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2025 **NSARB-2025-001**

Nova Scotia Aquaculture Review Board

IN THE MATTER OF: Applications made by **WFN FISH FARM LIMITED PARTNERSHIP (FORMERLY KNOWN AS WAYCOBAH FIRST NATIONS BAND COUNCIL AND AS WE'KOQMA'Q FIRST NATION)** for a **BOUNDARY AMENDMENT TO AQ#0814X** and for two new **MARINE FINFISH AQUACULTURE LICENCES** and **LEASES, AQ#1430 and AQ#1431** for the cultivation of **RAINBOW TROUT (Oncorhynchus mykiss)** in **WHYCOCOMAGH BAY, INVERNESS COUNTY**

WFN Fish Farm Limited Partnership

APPLICANT

-and-

Minister of Fisheries and Aquaculture

PARTY

Affidavit of Nathaniel Feindel

I, Nathaniel Feindel, of Shelburne, Nova Scotia, affirm and give evidence as follows:

1. I am the Manager of Aquaculture Development and Marine Plant Harvesting in the provincial Department of Fisheries and Aquaculture (the Department). I started with the Department in 2015 as an aquaculture advisor. I have been in my current management role since 2017.

2. I have worked in the aquaculture industry for approximately 15 years. My resume is attached to this affidavit as **Exhibit A**.

3. I have personal knowledge of the evidence affirmed in this affidavit except where otherwise stated to be based on information or belief.

4. I state, in this affidavit, the source of any information that is not based on my own personal knowledge, and I state my belief of the source.

History of Proceeding

5. The Applicant in this proceeding has operated in Whycocomagh Bay under three 10-year commercial marine finfish aquaculture leases and licenses for the cultivation of Rainbow Trout since 2011 (i.e. AQ#0814, AQ#0600 and AQ#0845). The Applicant is today named WFN Fish Farm Limited Partnership. In 2021, these licences were renewed for a further ten-year term (to February 1, 2031) and the leases were renewed for a further twenty-year term (to February 1, 2041).

6. In 2015 the regulation of aquaculture in Nova Scotia was overhauled with the enactment of two new regulations made pursuant to the *Fisheries and Coastal Resources Act*: the *Aquaculture Licence and Lease Regulations* and the *Aquaculture Management Regulations*.

7. At the time of the regulatory overhaul, a portion of the Applicant's existing infrastructure in Whycocomagh Bay was outside the boundaries of the Applicant's issued leases. This was a contravention of section 55(2)(b) of the 2015 *Aquaculture Licence and Lease Regulations*.

8. At the time, Nova Scotia Environment (now Nova Scotia Environment and Climate Change) (NSECC) was responsible for compliance and enforcement under the *Aquaculture Licence and Lease Regulations*. On May 31, 2016, NSECC sent a letter to the Applicant providing two options for bringing the Applicant's existing operations into compliance with the new regulations. (NSARB Exhibit 006a, p. 8)

a. Development of AQ#0814x – the boundary amendment application

9. In 2016, the Applicant chose to submit an administrative boundary amendment application to the Department to bring their existing aquaculture operation in this location into compliance with the new regulations.

10. The Applicant's 2016 boundary amendment application did not include the expansion of the 3 existing lease sites. (NSARB Exhibit 006a, p. 12, 14)

11. On March 5, 2019, the Applicant submitted a revised adjudicative boundary amendment application to merge AQ#0814, AQ#0600, and AQ#0845 and to further expand the space occupied by these three lease sites. This boundary amendment application today proposes to merge and expand the footprint of the Applicant's existing commercial leases from 4.37 to 63.77 hectares. (NSARB Exhibit 006a, p. 18)

b. Development of AQ#1430 & AQ#1431 – the new license and lease applications

12. In June 2018, the Applicant also applied for and was granted a 6-month Option To Lease in Whycocomagh Bay to scope for additional viable lease sites pursuant to s. 44A of the *Fisheries and Coastal Resources Act*. The Applicant then applied for and was granted an extension of this Option To Lease for a further six months, to June 19, 2019.

13. This scoping resulted in the Applicant adding two new commercial lease and license applications to its revised boundary amendment application in March 2019, namely, AQ#1430 and AQ#1431. (NSARB Exhibit 006a, p. 17)

14. In 2019 and 2021 respectively, the Applicant applied for and received special experimental licenses and leases AQ#5010 and AQ#5013 pursuant to s. 70 of the *Aquaculture License and Lease Regulations*. AQ#5010 is within the proposed boundaries of AQ#1430 and AQ#5013 is within the proposed boundaries of AQ#1431.

c. Consolidated Development Plan Submitted to the Aquaculture Review Board

15. On April 23, 2024, the Applicant submitted to the Department a final consolidated Development Plan for the three aquaculture applications currently before the Aquaculture Review Board (ARB). These final plans incorporated all current and updated information regarding AQ#0814x, AQ#1430, and AQ#1431. This includes all the information gained by the Department and shared with the Applicant through the network agency consultation process and practical experience gained from the special experimental applications.

16. Due to the large amount of information in the Applicant's consolidated Development Plan for these sites, two volumes were created for ease of review. Volume 1 contains the final, updated package that has been reviewed by the Department and is being presented to the ARB for adjudication. Volume 2 contains all the Applicant's original and historical submissions to the Department, as incorporated into their consolidated April 2024 Development Plan.

Review Team

17. The licensing coordinators within the Department who have been assigned to review these applications are Lynn Winfield, Susanne Holland and Megan Greenwood. Currently Susanne Holland is the primary Licencing Coordinator assigned to the Department's WFN Fish Farm Limited Partnership file and Review Team, as well as Robert Ceschiutti, Manager of Licencing and Leasing.

18. I led the Department's Review Team for these applications, alongside a number of others, as follows:

    - From the Aquaculture Development and Marine Plant Harvesting section: Aquaculture Advisor Jennifer Feehan and GIS Officer Matthew King;

    - From the Aquatic Animal Health section: Chief Aquatic Animal Health Veterinarian Dr. Amanda Swim and Fish Health Veterinarian Dr. Anthony Snyder and Aquatic Animal Health Program Specialist Dr. Stephanie Hall; and,

    - From the Operations section: Manager of Aquaculture Operations Jessica Feindel, and Aquaculture Operations Programs Specialist Danielle St. Louis, and Aquaculture Biologists David Cook, Gretchen Wagner, and Kate Richardson.

19. The Review Team conducts the Department's internal review of the technical feasibility of the application and its ability to align with the Department's regulatory programs. The technical review includes an assessment of information relevant to the factors the ARB must consider, as listed in s. 17(1) of the *Aquaculture Licence and Lease Regulations*. The Department's comments are summarized below and in the affidavits of Jessica Feindel and Dr. Amanda Swim. This summary includes Departmental staff's knowledge of the industry, the advice provided to the Department from Network agencies, information supplied by the Applicant, and information collected by the Department.

