

The Evolution of : Buffalo Gnat Control in SW Arkansas

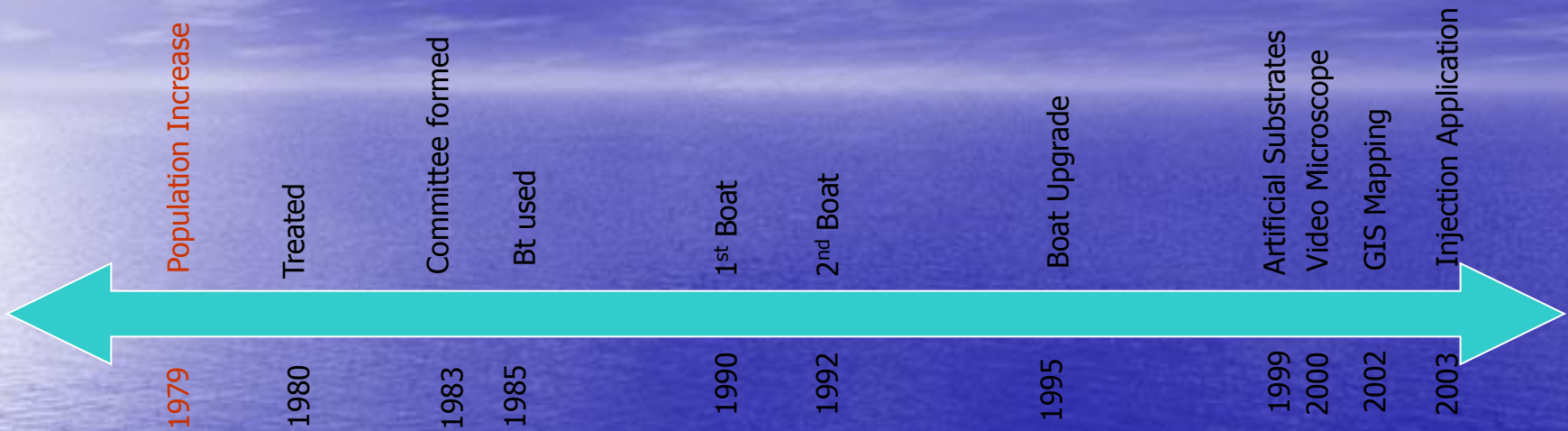
Doug Petty
County Extension Agent
Miller County

Sulfur River

43 miles of river
Located in
SW AR & NE TX



Buffalo Gnat Control Program



1979

1st large emergence of adult populations.

Losses: 42 Calves

2 Cows

12 Horses

\$750,000 in productivity

Buffalo Gnat Control Program

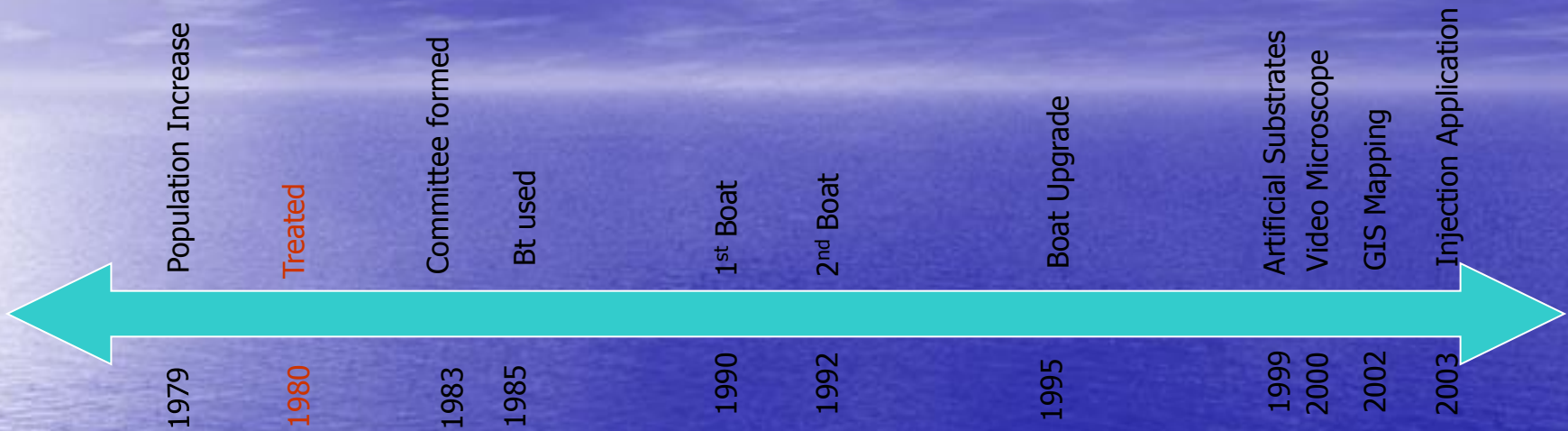


1979

Area spraying of livestock conducted for adult gnat applied.

