



# Lake Mead Threadfin Shad Monitoring

Lake Mead Ecosystem  
Monitoring Workgroup  
Meeting

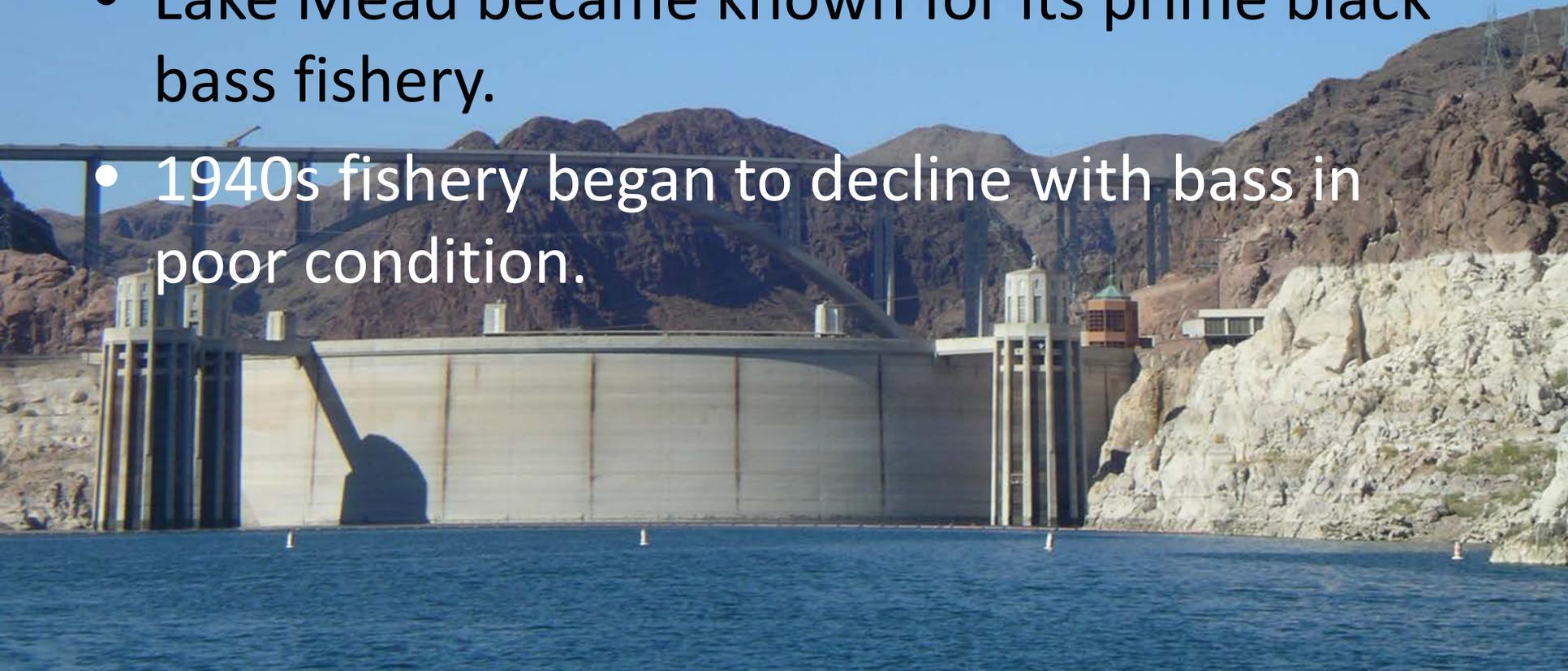
12/5/2012

Las Vegas, NV

Presented by Debora Herndon

# History of Lake Mead Fishery

- Hoover Dam completed 1935, creating Lake Mead.
- Largemouth bass and sunfish stocked.
- Lake Mead became known for its prime black bass fishery.
- 1940s fishery began to decline with bass in poor condition.



# History

- Study of fishery
- found lack of cover & forage



## History

- Threadfin shad stocked to Lake Mead in 1954

## • Properties

- Small size
  - Prolific
  - Pelagic , feeding in open water
  - Non-competitive with sport fish
- Largemouth bass condition improved and the threadfin shad became well established.



