Stream Connectivity and Emigration Rates in Headwater Coastal Cutthroat Trout Populations in Western Oregon

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CFER Cooperative Forest Ecosystem Research

USGS
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Douglas County

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ROSEBURG
FOREST PRODUCTS

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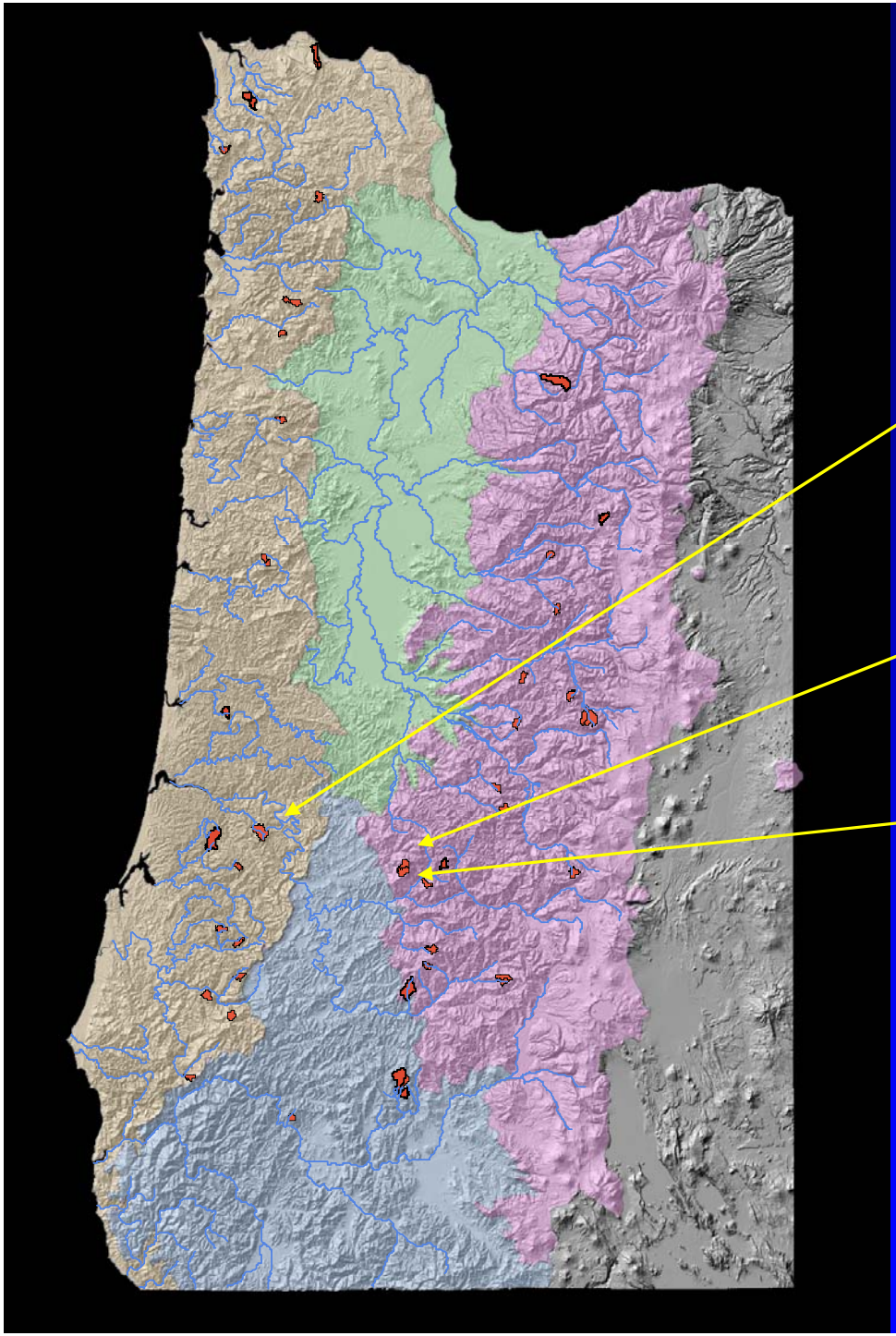
OREGON DEPARTMENT OF FISH & WILDLIFE



