky Mountain Forest District and chair of the Steering Committee. He points to the environmental, economic and social benefits that come from returning ecological function to Crown land. "If we do nothing, the problems will continue to get worse."

Using a combination of restoration treatments – timber harvesting, slashing and prescribed burning – the Steering Committee's goal is to restore 118,500 hectares of Crown rangeland by 2030. The restored landscape will then be maintained in perpetuity, mainly through prescribed burning. So far, an estimated 20,000 hectares have been restored to proper ecological function. Roughly 90,000 hectares still require significant treatment. The committee's plan is to treat 4,500 hectares a year to meet the 2030 target.

The Steering Committee's achievements have already made it a provincial leader in ecosystem restoration, and its alliance of government, industry and the public is a model for other jurisdictions.

Historically, a frequent fire cycle of low-intensity, ground-based fire, the result of lightning strikes and First Nations' land-management practices, maintained the grasslands and open forests of the Rocky Mountain Trench. But organized fire suppression effectively disrupted this fire cycle, and the forest canopy began to invade grasslands and fill in open forests.

The Trench has 250,000 hectares of Crown land classified as fire-maintained ecosystem. An estimated 114,000 hectares converted to closed forest condition between 1952 and 1990.

Over the years, forest ingrowth in the Trench has created dense stands of stagnant timber which have produced serious, region-wide problems. Forest ingrowth reduces the quantity and quality of natural forage that provides grazing for domestic and wild ungulates. This in turn creates conflict between the ranching industry and wildlife interest groups. Forest ingrowth displaces habitat and puts more grassland-dependent species at risk. It makes forests more susceptible to attack by insects and disease, and it provides dangerous amounts of fuel for potentially catastrophic wildfires. Grasslands in the region have also been lost to human settlement and development, making a bad situation worse.

An ingrown forest east of Wycliffe in the Rocky Mountain Trench. The dense, layered tree canopy inhibits growth of the grasses, shrubs and flowering plants characteristic of a fire-maintained ecosystem.

A restored site near Ta Ta Creek in the Rocky Mountain Trench. Healthy open forests and grasslands are vital to maintaining the region's exceptionally rich diversity of wildlife species.

"We've got 60 years of forest ingrowth to restore and that's what we're up against. If we don't have grasslands, we lose species," says Greg.

He stresses that the restoration program is not just about creating more forage for cattle and elk. It's about doing the right thing ecologically. And it's about a long-term payoff, not a quick fix.

"This is a good news story for everyone in the Trench. No other Canadian jurisdiction has had such positive restoration results," says Greg. "The restoration program has virtually unanimous support across a diverse range of stakeholders. Our success is due solely to this collective, non-partisan approach, one that is largely unique to the East Kootenay, but there is still much work to be done."

Results so far indicate that forage production has already increased substantially at some treated sites even though range recovery can take up to 10 years following treatment.

"Our results focus on forage production because the plants that make up the forage resource support biodiversity," says John Krebs, Columbia Basin Fish & Wildlife Compensation Program senior wildlife biologist and member of the Blueprint for Action 2006 Project Team. "If grassland and open forest plant communities are healthy, all wildlife species that depend on them will generally be in good shape too."

"The Compensation Program is glad to be part of this important ecosystem restoration work that's vital to the biodiversity of the Rocky Mountain Trench," says Invermere resident Greg Mustard, who is a public representative on the Columbia Basin Fish & Wildlife Compensation Program's Steering Committee. "And we are glad to be doing our part to conserve and enhance local wildlife populations."

Download your free copy of the new Blueprint for Action 2006 document from our website @ www.cbfishwildlife.org. Click on 2006 Reports.

(continued from page 1)

Local Fish & Wildlife Get $4 Million from BC Hydro
continued

address fish and wildlife losses resulting from BC Hydro dam construction in the Columbia Basin.

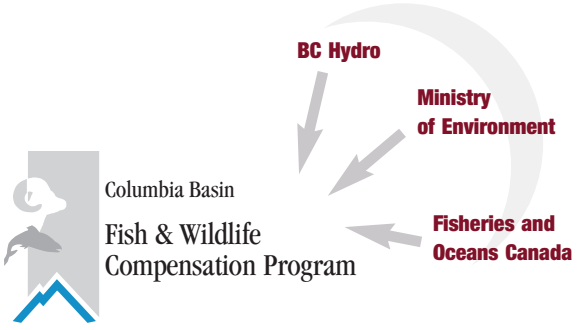
The $4.3 million in funding for 2006 – 07 will be shared between fish and wildlife projects – many aimed at species at risk, including the Upper Columbia white sturgeon in the West Kootenay and American badgers in the East Kootenay.

"Without funding from BC Hydro and the support of our many partners, it would not be possible to do the important biological work that is needed in order to help conserve and enhance local fish and wildlife," says the Ministry of Environment's Wayne Stetski, co-chair of the Compensation Program's Steering Committee.

This year's funding – $4.3 million – will sustain major projects already underway, including the largest lake restoration project in the world – the fertilization program in Kootenay Lake and the Arrow Lakes Reservoir – and it will provide the money needed for many other fish and wildlife projects. For example, some of the money will be used to buy land in the Robson Valley and East Kootenay so it can be set aside for conservation. Other funds will be used to maintain the Meadow Creek Spawning Channel, which is where the majority of Kootenay Lake kokanee come from. Some of the money will be used to restore and enhance more habitat in the East and West Kootenay – which is critical to sustaining wildlife populations. Fisheries projects aimed at restoring local streams will also benefit from this funding.

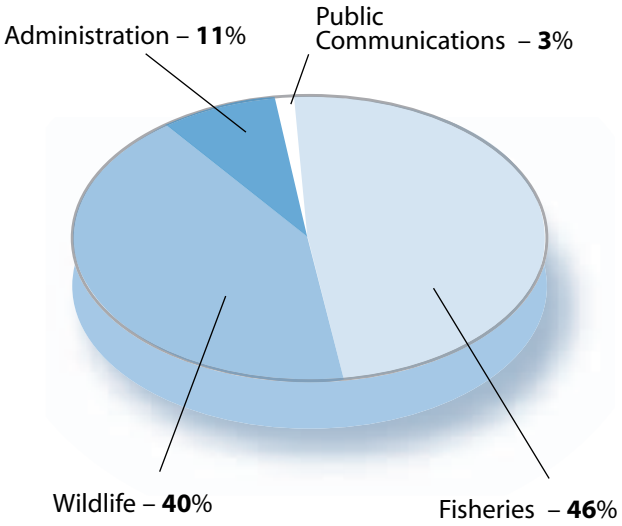
What is the Compensation Program?