Three Lease Sites

20. This Affidavit addresses all three applications currently before the ARB. These applications are in close proximity to one another in Whycocomagh Bay and, as such, my comments in this affidavit will apply to all three sites, unless specifically stated otherwise.

21. For ease of reference, individual maps showing AQ#0814x, AQ#1430, and AQ#1431 and their locations are included in the Application Package (Vol. 1) (NSARB Exhibit 004a. p. 11, 12, 17,18, 23 and 24)

Network Consultation

22. Under the *Aquaculture Lease and Licence Regulations*, when the Department receives a completed application, we are required to undertake consultations with relevant federal and provincial departments or agencies (the Network).

23. When the Minister of Fisheries and Aquaculture (the Minister) refers an application to the ARB, the Minister is required to include a Report on the outcome of the Department's Network consultation. For these applications, the Network consultation report submitted to the Board is entitled "Report on the Outcomes of Consultation" and the report has 3 volumes (i.e. NSARB Exhibits 005a, 005b and 005c). Network partners provided either multiple responses for each of the Applicant's three proposed sites, or a single response with common feedback for all three sites together. Any site-specific feedback will be explicitly identified below.

24. Any feedback from the Network partners that is relevant to the ARB's consideration of the factors outlined in section 17(1) of the *Aquaculture Licence and Lease Regulations* is discussed further below.

Section 17(1)(a): Contribution to Community and Provincial Economic Development

Production Plan

25. AQ#0814x has two proposed designated farming areas: a production area in the inner Whycocomagh Bay and an over-wintering area near the Applicant's wharves. This has historically been the Applicant's farming model for this area due to the ice conditions of Whycocomagh Bay.

26. The unique production plan at these sites allows for continuous, annual stocking as previous year-classes are grown out and/or harvested. Each site will be stocked as follows:

    - AQ#0814x – production area will hold juvenile fish only;
    - AQ#0814x – overwintering area will hold fish at all stages of the production cycle during the winter months, separated by year class cages;
    - AQ#1430 will hold fish in the first year of marine growth; and
    - AQ#1431 will hold fish in the second year of marine growth.

27. The Applicant plans to stock the production area of AQ#0814x annually in the fall with juvenile fish for grow-out until ice conditions require movement to the overwintering area of the site. This production area will act as an acclimatation location for early smolt introductions to the marine environment after being transferred in from a hatchery. Next, at the start of each winter, the Applicant plans to move these juvenile fish to the over-wintering area of AQ#0814 for holding during the winter months

28. At the start of each spring, the Applicant plans to move the fish in the overwintering area of AQ#0814x to either proposed AQ#1430 to continue their first year of marine growth or to proposed AQ#1431 for their second year of marine growth. Fish in their first year of growth will be returned to AQ#0814x for overwintering. Depending on market demands, market sized fish from AQ#1431 will be harvested at that site, or they may go back to the overwintering area at AQ0814x, where they will be harvested through the winter.

29. Throughout this 2-2.5-year production cycle, it is the Applicant's plan to move year classes of fish between AQ#0814x, AQ#1430, and AQ#1431 by moving the cages. This is a practice the Applicant has successfully employed at their existing lease sites.

30. In summary, the Applicant is planning to use the three proposed sites together as a single farming unit, with each lease site fulfilling different purposes in the Production Plan for each year class of fish on the farm. Accordingly, the expansion of AQ#0814x and the creation of AQ#1430 and AQ#1431 will enable the Applicant to utilize the combined proposed lease areas

Infrastructure

31. The Applicant is proposing to use 100 meter (m) polar circle cages for these sites. My team assessed this proposed infrastructure.

32. While cage sizes on finfish farms can range, 100m cages are a typical size for industry. This cage size is also what the Applicant has determined will work with their maintenance and cleaning infrastructure and equipment to support their farming operations (i.e. net maintenance and cleaning vessels) and will conform with the Department's regulatory programs.

33. The Applicant plans to establish arrays of 10 cages per site at all three proposed sites. Historically, this cage array has been suitable for facilitating cage movement between the production and overwintering areas of the Applicant's existing lease sites. As described above in the "Production Plan" section of this affidavit, the Applicant's intended Production Plan entails seasonal cage movement between all three proposed sites.

34. My team also assessed the planned net depth for the proposed sites to determine whether the water at the site locations is deep enough to ensure that the Applicant's nets will avoid catching and dragging on the bottom of Whycocomagh Bay.

35. The Applicant plans to use 8m-deep enclosure nets at all three proposed sites.

36. The minimum water depths at the proposed sites, where cage infrastructure would be located, are as follows:

- AQ#0814x – 14-37m in the production area, with enclosure netting reaching a depth of 8m;
- AQ#0814x – 2-30m at the overwintering area, with enclosure netting reaching a depth of 8m;
- AQ#1430 – 16-28m, with enclosure netting reaching a depth of 8m; and,
- AQ#1431 – 16-24m, with enclosure netting reaching a depth of 8m.

37. Department staff determined these water depth measurements for each proposed lease site through direct sonar collection in November 2023. The Review Team then corrected the depth information based on tide tables to account for tidal range.

38. The only site that may have depth challenges is the overwintering area on AQ#0814x. This is because this area abuts the shore. However, these concerns can be mitigated through appropriate farming practices and through the Applicant always ensuring that cages in the overwintering area are not moved into shallow waters and are secured at suitable water depths.

Wharf Usage

39. As set out above, the Applicant is proposing to combine and expand its 25-year-old commercial leases and licenses (i.e. AQ#0814x), as well as convert its existing 6- and 4-year-old experimental leases and licenses into commercial aquaculture sites (i.e. AQ#1430 and AQ#1431, respectively). During the Applicant's tenure in aquaculture operation in this location, they have consistently utilized the current wharf infrastructure to farm across all their sites. The Applicant has learned what wharf infrastructure works best for the operation and they have adopted infrastructure improvements accordingly, to support their farming operations (e.g. adopting a range of infrastructure improvements, from new wharves to updated vessel types).

40. The Applicant's current infrastructure is sufficient to support the proposed farming operations.

Section 17(1)(b): Fisheries Activities in the Public Waters Surrounding the Proposed Aquacultural Operations

41. DFO outlined that there are some commercial, recreational, and Aboriginal fishing activities present in Whycocomagh Bay. The presence of these fisheries was validated through internal and network review. DFO provided a high-level summary of all fishing activities in Whycocomagh Bay, including Food, Social, and Ceremonial (FSC) and recreational fisheries through the DFO Maritimes Region Reviews of the Proposed Marine Finfish Aquaculture Boundary Amendment and New Sites for Whycocomagh Bay, Bras D'Or Lakes, Nova Scotia. These reports are dated November 2021 and June 2022, respectively (CSAS Reports). (NSARB Exhibit 005a, p. 209-253 and 259-315)

42. As outlined in the DFO CSAS documents, commercial fishing activities are limited in Whycocomagh Bay. It has been identified that there are several commercial invertebrate species present within the Bra d'Or Lakes, like Lobster, Oysters, Scallop and Rock Crabs. Wild oyster harvesting was the most prominent fishery in the Bra d'Or Lakes until the introduction of the Multinucleate sphere unknown virus (MSX) in the early 2000's.

