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# INSIGHT

FEATURING

WORLD WEEKLY



Truly, madly, deeply

*Canada's Jill Heinerth has gone deeper into underwater caves than any other woman on earth. Marina Jimenez takes a glimpse inside her murky world, **IN4-5***

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Photo: David Laundy/Corbis; Photo: David Laundy/Corbis; Photo: David Laundy/Corbis



MELISSA RENWICK/TORONTO STAR

Jill Heinerth, born in Cooksville, is one of the world's leading cave divers and was recently named an explorer in residence at the Royal Canadian Geographical Society.

# Descent of a woman

*'I was told there wasn't a place for women in diving,' says Canada's Jill Heinerth. She's since made a name for herself exploring the oceans' most dangerous recesses*

MARINA JIMENEZ  
STAFF REPORTER

Jill Heinerth slips into her \$16,500 state-of-the-art diving gear — electric dry suit, gloves, hood and boots and weight belt — as effortlessly as if she were pulling on an old sweatshirt and pair of jeans.

She scoops up her strobe lights and nine-kilogram Canon camera (housed in an Aquatica box), tanks and regulators, and strides purposefully towards the shoreline of Lake Huron's Little Tug Harbour. A broad-shouldered five-foot-10, Heinerth breaks into a huge grin as she prepares to sink into the world where she feels most at home. "I'm more comfortable in the water than on the surface, floating free, and exploring places nobody's ever seen before," she says.

One of the world's foremost explorers and cave divers, the 51-year-old has returned to this fishing port in Tobemore, where she first learned to dive, to explore several shipwrecks with a group of women on Women's Dive Day. The summer day is a gift. Clear skies. Still water. Perfect visibility.

It's a homecoming of sorts, as townspeople stop to say hello, as well as a chance for Heinerth to reflect on the deep connection she feels to what she calls the "veins of Mother Earth."

She has gone deeper into underwater caves than any other woman on the planet.

"I spend my time swimming through dark places and exploring corridors filled with the very source of life," she says. "So much of Canada's geography is about the water and so much is underwater and out of sight."

One of the day's highlights is the Arabia, a wooden vessel from 1853 that is about 35 metres down, wheel and deck anchors still intact.

While today's dive is recreational, Heinerth made her name mapping remote cave systems all over the world, making television series for PBS and National Geographic Channel, and stunt diving for the likes of Hollywood director James Cameron. Her accolades include the Wyland ICON Award (an honour she shares with her heroes Jacques Cousteau and Robert Ballard), Scuba Diving magazine's 2012 "Sea Hero of the Year," and this year's inaugural explorer-in-residence designation for the Royal Canadian Geographical Society.

Heinerth is also one of few women to excel in this high-risk sport, which requires just the right blend of

curiosity, technical prowess and inner fortitude.

"In the beginning I was told so many times that there wasn't a place for women in diving and here I am doing exactly what I love to do," says Heinerth. "I hope some of that rubs off on other women."

She has certainly inspired Natasha Djermanovic, a diver and photographer based in Niagara Region, who describes Heinerth as a pioneer. "You don't often equate women with the kind of diving Jill does. I was raised thinking it was a man's world underwater," Djermanovic says.

"Jill is my most important role model." Cave divers work in pitch darkness, moving through unpredictably tiny spaces and often freezing black pools filled with stalactites and stalagmites. In an emergency, they cannot swim vertically to the surface. The only way out is to swim back the way they came. Rescues are rare, though Heinerth has been involved in a few recoveries.

Some specialized cave divers use rebreathers — two hoses that attach to the mouthpiece and recirculate the gas in a loop, scrubbing out the carbon dioxide being exhaled. (Astronauts use a similar device when they go outside the spacecraft.)

Rebreathers allow divers to stay down longer, but there are many increased risks, including oxygen toxicity, carbon dioxide poisoning and hypoxia (or oxygen deficiency), which can all lead to unconsciousness and drowning. As well, divers who have spent time in deep water must decompress before they surface to avoid decompression sickness, which can be fatal.

It is no surprise, then, that 10 cave divers die on average every year, according to the International Journal of Aquatic Research and Education.

"My husband, Robert (McClellan, a former combat photojournalist in the U.S. navy) has attended more funerals since he met me than he did while serving in

active combat duty," says Heinerth, who has lost more than 10 friends to cave diving accidents in as many years.