Study Sites

Camp Creek
Drainage Area 1270 ha

N.F. Hinkle Creek
Drainage Area 858 ha

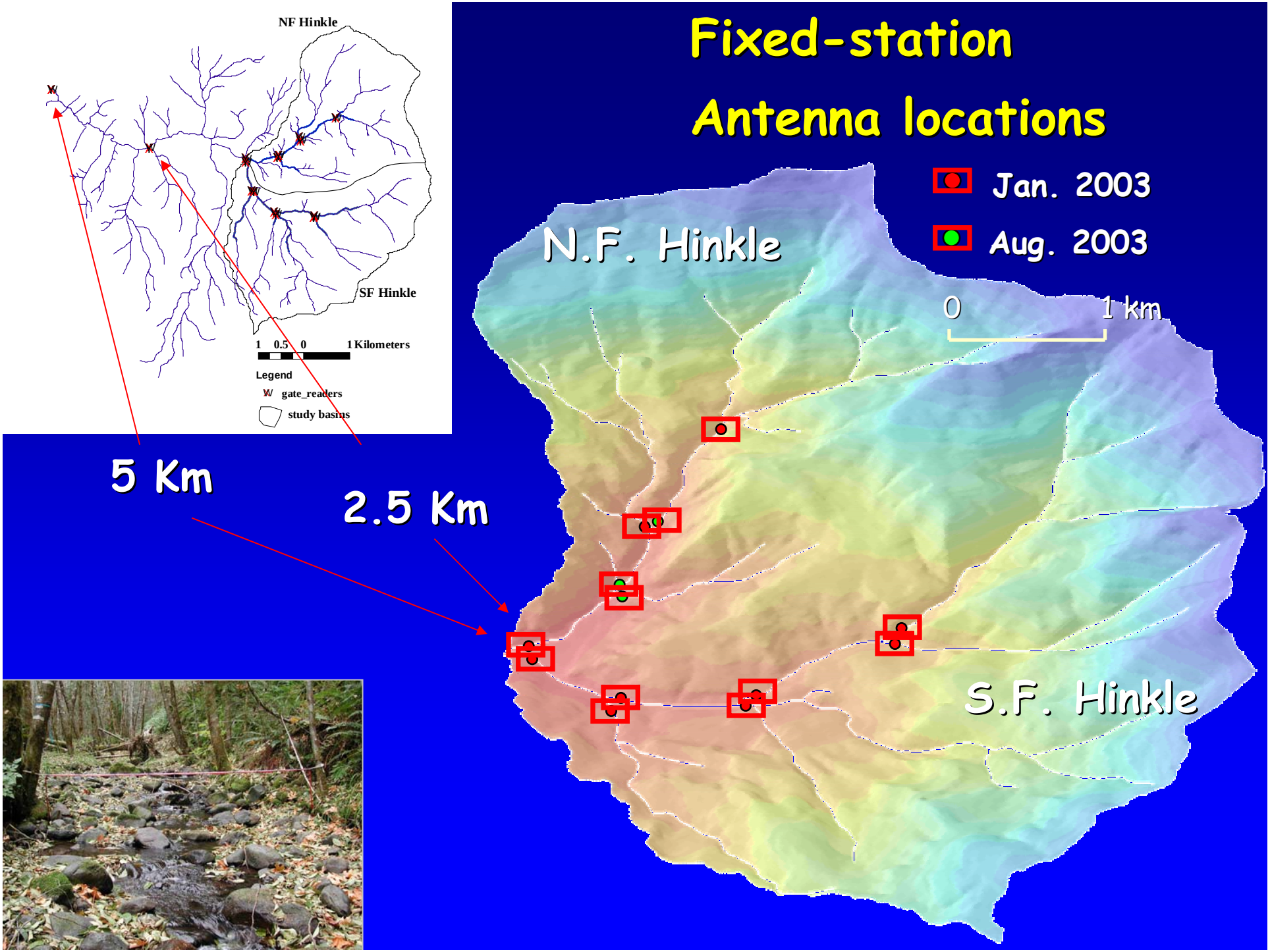
S.F. Hinkle Creek
Drainage Area 1083 ha

Mobile Tracker
