



Blue Revolution Fund

PORTFOLIO IMPACT REPORT 2024





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LEADERSHIP PERSPECTIVE

As Chair of the Impact Committee, I am proud to share the Blue Revolution Fund's 2024 Portfolio Impact Report.

The Food and Agriculture Organization reported in 2024 that for the first time, production of farmed aquatic animals has exceeded production of wild capture fisheries by weight. Global aquaculture production is projected to continue its rapid growth, making this a crucial time to lead the financial community toward investment in aquaculture that can benefit natural and social ecosystems.

The joint expertise between The Nature Conservancy and Hatch Blue has allowed us to develop an exciting and impactful portfolio to-date, and we are eager to continue adding innovative companies that will be transformative in the aquaculture sector, leading the way toward increased environmental and social sustainability. In this report, we reflect on BRF's first full year of portfolio impact management and measurement, and highlight the contributions that BRF portfolio companies are already making toward reaching the impact targets.

2025 will include the publication of aquaculture-specific guidance and tools developed by the BRF impact team. We are excited to share these externally as a continuation of our support for catalyzing investment in sustainable aquaculture.

Thank you for your continued support,

Sincerely,

TAYLOR VOORHEES
CHAIR, BRF IMPACT COMMITTEE

All photos by Lisa Tucker/TNC, unless otherwise noted; **Above:** Taylor Voorhees © TNC

BLUE REVOLUTION FUND ORIGIN

The Growing Demand for Sustainable Seafood

Seafood plays a significant role in meeting the global protein demand. As detailed on the [Our World in Data](#) website, it accounts for about 15% of the average daily protein intake per person globally. This includes both wild-caught and farmed fish, with aquaculture becoming increasingly important as wild fish stocks are strained from overfishing.

The seafood industry can considerably contribute to a 'Blue Economy' with the development of sustainable and regenerative agri-food systems, however according to the United Nations Food and Agriculture Organization (FAO) report "[The State of World Fisheries and Aquaculture 2024](#)", 50% of fish stocks are being fished at their maximum sustainable level, and 38% are overfished. This means that nearly 90% of reported global fish stocks are at or beyond their limit, making it impossible for wild fisheries to feed a growing global population.

For the past several decades, the growth of aquaculture production has helped increase the supply of seafood to meet higher demand. As one of the world's fastest growing methods of food production, aquaculture now puts more seafood on our plates than wild fisheries; the same 2024 FAO report notes that the production of aquatic animals exceeded wild capture for the first time in 2022 (by weight).