# History

- In 1963, Lake Powell began filling and the Lake Mead elevation dropped.
  - The drawdown pattern changed to one of lake elevation declines in the spring and rising elevations in the fall/winter.
  - This affected the largemouth bass spawning in the spring.
  - Harvest of largemouth bass declined during this time.
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- A photograph of a largemouth bass fish lying horizontally in a wooden crate. The fish is greenish-brown on top and lighter on the bottom. A wooden ruler is placed along the length of the fish, showing its size. The background consists of a gravelly surface and some fishing equipment.

# History

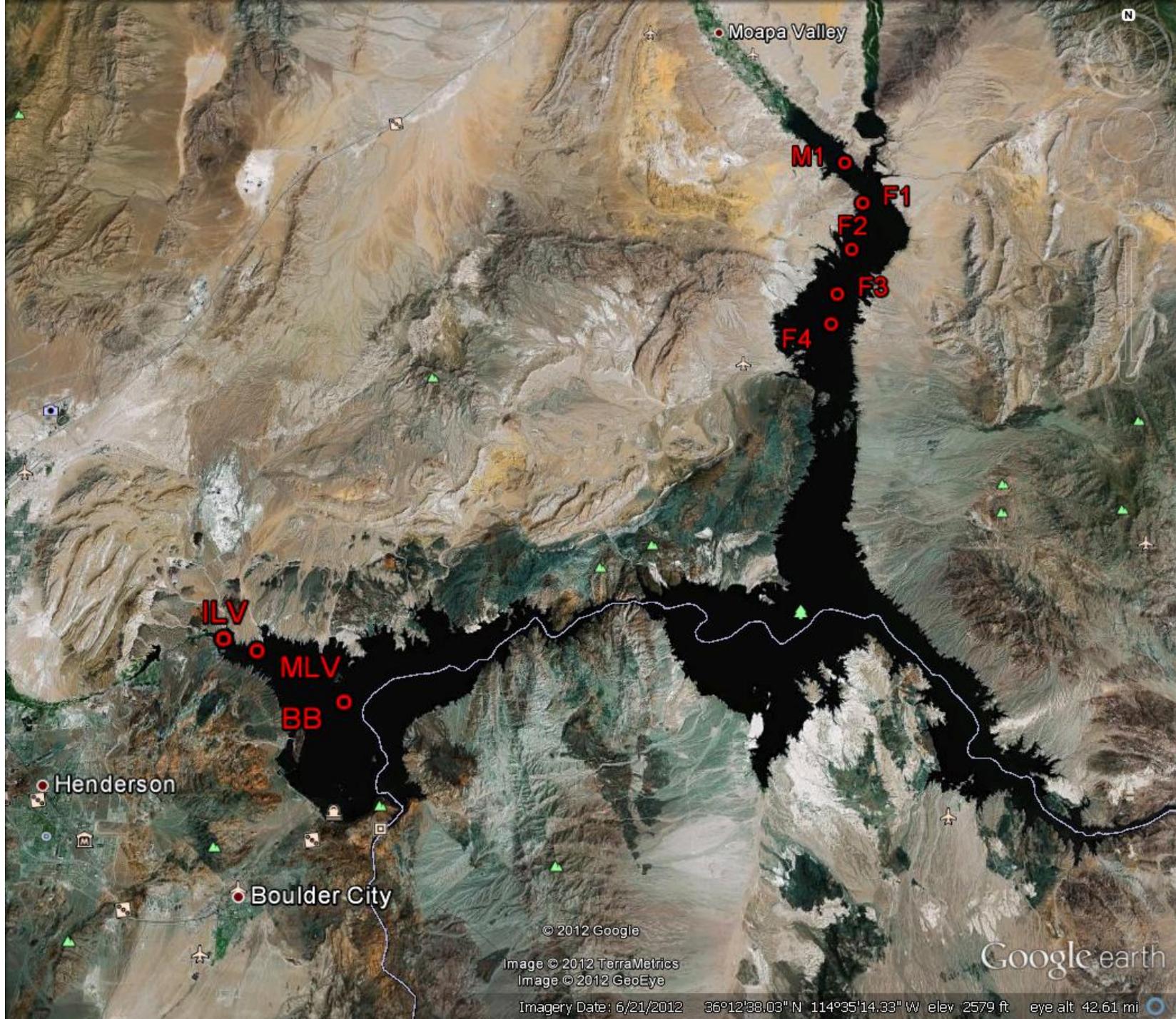
- Striped bass stocked to Lake Mead in 1969.
- Flourished on large biomass of threadfin shad (TFS).
- By the late 1970s, SB depleted shad biomass.



