

# Oil Spill Prevention in Recreational Boating

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## TWO-STROKE VS. FOUR-STROKE ENGINES

If you own an older two-stroke outboard, consider upgrading to a modern low emission (direct injection) two-stroke or four-stroke alternative at the earliest opportunity.

Conventional two-strokes are inherently more inefficient and can release a lot of oil and uncombusted fuel during normal operation. You may see this as a rainbow sheen on calm water around the engine at idle. Due to its high toxicity, even this apparently small amount can be harmful to marine life. Research in the USA also estimated that a 100hp two-stroke personal watercraft operated for 7 hours emits more harmful gaseous emissions than a new car driven for more than 140,000kms.

When multiplied by the vast number of small boats plying New Zealand waters, concentrated in popular areas over summer months, it is easy to see the potential for long-term environmental damage.

Four-stroke outboards, though more expensive initially, are cleaner operating, release less pollutants, require less lubricants, and generally have higher fuel efficiency than two-strokes. Over the course of the engine's lifetime, you may find that ongoing fuel savings offset the additional initial expense.

Conventional two-stroke engines have been banned in some parts of the world due to the harmful effects of their emissions, particularly in enclosed waters. Maritime New Zealand encourages recreational boaters to switch to less harmful engine alternatives, not only for outboards, but also when purchasing personal watercraft too. *Look after the environment you enjoy - invest in its protection.*

Engine manufacturers have developed a new generation of low emission, high performance two-stroke engines to meet stringent international emission standards. Conventional, inefficient models are still in production, so check with your dealer before deciding which model to purchase.

If you have an older two-stroke engine, limit operation at full throttle and eliminate unnecessary idling: these are the most polluting stages of engine use. Also, make sure you keep the engine properly maintained and tuned.