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AQUACULTURE FACILITY- HEALTH/BIOSECURITY PLAN TEMPLATE

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(This is a draft template; please try it and feel free to offer suggestions on how it can be improved and more useful.)

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General Farm Information

Farm name, Address, GPS coordinates, Farm owner, Phone, Email, State registration number...

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Animal Information

Species raised, Purpose: Food, bait, ornamental, stock enhancement/natural resource, laboratory/research, Life stage information: (which stages on property?) breeding, hatchery (larvae/fry), grow-out (juvenile/fingerling)

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Source by life stage on property: (In house/resident/produced on farm OR off-farm facility)

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Facility Map, Location of Life Stages, and Flow (you may not be able to easily change flow, but be aware of potential cross contamination issues)

Map of facility (Include as Appendix; can use drawing, Google Earth, drone shot)

Animal life stages location (where on the map is each life stage category – breeding, hatchery (fry), growout (juvenile/fingerling))

General traffic (employees, visitors [can use different colors for different groups]) flow on map. Is it logical, biosecurity-wise?

Do personnel (if not dedicated to a specific area) work from: most biosecure areas → least biosecure areas (without return to more sensitive areas?).

Separation by life stage (Yes/No): how?

Separation by disease status (Yes/No): how?

Quarantine area: (is there one? For what purpose?)

Isolation: Is there a way to physically isolate sick populations by tank or system from others? How?

Visitor pathway: Use a different color to mark pathways for visitors. How much access do they have throughout the facility? (If this is difficult to change, be aware of potential for visitors to spread disease).

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Staff pathway: Are there dedicated staff for different life stages and disease status? Use different colors for staff dedicated to different areas, if applicable.

Farm Perimeter Control (some facilities may not be able to change perimeter controls, but be aware of potential for entry of disease and spread of disease from outside sources, if no controls)

Perimeter type: Fence or open; complete, uniform perimeter OR partial perimeter

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Security: What type of security is present at entrances, exits, and perimeter?

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Entry/exit control: what type of control is there for employees entering and leaving the facility?

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Entry/exit control: what type of control is there for visitors entering and leaving the facility?

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Vehicles or boats

Are vehicles or boats coming from other facilities that may have pathogens of concern or susceptible animals? Is there a method to prevent entry on to the facility? Is there a need to consider wheel/chassis or hull or other disinfection? Is a disinfection station present for vehicles/boats?

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Pests, predators:

Can pests/predators enter production areas? Is there a method or are there methods to reduce their entry or exclude them? What is/are they?

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Aquatic Health Team

On-site, farm health manager:

Contact info:

Accredited veterinarian:

Contact info:

Other aquatic animal health specialist:

Contact info:

Diagnostic lab that works with aquatic animals

Contact person and information:

Extension agents or consultants:

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Contact info:

State contact name:

Contact info:

Federal contact name:

Contact info:

Facility Health Goals

Determined by owner and health team: useful to establish measurable semi-annual/annual goals. Examples: Reduce (weekly, monthly) losses by X%, Reduce use of drugs by Y dollars, Increase harvest by Z%, Decrease growout time by W days (or weeks), Informs records required: what records are needed to monitor this?

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Water Source

What is/are the water source(s)? Protected: well (depth?), municipal, disinfected? Unprotected (no disinfection): ground, Lake or river, Ocean

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Treatment (filtration, UV, bleach, ozone) of unprotected water source prior to use?

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What parameters of water quality/chemistry are being testing, and when/how often?

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System Types on Farm (location and type should be indicated on the Facility Map)

Recirculating aquaculture system (RAS), flow through, earthen pond, net pen, benthic, indoors vs. outdoors, holding unit type, wastewater disposition?

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List and Control Other Non- Production Animals Posing Biosecurity Risks (Another Appendix)

Pests (List)

Predators (List)

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Domestic animals (List- are these animals able to get in

(with each type listed, include control methods employed to keep animals off property or from spreading water or other materials from one tank to the next).

Pesticides

Netting

Fencing

Noise-makers

Other methods

Food/Feed

Types

Commercial pellet/crumble/flake

Frozen (invertebrate, fish)

Live (algae, zooplankton, macro-invertebrate, fish)

How is each stored?

Are there SOPs to ensure freshness and biosecurity?

Pathogen/specific pathogen testing?

People

Do they receive training for:

Husbandry

Biosecurity

On-farm diagnostics

Written plan/SOPs for training?

Written farm health plan?

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Written farm biosecurity plan?

Cleaning and disinfection

Compounds used (concentrations)

Handwashing stations, net dips, foot baths
Shower-in/out

Vehicle and boat disinfection

Holding unit disinfection

QA/QC: how often are cleaning and disinfection stations replenished/checked

Records

Husbandry, SOPs/management verification (systems, C&D, feeding, observations, WQ, above).
Is there accountability through initials or other means to help ensure follow through?

Animal Health

Quarantine/biocontainment: does the facility use (and if possible, determine by building or area):

Dedicated tanks/ponds/holding

Signs and restricted access if possible

All-in, all-out stocking (holding unit or system)

Isolation and separation of animals unknown (“new”), suspect, or clinically diseased

Separation by source, species

Sick animals

Records: What records are kept for quarantine and for diseased/isolated animals? (see section below)

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Standard Operating Procedures (SOPs)

Are the following items in written SOPs and are records maintained?

Systems management

General operational checks

Water quality /chemistry testing

Verification of management

Observations

Feeding, behavior, external appearance, mortality (rate)

Surveillance for disease and sampling?

Targeted routine sampling?

Type of diagnostic testing

Response

Disease management SOP (this is covered in Pathogens below)

Reporting and communication: Is there:

Employee communication

Chain of reporting

Agencies/authorities

Disease management

Cleaning and disinfection

DOA disposal

Pathogens

(If you have a health management team and/or are working with a veterinarian or health specialist, gather as much information as you can.)

Include list of names of facility-specific pathogens (your “diseases of concern” based on your species, disease susceptibility or disease history, systems, local, state, and federal regulations).

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For each pathogen you identify, work with your aquatic animal health team to determine:

Reportable or non-reportable?

Actionable: state or feds require specific action

Non-actionable: at vet/your/team's discretion

Non-reportable but significant for facility

Moderate to high mortalities

Not treatable

Zoonotic (can cause disease in people)

Do you have a pathogen-specific management plan for each?

These would include the items below:

Team agrees and accredited veterinarian signs off?

Diagnostics (communication with veterinarian and lab)

Biocontainment

Disease treatment/management (communication with veterinarian)

C&D (pathogen specific)

Prevention plan

Some quarantine overlap

Vaccination options?

Communication (reporting/in-farm/staff/visitor)

Keeping the Health and Biosecurity Plan Current

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How often is the Health and Biosecurity Plan reviewed and revised, and outcomes evaluated? (The plan should be reviewed and outcome evaluated for revision at least once a year). Education and ongoing communication to employees and outside stakeholders and collaborators is critical to success!