Half-duplex 23-mm tags
Gate Readers

Number of Fish Tagged

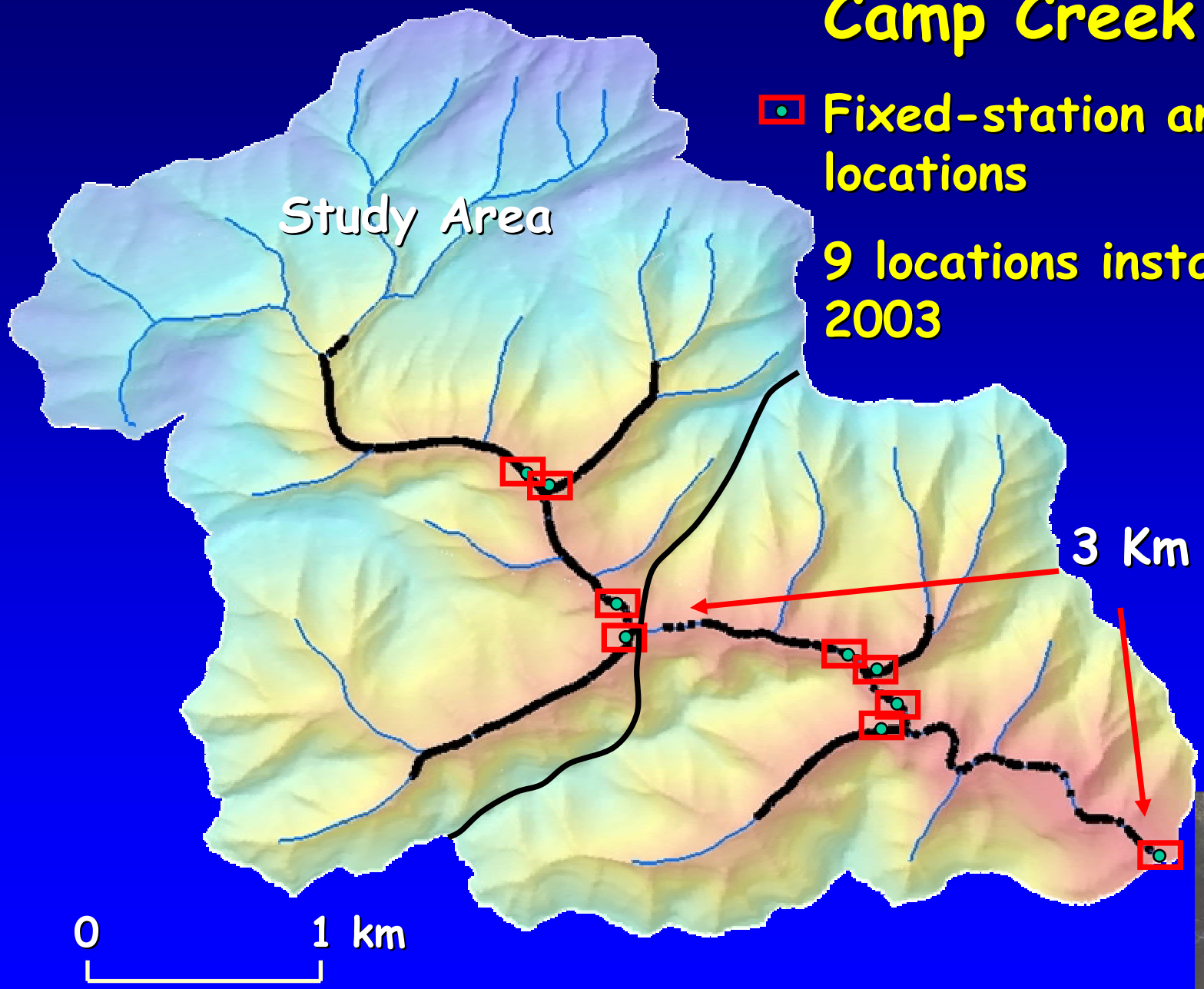
Year	N.F. Hinkle	S.F. Hinkle	Camp
2002	264	324	
2003	280	275	538
2004	197	394	589