- TFS population fluctuates from year to year and follows a boom-and-bust cycle.
- TFS provide forage for all sport fish and are the main forage for striped bass.

# History

- Lake Mead Fertilization Project, UNLV
  - Axler, R., L. Paulson, P. Vaux, P. Sollberger, and D. H. Baepler. 1988. Lake Mead Fertilization Project. *Lake and Reservoir Management* 2: 125-135.
- Increase shad production from the bottom up through the application of fertilizer to the lake.
- This is where the shad trawls and monitoring began.

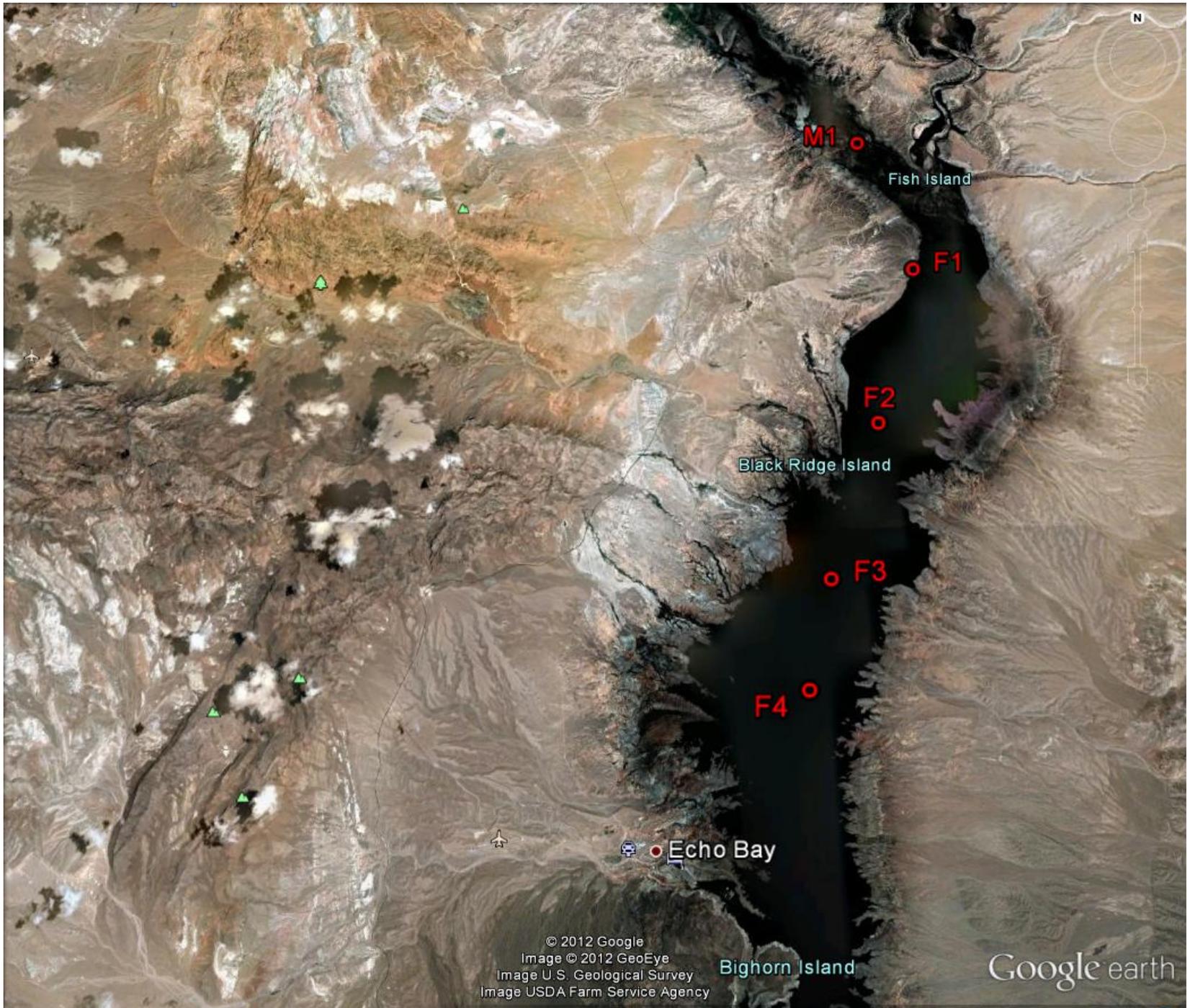


© 2012 Google

Image © 2012 TerraMetrics  
Image © 2012 GeoEye

Google earth

Imagery Date: 6/21/2012 36°12'38.03" N 114°35'14.33" W elev 2579 ft eye alt 42.61 mi





