

Annual Sustainability Report



2013 Report

consultant(s): Kayli Anderson
email: kayli@synergyenterprises.ca
phone: 250-516-2317

synergy
www.synergyenterprises.ca

Executive Summary

Introduction

Eagle Wing Tours is an adventure whale watching company based in Victoria, BC. They have measured, reported and offset their carbon footprint annually for four years. Eagle Wing Tours operates out of Fisherman's Wharf with a fleet of three boats and three transportation/company vehicles and is the first carbon neutral whale watching company in Victoria.

In 2013, Eagle Wing Tours increased their total passengers by 8.3% and total trips by 4.2%. In 2012, they started offering longer tours increasing emissions, however, at the same time they optimized their booking practices to maximize passengers per boat - effectively reducing emissions per passenger. The reporting scope for Eagle Wing Tours increased in 2011 to include deliveries to the office and in 2012 to include shipping emissions for boat parts and all paper sources. In 2013, Eagle Wing Tours added another vehicle to their fleet.

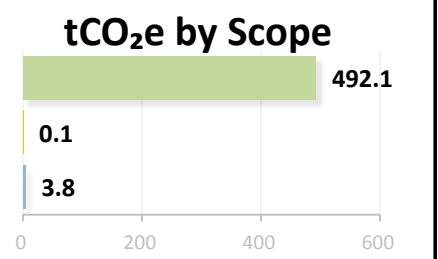
The emissions data for 2010 through 2012 has been restated based updated emissions factors and reporting standards.

General Information

Parameter	Description
Company Name	Eagle Wing Tours
Contact Information	Brett Soberg info@eaglewingtours.com (250) 384-8008
Company Description	One floating office, three boats, two company vehicles
Reporting Principals	Aligned with those defined in <i>The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (The GHG Protocol, www.ghgprotocol.org)</i> . Emissions factors approved by Offsetters.
Year of Inventory	December 1, 2012 - November 31, 2013
Inventory Boundary	Scope 1 (Direct Emissions) - Gasoline, Diesel (fuel for 3 ships + vehicles)
	Scope 2 (Indirect Emissions from Purchased Electricity) - Purchased Electricity (BC Hydro)
	Scope 3 (Indirect Emissions from Other Sources) - Office Paper, Other Paper, Waste, Water, Flights, Ferries, Shipping, Deliveries & Service Calls, Staff Commuting
Primary Measurement	Carbon Dioxide Equivalent (CO ₂ e)

