ESHMC March 31 – April 1 2009

Allan Wylie
IDWR

Outline

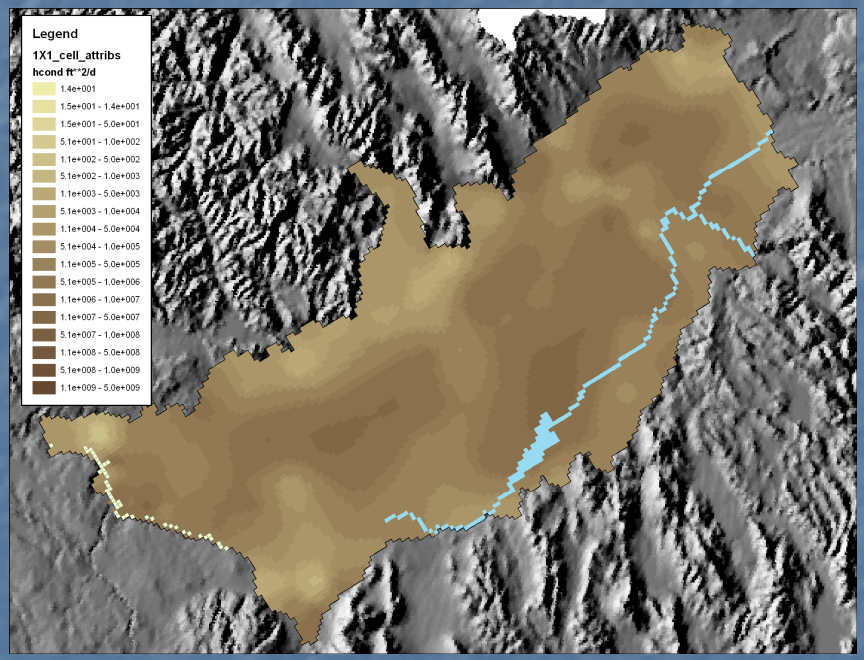
- Multi Drain simulation
  - Physical properties
  - Steady state match
  - Transient match

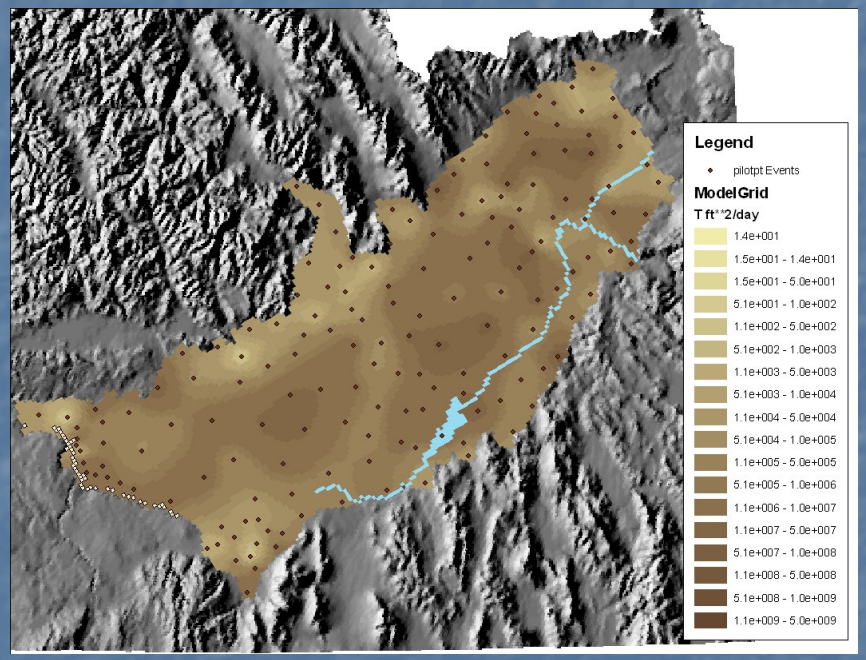
Multiple drains

- Digitize all springs in Covington & Weaver maps saving elevations and cfs
- Assign Covington and Weaver elevations to drains
  - Should check datums
- Calculate starting drain conductance using head from ESPAM 1.1 steady state run
  - (cfs * 86400)/((ss_head-drn_elev)+27)
    - +27 to ensure positive conductance
- Tie all drains in a reach except drains with measured discharge
  - All conductance values within a reach vary proportionally
- Elevations are fixed

