Vehicle alterations to improve efficiency and reduce environmental impact in mosquito control applications.

Angie Nakano, Steve Delucchi, Rob McGovern, and Erik Hawk

Marin/Sonoma Mosquito and Vector Control District, 595 Helman Lane, Cotati, CA 94931; (707) 285-2200; AngieN@msmosquito.com

The Marin/Sonoma Mosquito and Vector Control District covers a two-county area of nearly 2,300 square miles, including 20,000 known sources of mosquito production. Many of the District's significant mosquito sources occur in areas inaccessible by a standard truck, including marshes, seasonal wetlands, flood plains, and other rugged or ecologically complex environments. For several years District vector control technicians have used both amphibious, tracked vehicles (ARGOs) and four-wheeled all-terrain vehicles (quad ATVs) to responsibly traverse this varied terrain. In 2016 and 2017, District shop and operations staff designed, fabricated, and installed modifications to off-road vehicles to better access and more efficiently treat these areas. These alterations are specifically engineered to improve the efficiency of field staff and minimize impact to the environment.

One-person duster/blower configuration for ARGO vehicles

Objectives
- Reduce vehicle weight
- Eliminate need for 2nd technician for treatments made from the vehicle
- Minimize time and footprint needed to treat large areas
- Maximize carrying capacity for extra material

Combining duster/blower and rear-mounted seed broadcaster creates a 50' swath.

Drawbacks:
- Two people required
- This modification required exposing drive chains and reducing cargo space
- Extra weight of 2nd technician increased fuel consumption and impact on terrain

Multi-purpose duster/blower mount for quad ATV

Objectives
- Provide stable mount for backpack duster/blower
- Allow blower to be used while driving ATV
- Provide secure mount for spray tank
- Maximize carrying capacity for extra material

Lightweight 1/4" aluminum plates were mounted on the rear plate of the ATV. The front plate includes eye bolts to tie down bags of material or secure cargo basket.

Additional modifications and custom accessories for quad ATV

- Carlisle Multi-Trac C/S Tires
- Front Cargo Basket
- Quad ATV Tank Trailer

Drawbacks:
- Wider turf tires decrease impact on sensitive habitats
- Secure and convenient transport of equipment, tools, and other materials
- Removable

50 gal. tank with 50 ft. hose
- 12-volt battery-powered spray rig