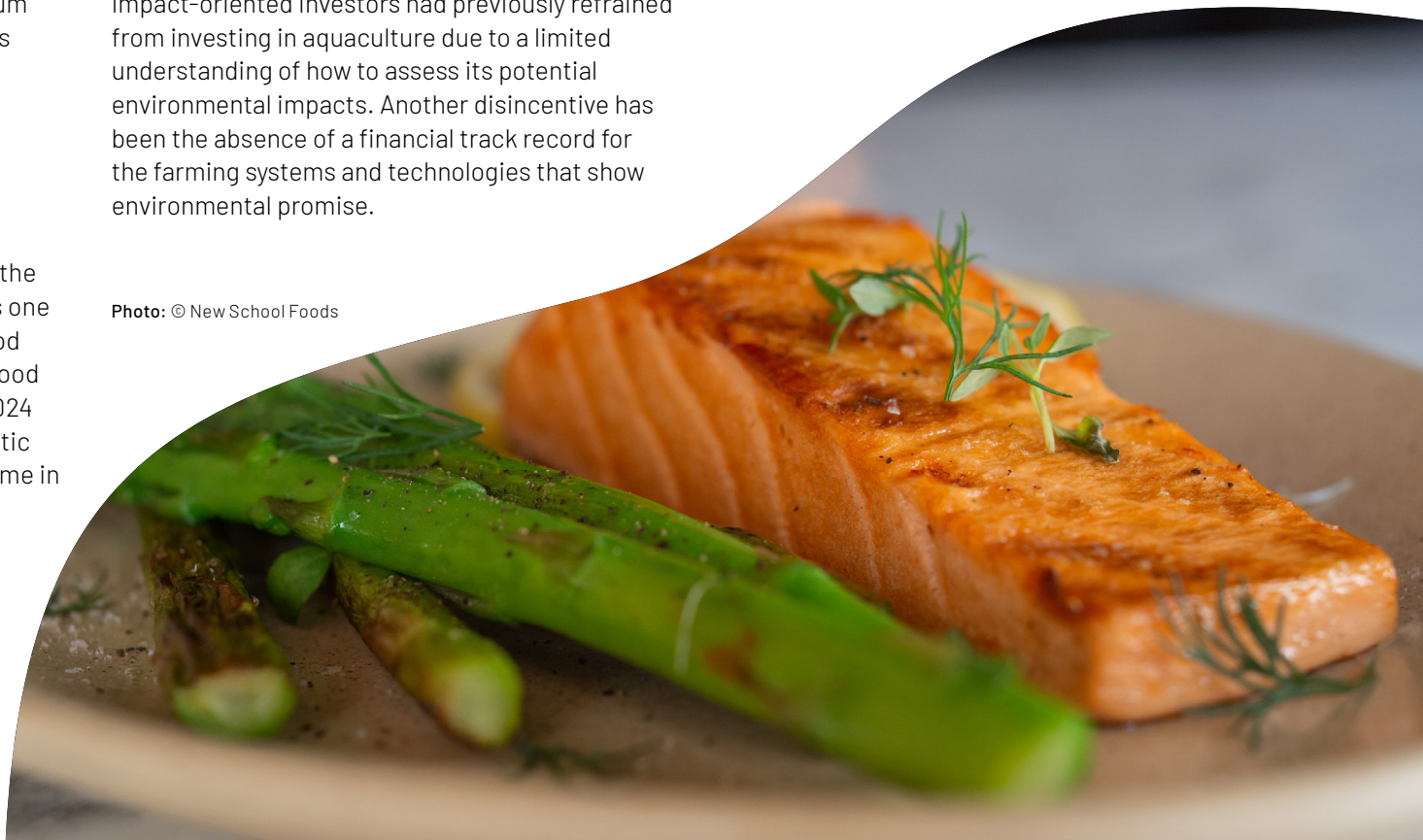
Aquaculture seafood production is projected to continue to grow by 20% between 2024 and 2033, according to the joint

Organisation for Economic Co-operation and Development (OECD) and FAO "[Agricultural Outlook 2024-2033](#)" report. As we rely more and more on aquaculture to provide food for the growing global population, we must ensure it is carried out such that it can benefit the environments and socio-economic systems in which it occurs, while avoiding, minimizing, and mitigating any negative effects.

Research conducted by The Nature Conservancy (TNC) and Encourage Capital, published in 2019 in "[Towards a Blue Revolution](#)," confirmed the unmet potential in the aquaculture sector. Many impact-oriented investors had previously refrained from investing in aquaculture due to a limited understanding of how to assess its potential environmental impacts. Another disincentive has been the absence of a financial track record for the farming systems and technologies that show environmental promise.

Photo: © New School Foods

After screening and evaluating potential partners that align with its objectives, TNC chose to collaborate with Hatch Blue to develop a blueprint for an impact investment fund that directs private capital toward sustainable aquaculture. The Blue Revolution Fund (BRF) is a closed-ended private equity investment fund that aims to support aquatic ecosystems, food security, coastal communities, and conservation efforts by investing in sustainable aquaculture farms and technology-driven businesses.



IMPACT MANAGEMENT

Blue Revolution Fund Impact Thesis

The vision of the BRF is to support and catalyze a global aquaculture industry that actively improves the health of the ocean, addresses the challenges of climate change, and benefits people. This guides the Fund to expand and scale aquaculture farms and technologies that actively improve ocean health and address climate change, thus reducing impacts of current aquaculture farms on our oceans and providing enhanced benefits to communities.¹ This vision is shared by the investment community, and **Hatch Blue completed the final close of BRF in October 2024 at EUR 92 million.**


The BRF Portfolio Impact Targets were designed by TNC to ensure ambitious yet realistic, measurable, and quantifiable outcomes. The BRF has an opportunity to set a global precedent for responsible and effective investment in aquaculture. The BRF uses TNC-designed, science-based tools to conduct aquaculture sector-specific risk and benefit analysis and portfolio impact measurement, bridging a gap that has previously deterred impact investors. Hatch Blue’s ability to apply these methods at scale positions BRF to make sustainable aquaculture more competitive, unlock greater capital flows, and accelerate growth.

