

AquaMind UI/UX Design Proposal

Complete enterprise aquaculture management system







Presentation Outline

1	Introduction	
2	Navigation System	
3	Hierarchical Navigation	
4	Dashboard Design	
5	Batch Management	<ul style="list-style-type: none">• Batch Overview• Batch Detail Views
6	Broodstock Management	
7	Inventory Management	<ul style="list-style-type: none">• Inventory Overview• Feed Management Dashboard

New Health Module

8	Health Management	<ul style="list-style-type: none">• Health Overview• Health Navigation• Health Dashboard• Batch Health Integration• Health Visualizations• Mobile Health Experience
9	Role-Based UI Adaptation	
10	Animation & Dynamic Effects	
11	Mobile Experience	
12	Implementation Approach	

Key Health Module Features

-  Complete medical journal for batches and containers
-  Health parameter scoring and visualization
-  Treatment planning and effectiveness tracking
-  Lice management and counting
-  Field-optimized mobile interfaces
-  Role-based access and personalized views



Navigation System

Sidebar Navigation

AquaMind

Dashboard

Infrastructure

Operations

Monitoring

Inventory

Batch

Broodstock

Analytics

Settings

Dashboard

Total Fish
125,350

Health Rate
96.7%

Benefits:

- More space for deep hierarchies
- Better for complex applications
- Works well with expandable trees
- Consistent with existing implementation

Topbar Navigation

AquaMind

Dashboard

Infrastructure

Operations

Batch

Dashboard

Total Fish
125,350

Health Rate
96.7%

Avg Water Temp
13.8°C

Benefits:

- Maximizes vertical space
- Clean, modern appearance
- Works well with dropdown menus
- Familiar pattern for web applications

Recommended Hybrid Approach

Toggle Navigation Style

Allow users to switch between sidebar and topbar navigation based on preference and screen size.

Contextual Secondary Navigation

Provide context-specific navigation options based on the current section and user role.

Persistent Search & Filters

Include global search and quick filters in both navigation variants for direct access.





Expandable Tree Navigation

Infrastructure

Search areas, containers...

GEOGRAPHY

Faroe Islands

Nordfjord Area

Sea Pens

Sensors

Sognefjord Area

Lofoten Area

Freshwater Stations

Infrastructure / Faroe Islands / Nordfjord Area

Nordfjord Area

Sea Pens

Total Fish

Sea Pens

NF-01

NF-02

NF-03

Search and Direct Access

sea pen NF

Active Filters

Geography: Faroe Islands

Type: Sea Pen

Search Results

SEA PENS (5)

NF-01 (Nordfjord Area)

NF-02 (Nordfjord Area)

NF-03 (Nordfjord Area)

SENSORS (2)

NF-Temp-01 (Nordfjord Area)

NF-Oxygen-01 (Nordfjord Area)

Map-Based Navigation

Interactive map showing geographies, areas, and sea pens

Navigation Flow Patterns



AquaMind

Dashboard

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Dashboard

Welcome back, John Hansen

Overview

Performance

Health

+

Faroe Islands

Total Fish

125,350

Across all areas

↑ 12%

Health Rate

96.7%

Average across all areas

↑ 1.2%

Avg Water Temp

13.8°C

Last 24 hours

↓ 0.5°C

Feed Usage

2,450 kg

Last 24 hours

↑ 3%

Growth Rate by Area

Nordfjord

Sognefjord

Lofoten

Hardanger

Trondheimsfjord

Environmental Conditions

Temperature

Oxygen

Performance Outliers

Top Growth: NF-02

12% above average growth rate

High Mortality: SF-05

3.2% mortality rate (1.8% above avg)

Efficient Feed: LF-03

15% better FCR than average

Low Oxygen: HF-01

8% below optimal levels

Recent Alerts

High Water Temperature

SF-05 • 1 hour ago

Low Oxygen Levels

HF-01 • 3 hours ago

Feed Supply Low

Nordfjord Area • 5 hours ago

Focus on Exceptions

Highlight outliers and issues requiring attention rather than forcing aggregation of disparate metrics.