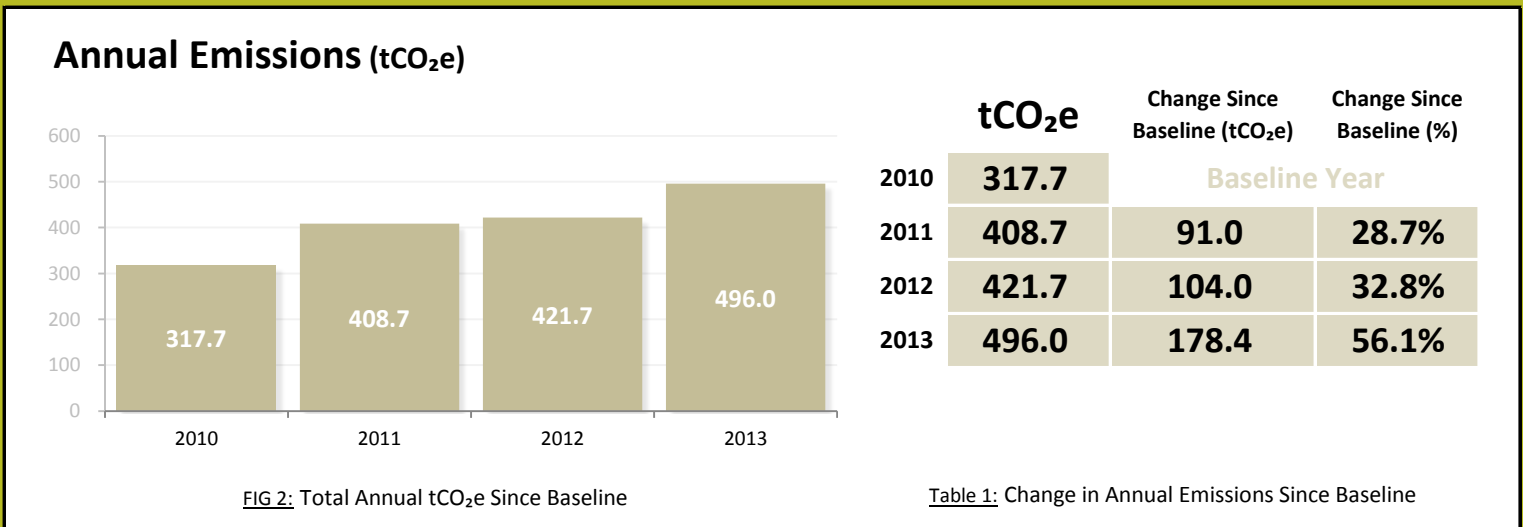
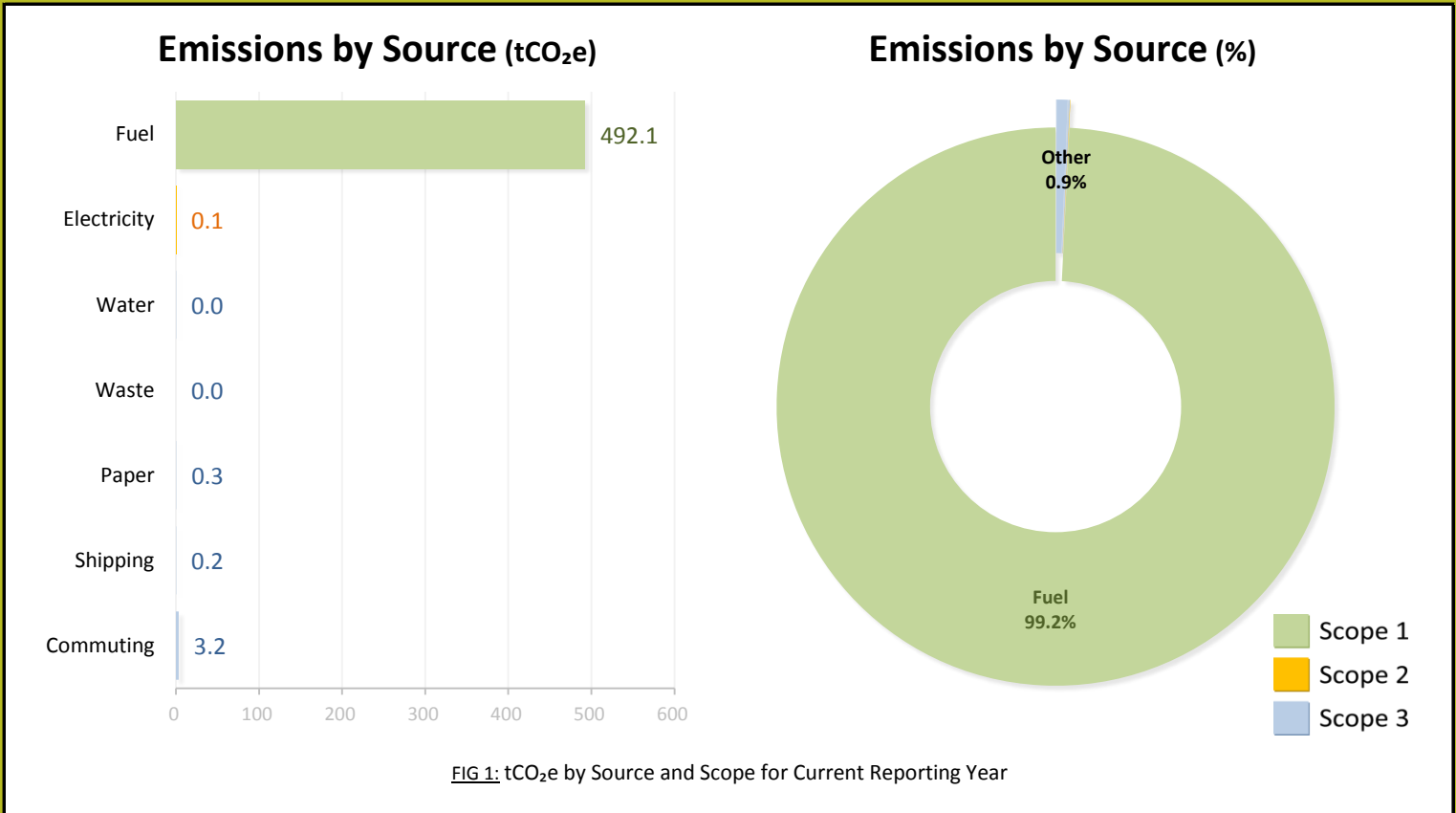
Inventory Results

Parameter	Value (tCO ₂ e)	
Scope 1	492.1	99.2% of total emissions
Scope 2	0.1	0.0% of total emissions
Scope 3	3.8	0.8% of total emissions
Total GHGs	496.0	



