



NORDIC

**AQUAFARMS**

SUSTAINABLE AQUACULTURE

# Putting Belfast in the map



**NORTH ATLANTIC SEAFOOD FORUM**

**MORE THAN 100 SPEAKERS, 12 SEMINARS OVER 3 DAYS**

## IntraFish

Tuesday, Jan 30, 2018



**BREAKING NEWS**  
**Norwegian group to build massive land-based salmon farm in US**

Facility will be one of the largest of its kind, investors say.

**LATEST NEWS | MOST READ**

**Cooke calls out 'inaccurate and misleading' report on collapsed net pen**

**Technology startup says it can cut fish feed costs by up to 30%**

**Iceland, Faroes reach quota agreement on blue whiting, herring**

**Lerøy salmon farming sites hit with ISA**

**Norwegian group to build massive land-based salmon farm in US**

**Marine Harvest gets go-ahead for new salmon farm**

**SALMON SHOWHOW**  
 7 FEBRUARY 2018

**FOX BUSINESS** MARKETS POLITICS FEATURES FBN TV Q

**TORY BURCH** SHOP

## Norway firm eyes Maine for major salmon farming operation

Published January 30, 2018 | Industries | Associated Press

**BELFAST, Maine** – A Norwegian firm says it has bought land in Maine that it intends to use to build one of the world's largest land-based salmon farms.

Nordic Aquafarms says it has signed an agreement to buy 40 acres on the outskirts of Belfast. It says the initial project phase will include a \$150 million investment, employ 60 people and take about two years to complete.



**Wayfair: Official Site**

Enjoy up to 70% Off Retail Prices & Free 2 Day Shipping on Thousands of Products

Maine Gov. Paul LePage says he's supporting the project, which he says will grow the economy and seafood industry in the state's mid-coast region.

**The Washington Times** HOME NEWS OPINION SPORTS MARKET SUBSCRIBE

Politics Trump orders ban on 'bump stock'...

Politics Trump's base warns to Ted Cruz after...

Politics Pelosi ignores net worth inquiry after lec...

Politics Obama, Democrats set s on flipping st...

**BILL MURRAY, JAN VOGLER AND FRIENDS**

*New Worlds*

**APRIL 23 MERRILL AUDITORIUM ON SALE NOW**

HOME \ NEWS \ BUSINESS & ECONOMY

## Backers of plan to build giant salmon farm to meet public



By Associated Press - Wednesday, February 21

**BELFAST, Maine (AP)** - City officials say they will meet Wednesday at 6 p.m. at the Hutcheson Center to discuss a plan to build one of the world's largest land-based salmon farms.

Nordic Aquafarms, of Fredrikstad, Norway, says it has bought 40 acres on the outskirts of Belfast. The firm says it plans to build a \$150 million facility that will employ 60 people and take about two years to complete.

Belfast officials say the meeting is expected to be held at the Hutcheson Center.

## Tar laksen på land i USA

Nordic Aquafarms, som skal bygge en av verdens største landbaserte oppdrettsanlegg for lakse i USA.

Harald Bergtho Kristiansund



Administrerende direktør Erik Stein (29. januar) og administrerende direktør Bjørn Eide (29. januar) ved oppdrettsanlegget i USA. Bildet ble tatt på anleggets bygging og er utarbeidet av Bergtho Kristiansund. Foto: Kjetil Lunde

**Nordic Aquafarms**

Administrerende direktør Erik Stein (29. januar) og administrerende direktør Bjørn Eide (29. januar) ved oppdrettsanlegget i USA. Bildet ble tatt på anleggets bygging og er utarbeidet av Bergtho Kristiansund. Foto: Kjetil Lunde

**"Eilo" - Kristiansund**

PROJEKTSKISSE - LAGEPLAN

- Industriellettsanlegg med ca. 100 000 m<sup>2</sup> (Lakselv og Kjøttbeholdning)
- Tomteareal på ca. 20 000 m<sup>2</sup> (Lakselv og Kjøttbeholdning)
- Bygging av ca. 100 000 m<sup>2</sup>
- Leasing av land
- Lakselv og Kjøttbeholdning anlegg (Lakselv og Kjøttbeholdning)
- Investering på ca. 100 000 000,- kr