The Columbia Basin Fish & Wildlife Compensation Program (CBFWCP) is a joint initiative between BC Hydro, the Ministry of Environment and Fisheries & Oceans Canada to conserve and enhance fish and wildlife populations affected by the construction of BC Hydro dams in Canada's portion of the Columbia Basin.



How is the money spent?

Funding of Core Services 2006 - 07



In fiscal 2006 – 07 86% of the funding will go to "hands-on" fish and wildlife projects. The remaining budget will go towards administration (i.e., staff) and communications. The Compensation Program employs a handful of full-time staff, mostly biologists. The communications activities are intended to increase awareness about the Compensation Program's work and share biological results with a range of groups and individuals.

Where does the money come from?

As part of its water license agreement, BC Hydro provides the Columbia Basin Fish & Wildlife Compensation Program (CBFWCP) with $3.2 million (indexed for inflation) in perpetuity to deliver conservation and enhancement projects aimed at species impacted by the footprint of BC Hydro dams in the Columbia Basin. "Footprint" means the initial construction and impoundment impacts primarily associated with lost habitat.

Ecosystems Are Complex

The Columbia Basin Fish & Wildlife Compensation Program has been fertilizing Kootenay Lake since 1992 and the Arrow Lakes Reservoir since 1999 in an effort to restore lake productivity impacted by dams that trapped nutrients upstream.

By all accounts the fertilization program in both systems has been successful. In fact, 2004 kokanee spawner returns to the Meadow and Hill Creek spawning channels were the best in a decade (more than a million spawners returned to Meadow Creek and 200,000 spawners filled the spawning channel at Hill Creek). Some anglers will tell you that the fishing on Kootenay Lake is the best in 50 years. But restoring nutrients by fertilizing is just one piece in the puzzle.

"Ecosystems are complex systems made up of a variety of interactions among various levels in the food web and other factors in the environment," says Compensation Program fisheries biologist Steve Arndt. "There are many variables beyond our control."

Reel Adventures

Thanks to the Fertilization Program anglers are catching more and larger fish but fisheries biologists note that adding nutrients is just one piece in a very complex puzzle.

In 2004, for example, a beaver dam built at the upstream end of the Hill Creek spawning channel may have diverted water out of the channel during a cold spell, and that may have been a factor in a lower than expected egg to fry survival rate that year.

"We also know that fall rains in 2003 and 2004 were among the heaviest since the spawning channel was built. This likely resulted in a lot of sediment in the spawning channel just after the eggs were deposited, and that could have had a big effect on egg to fry survival," says Steve. "We can increase the level of nutrients in the reservoir but we can't control all aspects of nature."

Other variables such as turbidity, weather, precipitation and the flow regime in the reservoir can all affect food-web interactions and fish populations, plus there is a natural ebb and flow. For example, it's possible that weather conditions could provide great spawning conditions for fall-spawning kokanee and poor spawning conditions for spring-spawning rainbow trout, which is one of the kokanee's predators.

"Down the road that would be likely to increase kokanee numbers, but the reverse can also occur, meaning it's possible that a few years later more predators could reduce kokanee abundance in the reservoir," says Steve.

Changes in weather patterns, including precipitation levels, affect flow regime, and the food-web response to nutrients will vary year to year as a result.

"We try to be proactive by monitoring regularly and adjusting the nutrients that we add to the reservoir and Kootenay Lake, but we don't fully understand the interactions between all the factors so it's possible fishing will be great one year and less so the next," says limnologist Eva Schindler, who works with a team to coordinate the fertilization program.

They Won!

We don't give away many freebies but we figured 10 years of fish and wildlife conservation work was a good cause to celebrate! To mark our first decade of achievement we offered a chance to win one of three free flights with a biologist. David Drahm of Revelstoke, Terry Fleet of Castlegar and Jamie Trach of Cranbrook each won a flight. They will take to the sky some time this field season and fly over the diverse habitats and ecosystems that make up the Columbia Basin.

Program UPDATE Newsletter

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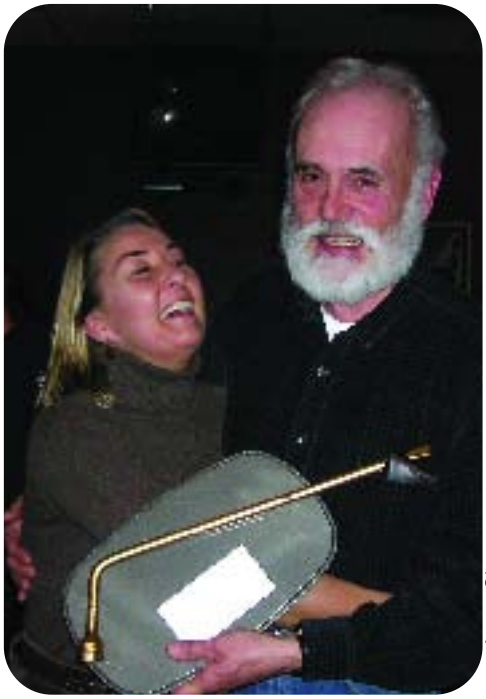
We Would Appreciate Your Feedback

Let us know if you have questions or comments about the newsletter, or the Compensation Program.

Manager's Message

Welcome to the spring 2006 Update newsletter. When I look back at past newsletters, I am reminded about the many fish and wildlife projects we have been involved with over the last 10 years and the many partners we have worked with in order to really make a difference on the ground. I am also reminded that in the last decade change has been a constant. In fact, I've written about change within the Compensation Program in this space many times and I'm about to do it again.

Let's start with the changing people. After working with local Compensation Programs for more than 25 years, wildlife biologist John Gwilliam has left the field. He retired in March and will be missed by all of us. John's retirement came on the heels of Guy Woods' retirement – he left the Ministry of Environment (MoE) in February. Guy chaired our Wildlife Technical Committee and worked with us on many projects. Both of these skilled biologists have a long history in the West Kootenay, particularly in the Pend d'Oreille Valley (south of Trail). John has spent thousands of hours working on white-tailed deer, habitat enhancement and other projects in the valley, and Guy authored the original management plan for the valley. It seems fitting that a new wildlife management plan for the valley has just been completed with help from both of them. This new management plan for the Pend d'Oreille Valley describes the area as one of the most important wildlife habitat areas in the southern interior of B.C. The plan will ensure the valley is managed for a range of values. This document is really a legacy for both John and Guy, who spent so much of their careers in the valley. (Please see page 11 for more about John's retirement and page 16 for details about the new wildlife management plan.)