Customizable Widgets

Allow users to configure dashboard components based on their role, responsibilities, and preferences.

Drill-Down Capability

Enable quick investigation from high-level metrics to detailed entity information with preserved context.

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Batch Management Dashboard

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Dashboard

Infrastructure

Operations

Monitoring

Inventory

Batch

Broodstock

Analytics

Settings

Active Batches

Search batches...

Filter

+ New Batch

Egg/Alevin

Parr

Smolt

Post-Smolt

Adult

Batch #B-2025-042

Smolt Stage

Started: Mar 15, 2025 • Current count: 2.8M

Lifecycle Progress

Day 210

~630 days remainin

Batch #B-2025-038

Parr Stage

Started: Feb 28, 2025 • Current count: 3.1M

Lifecycle Progress

Day 180

~660 days remainin

Key Features:

- ✓ Complete lifecycle visualization
- ✓ Status indicators and alerts
- ✓ Filtering by lifecycle stage
- ✓ Quick access to batch details

Batch Metrics & Distribution

Lifecycle Stage Distribution

68 Batches

Egg/Alevin (12)

Parr (18)

Smolt (15)

Post-Smolt (8)

Adult (15)

Batch Health Status

Healthy

52

Warning

12

Alert

4

Container Distribution

By Geography

Faroe Islands (65%)

Scotland (35%)

By Container Type

Freshwater (40%)

Sea Pens (60%)

5 / 10



Batch Detail Views

Batch Detail Views





Broodstock Management

Navigation & Submenu Structure

AquaMind

Dashboard

Infrastructure

Operations

Monitoring

Inventory

Batch

Broodstock

Breeding Programs

Genetic Inventory

Trait Analysis

Container Management

Environmental Monitoring

Analytics

Settings

Breeding Programs

Filter

+ New Program

Disease Resistance (PD/IPN)

Generation F3 • 24 family groups • Started: Jan 2025

Active

Growth Rate Optimization

Generation F4 • 18 family groups • Started: Mar 2024

Active

Fat Content Reduction

Generation F1 • 12 family groups • Starting: Aug 2025

Planning

Genetic Improvement Metrics

Trait Improvement Progress

Growth Rate

+18.5%

F1 Baseline

Target

Disease Resistance

+24.2%

F1 Baseline

Target

Color Enhancement

+12.8%

F1 Baseline

Target

Fat Content

-8.3%

F1 Baseline

Target

Family Group Distribution

Disease Resistance

24

Growth Rate

18

Fat Content

12

Color Enhancement

9

Family Groups by Breeding Program

Submenu Interaction:

- Expandable submenu appears on Broodstock click
- Five specialized sub-sections for broodstock management
- Visual indicators show active section
- Consistent with Infrastructure submenu pattern

Inventory Management

Feed Resource Optimization & Distribution

Key Features



Feed Type Management

Comprehensive feed specifications with nutritional composition, lifecycle compatibility, and brand information.



Procurement & Purchase

Supplier management, quality certifications, and cost tracking with purchase planning based on forecasts.



FIFO Inventory Tracking

First-In-First-Out methodology ensuring oldest feed is consumed first with automatic cost calculations.



Analytics & Reporting

FCR analysis, consumption patterns, cost trends, and stock optimization recommendations.

Role-Based Access



Inventory Manager

Complete overview of all inventory data with access to strategic planning tools and analytics.



Procurement Officer

Focus on procurement workflow, supplier management, and purchase planning based on forecasts.



Farm Operator

Simplified mobile interface focused on feeding events and quick access to relevant container stock.



Financial Controller

Cost-focused metrics and reports with budget vs. actual comparisons and export capabilities.

