

Sonar and U/W Cameras Aid Aquaculture



Top Inset: Open Blue Sea Farms founder Brian O'Hanlon in the pen. Main photo: OBSF's Philip Nicolson with Fishers SSS-100K/600K side scan. Bottom inset: Deploying the cage.

Worldwide demand for seafood products is expected to double in the next 10 - 15 years. However, the amount of seafood being harvested from our oceans is expected to decline over that period due to overfishing. One solution to the problem is aquaculture - the farming of aquatic species. Brian O'Hanlon, founder of Open Blue Sea Farms, is one of the pioneers in the field of open ocean fish farming. The key concept behind this method is moving the holding pens into deep water. Having the cages offshore increases the flow of seawater to the fish creating a cleaner and more healthy environment. Problems can arise in traditional near shore aquaculture due to higher concentrations of waste and contaminants which can breed disease. To avoid this, the fish in coastal farms are fed antibiot-

ics, antifungal agents, and anti-parasitical agents. Offshore farms eliminate this process, reducing costs and providing the public with a better seafood product with fewer chemicals.

With a background in marine biology and two generations of Fulton St. fishmongers in his blood, O'Hanlon thinks he's found a better way to harvest fish in a more sustainable and environmentally friendly way. He pioneered the use of advanced submersible cage designs for deep water and was the first to stock mutton snapper and cobia in open ocean cages. His nets are anchored to the ocean floor eight miles off the coast off Panama in the clear blue waters of the Caribbean Sea.

Open ocean cages (continued on pg 2)

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U/W METAL DETECTOR FINDS MURDER WEAPON

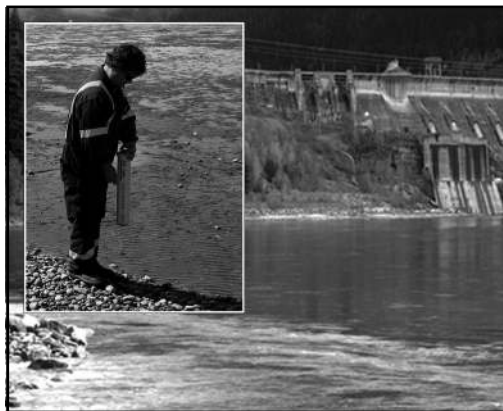
In Malaysia, police are investigating the gruesome murders of cosmetics millionaire Sosilawati Lawiya and three of her associates. Sosilawati, the 47 year old entrepreneur that founded Nouvelle Visages line of cosmetics, was reported missing on August 30 along with her driver, lawyer, and a bank officer. The Group had gone to Banting to discuss a land deal involving Ladang Gadong farm with a lawyer from Datuk that owned the property. For some time locals had been talking about "strange happenings" at the plantation surrounded by a fortified concrete wall. Area residents had noticed "characters of all sorts" coming and going from the farm, some of them in "luxury automobiles".

Suspects in the case told (contd.pg 5)



MALAYSIAN POLICE DIVERS SEARCH WITH PULSE 8X DETECTOR

Energy companies use u/w search equipment



CONTRACTOR USES CT-1 TO TRACK CABLE AT WATERS EDGE

BC Hydro in British Columbia, Canada operates 30 hydroelectric facilities and 3 natural gas fueled thermal power plants. Recently the company acquired one of Fishers CT-1 cable tracking systems. The cable tracker has the capability of finding and following both live and de-energized cables on land and underwater. It can also locate faults and breaks in cables. According to a company spokesman, the CT-1 was supplied to one of BC Hydro's contractors, commercial diving company CANPAC, who used the cable tracker to locate and track a transmission cable from the point of entry into a lake, across it, and out the other side.

