

U.S. Fish and Wildlife Service

CRFPO Carbon Footprint

FY 2013 Report



CRFPO Carbon Footprint Team

J. Michael Hudson, Brook Silver, Maureen Kavanagh, Larry Fishler, Doug Olson

**U.S. Fish and Wildlife Service
Columbia River Fisheries Program Office
Vancouver, WA 98683**

On the cover: Columbia River Fisheries Program Office Staff

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and authored by

J. Michael Hudson
Brook Silver
Maureen Kavanagh
Larry Fishler
Doug Olson

U.S. Fish and Wildlife Service
Columbia River Fisheries Program Office
1211 SE Cardinal Court, Suite 100
Vancouver, WA 98683

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J. Michael Hudson, Brook Silver, Maureen Kavanagh, Larry Fishler, Doug Olson

*U.S. Fish and Wildlife Service
Columbia River Fishery Program Office
1211 SE Cardinal Court, Suite 100
Vancouver, WA 98683*

Abstract –

The U.S. Fish and Wildlife Service – Columbia River Fisheries Program Office (CRFPO) convened a Carbon Footprint Team in 2013. The goal of this team is to quantify, track, and make recommendations toward reducing the office carbon footprint. To this end, we established a process that involved establishing objectives, meeting regularly, establishing contacts outside of CRFPO to collect information, conducting an energy audit, adopting a carbon footprint calculator, quantifying the office carbon footprint, and developing recommendations to reduce that carbon footprint. The energy audit was conducted by Clark Public Utilities and provided some insight to ways we could easily reduce our carbon footprint. The carbon footprint calculator was adopted from Seattle Climate Partnership, and provided a platform to easily input data so that the office carbon footprint could be quantified. The CRFPO carbon footprint for FY 2013 was approximately 350 metric tons of CO₂. Recommendations developed included ways of reducing the person commute between home and office, changes to the office vehicle fleet, and reducing electricity usage, all of which represented the biggest sinks to the CRFPO carbon footprint. This approach developed and implemented by the CRFPO Carbon Footprint Team identifies a way that U.S. Fish and Wildlife Service field offices can easily quantify and track their carbon footprint, and can be a meaningful step toward making changes that decrease the carbon footprint for the agency.

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Introduction

In February 2013, the U.S. Fish and Wildlife Service – Columbia River Fisheries Program Office (CRFPO) convened a Carbon Footprint Team (CFT) with a goal to quantify, track, and make recommendations toward reducing the office carbon footprint. The need for this arose from the 2010 U.S. Fish and Wildlife Service (Service) Strategic Plan for Responding to Accelerating Climate Change (Strategic Plan). The need was further emphasized by a November 1, 2013, Executive Order 13653, Preparing the United States for the Impacts of Climate Change, signed by President Barack Obama. To meet these directives, Service field offices need the ability to understand what their current carbon footprint is, and what actions can be taken to reduce that footprint.

Carbon tracking efforts currently being used by the Service are more specific to Service owned lands, facilities and equipment (e.g., National Wildlife Refuges, National Fish Hatcheries). A large number of field offices are housed in leased space and use leased vehicles for field activities. The carbon footprint from these facilities and vehicles are typically captured at the national level through General Services Administration (GSA) reporting. However, this information is often too broad scale to be useful at the individual field office level.

The objectives identified by the CRFPO CFT are:

- Identify existing models from ongoing/past activities other offices/agencies have used to track/reduce their carbon footprint;
- Determine a method to quantify the office carbon footprint;
- Conduct quantitative analyses of CRFPO carbon sources and offsets (i.e., what is the value of specific actions?);
- Identify platform to track CRFPO carbon footprint and measure progress toward reduction goal;
- Make recommendations for reducing CRFPO carbon footprint to achieve reduction goal;
- Establish CRFPO carbon footprint reduction goal.

This report captures the process followed, tools used, and outcomes associated with all but the last objective. This effort is consistent with goals and objectives identified in the Service's Strategic Plan (USFWS 2010) with respect to mitigation and engagement.

Relationship to the Service Strategic Plan for Responding to Accelerating Climate Change

Implementation of this project demonstrates application of the Service's 2010 Strategic Plan for Responding to Accelerating Climate Change. The following goals and objectives have been addressed by this project:

Goal 5: We will change our business practices to achieve carbon neutrality by the Year 2020.