Carbon Footprint

Eagle Wing Tours	Total Emissions for Eagle Wing Tours for 2013 comes to 496.0 tCO₂e . An increase in business (total customers seated) resulted in a emissions increase of ~17.6% over last year.
2013 Report	
Report completed Apr 30, 2014	
Kayli Anderson	



1,373.3
Barrels



113.4
Cars



22.5
Homes

Total Emissions (tCO₂e): 496.0

Fuel

In 2013, total number of passengers increased by 4.2% while number of trips increased by ~8.3%. While more passengers were taken out in 2013, fewer passengers were seated during each trip. Fuel consumption per trip has also increased. A drop in emissions per passenger is expected in 2014 with the addition of a more efficient boat and installation of fuel saving technologies.

Fuel (L)

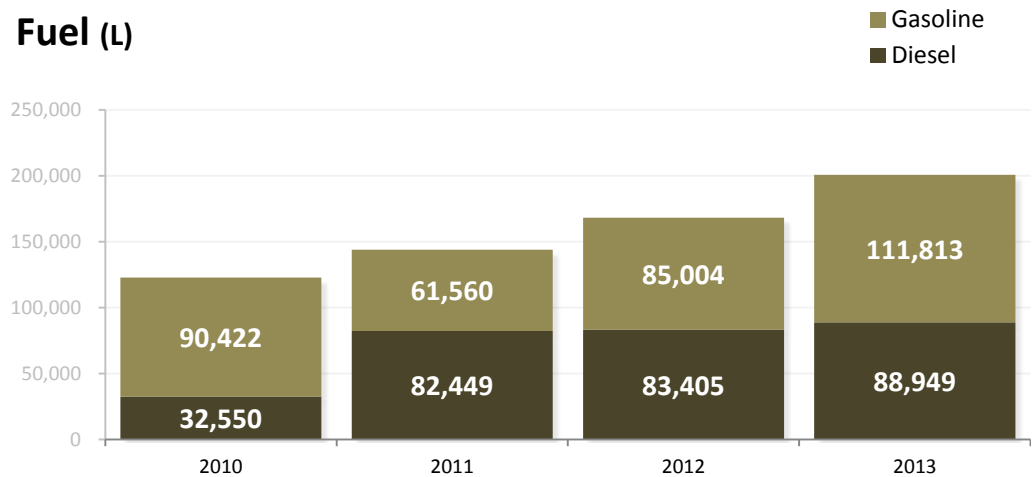
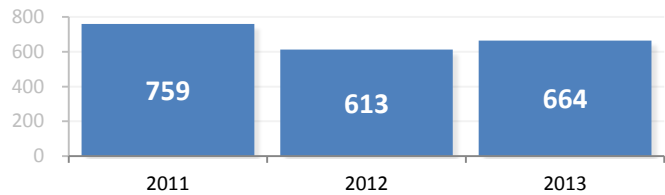
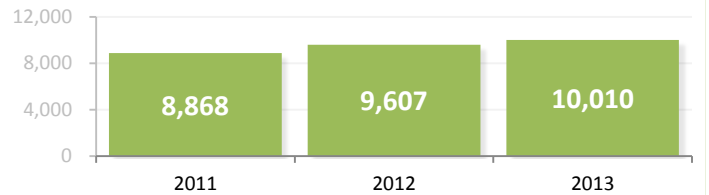


FIG 4: Annual Fuel Consumption by Type

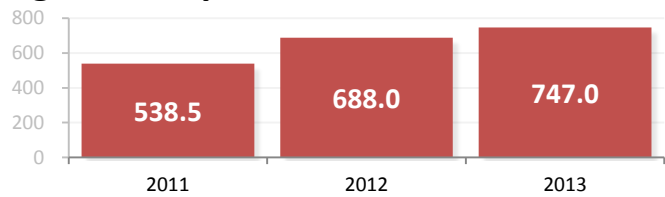
Total Trips



Total Passengers



kgCO₂e/Trip



kgCO₂e/Passenger

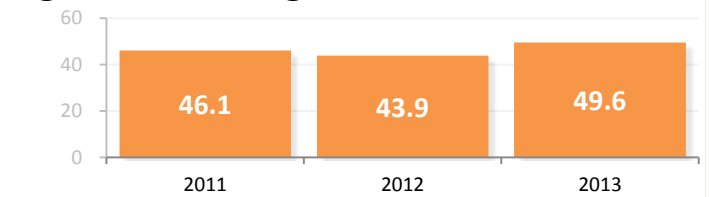


FIG 4.1: Annual Per-Trip and Per-Passenger Data, 2011-2013

Gold Wing 2013 Voyage Statistics



Passengers	Trips	Avg. Psngrs.
5,922	279	21

Eagle Wing 2013 Voyage Statistics



Passengers	Trips	Avg. Psngrs.
1,200	110	11

Serengeti 2013 Voyage Statistics



Passengers	Trips	Avg. Psngrs.
2,888	275	11

Table 3: Fuel KPIs for Current Year

L / Day

550.0

tCO₂e Change Since Baseline

58.6%

tCO₂e

492.09

% of Total tCO₂e for Current Year

99.2%

tCO₂e Equal to...



