



Valves in piddocks are held together by ligaments attached to structures called apophyses—small tongue-like projections (ap) on the inside margins of the valves.

Photo by Christina McCorry

Due to the presence of an extensive attached macro-algal cover on the firm substrates throughout the year, especially during reproductive periods, occurrence and densities of these piddocks in the False Narrows are somewhat limited. ◇

References

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Notes

This section of *SHALE* provides an opportunity for contributors to present the partial results of ongoing research, publish less-than-normal-length articles, and provide “interesting facts”.

Minimizing greenhouse gas: bridge v. ferry—by Nick Doe

In reality, comparing the greenhouse gas (GHG) emissions from the ferry to the GHG emitted by cars travelling via a hypothetical bridge is comparing apples with oranges because the switch from a ferry to a bridge would bring about all sorts of changes in islanders' travelling habits. Nevertheless, the question gets asked, how much more fossil fuel does the ferry use than would be

used if all the cars on the ferry used their own engines on a bridge?

That the cars would use less is pretty much a given because pushing something through water requires a lot more energy than pushing something through less-dense air.

The ferry uses about 115 litres of fuel per crossing. The capacity of the ferry is around 72 cars, but on average, the ferry travels only 48% loaded, carrying around 35 cars. The distance from a hypothetical bridge at El Verano and the present ferry terminal in

Nanimo is about 15 kilometres. At an average fuel efficiency of, let's say 8.6 litres per 100 km, these 35 cars would use 45 litres of fuel. So the answer is the cars would only require about 40% of the fuel used by the present ferry.

Sounds like there's room for improvement—a more fuel-efficient ferry, going slower, and a reduction in lightly-loaded crossings would all do the trick. ◇

Greenhouse gas emissions from Gabriola—by Nick Doe

	<u>2002</u>	<u>2007</u>	<u>2008</u>
vehicles	12283	14686	5912
ferry	2787		2870
food			2340
electricity	5317	957	1279
propane			1370
float-planes & boats			693
garbage	2053	2390	609
furnace oil			<u>258</u>
TOTAL	<u>22440</u>	<u>18033</u>	<u>15331</u>
	tonnes CO ₂ equivalent		

In December 2002, there was a note in *SHALE*¹ giving estimates of Gabriola's greenhouse gas (GHG) emissions. Recently, this exercise was repeated for 2008,² and so it might be of interest to compare the estimates. The middle column in the table above is a consultant's estimate for 2007.

Vehicle emissions

In 2002 and 2007, vehicle emissions were estimated using ICBC figures for the number of vehicles registered on Gabriola. This method was rejected in 2008 because many part-time residents register their

¹ *SHALE* 5 p.35.

² <http://islandfutures.ca>

vehicle on Gabriola to get cheaper ICBC rates, and because the average distance travelled by vehicles on the island is lower than the BC average. The number used for the 2008 report was based on the amount of fuel sold on Gabriola.

Ferry emissions

The ferry emissions remained the same.

GHG emissions generating electricity

Accounting for the GHG emitted to generate electricity to supply Gabriola is complicated because the *emission factor*, the amount of GHG emitted to generate one unit of electrical power, varies from year to year. It so happened that 2008 was an unusual year in that there was little need to import power from Alberta or the USA and so the GHG emitted was very low. It's unlikely this will happen often in future.

Garbage

Organic matter in garbage counts as a GHG generator because it produces methane rather than CO₂. In 2002 and 2007, the amount of garbage from Gabriola was taken to be the amount dumped in the Nanaimo landfill pro-rated for the island population.

In 2008, the amount of garbage trucked off the island was investigated and found to be considerable less than the pro-rated average for Nanaimo as a whole. Why is not known.

Bottom line

The bottom line is that the report for 2008 was more thoroughly researched than were those for 2002 and 2007. The GHG emitted in 2002 and 2007 was over-estimated, and the 2007 estimate is also incomplete. The earlier estimates do not therefore form a good basis for assessing long-term trends, but hopefully the 2008 report does. ◇