Multidrain Transmissivity

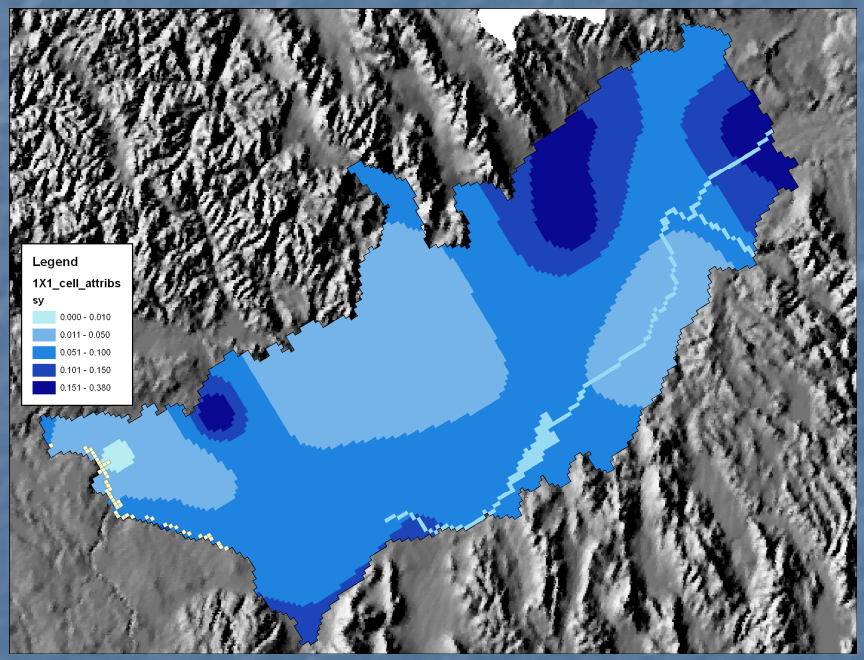
V 1.1

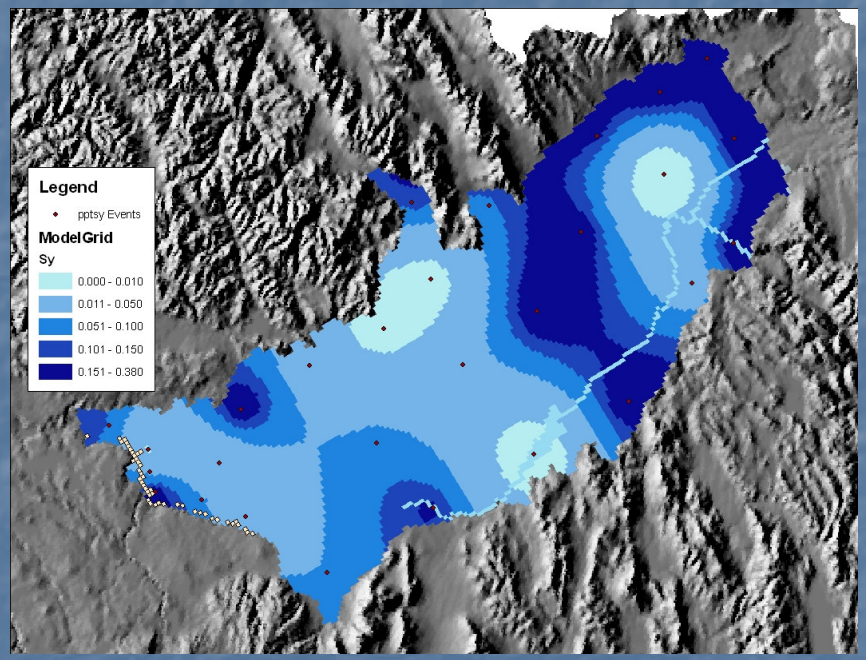




Multidrain Storage

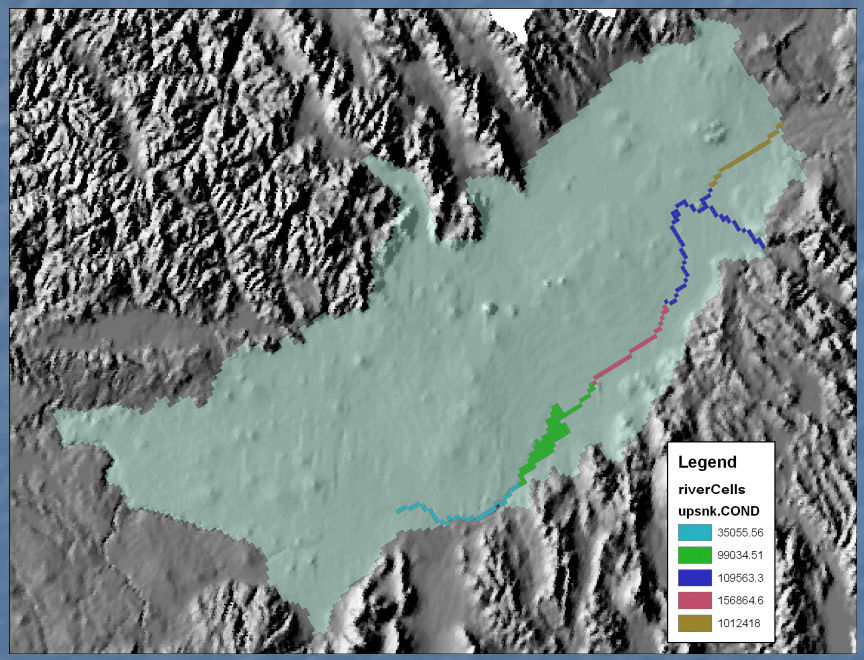
V 1.1

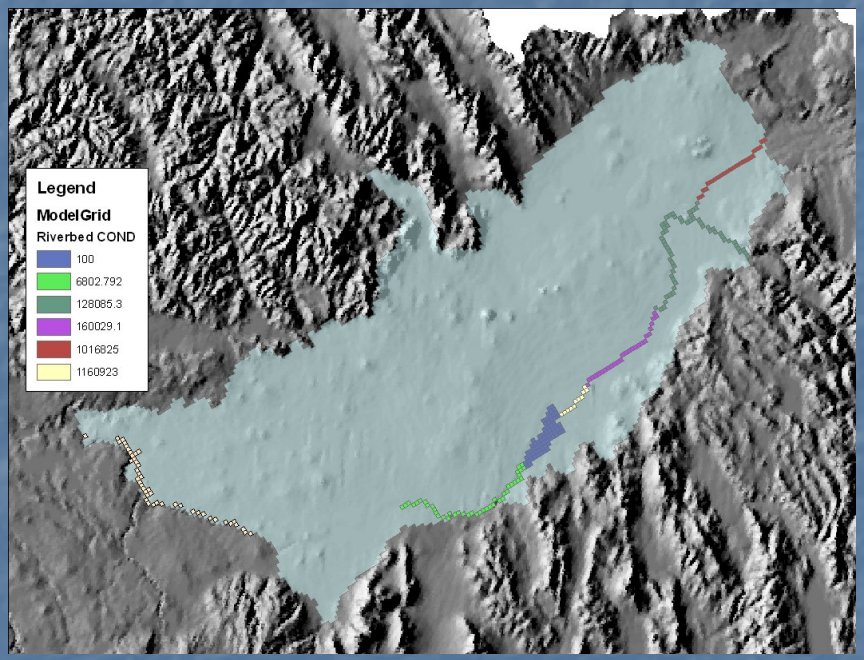




Multidrain Riverbed conductance

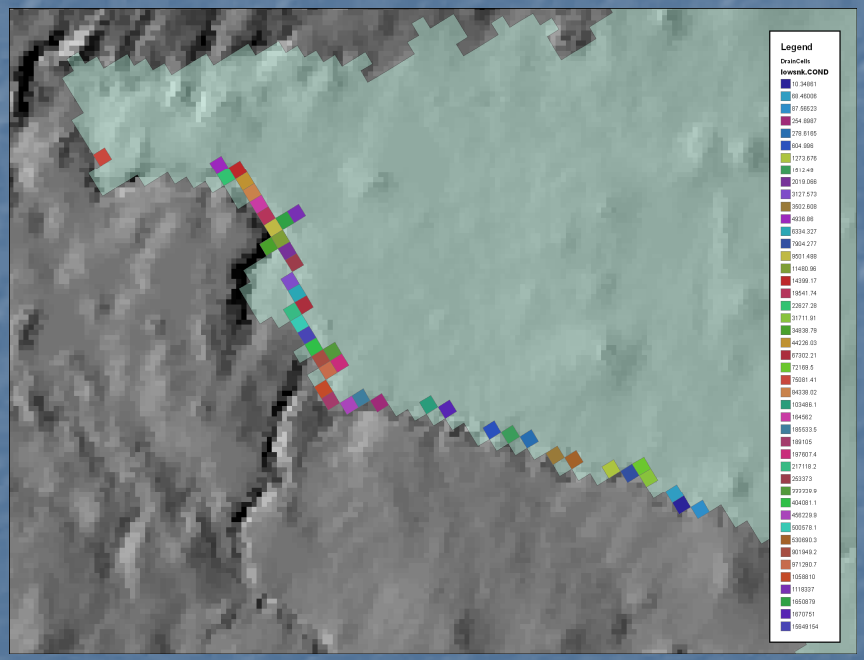
V 1.1

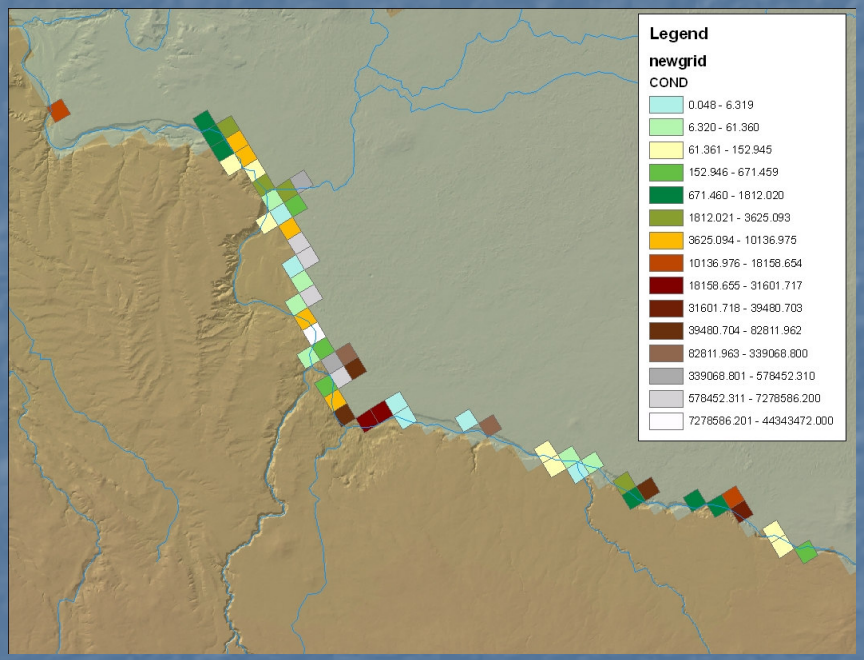




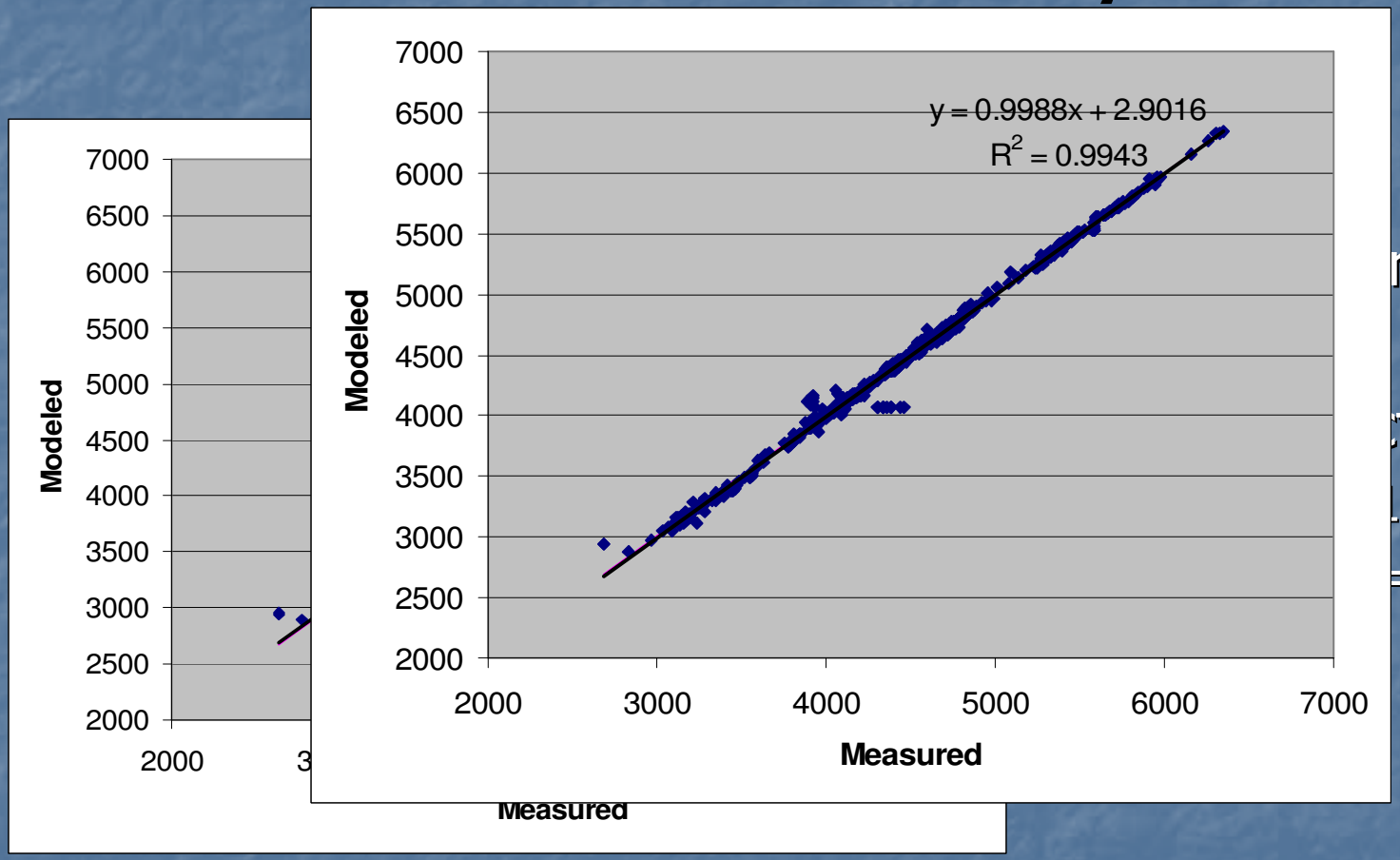
Multidrain Drain Conductance

V 1.1





Multidrain Steady state



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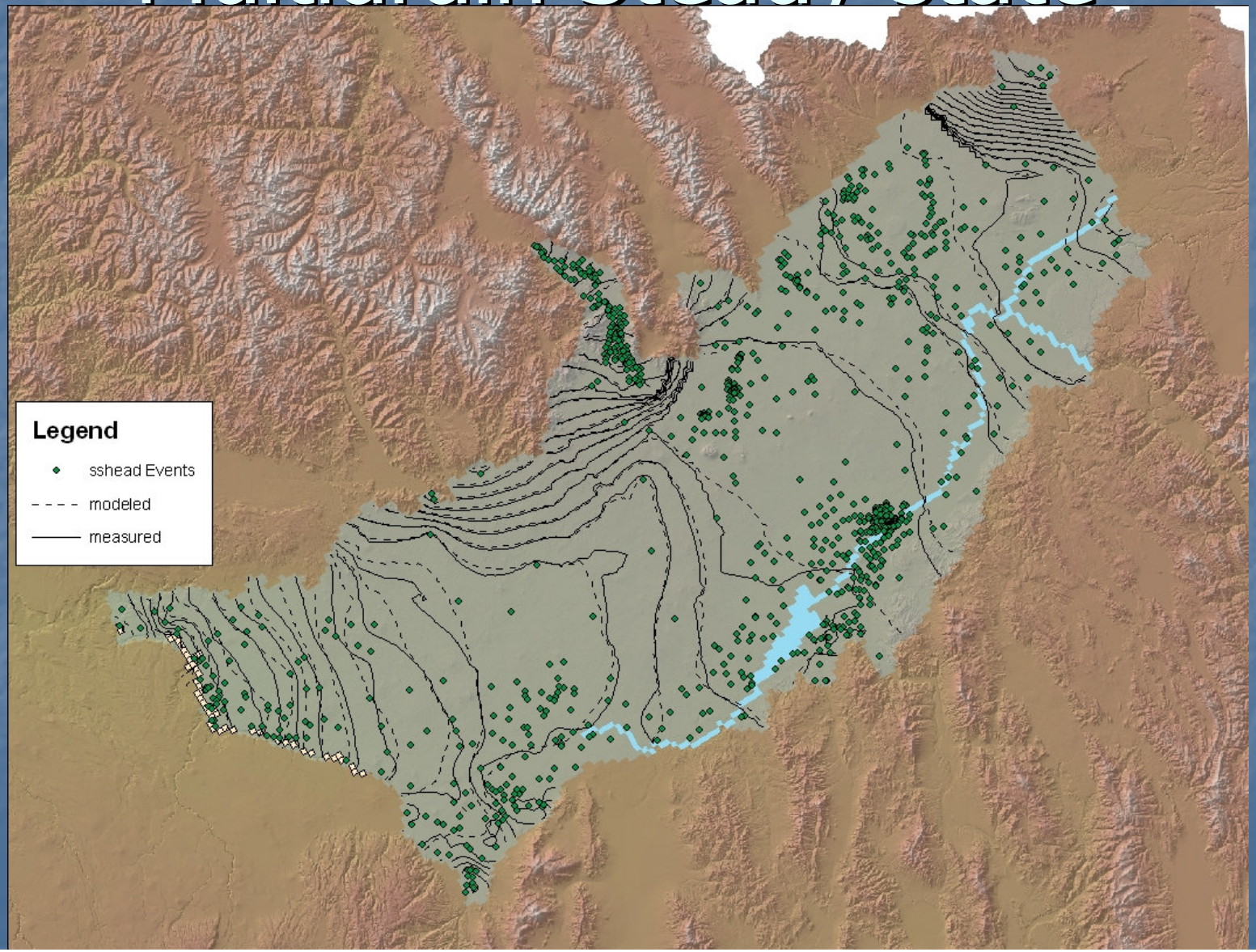
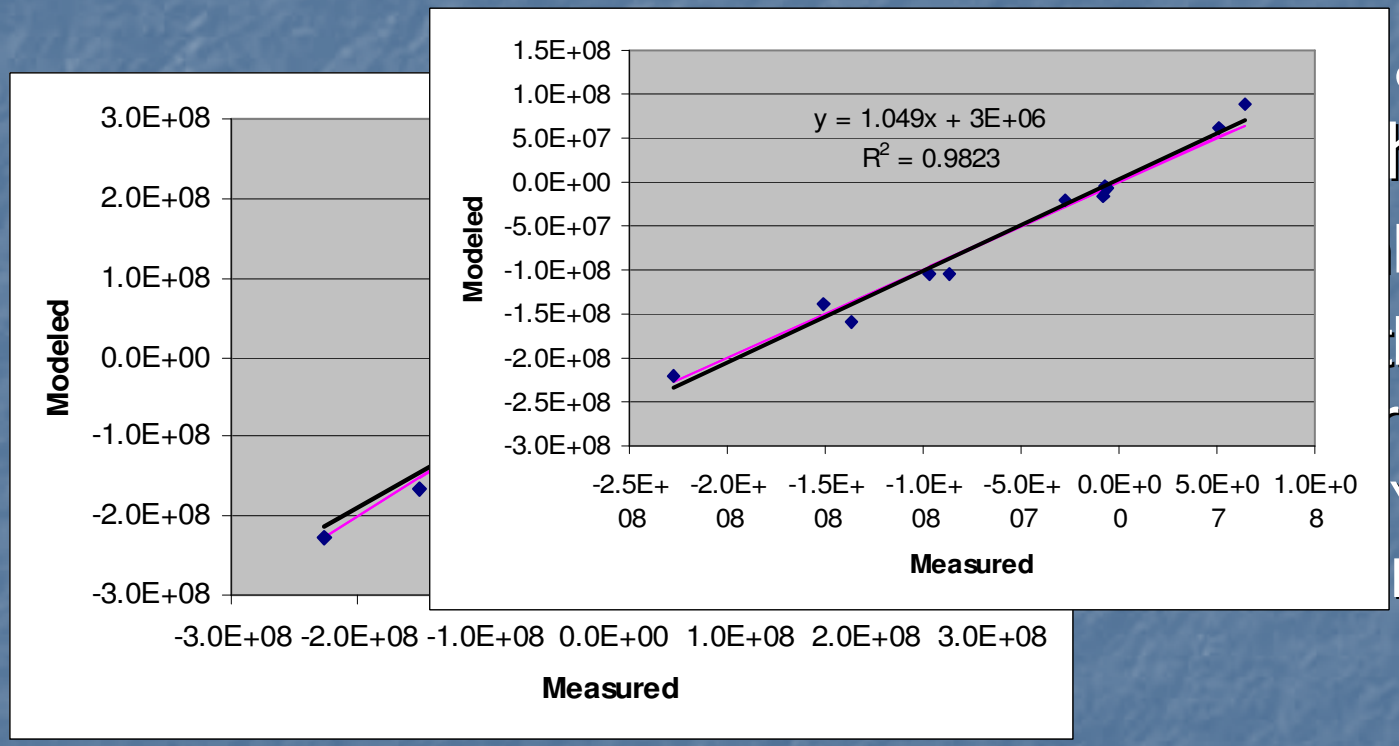
x + 0

= 1

Multidrain Steady state



Multidrain Steady state



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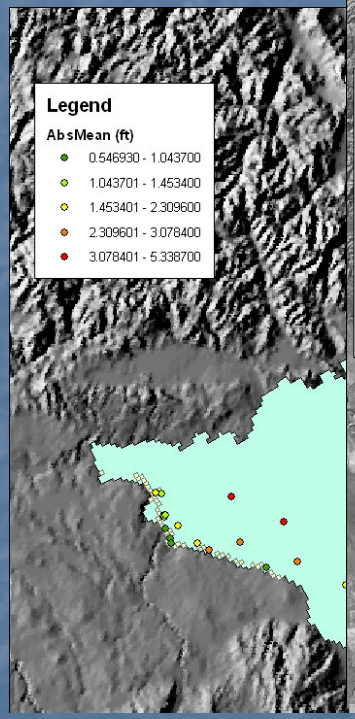
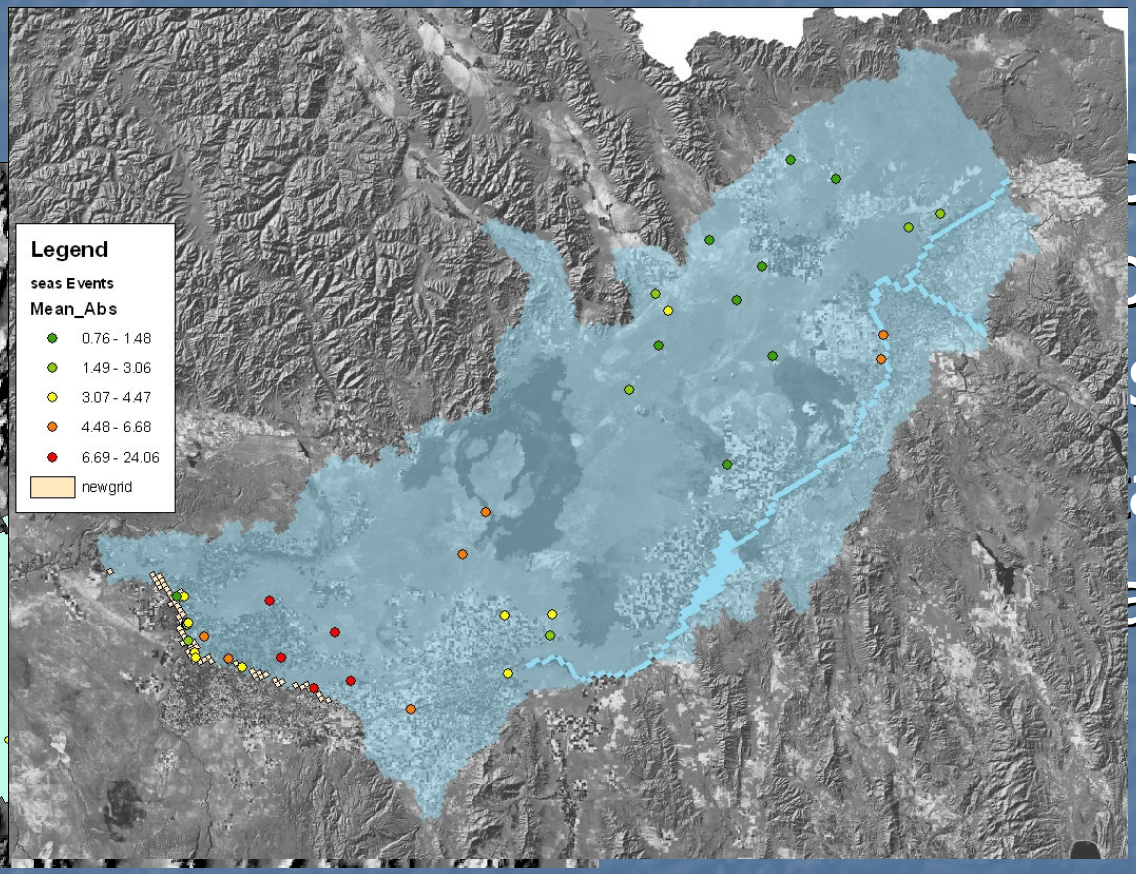
Y=1x + 0

$R^2 = 1$

Multidrain Seasonal data set





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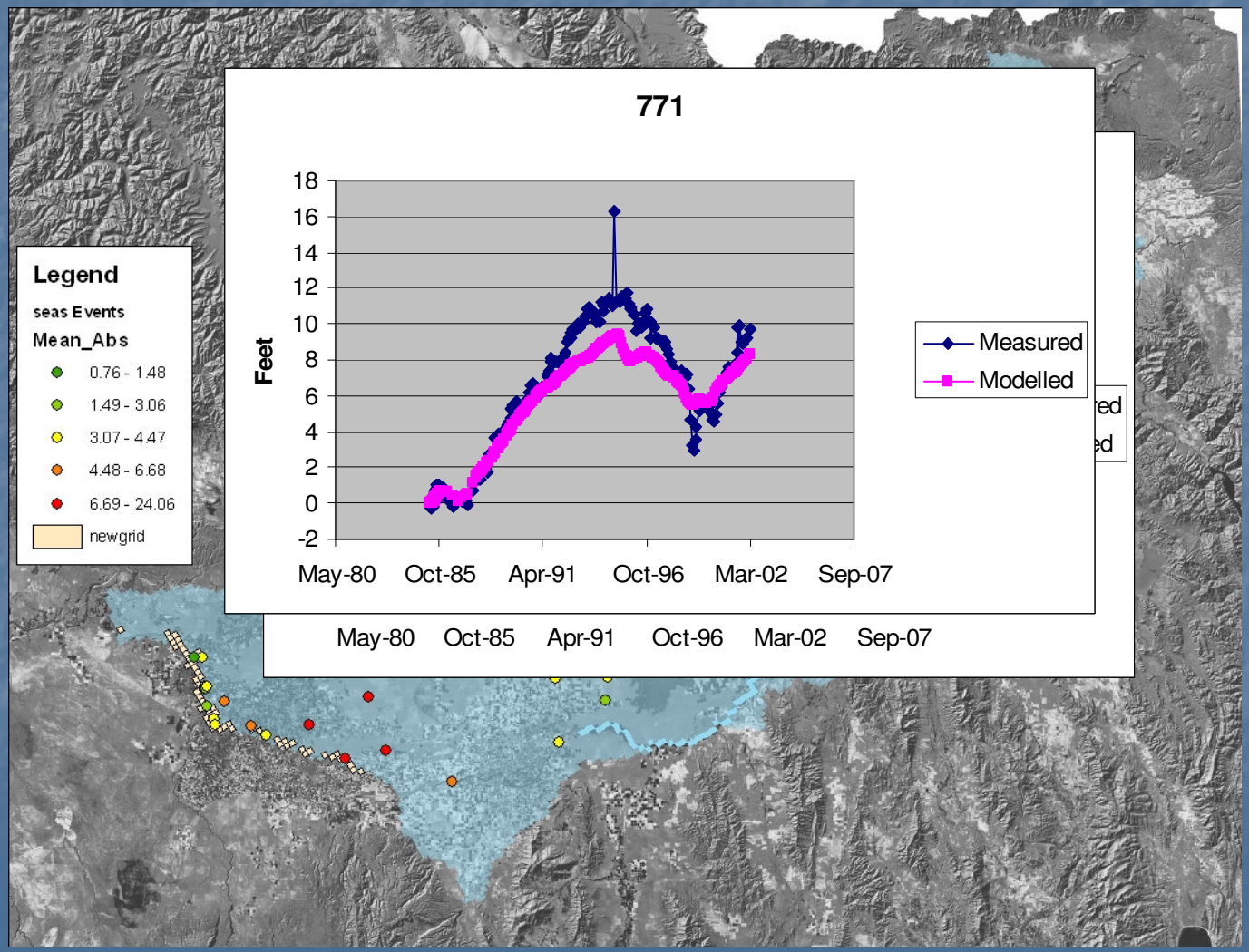
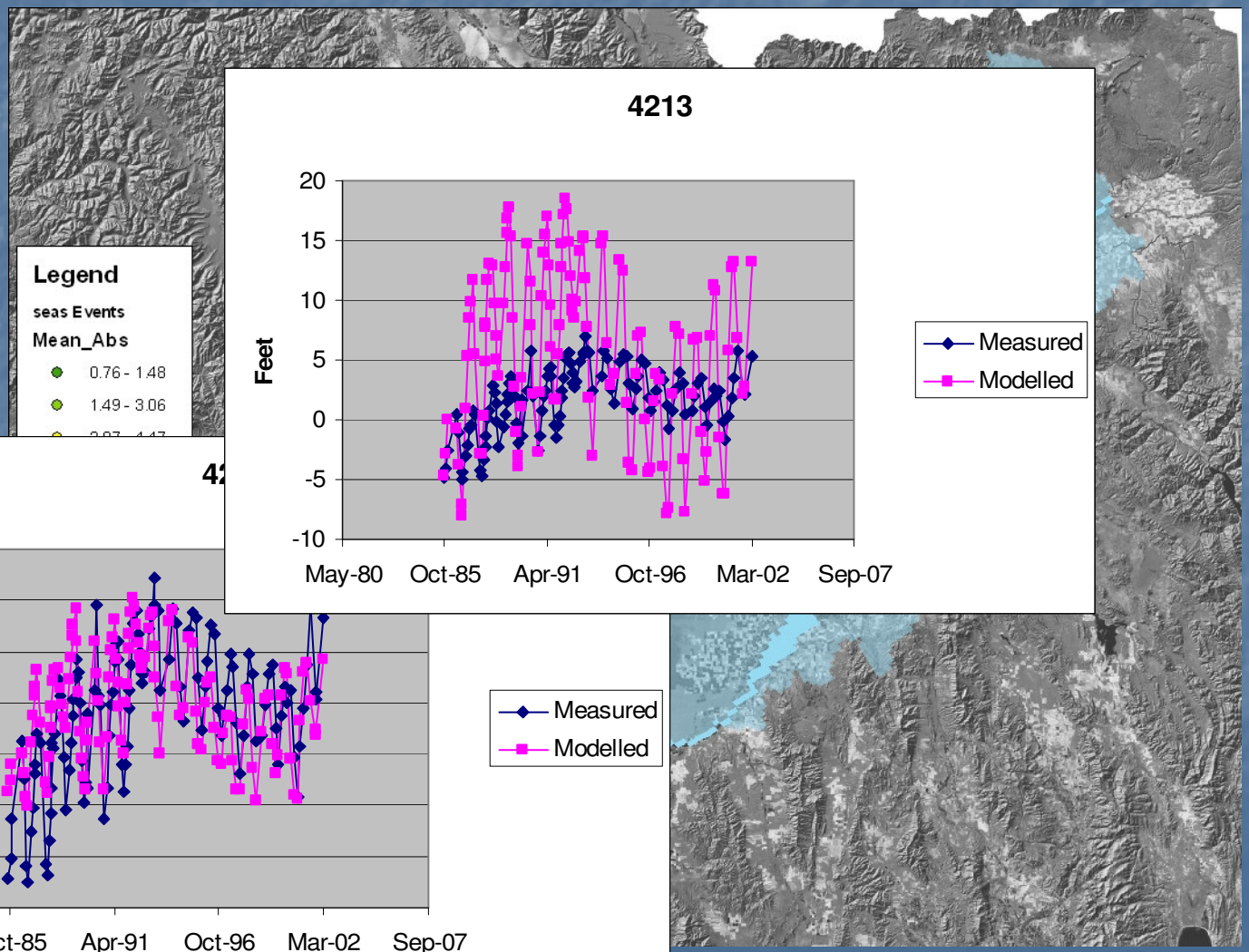
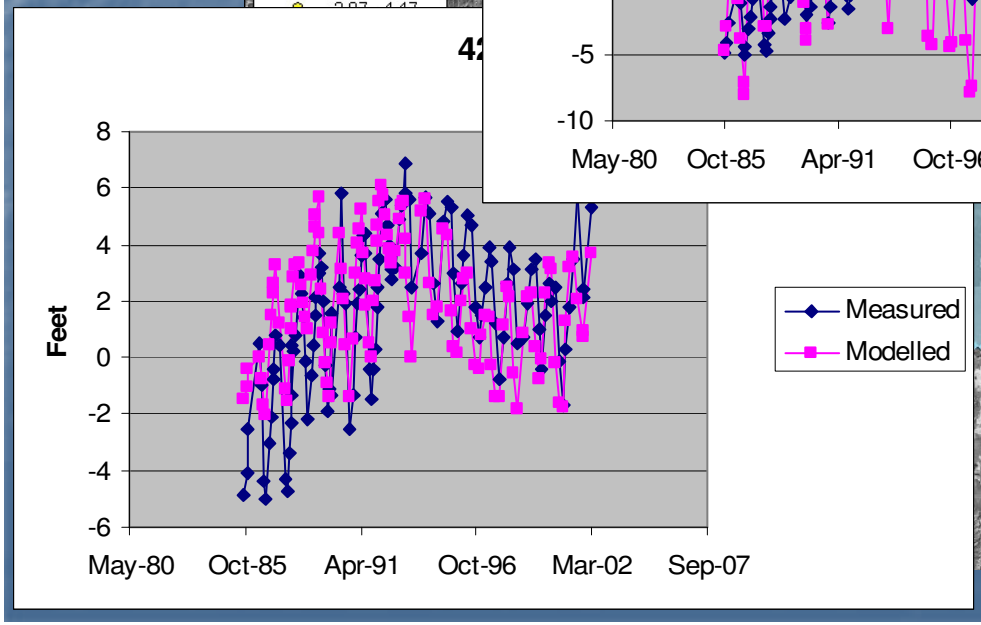
Multidrain Seasonal data set