Objective 5.1: Assess and reduce the carbon footprint of the Service's facilities, vehicles, workforce and operations.

Objective 5.3: Offset the remaining carbon balance

Goal 7: We will engage Service employees; our local, State, Tribal, national and international partners in the public and private sectors; our key constituencies and stakeholders; and everyday citizens in a new era of collaborative conservation in which, together, we seek solutions to the impacts of climate change and other 21st century stressors of fish and wildlife.

Objective 7.1: Provide Service employees with climate change information, education and training.

Process

The CFT met approximately once a month for an hour beginning in February 2013. The first step taken by the CFT was establishing the goals and objectives of the effort. Once these were established, our meetings involved discussing information collected since the previous meeting, integrating that information into our effort, discussing next steps and delegating responsibilities for the next meeting. All meetings were documented and all information collected and generated was made available to the office through the process.

We recognized early in the process that carbon footprint tracking was not a novel idea, and it was not our intent to “re-invent the wheel”. Therefore, we contacted other Service offices and programs, other agencies and NGOs to identify existing carbon tracking efforts and/or tools that might be valuable to our effort. These included the Service’s Oregon Fish and Wildlife Office, Washington Fish and Wildlife Office, and the Region 1 Refuge Program; the Bureau of Land Management-Medford; the U.S. Geological Survey (USGS)-Cascades Volcano Observatory and USGS-Sacramento; and, Energy Trust of Oregon, Northwest Sustainable Energy Economic Development (SEED), and Seattle Climate Partnership (Appendix B). These contacts proved valuable toward our next steps of conducting an audit and adopting a calculator.

The final component of this process was to develop some recommendations and identify next steps. The recommendations involved some quantitative analysis to understand how taking certain actions might affect the CRFPO carbon footprint. Next steps include setting CRFPO carbon footprint reduction goals and identifying actions to meet those goals.

Energy Audit

On September 12, 2013 representatives from Clark County Public Utilities’ Green Initiative Program conducted an on-site energy assessment of the CRFPO office, warehouse, and warehouse yard to identify cost efficient opportunities to improve energy efficiency and reduce energy operating costs of the office. The areas identified as having the highest impacts on our energy expenditure are the thermostat units (HVAC) and lighting system. To improve efficiency in both these areas, they recommended the following: establish a temperature that meets the comfort

level of most employees in the office, program the Honeywell thermostat units to the desired temperature, and cover and lock the units to prevent tampering with the system.

With regards to our lighting system, it was suggested that we upgrade the timer for indoor lights (software or standalone controls are available to achieve this task), add lighting in the warehouse (safety), ensure external lighting monitors are functioning properly (daylight harvest when and where possible), and de-lamp hallways and other over-lit areas/ offices. Other suggestions include having Bonneville Power Association (BPA) hire a third party to complete a more formal technical energy study of the building. This study would be at no charge to the office and it would provide more detail on any potential energy efficiency measures with associated costs, savings and incentives available.

Carbon Footprint Calculator Results

The Carbon Footprint Calculator developed by the Seattle Climate Partnership was adopted to estimate the CRFPO Carbon Footprint for FY 2013. The calculator is intended to provide users with a platform to inventory their greenhouse gas emissions. Activities that tend to have significant emissions such as energy use, transportation, purchasing, and waste generation were evaluated. This inventory created a benchmark to assist in prioritizing our greenhouse gas reduction strategies.

Building energy use was determined by energy purchased directly from the providers. Building management (PacTrust) provided utility invoices for our 19,008 square foot office area. In FY 2013, the CRFPO used 5,082 therms of natural gas and 236,770 kWh of electricity. Energy use was converted to a total of 123.4 metric tons of CO₂.

Transportation data was collected from business travel and employee commuting. Annual fleet fuel use in gallons was determined by fuel credit card invoices. 10,144 gallons of gasoline and 691 gallons of diesel were used. Miles of business travel by airline totaled 2,064 miles of short trips (<300 miles), 7,478 miles of medium trips (300-700 miles) and 27,144 miles of long trips (> 700 miles). A survey of 54 employees determined 11,579 gallons of gasoline and 653 gallons

of diesel were used during the annual commute. Commute by bus equaled 8,181 total miles. Transportation data was converted to a total of 214.9 metric tons of CO₂.