Key Workflows

Feed Type Definition

1. Access Feed Types section
2. Create new feed type
3. Define specifications
4. Set lifecycle compatibility
5. Save to catalog

Procurement Process

1. Create purchase order
2. Select supplier and feed
3. Enter quantities and costs
4. Submit and track delivery
5. Allocate to containers










Feeding Event Recording

1. Select container and batch
2. Record feed type and quantity
3. System calculates costs (FIFO)
4. Save event
5. Stock levels update automatically



Inventory Management Dashboard

Feed Resource Optimization & Stock Monitoring

-  Dashboard
-  Feed Types
-  Procurement
-  Stock Management
-  Feeding Events
-  Analytics & Reports
-  Batch Management
-  Broodstock
-  Environmental



Low Stock Alert: Area North-03

3mm Growth Feed below 20% threshold. Reorder recommended.

Total Feed Stock

248.6 t

↑ 4.2% vs. last week

Weekly Consumption

32.4 t

↓ 2.1% vs. last week

Avg. Feed Cost

€1.42/kg

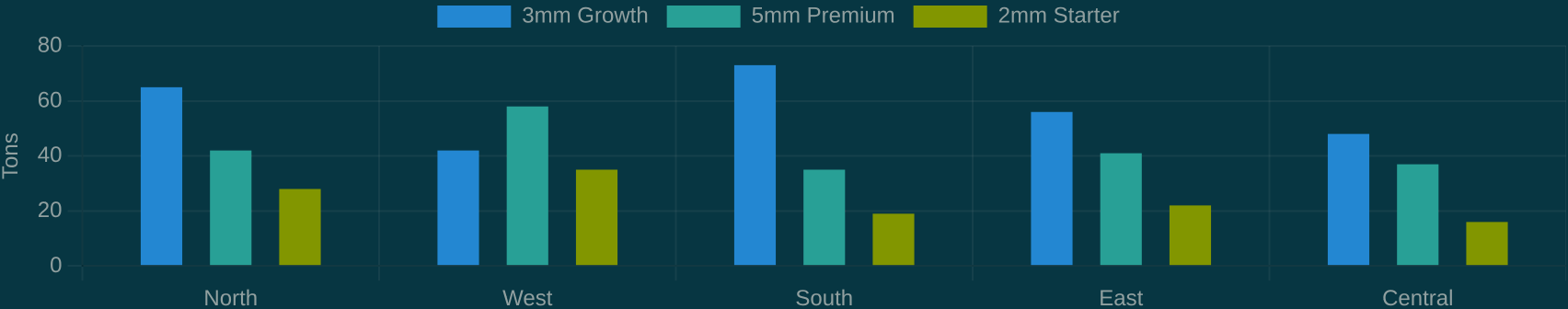
= No change

Current FCR

1.08

↓ 0.04 improvement

Feed Distribution by Area



Health Management

Medical journal and health monitoring for all fish batches

Key Features



Medical Journal

Complete health history with treatments, observations, and sampling events for each batch and container



Health Sampling

Structured parameter scoring for fin condition, skin, eyes, gills, mucus, and parasites



Treatments & Vaccinations

Planning, scheduling, and tracking of all treatments with effectiveness monitoring



Health Analytics

Trend analysis, environmental correlation, and comparative health metrics across batches

Role-Based Access



Veterinarian

Full access to all health features with treatment planning and prescription capabilities



Quality Assurance

Focus on health parameter scoring, sampling, and compliance monitoring



Farm Operator

Simplified data entry for mortality, lice counting, and basic observations



Management

Read-only access to health analytics, exception reporting, and cost analysis

Contextual Integration



Batch Health Integration

Health status, medical journal, and treatment history accessible directly from batch views



Container Health Integration

Container-specific health metrics and treatment status in container detail views

UI Preview



Health Dashboard Preview



Health Dashboard



Batch Health Integration Preview



Batch Health Integration



Health Visualizations Preview









Health Visualizations

Health Module Navigation


Intuitive access to health data for all user roles

Standalone Health Module

Main Health Menu





-  Medical Journal
-  Health Sampling
-  Treatments & Vaccinations
-  Mortality Tracking
-  Lice Management
-  Health Analytics

Role-Based Navigation

-  **Veterinarian**
Default: Medical Journal
-  **Quality Assurance**
Default: Health Sampling
-  **Farm Operator**
Default: Mortality/Lice Recording