Canada's energy industry is most widely characterized by its hydro plants, but the country also has a budding nuclear industry. Atomic Energy of Canada Ltd. (AECL) is a federal corporation charged with the responsibility of managing the country's nuclear program. The major R&D effort is carried out at Chalk River Laboratories (CRL). A primary focus of the lab is to develop, support, and advance CANDU nuclear reactor technology. There is also a strong commitment to ensuring that their operations have a negligible impact on the health and safety of employees, the public, and the environment. As part of this effort, environmental scientists at CRL are using Fishers DV-1 drop video system to monitor the river's ecosystem. The DV-1's high resolution video camera allows scientists to view and record the activity of marine life, and health of the vegetation, around the drains that output cooling water from the facility. *JWF*

International News

.....DUC Diving, a commercial diving company in Holland has purchased a PT-1 pipe tracking magnetometer. Last year the company bought the SSS-100K/600K side scan sonar. "We are very pleased with the performance of the Fishers equipment", reports owner Henk Kapitein.

.....ASL Environmental Sciences in BC, Canada has purchased two Fishers SFP-1 acoustic pingers. ASL has 33+ years experience with deployment, recovery, and data analysis of oceanographic instrumentation. The pingers are attached to the instruments to assist in their relocation.

.....Algosabi Diving and Marine Services in Saudi Arabia is using the PT-1 pipe tracker to locate pipelines, anchors, and other ferrous metal objects reports Mubarak Farook.

.....Worley Parsons, a \$7 billion Australian firm providing services to the energy, resources, and process industries, has purchased Fishers RMD-1 remote metal detector for attachment to one of their ROVs.

.....Dubina Engineering company in Croatia is using Fishers side scan sonar for their survey operations reports Dijana Kozina. "We are very satisfied with the performance of the sonar, and how it helps in our work."

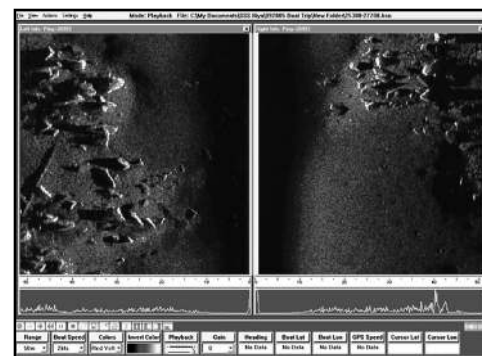
.....GDC Dive Center in Ecuador has acquired a SeaOtter-2. The ROV will be used to check out new dive sites as well as perform commercial inspection operations. The center is owned by Ecuadorian navy officers including Edwin Ortega who visited to Fishers factory in the USA.



Edwin Ortega of GDC Dive Center in Ecuador with his SeaOtter-2 ROV

Aqua Farms (from page 1)

need to be routinely inspected to ensure there is no damage to the netting, lines, or anchors - which could result in the loss of fish or expensive gear. With some of the holding pens extending more than 150 feet deep into the ocean, it is not practical to use divers because of their limited bottom time at these depths. One technology being employed to aid the modern day aqua farmer is side scan sonar. High frequency sonar has the ability to produce detailed images of the cages, mooring lines, and anchors. The sonar is also invaluable when determining where to place the nets. Scanning the bottom in the prospective deployment area allows the aqua farmer to see exactly what will be under the net. Selecting a location free of rocks and debris means avoiding potential hazards to nets and lines.



SONAR IMAGE OF ROCKY BOTTOM

When Open Blue made the decision to acquire a sonar they went to one of the experts in underwater search, JW Fishers Mfg. Operations manager Philip Nicolson contacted Fishers factory to discuss Open Blue's requirements. Major considerations were; quality of the images, ruggedness and reliability of the system, and a quick delivery time. Once it was established that Fishers could meet all of their needs, they decided on the dual frequency SSS-100K/600K which would provide both long range scan capability as well as short range high resolution pictures. Shortly after the sonar arrived on site Nicolson reported, "We've been very busy with the side scan. It works great! We're getting excellent images of the cages and the support structures."

Another piece of technology being employed in the aquaculture industry is the underwater video system. Several fish farms in Norway are using inexpensive drop cameras like Fishers MC-1 mini camera to view the condition of nets and health of fish. (contd. on page 5)

GOVERNMENT AGENCIES, UNIVERSITIES, & MILITARY PERFORM U/W SEARCHES

.....Sweden's Coast Guard is using a Pulse 8X detector in their salvage operations says environmental engineer Jelena Savic.