# Methods

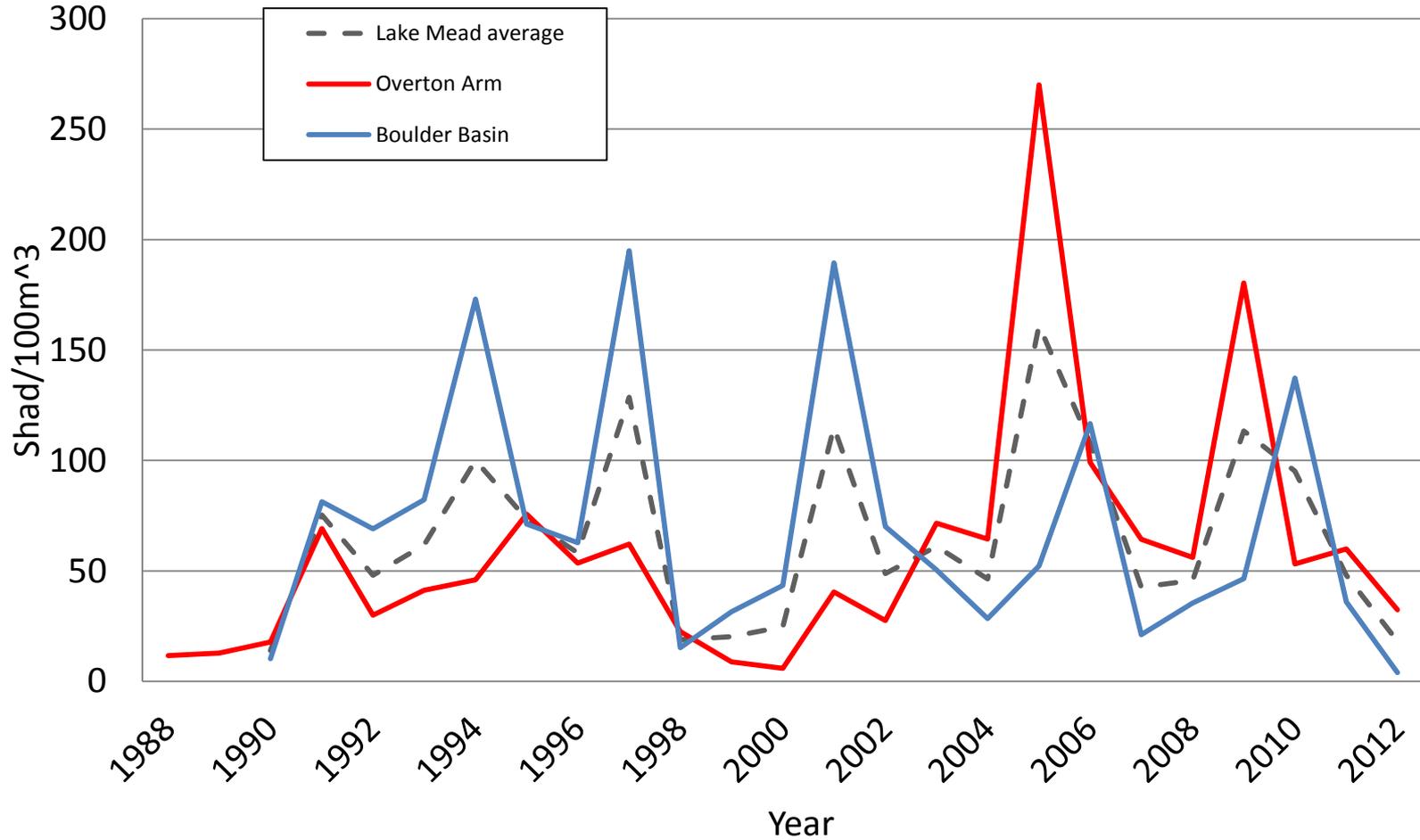
- Meter net, 1 meter diameter, 1600 micron mesh, 6 meters in length
- Collecting cup with 1mm mesh
- Flow meter
- Towed 21 meters behind boat
- Speed of approx. 2.5 mph
- 10 minutes
- Evening hours



