



# DIVING DEEP

Advances in underwater archaeology technology hold out hope for tantalizing new discoveries. by Douglas Hunter



A Parks Canada diver examines graffiti found on the sunken remains of a Basque ship believed to be the *San Juan*, that disappeared in Red Bay, Labrador in 1565.



**O**NCE PARKS CANADA DECIDED TO FIND THE WRECK OF *HMS INVESTIGATOR*, THE SEARCH DIDN'T TAKE VERY LONG. ROBERT McCLURE'S SHIP WAS ABANDONED IN 1853 WHILE LOOKING FOR SURVIVORS OF THE MISSING NORTHWEST PASSAGE EXPEDITION OF SIR JOHN FRANKLIN. PARKS CANADA'S UNDERWATER ARCHAEOLOGY SERVICE KNEW WHERE TO LOOK. USING A SIDE-SCAN SONAR, THE TEAM — LED BY RYAN HARRIS WITH JONATHAN MOORE AND THIERRY BOYER — FOUND THE FAIRLY PRISTINE HULL AT MERCY BAY IN AULAVIK NATIONAL PARK, NORTHWEST TERRITORIES, IN JULY 2010.

A month later, having generated international headlines with the *Investigator* find, Harris and Moore were aboard a Canadian Coast Guard icebreaker in the central Arctic, hoping to locate Franklin's *Erebus* and *Terror*, the twin holy grails of Arctic exploration.

"People have been searching for the *Erebus* and the *Terror* for over 150 years," observes Ken McGoogan, the bestselling author of *Lady Franklin's Revenge* and other acclaimed works on Arctic exploration. "They won't quit because to find even one of those ships intact would be the greatest discovery in Arctic exploration history, and arguably the greatest-ever such discovery, period. The reason is that historians continue to argue about what happened to Franklin. Finding those ships would almost certainly answer some crucial questions."

But such a discovery was not to be in 2010. After scouring 150 square kilometres of seabed with side-scan sonars, the team was unable to duplicate the remarkable success of the *Investigator* find. They hope to return to the Arctic for another try. In the meantime, the public has been made amply aware that marine archaeology is very much a part of Parks Canada's mandate.

**P**arks Canada is a leader in marine archaeology, both nationally and internationally. Its Underwater Archaeology Service has been in existence since 1964. The full-time staff of eight divers includes six archaeologists, one dive technologist, and one technician. They form a flying squad of highly specialized public servants who are kept busy on every coast of the country and in more than a few lakes, rivers, and canals. They discover, document, and preserve an array of historical artifacts and resources.

Marine archaeology evokes shipwrecks, and Canada certainly does not lack for them. But the work of Parks Canada's UAS in recent years has been much broader than searching for ship timbers and lost Victorian explorers of the Arctic. Its work, ranging from prehistory to the Second World War, is as varied and unusual as any archaeology on dry land. As well, the service's duties include developing management plans for the protection,

preservation, and recreational use of underwater archaeological resources. Striking a balance between protecting heritage resources and accommodating public interest is one of the agency's more pressing issues.

The Parks Canada system includes Fathom Five National Marine Park in Georgian Bay, Ontario, home to a variety of nineteenth- and twentieth-century wrecks that are popular with sport divers. But its best-known marine heritage project is Red Bay National Historic Site in Labrador, home to a sixteenth-century Basque whaling station. The discovery in 1978 of the remains of a Basque ship, believed to be the *San Juan*, dated to 1565 and the oldest known historic shipwreck in Canada, led to excavations from 1978 to 1985. This work uncovered a total of three whaling galleons and four smaller

*HMS Investigator* off Bering Island, 1851, by Samuel Gurney-Creswell.



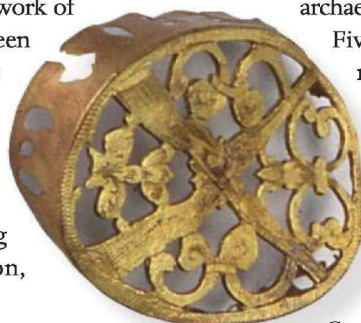
craft. Further discoveries were made more recently.

"It's one of the landmark excavations in the world; few of them ever represent a generation of work," says Marc-André Bernier, who heads the Underwater Archaeology Service. In 2004, a fourth Basque galleon was discovered at Red Bay.