Angus Glass

Compensation Program manager Maureen DeHaan and retiring wildlife biologist John Gwilliam.

Garth Mowat has replaced Guy at the MoE and we look forward to Garth's input through the Wildlife Technical Committee.

As for operational changes at the Compensation Program, we are working on the ecological impact assessment. This multi-year project is defining the footprint impacts of major BC Hydro dams built in the Columbia Basin. For example, we are looking at what habitat existed before the dams were built and what exists now. We are looking at how dams impacted productivity, fragmentation of species and options to address those impacts. That's just a quick overview of the project's scope. It is a mammoth undertaking that in many ways is setting the standard for others regions undertaking a similar assessment. The results are still months away, but when it's complete we will have a better understanding of how the dams and reservoirs have impacted fish and wildlife. The results will influence our approach to compensation projects in future. We know that change is coming and we will be ready for it when the time comes.

One thing that will never change is our commitment to do our part. Unfortunately, there is always more that we could do, but the reality is that we have to work within our financial abilities (in fiscal 06 – 07 our total program budget is $4 million). We fund and/or deliver a mix of fish and wildlife projects that help conserve and enhance fish and wildlife impacted by BC Hydro dams. That's our job. That's our mandate and that won't change. We are trying to do our part, but sometimes tough decisions have to be made about what we can fund and what we can't. That means we can't fund every good project. There just isn't enough money. We will, however, continue to work hard to fund the projects that directly address our impacts.

We have just completed a public opinion survey with help and input from our program partners BC Hydro and the MoE. The results confirm that there is strong support for the Compensation Program and the work we do. The results also tell us that we need to keep working hard to make sure people know about the Compensation Program and our partners. We are committed to making sure people know who we are and what we are up to.

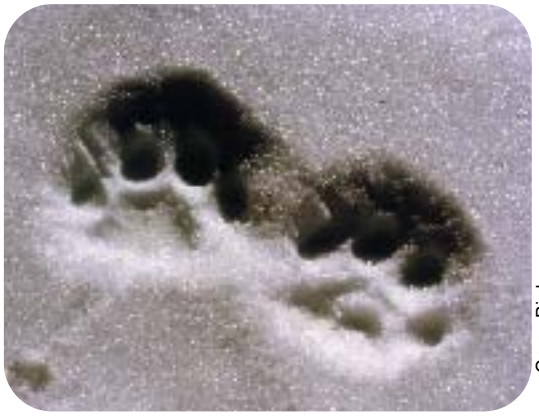
And finally, we are planning some changes to our website and we'd love your ideas. The website has been up and running for several years and while we've tinkered with it, we haven't made any major changes. We think the time has come. If you have suggestions for improving the function or content of our website, please contact Angus @ angus.glass@bchydro.bc.ca. If you have never been to our website, please take a minute now to visit it @ www.cbfishwildlife.org

Revelstoke Mountain Caribou Recovery
Cougars collared as part of predator research

The Revelstoke Mountain Caribou Recovery Project is getting some help from the Compensation Program. In winter 2006 contract technician Dave Lewis, along with his trained hound Emitt, captured and collared two cougars in the Revelstoke area.

"We know cougars account for some caribou mortalities and this work will help us learn more," says contract biologist Ross Clarke who is coordinating the three-year project. "We've just started the work but we're getting good data from the GPS collars and we'll monitor the cougars for the next few years."

Biologists use data from the GPS collars to locate cougar kill sites and find out what the cougars are killing. This work is part of a larger effort to understand the role predators play in declining caribou numbers in B.C. In the Columbia Forest District, predation accounts for 40% of collared caribou deaths, and cougars are responsible for 13% of those deaths.



Corey Bird

With the help of a tracking dog, the Compensation Program is collaring cougars near Revelstoke to better understand the relationship between cougars and caribou.

Until now no research has been done on cougar interactions with deer, moose and caribou in the north Columbia Mountains.

Caribou range includes valley bottoms during spring and early winter in the Revelstoke area, which is where most human settlement, including power development and reservoirs, are located. "The Compensation Program is committed to conserving and enhancing species at risk impacted by construction of BC Hydro dams in the Columbia Basin," says Ross.

Robson Valley & East Kootenay:
More land set aside for conservation

Two recent land purchases by a coalition of conservation partners have permanently set aside more than 630 acres of important fish and wildlife habitat for conservation. In the Robson Valley the Columbia Basin Fish & Wildlife Compensation Program helped fund the purchase of 157 acres of important fish and wildlife habitat near McBride, together with The Land Conservancy of B.C. (TLC), the Fraser Headwaters Alliance and the BC Trust for Public Lands, an initiative of the BC Ministry of Environment.

In the East Kootenay, 194 hectares (480 acres) has just been purchased near St. Mary's Prairie, 10 km northwest of Cranbrook. This land purchase was funded in part by the Compensation Program and other partners including the Rocky Mountain Elk Foundation, the Habitat Conservation Trust Fund, and Columbia Basin Trust.

"Both of these land purchases will help sustain a range of species," says Kevin Conlin of BC Hydro, co-chair of the Compensation Program Steering Committee. "Low elevation habitat like this was lost due to flooding when the BC Hydro dams were built in the Columbia Basin so it's great news when we can help protect some of the remaining habitat in the area."

Larry Halverson

Moose use the newly acquired conservation land in the Robson Valley as winter range.

Habitat loss through human settlement and development is a factor in the decline of many species. "The more habitats like this that we can conserve the better for fish, wildlife and future generations," says the Ministry of Environment's Wayne Stetski, co-chair of the Compensation Program Steering Committee, noting that both the Robson Valley and the East Kootenay are feeling development pressures. "We had to secure this important habitat before it was too late."

Volunteers & water bring wetland back to life

For close to four years, a once fertile and thriving wetland south of Creston sat dry. No water. No wildlife. The swans, geese, ducks, cranesand other birds flew over it and onto "greener pastures" so to speak, along with the other species that once called it home. But that's all changed thanks to the Yaqan Nuki Wetlands Friendship Society.