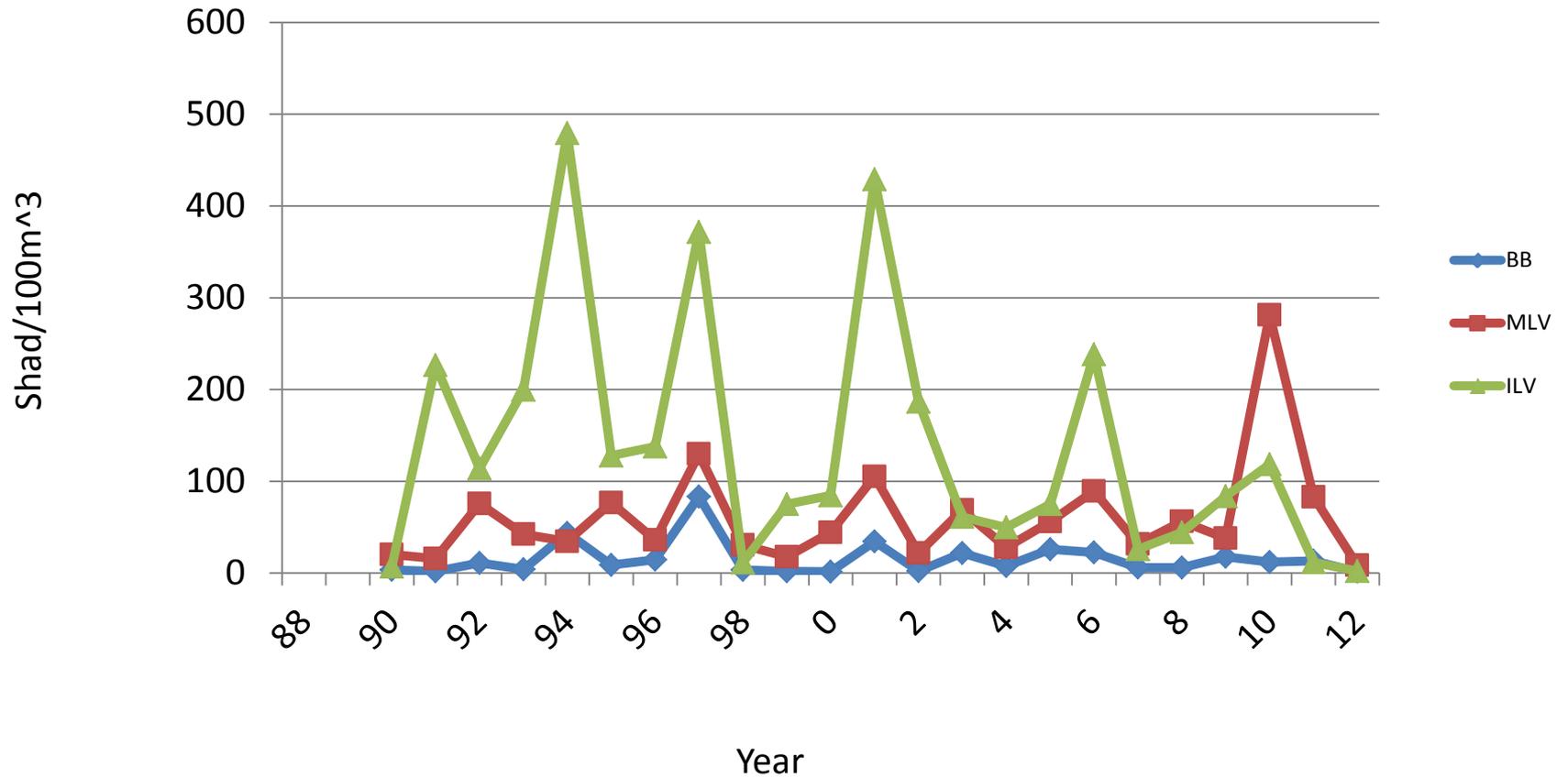
# Methods

- Larval shad measure 6-22 mm TL.
- Shad are preserved in ethanol.
- Later calculated to the number of shad/100 cubic meters.
- The average of 4 or 5 weeks of peak production is used to calculate peak values.