(No significant difference observed)

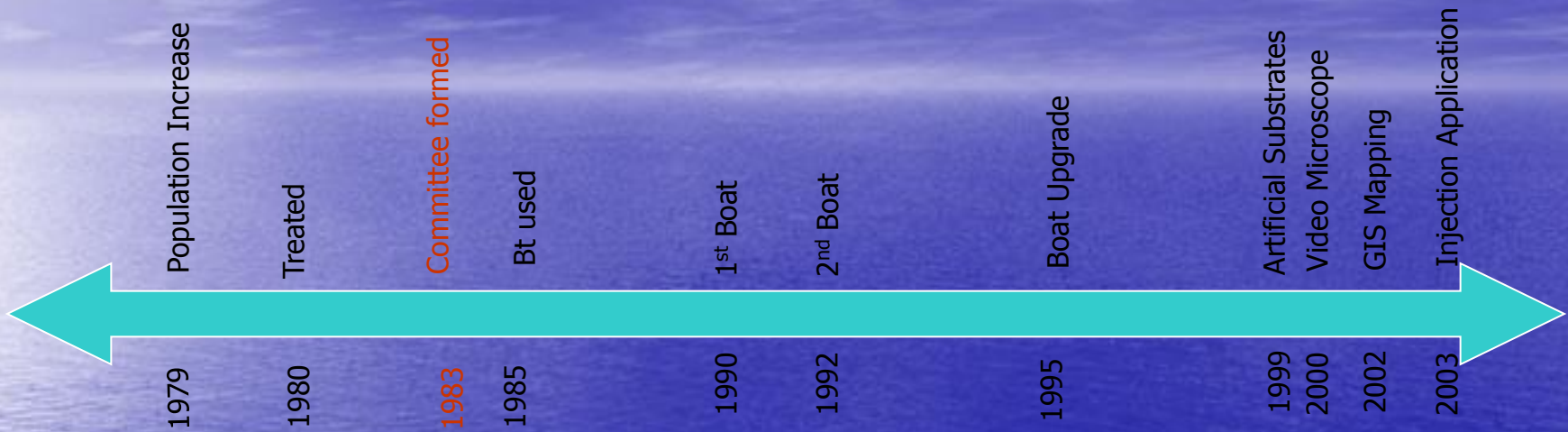
Buffalo Gnat Control Program



1980

Treated larvae with Abate insecticide using fixed wing aircraft.

Buffalo Gnat Control Program



1983

Formal Committee Formed with:

Ark. Extension

Texas Extension

Texarkana Chamber of Commerce

Miller and Bowie Counties

Buffalo Gnat Control Program

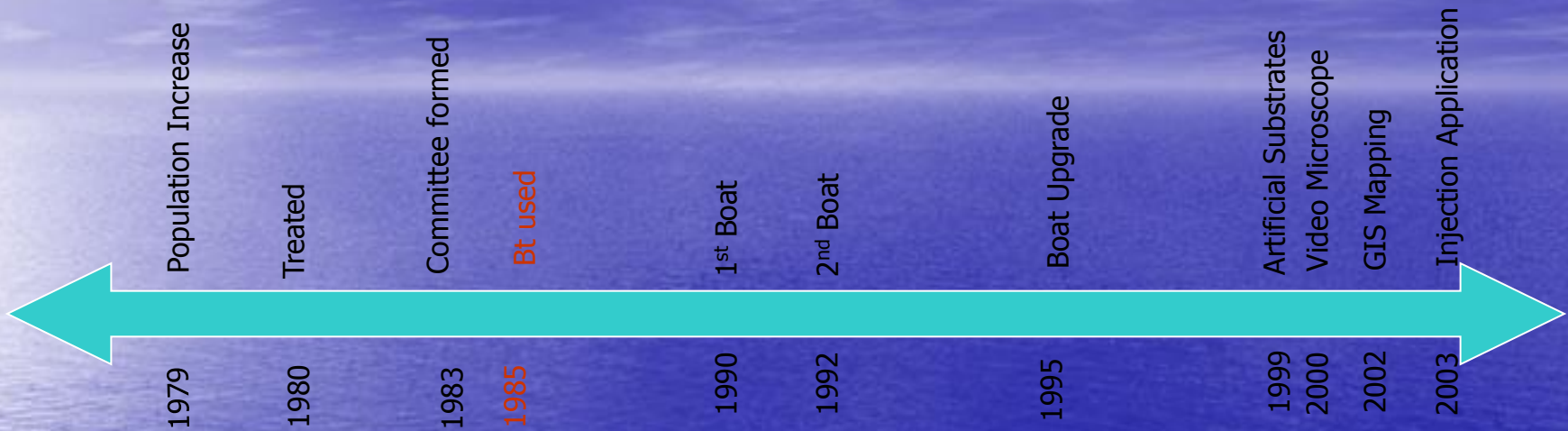


1983

Test conducted to "Strand" larvae by stopping flow of river.

(Caused no significant change)

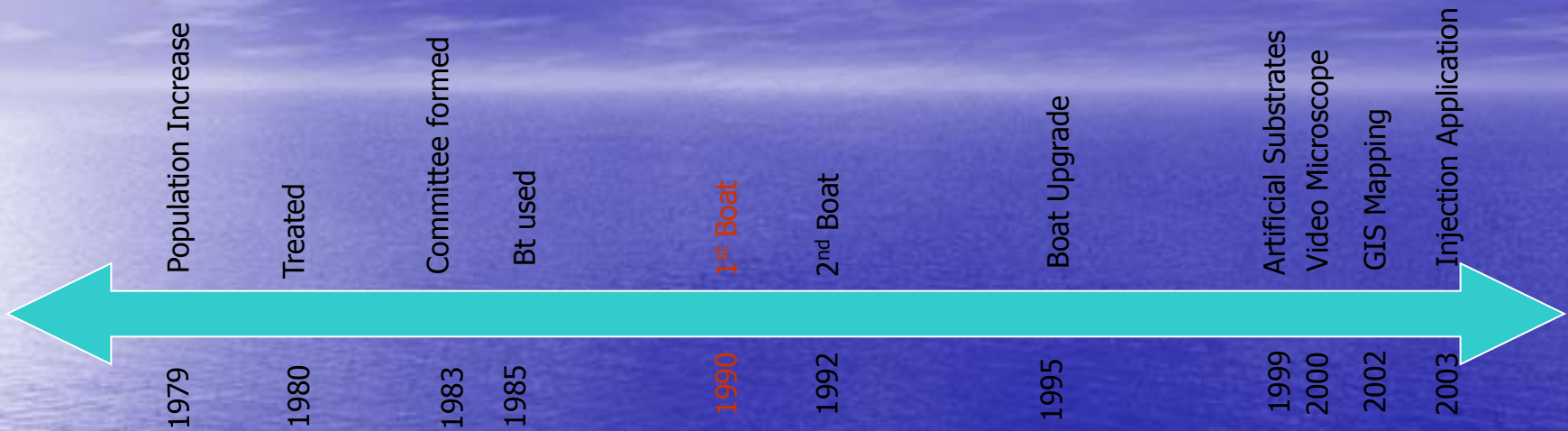
Buffalo Gnat Control Program



1985

Bt insecticide used for 1st time.