43. DFO identified that, historically, there were also cod and flounder fisheries in this area, but those ceased operations in the early 90's. (NSARB Exhibit 005a, p. 210 & 262)

44. DFO identified that, historically, recreational and Aboriginal fisheries in Whycocomagh Bay have targeted species such as American eel, herring, mackerel, cod, winter flounder, smelt, varying trout species, salmon, gaspereau softshell clams, oysters, mussels and striped bass. Based on Traditional Ecological Knowledge (TEK), the area is important for numerous species, although most of those species have declined over time. (NSARB Exhibit 005a, p. 210 & 262)

45. The Department's Inland Division supports a year-round recreational sportfish fishery throughout the Bra d'Or Lakes and in Whycocomagh Bay. As identified by the Department's Inland Division, the proposed Boundary expansion and two new sites in this location overlap with this recreational fishery and, as a result, the Applicant's proposed operations may conflict with and/or displace recreational anglers. (NSARB Exhibit 005b, p. 772, 775, 779)

46. In 2020, 2021 and 2022, during the COVID pandemic, DFO instated Variation Orders closing the inland tidal waters of Whycocomagh Bay for angling of all fish species. None of these orders are currently in place.

47. In addition to the CSAS Reports, DFO also provided a Letter of Advice to the Department regarding each of the proposed lease sites. (NSARB Exhibit 005a. p 175, 317, 324)

48. DFO's Letters of Advice about the Applicant's proposed new leases and licences, AQ#1430

and AQ#1431, addressed potential fishery displacement. DFO identified the following fisheries as potentially being displaced by the proposed new lease sites: gaspereau, trout, Striped Bass, groundfish, mussels, Softshell Clam, American Oyster, American Eel, American Smelt, Atlantic Salmon, Atlantic Herring, Atlantic Mackerel and American Lobster. (NSARB Exhibit 005a, p. 321-322 & 328-329)

49. DFO's Letter of Advice about the Applicant's boundary amendment, AQ#0814x, does not refer to any potential for displacing local fisheries.

50. DFO uses a risk-based approach to assessing potential impacts to fish and fish habitat. Using this precautionary approach, DFO evaluates the "residual risk" after incorporating the Applicant's mitigation measures and DFO's own regulatory requirements, as well as those of other federal and provincial regulators, to determine whether to recommend additional mitigation measures.

51. For AQ#0814x, DFO did not require that the Applicant implement any further risk treatments in respect of local fisheries, but DFO did recommend that the Department remind the Applicant of all applicable legislation in this area. (NSARB Exhibit 005a. p. 175-179).

52. For AQ#1430 and AQ#1431, DFO concluded that the proposed lease areas "are small relative to the fishing grounds for each of the fished species". In its Letters of Advice for these new site applications, DFO encouraged the Applicant to engage with fishing industry, rights holders and stakeholders. (NSARB Exhibit 005a, p. 322 & 329)

Section 17(1)(d): The Other Users of the Public Water Surrounding the Proposed Aquacultural Operation

Impacts to Wildlife

53. The Department also considers impacts to wildlife under this factor. To determine potential impacts to wildlife from the proposed operation, the Review Team relies on the proponent's application material and feedback from the Network consultation.

54. The information supplied by the Applicant regarding potential impacts to wildlife was reviewed by the Network partners. The Department received feedback from three network partners:

- The Nova Scotia Department of Natural Resources (DNR) (formerly the Department of Lands and Forestry and formerly Department of Natural Resources and Renewables);
- The Department of Fisheries and Oceans Canada (DFO); and,
- The Canadian Wildlife Services Division of the Department of Environment and Climate Change Canada (CWS).

Response from DNR

55. DNR provided initial feedback to the Department on the proposed AQ#0814x application on September 23, 2019. DNR then provided initial feedback to the Department on the proposed AQ#1430 and AQ#1431 on December 18, 2019. (NSARB Exhibit 005b, p. 686 & 694, respectively).

56. The Review Team then worked with DNR to clarify points of its advice to the Applicant. The Applicant responded to DNR on each point of advice.

57. DNR's advice was mostly specific to wildlife in Whycocomagh Bay and how to mitigate interactions between that local wildlife and various aspects of the Applicant's aquaculture operations. This was specific to fish feed, waste disposal, and equipment storage that could potentially or had in the past attracted wildlife to the Applicant's operations, like bears or other scavenger species.

58. DNR also included recommendations for the Applicant to implement mitigation measures for reducing the risk of impacts to bird species interacting with the Applicant's aquaculture operations. This was to ensure there is minimal risk to fish-eating birds, like loons, cormorants, and the bald eagle population in this area. DNR's recommended mitigations included requirements for the Applicant to report specific bird entanglements back to DNR, should they occur.

59. DNR made specific recommendations for mitigating risks to Bald Eagles around AQ#0814x. DNR recommended that the Applicant submit an annual report to DNR on all on-site interactions with Bald Eagles which result in eagle injury or mortality. DNR further recommended that the Applicant be required to document and report the number of eagles they observe on their aquaculture infrastructure at AQ#0814x or in the area generally, for a minimum of three years. (NSARB Exhibit 005b, p. 756-757)

60. Specific to AQ#1430 and AQ#1431, DNR requested that the Applicant report all diving bird entanglements and/or mortalities on these proposed new sites back to DNR. (NSARB Exhibit 005b, p. 723-726)

61. Under the Department's regulatory programs, all recommendations from DNR can be incorporated into the Applicant's Farm Management Plan (FMP). If the Applicant's proposed licenses and leases are approved, the Department will work with the Applicant to incorporate these requirements into their FMPs.

62. DNR was satisfied by the Applicant's and the Department's responses to its recommendations through correspondence during the regulatory review process. As of September 21, 2021, and February 16, 2022, respectively, DNR submitted no further comments or concerns about these applications to the Department. (NSARB Exhibit 005b, p. 756-757 and p. 764-765)

Response from DFO

63. DFO assessed which marine species may be impacted by the proposed lease sites. Please note that DFO's comments regarding salmon are discussed under the section of this Affidavit entitled "Section 17(1)(f): The Sustainability of Wild Salmon".