.....US Office of Defense Cooperation in Lebanon is using Fishers SSS-100K/600K side scan sonar in a classified operation.

.....308th Rescue Squadron based at Patrick AFB in Florida has equipped their team with four Fisher Pulse 8X detectors.

.....Ntl. Atmospheric and Oceanographic Administration (NOAA) Environmental Research Lab in Michigan is using Fishers MC-1 mini camera to assist in their scientific work. The group is also using the Pulse 8X detector with 8" x 48" coil.

.....North Carolina Dept. of Transportation is using the SSS-600K side scan with Splashproof computer. The system has the adjustable transducer feature which allows the sonar to scan vertical structures, such as bridge supports and pilings.

.....Brazil's Navy has purchased a SeaLion-2 ROV with optional side cameras providing the topside operator with views of four cameras to observe.

.....Texas A&M University's Institute of Nautical Archaeology is using the Pulse 8X metal detector to recover artifacts from shipwreck sites along the Texas coast and other inland sites.

.....Korea's Pukyong National University is working with the country's Hydrographic and Oceanographic Administration (KHOA) to study the affects of ocean currents. One of the instruments they employ is an Acoustic Doppler Current Profiler. To ensure the ADCP can be located when its time to retrieve the data, the instrument is fitted with JW Fishers MFP-1 acoustic pinger. *JWF*



**MS. KANG OF KHOA WITH
THEIR MFP-1 ACOUSTIC PINGER**

Search and Salvage Down Under



SEARCH TEAM OF REALF'S DIVING AND SALVAGE IN QLD, AUSTRALIA

The Central Queensland Port Authority is undertaking one of the largest capital improvement projects in Australia. The RG Tanna Wharf Expansion Project involves extending the pier by 350 meters, widening existing berths, building a 1.3 Km onshore conveyor, and creating a new jetty approach. The cost of the construction portion alone is \$128 million. Marine contractor Realf's Diving and Salvage was hired to survey before the dredging began. The company is based in Gladstone, Qld and has performed jobs for a number of high profile customers including Bechel Corp., Australia's Dept. of Fisheries, Dept. of Natural Resources, Customs Service, and Brisbane Port Authority.

Using JW Fishers side scan sonar and metal detectors Realf's team of divers and marine specialists located and removed a considerable quantity of underwater debris in the wharf area including some large metal objects that could have damaged the dredge. Dive supervisor John Realf filed this report, "Upon arrival at the site we met with the Surveyor to define the search area. Shot lines fitted with buoys were dropped to outline the perimeter and the area was searched using the SSS-100K/600K side scan sonar. All sonar data, position coordinates, and operator notes were stored on computer. Numerous targets were found on the seabed including concrete blocks, wire cables, a 17 ton anchor, car tires, and logs. Concerned that other objects could be hidden in the soft mud of the seabed, the area was surveyed again using the Pulse 12 boat-towed metal detector. A number of targets were located and their positions marked. A diver with the hand-held Pulse 8X detector was then deployed at these positions. He found a range of buried objects which included more steel rope and pieces of pipe. On a few of the marked sites the 8X gave no significant reading indicating the target was deeply buried and would not interfere with the dredging operation." *JWF*

COMMERCIAL NEWS

.....HT Marine Services in Florida has added a SeaLion-2 ROV to enhance their commercial diving and salvage diving capabilities. The ROV will allow some inspection work to be performed without the need to deploy a diver, and on other sites the job can be assessed before the diver goes in, increasing safety. HT Marine had previously purchased the Diver Mag 1 magnetometer to locate and track pipelines. "We're very pleased with JW Fishers products and services", reports company president Rudy Watts.

.....Randive Diving Services in NJ is using Fishers Pulse 8X metal detector. Not long ago the detector assisted in finding a large propeller lost by a tow boat. The company is now using the 8X with the 16 inch coil to locate and track pipelines running under the Hudson River. "Fishers detector is easy to use and takes a beating" says diver Keith Michalski.



Commercial diver Keith Michalski of Randive Diving Services with Pulse 8X

.....New Jersey based Hydro Marine Services, a division of WJ Castle and Assoc., has acquired Fishers PT-1 pipe tracker to locate and track pipelines. The company had previously purchased a CT-1 cable tracking system and SSS-100K/600K side scan sonar from JW Fishers.