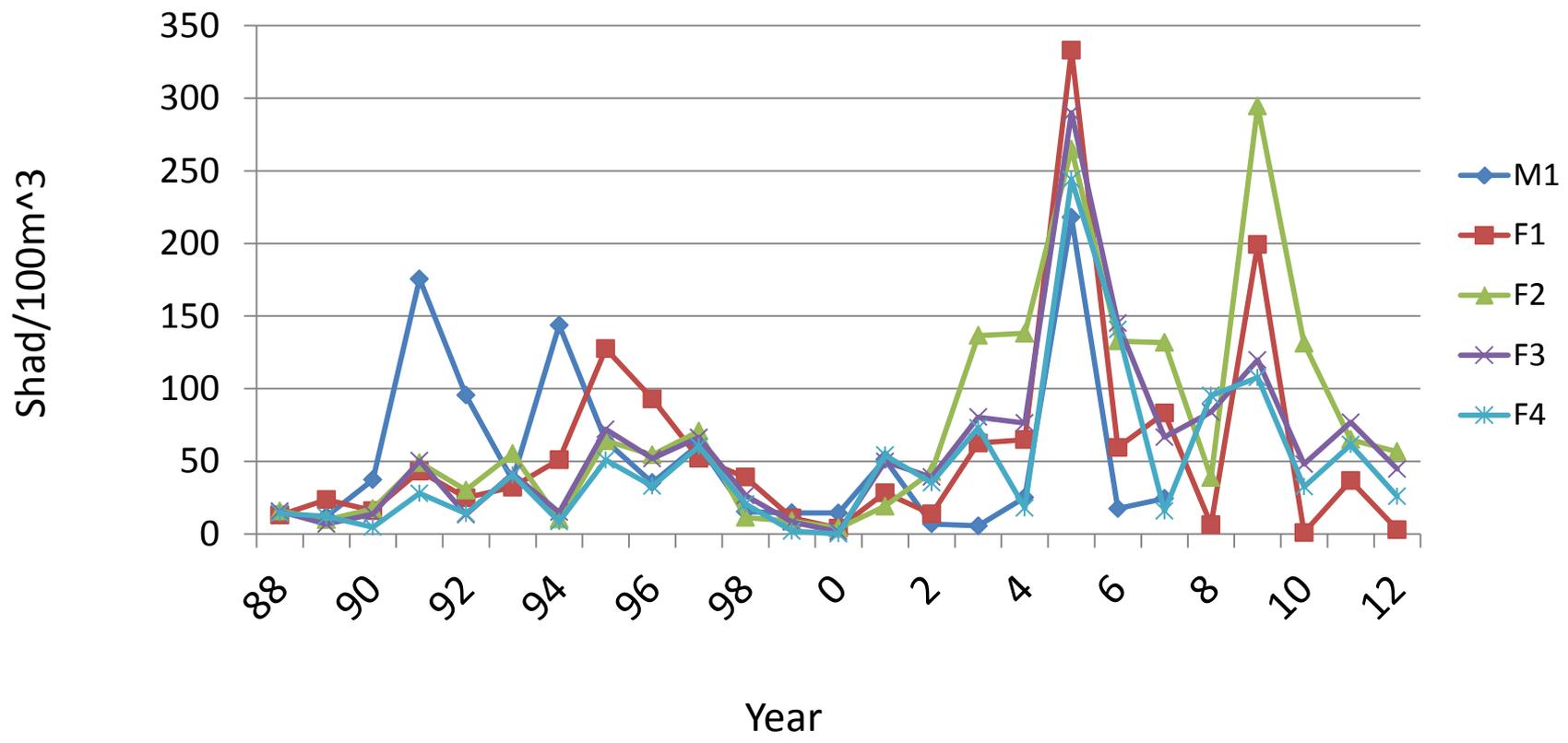
# Shad production by year



# Las Vegas Bay / Boulder Basin Shad



# Overton Arm Shad





Threadfin shad

# The end

- Questions or comments?

