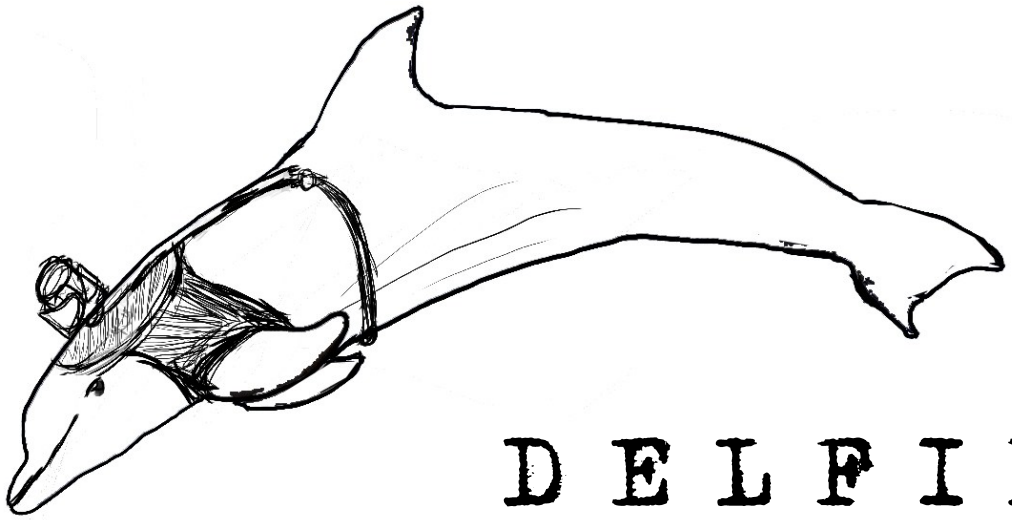

DELFINOX

While increased ocean acidification and pollution will make the ocean inhospitable to much of marine life by 2050, weakening calcium-based shells and protective mucus barriers, CO2 levels will also have greatly affected air quality. Marine-based mammals will therefore be placed in a double-bind.

By some accounts, 2015 is a point-of-no-return for climate change. World industries and economies have shown unwillingness change their course quickly enough to avoid this outcome. With that in mind, the Tempus Fugit Company, in collaboration with Aqualung Canada and NOAA, are targeting at-risk marine mammals, starting with a three-year pilot project with dolphins using a revolutionary new device.

DELFINOX is minimally invasive, requiring dolphins to wear a comfortable, individually-fitted neoprene harness and a small padded device above their blowhole. Making use of Aqualung's Rebreather technology, this device continuously filters both air and water to extract, store and purify oxygen. This device connects to a series of tubes which circulate air around the harness and back to the filter. The filter and its CO2 scrubbers are self-cleaning and can last up to a decade without being changed. For ease of monitoring and changing of filters, DELFINOX also acts as a tracking device. The whole of the device is powered by the motion of the dolphin through the water and the dolphin's instinctive blowhole clearing upon surfacing. When dolphins reach the surface to breathe, they forcibly expel air through their blowholes, clearing away any excess water from the blowhole and emptying their system of excess mucus and carbon dioxide that they have been storing. The force of this expulsion is sufficient to set the filtering process in motion.

Based on success teaching dolphins to use devices such as pneumotachometers, the Tempus Fugit team is convinced that dolphins will readily adapt to DELFINOX. In addition to providing oxygen for everyday activities, in the event that the dolphin is caught in a fishing net or other emergency which leads to an inability to surface (as in the growing area of the ocean that is currently taken up by plastic and garbage gyres), this emergency supply will be available to the dolphin to give it a fighting chance of living to face the folly of man once more.

After the initial pilot project, a decision will be made in collaboration with the United Nations Task Force on Ocean Pollution about whether to outfit the larger dolphin population with these devices. Research is also being made into whether releasing a $NaHCO_3$ solution into the world's oceans could counteract acidification.

D E L F I N O X