.....Bactec International, the explosive ordnance and mine disposal experts with contracts in more than 45 countries, have added two of Fishers Diver Mag 1 magnetometers to their list of specialty tools to assist in this dangerous work.

.....Commercial Dive Services in Tortola, BVI is using Fishers Proton 4 magnetometer and Pulse 8X detector in their search & salvage operations. Reports owner Christopher Juredin, "The mag is excellent at locating lost anchors and chains, and it finds cannons by the dozen!" *JWF*

EXPENSIVE SHOTGUNS RECOVERED BY DIVER

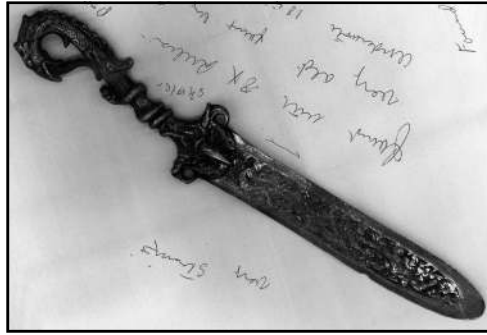
Not long ago Peter Corbett, owner of Divers Training & Supply in West Virginia received an unusual call. The caller related an incident involving himself and a friend that had gone out duck hunting....in a canoe. Apparently one of the men swamped the boat, and sent two expensive shotguns to the bottom of a muddy river. The caller wanted to know if Peter, an experienced diver with all the equipment needed to work in the cold, low visibility environment, could recover the weapons. What the man didn't know was that Peter had the most essential piece of equipment for this job, a Pulse 8X metal detector.

After getting the details on the location of the mishap, Peter packed his gear and headed out. Upon reaching the site he donned his drysuit and scuba equipment, grabbed his detector, and hit the water. Swinging the detector back and forth in front of him Peter methodically swam a search pattern to ensure no part of the area was missed. Although it was difficult to see the detector's meter in the silty water, he knew if the machine passed over the weapon he would hear the audio alarm indicating a target had been located. It wasn't long before the underwater earphone began to wail indicating a significant size metal target right in front of him. Plunging his arm into the soft mud of the river bottom Peter groped around. Then he felt it, the unmistakable shape of a shotgun barrel. He yanked it out of the mud and scanned the area again with the detector. Another wail of the audio alarm and some more probing in the muck, and the other gun was recovered. *JWF*



PETER CORBETT OF DIVERS TRAINING & SUPPLY WITH PULSE 8X DETECTOR AND RECOVERED SHOTGUNS

.....FROM THE TREASURE CHEST



16th CENTURY DAGGER FOUND BY NJ DIVER & EXPLORER NELSON JECAS

.....Diver, explorer, treasure hunter, museum exhibitor, writer, and lecturer are some of the words used to describe NJ resident Nelson Jecas. He has recovered ships' anchors, coins, buttons, medals, ancient figurines, and now a very ornate dagger. The weapon is made of bronze with a serpent coiled around the handle, a lion on the blade, and other detailed engravings along its entire length. This beautiful piece has been dated to the 1500s.

Nelson has been pursuing his passion of historic research and artifact recovery for many years. His detector of choice in these expeditions is a Pulse 8X. He has located numerous historically important pieces from sites near and far. He has shared his findings with scientists, educators, students, and the public. Another significant find made with the 8X was a mini teak treasure chest, called a coffer, which is about 8 inches long. The box is in remarkably good condition considering how long it's been submerged in the ocean. The metal bands on top and sides, along with the fixtures on the front and rear are all still intact. Even more interesting were the contents; five British coins of different sizes and values all dating to the 1800s. One of them is a large silver piece, but unfortunately the markings on each have been almost completely obliterated by time.



MINI TREASURE CHEST THAT HELD FIVE BRITISH COINS

.....Odyssey Marine Exploration, a long-time user of Fishers Pulse 8X detectors and ROV mounted metal detector, has located the largest cargo of precious metal found in the sea; 200 tons of silver. The SS *Gairsoppa* was sunk by a torpedo from a German U-boat in Feb. 1941. The ship was carrying the silver from India to England to help fund the war effort. The ship was found upright on the bottom with cargo holds open.