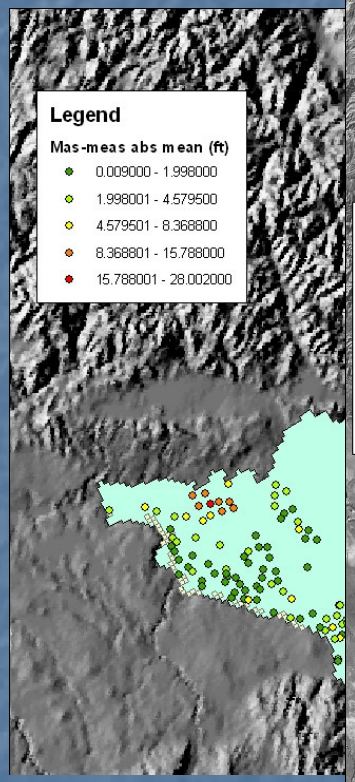


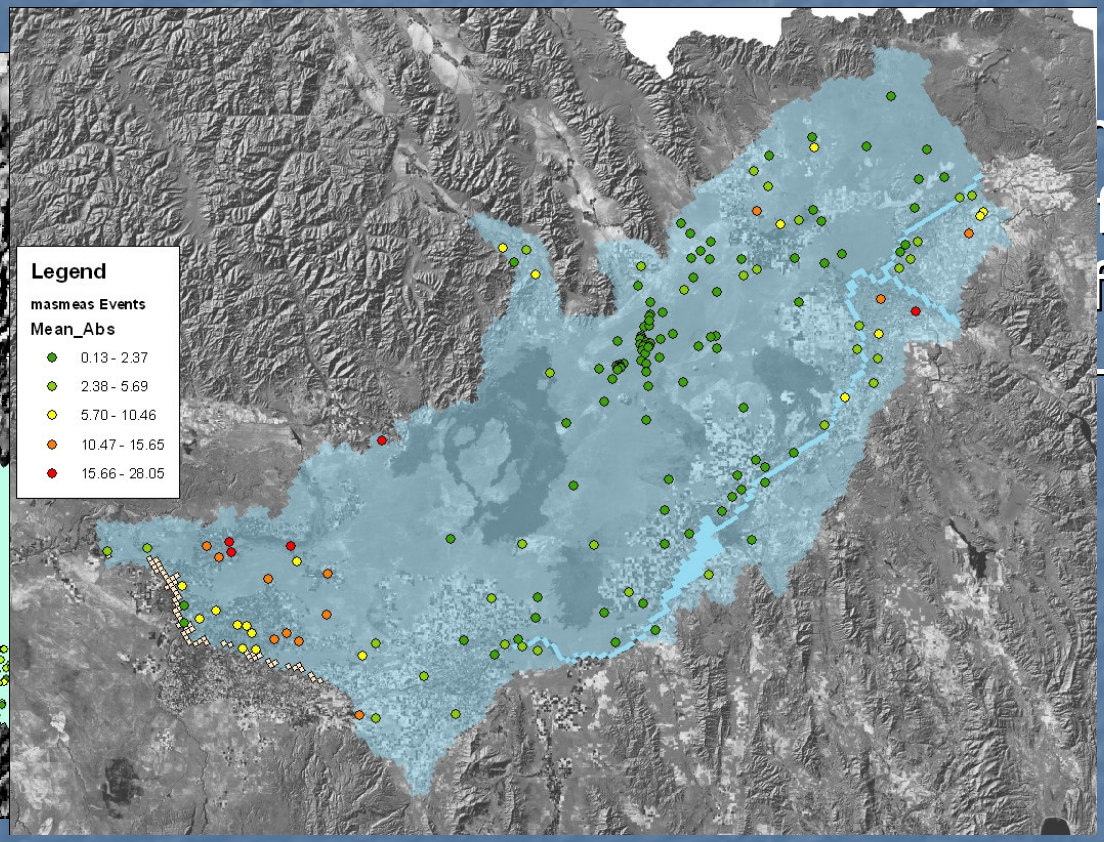
Multidrain Seasonal data set





Multidrain Mass measurement





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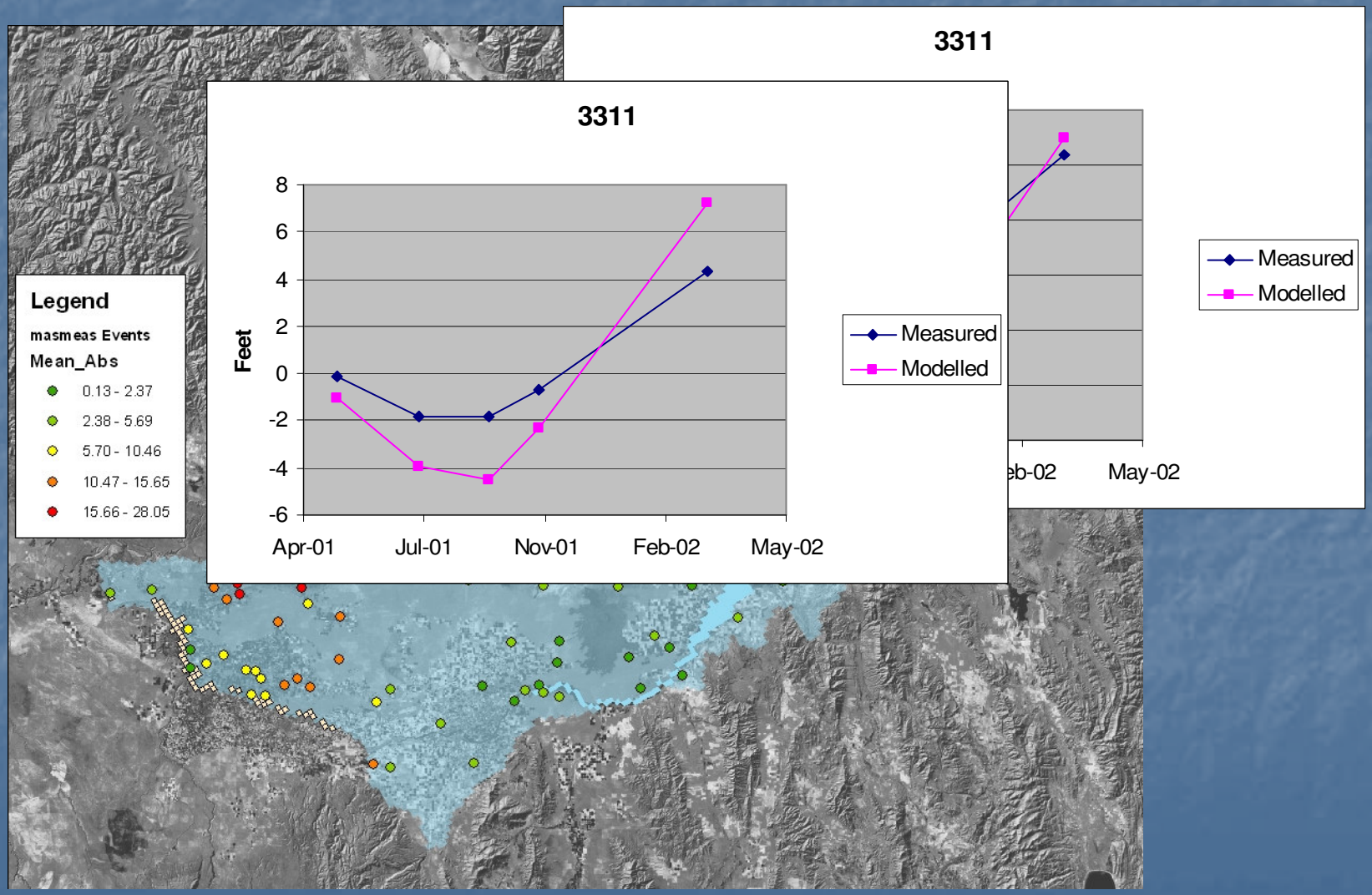
Multidrain Mass measurement



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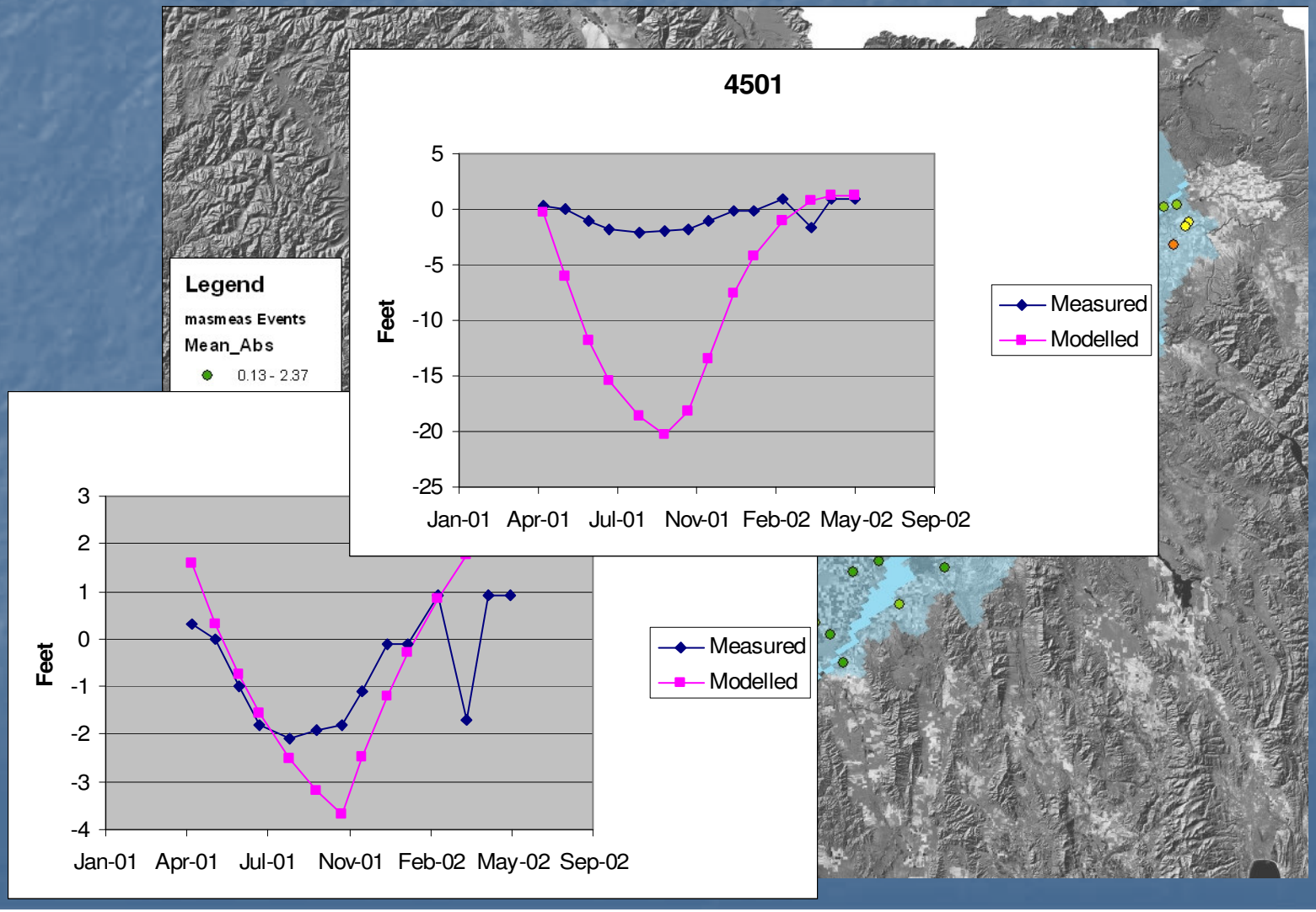
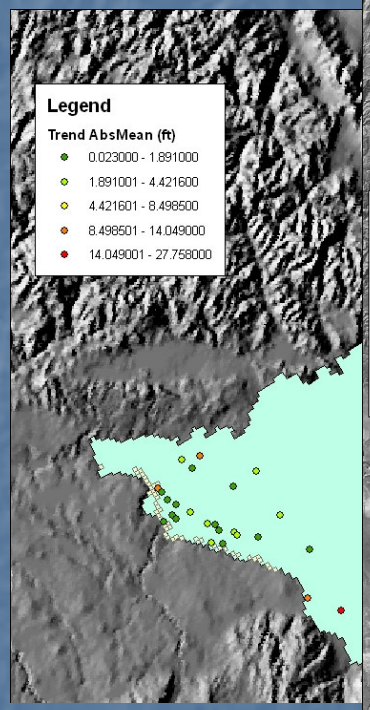
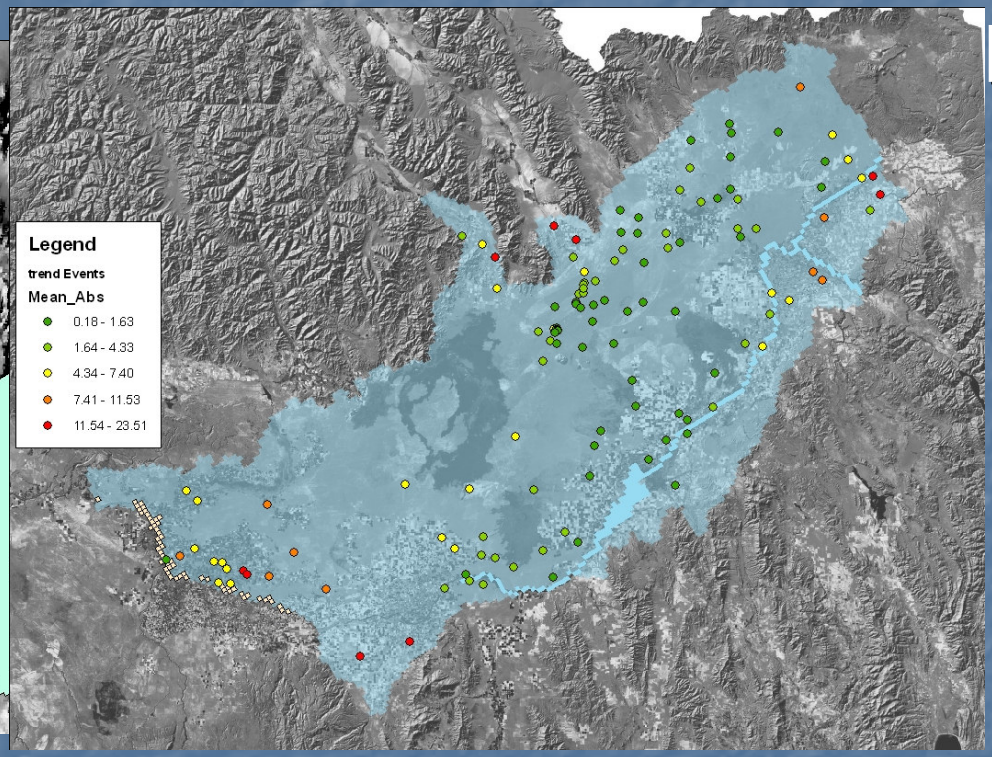


