MOWI® WHARFSIDE

AUGUST 2020

ASC Certification: Not A Piece Of Cake, But Well Worth The Total Team Effort

It wasn't a piece of cake for Mowi Canada West to achieve **Aquaculture Stewardship Council** (ASC) Certification at all of its production sites, which was achieved in July.

Every Mowi employee did receive a piece of cake – a cupcake, actually – to mark the momentous occasion.

With the certification of two final farms (28 in total) this month (Sheep Pass and Cougar Bay in the Klemtu region), every Mowi Canada West production farm off BC's coast is now certified by ASC – the most rigorous, gold standard aquaculture certification in the world.

Mowi Canada West can now label its salmon as ASC certified when sold in stores, and can provide customers a continuous, year-round supply of ASC certified Atlantic salmon.

"This is a fantastic achievement that speaks to our team's commitment to operating at the world's highest standards," said **Dr. Diane Morrison**, Mowi Canada West Managing Director. "To achieve ASC certification, every farm must meet more than 500 measures of fish heath, wild salmon protection, environmental stewardship, social responsibility, and more. It really is a tremendous accomplishment."

Certification Manager **Renée Hamel** led the certification over the past 16 months and has been involved in the process for a number of years, and notes that certifications organizations like ASC are independently owned and managed.

"The ASC standard was developed to minimize environmental and social impacts under seven guiding principles," she notes. "We are the first business unit within Mowi ASA to reach 100% ASC certification."

Renée adds that auditing has continued throughout the COVID-19 pandemic. "We've implemented remote auditing processes to ensure we keep our staff and coastal communities safe."

Hamel has been with Mowi for seven years, and she is responsible for long-term planning to ensure continuance of third party certification status at all of Mowi facilities.

"I liaise with our facilities and certification accreditation bodies to arrange audits," she states. "I support our facilities to ensure they are sufficiently prepared for their audits, and I coordinate contracted sampling events such as wild salmon sea lice monitoring in accordance with our certification scheme requirements."

She also notes that Mowi is certified to the Best Aquaculture Practices standard for hatcheries/brood sites, production and processing, the Aquaculture Stewardship Council for production sites and the Marine Stewardship Council Chain of Custody for processing plants.

Site Manager **Eli Fraser** has been involved with six ASC audits, and observes, "The audit is our opportunity to demonstrate that we do the things that we say that we do. The audit itself isn't the challenge – it's fulfilling all the requirements of the standard leading up to the audit.

"Our certification team does a good job preparing the sea sites for audits," she adds. "The ASC process has improved our practices, too. Increased sea lice monitoring, for example, has allowed for more proactive management."

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Dalhousie Study Measures Health Benefits Of Salmon

Farmed or wild salmon? Wild or farmed?

Dr. Stefanie Colombo, an assistant professor of Aquaculture at **Dalhousie University**, researched the nutritional differences between farmed and wild salmon, and the results were published recently in the *Journal of Agriculture and Food Research* with articles on her study reported in the Nova Scotia institution's Dal News and on the FishFarmingExpert.com website. It produced some surprising findings she hopes may dispel misunderstandings about farmed salmon, as her research showed farmed and wild salmon are equal in nutritional value, with farmed salmon being less expensive for consumers.

"I get a lot of questions from people I meet about farmed salmon and many people have the idea that it's not good for you, that it's full of fat and contaminants," Dr. Colombo, who also holds the Canada Research Chair in Aquaculture Nutrition, stated in Dal News. "I knew these were misconceptions, but I wanted to know how it compared to the other types of salmon that were out there.

"I was surprised by a few things. It's really the species of salmon that makes the biggest difference in nutritional quality — not whether it was farm raised or wild caught, or whether it's certified organic or environmentally certified. For example, there was a big difference in the wild salmon we looked at — between Sockeye, Chinook and Pacific.

The results did clearly show that salmon types are different."

The Dal News article added it is well known that salmon provides a range of valuable nutrients, including

Dr. Stefanie Colombo

Omega-3 fatty acids and protein. But it can be confusing for consumers to know which species offers the highest level of nutrition when they are faced with several different types of salmon at the grocery store.