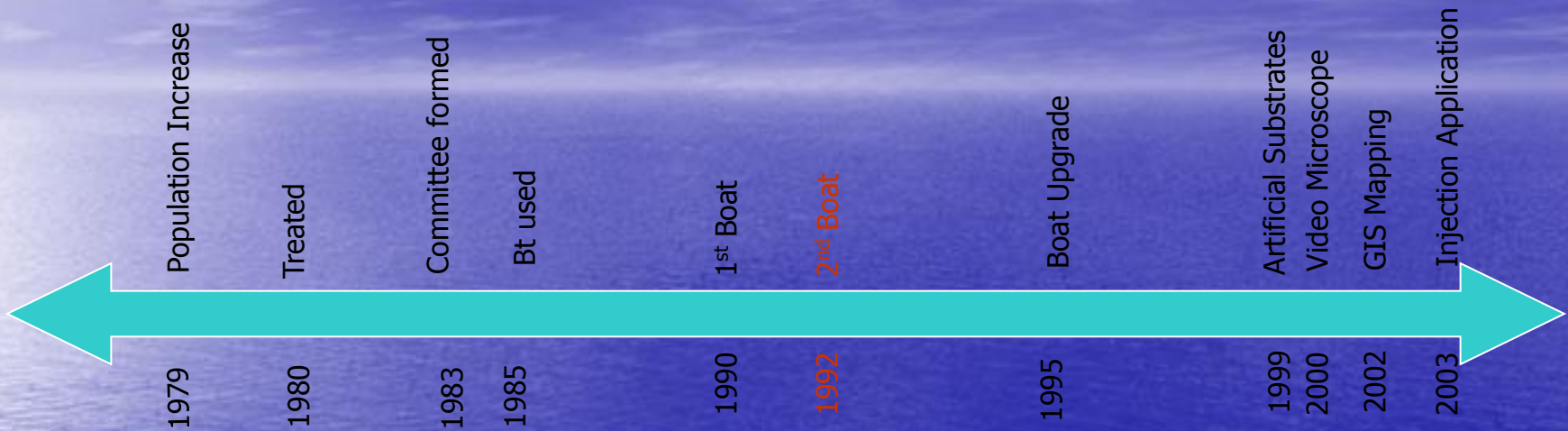
Buffalo Gnat Control Program



1990

20 ft. fiberglass boat, 25 hp motor, and spray system purchased.