Multidrain Trend





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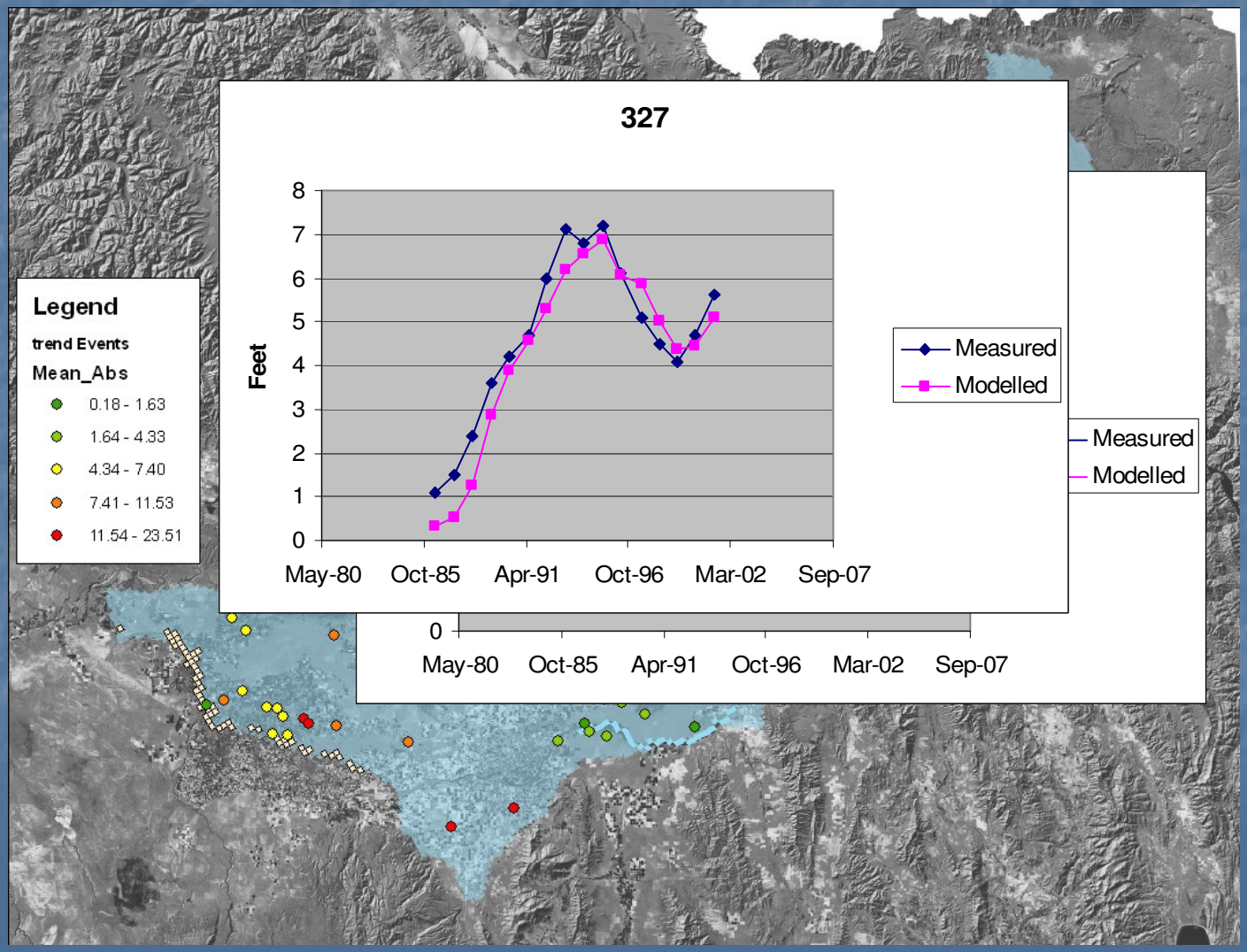
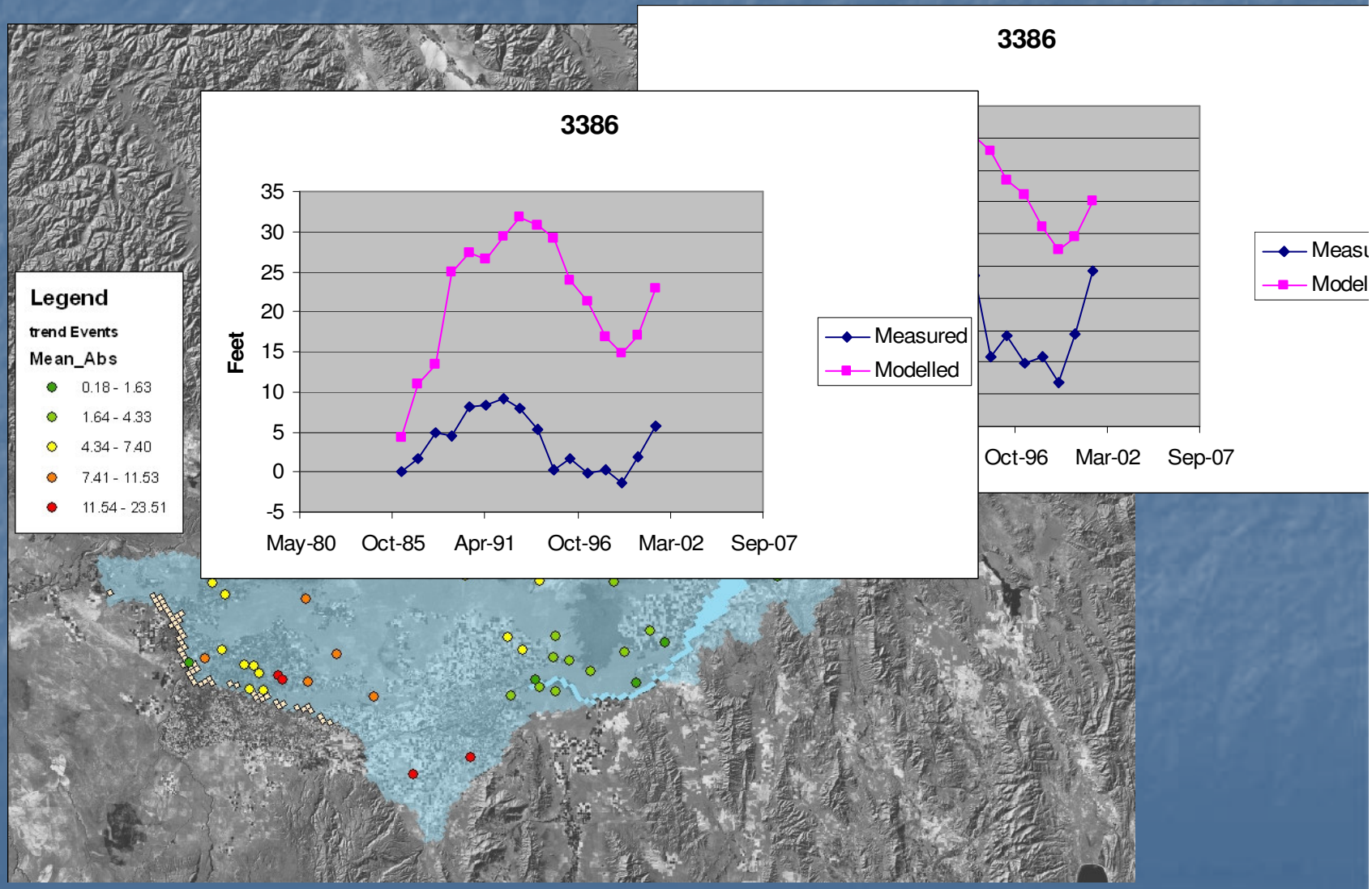
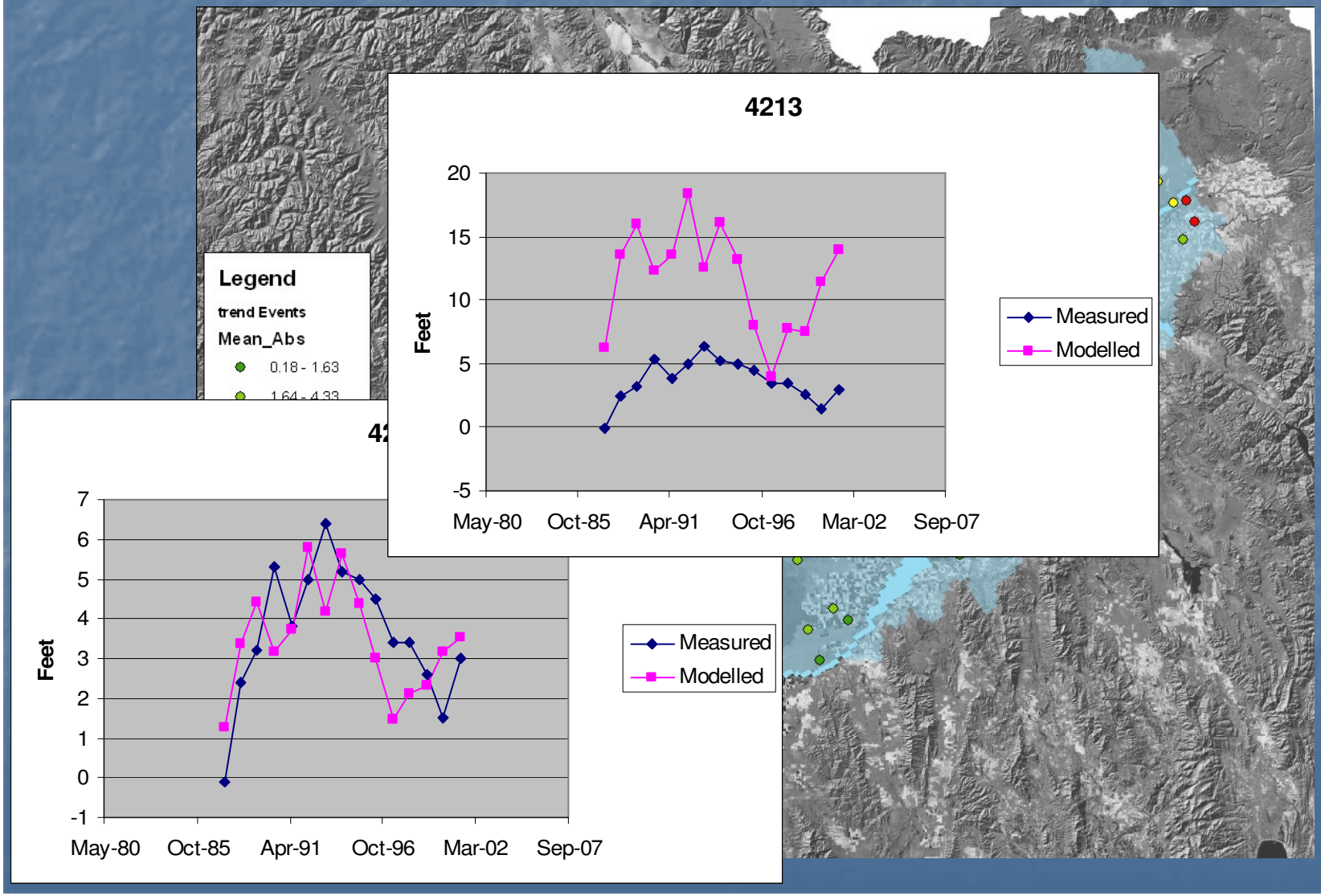
Multidrain Trend