TNC provides science-based guidance to BRF’s portfolio companies and has designed and tested approaches to evaluate impact opportunities rigorously. As the Impact Manager, TNC ensures the use of best practices for measuring the impact contributions of the BRF portfolio companies, and monitors progress toward the six portfolio impact metrics.

BRF Impact Objectives	BRF Impact Metrics
Improve the environmental performance of existing aquaculture farms.	Area (ha) affected by aquaculture with improved environmental performance
Regenerate our oceans by creating sustainable aquaculture farms that remediate water pollution and rebuild fish habitat.	New aquaculture footprint (ha) that provides habitat for biodiversity
	Amount of nitrogen (kg) removed from coastal waterways
Provide a source of protein with fewer GHG emissions than other forms of animal protein production.	Avoided greenhouse gas emissions (mt CO ₂ equivalents)
Provide a sustainable source of seafood as an alternative to overexploited wild fish stocks.	Portions of sustainable seafood added to the market (150 g. portion size)
Empower coastal communities by providing a source of equitable jobs that are also nature-positive.	Jobs created (#)

1 There can be no assurance that the Fund will meet its investment and impact objectives.





Investment Category	Example Portfolio Company Product/Service
Next-generation aquaculture systems	Land-based recirculating fish, bivalve, and/or seaweed production
	Innovative offshore fish production that minimizes waste
Regenerative aquaculture	Seaweed production, processing, and markets to provide social and/or ecosystem services
	Bivalve production to provide social and/or ecosystem services
Enabling technologies (to reduce the impact of conventional aquaculture)	Biomass estimators to improve efficiency of fish production in aquaculture systems
	Oxygenation to improve water quality and fish health in aquaculture systems
	Transparency/traceability software to improve sustainability throughout supply chains
Aquaculture nutrition, health, and genetics	Vaccines to improve animal health and welfare
	Alternative antimicrobials to ensure animal health and welfare while avoiding challenges associated with antibiotic use
Efficient ingredients and portions	Lower-impact aquafeed ingredients that avoid or minimize land conversion, GHG emissions, freshwater use
	Plant-based seafood that provides nutrition using lower-impact ingredients
	Efficient processing (e.g., use of processing side streams for aquaculture feed ingredients, valorisation of aquaculture processing waste)

The Blue Revolution Fund's Growing Investment Portfolio

The BRF investment portfolio grew by three companies in 2024, to a total of six. It is expected to grow to a total of between 15 to 20 companies by the end of the investment period.

Company	Description	Investment Category	BRF Impact Metric Contributions
New School Foods	A Canadian food technology company focused on developing new plant-based seafood alternatives. New School Food's unique technology delivers an animal-like texture and a familiar cooking experience without many of the impacts associated with conventional animal protein production.	Efficient ingredients and portions	Avoided greenhouse gas emissions
			Portions of sustainable seafood added to the market
DeNova	A Canadian single-cell protein producer. DeNova aims to replace soy protein and fishmeal in aqua feeds, reducing GHG emissions and pressure on wild ecosystems.	Efficient ingredients and portions	Avoided greenhouse gas emissions
Wholechain	A U.S.-based company with a Software as a Service business model offering blockchain-based traceability technology for transparency throughout supply chains. Wholechain's solution caters to multiple protein and non-protein products, offering comprehensive traceability across various commodity sectors.	Enabling technologies	n/a ²
CageEye	A Norwegian company focused on improving feeding processes in aquaculture. CageEye uses echo-sounding devices to monitor fish behavior in real-time, allowing for improved efficiency in the use of feed, and subsequently feed ingredients (e.g., soy, fishmeal, etc.). This results in lower habitat and water quality impacts.	Enabling technologies	Area affected by aquaculture with improved environmental performance
			Avoided greenhouse gas emissions
ChucoaTec	An Irish-Chilean company producing nanobubble oxygenation technology for salmon and shrimp farming. ChucoaTec's innovative technology is set to revolutionize oxygenation practices in aquaculture, enhancing sustainability and efficiency by improving water quality and benthic ecosystems in fish farming areas.	Enabling technologies	Area affected by aquaculture with improved performance
			Avoided greenhouse gas emissions
Peptobiotics	A Singapore-based biotechnology company developing innovative recombinant antimicrobial peptides to combat harmful bacteria, improve the health and survival rate of aquaculture shrimp, and decrease farmers' reliance on antibiotics.	Aquaculture health and genetics	Area affected by aquaculture with improved performance
			Avoided greenhouse gas emissions