There are also mixed messages when it comes to farmed salmon, with some people believing it may contain contaminants and is not as nutritious as wild-caught fish.

Consumers can't look to labels for clarity since nutritional information is not required on seafood packaging in Canada and the United States.

Dr. Colombo's study involved purchasing six different types of salmon that are commonly available to Canadians to compare the nutritional information for each type, focusing in particular on the Omega-3s. The fish included were farmed Atlantic, farmed organic Atlantic, farmed organic Chinook, wild Chinook, wild Pacific pink and wild Sockeye.

The team brought all the samples back to the Dal Agricultural Campus in Truro, processed the fillets and did various nutritional analyses, as well as for mercury. Dr. Colombo tested the different salmon species that were either wild, farmed, organic, non-organic, environmental certified, and non-environmental certified.

Dr. Colombo found that the more expensive wild Sockeye, which can be $31.50/lb, and wild Chinook had the most nutrient-dense and highest omega-3 content. But she also discovered that farmed Atlantic salmon, which costs about

$12.50/lb, had the lowest mercury content, had a high nutrient density, is more affordable and available on both of Canada's coasts.

"There's actually no other study out there that has done this for Canadian salmon," she says. "There have been studies that focus on the contaminants, but they are several years old and things have changed in the environment and in aquaculture. So, it was an exciting opportunity to do an investigation!"

Dr. Colombo says the material can be useful for consumers searching for nutrition information about salmon, while clearing up confusion about distinctions between wild and farmed fish.

Based on these results, Sockeye and Chinook can be consumed less frequently for the same nutritional value; however, they are expensive and there are limits on sustainable catch levels. But if you enjoy eating salmon more frequently, Dr. Colombo says farmed Atlantic is a great option for its nutritional value, cost, availability and low mercury.

Aquaculture supplies around 50 per cent of the world's fish for human consumption, with Canada being the fourth largest producer of salmon in the world behind Norway, Chile and the United Kingdom. The volume of farmed Atlantic salmon has increased by 800 per cent since 1990, with 72 per cent of salmon we eat today being farm-raised, according to the paper.

The research, which was funded by a Discovery Grant from the Natural Science and Engineering Research Council of Canada (NSERC), may also provide policy makers with important information on the nutritional value and possible future labelling for a fish that is linked to improved cardiovascular and neurological health, the development of visual capabilities and brain development in fetuses, and has anti-inflammatory properties.

"The situation with regards to traceability and labeling is evolving, and I think we'll see more labeling for agricultural products in the future — this paper can be helpful for policy makers to review the current data on the vast differences in nutritional content of salmon," says Dr. Colombo.

Paperless Fish Health Reporting

Reducing the use of paper at Mowi Canada West has become as easy as "123" – as in Survey123, a new and innovative Geographic Information Systems (GIS) application to create a customizable Fish Health Reporting System (FHRS).

GIS Analyst **Jed Jackson** says Survey123 "has allowed us to replace paper forms with a customized and smart electronic survey, where we can collect data from our many remote field locations, classify and standardize the incoming data once at the source to prevent errors, and upload that data to a Web database as soon as within cell coverage.