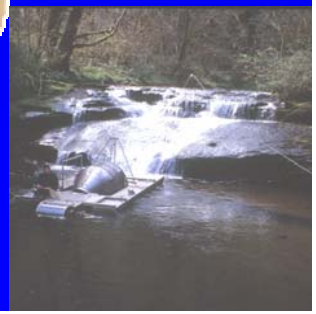
Fixed-station Antenna locations



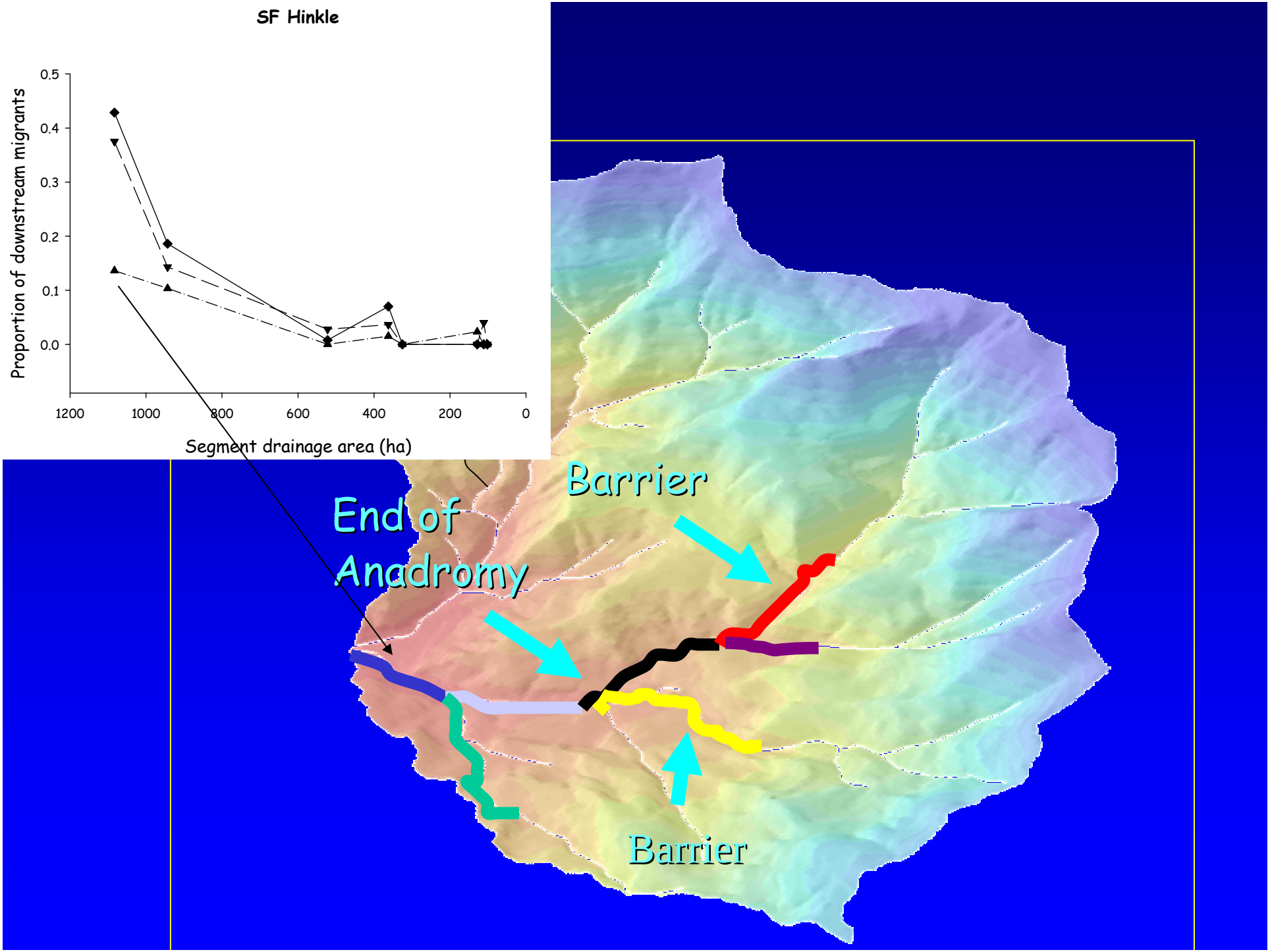
Camp Creek