www.norion.no

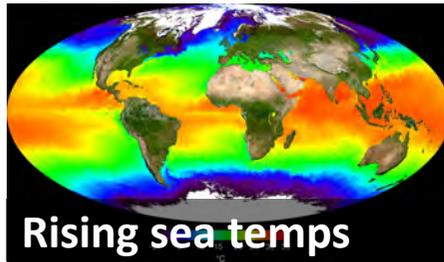
**NORION** NORWEGIAN

**FEBRUARY 21-24, 2018**

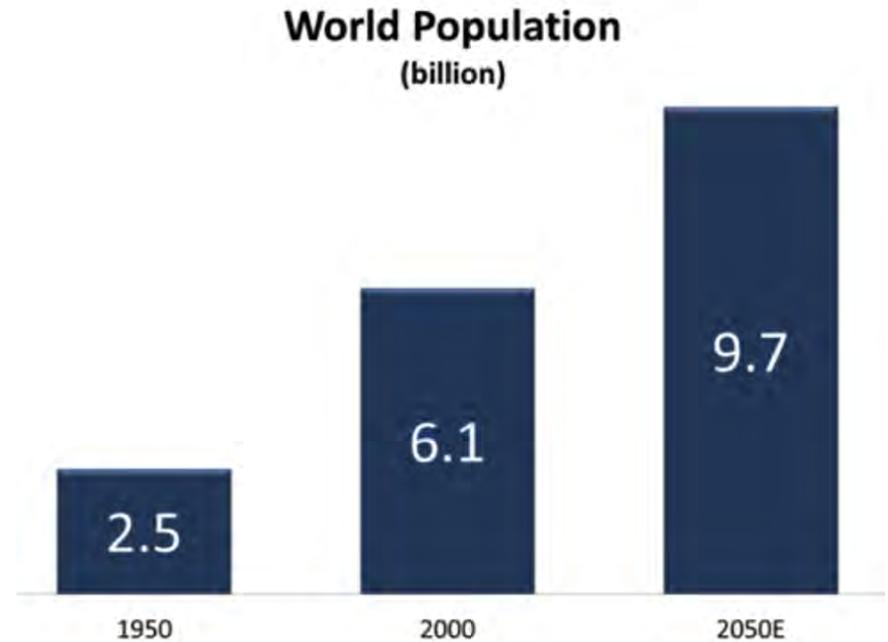
**THE WORLD'S LARGEST POLITICAL ACTION CONFERENCE**

**REGISTER NOW**

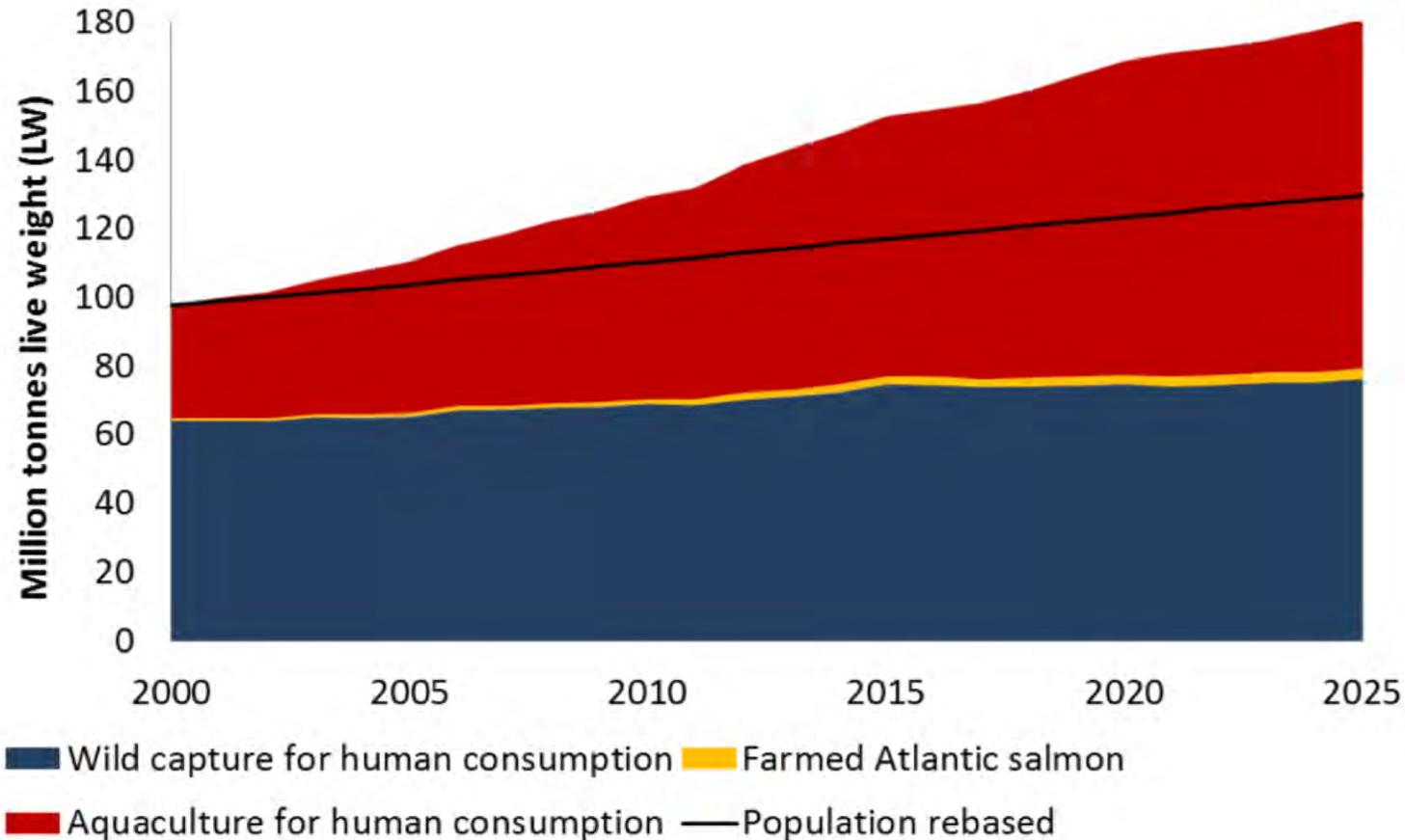
We face a global challenge that needs to be solved