64. DFO sent the Department three site-specific Letters of Advice regarding the Applicant's proposed boundary amendment and new sites. The Department received the Letter of Advice for AQ#0814x in June 2021 and the two Letters of Advice for AQ#1430 and AQ#1431 in June 2022. (NSARB Exhibit 005a, p. 175, 317, 324)

65. DFO also published two CSAS reports for these applications (i.e. an individual CSAS Report for AQ#0814x and a combined CSAS Report for AQ#1430 and AQ#1431). These CSAS documents are comprehensive scientific reviews of the lease sites in accordance with DFO's legislative mandate, including the federal *Fisheries Act*, *Species at Risk Act* (SARA), *Oceans Act*, and all applicable regulations. (NSARB Exhibit 005a, p. 205 & 259)

66. Respecting wildlife and wildlife habitat interactions around the proposed lease sites, DFO concluded that: "No SARA-listed species or their Critical Habitat or Residences are likely to be found within the areas at risk of impact". (NSARB Exhibit 005a, p. 176, 318, and 325).

67. With respect to eelgrass, DFO noted that there was no evidence of eelgrass beds within the proposed lease spaces for AQ#1430 and AQ#1431 and that infrastructure on these sites was going to be at depths greater than what eelgrass typically inhabits. (NSARB Exhibit 005a, p. 319 & p. 326).

68. With respect to eelgrass at AQ#0814x, DFO did note that there is some eelgrass along the perimeter of the proposed amended lease and, as a result, DFO recommended that the Applicant avoid installing any blocks and anchors in these perimeter areas. (NSARB Exhibit 005a, p. 177)

69. DFO's Letters of Advice for all three proposed sites assessed and provided recommendations for increased/improved mitigation measures in 8 risk areas associated with aquaculture-wildlife interactions:

    (1) physical alteration of habitat structure;

    (2) alteration of light;

    (3) alteration of noise;

    (4) deposit of nutrients and organic material (this issue is addressed in the Affidavit of Jessica Feindel);

    (5) release of aquatic invasive species;

(6) deposit of chemicals;

(7) release of farmed fish, and (this issue is addressed in the sustainability of wild salmon section below); and,

(8) release of pathogens.

70. Ultimately, DFO did not suggest additional risk treatment or mitigation measures related to these stressors. However, DFO did include comments reminding the Applicant of specific sections of the relevant federal regulations.

Response from CWS

71. On September 17, 2019, CWS provided initial recommendations and points for clarification and reference to applicable legislation for AQ#0814x. (NSARB Exhibit 005b, p. 449-451)

72. The Applicant then provided additional information to CWS, which satisfied all of the organization's concerns except its request for a map showing the proposed lease boundaries for application AQ#0814x. (NSARB Exhibit 005b, p. 454-461)

73. On October 3, 2019, the Department provided CWS with maps of AQ#0814x, from the license and lease Application Form, Schedule A. CWS conveyed no additional comments specific to application AQ#0814x. (NSARB Exhibit 005b, p. 462-471)

74. On January 3 and 6, 2020, CWS reviewed and provided initial recommendations and points for clarification and reference to applicable legislation for applications AQ#1430 and 1431, respectively. (NSARB Exhibit 005b, p. 466-470)

75. The Applicant provided additional information to CWS for the new site applications and also asked CWS for guidance on how to address the risk of bird entanglements, should they occur. (NSARB Exhibit 005b, p. 479 & 481)

76. On October 25, 2020, the Department provided CWS with updated excerpts from the Applicant's FMP for AQ#1430 and AQ#1431, including the Applicant's Bird & Predator Deterrence Strategy and Pest Management Strategy. (NSARB Exhibit 005b, p. 495-496)

77. On September 2, 2021, CWS provided additional comments and advice, as well as documentation, to support the refinement of the Applicant's Wildlife Interaction Plan. The Department will continue to work with the Applicant on implementing CWS's most recent comments and advice into the Applicant's FMPs. (NSARB Exhibit 005b, p. 540-559)

78. In February and March 2022, the Department followed up with CWS to finalize the network consultation process with this organization for all three of the Applicant's license and lease applications. No further concerns or comments were received from CWS. (NSARB Exhibit 005b, p. 562-566)

Section 17(1)(e): Public Right of Navigation

79. The Applicant applied to Transport Canada for an updated Canadian Navigable Waters Act (CNWA) approval for AQ#0814x, and two new CNWA approvals for AQ#1430 and AQ#1431.

80. On October 14, 2021, the Department posted a Notice of Application for each of the Applicant's CNWA applications to its website. This notice included information on how to submit written comments to Transport Canada regarding the effect of the proposed lease sites on marine navigation. (NSARB Exhibit 005a, p. 404-405)

Section 17(1)(f): Sustainability of Wild Salmon

81. DFO provides feedback to the Department regarding potential impacts to wild salmon. The Eastern Cape Breton (ECB) Atlantic Salmon have been assessed as Endangered by COSEWIC since 2010 and are under consideration for SARA-listing. ECB salmon are the last remaining population that supports recreational fishing and First Nations allocations in the DFO Maritimes Region.

82. Cultured Rainbow trout escape and their potential for ecological interactions in the wild marine environment is a potential risk to wild salmon.

83. DFO's Letters of advice to the Department for sites AQ#0814, AQ#1430, and AQ#1431 conclude that "[b]ecause the risks are proportional to the number of Rainbow trout escapees, DFO recommends that the proponent prioritize preventing Rainbow Trout escapees" and "[n]o additional risk treatment for this stressor is required". (NSARB Exhibit 005a. p. 179, 321, 328)

84. For sites AQ#1430 and AQ#1431, DFO also recognizes "NSDFA's increasing regulatory requirements for preventing and responding to Rainbow Trout escapees" and DFO states that it will continue to collaborate with the Department (DFA) and industry to further improve mitigating the effects of escapees through improved prevention, stocking decisions, early detection, tracking and response. (NSARB Exhibit 005a. p. 321 and p. 328)

85. DFO's reference to the Department's "increasing regulatory requirements for preventing and responding to Rainbow Trout escapees" is likely a reference to the *Aquaculture Management Regulations* and the Department's Containment Management Framework (described in more detail in the Affidavit of Jessica Feindel).

86. If a suspect escapee Rainbow Trout is found, this program allows the Department to commence an investigation. The investigation is to determine the potential source of the fish with the intention to identify the potential cause of the escape, which can then be rectified through the implementation of appropriate mitigation procedures.

Conclusion – Network Partner Review

87. In summary, the Review Team has been involved in the review of these applications over several years of farm operations. When the applications were submitted for Network Partner review, the Applicant received feedback and has proceeded to address all technical comments, mitigation recommendations, and operational guidance provided by the Department's Network Partners.

88. I was not physically present before Ms. Menczel-O'Neill when I affirmed this affidavit. I was linked with Ms. Menczel-O'Neill using video conferencing technology.