McClellan shakes his head and smiles, confessing that while he worries about his wife, he also understands she is doing "exactly what the universe intended her to do."

"I appreciate that her work makes Jill who she is and the woman I fell in love with," says McClellan, who helps run Heinerth Productions, a business that offers underwater filmmaking and other creative services including writing, consulting and motivational speaking. The couple split time between a home in Fergus, Ont., and one in High Springs, Fla.

Heinerth manages the sport's risks by staying focused, she says, recalling a formative incident in her 20s that tested her mettle. She had just moved into a student house in Toronto, and on her very first night there, when she was alone, she heard an intruder.

"My first instinct was to cower, but then I thought, no, I have to defend myself," she recalls.

"I heard him come up the stairs. I grabbed an X-Acto knife from my drafting table. He came into my bedroom and I yelled, 'Who are you? Identify yourself.' He came after me. I slashed his chest and stood face to face with him. I felt like my head was going to explode."

The man fled, and Heinerth escaped out the front door. "I had nightmares about it for years. But I learned that if you take the next step towards survival, and do the next best thing, then you're going to make it. I knew in my heart I was going to be a survivor."

Does she ever worry about dying on the job?

"I always enter the water prepared to deal with a worst-case scenario," she confesses. "But I am more afraid of not living a full and authentic life. Thoughtful risk-taking is part of exploration, which ultimately drives society forward."

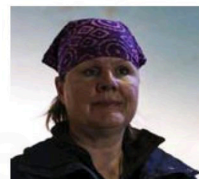
**Chance encounter leads to risky profession**

Born in Cooksville, now part of Mississauga, to a mechanical engineer and a schoolteacher, Heinerth grew up in a close family that celebrated maps, canoe trips and endless horizons. She loved Brownies, hiking the Bruce Trail and Cousteau's television series. "My parents encouraged me to chase my dreams," she says.

An excellent swimmer, Heinerth also enjoyed building forts and burrowing in small spaces. After high school, she pursued a degree in visual communications design from York University and opened a graphic design business, inspired by her grandparents, who were professional illustrators.

The business flourished. But the water beckoned. "I was always looking for ways to escape to Tobemore," she recalls.

In 1991, she took the plunge, selling her business and moving to the Cayman Islands. "I didn't have a clear path of what I wanted to do, but I wanted to focus on getting more time in the water, and on my photography," she recalls.



MELISSA RENWICK/TORONTO STAR

Cave divers like Heinerth work in pitch darkness, moving through unpredictably tiny spaces and often freezing black pools filled with stalactites and stalagmites.





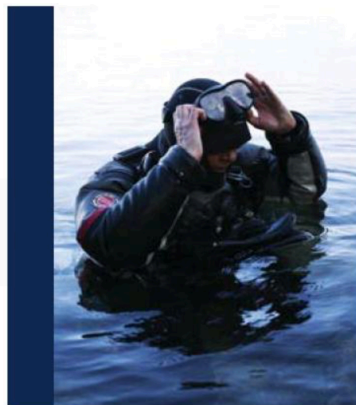
Heinerth, left, with Natasa Djermanovic on Women's Dive Day in Tobermory, where they explored shipwrecks. Djermanovic, a diver and photographer, says, "Jill is my most important role model."

MELISSA RENWICK/TORONTO STAR



COURTESY OF US DEEP CAVING TEAM INC.

Heinerth guides the digital wall mapper, which produces 3D models of cave systems, at Wakulla Springs in Florida.



MELISSA RENWICK/TORONTO STAR

Heinerth makes some final adjustments before taking the plunge at a site known as the Tugs in Tobermory, where she first learned to dive.

Four years later, she met Bill Stone, a U.S. engineer, inventor and caver, through a diving friend, and formed a friendship that would end up changing her life. Stone invited her on an expedition to Sistema Huautla, in Oaxaca, Mexico, the world's deepest cave system, as a "grunt," to support the base camp. Stone had spent years charting a route through the system, working in bone-chilling water, 15-metre shafts and unpredictable weather.

"You start on a mountain in central Mexico in the cloud forest, go in through a hole, and work your way down through waterfalls and cascades that go on forever," Heinerth explains. "You have to hike everything down through a slot canyon, dive in, then hike everything out. Tsunamis would come down the canyon, bringing six-foot-deep water, and wash our camp away."

It was arduous, technically challenging work, made moreso by the lack of visibility. The year before, Stone had lost a colleague; it took his team five days to haul the body out of the cave system.