This group of volunteers, which includes members of the Lower Kootenay Band, Ducks Unlimited and local residents, has brought the 474-hectare wetland back to life with funding from FortisBC and the Columbia Basin Fish & Wildlife Compensation Program. All they did was add water.

"As soon as we got the pumps working and re-watered part of the wetland, the birds and other species came back," says society chair Art Tremblay. "Almost instantly a cow moose and cow elk were spotted by the wetland and then came the Tundra and Trumpeter swans, Greater White-fronted geese and Canada geese on their fall migration. The Great Blue herons, Black terns and Sandhill cranes showed up to forage and Pied-billed grebes, Mallards, Wood ducks and Common Goldeneyes moved in."

Since the wetland became wet again in 2003, more than 184 species of birds, 22 species of mammals and nine species of reptiles and amphibians have been spotted.

The wetland, east of the Kootenay River and south of the Goat River near Creston, is an important link between the Creston Valley Wildlife Management Area and the Kutenai National Wildlife Refuge across the border. It had traditionally been an important migrational stopover for many species of birds and, like any wetland, provided important ecological functions (see wetland facts). The seasonal wetland was dyked for flood control in the 1950s and a series of pumps was installed to help manage water levels. The pumps were taken out of service in the late 1990s as a result of funding cuts and other changes. Without the pumps to move the water, the wetland quickly became dry.

That's where local resident Art Tremblay comes in. He helped establish a partnership between Ducks Unlimited and the Lower Kootenay Band and managed to pull together the funding and volunteers to get the pumps working, the water flowing and the wetland functioning again.

"Wetlands are diminishing at a rapid rate and we had to do something," says Art. "Tomorrow may be too late." Many wetlands in the Columbia Basin have already been lost to human settlement and from the effects of a range of activities including power development.

With the support of local partners the wetland has come back to life and the wildlife has returned.

Wetland Facts:

- Wetlands play a pivotal role in maintaining water quantity and quality and provide habitat and life support for a diversity of flora and fauna.
- They support a higher number of rare species relative to other ecosystems.
- An estimated 175 vertebrate wildlife species in the Columbia Basin are associated with wetlands.
- Loss of wetlands worldwide is a key conservation issue.
- Smaller, more isolated wetlands, like the ones here in the Columbia Basin, receive little management or conservation attention.
- Approximately one-quarter of the small wetlands in the Basin are on private land where management of the wetlands is not legislated.
- Get to know more about wetlands in the Columbia Basin. Read our Small Wetland Literature Review and Mapping report (2004) at www.cbfishwildlife.org

Re-watering the wetland is just part of the picture. The society has also cleared plugged ditches and cut some of the overgrown areas. There are plans for a pullout on the highway, a wetland education program, and maybe eventually school tours. The society also hopes to create more open areas on the water to accommodate the larger waterfowl by using a swamp boat with a mower to cut some of the cattails. In 2007 the endangered (red-listed) Northern leopard frog may be introduced into this wetland.

BC Hydro

Sharon Laughlin

Wildlife returned to the wetland near Creston as soon as volunteers got the water flowing.

