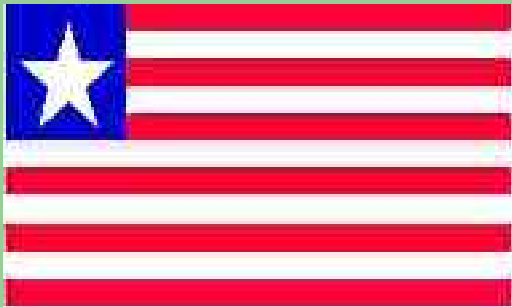


LIBERIA – Mosquito Control



Liberia First

Liberia Mosquito Control

- **Malaria**

- Malaria is a killer disease in tropical climates where mosquitoes serve as the primary vector
- In Monrovia maybe 50% of the population is affected by malaria
- Malaria fever affects productivity
- Malaria fever sometimes kills and sometimes leaves a person with brain damage.

Liberia Mosquito Control

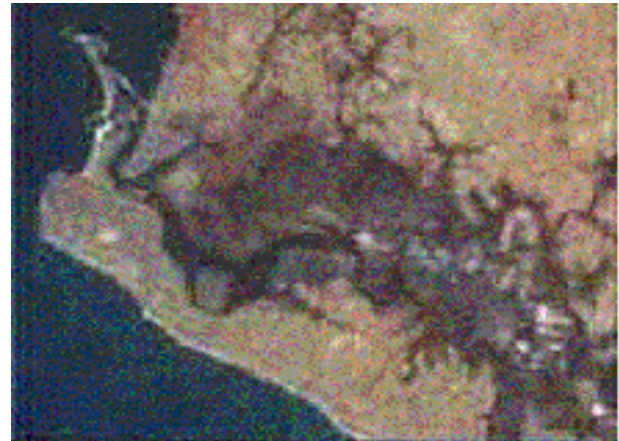
- **Mosquitoes**

- Mosquitoes are the main vector for malaria
- Eliminate mosquitoes and incidence of malaria goes down
- This has been done in places like Florida which are tropical and a lot of standing water.
- It was done by a combination of aerial spraying and ground fogging

Liberia Mosquito Control

- **Monrovia**

- Monrovia is a city with a population of around 3.5 million people including IDPs. It has a total area of about 50,000 acres. The Mesurado River flows through the centre of the town and there are some 15,000 acres of marshy land along within the city, perfect breeding ground for mosquitoes.



Liberia Mosquito Control

- **Liberia looking for a sustainable solution**
 - Government of Liberia
 - Ministry of Health
 - City of Monrovia
 - Community leadership
 - Civil Society
 - Local NGOs
 - Liberian Diaspora

Liberia Mosquito Control

- **Liberian science and technology**
 - Medical experience
 - Epidemiology
 - Monitoring progress
 - Assessing any side effects
 - Entomology
 - Planning the campaign
 - Monitoring progress

Liberia Mosquito Control

- **Mosquito Control Operations**
 - Aerial Applicators with experience
 - Planning
 - Pilots
 - Equipment maintenance
 - Entomology
 - Training
 - Monitoring and evaluation

West Coast Aerial Applicators

Organization

Bill
Nessler

Chief Pilot
Program Manager

Delvin
Walker

Personnel Director
Entomologist

Jeff
Widmann

Pilot
Director of Training
Air Operations

Brian
Cain

Maintenance
Chief Ground Instructor

Liberia Mosquito Control

- **Proposal for Mosquito Control in Monrovia**
 - A five year \$20 million project
 - A reduction of mosquitoes by 80%
 - A reduction in malaria of more than 80%
 - A socio-economic value adding justification that gives an ROI of more than 1000%



Liberia Mosquito Control

- **What are the alternatives**

- Do nothing – a continuing malaria crisis
- Bed nets – \$5 a year per person for 800,000 is the same cost , but the effectiveness is only 50% or less
- Personal sprays, coils, household spray, etc. can run at \$50 to \$100 per year per household. Too expensive for most people.
- Ground fogging, no aerial spraying ... gets probably only 30% of the mosquitoes

Liberia Mosquito Control

- **What are the risks**

- Basic operating risks ... safer than ordinary life
- Pesticide poisoning ... system uses VERY low concentrations. Kills mosquitoes but does NO damage to humans.
- Pesticide cumulating in the environment ... this is something that happens with agricultural concentrations ... NOT mosquito control programs
- DDT is very effective, does no damage at low concentrations, very low cost

Liberia Mosquito Control

- **The timeline** – start up 6 months after funding
 - International - Equipment acquisition and staging, shipping and warehousing.
 - Liberia – staging, personnel recruitment, equipment set up, spares inventory and cataloguing, equipment set up and calibration, flight equipment tests, ground equipment tests.
 - Flight operations and effectiveness evaluation. Ground operator and maintenance personnel training.
 - Full scale flight operations. Expanded operations. Additional pilots trained.
 - Performance evaluation

Liberia Mosquito Control

- **Aircraft** - Turbine AgCat with spray unit
 - Can easily spray Monrovia in 8 operating hours. Will probably do three (3) spray cycles in the first month of operations with continuous monitoring of results.
 - Will probably require one (1) spray cycle per month on a continuing basis to maintain low mosquito population count.



Liberia Mosquito Control

Ground fogging equipment

- Can fog the vehicle accessible areas of Monrovia on a weekly cycle
- Portable spray units for hard access areas



Liberia Mosquito Control

- **Summary**

- Use the same technical approach in Monrovia as one would do in Florida. Why use a second class approach when first class is better and not more expensive?
- Make sure results are good. Adopt high transparency and accountability standards. Continuous monitoring of the costs and results.
- Goal is to end endemic malaria in Monrovia

Liberia Mosquito Control

Questions?

**For more information contact
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