Sworn to before me by videoconference from Shelburne, Nova Scotia (location of affiant) to Halifax, Nova Scotia (location of lawyer taking oath) on the 17th day of February 2026

Caitlin Menczel-O'Neill
A Barrister of the Supreme Court of Nova Scotia

Nathaniel Feindel

NSARB-2025-001

This is Exhibit “A” referred to in the
Affidavit of Nathaniel Feindel
affirmed before me by videoconference
on February 17, 2026

[redacted]

Signature
CAITLIN MENCZEL-O’NEILL
A Barrister of the Supreme Court of Nova Scotia

Nathaniel Feindel

Education

2008-2010 University of New Brunswick (Fredericton) Fredericton, NB

Masters of Science. (Biology)

- Specialization in Aquaculture

2002-2006 St. Francis Xavier University Antigonish, NS

Bachelor of Science

- Double Major in Aquatic Resources and Biology

Employment Experience

Nova Scotia Department of Fisheries and Aquaculture Shelburne, NS

April 2017 - Present

Manager (EC 12)

- Managing the Development Section in the Aquaculture Division of the Nova Scotia Department of Fish and Aquaculture.
- Develops, manages, advises and administers funding programs designed to assist and foster sustainable aquaculture industry development initiatives (e.g. Nova Scotia Aquaculture Research and Development Funding Program (NSARDFP)).
- Collaborates closely with the Aquaculture Development staff, Department staff as well as other Departments (where applicable) to ensure a coordinated and consistent approach to program/process development, implementation and day to day administration.
- Implements collaborative approaches for application reviews and discussions with other government agencies and review committees to recommend funding levels and restrictions.
- Manages the review of applications, corresponding with applicants, providing feedback, and composing formal departmental response letters for senior management
- Manage the oversight of the performance of multiple industry projects, involving multiple industry stakeholders; extensive monitoring, analysis and evaluation of operational activities to ensure compliance with contractual funding agreements in conjunction with licensing requirements. Provides Sr. management with progress reports on a program/project success.
- Corresponds, collaborates and supports the Policy Department in drafting legal contracts, maintaining and managing tracking documents, and reviewing interim and final reports
- Corresponds with proponents to ensure they are conforming to contractual agreements
- Advise on and implement aquaculture lease/license application documents and processes with respect to aquaculture regulations.
- Manages staff and their detailed technical and performance reviews on requests for aquaculture options to lease, new applications, scoping reports, development plans, licence and lease renewals, amendments, assignments, and production statistics analysis to advise the Minister and Aquaculture Review Board in decisions pertaining to the allocation of public resources. Assess technical feasibility, operational performance and environmental impact or adverse risk effects the current or potential aquaculture operations could have on the marine environment and its associated fisheries.
- Working with departmental staff to ensure industry compliance and understanding of Farm Management Plan (FMP) requirements and processes to enable the incorporation of regulatory oversight by the Nova

Scotia Department of Environment, as per the Aquaculture Licencing and Aquaculture Management Regulations. Assesses sections of FMPs, which may include Fish Health and Containment Management, Farm Operations, and Environmental Monitoring.

- Manage staff on the execution of performance reviews of individual farm owner FMPs through evaluation on the utilization rates through analysis of annually submitted farm production statistics and FMP records. Makes recommendations to farmers on techniques and technology to improve operations and to use provincial leased space to its full potential.
- Manage policy, regulatory and program program development
- Provides feedback, technical advice, and insight on Aquaculture Strategy, initiatives, and industry practices on program planning strategies and approaches
- Provides advice and assistance to program/operational areas throughout implementation of policies, providing interpretation on complex policy and regulatory issues; and provides guidance in monitoring and reviewing the effectiveness of policy interventions.
- Provides scientific/specialized knowledge and evidence for the effective development, implementation and evaluation of policy/regulatory changes and recommendation of legislative proposals that are responsive to the aquaculture industry and stakeholder needs.
- Manage research and the analysis of developments including new technologies, approaches and best practices and activities occurring in other jurisdictions in the field of aquaculture.
- Makes effective recommendations on implications and alternative methods to leverage potential opportunities to address key, critical issues of strategic relevance to the department's policy and legislative requirements.
- Provision of Aquaculture Industry Development and Extension Services
- For both Government and Non-Governmental Organizations: lead, coordinate and facilitate the design and execution of a variety of complex research projects related to aquaculture that support the refinement of techniques and methods to increase production, profitability and environmental sustainability or that focus on the potential socioeconomic impacts of aquaculture.
- Manages and reviews project development, activities and performance, including the gathering, interpretation, analysis and preparation of data for studies and reports: organize steering and other committees, liaise with pertinent project partners, participants, and supports, implement corrective actions in project phases; review work and monitor, approve and control budget expenditures to ensure project deliverables are on time and within budget.
- Evaluate adverse impacts of industry development on aquatic wildlife resources, and recommend mitigation or enhancement measures to industry developers, other government departments, consultants and other key stakeholders to ensure responsible development of the aquaculture industry.
- Respond to urgent and on-going situations that are non-biological in nature such as oil spills, damage by ice or storm, etc.; conduct site visits as required to conduct situation impact analysis and recommend corrective actions.
- Manage collaboration with other federal/provincial/municipal government organizations (DFO, Canadian Food Inspection Agency, Environment Canada etc.) to facilitate integrated solutions for those issues that cut across jurisdictions and disciplines.
- Manage the preparation of requests for proposals, selecting consultants, contractors and internal program participants as necessary; negotiate contractual terms of agreement with successful bidders, set project goals, priorities, and performance criteria. Manage reviews for other Provincial and Federal funding programs and advice on aquaculture specific requests from the department's perspective.
- Manage and Intra/Inter-Departmental and Intergovernmental Coordination and Cooperation
- Lead and participate on a variety of cross-jurisdictional planning and project committees to ensure a coordinated, strategic approach for the promotion, advancement and sustainable growth of the aquaculture industry.
- Provides advice to federal and provincial departments in decision making related to the movement of aquatic organisms both intra/inter-provincially to help control the spread of disease organisms and aquatic invasive species.
- Manages the Nova Scotia Department of Fisheries and Aquaculture representation on various committees and working groups at both the regional and national level (e.g. the Atlantic Region Interdepartmental

Shellfish Committee (ARISC)). Consults on approaches to respond to issues related to aquaculture science, capacity and development (e.g. participation in research projects and papers)

- Works closely with departmental employees to develop and present educational programs, courses, materials, etc. for a variety of audiences including industry sectors, schools, colleges and universities, and the public. Facilitates and supports planning committees to develop special events (conferences, trade shows, etc.) or campaigns sponsored by the Department in order to influence industry participation and engage the public on aquaculture or related topics.