Contextual Health Integration





Batch View Integration

-  Health tab in batch detail view
-  Health status card in batch overview
-  Recent medical journal entries
-  Batch-specific health metrics

OverviewContainersHealthFeedingGrowth

Batch-specific health view with medical journal and metrics

Container View Integration

-  Container health status indicator
-  Container-specific journal entries
-  Active treatments for container
-  Container health parameter scores



FW-ST3-C12Treatment in progress

FW-ST3-C13Treatment in progress




FW-ST3-C14Healthy

Mobile Experience




Field Data Collection

-  Simplified mobile forms
-  Photo documentation
- Offline capability

Quick Entry Patterns

-  One-tap mortality recording
-  Lice counter interface
-  Quick observation logging

Apple Watch Integration

-  Health alerts
-  Mortality counter
-  Treatment reminders

Health Dashboard

Comprehensive health monitoring and medical journal

Search health records...

Filter

Active Treatments



12

Across 8 batches

Health Alerts



7

3 require attention

Mortality Rate (7d)



0.12%

-0.03% from last week

Avg. Lice Count











0.8

Below threshold (2.0)

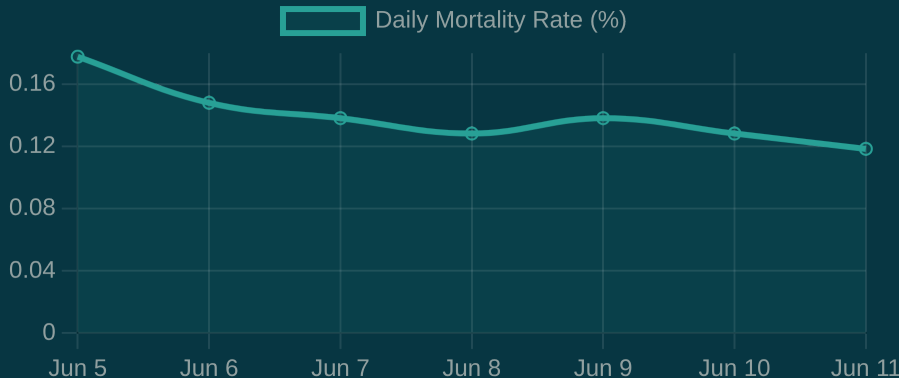
Recent Medical Journal Entries

View All >

Date	Batch	Container	Entry Type	Description	Recorded By	Actions
2025-06-11	B-2025-042	FW-ST3-C12	Treatment	Formalin bath treatment for fungal infection	Dr. A. Hansen	 
2025-06-10	B-2025-039	SP-A4-08	Mortality	Increased mortality, suspected PD outbreak	L. Jacobsen	 
2025-06-10	B-2025-036	SP-A2-15	Sampling	Routine health parameter sampling, all normal	M. Thomsen	 
2025-06-09	B-2025-042	FW-ST3-C12	Observation	Early signs of fungal infection on 5% of population	Dr. A. Hansen	 

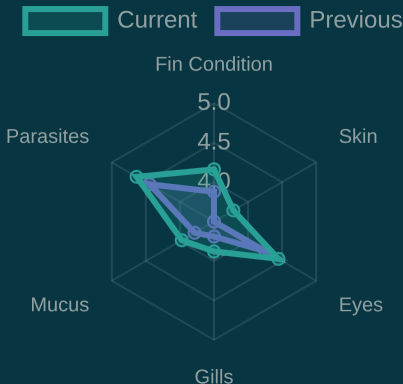
Mortality Trends

7d30d90d



Health Parameter Scores

Batch: B-2025-042



Batch Details: B-2025-042

Smolt Stage

Atlantic Salmon • Created: Feb 15, 2025 • Current Age: 118 days

Edit



Overview

Containers

Health

Feeding

Growth

Environment

History

Health Status



Warning

Treatment in progress

Mortality (7d)