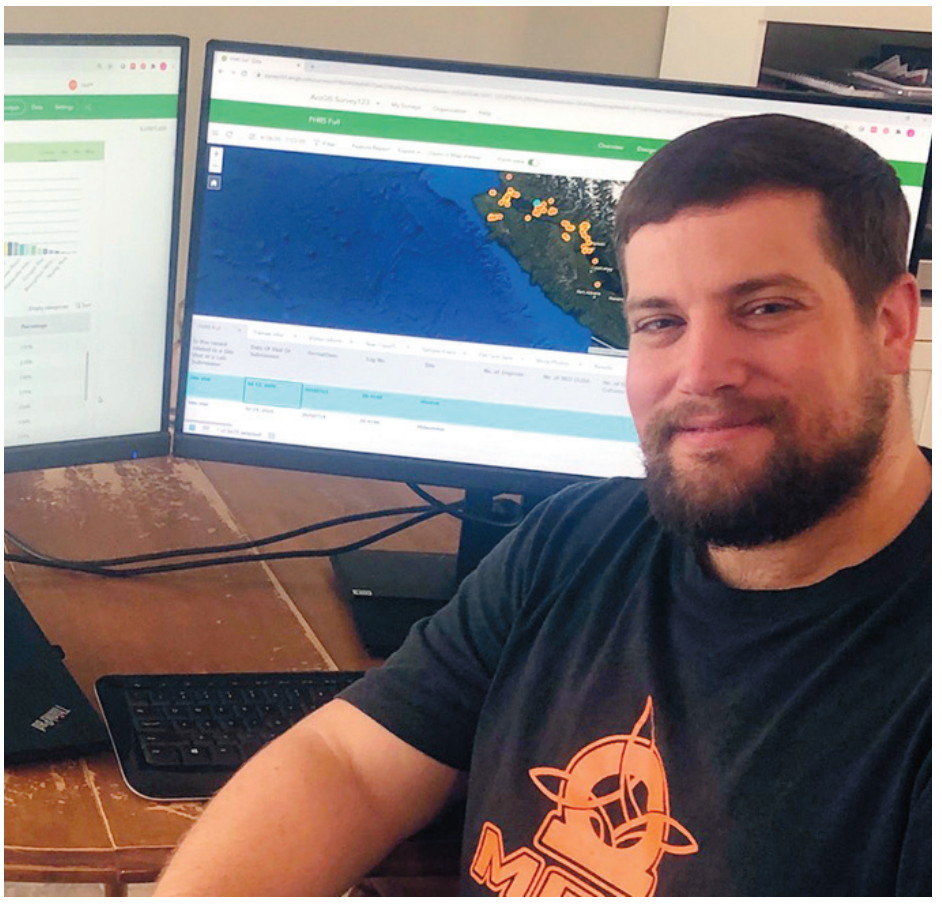
"Then we can automatically analyze that data on the fly in real time, and as a GIS software, it provides informative graphs, charts, maps and reports seamlessly."

Jackson has been compiling all data from Mowi's Fish Health teams into one database with the tool, allowing users to easily access detailed information. Survey123 has enabled Mowi Canada West to use GIS, used in a variety of industries, for the first time, and it greatly improves the utilization of data.

GIS Analysts are spatial data experts that work at the intersection of data management and analysis, programming, innovation and visualization, particularly with maps.

"I was hired in December 2018 after a lot of lobbying for the creation of the position from the Fish Health and Environmental Protection and Certification department Managers," Jackson notes, adding he shares his time between the two departments.

Mowi's Fish Health department needed an innovative new system to compile, catalogue and classify the vast amount information they acquire during their site visits and health checks. The collected data included the sites they visited, who attended, any training of site staff that occurred, any visitors who attended, what pens or year class of fish they sampled, what kind and number of samples taken and track the lab results of those samples, any biological samples sent to them, as well as any concerns or other valuable information gathered on site.



GIS Analyst Jed Jackson

"All this vital information is collected in support of reporting requirements to government, our public license and relationships with communities and Indigenous Partners and to help us grow the best, healthiest fish we can," he explains. "Our project was to create a unified system to compile all this data into one digital and cohesive database that would allow easy tracking, analysis, timely retrieval, and mapping of this information for the last 10 years to turn data into knowledge to facilitate decision making."