Buffalo Gnat Control Program



1992

Second boat purchased

20ft commercial aluminum boat, 25 hp motor,
spray system

Buffalo Gnat Control Program

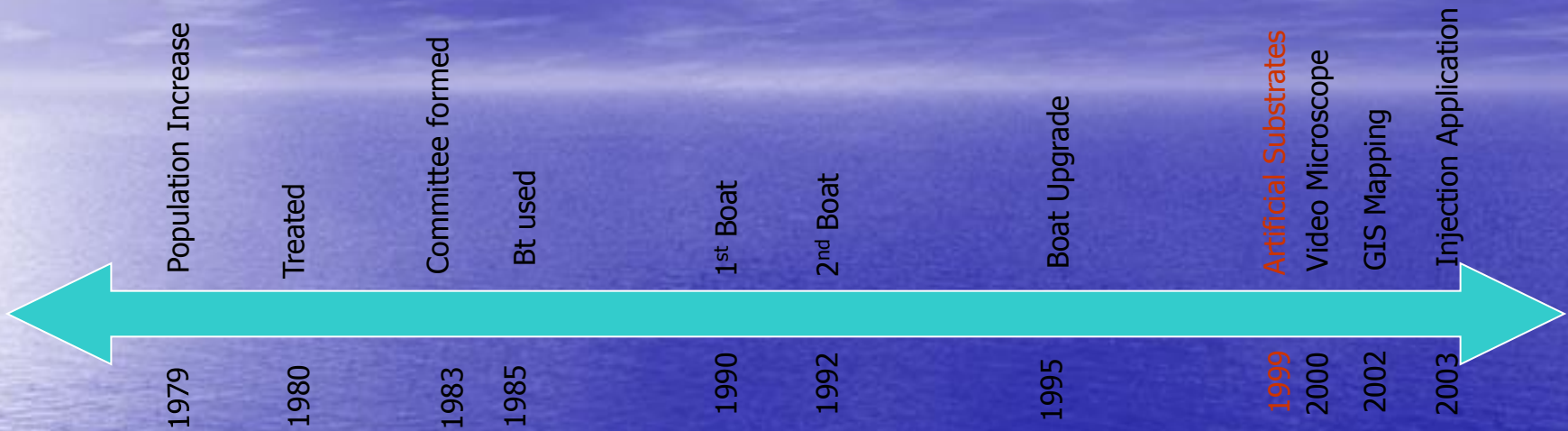


1995

Second Boat Purchased

20 ft. commercial boat, 40hp motor, spray system

Buffalo Gnat Control Program



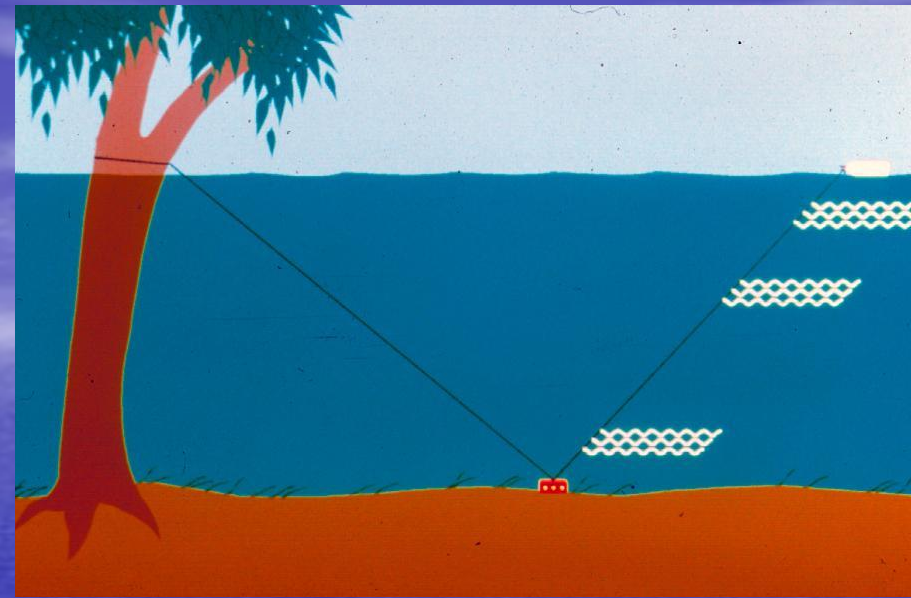
1999

Trial of Artificial Substrates tested and system developed.



OLD WAY

Checking sticks, limbs, vines, and other surfaces for larvae.



NEW WAY

Artificial Substrates suspended at different depths at 10 locations.

Buffalo Gnat Control Program



2000

Purchased a video microscope to count and measure larvae samples.

Counting Larvae (Below)
I.D. Larvae (Top Right)
I.D. Pupae (Bottom Right)