112.5
Cars/Year

Electricity

Electricity reduction strategies are in place at the Eagle Wing Tours office. All Electronics are turned off or unplugged when not in use. Recharging of equipment is scheduled to eliminate over-charging.

Electricity use is measured based on square footage, and is not metered separately from surrounding businesses. As such, changes in use will not be seen.

Electricity (kW)

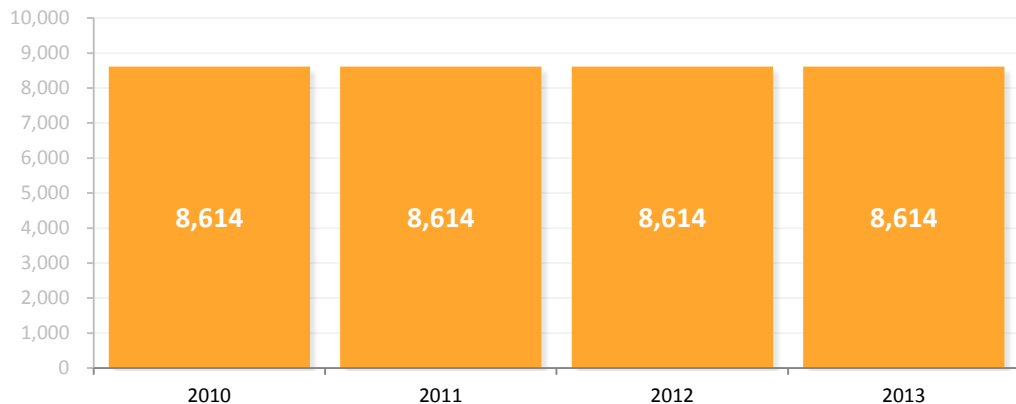


FIG 5: Annual Electricity Consumption

Table 4: Electricity KPIs for Current Year

kW / Day	tCO ₂ e Change Since Baseline	tCO ₂ e	% of Total tCO ₂ e for Current Year
24	46.2%	0.10	0.02%

Use Equal to...



0.0

Homes/Year

* Electricity factor updated April 29, 2014 - lowered by ~86% from previous year.

Water

Minimal water is used on site. It is measured based on square footage, and is not metered separately from surrounding businesses. As such, changes in use will not be seen.

Water (m3)

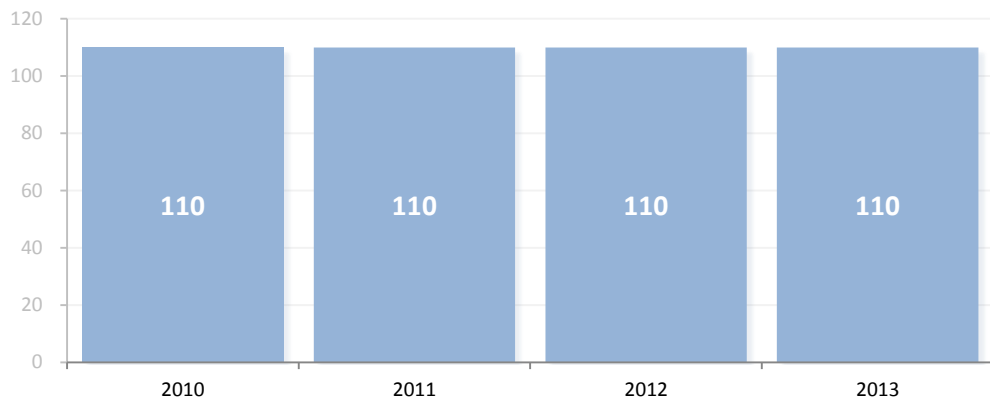


FIG 6: Annual Water Consumption

Table 5: Water KPIs for Current Year

m ³ / Day	m ³ Change Since Baseline Year	tCO ₂ e	% of Total tCO ₂ e for Current Year
0.3	0.0%	0.04	0.01%

Volume Equal to...



