



## **Career Development 2201**

Two areas of interest and corresponding student activities that are related to the NL aquaculture industry are:

1. Unit 3: Career Exploration-learning and work Topic 4: Personal Safety
2. Unit 4: Career Preparation-life and work building Topic 2: Creating, securing and maintaining work and Topic 3: Reflection

### **Aquaculture Safety**

#### **Introduction - Aquaculture Workplace Safety**

There are many different professions in the aquaculture industry and each one has its own safety hazards while on the job, as well as preventative measures. Some operations are very large and require many workers. Large amounts of feed and product are moved every day to and from hatcheries, cage and infrastructure sites and processing plants, providing many areas in which employees safety can be at risk. There are also injuries related to the risky environmental conditions while out on the water (ocean or lakes). In Canada workers, employers and other indirect groups, like contractors, engineers and equipment designers, have a responsibility to protect the health, safety and well being of themselves and the individuals working in the aquaculture industry.

Some of the most common injuries reported by aquaculture workers are slips and falls and soft tissue injuries, most commonly due to over-exertion. The occurrence of injuries has decreased and is still decreasing today due to safety training and auditing in all sectors of the industry.

Training is essential to employees so they can safely work efficiently. This includes first aid training to knowing how to operate machinery to the proper personal equipment for different work environments.

#### **Specific Curriculum Outcomes (Unit 3, Topic 4)**

**3.10** Identify commonly implemented safe practices in the home, school, community and workplace; and demonstrate an understanding of the importance of maintaining these safe practices.

**3.11** demonstrate an awareness of the policies, procedures and guidelines that exist to protect employee and employers at the workplace.

GCO 4.401 Develop strategies for locating, understanding and using like/work information

- Discover differences between work, jobs, occupations and careers and the classification of work roles and alternatives
- Explore various work settings, roles and working conditions
- Explore economic/work sectors
- Demonstrate an understanding of the value of networking in career development
- Understand the importance of workplace safety
- Demonstrate knowledge of basic job seeking and maintenance skills

Suggested Teaching and Learning Strategies:

#### **Perform a Safety Audit**

- This can be done on a number of facilities/buildings; the ones most relevant to the aquaculture industry would be an aquaculture site (marine or freshwater), wharf, vessel or land based facilities (e.g. warehouses, supply buildings, hatchery, processing facility). This is only possible if there is one located relatively close to the school and approval is obtained for access to a private industry operation. This will also require that students be aware of their safety requirements to enter an aquaculture facility (e.g. proper clothing, boots, head gear, life vests).
- Another option is for the teacher to come up with a mock aquaculture site. Students could be given a list of criterion and have to come up with a portfolio of pictures to illustrate performing the mock audit.
- A third option is to perform and audit a school facility, such as the gym, industrial workshop or cafeteria, etc.
- An audit of the student's home environment could also be done to check for risks within and around the home.

Get the students to create their own checklist based on what environment the audit is chosen to study. If it is aquaculture or vessel related audit, then use Aquaculture Safety Hazards\_Resource to pull criterion from and design the checklist form using the Safety Audit template Activity.

This can be modified for more specific areas depending on what type of audit is selected. Information on the hazards, common injuries and safety measures can be found on General Aquaculture Safety Resource.

## Additional Resources

**Resource - Moreau D.T.R. and Neis B. 2009. Occupational health and safety hazards in Atlantic Canadian aquaculture: Laying the groundwork for prevention**

**Safety Section Marine Technology 2228 Resource**

[http://www.wcb.pe.ca/photos/original/wcb\\_aqua\\_cop.pdf](http://www.wcb.pe.ca/photos/original/wcb_aqua_cop.pdf)

<http://www.wcb.pe.ca/index.php3?number=1024231>

<http://www.lifesaving.ca/main.php?lang=english&cat=main> (Water Smart options)

<http://www.redcross.ca/article.asp?id=000620&tid=021>

<http://www.redcross.ca/article.asp?id=000881&tid=024>

<http://www.sja.ca/NFLD/Pages/default.aspx>

<http://www.whscc.nf.ca/>

<http://www.ccohs.ca/>

<http://seagrant.uaf.edu/bookstore/pubs/AN-17.pdf>

## Suggested Assessment and Evaluation Strategies

Students could add to their professional portfolio that they have experience in identifying safe work practices through the audit activity.