Accounting provided purchase records of key materials, goods, and services. Recycled paper (30% recycled content) was purchased for \$1,400 and virgin paper was \$25. Other items purchased in FY 2013 were \$9,823 of computers, \$600 of furniture, and \$5,474 of office supplies. Purchasing data was converted to a total of 5.5 metric tons of CO₂.

Waste disposal and recycling data was collected from utility invoices provided by PacTrust. Twenty tons of waste was disposed of and 1.3 tons of waste was recycled. Waste generation data was converted to 8.4 metric tons of CO₂.

The Carbon Footprint Calculator summarized the results of the carbon footprint inventory. The carbon footprint for the CRFPO in FY 2013 was an estimated 352 metric tons of CO₂, or 7 metric tons of CO₂ per employee (Table 1). Business travel, employee commuting, and electricity use were the top three sources of greenhouse gas emissions (Figure 1). Transportation (business and commuting) generated 61% of the greenhouse gas emissions and energy use (electricity and natural gas) generated 35% of the greenhouse gas emissions (Figure 2).

Table 1. Metric tons of greenhouse gas emissions generated by the CRFPO (50 average full time employees) in FY 2013

	Metric tons of CO₂
Business Travel	103.8
Employee Commuting	111.1
Energy - Electricity	96.4
Energy - Other	27.0
Materials & Services	5.5
Waste Generation	8.4
Total	352.2