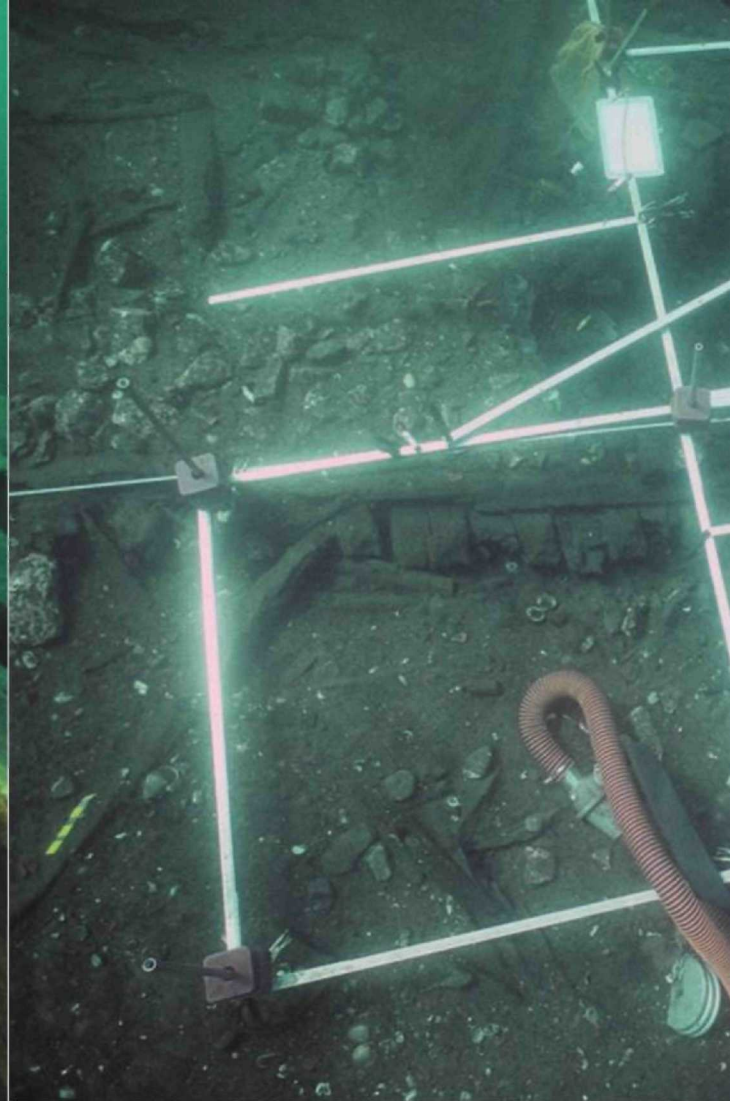
"We've now identified the remains of nine different vessels," says Bernier. Red Bay remains the largest marine archaeology project ever undertaken in Canada.

Five volumes totalling 1,600 pages were required for the 2007 report on its findings.

**Below**  
An artifact from the wreck of the *Elizabeth and Mary*, a barque lost in the Gulf of St. Lawrence during a failed 1690 assault on Quebec.



**M**any national parks, historic sites, and marine conservation areas contain artifacts of marine history that are not well-known to the general public. The submerged



Sword hilt recovered from the wreck of the *Elizabeth and Mary*.



shipwreck treasures of Fortress of Louisbourg National Historic Site on Cape Breton Island are a case in point.

A true jewel in Parks Canada's crown, Louisbourg's marine archaeology is not readily accessible to the average visitor. Immersed in the harbour are the wrecks of nine French vessels from the 1758 British siege. Each was either lost in combat or scuttled by the defenders. They include four substantial ships of the line, each equipped with sixty-four or seventy-four guns. These heavily armed vessels have generated the most interest.

"There was some commercial salvage in the early twentieth century, when some guns were removed," says Moore. "The wrecks were relocated with the advent of scuba diving, and a management framework for them was drawn up." Transport Canada closed the wrecks to recreational diving in the early 1960s over concerns about vandalism.

As a result, artifacts that might otherwise have been raised — and ultimately lost — stayed in place.