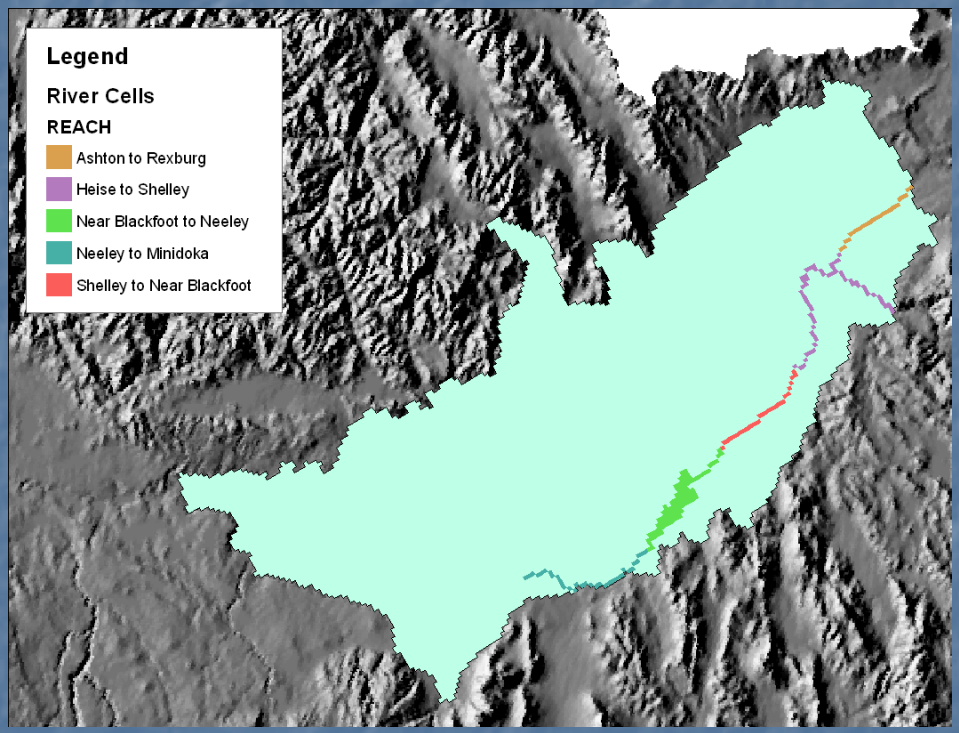
Multidrain Trend



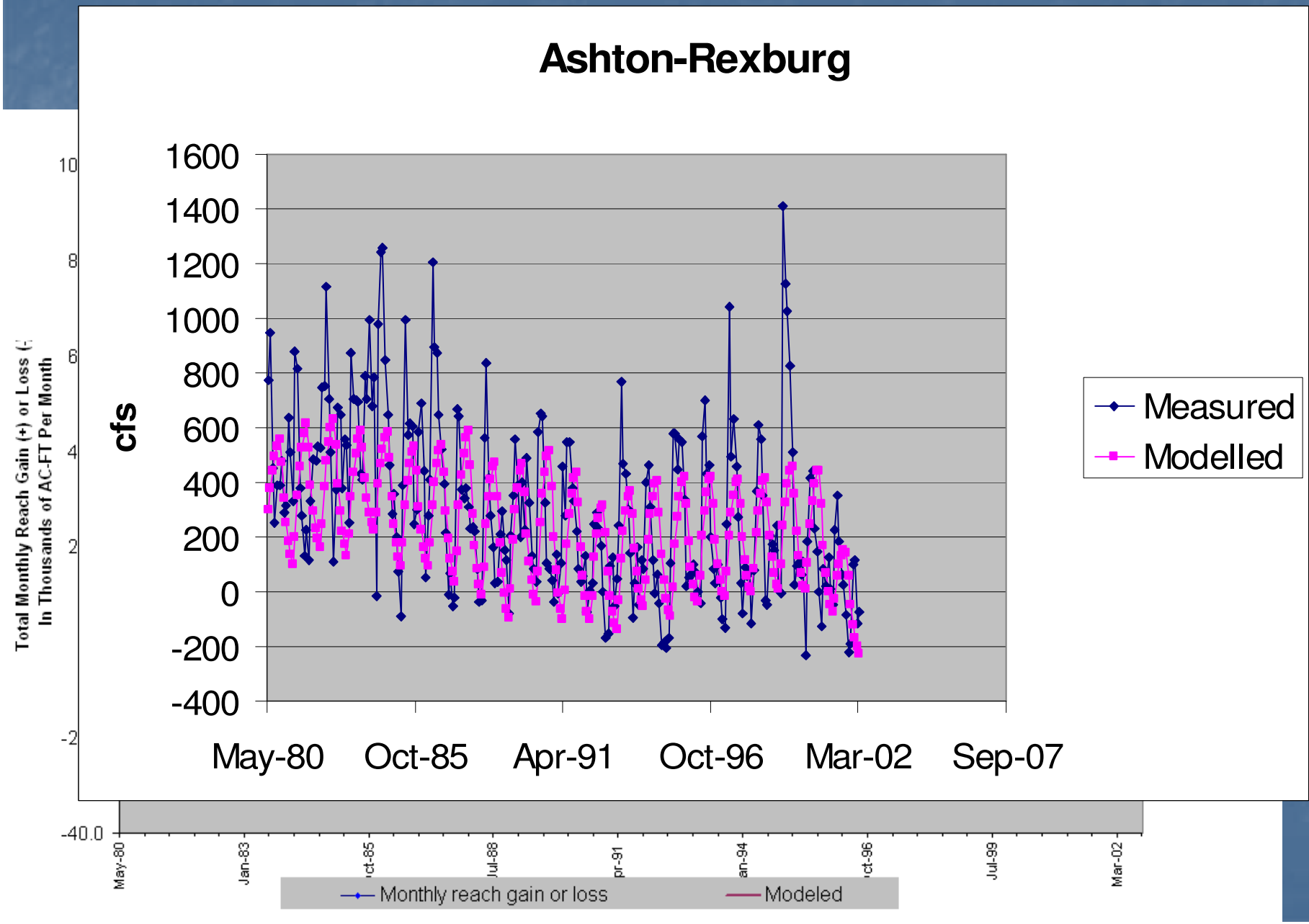
Multidrain Trend



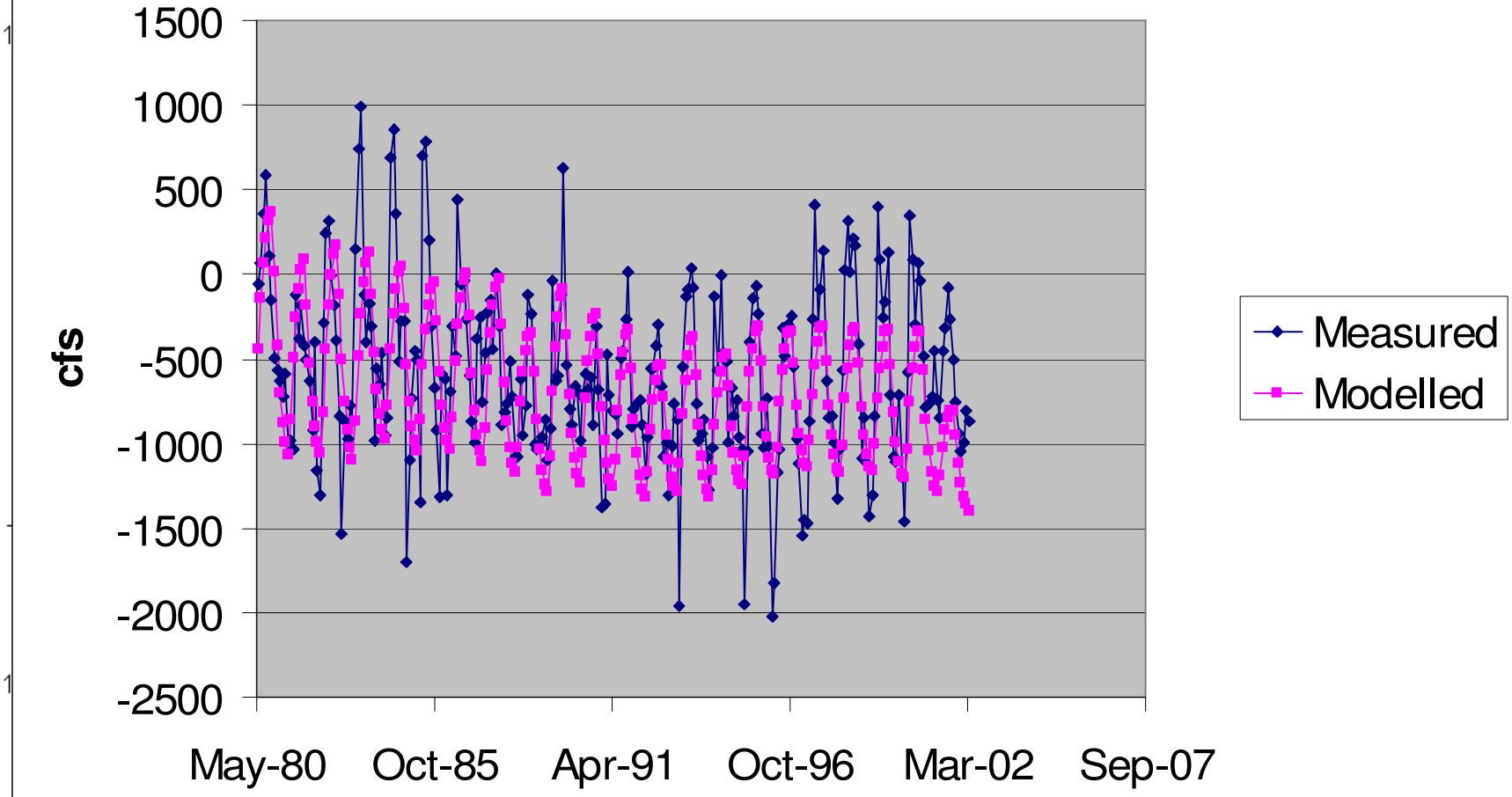
Multidrain Snake River

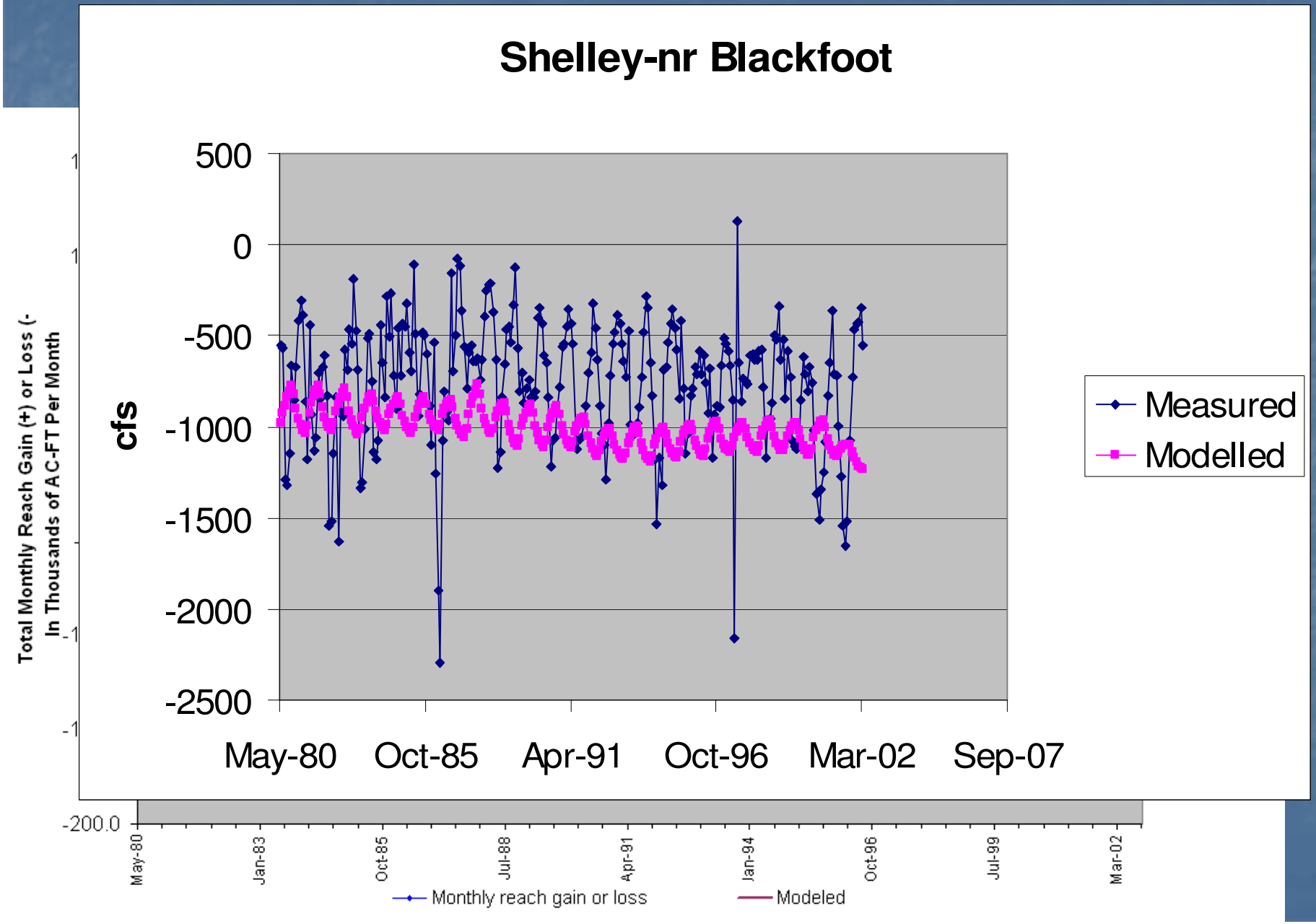


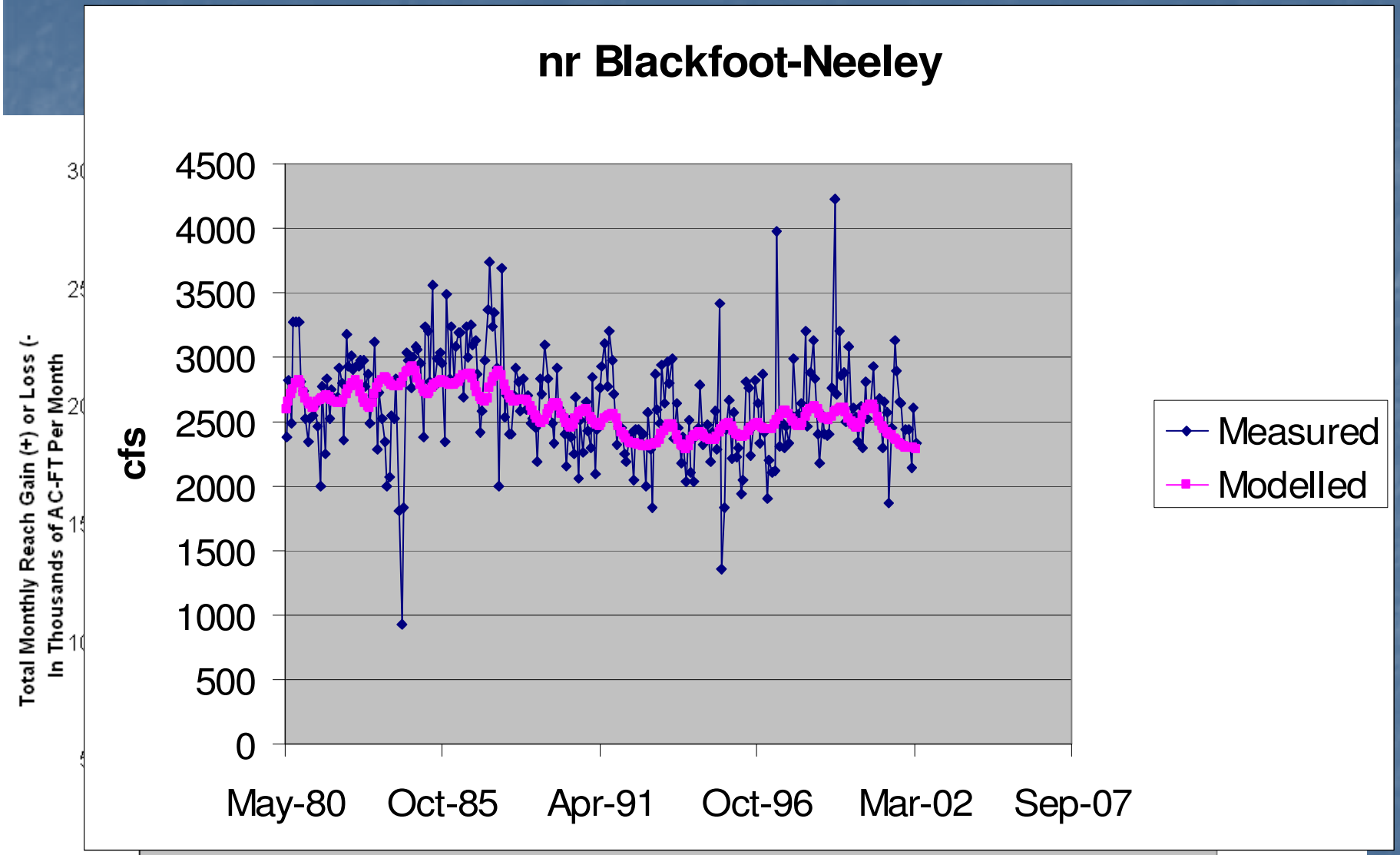
- Snake River reaches


Ashton-Rexburg
cfs
1600
1400
1200
1000
800
600
400
200
0
-200
-400
May-80
Oct-85
Apr-91
Oct-96
Mar-02
Sep-07
Measured
Modelled
Total Monthly Reach Gain (+) or Loss (-)
In Thousands of AC-FT Per Month
10
8
6
4
2
-2
-40.0
May-80
Jan-83
Jul-88
Jul-99
Mar-02
Monthly reach gain or loss
Modeled

Heise-Shelley

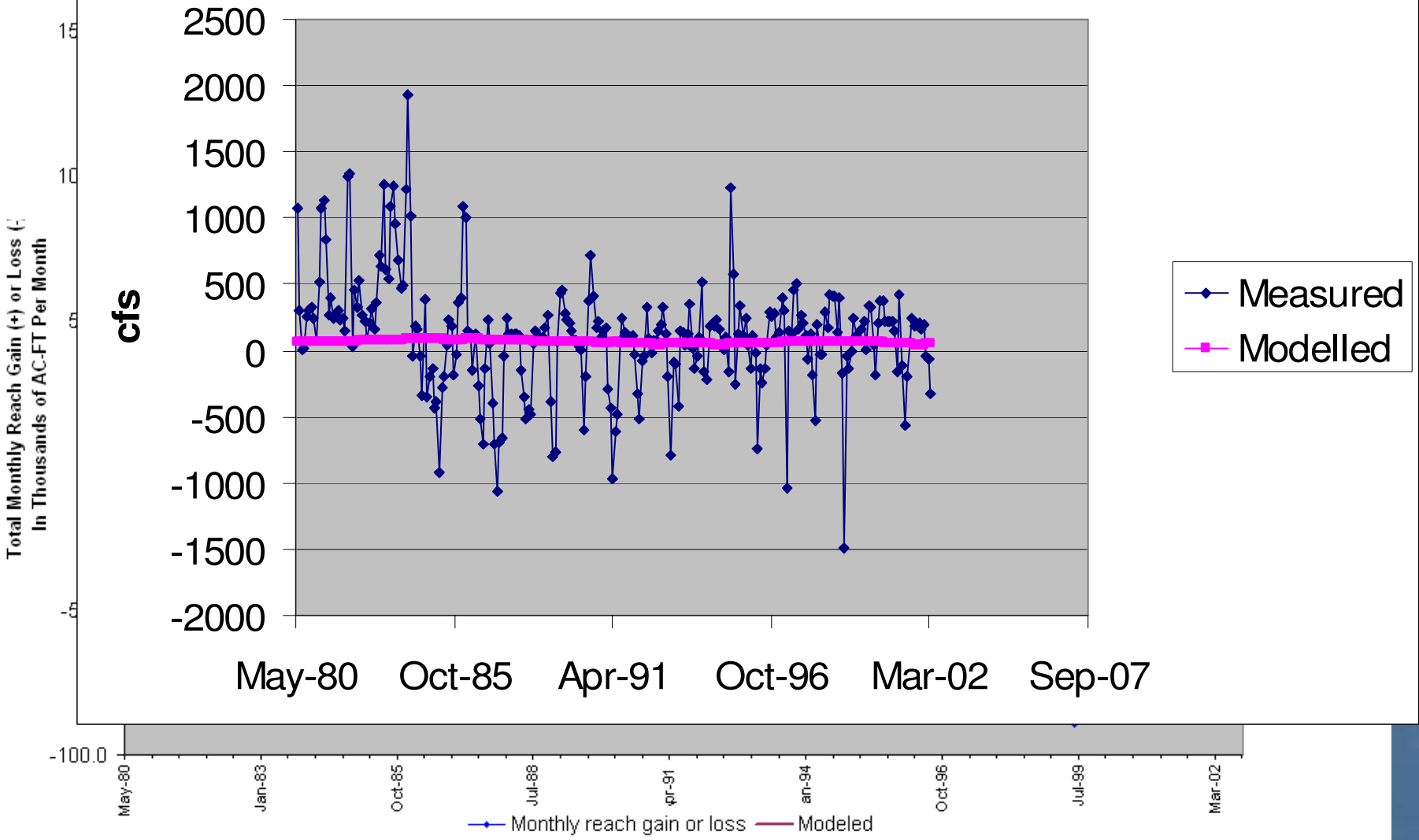



Shelley-nr Blackfoot
cfs
500
0
-500
-1000
-1500
-2000
-2500
May-80
Oct-85
Apr-91
Oct-96
Mar-02
Sep-07
Measured
Modelled
Total Monthly Reach Gain (+) or Loss (-
In Thousands of AC-FT Per Month
-200.0
May-80
Jan-83
Oct-85
Jul-88
Apr-91
Jan-94
Oct-96
Jul-99
Mar-02
Monthly reach gain or loss
Modeled

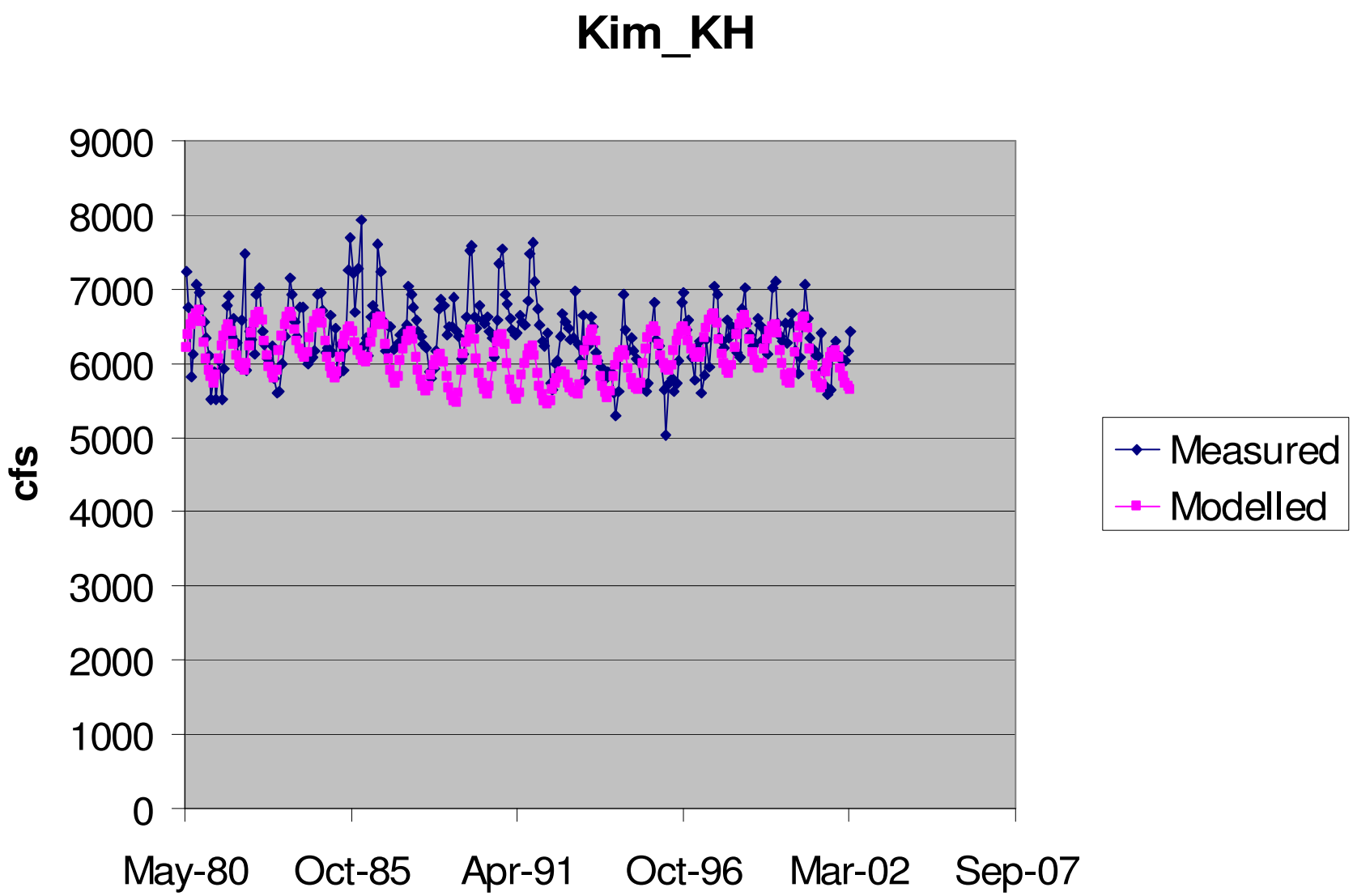

nr Blackfoot-Neeley
cfs
4500
4000
3500
3000
2500
2000
1500
1000
500
0
May-80
Oct-85
Apr-91
Oct-96
Mar-02
Sep-07
Measured
Modelled