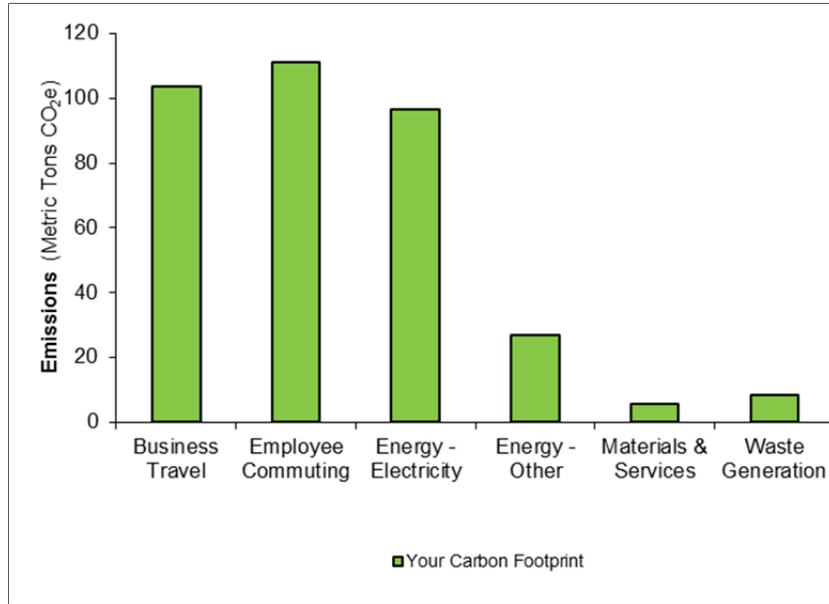


Figure 1. Results of the Carbon Footprint Calculator for FY 2013

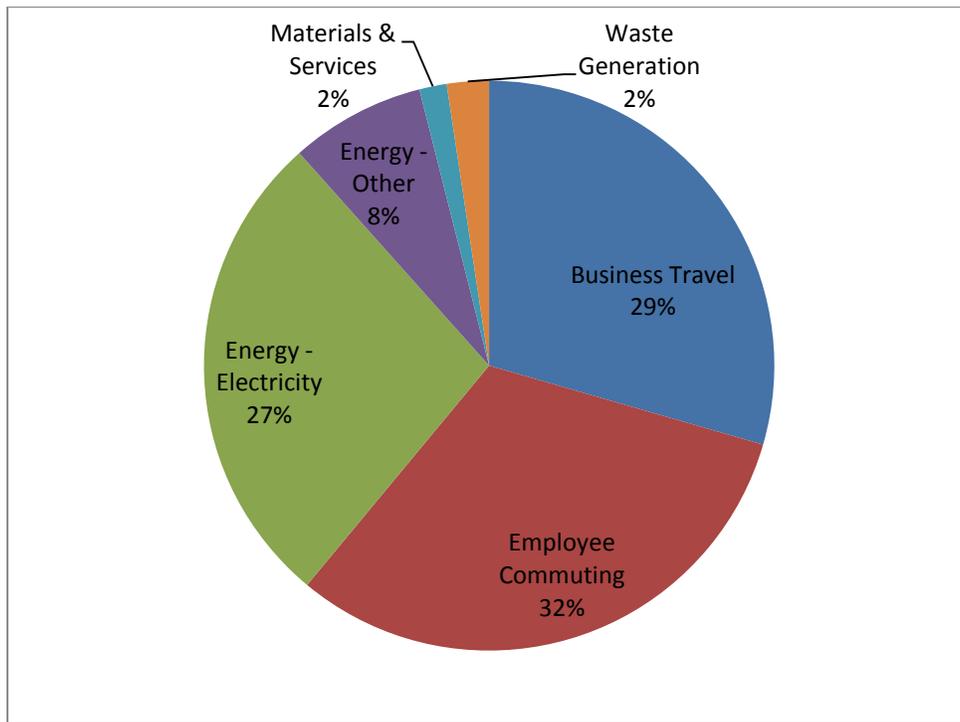


Figure 2. Percentage of greenhouse gas emissions generated by the CRFPO in FY 2013

Recommendations

The CRFPO carbon footprint calculator produced a quantitative analysis of our greenhouse gas emissions. Significant sources of greenhouse gas emissions were generated from transportation, energy use, materials consumption, and waste disposal. This benchmark inventory will serve to establish trends in future years and improve our ability to make recommendations to achieve reduction goals. To move forward, our office needs to identify reduction goals and specific actions. Continued tracking of the CRFPO carbon footprint will document trends and progress towards these goals.

To reduce transportation emissions, changes to fleet management and work schedules should be considered. Increasing fleet vehicles that use diesel fuel instead of gasoline would reduce the FY2013 footprint by 8.3 metric tons of CO₂ (7.9%). Regular fleet maintenance such as tire pressure checks and adjustments increase gas mileage and lower fuel consumption. Walking, biking, carpooling, and alternative work schedules would all reduce greenhouse gas emissions from automobiles. Increasing the use of flex schedule and telecommuting would reduce the FY2013 footprint by 8.2 metric tons CO₂ (7.5%).

Reduction of energy use begins with conserving electricity. Electricity use for office lighting can be reduced by reprogramming light timers, adjusting office lights, opening curtains and manually switching off lights. Additionally, turning off computers and equipment when not in use (except for patch Wednesdays) will prevent unnecessary energy consumption. Thermostat regulation (warmer in the summer, cooler in the winter) will lessen the use of air conditioning units and heaters.

A thoughtful purchasing policy should avoid carbon intensive items and limit the need for new items by reusing materials. Ordering new supplies from local sources will reduce transportation energy needed for delivery. To reduce the need for new items, an exchange area for office supplies, furniture, and equipment can be set up. A substantial amount of purchasing goes toward paper, which has a large carbon footprint. Purchase of unbleached paper made with 100% recycled content will help save trees, water, energy, landfill space, and prevent air

pollution (US EPA 2014). Paper can be conserved by setting all office computer defaults to print double-sided and careful editing before printing.

Waste disposal can be reduced by increasing recycling and reducing consumption of disposable products. Paper towels can be recycled or composted with food scraps. Use of reusable dishes and utensils is encouraged (can be purchased from the second hand store or donated by office employees

Next Steps

- Establish office carbon footprint reduction goals.
- Identify actions to meet CRFPO carbon footprint reduction goals.
- Continue annual tracking and reporting of CRFPO carbon footprint.

Acknowledgements

We acknowledge the CRFPO executive team for providing the CFT the time and resources to implement this effort. We acknowledge the staff of CRFPO, particularly Mary McGrew, for the information that was provided critical to accurately assessing the office carbon footprint. We thank the Region 1 Climate Change Board for its receptiveness of this information and the feedback provided. We thank a number of individuals that were responsive to our information needs and provided feedback, including: David Patte, Shauna Ginger, Jeff Stephens, Ed Brown, Ben Harrison, Jessica Zahn, and Donna Seaman, Kirk Slack with Oregon Community Wind, and Debbie DePetris with Clark County Public Utilities.