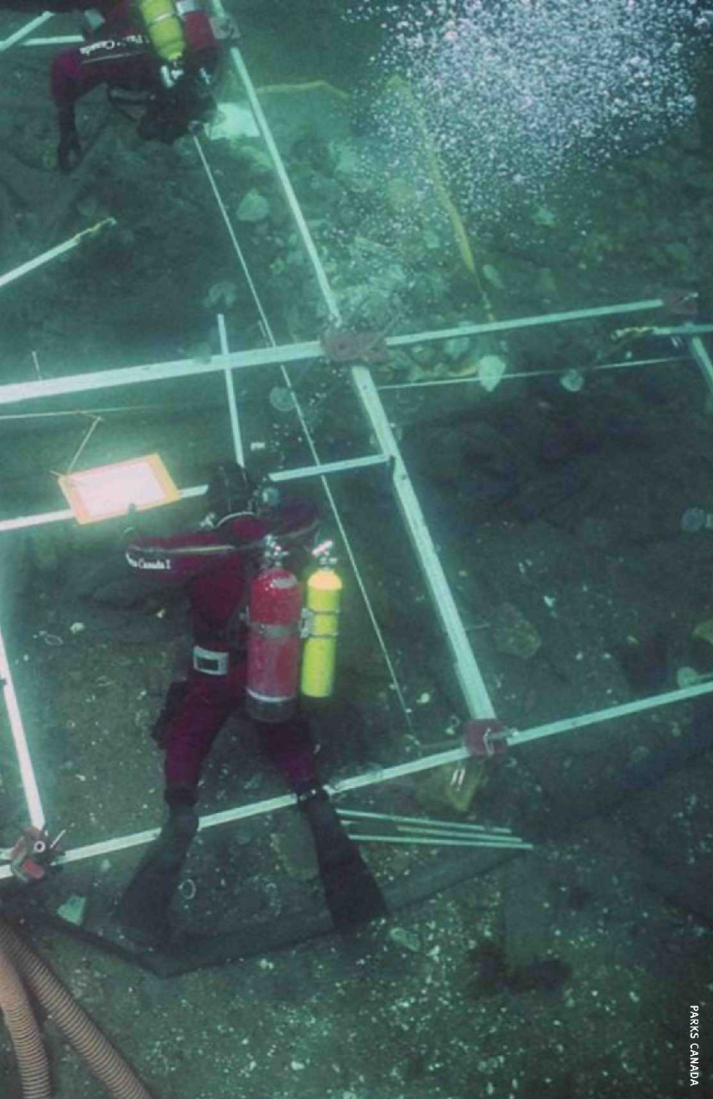
Today, says Moore, "diving access is controlled but encouraged." Tour operators can secure a permit to take

recreational divers to one of the wrecks, the sixty-four-gun *Célèbre*, which exploded and sank near the fortress during the British bombardment. Most of the wrecks have now been mapped, with their distribution of artifacts recorded. A monitoring program involving Parks Canada, Transport Canada, and a local tour dive operator keeps tabs on the wrecks, with a full inspection conducted every four to five years.

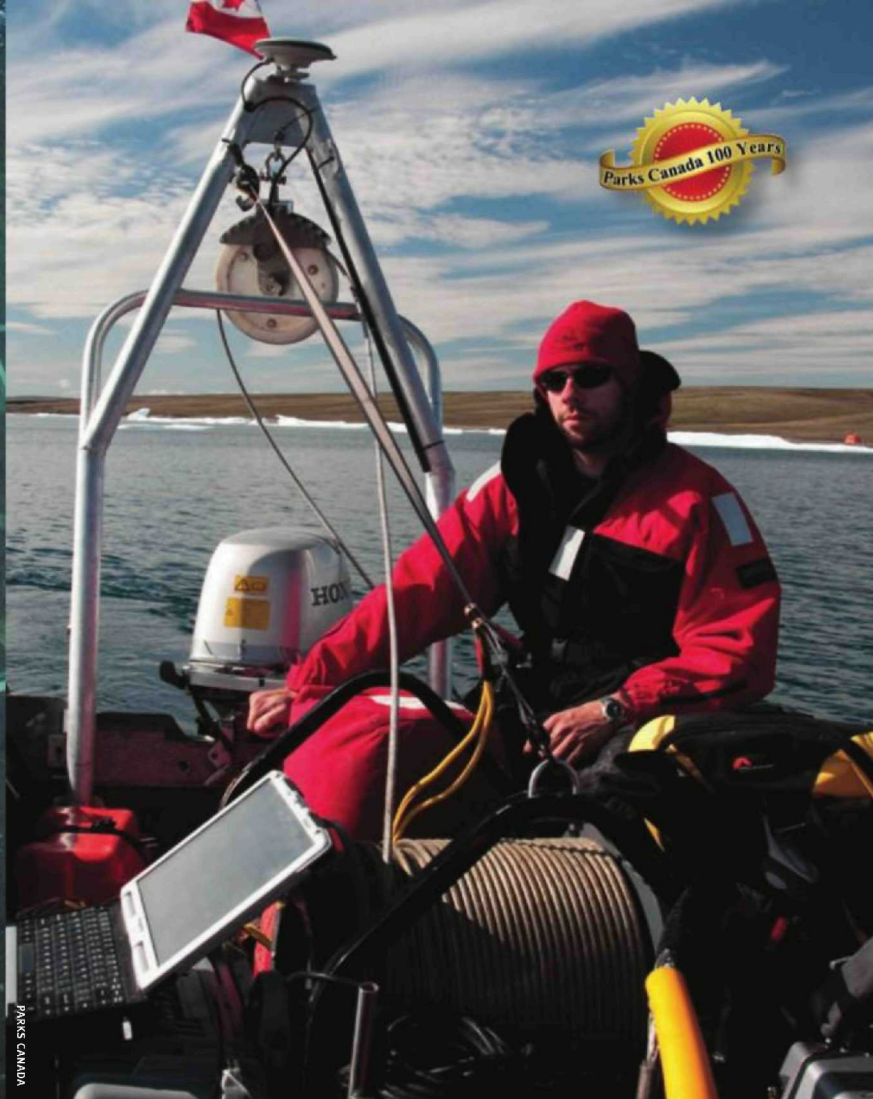
The Gulf of St. Lawrence is a showcase of diverse Parks Canada marine archaeology projects. A major storm in 1994 exposed the remains of a seventeenth-century barque in shallow water along the shore at L'Anse aux Bouleaux, near Baie Trinité, Quebec, at the mouth of the St. Lawrence. The *Elizabeth and Mary* was one of four ships lost by Sir William Phips during his ill-fated 1690 assault on Quebec.