**While this is going on we need to feed a rapidly growing world population**



# Global sourcing of fish shows a telling picture - supply growth must come from aquaculture



Source: FOA / World Bank

We all want to be enjoying this for generations to come



End-game for providing safe,  
high quality and sustainable seafood



- To produce **more with less**
- To **protect our food resources** from environmental challenges
- To **recycle and utilize all waste resources**
- **Production of fresh product close to the customer**
- To ensure **fully transparent and traceable natural food products**

Today, the US imports most of its seafood. Belfast can play a major international role as a beacon in sustainable practices.

# What is land-based production?



Our Danish facility

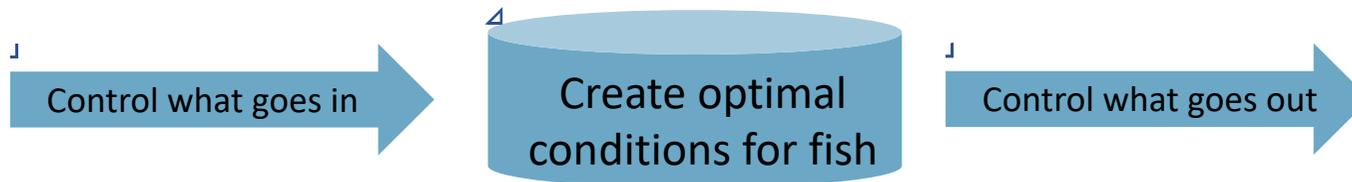
# Nordic Aquafarms land-based production



- It starts with fish welfare and biology
- A water treatment plant tailored for fish
- Less than 1% of water is exchanged every hour
- We remove and recycle majority of nutrients
- Close to zero risk of fish escape
- 12-15 cents energy use per pound fish
- No parasites – no medications for sea lice
- It all happens indoors. No smell – no noise