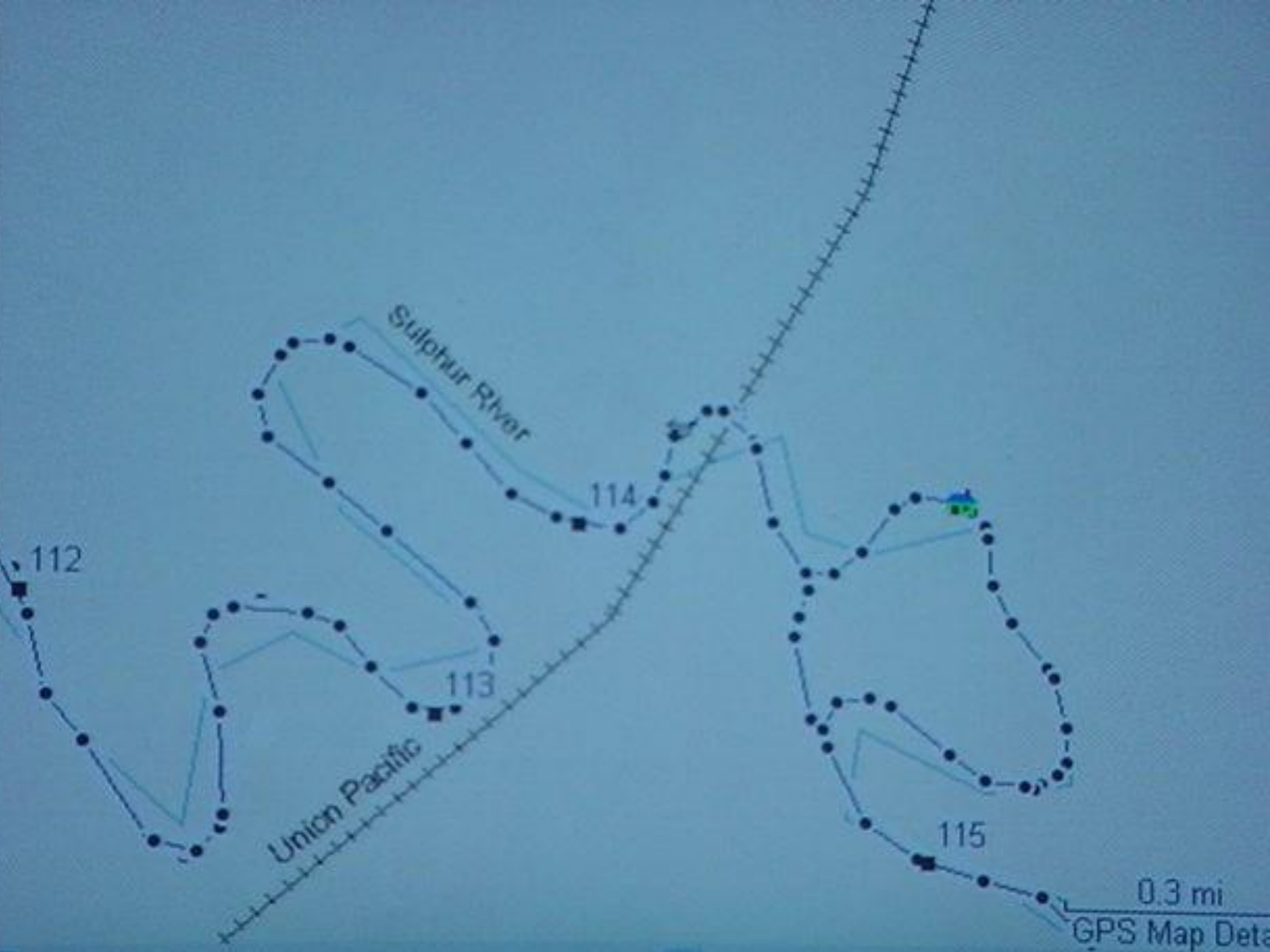


Buffalo Gnat Control Program

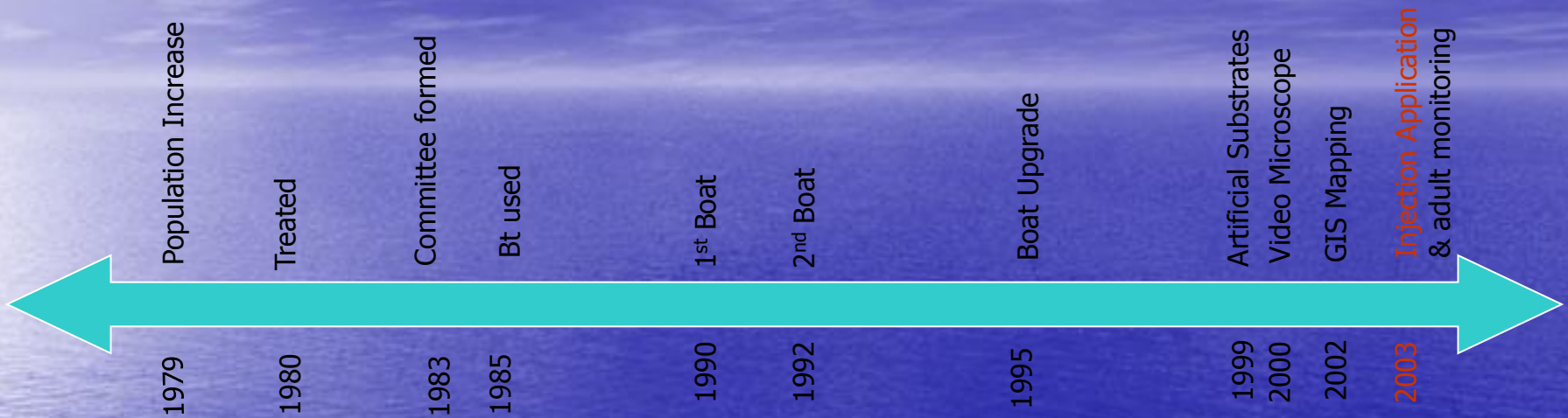


2002

Purchased GPS unit to map river, treatment locations, sample locations, and landmarks.