Excavated in 1996–97, the *Elizabeth and Mary* site has proved to be a time capsule of the late seventeenth century, with more than six thousand artifacts recovered. "We have complete shoes, silk ribbons ... amazing stuff," says Bernier. The ship was transporting militia from the New England village of Dorchester. Thanks to archival research, says Bernier, "We know exactly who was on board." Some of the artifacts are now on display at an interpretive centre at Baie Trinité.

Some two hundred and forty kilometres to the east, at Mingan Archipelago National Park Reserve, Quebec, Parks Canada's marine archaeologists have been dealing with an



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## Immersed in Louisbourg's harbour are the wrecks of nine French vessels from the 1758 seige.

entirely different sort of wreck: a U.S. Army Air Forces plane from World War II. The Consolidated PBY 5A (Catalina) was an amphibious plane based at Presque Ile, Maine, that crashed on takeoff in rough waters in November 1942. Only four of nine crew members escaped.

Parks Canada found the wreck in 2009 while in the midst of a three-year survey for shipwrecks in the frigid waters that surround the park. The plane wreck has been surveyed, and while no human remains were found in the initial investigation, an excavation might take place in 2012 in co-operation with the U.S. government.

Across the Gulf of St. Lawrence at Restigouche, Quebec, at the head of Baie de Chaleur, is the Battle of the Restigouche National Historic Site. The "underwater battlefield" from 1760 contains three known French wrecks, including *Le Machault*, whose excavation was one of the largest projects ever undertaken by Parks Canada. In 2010, Parks Canada archaeologists made a new discovery there. While assessing the state of three known French wrecks and scouring the river bottom with side-scan sonar for further battle evidence, the team discovered another wreck that could be one of several French or Acadian vessels sunk to prevent British

warships from entering the river.

In Ontario, team members have participated in a survey of wrecks related to the War of 1812 off Kingston's Fort Henry. The Rideau Canal, completed in 1832, links Kingston with Ottawa and is now a National Historic Site. In 1998, Parks Canada's underwater archaeologists embarked on a five-year survey of the canal system's hidden resources. The finds have included not only historic vessels such as steamboats, but also a variety of structures — such as wharves, dams, mills, and mines — that were submerged after the construction of the canal system. In addition to ensuring the preservation of these finds, Parks Canada plans to produce an information booklet and to install interpretive panels at lock stations.

At the western end of Lake Ontario are two of the most famous shipwrecks in the world: the War of 1812-era U.S. warships *Hamilton* and *Scourge*, which went to the bottom during a violent squall in 1813. The wrecks were discovered in 1973, lying upright and remarkably intact in about ninety metres of water. They have been the focus of both welcome and unwelcome attention ever since. The U.S.

**Above left:**  
A Parks Canada diver carefully excavates the wreck of the *San Juan* at Red Bay, Labrador. The 1565 ship is the oldest wreck discovered in Canada.

**Above centre:**  
Divers use an excavation grid to uncover a sixteenth-century wreck in Red Bay.

**Above right:**  
Parks Canada archaeologist Thierry Boyer helms a survey boat at the wreck of *HMS Investigator* at Mercy Bay, N.W.T.



**Above:** Parks Canada underwater archaeology team members Jonathan Moore, Ryan Harris, and Thierry Boyer during the 2010 *HMS Investigator* project.