Feb 2015 – April 2017
Biologist III (PR-15)

- Providing the aquaculture industry with development and extension services.
- Managing, coordinating and facilitating aquaculture development projects
- Coordinating and implementing research and development projects and activities for Non-Governmental Organizations, stakeholders, fisheries associations participating in species enhancement, and coastal community development projects.
- Providing technical research and advice to pertinent project partners, participants and other stakeholders
- Evaluating adverse impacts of industry development on aquatic resources, and providing/recommending mitigation or enhancement measures to industry developers, government agencies, consultants and other stakeholders
- Managing, administering and coordinate provincial funding for aquaculture research and development within the province
- Developing provincial program guidelines and policies to support provincial legislation
- Collaborating with other government agencies and stakeholders on project designs and funding
- Collaborate with other government agencies on planning and project committees to ensure a coordinated, strategic approach for the promotion, advancement and sustainable growth of the aquaculture industry
- Manage and review industry project performance; analyze and evaluate to ensure contractual funding agreements are being achieved
- Provide expert advice to senior management on current projects as well as potential future projects
- Provide feedback and insight on industry practices and technical advice from a science perspective on program planning strategies and approaches that will strengthen the provinces capacity to support the aquaculture industry
- Actively seek collaborators and leverage additional funding for projects within Nova Scotia
- Develop strategic and supporting documents for the Aquaculture Division.
- Serve as a provincial representative to collaborate nationally and internationally on strategic programs to develop and strengthen the finfish aquaculture industry in Nova Scotia
- Provide relevant technical/specialized knowledge for the effective development, implementation and evaluation of policy/regulatory changes and recommendation of legislative proposals that are responsive to marine finfish industry and stakeholder needs.
- Drafting legislative language and policies to support the continued development of the aquaculture industry in an economical and environmentally acceptable manner
- Monitor, research and analyze developments in new industry approaches, technologies as well as what is happening in other jurisdictions, enabling their application in Nova Scotia
- Respond to urgent and on-going situations and provide recommendations and facilitate solutions
- Manage, coordinate and facilitate the procurement of assets to support the development of the aquaculture industry and mandate of the Department of Fisheries and Aquaculture.
- Training and developing government employees in techniques that are acceptable under provincial government standards
- Organizing regional, national and international conferences/workshops involving multiple stakeholders

Nathaniel Feindel

July 2014 – Feb 2015 | Parks Canada | Port Mouton, NS

Project Manager (PM-04)

- Managing the costal restoration project in the Kejimkujik National Park Seaside
- Conducting condition monitoring and management effectiveness monitoring within Kejimkujik National Park Seaside in both marine and terrestrial environments
- Managing human and financial resources, including external service providers, volunteers and contractors
- Working in a collaborative environment with diverse groups (e.g. cross functional, other government departments, NGO's, businesses/corporations, community groups, educational institutions rural municipalities, the general public)
- Developing and delivering documents including action plans, communication plans and messaging, project financial reports and briefing notes.
- Delivering the Parks Canada mandate, strategic and operational objectives, policies, directives and regulations
- Managing and developing staff to effectively interact with the general public to communicate Parks Canadas mandate through the implementation and facilitation of eco-tourism and educational experiences
- Developing and managing contracts
- Planning, prioritizing and implementing complex projects or programs involving cross-functional teams, contractors and multiple stakeholders with a broad range of competing or conflicting interests
- Working independently and in cross-functional teams using a multi disciplinary approach
- Evaluating complex situations and making sound decisions and/or providing authoritative advice
- Preparing reports, presentations, and briefing notes for senior Parks Canada management, collaborators and the general public

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Jun 2012 - April 2014 | Fisheries and Oceans Canada | St. Andrews, NB

Aquatic Science Biologist (BI-02)

- Managing, implementing and facilitating an Aquaculture Collaborative Research and Development (ACRDP) project
- Managing the field testing of "green-technology" sea lice traps and further documentation of on-site dynamics of sea lice early life history
- Managing the deploy prototype traps on farms to evaluate the equipment performance in at-sea conditions.
- Compare the variation in larval sea lice, on salmon sites, captured between traps in the same cage as well as between different cages and different depths in the water column.
- Supporting a research scientist on experiments relating to sea lice in the marine environment.
- Designing and plumbing in various systems in wet lab facility from quarantine lab to a sea lice hatchery system and various types and sizes of tanks
- Producing sea lice larvae in an experimental hatchery from egg strings collected from naturally infected salmon on local farms
- Collecting sediment samples for larval hatching experiments on various sediment types
- Deploying mesocosms for sea lice larval hatching experiments
- Deploying oceanographic equipment, CTDs, LISST-100, Cyclops Submersible samplers, ph and temperature sondes, sediment collection tubes and collecting water samples with Niskin Bottle
- Maintaining the sea lice hatchery system and conducting routine maintenance
- Continue with the testing of the relative efficiency of the prototype sea lice traps developed in phase 1 and 2 of this project measured by selective efficiency
- Develop and minimize the energy requirements of the traps
- Developing and conducting experiments on sea lice, in and around salmon aquaculture sea cages in the Bay of Fundy and Nova Scotia
- Operating and maintaining Rossborough boats in and around salmon sites and the Bay of Fundy
- Conducting experiments off of Coast Guard vessels in and around salmon sites and the Bay of Fundy

Nathaniel Feindel

- Loading and offloading research equipment and trawl gear on/off research vessels with overhead crane
- Liaising with industry partners and collaborators to conduct experiments on private aquaculture leases
- Writing, reporting and presenting findings of experiments being conducted to senior DFO management and industry partners
- Presenting results at national conferences
- Chairing conference sessions and general meetings
- Working with NB Department of Agriculture, Aquaculture and Fisheries on chemotherapeutant treatments for salmon
- Making recommendations to senior scientists on logistics and design of future projects
- Managing/training technicians and summer students
- Managing a budget
- On-call after hours for emergency response to the wet-lab, broodstock facility and quarantine lab

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Apr 2012 - Jun 2012 Fisheries and Oceans Canada St. Andrews, NB

Aquatic Science Biologist (Bi-02)

- Managing, compiling and drafting the publication of a specialized chapter in a Canadian Manuscript of Fisheries and Aquatic Sciences for the Aquatic Climate Change Adaptation Services Program (ACCASP)

Shackell, N.L., B.W. Greenan, P. Pepin, D. Chabot and A. Warburton (Editors). 2013. Climate Change Impacts, Vulnerabilities and Opportunities (IVO) Analysis of the Marine Atlantic Basin. Can. Manuscr. Rep. Fish. Aquat. Sci. 3012: xvi + 366 p.

Chapter 6: Feindel et al.,"Climate Change and Marine Aquaculture in Atlantic Canada and Quebec."