Total Monthly Reach Gain (+) or Loss (-
In Thousands of AC-FT Per Month
0.0
May-80
Jan-83
Oct-85
Jul-88
Apr-91
Jan-94
Oct-96
Jul-99
Mar-02
Monthly reach gain or loss
Modeled

Neeley-Minidoka



Multidrain Snake River



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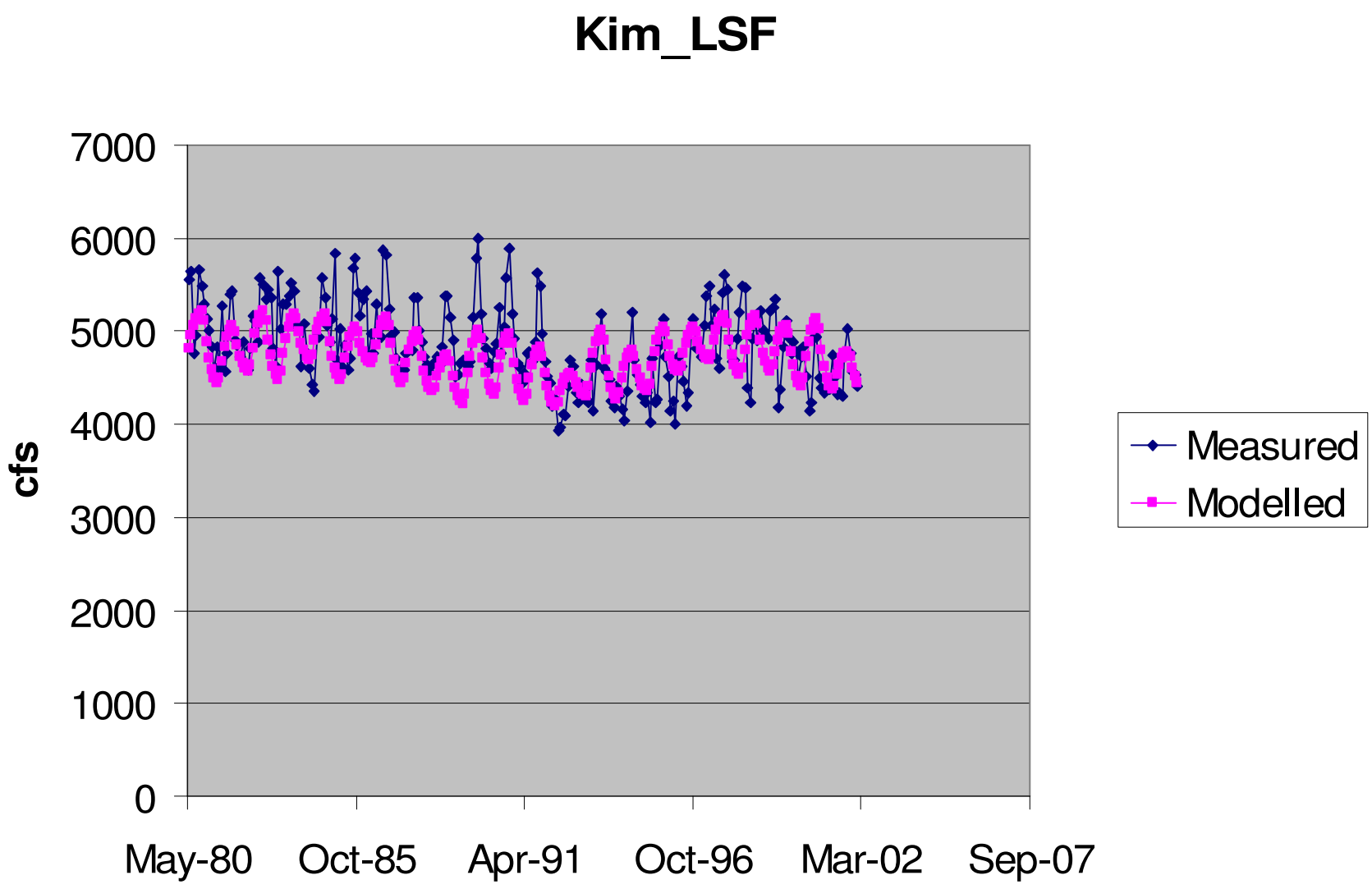

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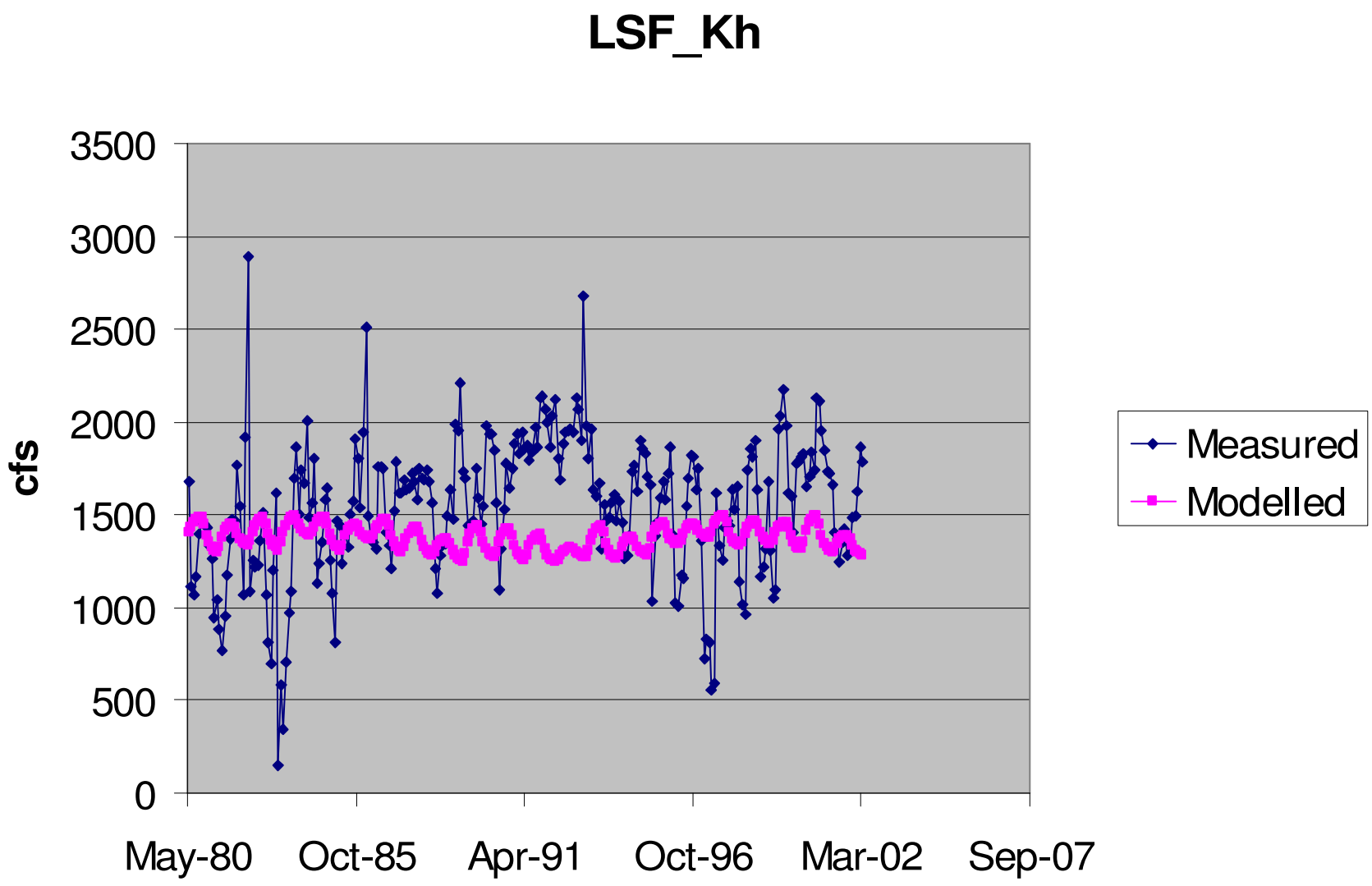

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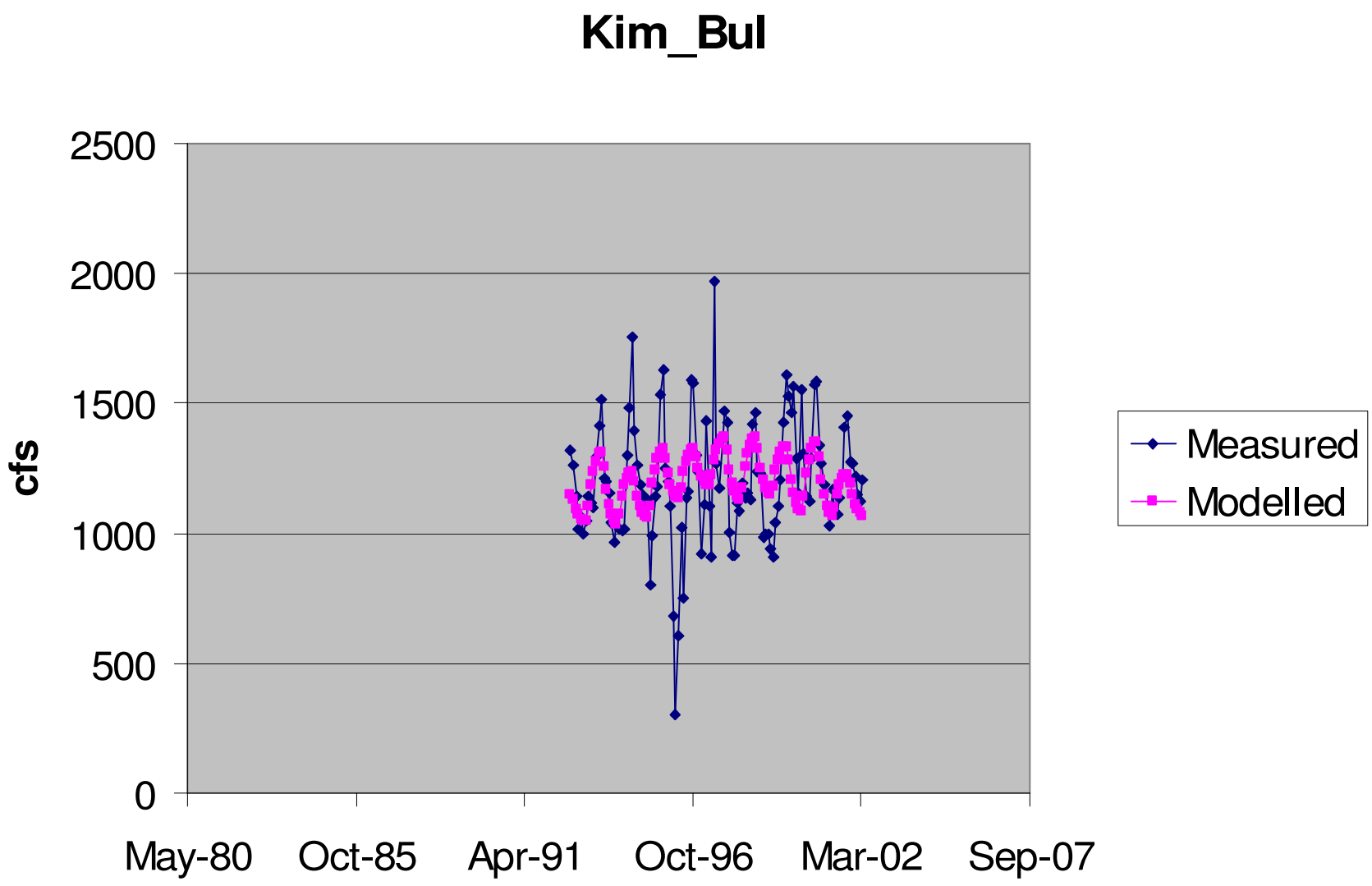