581

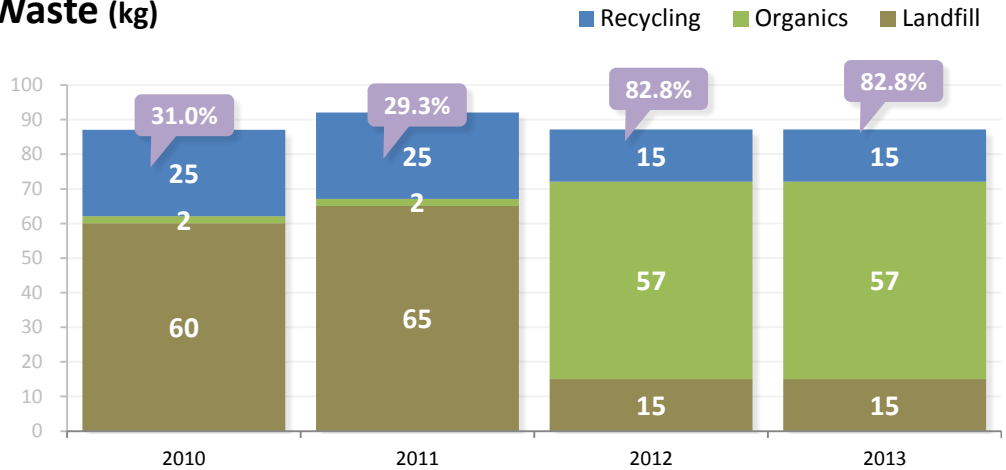
Baths*/Year

* Volume in one "bath" = 50Gal

Waste

In 2012, Eagle Wing Tours introduced a composting program through Pedal to Petal. A full waste audit is scheduled for the busier summer months in 2014.

Waste (kg)



Current Year's Diversion Rate

91.8%

FIG 7: Annual Waste by Type

Table 6: Waste KPIs for Current Year

kg / Day

0.2

tCO₂e Change Since Baseline

91.8%

tCO₂e

0.02

% of Total tCO₂e for Current Year

0.005%

Volume Equal to...



0.0

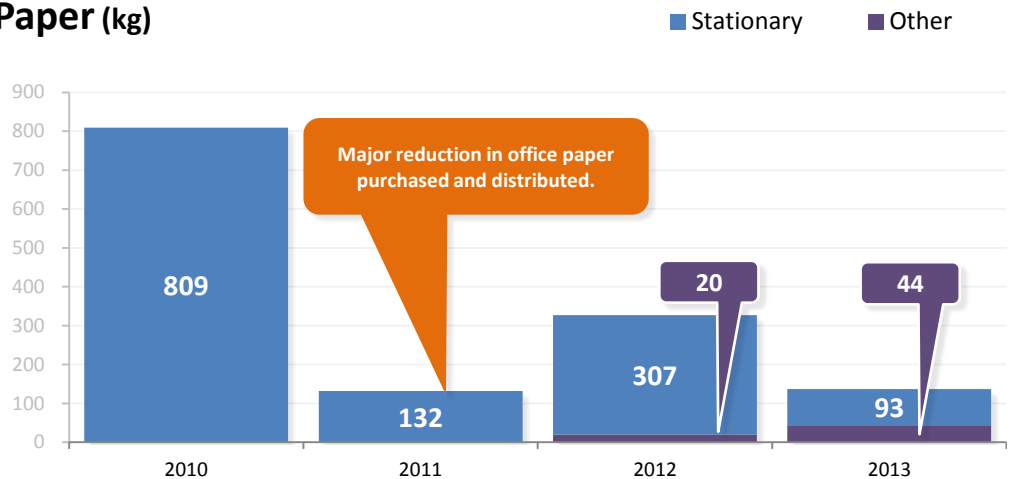
Trucks/Year

* New landfill emission factor in 2014. Increase of ~27% over previous year. Volume in 1 "truck" = 12t

Paper

All office paper used at Eagle Wing Tours is 'Step Forward' 80% tree-free wheat paper. In 2012 the scope increased to include all paper products including toilet paper and disposable cups. In 2012, a large round of brochures was printed. An electronic waiver system is being implemented in 2014 to further reduce paper use.

Paper (kg)



Average % of Recycled Content

66.1%

FIG 8: Annual Paper Purchasing

Table 7: Paper KPIs for Current Year

kg / Day

0.4

tCO₂e Change Since Baseline

-87.3%

tCO₂e

0.31

% of Total tCO₂e for Current Year

0.1%

Trees Harvested...



1

Trees/Year

Business Travel

A business trip was taken from Victoria to San Juan Island on a zodiac with other whale watching company owners - emissions associated with this trip are negligible.