0.09%

-0.04% from previous week



Active Treatments



1

Formalin bath (Day 2 of 3)

Last Health Check



2d ago

Next check: Tomorrow

Medical Journal

+ New Entry

Treatment

2025-06-11

In Progress

Formalin bath treatment for fungal infection (Day 2 of 3)

Concentration: 200 ppm

Duration: 30 minutes daily for 3 days

Containers: FW-ST3-C12, FW-ST3-C13

Veterinarian: Dr. A. Hansen

View Details

Observation

2025-06-09

Recorded

Early signs of fungal infection on 5% of population

Affected areas: Fins, gills

Containers: FW-ST3-C12, FW-ST3-C13

Veterinarian: Dr. A. Hansen

View Details

Vaccination

2025-05-15

Completed

PD vaccination administered to entire batch

Vaccine: ALPHA JECT micro 6


Dosage: 0.05 ml per fish

Coverage: 99.8% of population

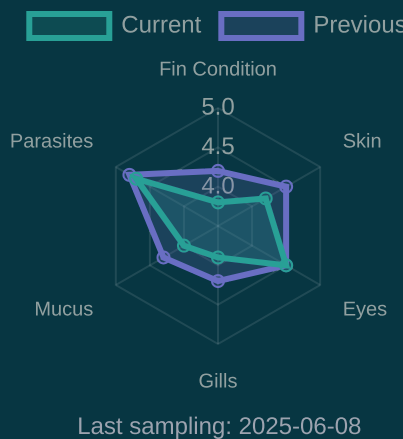
Veterinarian: Dr. A. Hansen

View Details

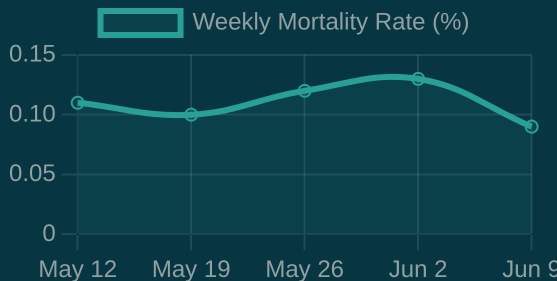
View Full Medical History



Health Parameters



Mortality Trend



Container Health Status

Health Visualizations & Indicators

Actionable health data for veterinarians, QA personnel, and operators

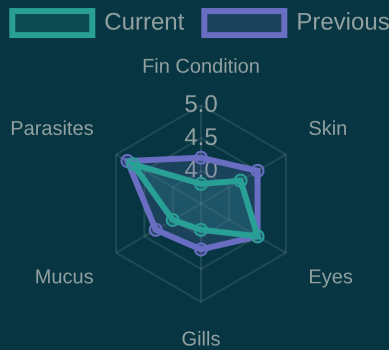
Health Parameter Visualizations

Parameter Scoring Radar

For veterinarians and QA personnel

Current

Previous



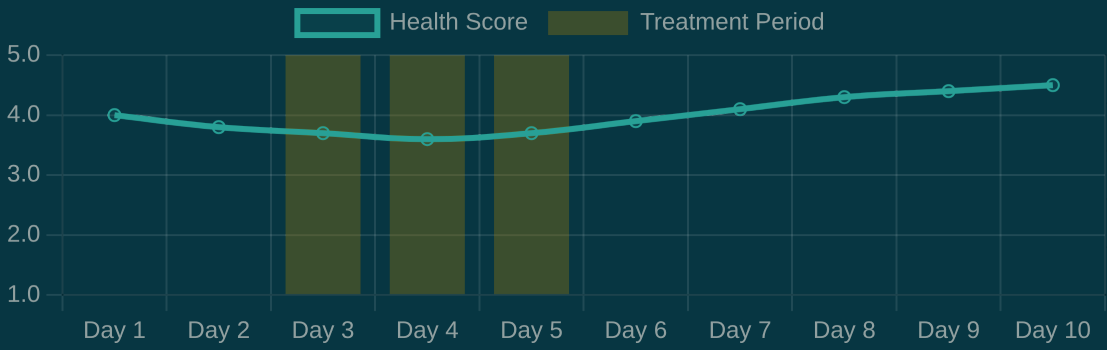