² The Impact Committee notes that while this deal does not directly contribute to the BRF metrics initially, it is likely that the additionality of the company's product, and subsequent contributions to BRF portfolio metrics, can be quantified through the collection of appropriate data by the BRF Impact Manager and Wholechain.

While BRF is still in the early stages of its maturity, current portfolio companies are already beginning to contribute to the impact targets and will continue to do so as the portfolio grows.

BRF Impact Metrics	Target	Portfolio Progress*
Area affected by aquaculture with improved environmental performance	500,000 ha	0.21%
New aquaculture footprint that provides habitat for biodiversity	640 ha	0.00%
Amount of nitrogen removed from coastal waterways	2.7 million kg	0.00%
Avoided greenhouse gas emissions	1.2 million mt CO ₂ equivalents	10.78%
Portions of sustainable seafood added to the market	500 million portions	0.00%
Jobs created	3,200 jobs	0.00%

*To date

BRF Impact Team

The BRF governance structure integrates Hatch Blue and TNC teams with complementary impact and investment management roles. Hatch Blue is the Fund's General Partner (GP), with responsibility for fund operations, investment execution, and portfolio management. TNC is a Special Limited Partner, as well as the Impact Manager with a focus on the BRF's impact outcomes.

As Impact Manager, TNC conducts diligence related to the companies' environmental and social performance and leads impact management of the portfolio. The Fund's Impact Committee consists of three members with TNC holding the Chair seat and constituting a majority of voting members. It reviews the findings of the Impact Manager's assessments and provides a recommendation to the Investment Committee after considering potential environmental and social outcomes of a company's operations along with the projected contributions to BRF's impact targets. The Investment Committee evaluates these recommendations in addition to the outcomes of their financial diligence assessment when building the portfolio.

The impact and investment diligence processes usually occur concurrently, enhancing both the Impact Committee and the Investment Committee's understanding of a company's operations. To incentivize the achievement of impact outcomes by the GP, 50% of carried interest is withheld until the impact targets are met, as reported by the Impact Manager.

The Impact Manager works directly with portfolio companies providing guidance and measuring progress toward impact goals for each portfolio company as well as at the portfolio scale.