Distance (km)

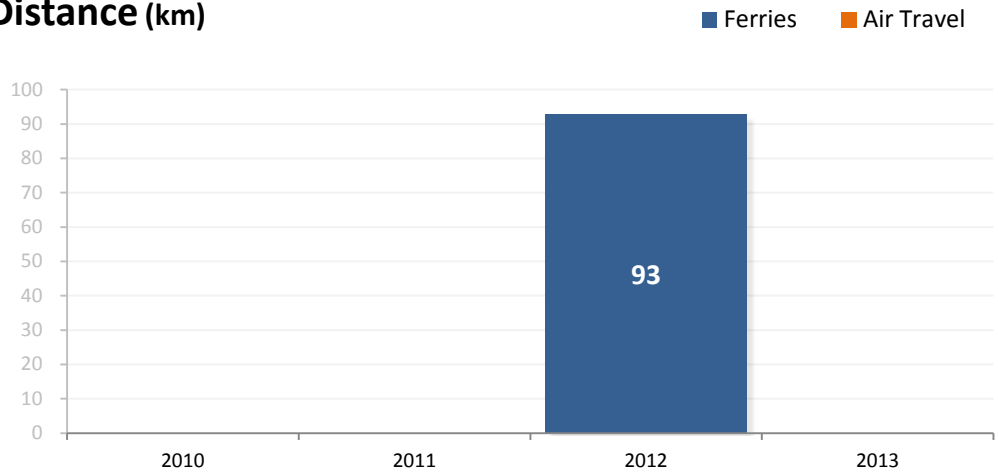


FIG 9: Annual Distance Flown

Table 8: Business Travel KPI's for Current Year

km / Day	tCO ₂ e Change Since Baseline	tCO ₂ e	% of Total tCO ₂ e for Current Year
0	0.0%	0.00	0.0%

tCO₂e Equal to...



0.0

Cars/Year

Shipping

In 2012, the scope increased to include shipping emissions for boat repair parts.

Air Shipping (t-km)

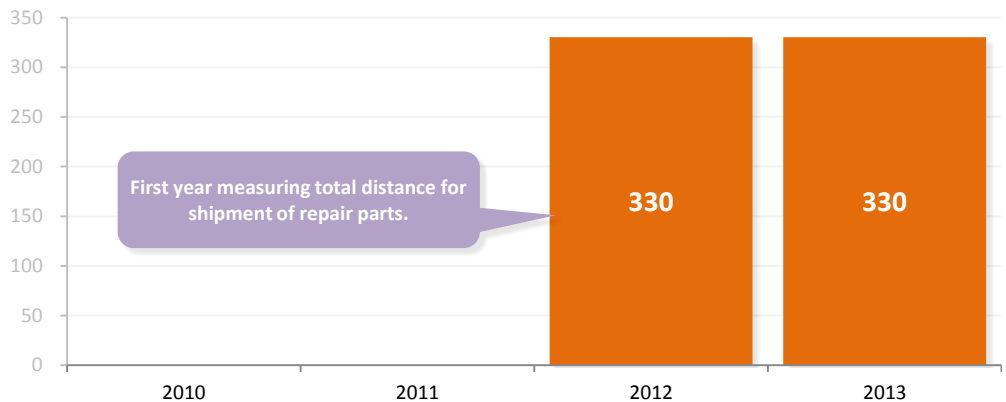


FIG 10: Annual MT/km by Shipping Method

Table 9: Shipping KPI's for Current Year

t-km / Day	tCO ₂ e Change Since Baseline	tCO ₂ e	% of Total tCO ₂ e for Current Year
1	0.0%	0.20	0.04%

tCO₂e Equal to...