They could be given an aquaculture operation's description and then compile a list of the safety equipment and training employees need to have on that site. They can be graded on what they come up with; this can be evaluated as a group or individual, either in written form or presentation.

## **Potential Aquaculture Careers**

### **Introduction - Career Options in Aquaculture**

There are many different areas of the aquaculture industry where people of all ages and training work with many different fish/shellfish species and environments. Aquaculture is a year-round business and is becoming a big part of the labor market, especially on the south and north-east coasts of Newfoundland. There are currently about 1000 direct and indirect jobs in the province; nationally there are approximately 8000 direct jobs and another 8000 indirect jobs in aquaculture. Two thirds of the Canadian work force is also under the age of 35. In Newfoundland, this is not the case, as most of the work force is nearing retirement age. This means there is/will be a demand for younger people in the industry and there are many opportunities now and in the future.

There are jobs in areas including private industry, grow out operations, hatcheries, processing plants, product development, open water sites, recirculation operations, government (provincial and federal), industry research, alternate species research and many more.

There are a number of places in the country where education is available for people looking for training in the different capacities for aquaculture, including the Advanced Diploma in Sustainable Aquaculture from the Marine Institute of Memorial University of Newfoundland.

### Specific Curriculum Outcomes: (Unit 4, Topics 2 and 3)

**4.04** Identify specific job opportunities and complete any required job application forms:

GCO 4.402 Demonstrate an understanding of the importance of transferrable employability skills development to further employment and education

**4.07** Review and determine the ideal personal skills, behaviors and attitudes required to seek/create, secure and maintain work:

GCO 4.401 Develop strategies for locating, understanding and using like/work information

- Discover differences between work, jobs, occupations and careers and the classification of work roles and alternatives
- Explore various work settings, roles and working conditions
- Explore economic/work sectors
- Demonstrate an understanding of the value of networking in career development
- Understand the importance of workplace safety
- Demonstrate knowledge of basic job seeking and maintenance skills

GCO 2.402 Recognize how an individual's overall flexibility and adaptability to cope with change directly impacts on workplace satisfaction and productivity.

- Examine one's work, family and leisure activities and acknowledge their impact on one's mental, emotional, physical and economical well-being.

- Adopt habits and engage in experiences, further work, family and leisure activities that contribute to one's mental, emotional, physical and economic well-being.

### Suggested Teaching and Learning Strategies:

Research activity – After a simple introduction to aquaculture, use a provided list of possible aquaculture careers from:

Cold Harvester Poster Resource

Career Options List Resource

Canadian Aquaculture Courses & Programs Resource

General Aquaculture Presentation (career section) Resource

Resource-Frost, A.R., McMaster, A.P., Saunders, K.G. and Lee, S.R. 1996. The Development of a Remotely Operated Vehicle (ROV) for Aquaculture.

- Students must research online 3 things that a professional in each position would do on a day to day basis. This will give more understanding into each career and help students to identify any that they may be interested in pursuing.
- Also, to correspond with each of these careers and job activities, students could research what type of education is required to obtain the skills to qualify for each profession. See Aquaculture Career Exploration Activity as a template for this activity.
- Student could also perform interviews with employees in the aquaculture industry to gain insight into their daily activities, the education required for their position and other questions pertaining to their job. See Career Profile Questionnaire Activity

### ***Additional Resources***

[www.aquaculturejobs.ca](http://www.aquaculturejobs.ca)

[www.naia.ca](http://www.naia.ca)

<http://www.aquaculture.ca/>

<http://www.dfo-mpo.gc.ca/aquaculture/aquaculture-eng.htm>

<http://www.gulfofmaine.org/times/winter2008/update.php>

<http://www.videoray.com/stories/154-videoray-swimming-video-camera-helps-chilean-aquaculture-farm-inspect-nets>

<http://www.seabotix.com/applications/aquaculture.htm>

<http://www.seavision.com.au/AnnouncementRetrieve.aspx?ID=16125>

<http://www.naia.ca/links.asp>

## Suggested Assessment and Evaluation Strategies

To add to their professional portfolio, students can create a list from the professions they feel they are qualified or partially qualified for, or would like to pursue.

A case study could be used in which students are given a certain type of aquaculture operation. Then they can suggest the types of professionals that would be needed for that site and what they would be doing.