Literature Cited

U.S. Environmental Protection Agency (US EPA). *Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2012*. EPA530-F-14-001. February 2014. http://www.epa.gov/wastes/nonhaz/municipal/pubs/2012_msw_fs.pdf

U.S. Fish and Wildlife Service (USFWS). 2010. *Rising to the Urgent Challenge: Strategic Plan for Responding to Accelerating Climate Change*. U.S. Fish and Wildlife Service, Washington, DC.

Appendix A: “How to” Guide

- Identify a group of people in your office willing to compile the information for the calculator – someone with access to the waste and electric bills, and fleet information is useful.
- Download the Seattle Climate Partnership calculator from scp.co2challenge.com, or contact Mike Hudson, Fish Biologist, USFWS-Columbia River Fisheries Program Office, for a copy of the Excel based calculator (michael_hudson@fws.gov).
- Company info tab – enter average number of employees, facility type and facility location (this should be NWPP for all mainland Region 1 facilities).
- Collect your energy use from bills for the tracking period (e.g., fiscal year, calendar year) – natural gas (therms), electricity (kWh) – and enter into spreadsheet on the Energy tab.
- Collect mileage, fuel economy, and fuel type from fleet vehicles and staff commuting. We have a spreadsheet we can provide to convert this information to gallons of fuel that can then be entered into spreadsheet on the Transport tab. Mileage for any public transportation is entered on this tab.
- Collect information from staff on business air travel (to where, how often). Round trip mileage will have to be calculated and entered on appropriate line (short v. medium v. long trips) on the Transport tab.
- Collect information on reams of paper and cost of office supplies (computers, furniture, other office supplies) and enter into spreadsheet on the Materials tab. If you have information on water usage (input and output), that can be entered on this tab too.
- Collect information on waste disposed, recycling, and any composting your facility conducts and enter on the Waste tab.
- All of this information is processed and presented on the Results tab, which is similar to what is presented under Calculator Results in this document.

Appendix B: Contacts and References

Contact Agency	Contact Office	Contact Name	Contact Phone	Contact Email	Location of documentation
BLM	Medford Interagency Office	Jeff Stephens	541-618-2499	j2stephe@blm.gov	
USGS	Cascades Volcano Observatory	Ed Brown	360-993-8980	ecbrown@usgs.gov	
USGS	Sacramento Office	Donna Seaman	916-278-9436	dseaman@usgs.gov	M:\Regional Climate Board\06_Projects\Carbon Footprint Tracking\06-ExternalInformation . http://www.epa.gov/climateleadership/smallbiz/footprint.html
USFWS	Oregon Fish and Wildlife Office	Shauna Ginger	503-231-6949	shauna_ginger@fws.gov	M:\Regional Climate Board\06_Projects\Carbon Footprint Tracking\ExternalInformation\TrackingReductionApproaches
USFWS	Regional Office	Ben Harrison			http://www.conservationfund.org/our-conservation-strategy/major-programs/go-zero/
Energy Trust of Oregon	Energy Trust of Oregon	Jessica Zahn	503-575-4212	jzahn@peci.org	M:\Regional Climate Board\06_Projects\Carbon Footprint Tracking\06-ExternalInformation\TrackingReductionApproaches
NW SEED (Sustainable Energy Economic Development)			206-328-2441		http://www.nwseed.org/
DSIRE : Database of State Incentives for Renewables and Efficiency					http://www.dsireusa.org/
carbon footprint calculator	Seattle Climate partnership				M:\Regional Climate Board\06_Projects\Carbon Footprint Tracking\06-ExternalInformation\TrackingMethods

Appendix C: CRFPO Carbon Footprint Goals and Actions

CRFPO footprint goals and actions to be included in this Appendix are pending the outcome of a meeting yet to be held with the CRFPO Executive Team. When available, these will be appended to the final report.

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1211 SE Cardinal Court, Suite 100
Vancouver, WA 98683**



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