Columbia Basin Fish & Wildlife Compensation Program

Fish & Wildlife Projects Funded in 2006 – 07

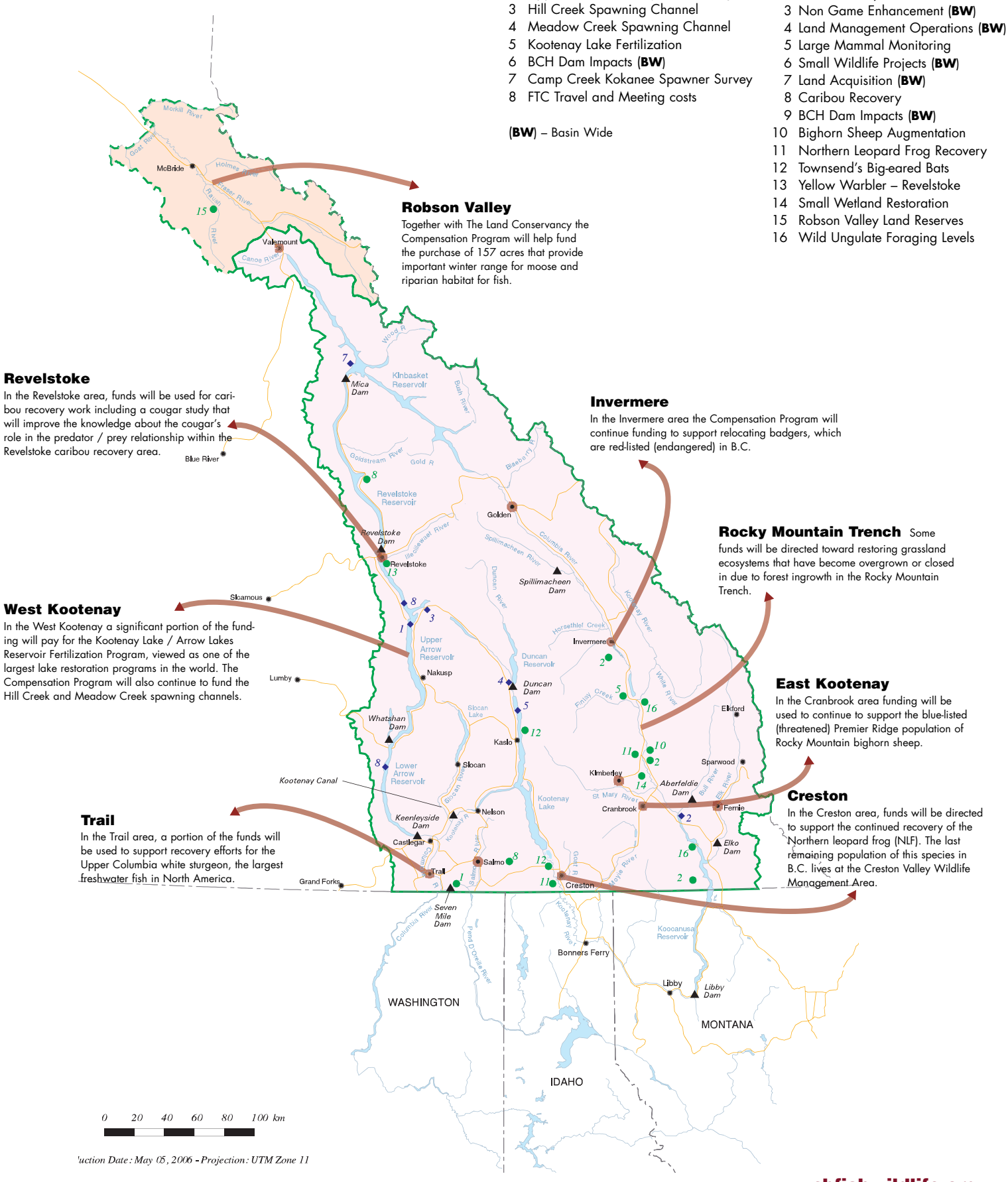
2006/07 Fish Projects

1 ALR Fertilization
2 Upper Columbia Sturgeon Hatchery
3 Hill Creek Spawning Channel
4 Meadow Creek Spawning Channel
5 Kootenay Lake Fertilization
6 BCH Dam Impacts (**BW**)
7 Camp Creek Kokanee Spawner Survey
8 FTC Travel and Meeting costs

(**BW**) – Basin Wide

2006/07 Wildlife Projects

1 West Kootenay Enhancement
2 East Kootenay Enhancement
3 Non Game Enhancement (**BW**)
4 Land Management Operations (**BW**)
5 Large Mammal Monitoring
6 Small Wildlife Projects (**BW**)
7 Land Acquisition (**BW**)
8 Caribou Recovery
9 BCH Dam Impacts (**BW**)
10 Bighorn Sheep Augmentation
11 Northern Leopard Frog Recovery
12 Townsend's Big-eared Bats
13 Yellow Warbler – Revelstoke
14 Small Wetland Restoration
15 Robson Valley Land Reserves
16 Wild Ungulate Foraging Levels



www.cbfishwildlife.org

Invasive Weeds Are a Growing Problem

Central Kootenay Invasive Plant Committee Update

It may be hard to believe that those pretty blooms in your yard or along your favourite trail are bad for the environment, but it's true. Invasive weeds like Yellow Flag iris, Common tansy or Orange hawkweed have been introduced to Canada without natural predators to keep them under control, so they are spreading across the region. That's where the Central Kootenay Invasive Plant Committee (CKIPC) comes in. This non-profit group of concerned citizens, community organizations, governments and land managers wants to raise awareness about the growing problem of invasive plants and stop them from spreading.

On a global scale, exotic plant and animal species are considered the largest contributor to the loss of biodiversity, after the loss of habitat.

"We've just produced a brochure, funded by BC Hydro, to help raise awareness about these exotic species that are choking out natural plants and degrading wildlife habitat," says Juliet Craig, CKIPC coordinator.

These rapidly spreading plants are "aliens" that have been brought to Canada either accidentally or on purpose. They are aggressive plants that are rarely eaten by wildlife or grazing livestock and they reduce the quality of forage for a variety of species – effectively reducing the biodiversity of native ecosystems and contributing to the endangered status of some native plant species.

For example, invasive plants are a factor in the loss of habitat for the blue-listed (i.e., vulnerable) Western skink and one of the largest infestations of Rush skeletonweed in the province is in the West Kootenay's Slocan Valley. Invasive plants are taking over local wetlands, reducing the habitat for amphibians, waterfowl and insects. These plants are also reducing the quality of local agricultural crops. Those are just a few examples of how serious the problem is.

Thanks to funding from the Columbia Basin Fish & Wildlife Compensation Program and other partners, the Committee is working to increase awareness and control the problem plants.

"Habitat was lost through flooding and the creation of reservoirs when dams were built in the region, so it's important to restore and maintain the remaining habitat for a range of wildlife values," says Kevin Conlin, co-chair for the Columbia Basin Fish & Wildlife Compensation Program Steering Committee.

The CKIPC has completed a landscape level inventory of four invasive weeds: Field scabious, Purple loosestrife, Hoary alyssum and Rush skeletonweed (see photos). These four weeds are present locally but based on the results of this inventory work, their distribution is limited – for now – so there's still time to stop their spread.

Controlling invasive plants can be done through a combination of tactics including biological control, which uses the plant's natural enemies such as insects to reduce the plant's population.

(continued to page 10)

Stop the Spread of Invasive Weeds:

- Learn to recognize and identify noxious weeds.
- Do not plant or spread invasive plants.
- If you can't remove invasive plants from your property, don't let them seed.
- Keep aggressive plants from escaping your garden or landscaped areas.
- Do not use roadside or "wild" plants in flower arrangements if you cannot identify them.
- Clean equipment, tools, vehicles and footwear before leaving an infested area.
- Report invasive plants in remote locations to the Central Kootenay Invasive Plant Committee or the East Kootenay Weed Committee.

(continued from page 9)

"It's easier to keep noxious weeds and invasive plants off the land base than to try and control them once they are established," says Juliet, who encourages landowners and local residents to learn to identify invasive plants so they can be detected early, before they have spread far.

"It's easier to keep noxious weeds and invasive plants off the land base than to try and control them once they are established."

In the Pend d'Oreille Valley (near Trail), the new wildlife management plan includes strategies to reduce the spread of aggressive plants like Spotted knapweed, Hoary alyssum, Hound's tongue and Dalmatian toadflax. (See story on page 16 about the new Wildlife Management Plan for the Pend d'Oreille Valley.) Invasive plants are also a problem for land managers in the Rocky Mountain Trench who are trying to restore grasslands. (See story on page one about ecosystem restoration in the Trench.)

To request a copy of the new brochure or for more information about invasive weeds in the West Kootenay and how to control them, visit www.kootenayweeds.com or call 352-1160. If you live in the East Kootenay, contact Kevin Paterson at 489-2791.

Hoary alyssum

Purple loosestrife

Field scabious

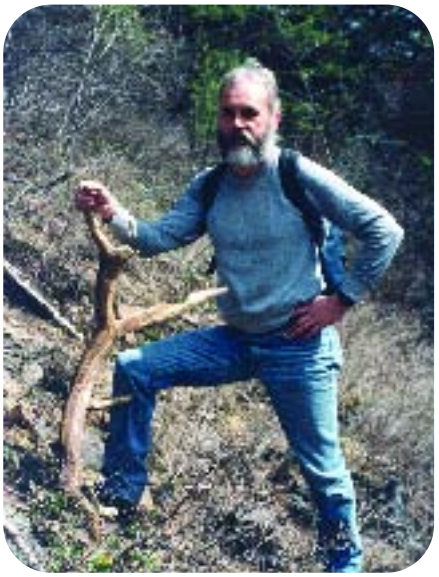
Photos: Ministry of Agriculture and Lands

Rush skeletonweed

Contact the Central Kootenay Invasive Plant Committee to request your free brochure about these aggressive weeds or learn more about invasive plant management. Call 250-352-1160 or visit www.kootenayweeds.com.