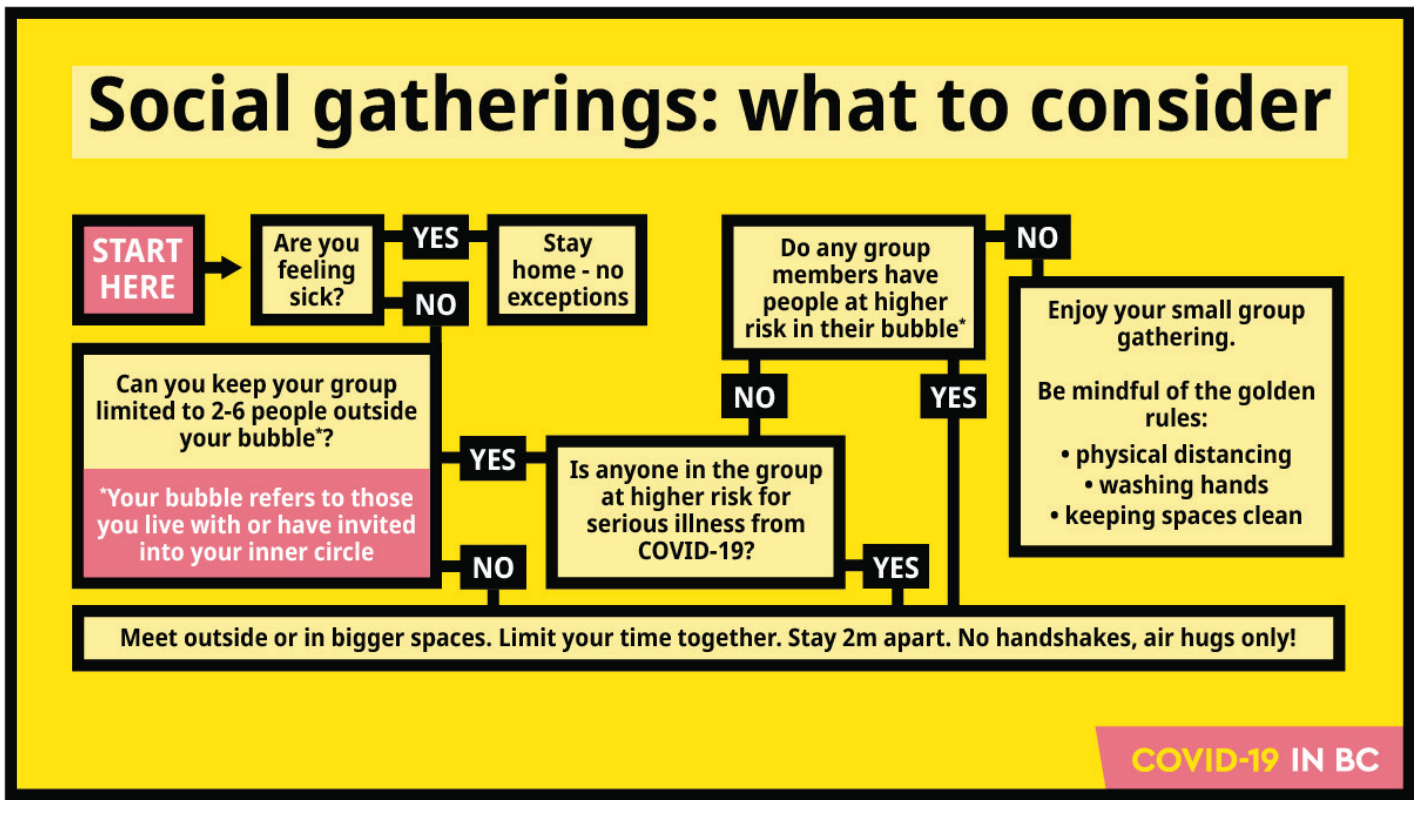
Considering that the Fish Health department has to visit each site at least once a month and conducts well over 500 visits or submissions a year, and uses 3-4 paper forms for each visit to track over 50 different fish health and welfare concerns, the amount of paper used can mount up quickly. With Survey123, it's now a virtually paperless process.

The idea to incorporate GIS to solve some of our business challenges was originally the vision of **Dr. Diane Morrison**, **Sharon DeDominicis**, **Meghan Mills**, **Greg Gibson** and **Brad Boyce**, and using Survey123 to solve this particular problem started as the brain child of Brad and Jed.

"Survey123 has centralized our data, allowing us to have years of diagnostics in one place. It is a great tool to understand historical and present Fish Health in our farms, and allows for better data analysis," states Lab Manager **Jaramar Balmori**, who is in charge of internal diagnostics and data tracking for all external diagnostics.

It has saved time, standardized data collection, reduced paper (and thus waste), and made it easier to review and evaluate results and see new and emerging trends, as well as past history of Mowi sites.

"This has helped change data into information and information into knowledge to help support better decision making," Jackson notes.



