

# **Autonomous Fish Feeding Drone Market Forecasts to 2032 – Global Analysis By Product Type (Fixed-Position Feeding Drones, Mobile/Navigation-Based Feeding Drones, Underwater Autonomous Feeding Drones and Hybrid Feeding Systems), Component (Hardware, Software, Feeding Mechanism and Other Components), Feed Dispensing, Payload Capacity, Technology, Application and By Geography**

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## **Abstracts**

According to Statistics MRC, the Global Autonomous Fish Feeding Drone Market is accounted for \$479.4 million in 2025 and is expected to reach \$1113.9 million by 2032 growing at a CAGR of 12.8% during the forecast period. Autonomous fish feeding drone is a self-operating aerial or aquatic device designed to distribute feed to fish in aquaculture environments. Equipped with sensors, GPS, and AI-based control systems, it monitors fish behavior and environmental conditions to optimize feeding schedules and reduce waste. These drones enhance operational efficiency, support sustainable farming practices, and minimize labor dependency by automating routine feeding tasks. They are increasingly used in commercial fish farms, research institutions, and precision aquaculture systems for scalable and intelligent feed management.

According to Drones journal by Ubina and Cheng (2022) the integration of autonomous drones with cloud-based aquaculture systems has demonstrated a 30% improvement in feed efficiency and a 25% reduction in labor costs.

Market Dynamics:

### Driver:

#### Rapid expansion of the global aquaculture industry

As consumer demand for high-quality seafood continues to rise, the aquaculture sector is under immense pressure to enhance its production capabilities and operational efficiency. Autonomous drones provide a compelling solution by automating the labor-intensive process of feeding, which is a critical aspect of fish farming. These systems, powered by advanced software and sensors, ensure that feed is distributed with precision, minimizing waste and maximizing the health and growth of fish.

### Restraint:

#### Limited battery life and endurance

Current battery technology often restricts the operational time and flight range of these drones, making them less suitable for large-scale, offshore, or remote aquaculture operations that require continuous monitoring and feeding over vast areas. The need for frequent recharging or battery swaps can disrupt a drone's workflow and require a dedicated support team, negating some of the cost-saving benefits of automation. This limitation presents a major hurdle for companies seeking to implement fully autonomous systems in expansive marine environments where long flight durations are essential for effective management.

### Opportunity:

#### Development of hybrid and solar-powered drones

Hybrid and solar-powered drones are gaining traction for their extended operational capacity and reduced energy dependency. These models can operate continuously with minimal downtime, making them ideal for remote aquaculture sites. Integration of renewable energy sources also aligns with global sustainability goals, attracting investment from eco-conscious stakeholders and government-backed initiatives promoting green aquaculture technologies. The focus on sustainable energy sources also aligns with the aquaculture industry's broader goal of reducing its environmental footprint.

### Threat:

## Possible restrictions or bans on drone flights

Regulations governing the use of unmanned aerial vehicles (UAVs) can be highly fragmented and vary significantly between countries and even within different regions of the same country. These regulations may impose limitations on a drone's flight path, altitude, and proximity to sensitive areas, which could severely hinder its operational effectiveness, particularly for offshore and expansive aquaculture facilities. The evolving nature of these legal frameworks, driven by concerns over public safety, privacy, and airspace security, creates a challenging and unpredictable environment for drone manufacturers and operators.

## Covid-19 Impact:

The COVID-19 pandemic had a dual impact on the autonomous fish feeding drone market. On one hand, supply chain disruptions and manufacturing delays slowed product availability and deployment. On the other, the crisis accelerated the adoption of automation in aquaculture as farms sought to minimize human contact and maintain operations amid labor shortages. Remote monitoring and feeding capabilities became essential, driving demand for drones equipped with smart sensors and cloud-based control systems.

The fixed-position feeding drones segment is expected to be the largest during the forecast period

The fixed-position feeding drones segment is expected to account for the largest market share during the forecast period as this model offered a reliable, contained, and low-maintenance solution for automating feeding, which was highly appealing during a period of economic uncertainty and social distancing protocols. The segment's market share is expected to remain dominant as it provides a robust and dependable solution for farms seeking to minimize human-to-human contact and ensure consistent, uninterrupted operations.

The pellet feed dispensing segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the pellet feed dispensing segment is predicted to witness the highest growth rate driven by the widespread use of pelletized feed in modern aquaculture. As the industry increasingly focuses on optimizing feed conversion ratios and minimizing waste, pelletized feed has become the preferred choice for many fish

species. Autonomous drones equipped with precision pellet dispensing systems can deliver the exact amount of feed required at specific times, preventing overfeeding and the associated environmental and financial costs.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share attributed to its robust technological infrastructure and early adoption of precision aquaculture. The region's well-established research and development ecosystem, coupled with significant investments from leading technology firms and venture capitalists, has fostered a climate of innovation in drone and robotics technology. Additionally, North American aquaculture farms are increasingly embracing automation to address labor shortages and improve operational efficiency solidifying North America's position as the leading market for autonomous fish feeding drones.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR fueled by the region's immense and rapidly growing aquaculture sector. Countries like China, India, and Southeast Asian nations are home to a large number of fish farms, many of which are transitioning from traditional, labor-intensive methods to more modern, automated systems. Government initiatives and investments in smart aquaculture technologies, along with the increasing availability of affordable drone solutions, are creating a fertile ground for market expansion.

Key players in the market

Some of the key players in Autonomous Fish Feeding Drone Market include Xelect Ltd, Urban Drones, Umitron, SwellPro, SubCtech, Seaber, PowerVision Robot, OpenROV, InnovaSea Systems, Hydromea, Eruvaka Technologies, Deep Trekker, Blueye Robotics, Blue Ocean Gear, AutoAqua, Aquabyte, Aquaai, and Ace Aquatec.

Key Developments:

In June 2025, Hydromea announced a strategic partnership with Blue Logic to accelerate subsea WLAN deployments, enabling wireless, real-time subsea communications for offshore energy, defense, and research.

In June 2025, Ace Aquatec announced a strategic partnership with JBT Marel and later

news in June 2025 about expanded collaborations and product launches. The partnership named Ace as a preferred supplier for fish-stunning solutions; items covered North American product introductions responding to welfare regulations.

In May 2025, InnovaSea announced enhancements to its BiomassPro platform, adding a European sea bass algorithm to improve biomass estimation and farming decisions. The release positions the update as a targeted software improvement to help farmers optimize feed and harvest planning.

#### Product Types Covered:

Fixed-Position Feeding Drones

Mobile/Navigation-Based Feeding Drones

Underwater Autonomous Feeding Drones

Hybrid Feeding Systems

#### Components Covered:

Hardware

Software

Feeding Mechanism

Other Components

#### Feed Dispensings Covered:

Pellet Feed Dispensing

Powdered Feed Dispensing

Live Feed Dispensing

## Mixed Feed Dispensing Systems

### Payload Capacities Covered:

Small Capacity (0-5 kg per load)

Medium Capacity (5-20 kg per load)

Large Capacity (>20 kg per load)

### Technologies Covered:

GPS & Navigation Systems

AI & Machine Learning-Based Feeding

IoT-Enabled Drones

Remote Sensing & Monitoring

Other Technologies

### Applications Covered:

Offshore Aquaculture

Coastal Fish Farming

Inland Fish Farming

Research & Conservation

Other Applications

### Regions Covered:

## North America

US

Canada

Mexico

## Europe

Germany

UK

Italy

France

Spain

Rest of Europe

## Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

## South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

## Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

## Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

## Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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