



## **CLEANING UP LAKE MARACAIBO, VENEZUELA**

### **Lemna International providing immediate and long-term solutions**

**Maracaibo, Venezuela** – Covering 12,000 square kilometers, Lake Maracaibo is the largest body of fresh water in South America. It currently suffers from a massive growth of floating aquatic plants of the Lemnaceae family, also known as duckweed or “lentejas de agua”. Around Maracaibo, the second largest city in Venezuela, the plants are invading bays and beaches, causing huge problems for local fisheries, and generating offensive odors as they die. After seeking advice from various environmental experts, the Ministry of Water and Natural Resources (MARN) and its hydrologic research institute ICLAM turned to Lemna International, a world expert on duckweed.

Lemna sent a specially designed mechanized harvester to demonstrate its ability to quickly and efficiently scoop the bothersome plants off the surface of the lake and transport them to shore. On August 10, 2004, Venezuela’s Minister of Water and Natural Resources Ana Elisia Osorio attended a demonstration of the Lemna-built harvesting equipment and piloted the watercraft herself. As a first step to deal with the immediate problem of duckweed covering up to 12% of the lake’s surface, three more harvesters will soon join the demonstration vehicle. At the demonstration of the harvester, Mr. David Anderson, Lemna General Manager observed, “The design of these harvesters has been shown to be efficient and cost-effective in more than fifteen years of successful use on hundreds of Lemna duckweed wastewater treatment lagoons.”

The second step in Lemna’s program to solve the problem will be to install a patented duckweed Lemna treatment facility on selected sections of the lake to intercept sewage being discharged into the lake. The sewage carries nutrients that feed the duckweed plants, increasing reproduction rates and causing overwhelming growth near the coastline. The duckweed plants themselves will be harnessed and controlled by a floating grid in order to absorb and remove the nutrients, preventing their dispersion in the lake. Lemna has installed more than 150 wastewater treatment facilities using its patented duckweed technology in the U.S and many other countries.

The third step will be a program to use the harvested plants as valuable, natural organic fertilizer for surrounding lands and eventually turn them into a protein-rich animal feed. Mr. Viet Ngo, Lemna’s President and CEO, who also attended the demonstration, is excited about this part of the program. He said, “Our goal is to create a cottage industry, harvesting and selling the Lemna plants, turning them into an economic resource, generating thousands of jobs in the region.” Following the demonstration, Minister Osorio stated, “With the support of Lemna International, we will methodically and efficiently solve this problem. We should not consider Lemna plants as monsters, but as a natural resource.”