John Gwilliam Leaves the Field

Wildlife biologist John Gwilliam has retired after 25 years with the Columbia Basin Fish & Wildlife Compensation Program and its predecessor the Seven Mile/Pend d'Oreille Compensation Program. He worked extensively in the West Kootenay's Pend d'Oreille Valley southeast of Trail and in the Lower Arrow Lake near Deer Park, where he focused much of his work on habitat restoration. While ungulates, particularly white-tailed deer and to a lesser degree mule deer, have been species of interest for John over the years, he has recently been involved with bats and their relationship to wildlife trees. Looking back, he says one of the most exhilarating parts of his job was net gunning deer from a helicopter. He admits that he's never aspired to more senior positions but preferred the active lifestyle that comes with years of field work. "When you are in the field you can see the difference your work is making and I feel I've made a difference," says John. One of the last projects John was involved with was the production of the newly released wildlife management plan for the Pend d'Oreille Valley. The new plan will manage the area for a range of biodiversity values and is an important legacy for John, who lived and worked for years in the valley. Now that he's retired, he plans to continue volunteering as a board member on the Central Kootenay Invasive Plant Committee, travel to destinations where he and wife Maryann can pursue their bird and butterfly watching, and if time allows, follow his passion through continued involvement in local wildlife conservation groups.



John's commitment and years of tireless work comes from seeing positive results for wildlife populations. As a result, he is happiest and most at home in the field – a field that he knows like the back of his hand.

So You Think You Know It All?

1. **What do thatching ants – the ones that build big nest mounds – spray on their victim when they are threatened or biting?**
2. **Why is it called the "white" sturgeon when the fish looks so dark?**
3. **Where would you find a "plastron"?**

See page 18 for answers

David Gluns

Creative Thinking Is Creating Habitat

When it comes to restoring a particular piece of property to improve wildlife values, scientific-based guidelines are usually followed closely, but that does not mean there isn't room for creativity.

Such creativity in the field is exhibited by CBFWCP wildlife biologist John Gwilliam, and professional tree-faller Ray Thomas. John has been with the CBFWCP since its inception and with the Pend d'Oreille/Seven Mile Compensation Program prior to that, so he knows the land well and has a few tricks hidden up his sleeve when it comes to habitat restoration.

Creating habitat from blown-down trees is a prime example. For the majority of us, the value of a downed tree is in using it for firewood or a place to rest a backside on a long hike. For John and Ray, if the variables are right, it can be reshaped – quickly and cheaply – into a vertical snag for nesting and feeding birds, and for a range of other foraging species.

There is no secret to it, but you have to select a tree witha large root-wad that creates the counter-balance to get the tree upright again. Then you work down the tree, making several chainsaw cuts until the root-wad is heavier than the remaining tree trunk, flipping it skywards.

"Clearly you can't do it with all trees, nor would you want to," says John. "I rarely utilize the technique and always use a professional faller like Ray, but having a few strategically placed snags can be extremely valuable to wildlife."

There are primary and secondary species that benefit from such projects. The primary species include birds such as Hairy or Downy woodpeckers, and following these are the bats and squirrels that use the cavities created by the birds.

"It's way quicker than waiting for standing timber to die!" adds John. "And as far as restoration activities are concerned, it's a simple and inexpensive thing to do."

Simple, cheap, and very effective. Creativity is, indeed, everything.

John Gwilliam

Righting a fallen tree is a low-cost and creative way to turn a downed tree into a wildlife tree and it's just one of the many low-tech tricks the Compensation Program biologists use to help Mother Nature. Wildlife trees are used by a range of species.

Breeding Chats Clarification

An article on Yellow-breasted chats appeared in the last newsletter. Based on feedback from a keen reader and birder, we need to clarify that until now there have been unconfirmed reports of chats breeding in the Creston area. The fieldwork we reported on confirms those reports and indicates a larger breeding range for this bird. If you have questions or comments about anything you read in the Update newsletter, please let us know.

KOOTENAY LAKE & ARROW LAKES RESERVOIR FERTILIZATION & MONITORING

Project Biologist: Eva Schindler
Creel Survey Biologist: Steve Arndt
Contract Biologist: Don Miller
Contractors: Allison Alder, Deb Imeson, Heather Mackey, Glen Olson, Dr. Frances Pick, Dr. John Stockner, Grant Thorp, George Veale, Dr. Lidija Vidmanic, Harvey Andrusak
Partners: Ministry of Environment, Columbia Power Corporation, Kootenai Tribe of Idaho, Western Pacific Marine and Ministry of Transportation

Background

In 1992 an experimental fertilization program was started in Kootenay Lake, and in 1999 a similar program was implemented in the Arrow Lakes Reservoir (ALR). In both cases, upstream dams were trapping nutrients and dramatically impacting fish populations and habitats. Studies conducted in the 1990s confirmed that kokanee stocks in both the Kootenay Lake and Arrow Lakes systems were in serious decline.

Key Objectives

The experimental fertilization program, now viewed as one of the largest lake restoration programs in the world, is attempting to restore productivity by adding nutrients to the lake and reservoir. The intention is to support and restore the food web from the bottom up and ultimately strengthen the species that rely on that food. Stronger populations of kokanee make for stronger populations of other fish species, as well as the terrestrial species such as bears and bald eagles that include kokanee in their diet.

Update

In 2005 distribution of fertilizer was changed on both Kootenay Lake and the ALR. On Kootenay Lake, the run was extended to a total of 15 km in the north arm of the lake. Monitoring indicated that the phytoplankton composition was an excellent food source for zooplankton, which in turn provides the food base for kokanee. Results also show that kokanee did not disperse over the entire length of the lake, remaining instead in the north arm. Escapement runs of kokanee in the fall were more than a million fish between Meadow Creek and the Lardeau River – which is considered good – even though the in-lake abundance numbers are down from the previous year.