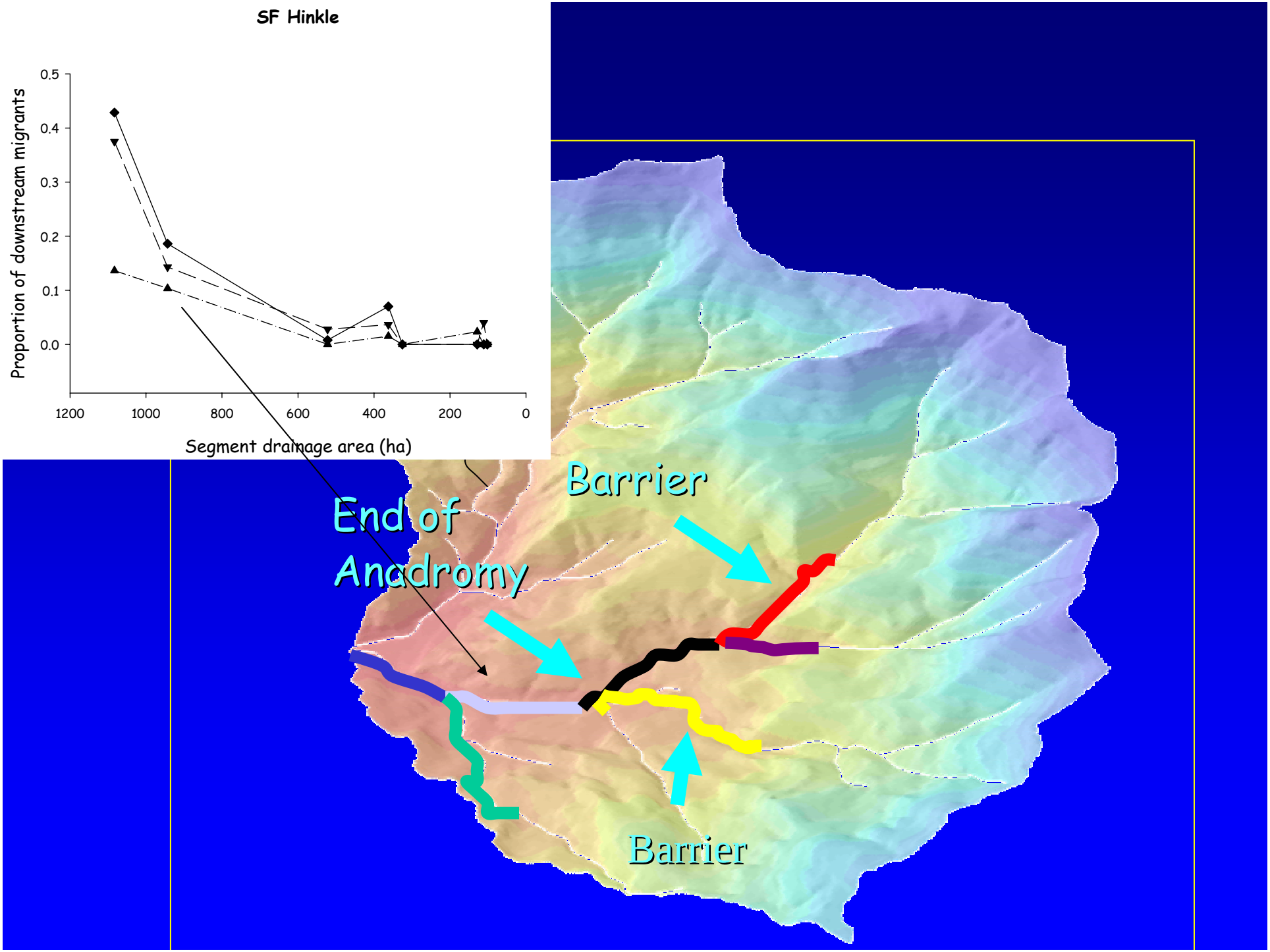
- Fixed-station antenna locations
- 9 locations installed fall 2003





Emigrants? What are they?