0.0

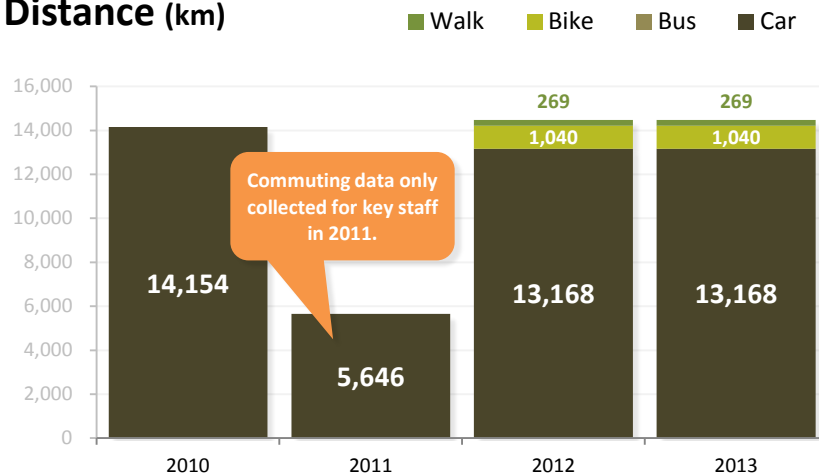
Cars/Year

* Data for 2013 was estimated based off of 2012 totals

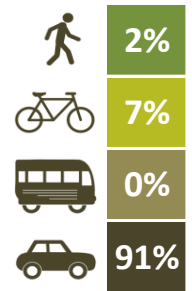
Staff Commuting

Most Eagle Wing Staff get to work by driving. Due to early hours and long distances traveled, transit and cycling are not options for many staff.

Distance (km)



How Staff Get To Work



Values are rounded and may not add up to exactly 100%

FIG 11: Annual Commuting Distances and Commuter Count by Method

Table 10: Staff Commuting KPI's for Current Year

tCO ₂ e / Day	tCO ₂ e Change Since Baseline	tCO ₂ e	% of Total tCO ₂ e for Current Year
0.009	-17.4%	3.19	0.6%

tCO₂e Equal to...



* Number of staff did not change from 2012 to 2013, therefore same data was used.

Deliveries & Service Calls

Deliveries and service call emissions were first tracked in 2011. A more in depth study was made into the deliveries and service calls in 2012 - in particular the maintenance calls from the mechanic. More work was done on the boats internally in 2013 - reducing the need for the mechanic to be on site.

Distance* (km)

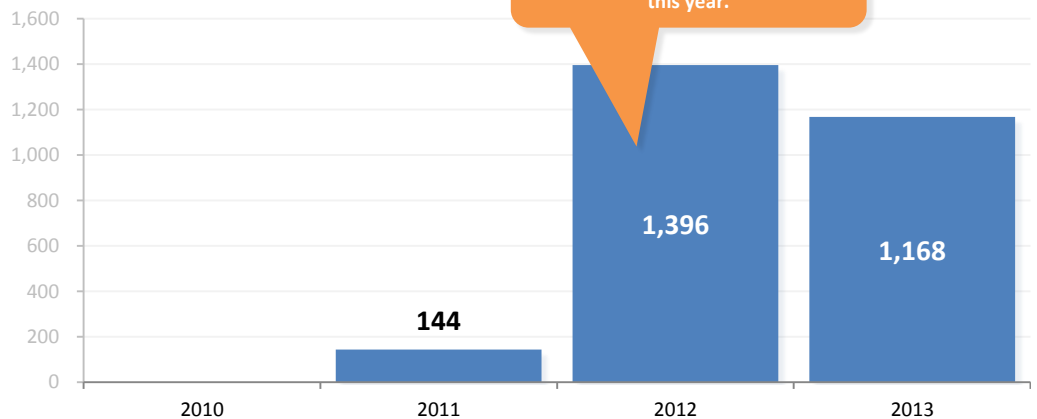


FIG 12: Annual Distance Travelled for Deliveries and Service Calls

Table 11: Delivery & Service Call KPI's for Current Year

Visits / Week	tCO ₂ e Change Since 2012	tCO ₂ e	% of Total tCO ₂ e for Current Year
11.2	-16.3%	0.08	0.02%

tCO₂e Equal to...



* Standard distance of 2km and < 1t of product assumed for each delivery or service call.

Additional Information

Carbon Reduction Strategies

Eagle Wing Tours has been measuring and offsetting their carbon emissions for four years. Their largest emissions source is the fuel used to power their boats and to transport their guests to and from Fisherman's Wharf. Eagle Wing Tours strives to minimize environmental impact through optimizing the efficiency of their tours. After their first assessment with Climate Smart in 2010, a sustainability action plan was put in place to reduce emissions wherever possible. They monitor boat maintenance, driver performance, and capacity minimums to maximize efficiency and drive down emissions per passenger. In 2012 they reduced their number of trips by ~14.3% while increasing their passengers by ~7.7% and while introducing longer tours managed to reduce emissions per passenger. In 2013, however, their per passenger emissions increased. In early 2014, Eagle Wing Tours purchased a more efficient boat with greater capacity that will replace one of the current boats and further reduce emissions per passenger.