TAYLOR VOORHEES

Chair, BRF Impact Committee; Global Aquaculture Program Director, TNC



EKATERINA ALEXANDROVA

BRF Impact Committee; Program Director for Impact Management, NatureVest, TNC



GEORG BAUNACH

BRF Impact Committee; Managing Partner & Co-founder, Hatch Blue



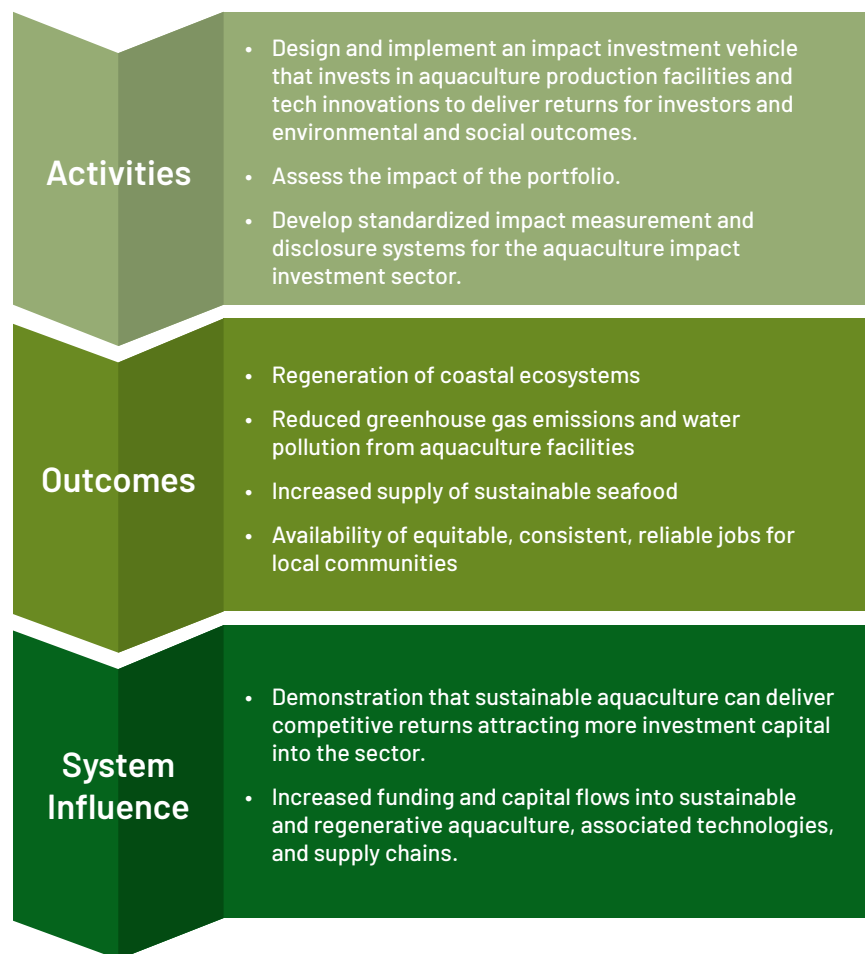
LISA TUCKER

BRF Impact Manager; Conservation Manager for Aquaculture Investments, TNC



BRF Approach to Sustainable Aquaculture

THEORY OF CHANGE



The Impact Manager and Impact Committee assess each investment to ensure that negative impacts are prevented. All companies must meet the following essential requirements, as applicable³, and attempt to create a net positive improvement to these topics. Additionally, each BRF investment must contribute to one or more of BRF's impact metrics.

Topic	Essential Requirements for Each BRF Investment
Company capacity	Develop and implement adequate resources, policies, expertise, and strategy to operate in an environmentally and socially sustainable way.
Company ethics	Avoid unethical practices within the company and supply chain as well as in interactions with affected communities and demographics.
Source of fry/raw materials	Avoid or minimize reliance on wild fisheries or unsustainable raw material production.
Escapes/genetic interactions	Avoid, minimize, and mitigate escape events and genetic interactions between farmed animals and wild populations.
Macrofaunal interactions	Avoid, minimize, and mitigate negative interactions with wildlife populations , especially at-risk populations.
Feed use	Maximize feed efficiency and resource use on farms.
Habitat	Avoid, minimize, and mitigate any impacts to habitat surrounding farms or affected by supply chain operations.
Water column	Avoid, minimize, and mitigate any negative water quality impacts .
Disease/chemical use/biosecurity	Maintain animal health and welfare to avoid, minimize, and mitigate impacts from disease .
Freshwater use	Ensure efficient and sustainable use of freshwater resources .
Land use	Avoid direct land use change for aquaculture operations and minimize it in the supply chain.
Energy use/GHG emissions	Minimize greenhouse gas emissions by improving efficiency and transitioning to clean energy.

³ Applicability is based on whether that impact area is relevant to the company's operations (e.g., aquaculture production, supporting technology).

IMPACT HIGHLIGHTS 2024

Spotlight on New School Foods

The first company to enter the BRF portfolio was New School Foods, a Canadian company producing plant-based whole cut seafood alternatives, and planning to expand into additional meat alternatives in the future. In the plant-based protein sector, the use of extrusion and mix-and-form techniques is commonplace, often resulting in a sensory experience that is different from consuming an animal product. To recreate the experience of preparing and eating seafood, New School Foods developed a patented technology to match the texture, taste, and cooking properties of a filet of salmon. New School Foods Founder and CEO Chris Bryson has a successful history as an entrepreneur identifying opportunities and strategies in the alternative and plant-based protein sector.

Founded in 2021, New School Foods spent its first years focused on research and development of its plant-based salmon and developing a market strategy. In October 2024 the company had a successful commercial launch in selected restaurants, beginning its contributions to the BRF impact metrics for avoided emissions and portions of sustainable seafood.