Buffalo Gnat Control Program

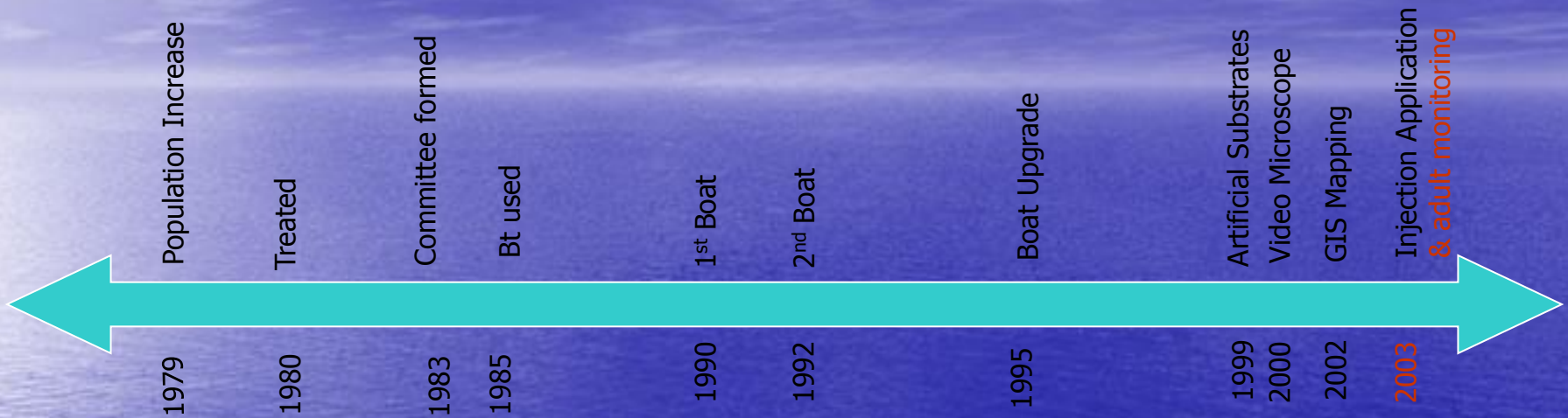


2003

Removed old spray systems and upgraded to an injection system in both boats.



Buffalo Gnat Control Program



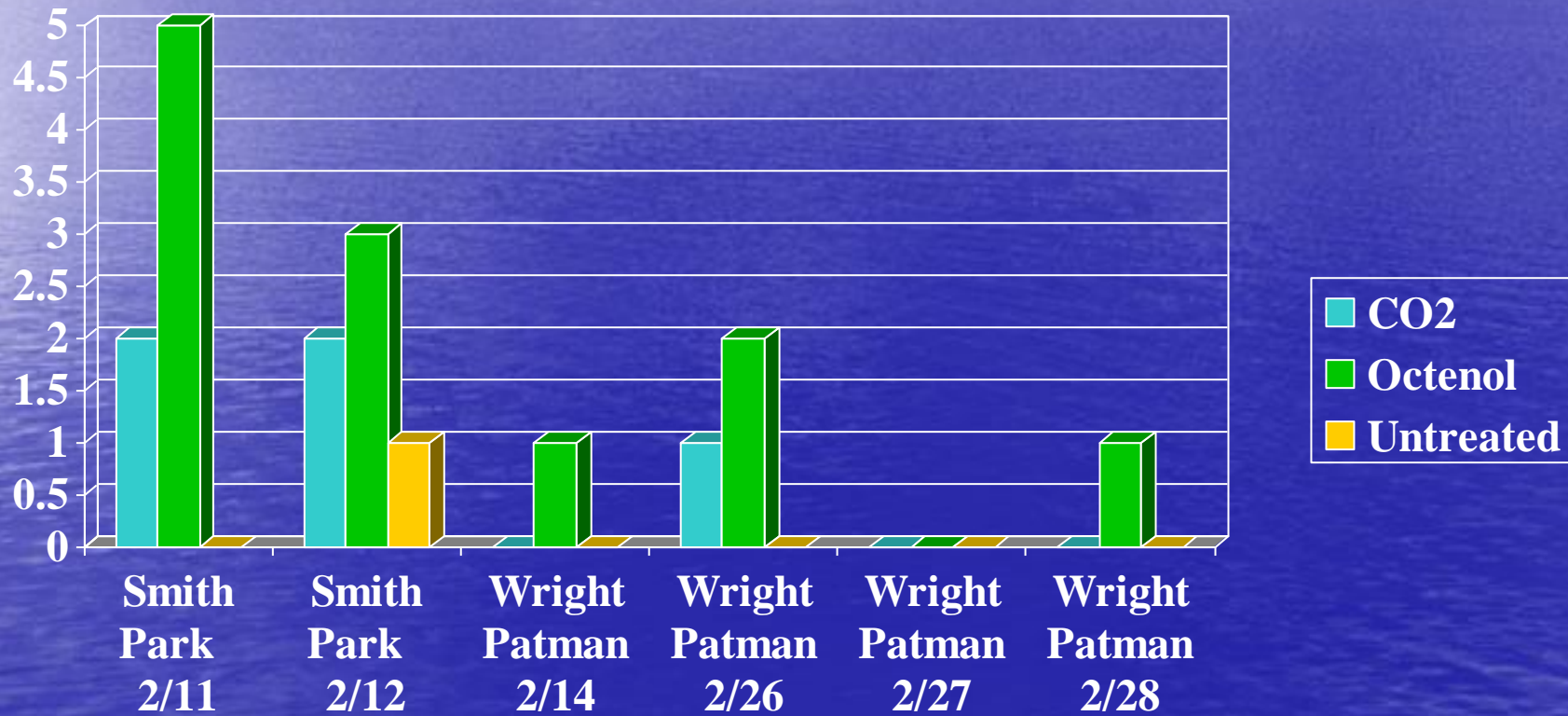
2003

Conducted tests on types of traps used for monitoring adult gnats.