Water treatment technologies maintain optimal conditions for the fish



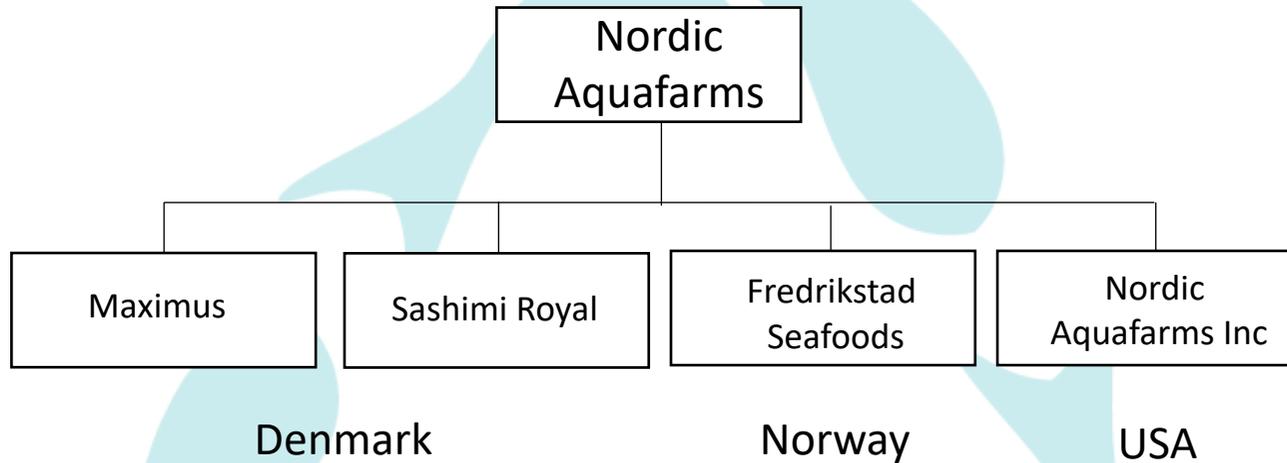
# Facility in Norway





# About Nordic Aquafarms

- one of top-two international investors in land-based



- Largest facilities in Europe to date in various stages
- 28 employees in Nordic structure (to be 40 in next year)
- 70-80 years combined production experience
- 50 years of combined engineering experience
- 10 million USD in various sustainability grants
- 40 millions USD in shareholder capital so far (and more capacity)

Natural products, sustainably farmed



- No GMO
- Sustainable sourcing of feed ingredients
- Focus on fish welfare
- Low mortalities
- Moving beyond highest environmental standards

# Seafood Watch®



## Choices for Healthy Oceans

<b>BEST CHOICE</b>  ▼	Type <b>Salmon, Atlantic</b> Sake, Salmon	Method <b>Indoor recirculating tank</b>	Location <b>Worldwide</b>
---	---	--	------------------------------

# Nutrients and waste resources are captured and processed indoors



- **We remove over 90 % of most nutrients and biological matter** in our discharge
- Biological matter is filtered and collected as a high-energy sludge with numerous applications
- Example: total suspended solids are reduced by 95 % in discharge
- Other nutrients in the water are reduced by bacteria in special bio-filters
- Phosphorous is greatly reduced by integrated, indoor technologies
- Water is treated for bacteria to prevent risk of disease spread
- Treated discharge water is pumped and dispersed far off the shoreline in submerged pipes
- **We will document a low-impact profile for local eco-systems**

## Use of water



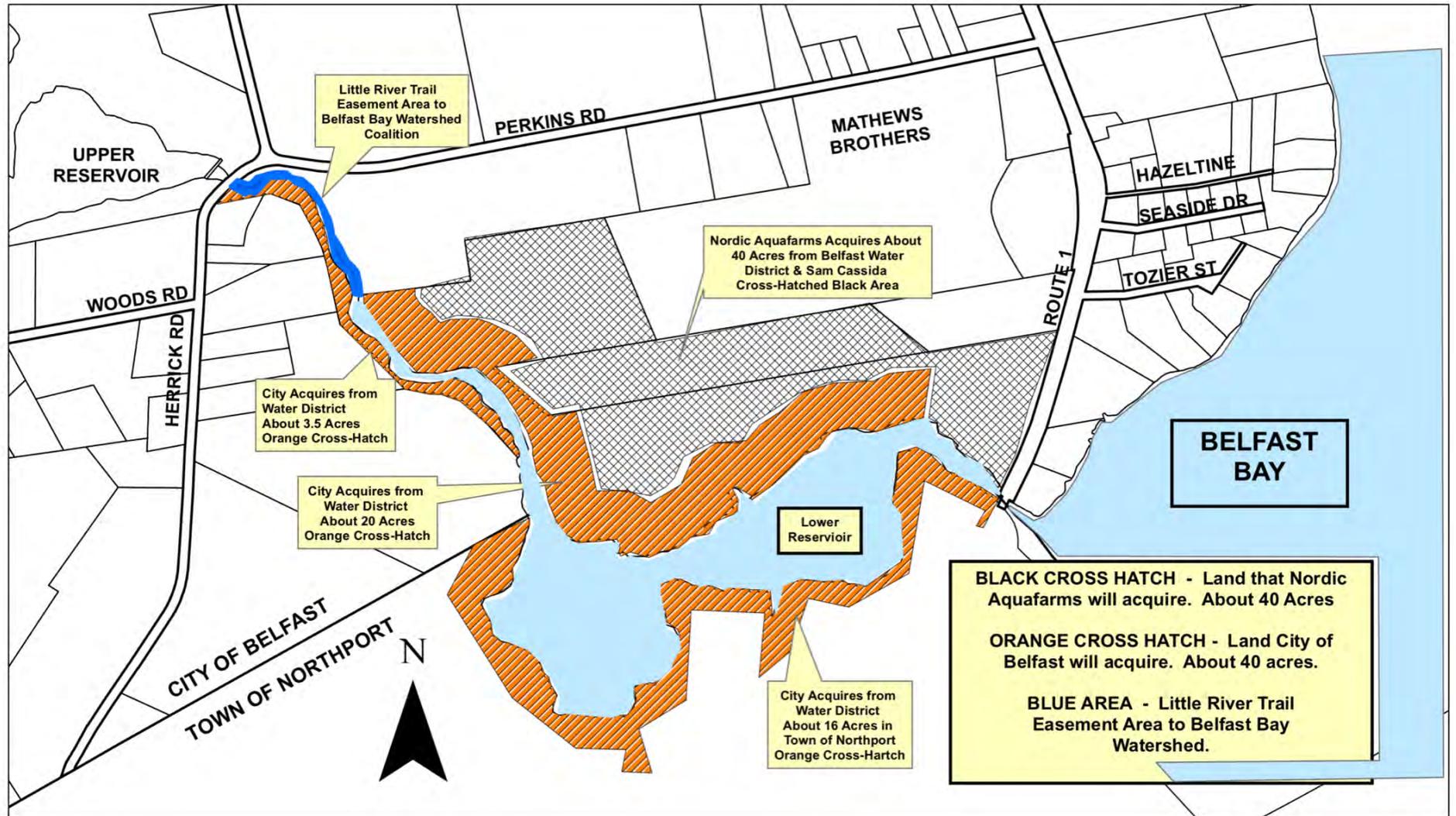
- Recycling aquaculture systems **exchange less than 1 % of the water in the tanks every hour**
- We use a **combination of seawater and freshwater** to create optimal conditions
- Our approach is to first **map scope of sustainable water resources**
- **Multiple sources of freshwater to be assess: BWD, dams and wells**
- Based on the results, we will then assess if we can make this work for the farm
- Various technical solutions can be applied to control how much water we will need
- **A key condition for moving forward in Belfast is to verify sustainable water sources**