Treatment & Mortality Visualizations

Treatment Effectiveness

For veterinarians and health planning

Health Score

Treatment Period

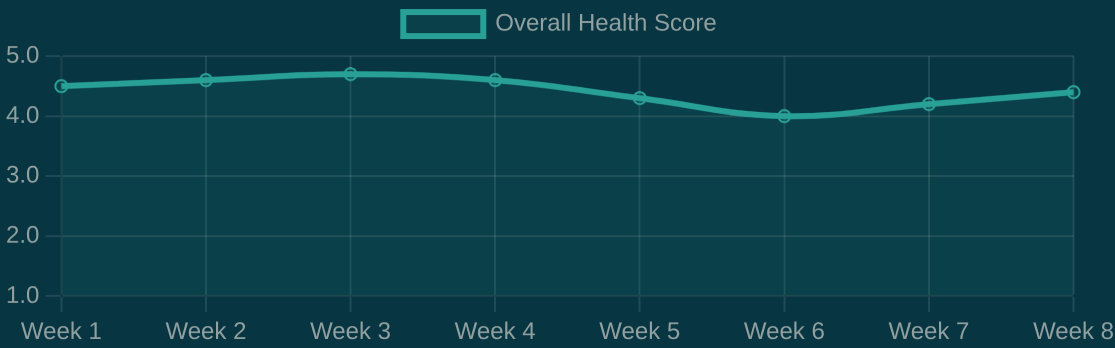


Health Score Timeline

For area managers and production planning

Parameter:

Overall Score

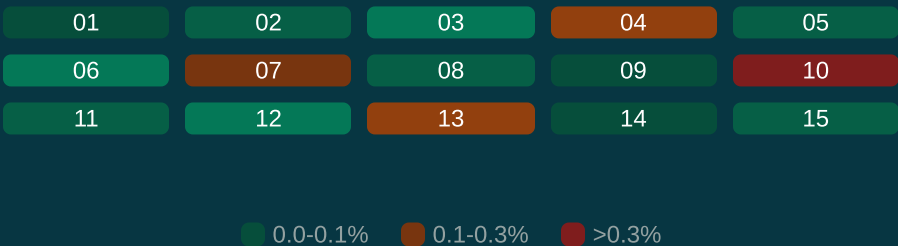


Container Mortality Heatmap

For operators and area managers

Area:

All Areas



Mobile Health Indicators



Healthy

For field operators

All parameters normal
No action required



Warning

For field operators

Parameter deviation
Monitor closely



Critical

For field operators

Immediate attention
Contact veterinarian



Treatment

For field operators





Treatment in progress
Follow protocol

Mobile Health Experience





Field-optimized interfaces for health data collection

Mobile App for Field Workers

Key Features

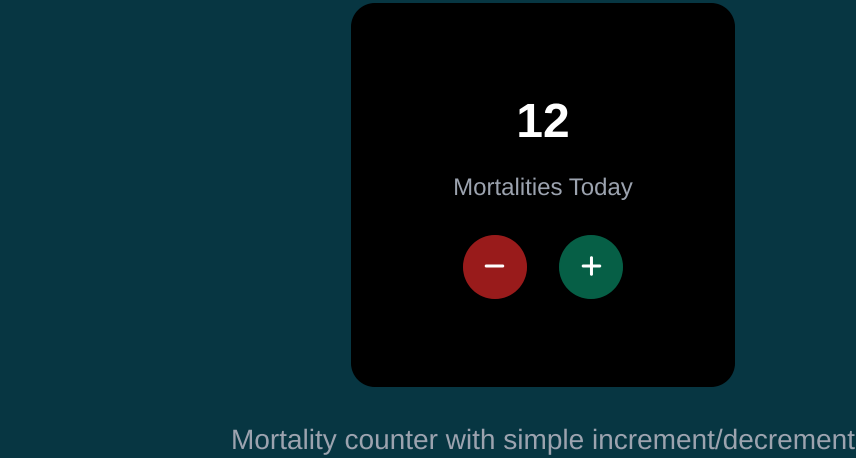
-  **Offline Capability**
Data collection in remote locations with automatic sync when connection is restored
-  **Visual Documentation**
Photo capture for health observations with automatic tagging and batch/container context
-  **QR Code Scanning**
Quick container identification via QR codes for accurate data entry
-  **Treatment Alerts**
Notifications for scheduled treatments and sampling events