30 LB CONGLOMERATION OF COINS

.....Florida treasure hunter Carl Fismer, who loves his Pulse 8X detector, located a conglomeration of coins weighing almost 30 pounds! The lump appears to hold about 500 coins and is valued at \$100,000.



1800s BRASS POWDER FLASK FOUND BY BILL AUFIERO WITH PULSE 8X

.....Ohio diver Tim McPhillips has made some great finds with his Pulse 8X over the last several years. Recent finds include a British swivel gun cannonball, 1917 walker half dollar, 1853 large cent in excellent condition, an arrowhead medallion, cockade brooch with citrine, emerald and sapphires, pewter button c. late 1700s, a biscayne-type tomahawk, a lead bale seal, and a 40 caliber musketball. *JWF*

MURDER WEAPON (contd frm pg 1) authorities that the four victims were killed and their bodies burned. The remaining ashes were then thrown into a river next to the farm. Police divers using JW Fishers Pulse 8X metal detector scoured the muddy river bottom and recovered a number of the victim's belongings including cell phones, watches, and a necklace. In addition to the personal items, the divers also retrieved a knife allegedly used in the killings. *JWF*



MALAYSIAN POLICE DIVER FINDS KNIFE USED IN MURDER

Aqua Farms (contd. from page 2) California's Dept. of Fish & Game is also using the MC-1 to monitor the health of their fish and shellfish populations reports the dept's Dave Osorio.

Fishers SeaOtter ROV, a remote controlled underwater vehicle, is being employed in Canada to inspect the country's aquafarms. One inspector reports, "We send the ROV down under the nets to determine the amount of waste and to check for dead or dying fish. It's a very useful tool. It can go deeper than a diver and stay as long as needed." *JWF*



THE SEAOTTER ROV IS INSPECTING PENS AT AQUA FARMS IN CANADA

LAW ENFORCEMENT AND DIVE RESCUE NEWS

.....Downe Township Fire Rescue in NJ is using the SSS-600K side scan sonar in their search operations. Two members of the team recently attended a training session at Fishers factory.



MEMBERS OF DOWNE TOWNSHIP FIRE RESCUE WITH SIDE SCAN SONAR

.....Dive Rescue Intl. In Ft. Collins, CO is using two of Fishers Pulse 8X metal detectors in their training classes. The company provides training, equipment, and technical support to water rescue and recovery professionals worldwide.

.....Pulaski County Sheriffs Dept. in Arkansas has purchased the SSS-600K side scan. The high frequency sonar is ideal for locating drowning victims, sunken boats, and submerged vehicles.

.....Anderson County Sheriffs Dept in TN has purchased Fishers DV-1 drop video system and SCAN-650 sonar for their search operations.

.....Oxnard Fire Dept. in California has acquired Fishers SSS-600K side scan. The sonar was purchased with optional adjustable transducers which allows the scanning of vertical structures such as seawalls, pilings, and ship hulls, a useful capability in homeland defense ops.

.....Oneida County Dive Team in Wisconsin is using a Pulse 8X detector for their u/w search operations.

.....Ashtabula County Water Rescue Team in Ohio is using the SCAN-650 scanning sonar with a Splashproof computer. The sonar will be used in locating drowning victims, sunken vessels, and submerged vehicles. Team member Mark Vosberg reports very good results even during initial test. "We could see all of the pilings holding up a pier and the fish underneath. We're very impressed and looking forward to using it in our search operations."

.....Lt. Josh Gibbs with Daphne County Search & Rescue reports, "We used the Pulse 8X to locate large drill bits used to cut through concrete that were stolen from a construction business. The robbers dumped the tools in a pond assuming they would never be found. Using the 8X we were able to locate more than two dozen pieces of stolen property which were used as evidence in prosecution of the robbery suspects."