## Our role and commitment to the Belfast community



- We are **committed to transparency** – also a customer promise
- We want to **be in dialogue** with the Belfast community as local knowledge is important
- We will on a regular basis provide **local updates** on progress and activity
- We will be in Belfast on a monthly basis through 2018
- We require 7-8 months now to **clarify qualities of the site and permits**
- **We will put Belfast on the international map of innovation and sustainability**

# The Befast site





## How did we end up in Belfast?

- US identified based on seafood deficit – we only produce 10% of the salmon we consume.
- Northeast and mid-Atlantic regions have significant populations within driving distance of the coastline, which is preferable for sale of fresh product.
- Ransom Consulting, Inc. engaged to find location between DC and Canada for aquaculture site with likely access to fresh and seawater.
- Six month study involving mapping and review of scientific data to select Maine, and ultimately Belfast as a good candidate for site development.

## More about Belfast



- Belfast Bay is relatively clean compared to many portions of the state
- Sea water in the bay is at 20 degrees C or cooler for most of the year
- Site geology is promising for groundwater development
- Site has multiple potential sources of fresh water, including access to water sold by Belfast Water District
- Transportation to/from the site by truck is relatively easy, even in tourist season
- City of Belfast is a great community with a vibrant downtown, where future employees will want to live and work.

## Due diligence



- Check on site history and potential site and area land uses that could be detrimental to soil and/or groundwater quality (ASTM Phase I ESA)
- Detailed evaluation of site hydrogeology
  - How much fresh water can sustainably be pumped from water supply wells on the site?
  - Is that well yield sustainable over time?
  - Can a brackish water well with significant well yield be installed?
  - What is the quality of the fresh and brackish water?
- Detailed evaluation of Belfast Bay
- Detailed evaluation of lower reservoir dam

## What is next?



- Environmental Permitting – local, state, and federal permits required.
  - Evaluation of existing resources (water, plants, animals, archeology, etc.)
  - Preliminary Design of Proposed Facility
  - Pre-Application Meetings with applicable regulatory agencies
  - Description of what is proposed, including scaled drawings
  - Description of potential impacts and mitigation measures for the project
    - May involve wetland delineation, storm water analysis, erosion and storm water control planning, noise evaluation, etc.
  - Public Participation

## Timeline



**2018** – final due diligence, permitting and early engineering

**2019** – further engineering, construction start, and first hiring

**2020** – First production, further construction and hiring

**2021** – First sales