

Fish Eye Project: Team on a mission

Live dives streamed to the Internet enable audiences around the world to follow divers and communicate with them wherever they are, in real time

TEXT BY SARAH POLLARD

It's the morning of November 24, 2014. Go time. Members of the Fish Eye Project team are exhausted and running out of time. In less than three hours, they're due to broadcast a live dive from Victoria's Saanich Inlet. Media and viewers from around the world are expected to tune in, including more than 4,000 students. A CBC crew plans to follow along from a Vancouver classroom and new sponsor Aqua Lung Canada will be watching. It's easily Fish Eye's biggest event to date.

So far, the technology isn't cooperating—in fact, not much is working: not dive timings, tech, or weather. There's still 300 feet (91m) of Ethernet cable to be run and already some of the test divers in the water are finding themselves caught up in the lines. Last night, the lead computer crashed; in aborted trials the previous week, water penetrated the housing of two cameras, flooding both. Now, with 15 minutes to go, a windstorm has kicked up from the southeast—a nasty surprise, given the location's usually reliable shelter—leaving the support team on the dock scrambling to chase down the gear tent. Worse? The wind has drastically reduced broadcast bandwidth and finding a fix is proving difficult. With five minutes to go, someone tethers a cell phone to a laptop, nabbing a spotty Internet connection. It's a down-to-the-wire save.

These are the kind of last minute hurdles the Fish Eye Project team has come to expect. They're hazards of the mission the not-for-profit organization has taken on the past four years: hosting live educational dives that rely on real-time technologies for broadcast around the world.

Fish Eye's co-founder Mike Irvine has mixed emotions about that November day. "The dive worked,



but barely," Irvine says shaking his head. "The stress was huge. We've never failed at an event, but we came damn close to it on that one."

Limited margin for error has taught the team to build in plenty of contingencies for the elements it can control, and to get comfortable with improvisation for those it can't. Fish Eye's big-picture commitment to furthering ocean literacy helps members to take the tough lessons in stride. The early glitches are also a measure of how far the organization has come.

'Edutainment'

When the Victoria, B.C.-based Fish Eye Project launched in 2012, the goal was to develop a unique form of 'edutainment' that wowed audiences

Above: World Ocean's Day IMAX event poster. Full face masks with comms, and HD cameras head up evolving technology