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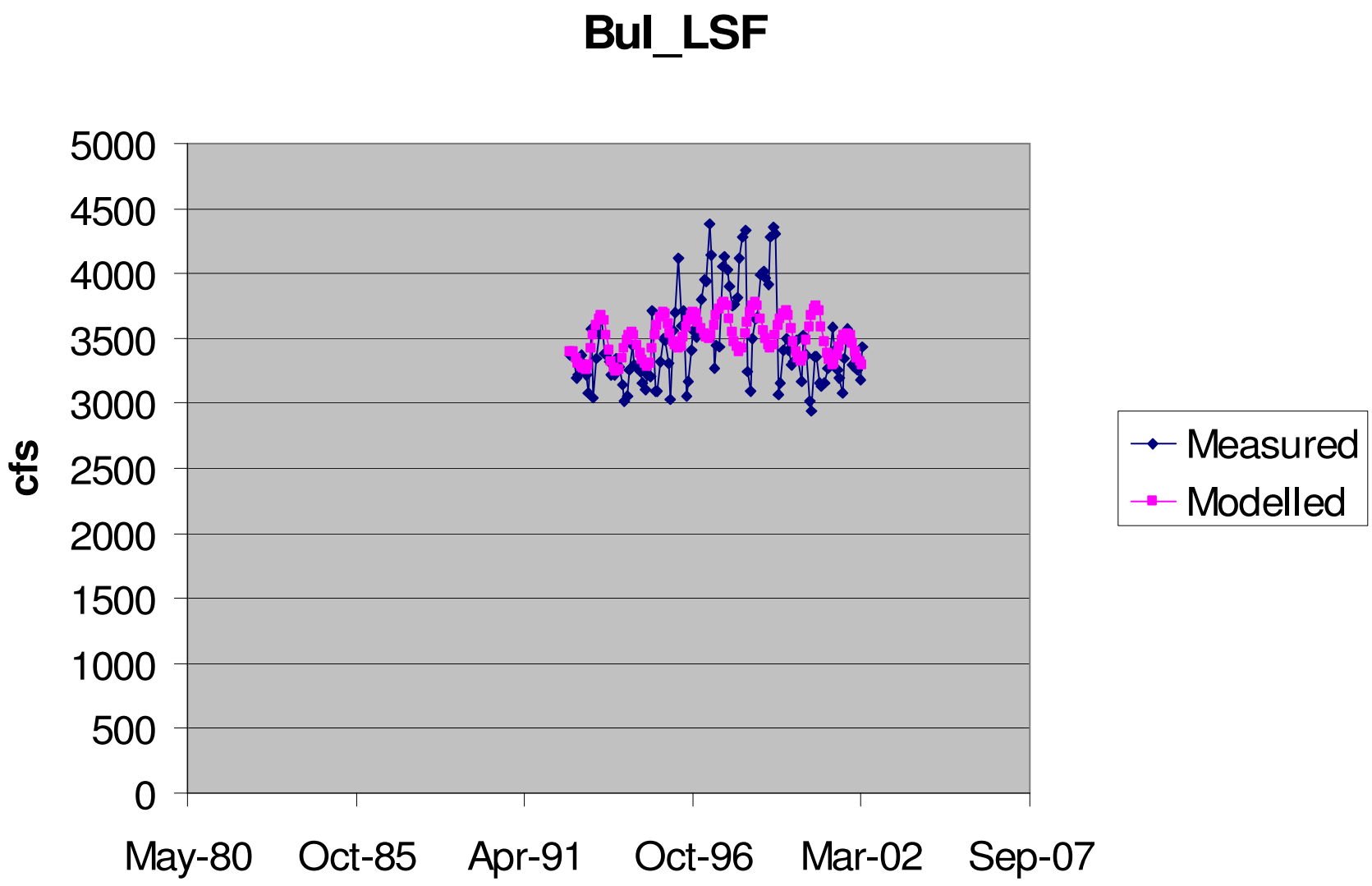
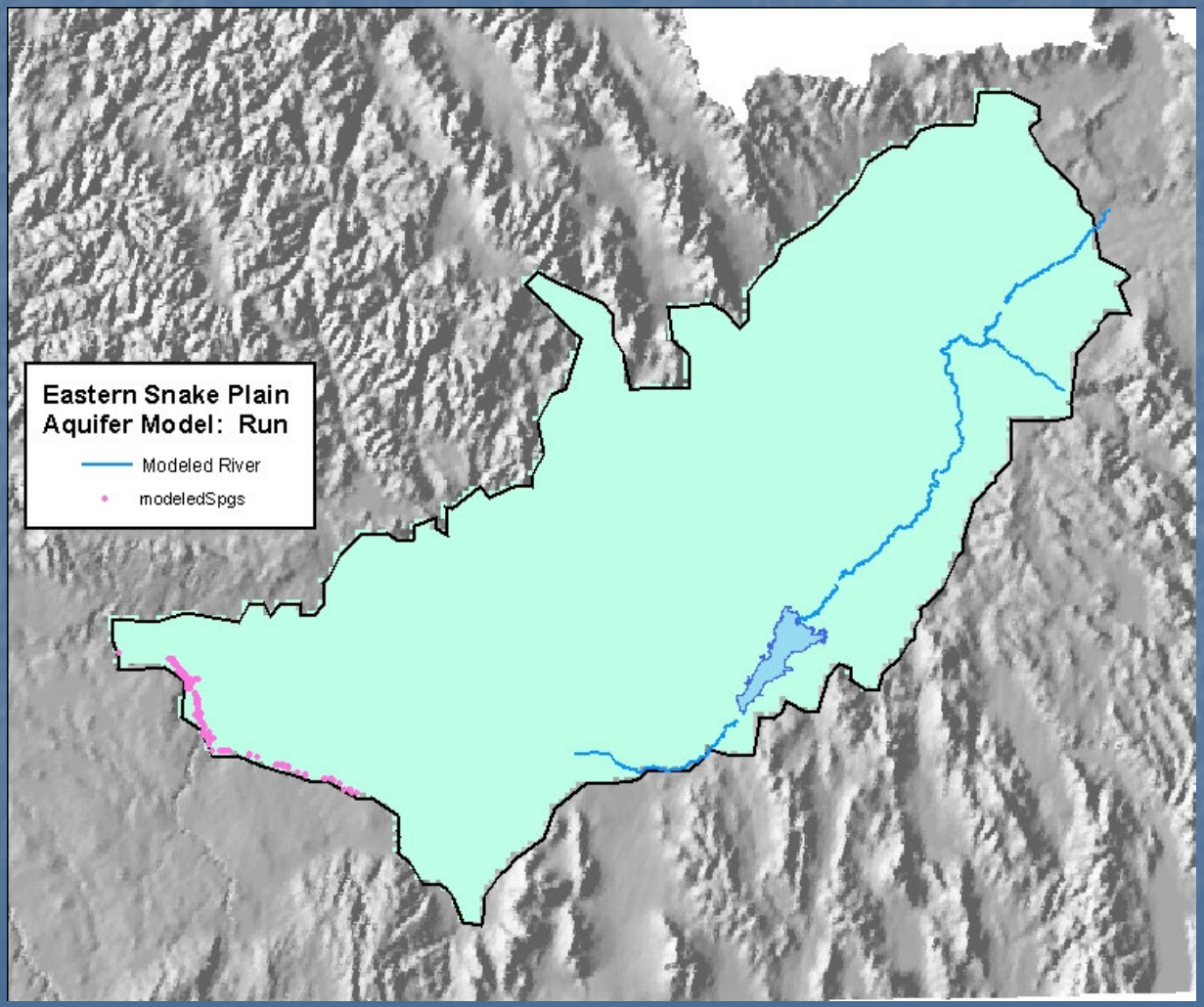
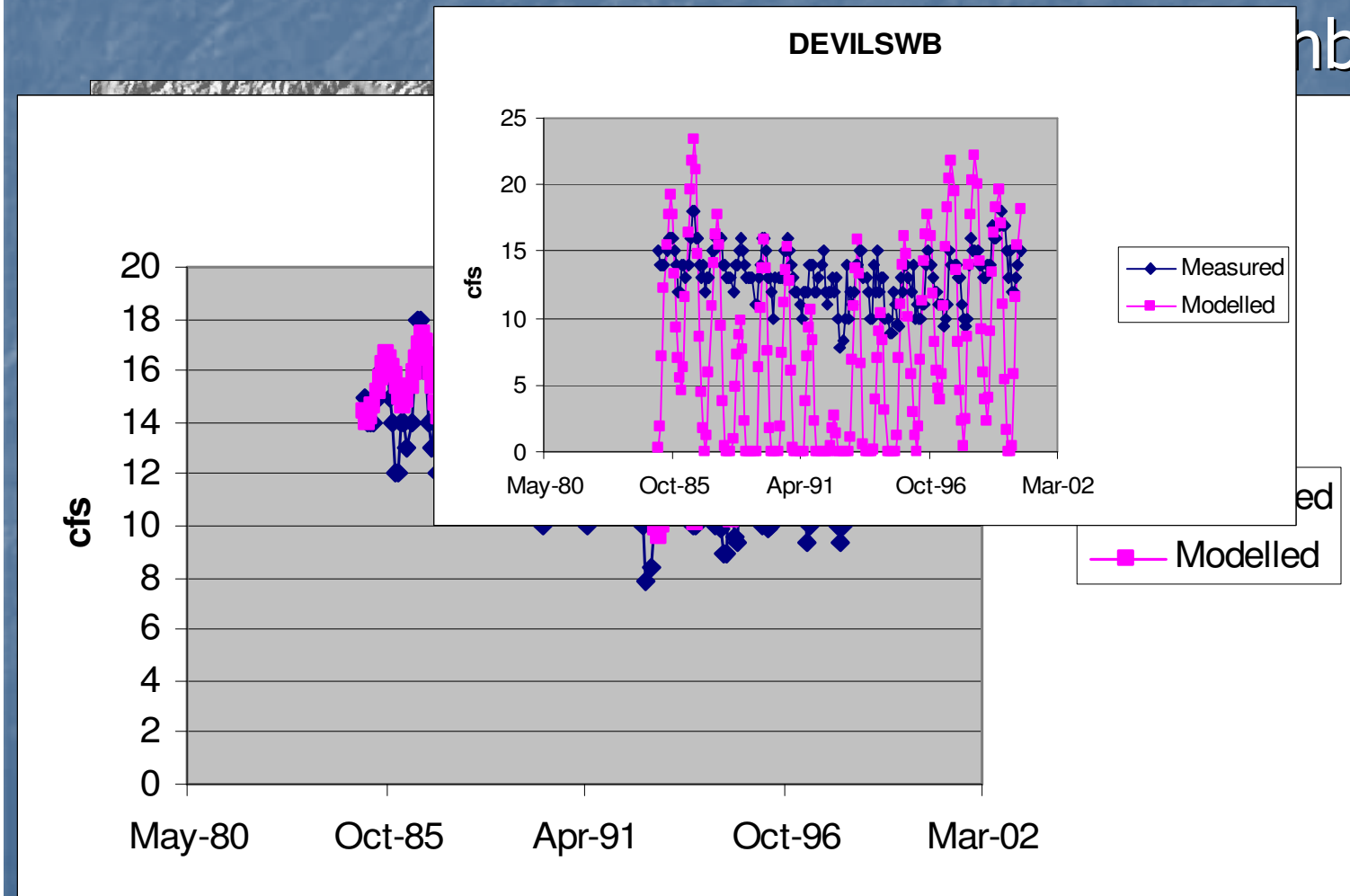


Multidrain Springs



Multidrain Springs



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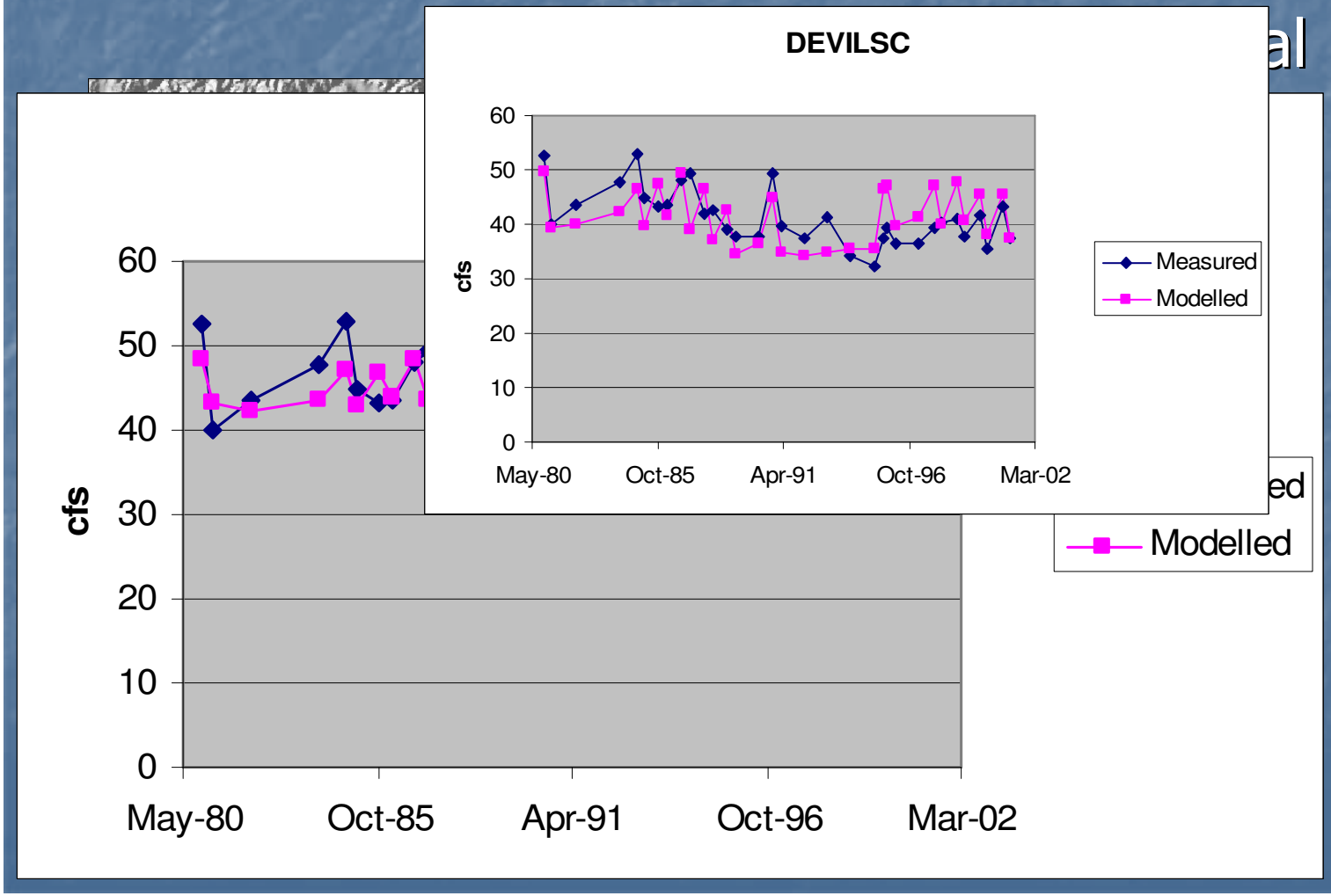

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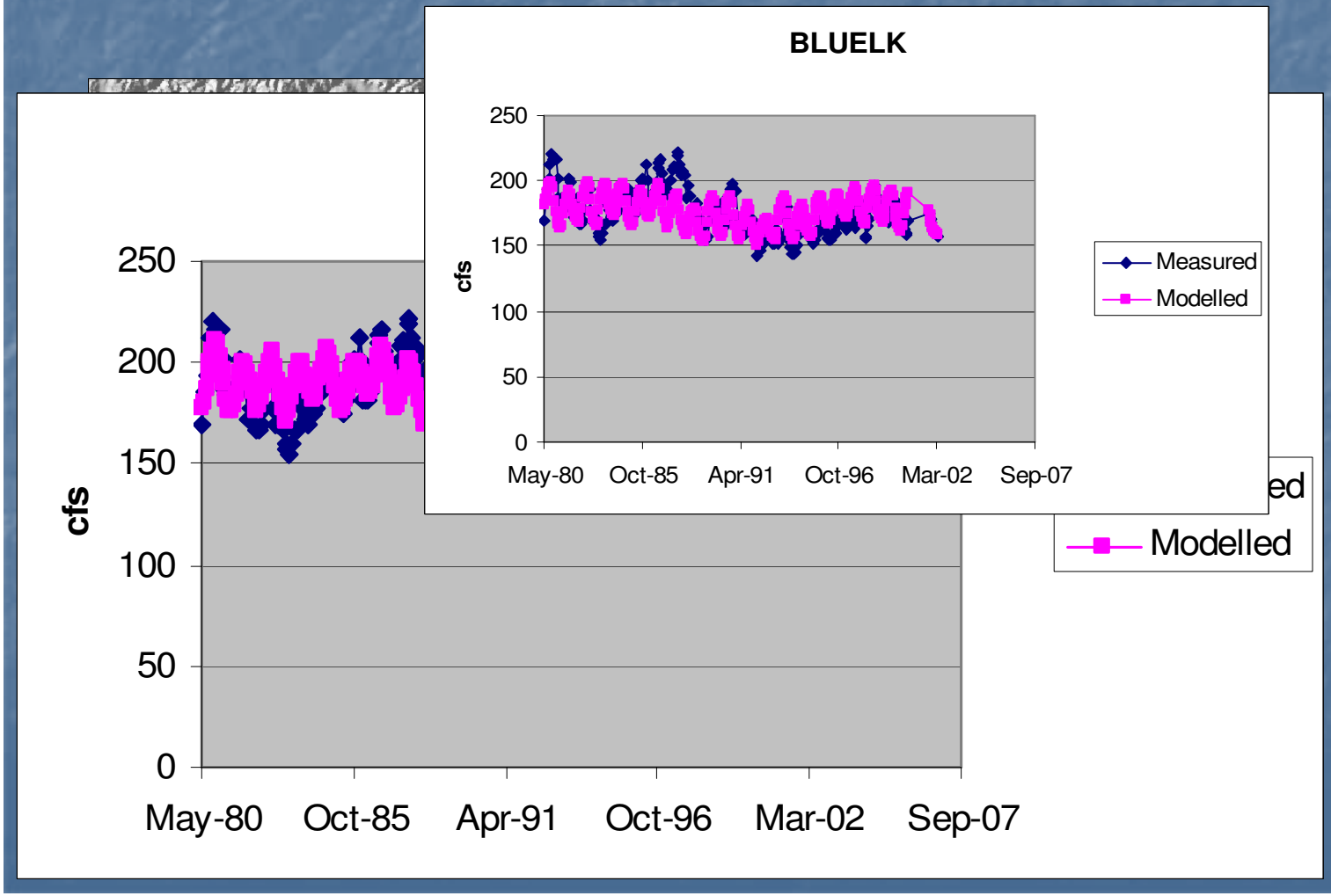

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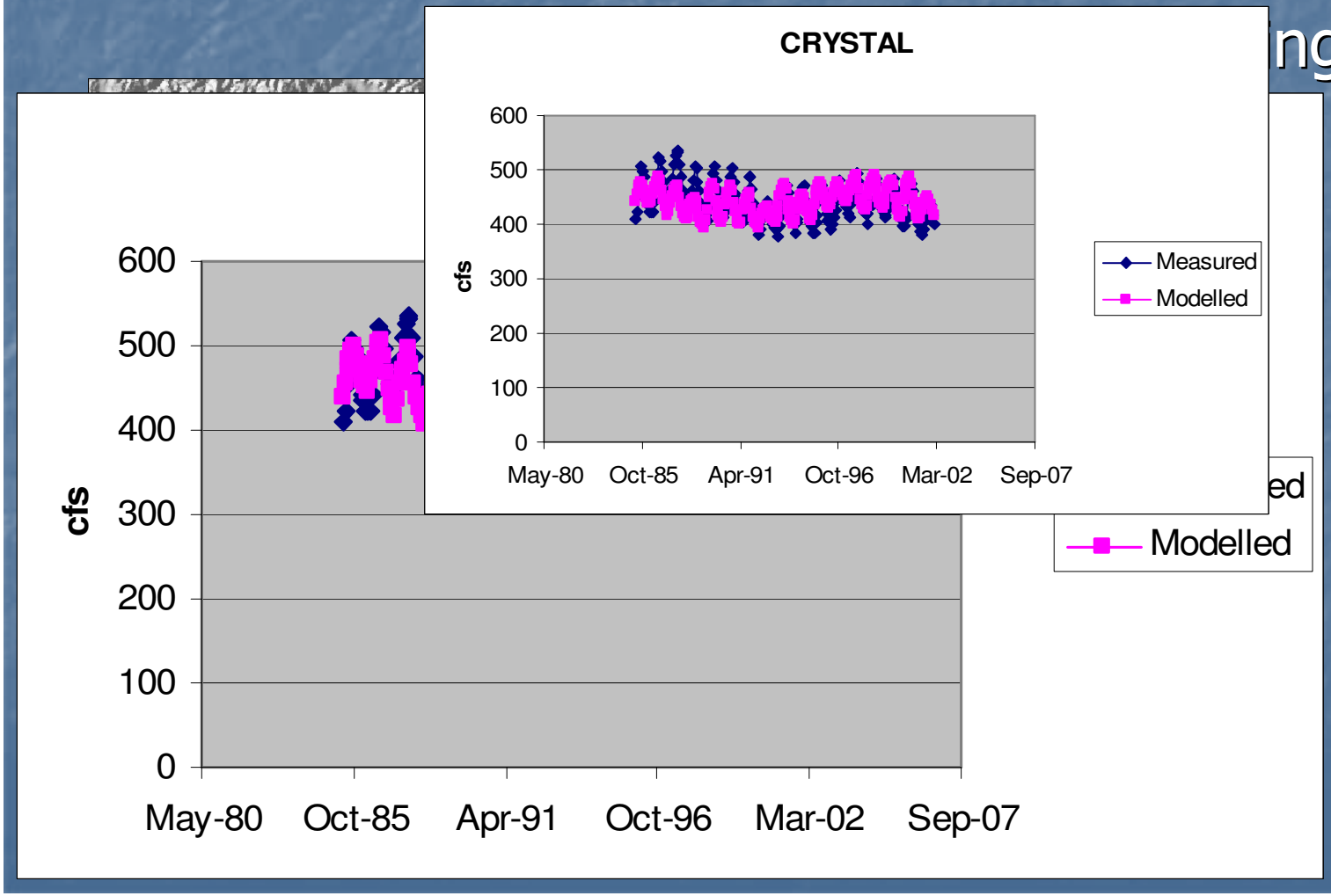