Optimized Data Entry





-  **Mortality Recording**
Quick-count interface
Cause selection
Photo evidence option
-  **Lice Counting**
Adult/juvenile counter
Fish sample tracking
Distribution visualization
-  **Health Observations**
Quick templates
Voice-to-text notes
Severity indicators
-  **Treatment Verification**
Treatment checklist
Dosage confirmation
Time tracking

Apple Watch Integration

Ultra-Simplified Interface



Key Watch Features

-  **Quick Glance Metrics**
Critical health indicators for assigned containers at a glance
-  **Treatment Timers**
Countdown timers for treatment duration with haptic alerts
-  **Critical Alerts**
Immediate notifications for urgent health issues requiring attention
-  **Voice Notes**
Quick voice recording for observations with automatic transcription

Field-to-Office Workflow



Role-Based UI Adaptation

Adaptive UI Principles

Content Prioritization

Reorder and highlight content based on role relevance, showing most important information first.

Feature Visibility

Show or hide features based on permissions, avoiding empty states or unauthorized access errors.

Contextual Tools

Provide role-specific tools and shortcuts that align with common workflows and responsibilities.





Animation & Dynamic Effects

Recommended Animation Types

Navigation Transitions

Smooth accordion animations for hierarchical items, sliding indicators for selection.

Page Transitions

Content fades and slides between pages, with staggered loading of dashboard widgets.

Data Visualization

Progressive reveal of chart data, smooth transitions when filtering or comparing data.

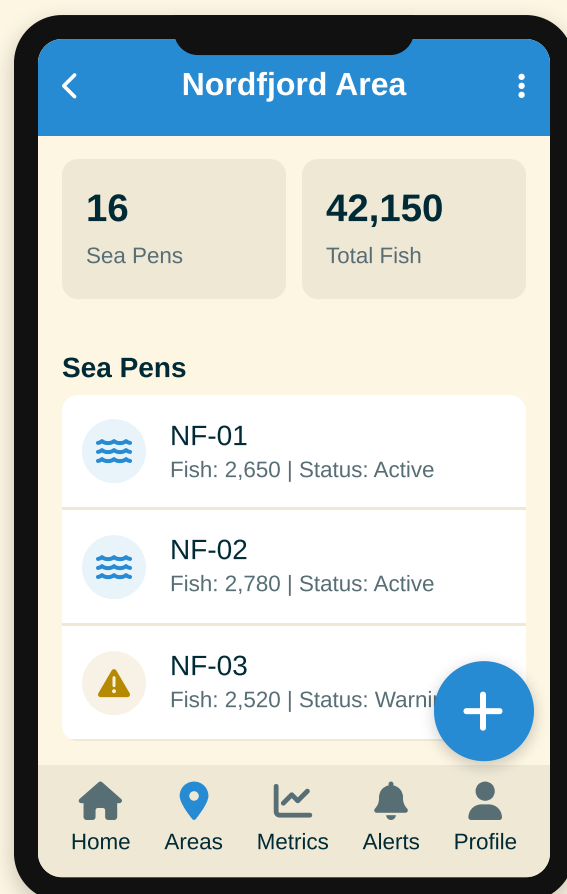
Feedback Animations

Subtle animations for form validation, success confirmations, and error notifications.