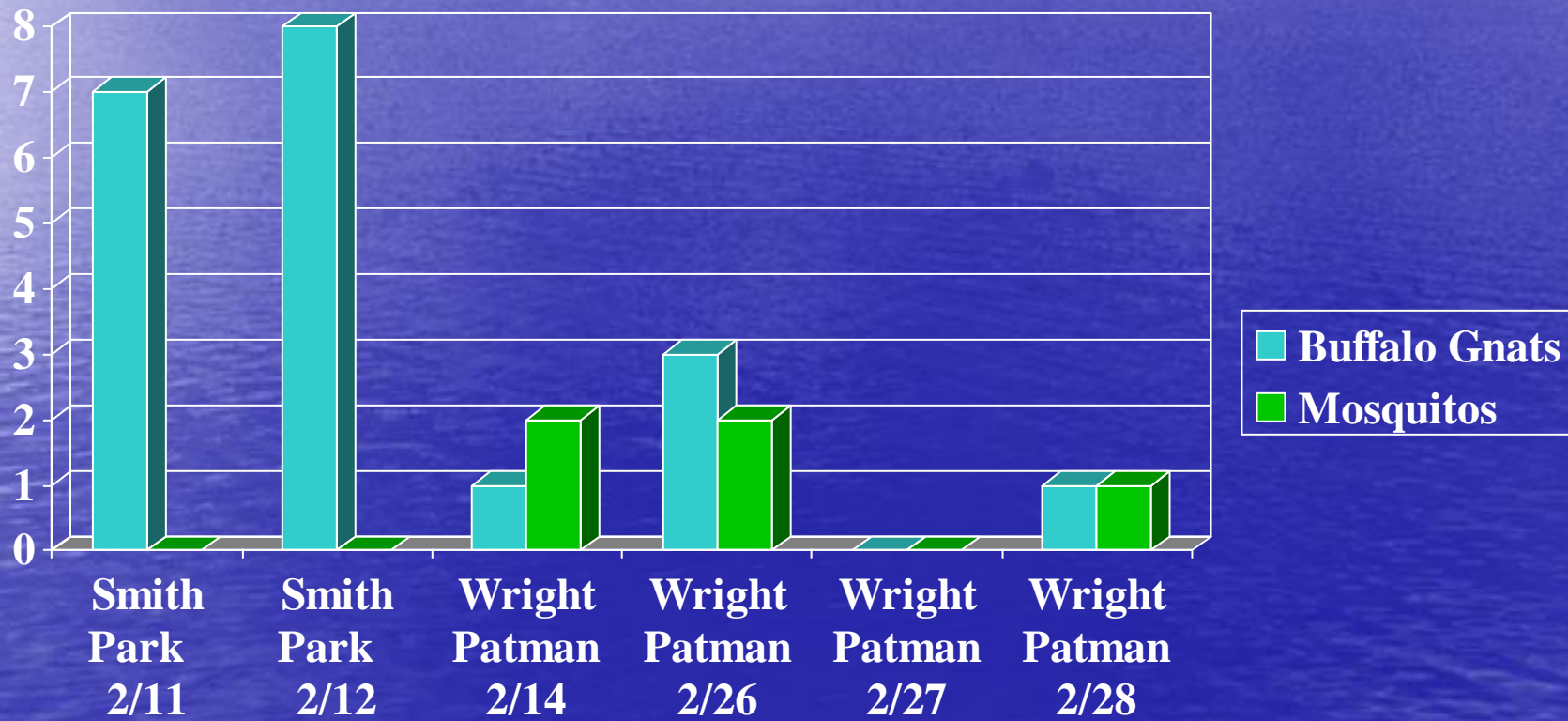


CDC Miniature Light Traps were modified
to use: CO₂
 Octenol
 No Attractant

Buffalo Gnat Survey



Type Insects Captured (total #)



What Do We Do Next?



THE END