Fertilizer will continue to be dispersed on the ALR by the Shelter Bay ferry. For a portion (about half) of the 22 weeks per year that fertilizer is dispersed, the ferry will again be hired by the CBFWCP to disperse fertilizer along a 15-km north-south run in the upper Arrow. This change was implemented in 2005 and results show an improvement in the composition of phytoplankton. Escapement runs of kokanee in the fall were approximately 630,500 fish and the in-reservoir abundance is unchanged from 2004. Monitoring confirms that the density and bundance of kokanee in the ALR is higher than before fertilization started.

(continued to page 14)

Brian Sperling

The Compensation Program will hire the Shelter Bay ferry again this year to disperse fertilizer along a north-south run on the upper Arrow. This new route has helped boost phytoplankton composition in the reservoir.

(continued from page 13)

FISH PROJECT UPDATES

FISH HABITAT RESTORATION IN GOAT RIVER

Project Biologist: Steve Arndt,
Columbia Basin Fish & Wildlife Compensation Program
Partner Technician: Kenton Andreashuk,
Columbia Kootenay Fisheries Renewal Partnership
Partners: FortisBC, Columbia Basin Trust, Columbia Kootenay Fisheries Renewal Partnership, Goat River Residents' Association, Lower Kootenay Band, Ministry of Environment, Ministry of Transportation, Fisheries and Oceans Canada, Town of Creston, John Day Family, Regional District of Central Kootenay, and J.H. Hushcroft Ltd.

Background

The Goat River was once the most important spawning and rearing tributary for kokanee salmon in Kootenay Lake's south arm. It was also important to rainbow trout and endangered Kootenay River burbot and Upper Columbia River white sturgeon. Up until the last few years, management of the river focused on flood control with little attention focused on fish habitat. Improper flood and erosion control projects, together with hydro dams on the Kootenay River resulted in degraded habitat in much of the lower Goat River and reduced fish populations. Kokanee spawning runs used to reach 90,000 a year. Today kokanee are no longer found in the Goat River and it's the same for burbot that once numbered in the thousands. In 2000 there were less than 20 burbot in the river.

Objectives

Habitat restoration work began in the Goat River in 2002 in order to conserve and enhance remaining fish populations and create a more natural flood control response. The work was undertaken by an experienced fish habitat restoration crew, coordinated by the Columbia Kootenay Fisheries Renewal Partnership on behalf of the Columbia Basin Fish & Wildlife Compensation Program. FortisBC and the Columbia Basin Trust funded this restoration work.

Update

With help from the Lower Kootenay Band and the Goat River Residents Association, in-stream restoration work got underway in 2002. Today more than 20 fish habitat and flood control structures have been installed in the Goat River. The large woody debris and rock groynes improve the functioning of the current habitat by encouraging the river to meander more naturally. The debris features help restore a more natural flood-plain pattern and, together with the creation of deep pools for refuge, will improve the river's fish habitat. Local native willows, cottonwood, red-osier dogwood and grasses planted on the shoreline will, in time, provide overhead habitat and help stabilize eroding stream banks. The restoration partners have designed a plan and are looking for funding so that water can be diverted back into a south channel of the Goat River, which is currently dry.

CKFRP

Large woody debris and other habitat features have been installed in the Goat River to help restore fish habitat. The efforts of local partners and volunteers are paying off.

WESTERN SKINK INVENTORY & ASSESSMENT RESULTS

Project Biologist: John Krebs
Contract Biologist: Jakob Dulisse
Duration: Year 2 of 2

Background

In 2002 the elusive Western skink was federally designated as a species of Special Concern and a year later it became blue-listed in B.C., meaning it is vulnerable or sensitive. In some states, this beautiful and colourful reptile is also considered vulnerable or imperiled. Despite these designations, very little was previously known about this reptile that weighs between three and nine grams (a loonie weighs seven grams) and measures 15 – 18 cm (from nose to tail).

The Western skink is the only egg-laying lizard in the Columbia Basin and lives primarily in low elevation, dry open forest and mixed grassland habitat. Much of this habitat was lost when the construction of BC Hydro dams caused flooding which created reservoirs in the Columbia Basin, including in the Pend d'Oreille River valley, which was flooded when the Seven-Mile dam was constructed in the 1980s.

This species is sensitive to habitat disturbance and is a good indicator of the overall health of low elevation, dry open forest ecosystems.

Key Objectives

In 2004, an inventory was initiated to determine the distribution of Western skinks, and conduct a habitat assessment in the southwestern portion of the Compensation Program area. In 2005 the inventory and habitat assessments were continued to provide further recommendations for the conservation of this species and initial information for predictive mapping.

Not only does this work expand the knowledge base about Western skinks, but it also helps guide future conservation planning.

Update

In the summer of 2004 and 2005 potential skink sites were surveyed. Field visits were limited to drier, open forest types within the Compensation Program mandate area (see map on page 6). Public sightings, in target areas including Riondel, Gray Creek, Ainsworth, Balfour, Winlaw, Slocan and New Denver, helped scope the survey sites. Foot surveys, in combination with sound clues (lizards make unique sounds as they travel through dry grass and debris) were carried out to confirm skink locations and collect habitat data.

The results: skinks were present at 41 out of 91 sites surveyed and also reported at another 86 locations, to make a total of approximately 127 known skink sites in the West Kootenay portion of the Compensation Program's mandate area.

Western skinks are distributed as far east as the Creston Valley, and along Kootenay Lake as far north as Pilot Bay and Ainsworth. The northernmost confirmed location was Vallican in the Slocan Valley. This work indicates that Western skinks are relatively common from Syringa Provincial Park (near Castlegar), south along the Columbia River valley to the U.S. border and throughout the Pend d'Oreille River valley. They may also exist at New Denver and Rosebery, but reported sightings have not been confirmed.

As for roommates, the Western skink is often found alongside Northern alligator lizards and Rubber boas. They are typically found in sites with warm aspects, loose soil cover and an abundance of cover objects, such as rocks with nearby grass, shrubs or woody debris. If you see a skink (with its distinctive blue tail) outside the areas mentioned, please report it to the Compensation Program. (See page 2 for contact information.)

(continued to page 16

Jakob Dulisse

The distinctive blue tail is a feature of juvenile Western skinks.

