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The Role of Aeration in Pond Management [1]

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The goal of most fish farmers is to maximize production and profits while holding labor and management efforts to the minimum. Risk of fish kills, disease outbreaks, poor water quality, and reduced feed conversion often result when efforts to increase production are unsupported by improved management strategies.

In most pond culture operations, aeration offers the most immediate and practical solution to water quality problems encountered at higher stocking and feeding rates. Aeration may be broadly classified into two different applications, emergency aeration and maintenance aeration.

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Table 1.

	Emergency Aeration	Maintenance Aeration
Equipment	Tractor driven paddlewheels & pumps, motor driven paddlewheels & pumps, usually portable.	Diffuser system, airlift pumps, slow RPM paddle-wheels, fans. Usually permanently installed in each aerated pond. Electrically operated.
Application	Used during low oxygen crises to prevent fish kills. Used only as needed.	Semi-continuous to continuous use to prevent low oxygen situation in fish ponds. Emphasis on mixing of water and long-term water quality improvement.
Effects	Quickly raised dissolved oxygen to safe levels. Aerates localized area, disperses oxygen from a point source.	Sustains desirable condition for fish. Pond remains well-mixed. Entire pond area available to fish. Moderates daily oxygen fluctuations in ponds. Helps speed decomposition of waste organic material.