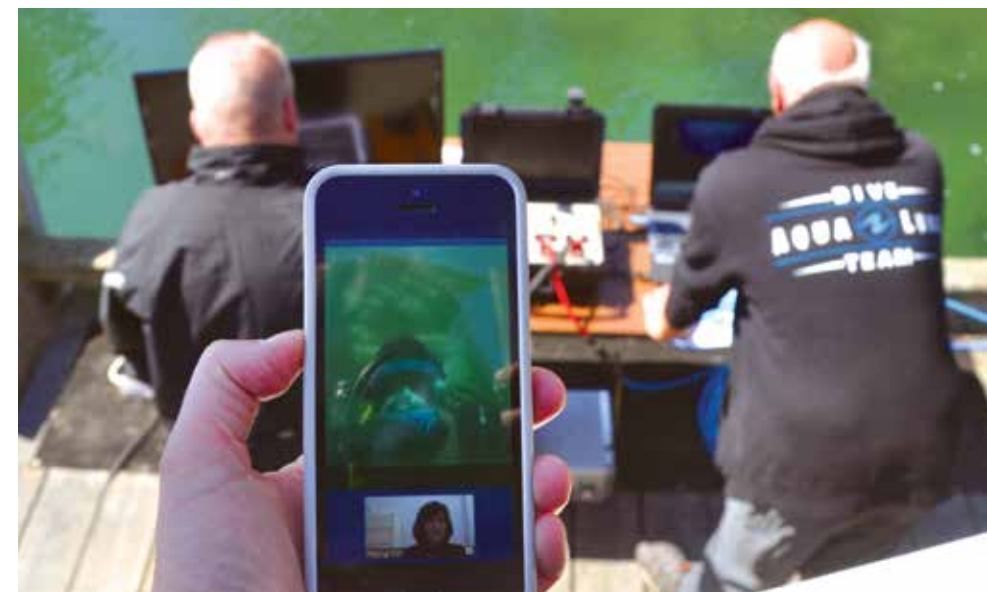


Photo: Cathy Sturgeon, Scot Stevenson

and inspired interest in the health of the world's oceans. Fish Eye's "live" dive experiences, streamed to the Internet, enable audiences from around the world to follow divers and communicate with them wherever they are, in real time. Getting buy-in from schools has been a key thrust of a mandate to foster the next generation of ocean stewards.

Innovation on a shoestring

With little budget to speak of, the organization has relied on volunteers from the outset. The recipient of only a small, event-targeted grant and some generous gear sponsorship since, Fish Eye is largely propelled by the grit and determination of those who give their time. Right now, that means a group of about



40 divers and non-divers, ocean enthusiasts, scientists, educators, conservationists and advisors.

"We're super lucky to have volunteers with diverse backgrounds, some without any formal connection to oceans, who want to be part of a dynamic team that's making things happen," says co-founder and marine biologist Maeva Gauthier.

There's a natural ebb and flow to participation but a dedicated crew has been at the helm from the beginning.

While Fish Eye's work may be global in scope, Victoria is a good fit for home base. The region is home to marine habitat admired for its biodiversity and some of the best cold-water diving anywhere. Nearby sea-lion colonies, kelp forests and

salmon runs make for high-interest exploration. The city is also a burgeoning tech hub and creative incubator. It's the ideal place to grow a new, disruptive model.

Pivotal partnerships

What Fish Eye has lacked in capital, it has made up for in its ability to forge strategic partnerships. The team's willingness to hustle and share its own brand of ingenuity with anyone who will listen—at tech events, innovation competitions, and conferences—has earned Fish Eye the respect of those in a position to lend a hand.

"When you can't throw money at the problems, you have to find creative solutions," Mike Irvine says.

This startup mentality has gained

them traction.

2016 has been a banner year to date. In April, the organization co-facilitated a ship-to-shore broadcast exploring Fiji's deep sea hydrothermal vents with some international heavy hitters: Schmidt Ocean Institute, ROPOS Canadian Scientific Submersible Facility, and Ocean Networks Canada. Researchers from Harvard University, Woods Hole Oceanographic Institution, Pennsylvania State University, Columbia University and the University of Victoria were involved.

On June 8, Fish Eye marked World Oceans Day with a global cinematic first—the world premiere of a live, interactive giant screen feature ("Emerald Forest"). Hosted by IMAX Victoria, the dive was simulcast to the Vancouver Aquarium and giant screen theatres across Canada. It was also streamed online.

Even before that, the Fish Eye Project was racking up the milestones with school curriculum development, shipwreck dives and Irvine's 2015 history-making underwater thesis defence that proved an international media sensation.

"The thesis was crucial in putting us on the map," Irvine says. "People sat up and took notice there was something special going on."

The nonprofit continues to professionalize its brand while carrying forward an authenticity and enthusiasm that's hard to resist.

Tech-revolution

Just as the team has evolved, so too has the technology. In the early days, 'event tech' meant cramming GoPro cameras into rudimentary underwater housing. Experiments with Internet protocol security cameras were short-lived when the video quality wasn't there. Now, Fish Eye uses full-face intercom masks, high-definition handycams, and webcasting to get its broadcasts out online (via YouTube channel). Content can be consumed from any device.

As the tech improves and the vision expands, the aim is to take the model to professional dive sites, schools and marine facilities around the world. Multilingual broadcasts are expected to widen the net of engagement. The tech is completely mobile, so there are few practical limits on where it might go. If it comes down to imagination and passion, it seems there are few barriers the Fish Eye Project can't breach. []

Top: From the ocean floor to IMAX, all via an iPhone. Broadcasting live to YouTube is easier than ever with LTE cell services. Above: the Fish Eye Team on location