McFadyen Marks Two Decades With Mowi

Port Hardy Area Production Manager Riley McFadyen

Bird net poles are utilized at Mowi farms

August 3 will be a memorable day for **Riley McFadyen**, as the Port Hardy Area Production Manager celebrates his 20th year with Mowi Canada West.

Riley has played a major role in many company projects, including designing hanging feed spinners an implementing a new system of poles and dome style top nets in the Port Hardy area.

"The company is completely different," he observes. "20 years ago it used to be all manual labour, and now it is very safety focused, highly professional, highly technological and has many professional people involved in achieving great results and caring for the environment."

Riley says there have been numerous highlights during his two decades with the firm, including working with local communities and First Nation partners, travelling to Scotland and Tasmania, and being part of a production management team that strives to drive the company and the industry forward in a safe, responsible and sustainable manner.

"The trips to Scotland and Tasmania were both for the purpose of information sharing and gathering information about different methods of sea lice treatment," he notes. "The spinner project is an effort to reduce damage to our stocks by removing as much floating equipment from the pens as possible. We removed the floating spinners and created a bracket that allows them to be suspended in the air and removes the possibility of fish jumping into and damaging themselves."

A spinner prototype

Riley adds that the birdnet poles were implemented for the same reason as the spinner, as the removal of floating equipment to protect fish.

"Recently I've been working closely with our First Nation partners on the North island to find ways that they can provide services to Mowi and create business opportunities within the partnerships," he says.

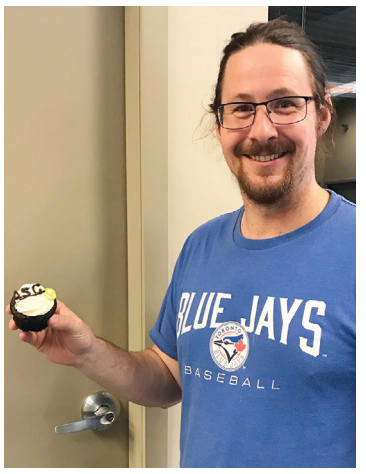
Riley worked closely with Kitasoo Xai'xais Nation in Klemtu on new salmon farm locations in their territory, Earth Day, annual basketball tournaments, and other community events. Reflecting on his time working in Klemtu, Riley says "I spent a lot of one on one time with the late Hereditary Chief **Archie Robinson**, discussing the future of the Salmon farming and listening to his amazing stories of the past."

"I would just like to thank the company and everyone I've worked with over the last 20 years," he says.

Mowi Employees Enjoy Cake With ASC Certification

To celebrate the amazing achievement of all of our production sites achieving ASC certification, it was cake for everyone! Delicious cupcakes were delivered to all Mowi employees. We received some great photos of people enjoying their cupcakes, and a number of reports of cupcakes being eaten so fast that photos were not possible!

Cupcakes from Callista Allemekinders (@littlehungryhelpers on Instagram)



ASC CERTIFICATION

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Sheep Pass and Cougar Bay are both in Klemtu. Chief **Roxanne Robinson** and Councillor **Isaiah Robinson** of **Kitasoo/ Xai'xais Nation** said, "The traditional territories are of significant importance to us and we take who we allow to operate in our territory very seriously. It brings us peace of mind to know that Mowi voluntarily strives to reach the highest sustainability standard. It is of upmost importance that we take care of our traditional territories so we can ensure that we will have our lands and waters for our future generations.

"To know that the company has such high standards is really important to us. Our partnership has evolved over the years. Mowi has supported the community so well that we have strong ties and lifelong friendships."

The ASC standard was launched in 2012 after a decade of development through dialogue involving environmental NGOs, researchers, farmers and retailers from around the world. It is available for 12 of the most common aquaculture species, including Atlantic salmon. To achieve certification under the ASC Salmon Standard, farms are audited against 500 separate aspects of the site's performance. These audits are repeated every year to ensure that the site maintains the standard required.

From left: Environmental Compliance and Certification Director Sharon DeDominicis, Certification Manager Renee Hamel and Certification Administrator Samantha Tomkinson helped to organize sending 550 cupcakes to Mowi staff to celebrate the ASC certification

Mowi Helps Port Hardy Salvation Army With Food Security

Food security has become a rising social problem with the Mount Waddington region, and Mowi Canada West has been helping **The Salvation Army** address the issue by supplying fresh Atlantic salmon for the people they serve.