- On-call after hours for emergency response to the wet-lab, broodstock facility and quarantine lab

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Jan 2011 - Mar 2012 Fisheries and Oceans Canada St. Andrews, NB

Aquatic Science Technician (EG-04)

- Designing, managing and conducting scientific studies on American lobsters in both lab and field settings
- Managing the coordination of industry stakeholders to conduct experiments and deployment scientific equipment in the marine environment
- Deploying divers with mesocosms and scientific equipment to conduct studies in the field relating to chemical chemotherapeutants
- Conducting chemtherapeutant experiments on adult, juvenile and larval lobsters
- Conducting climate change studies on larval lobsters
- Writing manuscripts from experiments that were conducted and presenting data at national and international conferences and to senior DFO management
- Maintaining lobsters in the holding facility at the biological station
- Maintaining the holding facility and carrying out routine maintenance
- Developing standard operating procedures to be used by conservation and protection officers in the field for specific infractions of the *Fisheries Act*
- Managing a lab and a budget
- Providing scientific support and advice on various studies being conducted by multiple divisions at the biological station, industry stakeholders and conservation officers
- Spawning Atlantic salmon, Atlantic cod, Arctic charr, Atlantic halibut and American lobster
- Hatchery production of Atlantic salmon, Atlantic cod, Arctic charr and American lobster
- Training technicians, students and interns in animal husbandry and standard operating procedures to conduct scientific studies
- Entering, extracting and analyzing data using Oracle/SQL, SPSS, R, Minitab and Excel
- Supporting other technicians in the group with experiments they are conducting
- Loading and offloading research equipment and trawl gear on/off research vessels with overhead crane

- On-call for after hours emergency response to the wet-lab facility, broodstock facility and quarantine lab

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Oct 2010 - Jan 2011 | Fisheries and Oceans Canada | St. Andrews, NB

Aquatic Science Technician (EG-02)

- Providing technical support as part of an animal care/scientific support team
- Designing and conducting various scientific studies on finfish and crustaceans
- Mixing and producing vitamins to supply various finfish programs
- Spawning Atlantic salmon, Atlantic cod, Arctic charr, Atlantic halibut and American lobster
- Hatchery production of Atlantic salmon, Atlantic cod, Arctic charr and American lobster
- Operating computer controlled systems for aquatic science labs
- General maintenance to filtration and dechlorination systems
- Collecting oceanographic data on population ecology survey using CTD and Rosette samplers
- Assisting in monitoring and collecting Scanmar and Marport data on trawl gear
- Entering data in to GSE database
- Loading and offloading research equipment and trawl gear on/off research vessels with overhead crane
- Placing temperature and depth probes on ground fish and lobster trawling gear
- Uploading data from different types of probes and equipment to spreadsheets and analyzing data
- On-call after hours for emergency response to the wet-lab, broodstock facility and quarantine lab

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Aug 2010 - Oct 2010 | Fisheries and Oceans Canada/University of New Brunswick | St. Andrews, NB

Marine Biologist

- Providing scientific and practical advice on finfish, invertebrate, plant and crustacean aquaculture management issues to senior management and industry stakeholders
- Writing reports for senior management in the DFO, industry and university research scientists
- Managing and conducting research on Integrated Multi-Trophic Aquaculture (IMTA) development
- Culturing and harvesting kelp for commercial applications and to maintain sea urchins
- Conducting research on sea lice controls by mechanical and filtration methods
- Designing, conducting and analyzing scientific studies on finfish and invertebrates
- Designing and constructing sampling/field equipment
- Deploying oceanographic equipment such as; CTD, LISST, pH sondes, chlorophyll and current meters in the field
- Assisting in the use of an acrobat used to profile the water column around aquaculture sites
- Collecting grab samples, sediment cores
- Loading and offloading equipment on/off research vessels with overhead crane
- Designing and constructing infrastructure for deployment in harsh ocean environments
- Deploying and retrieving infrastructure containing expensive scientific equipment in/from harsh environments

Nathaniel Feindel

Apr 2010 - Jul 2010 | Fisheries and Oceans Canada/Genome Atlantic | St. Andrews, NB

Lab Manager

- Managing technicians and students in DFO research lab
- Designed and conducted an Atlantic cod spermatozoa cryopreservation experiment.
- Collected and analyzed data
- Compiled and edited a manuscript for publication in Aquaculture Research. "Cryopreservation of Atlantic cod (Gadus morhua) sperm in large volume straws: applications for commercial production and gene banking". 2011, Volume 42, pages 1714-1722.

2007 - 2009 Casual Employment | Centre for Aquatic Health Science, Atlantic Veterinary College | St. Andrew/St. George, NB

Field Fish Health Technician

- Aided in data collection and sampling of cultured Atlantic salmon involved in vaccination trials

2007 - 2010 Contract Work | Fisheries and Oceans Canada | St. Andrews, NB

At-Sea Lobster Sampler

- Arranging sampling trips with lobster fishermen
- Managing the collection of lobster stock assessment data for senior biologist
- Collecting samples for various biological analysis
- Compiling data in database
- Extracting data from database and compiling report on fish activity
- Training biologists, technicians and students in at-sea sampling protocols

May 2007 - Sept 2007 | Maple Leaf Foods Canada | St. Andrews, NB

Research Facility Manager

- Managing an Atlantic salmon research facility
- Coordinating and conducting a nutrition experiment on various stages of Atlantic salmon (creating and executing numerous standard operating procedures)
- Compiling data for senior scientist
- Conducting routine fish husbandry and facility maintenance
- Designing, installing and expanding the existing tank field and facility
- Obtaining contractors and sub-contractors to expand wet lab facility

May 2006 - May 2007 | Cooke Aquaculture | Aspotogan, NS

Saltwater Technician

- Feeding fish (two farms totaling 30 cages)

Nathaniel Feindel

- Monitoring water quality parameters
- Sampling and harvesting fish
- Assisting veterinarians
- Conducting site maintenance

Summer 2005 JAVI-Tech Yarmouth, NS

At-Sea Scotia-Fundy Fisheries Observer

- Monitoring and recording all activity aboard various types of fishing vessels to ensure compliance with fish regulations (e.g., scallop, tuna, lobster, ground fish, etc.)
- Recording and sampling catches aboard fishing vessels for scientific purposes
- Conducting experimental surveys for the Department of Fisheries and Oceans Canada

Research Experience

- M.Sc. Biology (Aquaculture specialization): Triploidy induction of Atlantic cod (Gadus morhua)
  - Developing an optimized protocol for the induction and commercial scale production of triploid Atlantic cod.
  - Studying the reproductive potential and spawning capacity of triploid Atlantic cod
  - Co-supervisors: Dr. Tillmann Benfey (UNBF), Dr. Edward Trippel (DFO SABS)