**Above right:** A nineteenth-century painting of the *Erebus* and *Terror* during a 1839–43 expedition to chart the Antarctic coastline. The ships were later lost during Sir John Franklin's ill-fated search for the Northwest Passage.

## The discovery of the *Erebus* and *Terror* would provide a mandate to rewrite exploration history.

Navy transferred title to the City of Hamilton in 1980, but Parks Canada maintains an interest in the site.

"We've had a role in the project from the early days," Moore explains. "Shortly after the discovery of the vessels, we became involved in an advisory role." In 2007, Moore began serving as principle investigator for Parks Canada in a three-year survey of the wreck site.

The recent project was initiated by the City of Hamilton, which approached ASI Group, an underwater inspection services firm headquartered in St. Catharines, Ontario, to conduct a condition survey. The project drew in a number of major partners, including the province of Ontario, the Canadian Coast Guard, the Canadian Navy, Canadian Hydrographic Service, and the National Water Research Institute, with Parks Canada providing overall direction of the archaeology under Moore.

There were two main concerns: deterioration of the wrecks, particularly due to heavy colonization of zebra and quagga mussels, and the vulnerability of the wrecks and their artifacts to unauthorized technical divers — sport divers who use specialized equipment and gas mixes to delve deeper than the normal recreational

scuba diving limit of forty metres. Unapproved technical divers did in fact reach the wrecks between 2000 and 2002. Paradoxically, it was these very divers who alerted authorities to the presence of the mussels and the threat these invasive species posed to the integrity of the *Hamilton* and *Scourge*.

A 2008–2009 survey done with remotely operated vehicles (ROVs) revealed a shockingly high level of mussel colonization of the wrecks compared with when they were first thoroughly photographed in 1980 and 1982. For the first time, an ROV was "flown" inside one of the ships, the *Hamilton*. Technicians created three-dimensional portraits of the vessels using sonar data, providing the first comprehensive picture of their dimensions and design. "In three years, we carried out a great deal of surveying, recording, inspection, and environmental assessment," Moore said. "It was a very productive partnership."

**I**n the Rocky Mountains, Banff National Park in Alberta is home to one of the more unusual attractions in the parks system: the drowned village of Lake Minnewanka. The resort town had scarcely



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been founded in 1888 when a series of local dam projects, beginning in 1895 and culminating in 1941, doomed it. The final dam raised the lake level by thirty metres, flooding the old townsite. Lake Minnewanka boasts fifteen architectural and structural features that attract recreational divers, and Parks Canada continues to strive to strike a balance between preserving irreplaceable and sometimes fragile heritage assets and accommodating public recreational interest.

On the West Coast, Parks Canada has been active in two very different undertakings: conducting an inventory of shipwrecks off Pacific Rim National Park and supporting research into submerged prehistoric resources at Gwaii Haanas National Park Reserve and Haida Heritage Site.

Some underwater features stretch back very far in time. At Ontario's Trent-Severn Waterway National Historic Site at Atherley Narrows, between Lakes Couchiching and Simcoe at the city of Orillia, is an Aboriginal fish fence (used for catching fish) dating back five thousand years. Under constant threat from development as well as boat traffic, some of the stakes in the Mnjikaning fish weir have been removed for preservation. The remaining weir stakes are periodically monitored by Parks Canada.

Submerged wooden stakes in a busy recreational waterway may not seem as glamorous as the lost ships of a doomed Arctic explorer, but heritage resources like the

Mnjikaning fish weir are as important as they are vulnerable. "There are a lot of sites that are less sensational than the high-profile shipwreck sites," says Moore. "The weirs at the narrows fall into a category of site that is extremely important to a local constituency, the Rama First Nation, and others. There may not be a lot to see, but it is very important for us to protect and keep an eye on it. And sites like it tell us a lot about the past. Learning about the past, and presenting it to the public, are core mandates for us."

Nevertheless, the Arctic discoveries and searches continue to garner the greatest public interest and accolades. "We're planning to go back to *Investigator*, and to dive and survey the shipwreck," confirmed Bernier this spring.

As for the *Erebus* and *Terror*, they are still out there, and now we at least know of 150 square kilometres of ocean where they definitely are not hiding. "Their discovery would provide a mandate to rewrite exploration history," says author Ken McGoogan. "The ensuing avalanche of books would make the mountain around the *Titanic* look puny."

So, will there be another search for Franklin's lost ships? Bernier allows: "Possibly." We'll see. 🍷

**Visit [CanadasHistory.ca](http://CanadasHistory.ca) for updates on Parks Canada's Arctic expeditions.**

**Pistol recovered from the wreck of the *Elizabeth and Mary*.**