Michael Winter, Community Ministries Supervisor for the region, has been with the Salvation Army for nine years, and notes they provide numerous food distribution programs, including a Community Feeding Lunch Program, Breakfast Club, year-long shelter services, special holiday events, associated programming with attached meal services, and food hampers through family services.

"Last fiscal year with all programs included, we provided 24,127 meals and 120 food hampers," he notes. "Our programs associated with the distribution of food provide basic essential and human needs. As well, by giving references, referrals and added supports, a holistic approach to healing is in place to help individuals and families move toward healthier living and long term success in a warm, loving, and nurturing environment."

Winter says the program assist food security for the street entrenched (homeless), marginalized, stigmatized, the disenfranchised and those dealing with the following: varying degrees of mental health barriers, cognitive problems, heavy drug and alcohol addiction, emotional and psychological trauma, Fetal Alcohol Spectrum Disorder, Post-Traumatic Stress Disorder and physical, emotional, and mental abuse.

"The remainder of our clientele includes low income or those living under the poverty line, unemployed, the working poor, young families, senior citizens, those who are alone and dealing with social isolation, and those who are in the middle of a significant life transition – divorce, loss of work, death in the family, those fleeing abusive relationships, etc.," he adds.

Mowi's donations through the Salvation Army are truly helping people in need.

A Salvation Army volunteer handing out bagged lunches.

Operations Team Integrates Process With Microsoft Teams

A team of long-time Mowi staff has put together a system to integrate health and safety processes within Microsoft Teams.

Campbell River Operations Manager **Paul Pattison** and Campbell River Area Coordinator **Dave Pedersen** put their heads together to produce a verification step within Teams that dovetails perfectly with the DATS System Mowi employees use to track important data and information.

"We've created a system that uses Teams as a verification step," notes Pedersen. "In our management system, we have policies, procedures, specifications, certifications, government body regulations, etc., that monitor, record and inspect.

"Now there's a verification step, where you record data to verify what you've been doing and saying, to verify your inspections."

Pattison and Pedersen have used Teams to create lists and forms, enabling staff to go completely digital with iPads and iPhones to verify activities.

"We can now get away from paper completely, and we can upload pictures and data, and create form so people can answer a simple yes or no to a text question," Pedersen says.

Pattison's expertise is in "anything to do with computers" and production, while Pedersen focuses on management systems and compliance.

We can find a deficiency and trace it back to the point earlier in the day where it happened, and identify it," Pedersen says.

"The two of us got together, and we have good synergy," Pedersen states. "We put together a PowerPoint featuring work flow and how we manage our risks as an area. Teams and OneNote are used as part of our verification records for health and safety, environment, fish health, food safety, production and quality.

"Because we were using the DATS system already, we want to build a digital workplans describing all the things we manage like health and safety, fish health, environment, food safety, quality and production in this work plan.

We then do a risk assessment identifying all the tasks risks and controls in the work and then we communicate it.

If there is a deviation like an accident or incident that is reportable it goes straight in to DATS.

If we have documented in the workplan and the risk assessment is communicated, then it could be an open and shut case in DATS with minimal efforts.

It will help identify negligence if there is any if the controls are written and communicated

DATS system helps investigate, find the root cause, correct and prevent further incident and much more. Teams makes DATS even less work.

"It has been particularly useful during the COVID-19 pandemic, as it includes an orientation aspect that has every visitor to every site sign on and go through Teams checklists to answer and verify WorkSafe BC COVID questions, such as: "Have you been out of country? Do you have symptoms? Do you have a temperature, etc.

A COVID file within Teams includes items to fill out regarding travel to a site, taking the name of the boat and passengers, record temperatures, and keep stock of cleaning, health and safety supplies on the boat.

Dave Pedersen

"Every single boat fills this out prior to any trip to any site," Pedersen points out. "We have a site safety plan specific to every single site. We have a log of what they've cleaned, what they used, what they need, etc.