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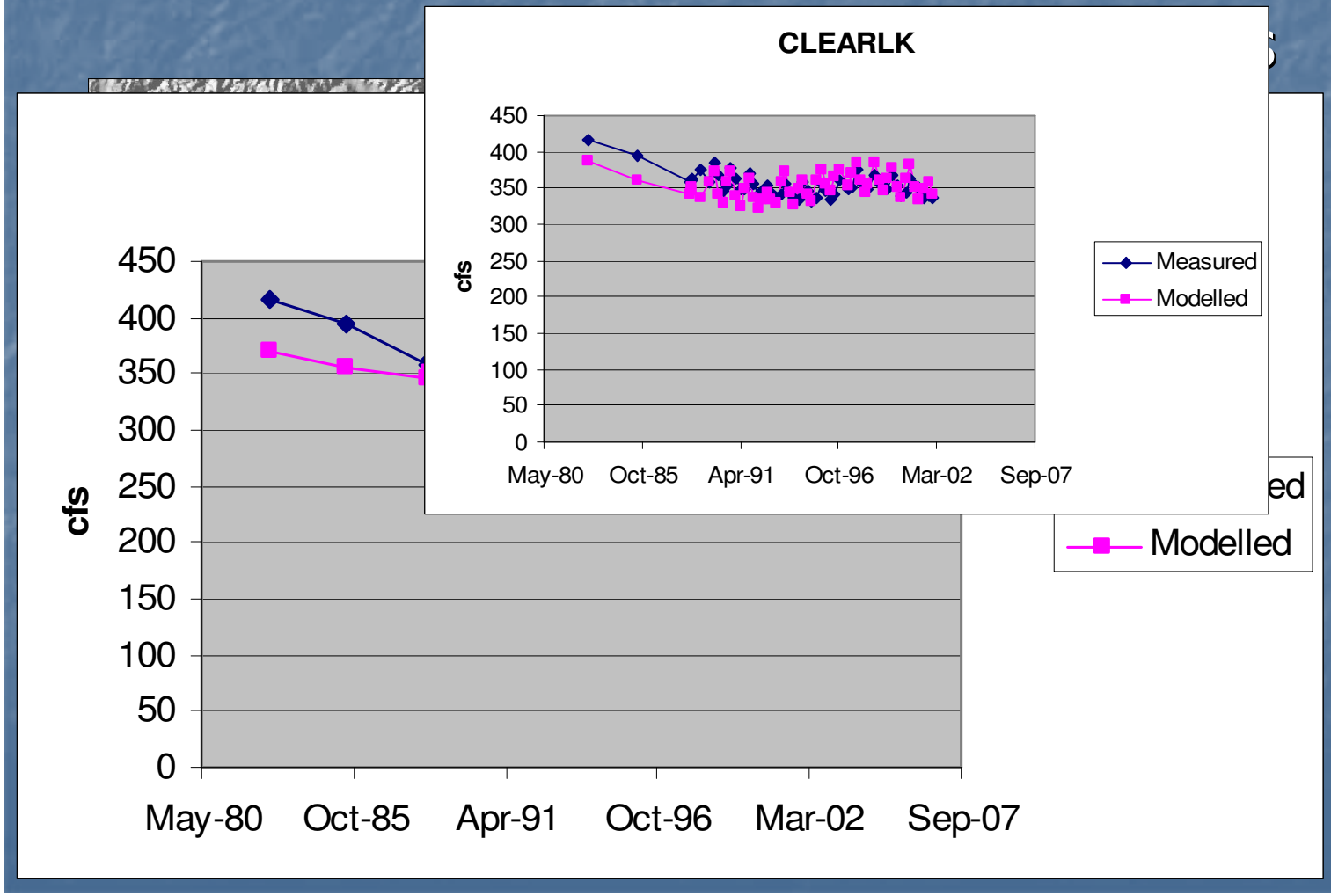
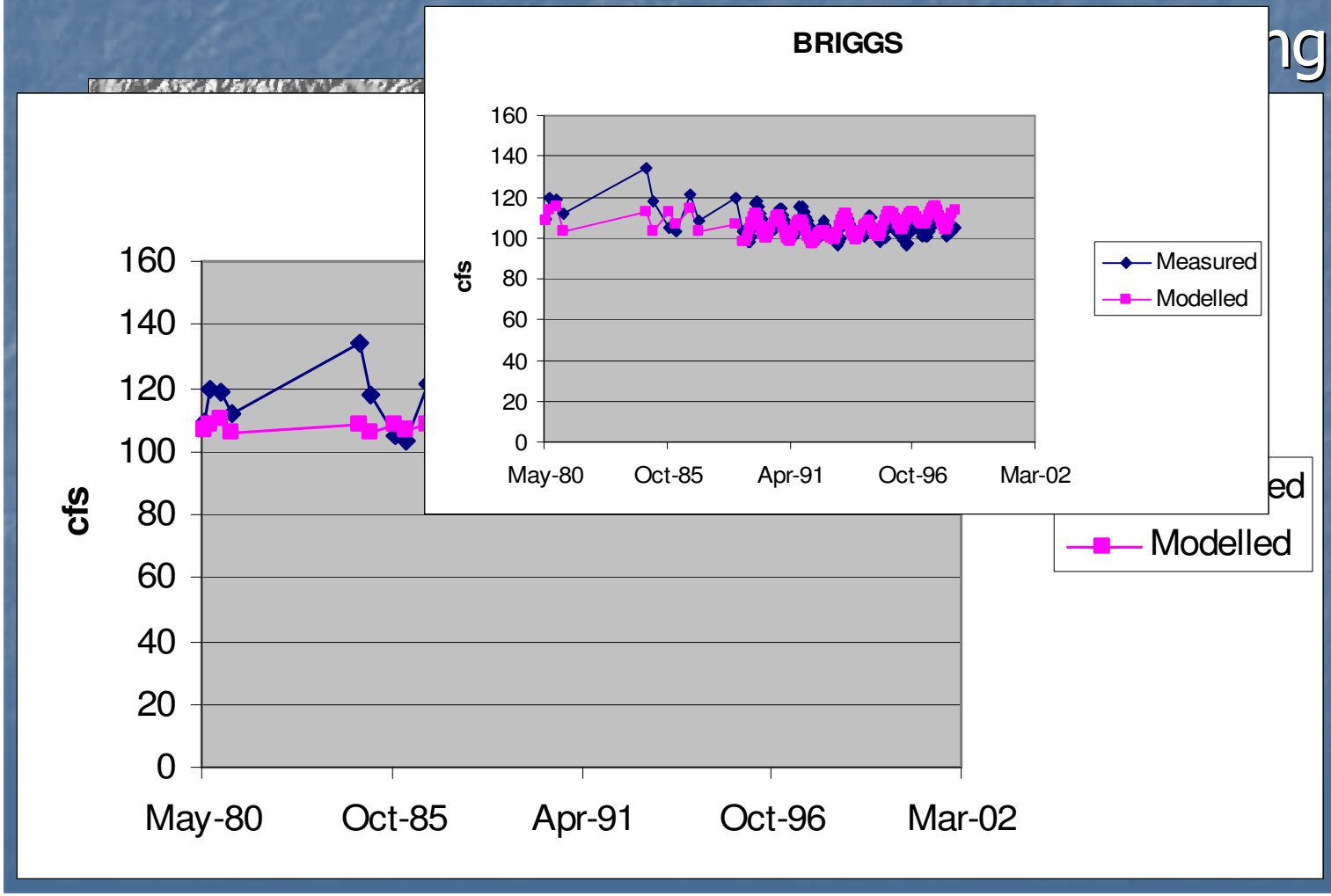
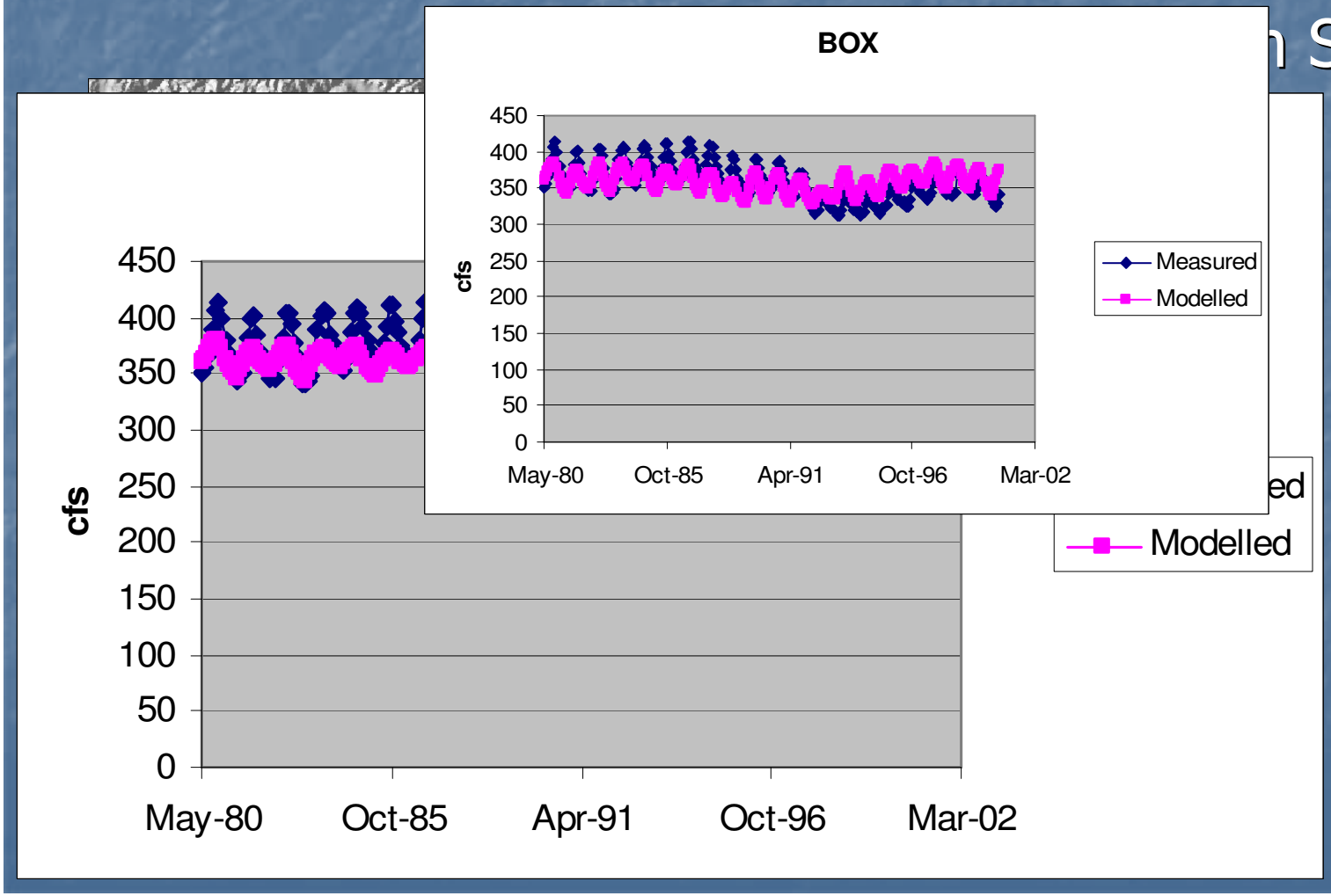


Multidrain Springs



Multidrain Springs



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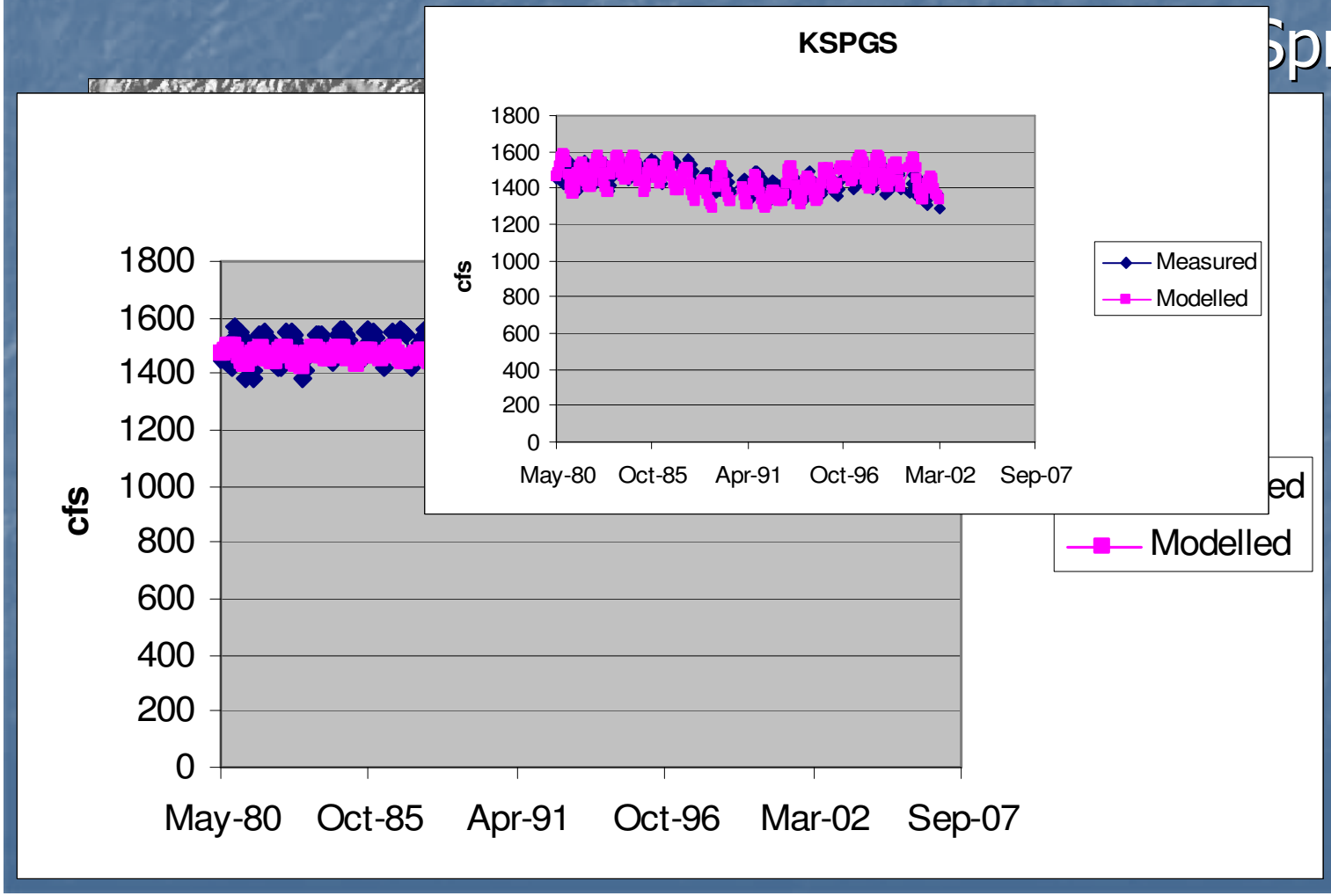

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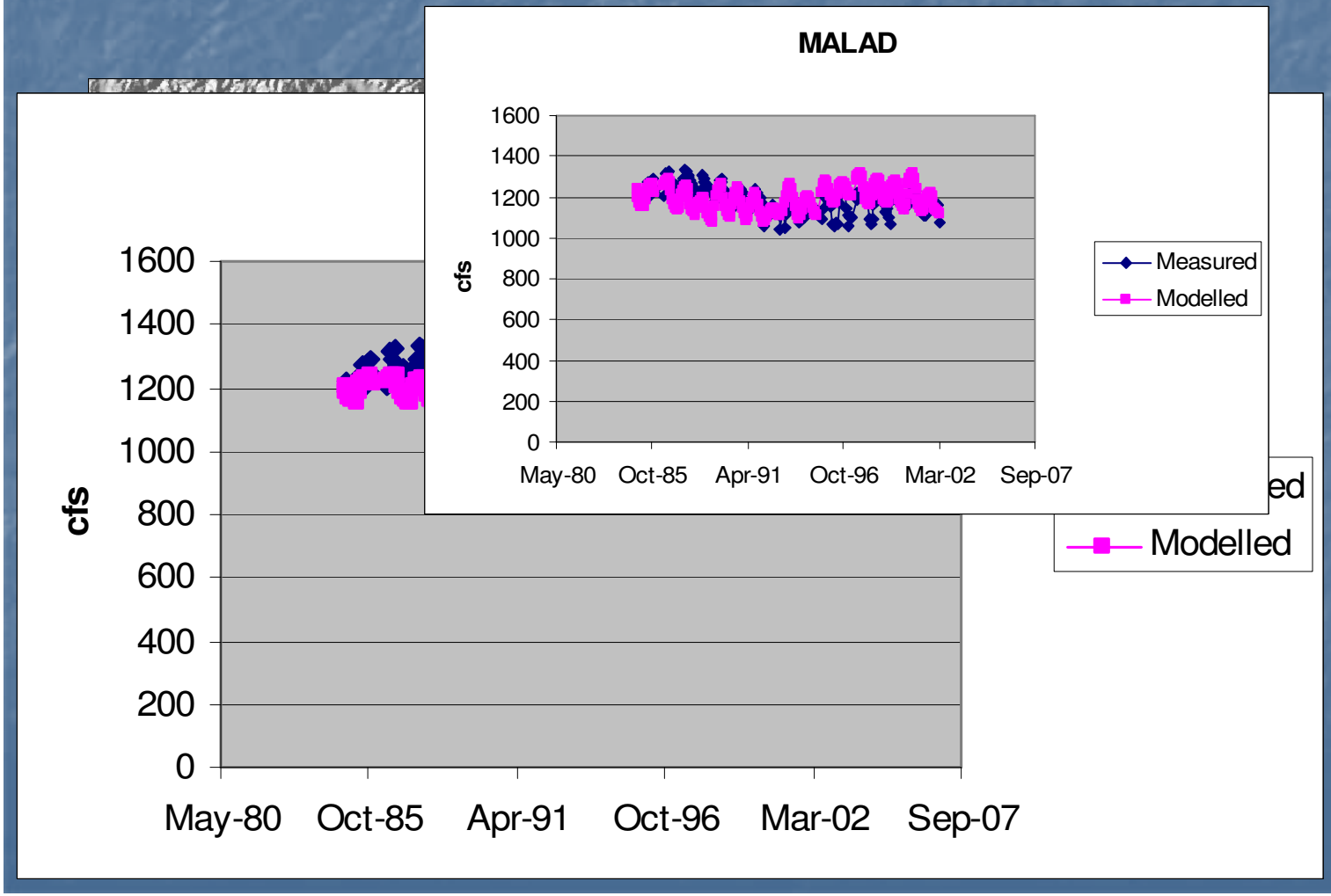

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