- Experiments/Studies conducted during employment and education experiences: Therapeutant Exposures, Development of Chemical Exposure Test Kits, Gonadal MaturityAssessment (macro/microscopic), Fertilization Success, Sperm Motility, Sperm Morphological Assessment (Micro and macroscopic), Sperm Cryopreservation Experiment, Competitive Spawning, Triploidy Pressure Induction, Deformity Assessment, Photoperiod Manipulation, Stress Response, Tagging Studies, Observational Studies using Video Equipment, Sea Lice Filtration (mechanical and bio-filtration), Particle Size Analysis, Toxicological, Compensatory Growth, Larval Hatching Success, Growth, Larval Survival, Vaccination Trials, Hypoxia Challenges, Parasitic Infection, Viral Challenges, Sedimentation Studies, Parasitic Bath Treatment

Cultured Organisms Handled

Atlantic Cod, American Lobster, Atlantic Salmon, Blue Mussels, American Oyster, Atlantic Halibut, Kelp, Sea Lice, Atlantic Sea Scallops, Turbot/Greenland Halibut, Sea Cucumber, Arctic Charr, Sea Urchins, Atlantic Sturgeon, Rotifers, Shortnose Sturgeon, Artemia, Haddock, Sea Lice, Pollack, Zebra Fish, Rainbow Trout, Polychaetes, Sable Fish, Striped Bass, Bloodworms

Additional Assets

- Ability to manage various types of projects ranging from scientific to construction projects
- Ability to train biologists, conservation and environmental compliance officers, technicians, students, interns and the general public in fish husbandry, standard operating procedures and scientific techniques
- Capacity to design and execute various types of experiments
- Write and present clear and concise reports
- Capacity to design and construct field equipment for harsh environments
- Strong public speaker and presenter
- Comfortable liaising with industry stakeholders and government officials
- Ability to operate various types of boats and oceanographic equipment
- Knowledge of statistical analysis software packages (Oracle/SQL, Minitab, SPSS, NCSS)

Nathaniel Feindel

- Computer Software Knowledge
  -Microsoft Office Suite
  -Image ProPlus
  -Nikon NIS-Elements BR
  -Image Q
  -Image J
  -Integrated Semen Analysis Software (ISAS)
  -ArcGIS

Publications

Primary Publications:

- Lavoie, M-F., Horricks, R.A.., Feindel, N.J., Robinson, S.M.C., McKindsey, C.W. 2025. Effects of finfish farms in eastern Canada (Nova Scotia) on American lobster and rock crab movements. Aquaculture Environment Interactions. 10.3354/aei00515

- Waddy, S.L., Feindel, N.J., Hamilton-Gibson, N., Aiken, D.E., Merrit, V., and Leavitt, N. 2017. Reproductive Cycles and Mating Capacity in Male American Lobsters (*Homarus americanus*). Fisheries Research, 186:358-366.

- Trippel, E.A., Butts, I.A.E., Babin, A., Neil, S.R.E., Feindel, N.J., and Benfey, T.J. 2014. Effects of Reproduction on Growth and Survival in Atlantic Cod, Gadus morhua Assessed by Comparison to Triploids. Experimental Marine Biology and Ecology. 451: 35-43

- Shackell, N.L., B.W. Greenan, P. Pepin, D. Chabot and A. Warburton (Editors). 2013. Climate Change Impacts, Vulnerabilities and Opportunities (IVO) Analysis of the Marine Atlantic Basin. Can. Manuscr. Rep. Fish. Aquat. Sci. 3012: xvi + 366 p.
  - Chapter 6: Feindel, N.J., Cooper, L., Trippel, E.A., and Blair, T."Climate Change and Marine Aquaculture in Atlantic Canada and Quebec." pages 195-240

- Benfey, T.J., Feindel, N.J., Lin, S., Whitehead, J.A., Martin-Robichaud, D.J., Trippel, E.A., and Duffy, M. 2012. The production of single-sex and sterile populations of Atlantic cod (Gadus morhua) for aquaculture: fish health considerations with focus on Loma morhua. Aquaculture Association of Canada Bulletin 109-1.

- Feindel, N.J., Benfey, T.J., and Trippel, E.A. 2011. Gonadal Development of Triploid Atlantic Cod (Gadus morhua)". Journal of Fish Biology. Volume 76, pages 1756-1761

- Butts, I.A.E., Feindel, N.J., Neil, S.N., Kovács, É., Urbányi, B., and Trippel, E.A. 2011. Cryopreservation of Atlantic cod (Gadus morhua) sperm in large volume straws: applications for commercial production and gene banking. Aquaculture Research. Volume 42, pages 1714-1722.

- Feindel, N.J., Benfey, T.J., and Trippel, E.A. 2010. Competitive Spawning Success and Fertility of Triploid Male Atlantic Cod (Gadus morhua). Aquaculture Environment Interactions Volume 1, pages 47-55.

Conference Proceedings:

- Aquaculture Association of Canada. 2013. "Field Testing of a "Green-Technology" Sea Lice (*Lepeophtheirus salmonis*) Trap:Performance, Larval Dynamics and Trap By-Catch Around atlantic Salmon (*Salmo Salar*) Aquaculture Farms in the Bay of Fundy." Feindel, N., Robinson, S.M.C., and Ang, K.P.

- World Aquaculture Society. 2013. "Spatial Distribution Patterns of Sea Lice (*Lepeoptheirus salmonis*) Larvae around Salmon (*Salmo salar*) Aquaculture Farms in the Bay of Fundy, Canada." Robinson, S.M.C., Bartsch, A., Luitkus, M., Feindel, N., Robertson, P., Ang, P.A., Cleaves, D., and Lander, T.L.

- World Aquaculture Society. 2013. "Multi-Year Growth and Reproductive Patterns of Diploid and Triploid Atlantic Cod (*Gadus morhua*)." Trippel, E.A., Butts, I.A., Babin, A., Neil, S.R.E., Feindel, N.J., and Benfey, T.J.

- Aquaculture Association of Canada Conference Proceedings, 2009. "Spawning capacity of triploid Atlantic cod males and the early life history performance of their offspring".

- Conference Proceedings for ICES ASC, 2009. "Competitive Spawning of Male Triploid Atlantic Cod (Gadus morhua) and the Early Life History Performance of their Offspring".

Certificates/Training

- Oracle/SQL
- The Experimental Fish (Animal Care Protocol Certification)
- Government Security Clearance (Reliability Status)
- Workplace Hazardous Materials Information Systems (WHMIS) Certificate
- Passport to Safety Certificate
- Marine Emergency Duties (MED A1) Training
- Restricted Operators Certificate Maritime Commercial
- Marine First Aid
- Small Vessel Operator Proficiency Training Course (SVOP)
- Pleasure Craft Boaters License
- PADI Certified Open Water Scuba Diver
- Firearms Possession Acquisition License
- Conservation Education Certification
- Overhead Crane Training
- Advanced Wilderness First Aid Training
- Introductory ROV Training
- Introductory to Simulated Electronic Navigation
- Nova Scotia Provincial ATV Training