Using plant-based ingredients, New School Foods avoids the direct environmental impacts that can be associated with the conventional salmon aquaculture sector. Production of New School Foods' plant-based salmon is a 65% reduction in emissions compared to conventional farmed salmon practices on a per kilogram of edible product basis. This product avoids impacts to wild fish stocks, as well as impacts to the water column and benthic ecosystems from chemical exposure, and excess nitrogen from feces and uneaten feed.

New School Foods is projected to produce about 419 tonnes of plant-based salmon cumulatively through 2030, resulting in about 3 million portions of sustainable seafood, and 2,325 tonnes of avoided emissions.



Photo: © New School Foods

BRF: Influencing Impact Investment in Aquaculture

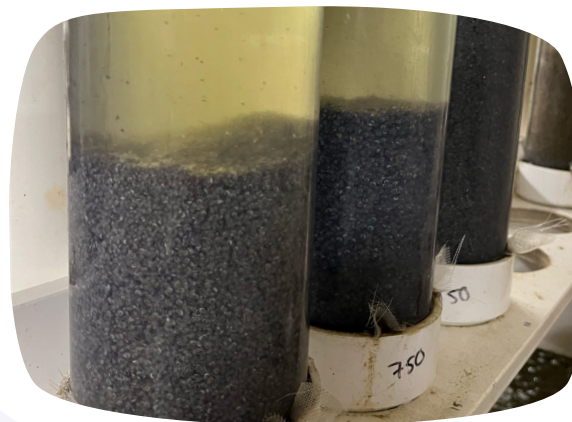
Beyond the impacts created by the BRF portfolio companies, TNC aims to demonstrate how sustainable and regenerative aquaculture can deliver competitive returns as well as create positive environmental and socio-economic impacts, embedding these principles into systems that are used by the broader impact finance community. Highlights of these activities from 2024 include:

UK Green Taxonomy: Technical Screening Criteria for Sustainable Aquaculture

- To support investments into activities that are aligned with the sustainability goals of the UK Government Green Financing Framework, the Green Finance Institute (GFI) provides the Secretariat for the Land, Nature and Adapted Systems (LNAS) Advisory Group. LNAS offers independent guidance to the Department of Environment, Food and Rural Affairs (Defra) on the design of technical screening criteria for investments, including those in the aquaculture sector.
- As a member of the LNAS Aquaculture Working Group, BRF Impact Manager Lisa Tucker supported the development of criteria to guide investors toward sustainable aquaculture production. The final Technical Screening Criteria were published in October 2024, and are strongly influenced by the BRF's Impact Diligence Frameworks for seaweed and bivalve aquaculture, offshore aquaculture, and land-based aquaculture.

GIIN IRIS+ Marine Resource Conservation and Management

- The Global Impact Investing Network (GIIN) maintains the [IRIS+ system](#) for measuring social, environmental, and financial performance of an investment. The IRIS+ system includes sets of standards with metrics to describe the performance of investments in various sectors.
- The process of developing indicators, metrics, guidance, overviews, and evidence for Marine Resources Conservation and Management (MRCM) is underway, with BRF Impact Manager Lisa Tucker participating in the MRCM Working Group. Where applicable, BRF tools and impact findings have been incorporated into the deliverables for the new IRIS+ MRCM impact measurement. At the time of writing, a draft of the MRCM working paper is open for public comment, and the finalized version will be available for use on the IRIS+ website in July 2025.



LOOKING FORWARD

Systems Approach to Transformative Aquaculture Investment

As the BRF portfolio grows, TNC and Hatch Blue will make impact management tools and guidance available to external investors. This will further support and enable additional investment into sustainable and regenerative aquaculture, associated technologies, supply chains, and markets. BRF aims to improve understanding and confidence in the sector with the goal of directing more capital into sustainable aquaculture.

In 2025 BRF will release pre-investment impact due diligence guidance for investments in:

- Seaweed and bivalve aquaculture
- Offshore aquaculture
- Land-based aquaculture
- Aquaculture-supporting technologies

We are excited about the future and eager to share BRF's ongoing impact and achievements. Stay tuned for more updates as we continue to make significant strides and drive positive change across the aquaculture sector. Thank you for your continued support and interest in our journey.



Notice to Recipients

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