"It compiles it into Excel so the data can be mined, and as well we've set it up so we have graphs to see who is reporting, and what. It's quite an extensive verification system."

Pedersen observes that the system capture all the data to be compliant in all our management systems.

We're trying to teach our guys to digitally plan and communicate to avoid deviations that would disrupt or stop work flow and cause incident.

Feedback has been overwhelmingly positive.

"It's been absolutely unbelievable in our area," says Pedersen. "Everybody understands it. We've now taken it a step further, as Paul has developed a maintenance tracker."

With the maintenance tracker, progress can be followed through either tickets or on the schedule itself.

"A task can be created by anyone I then we accept it, assign all the stakeholders, allocate it, send it to a contractor, mark it as 'in progress'," he explains. "The minute we update the ticket, whoever it is assigned to, they get an automatic email. If they reply to that email, it embeds it into that ticket.

"As soon as it is marked 'in progress', anyone assisting gets a notification immediately and they understand that it's booked."

Avoiding Hazards Getting Into And Out of Boats

It's certainly no surprise, boats are a fundamental component of our business, creating a very high frequency getting in and out of them for a large number of different reasons. Because of this high frequency of activity, we must focus on our behavior, safe working practices and construction / equipment.

This would be more recognizable from the Safety Culture Model in the "Brainsafe" concept as Person, Practices and Environment.

The hazards associated to this task can appear camouflaged due to the "high frequency of activity". What does this mean? We become comfortable with this task, it went well before and "I never get injured doing this task". These can all be factors or attitudes making it difficult to adequately see and address hazards as we get comfortable with this process and fail to address items until someone is injured.

How has our team been exposed to injuries while accessing in and out of boats?

- Stepping down from a feed shed or float, on to a storage box or fuel tank has lead to injuries.
- Stepping into a loaded boat, with obstructions and hazards, leading to rolled ankles or trips.
- Stepping off or onto vessels in slippery conditions or where weather is causing waves and instability.
- When two or more boats are tied together because of unavailable mooring space, walking in between boats can pose a hazard.
- Inadequate anti-slip, lack of handles to hang on to or uneven transitions lead to unsafe events.
- Boats, barges and docking areas are being used without railings, ladders, adequate grip or handrails to help maintain proper footing and three points of contact.
- Carrying items across the gap of the walkway and boat, eliminating the opportunity to maintain 3 points of contact.

How are we mitigating these hazards to date?

- All accidents / incidents are investigated to determine the causes and apply controls to reduce or prevent repeat occurrences.
- Many boats have been outfitted with engineered controls, such as steps, grip tape and handles for maintaining three points of contact.
- Trip / slip hazards are addressed in site specific risk assessments.
- Staff are more vocal and procedures are in place to limit carrying items across water, maintaining a high standard of housekeeping and clearing vessel work areas.

What else can we do?

- Review the following key points at your site and discuss in the next monthly safety meeting or tailgates.
- Always use three points of contact when getting in or out of boats.
- Complete Eye-Checks and Eye-Observes regularly, targeting boat docking areas and conditions surrounding accessing vessels.
- Minimize conditions which would restrict having three points of contact. Ex. Replace totes with backpacks for carrying personal goods to boats.
- Clear tripping hazards and remove chains and side rails. Avoid stepping over them.
- When loading equipment into a boat, form a chain of people: For example, two people on the dock, one person in the stern of the boat and one person in the boat.

Analyze your work areas constantly.

- How are the boats anti-slip material at you site or area?
- If your site feed shed is raised high out of water, when low on feed storage, check the height for accessing in/out of boats. Are there safety measures in place to safely get employees in and out from heights?
- Are the boats in your area always clean and free of clutter for safe entry or exit.
- If you have specific docking areas, consider stanchions or railings on the outside walkway, to help give workers a convenient grip to guarantee easy three point contact.

BE SAFE: Follow procedures and commit to a safe workplace.

BE AWARE: Observe others around you and lead by example.

BE RESPONSIBLE: Look for ways to mitigate injuries and keep yourself and your coworkers safer on the job.

BE VOCAL: Talk about this hazard with your crew members and report unsafe conditions when you see them.