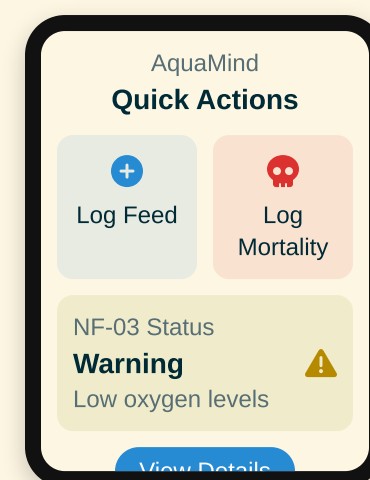
Responsive Mobile Design



Mobile Design Principles

- ✓ Touch-optimized interface with larger tap targets
- ✓ Bottom navigation for easy one-handed access
- ✓ Simplified views focused on essential information
- ✓ Progressive disclosure of complex hierarchies

Apple Watch Experience



Field Worker Experience

The Apple Watch app is designed specifically for field workers who need to quickly log data while working with fish pens:

- ✓ One-tap data entry for common tasks (feeding, mortality)
- ✓ Real-time alerts for critical conditions
- ✓ Voice input support for hands-free operation
- ✓ Offline capability with sync when connection is restored

Mobile-First Approach

Responsive Design

All interfaces adapt fluidly from desktop to tablet to mobile, maintaining functionality across devices.

Context-Aware Features

Mobile interfaces prioritize location-specific tasks and data entry relevant to the user's current context.

Offline Capabilities

Critical features work offline with background synchronization when connectivity is restored.



Implementation Approach

Recommended Technology Stack



Vue.js 3

Frontend framework with Composition API for reactive UI components



Tailwind CSS

Utility-first CSS framework for rapid UI development



TypeScript

Type-safe JavaScript for robust application development



Django REST

Backend API framework with robust authentication

Additional Libraries

Vue Router
For navigation and route management

Pinia
For state management across components

Chart.js / D3.js
For data visualization and dashboards

Vue Query
For data fetching and caching

Implementation Roadmap

1

Component Library Setup

Create a shared component library with base UI elements following the Solarized design system. Implement theme toggle functionality and responsive layouts.

2

Navigation Framework

Implement both sidebar and topbar navigation variants with toggle functionality. Build the hierarchical navigation system with expandable trees and search.

3

Role-Based Access Control

Integrate with Django's authentication system to implement role-based UI adaptation. Create permission-aware components that adapt based on user role.

4

Dashboard Framework

Build a flexible dashboard system with customizable widgets. Implement data visualization components and real-time updates.

5

Mobile Responsive Implementation

Adapt all components for mobile devices using responsive design principles. Create specialized mobile views for field workers.

6

Animation & Interaction Refinement

Add purposeful animations and transitions to enhance user experience. Implement accessibility features including reduced motion options.

Component Example

```
// HierarchicalNavigation.vue
<script setup lang="ts">
import { ref, computed, watch } from 'vue';
import { useGeographyStore } from '@stores/geography';
import { useAuthStore } from '@stores/auth';

const geographyStore = useGeographyStore();
const authStore = useAuthStore();

const selectedGeography = ref(authStore.defaultGeography);
const expandedAreas = ref<string[]>([]);
const searchQuery = ref('');

const filteredAreas = computed(() => {
  return geographyStore.areas
    .filter(area => area.geography_id === selectedGeography.value)
    .filter(area => searchQuery.value ?
      area.name.toLowerCase().includes(searchQuery.value.toLowerCase())
    : true
  );
});
</script>
```

Development Approach

Component-Driven Development	Progressive Enhancement
Build and test components in isolation using Storybook before integration	Ensure core functionality works without JavaScript, then enhance with interactivity
Continuous Integration	Iterative Refinement
Automated testing for components and integration with Django backend	Regular user testing and feedback cycles to improve usability

Integration with Existing Backend

API Integration

Leverage existing Django REST API endpoints with TypeScript interfaces for type safety and auto-completion.

Authentication Flow

Implement JWT authentication with secure token storage and automatic refresh to maintain sessions.

Data Synchronization

Use optimistic UI updates with background synchronization for a responsive experience even with network latency.