LT. GIBBS WITH 8X AND STOLEN TOOLS

.....Fall River Police Dept. in Massachusetts is using Fishers SeaLion-2 in their u/w searches. The ROV is being operated by the city's harbormaster Roland Proulx who attended a training session at Fishers factory. "We are very happy with the ROV and it has raised a lot of interest from the higher ups" says Proulx.



FALL RIVER HARBORMASTER (l) & PAUL BORGES WITH SEALION-2 ROV

— COMPANY NEWS and NEW PRODUCTS —

From the mailbag...

.....Bart McCollum of Midland, Texas reports, "I spent several days testing my new Pulse 8X in a fresh water lake with limited visibility. I didn't find any significant treasure, but I am very impressed with this detector. The instructions provided were extremely simple to follow, and the unit performed flawlessly."

.....Alex Sokolan of Tiraspol, Moldova near the Black Sea writes, "I have been diving using equipment manufactured by your company for the last 5 years, and all this time I have admired the quality and reliability. I express my appreciation and gratitude, and assure you I will never change my brand."

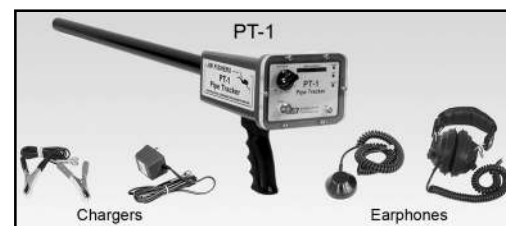
.....Remy Mattel of Los Angeles writes, "Thank you for following up on my purchase. I really appreciate the quality of your customer service which I am sure will ensure your future success. I'm looking forward to using my new Pulse 8X."

.....Varapoj Tangpojthavipol with NAVA 19 Engineering in Thailand reports, "I'm pleased to tell you that we have just completed our first job of locating four cables. The CT-1 cable tracker is working perfectly." Another report was received shortly after from Mr. Prajuab Riabroy. "The man who brought the cable tracker to Thailand is my subcontractor. The CT-1 easily located and tracked several power cables which saved us time and money. We also located and tracked a fiber optic cable by injecting a signal at the station. The CT-1 is a very good product." **JWF**

JW Fishers has developed the VRM-1 video recorder and monitor for viewing and recording of video from underwater cameras. The VRM-1 is a rugged console in a waterproof case with built-in 10.4 inch flat screen monitor and digital video recorder (DVR). The monitor's ultra bright display is easy to see, even in the sunlight. The DVR records up to 12 hours of high resolution video on a 16GB SD card. The console's control panel has all the switches necessary to operate the lights, camera, and the complete system, along with the input jacks for a microphone and external monitor. Attach the microphone and record audio with the video. Connect a cable to the video output jack to view the picture on an external monitor. A GPS interface option allows position coordinates to be recorded with the video.



VRM-1 Video Recorder and Monitor



New magnetometer is a hit!

Fishers PT-1 pinpointing magnetometer is a hit with a diverse group of customers from marine archaeologists to commercial diving companies. This very sensitive metal detector of iron and steel targets is ideal for locating and tracking pipelines buried up to 16 feet in the bottom, and is also very useful in finding anchors, lost dredge heads, weapons, and working shipwreck sites. One group using this instrument is North Carolina's Dept. of Cultural Resources. Their Underwater Archaeology Branch is recovering artifacts from the wreck site of Blackbeard's flagship, Queen Anne's Revenge.

The advantage of the PT-1 is it's ability to pinpoint artifacts in areas strewn with many iron and steel targets. Other mags can have trouble differentiating between the multiple pieces of ferrous metal on a wreck site, making it nearly impossible to pinpoint the individual targets. This hand-held magnetometer is the ideal tool to locate all the bits and pieces of ferrous metal on the wreck site including anchors, chains, cannons, cannon balls, the ship's stove, and iron hardware that was used in the construction of the vessel. Not long ago the first anchor from the Queen Anne's Revenge was located and pulled from the muddy bottom where it had been lying for the last 300 years. **JWF**

If you have a story you would like to share, send us a photo and write-up, or call Chris or Jack at (800) 822-4744 or (508) 822-7330. Send faxes to (508) 880-8949, email: jwfishers@aol.com or visit the website at www.jwfishers.com.

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