"I fully intended to just carry equipment," Heinerth remembers. "But then, one of the divers backed out. I started to feel like I was replacing him. I told Bill. He was wary. I told him, loss of visibility in cave diving never alarmed me. So, he let me do it."

It was a pivotal moment: Heinerth was mapping a cave system nobody else had ever been in — an accomplishment akin to an Everest summit. She had won the respect of her colleagues. "I started to feel a sense of purpose beyond myself, and understand the story I was meant to tell." The story of water, she realized, is that "everything we do on the surface of the land gets returned to us to drink."

Heinerth wanted to spend the rest of her life documenting water's journey, and so she moved to Florida — the world's leading cave diving site.

Marina Jimenez is married to John Geiger, who is CEO of the Royal Canadian Geographical Society.

"I spend my time swimming through dark places and exploring corridors filled with the very source of life. So much of Canada's geography is about the water and so much is underwater and out of sight."

JILL HEINERTH

## Career lowlights

Some of Jill Heinerth's most memorable experiences:

### Wall mapping

In 1996, Heinerth co-led an expedition to Mexico's Riviera Maya, where her team laid down 15,000 metres of guidelines, helping to open up this part of the world to cave divers. She also collaborated again with Bill Stone, this time on a project that tested his groundbreaking invention: a three-dimensional wall mapper. The 150-kilogram, two-metre-tall torpedo-like device permitted divers to assemble an accurate three-dimensional model of cave systems by bouncing sonar signals off cave walls in 32 directions four times a second.

"We had to create a way to do deep dives that had never been done before because of the depth and duration we were planning," says Heinerth, whose 22-hour mission included being down at about 90 metres and decompressing for 16 hours, as together they mapped Wakulla Springs, a deep cave system in north Florida.

### Antarctica

Heinerth was lucky to meet another key mentor along the way: Wesley Skiles, a diver and underwater photographer for National Geographic. Impressed by her images from Wakulla, Skiles proposed they work together, and in 2000, they went to the Antarctic to explore the caves inside the world's largest iceberg — which was the size of Jamaica. "We ended up getting trapped in the iceberg and almost didn't get out due to a ripping current," recalls Heinerth. "When we finally escaped, mere hours later, the entire mass of ice exploded."



### James Cameron

Through Skiles, Heinerth met James Cameron, who had long dreamed of making a 3D cave disaster film.

While the Hollywood director of *Titanic* and *Avatar* has a reputation for being prickly and hard-driven, Heinerth said his commitment to pushing the boundaries of ocean exploration and technology won her over. She took Cameron on

his first cave dive in Florida, when they were shooting a pitch trailer for the thriller cave disaster film *Sanctum*.

He told her, "Show me stuff that looks cool and scary," she says. "I squeezed through restrictions, and pushed a double scuba tank through a narrow area and then breathed off the hose. I had the hose ripped from my mouth so I had to surface and put my lips to where the air pools were and suck up the air," she recounts.

"He said, 'How on earth did you figure out how to do that?' I said, 'That's the first time I've ever done it.'"

The film, released in 2011, was dedicated to Skiles, who died in a diving accident the year before. "More people have been to the moon than to the places Jill has explored deep inside our watery planet," says Cameron, in a quote on Heinerth's website, [intotheplanet.com](http://intotheplanet.com).

### Bell Island, N.L.

These days, Heinerth is exploring a forgotten chapter of Canada's history off Newfoundland's Bell Island. The island was the site of an iron ore mine that was used for the shipping industry during the Second World War. In 1942, German U-boats attacked the island twice, sinking four ships, killing 70 merchant marines and destroying the loading dock.

Heinerth is leading an effort to explore the inside of the mine, which was flooded, as well as to document the shipwrecks, and provide the Bell Island Historical Society with visual images of culturally significant artifacts. She recently recovered a sextant, an instrument used for celestial navigation.

She has already done as many as 60 dives on the site. But in classic Heinerth form, she feels she is just getting started.

### Explorer-in-residence

As inaugural explorer-in-residence for the Royal Canadian Geographical Society, Heinerth will promote the society's traditional links to explorers and also promote geography, especially among young people, speaking in classrooms across the country. Heinerth hopes to inspire young people to live their dreams, and wants to connect the public to their water resources.

"Everything we do to the surface of our land will be returned to us to drink. We need to fully embrace how water flows into and out of our lives," she says.

Marina Jimenez