(continued to page 16)

(continued from page 15

WILDLIFE PROJECT UPDATES

PEND D'OREILLE VALLEY GETS NEW WILDLIFE MANAGEMENT PLAN

Project Biologist: John Gwilliam
Contract Biologists: Marlene Machmer, Chris Steeger, Steve Wilson, Dennis Hamilton
Partners: Ministry of Environment (Environmental Stewardship), Habitat Conservation Trust Fund, BC Hydro

Background

When BC Hydro constructed the Seven-Mile dam in 1975 south-east of Trail, important wildlife habitat, including vital winter range for white-tailed deer, was lost. The initial Pend d'Oreille (PDO) wildlife management plan developed in 1979 by Ministry of Environment biologist Guy Woods (recently retired) focused management efforts on white-tailed deer. This plan has been the basis for management ever since.

A total of 205 terrestrial vertebrate species are known to use habitats in the PDO, which represents approximately 50% of all terrestrial vertebrate species occurring in the Columbia River Basin. Eleven of the vertebrate species are considered at risk in B.C., and additional listed taxa include six vascular plant species and six butterfly species.

Key Objectives

Since 1995, when the Columbia Basin Fish & Wildlife Compensation Program was formed, management of the 1,755 hectares of conservation lands in the PDO Valley has been expanded to include other wildlife species. Until now, however, there has been no formal plan to guide the management of what is described in the new wildlife management plan as "one of the most important wildlife habitat areas in the southern interior of British Columbia."A new wildlife management plan has been developed and is ready to be implemented.

A new wildlife management plan for the Pend d'Oreille valley will expand on the historical focus which has been on white-tailed deer.

Update

The new wildlife management plan builds on the experience gained in the valley since 1979, applies ecosystem-based management principles, includes new wildlife habitat use information, considers current legislative requirements, proposed resource development activities, ecosystem health, and concerns raised by local residents and stakeholder groups.

The new wildlife management plan for the Pend d'Oreille Valley will recognize:

- the pivotal role that this area plays in regional management for ecosystem representation, wildlife diversity and species at risk;
- the importance of active habitat management to maintain appropriate ecosystem composition, structure and function and the associated productivity of the area's habitats;
- the need to control existing noxious weeds, and to work collaboratively with a range of stakeholders to prevent additional weed infestations and associated ecosystem impacts;
- the need to create greater awareness of ecosystem values and sensitivities to promote responsible use and stewardship of the plan area; and
- the desire to provide a well-managed area suitable for recreational users and visitors without compromising the wildlife and habitat values.

WWWant to know more?

To view the new wildlife management plan for the Pend d'Oreille Valley go to: **www.cbfishwildlife.org** and follow the link to 2006 Reports.

New Fish & Wildlife Reports

Check out the latest reports now available for free on our fully searchable data base. Visit our REPORTS page at www.cbfishwildlife.org for a complete list of our fish and wildlife reports.

Fish Reports

- Kinbasket Reservoir and Upper Columbia River Kokanee Spawner Index – before 2005
- Koocanusa Reservoir Kokanee Spawner Index – 2005
- Hill Creek Spawning Channel Kokanee Fry Enumeration Report – 2004
- Microsatellite DNA Polymorphism in Rainbow Trout (*Oncorhynchus mykiss*) from the Arrow Lakes, BC
- Feasibility of Juvenile and Adult Bull Trout Abundance Monitoring in Selected Tributaries of the Arrow Lakes Reservoir
- Status of Burbot (*Lota lota*) in Arrow Lakes Reservoir

Wildlife Reports

- Creston Valley Wildlife Management Area Wetland Enhancement Project Report: Corn Creek Unit 2B
- The Kootenay Community Bat Project: 2005 Summary Report
- Habitat Selection by Mule Deer in Southeastern British Columbia
- Great Blue Heron Breeding Inventory and Stewardship in the Columbia Basin
- The Predator-Prey Dynamics of Wolves and Moose in the Northern Columbia Mountains
- East Kootenay Badger Project 2004-2005 Update: Ecology, Translocation, Sightings and Communications
- Endangered Forests of the Inland Temperate Rainforest: An inventory of old-growth in Trout Lake and the Incomappleux
- Hoodo Hofert Restoration Treatment Monitoring Site Establishment
- The Role of Habitat Structure in Nest Site Selection and Breeding Success of Yellow Warblers in the Revelstoke Reach, BC
- Survey for Endangered Yellow-Breasted Chat Breeding Occurrence, Habitat and Productivity in SE BC
- Protection of the Morrisey Old Growth Cottonwood Forest
- Columbia Basin Western Skink Inventory & Assessment 2005 Results
- 2005 Western Screech-Owl Inventory of the Central and West Kootenay Region
- 2005 Columbia Basin Racer Inventory
- Columbian Sharp-tailed Grouse

We're listening to our readers!

Many thanks to all of you who completed our reader response card. The lucky winner of a ball cap is E.A. Grunerud of Procter. Based on your feedback, most of you think the newsletter is an informative read. That being said we are always seeking ways to improve it, so many thanks for all the constructive ideas.

Several of you asked for information on the stocking of lakes for the sports fishery, but the Compensation Program does not get involved in the stock management side of things – that falls within the mandate of the Ministry of Environment.

Since many of our readers are fish and wildlife advocates, conservation, not surprisingly, is an ongoing concern. So, here is our response to a number of your suggestions to reduce our paper consumption:

This issue of the newsletter was printed on paper that is 17% lighter than usual plus it's made from 100% post-consumer fibre. Please tell us what you think.

We are producing approximately 30% fewer copies than two years ago, as we focus on targeting Basin residents rather than people outside the region and the newsletter is now available electronically; if you would like your newsletters emailed, contact us at info@cbfishwildlife.org.

You gave us a number of other comments requesting updates on projects in specific areas and we will get to as many of those as we can in the course of the next few newsletters, but in the meantime you can find detailed project reports on our website at www.cbfishwildlife.org.

continued from page 11

Answers to So You Think You Know It All...

1. Formic acid.

2. It has a white or very pale underbelly. This means predators from above find it difficult to pick out its dark shape against the dark river bottom, and predators from below find it difficult to pick out the white shape against the light sky.

3. Plastron is the flat part of a turtle shell and these Western painted turtles are relaxing on theirs. (It's also a quilted pad worn by fencers to protect the torso)

Angus Glass

Sign up Now!

We're developing a new e-letter. This free, concise, online quarterly will keep you in touch with our activities. Sign up now by contacting **info@cbfishwildlife.org** or **250-352-6874**.