Table 12: Achievements and Goals in Carbon Reduction

Achievements

CLIMATE ACTION

- Carbon Neutral for four years
- Efficient Volvo Penta D9 diesel engines exceed EPA regulations
- Composting program for cups and other food waste
- Purchase 80% tree free paper

CONSERVATION

- Introduced \$2 wildlife fee (Industry first!) to support the Pacific Salmon foundation and the Centre for Whale Research
- 1% For the Planet members
- Founding members of VISTA and the Earth Day Garbage Showdown
- Coordinated World Oceans Day at Fisherman's Wharf
- Environmental education is a key part of every tour

AWARDS

- 2013 EcoStar Award for Community Environmental Leader
- 2013 Tourism Vancouver Island Tourism Sustainability Award

Moving Forward

- Purchase renewable energy from Bullfrog power
- Install fuel treatment system to increase fuel efficiency
- Launch a more efficient boat (remove less efficient boat)
- Replace Goldwing motors with larger more efficient motors
- Researching opportunities to convert motors to biodiesel and/or hybrid electric

Information on Inventory Uncertainty

- * Land vehicle fuel calculated based on financial records for fuel allowances and purchases and averaged 2013 fuel costs
- * Electricity and Water data has been estimated based on amount billed and office square footage. Eagle Wing is not independently metered from other businesses on the pier.
- * 2013 staff commuting, waste data and shipping data recorded as the same as previous year.

References

Table 13: Emissions Factor Reference Table

Emission Source	Per Unit	CO ₂ e (kg)	References
Natural Gas	GJ	50.3014	
Light Fuel Oil	L	2.6260	http://www.env.gov.bc.ca/cas/mitigation/pdfs/BC-Best-Practices-Methodology-for-Quantifying-Greenhouse-Gas-Emissions.pdf
Propane		1.5410	
Gasoline		2.2718	
Diesel		2.6765	
Bio-Diesel (Locally Made*)		0.0000	
BC Hydro Electricity	kW	0.0120	http://publications.gc.ca/collections/collection_2013/ec/En81-4-2011-3-eng.pdf
Plane (0-463km)	psg-km	0.3266	http://www.env.gov.bc.ca/cas/mitigation/pdfs/BC-Best-Practices-Methodology-for-Quantifying-Greenhouse-Gas-Emissions.pdf
Plane (463-1,108km)		0.1834	
Plane (> 1,008km)		0.1654	
Float Plane		0.2130	
BC Ferries		0.1480	
Public Transit		0.1158	
Taxis	km	0.1443	
Accommodation	Night	12.6300	
Landfill Waste	kg	1.2512	http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=AA11E35B-1
Organics (Compost)		0.0000	(No end-user emissions for materials sent to compost/recycling facilities)
Recycling (Mixed)		0.0000	
Municipal Water	m ³	0.3441	http://www.watgovernance.ca/factsheets/pdf/FS_Water_Use.pdf
Paper (Virgin)	Ream	6.3580	http://www.printoutlet.ca/stockweight.php
Paper (100%PCR)		4.0100	
Light Ground Shipping	t-km	0.0310	http://www.cefic.org/Documents/IndustrySupport/Transport-and-Logistics/Best%20Practice%20Guidelines%20-%20General%20Guidelines/Cefic-ECTA%20Guidelines%20for%20measuring%20and%20managing%20CO2%20emissions%20from%20transport%20operations%20Final%2030.03.2011.pdf
Heavy Ground Shipping		0.0720	
Rail Shipping		0.0272	
Barge Shipping		0.0310	
Short-Sea Shipping		0.0160	
Deep-Sea Shipping		0.0057	
Air Shipping		0.6020	

GLOSSARY of TERMS & UNITS

CFL	Compact Fluorescent Light.
GHG	Greenhouse Gas (emissions): Atmospheric gasses contributing to the greenhouse gas effect, including Carbon Dioxide (CO ₂), Methane (CH ₄), Nitrous Oxide (N ₂ O), etc.
GJ	Gigajoule: Unit of natural gas equal to 38.26 L, or 1/6 the volume of a barrel of oil.
HVAC	Heating, Ventilation & Air Conditioning.
KPI	Key Performance Indicators (Highlights.)
kW	Kilowatt: Unit of energy equal to 1,000 Watts, commonly used for electrical billing.
LED	Light Emitting Diode: Efficient lighting technology.

m ³	Cubic meter: Unit of measurement equal to 1,000 Litres, used here to quantify water.
t-km	Metric Tonnes per kilometer: A unit of measurement used in shipping.
PCR%	Post-Consumer Recycled Content (by percent.)
psg-km	Passenger Kilometer: Unit separating total emissions between passengers per km.
Ream	Standard unit of paper measurement equal to 500 sheets, with 10 reams in a box.
T12/T8/T5	Models of common fluorescent tube lighting.
tCO ₂ e	Metric Tonnes of Carbon Dioxide Equivalent: GHGs have different warming potential, measured collectively as CO ₂ equivalent, hence "e".