SF Hinkle
Proportion of downstream migrants
0.5
0.4
0.3
0.2
0.1
0.0
1200
1000
800
600
400
200
0
Segment drainage area (ha)
Barrier
End of
Anadromy
Barrier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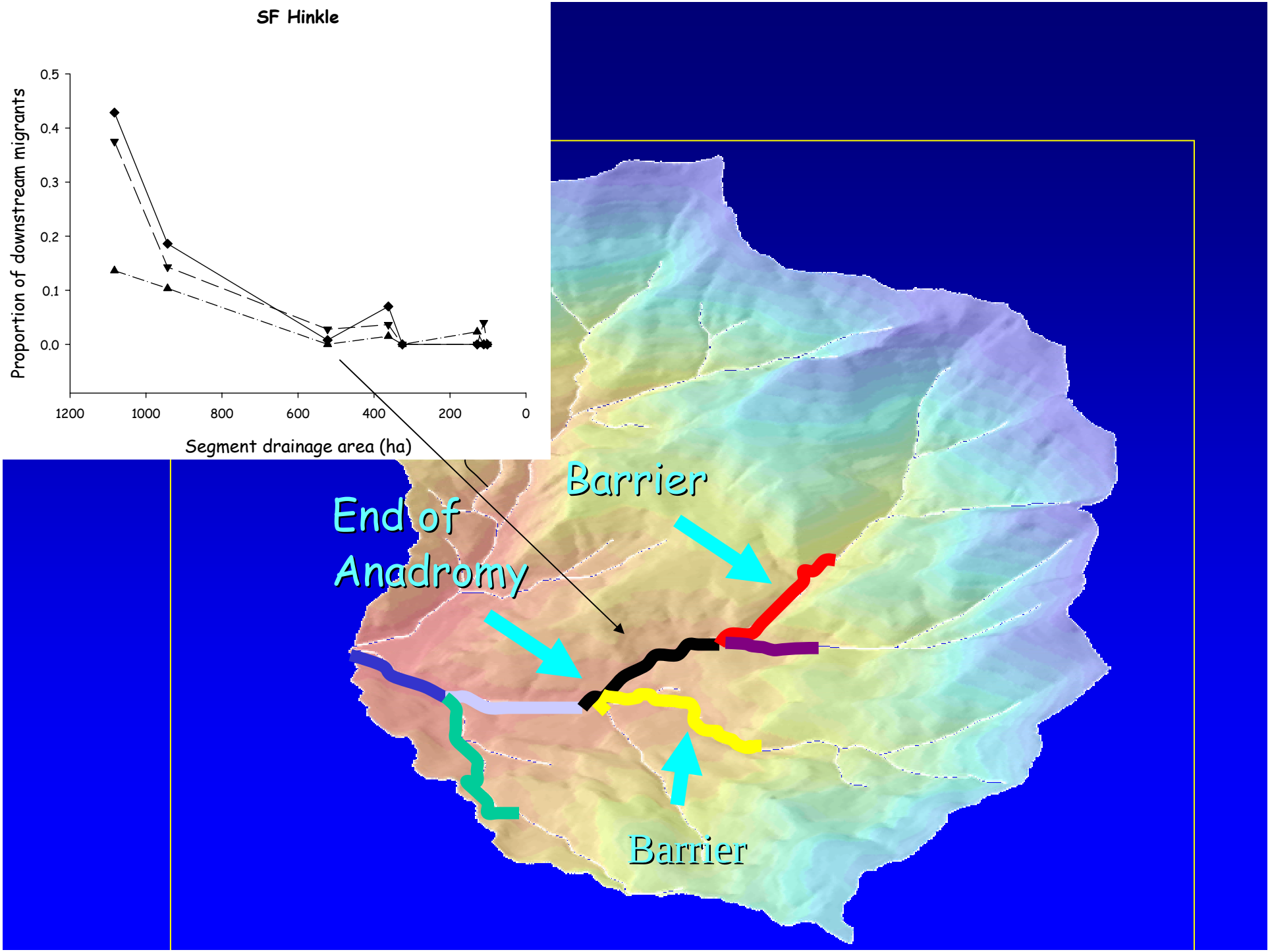
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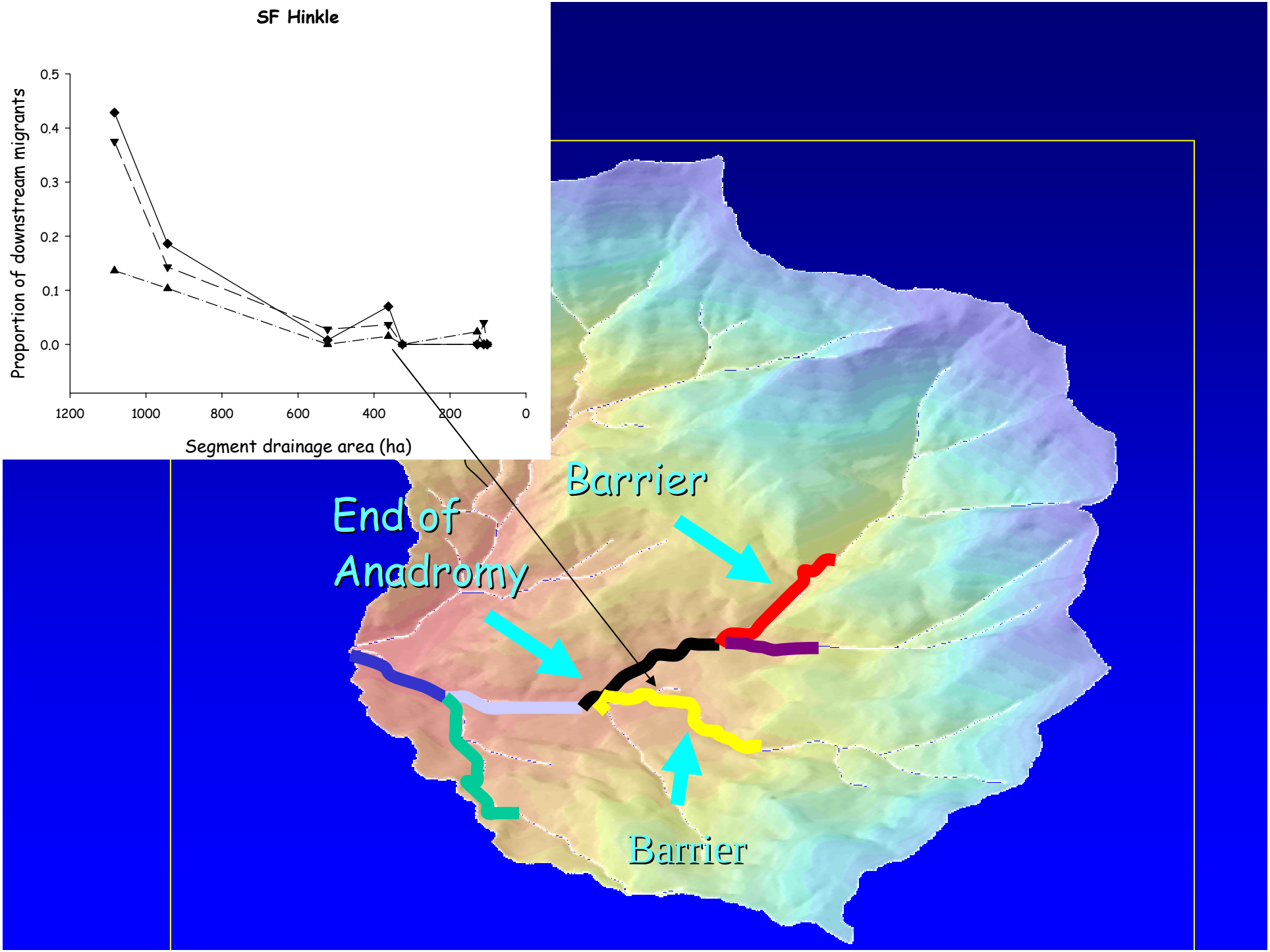
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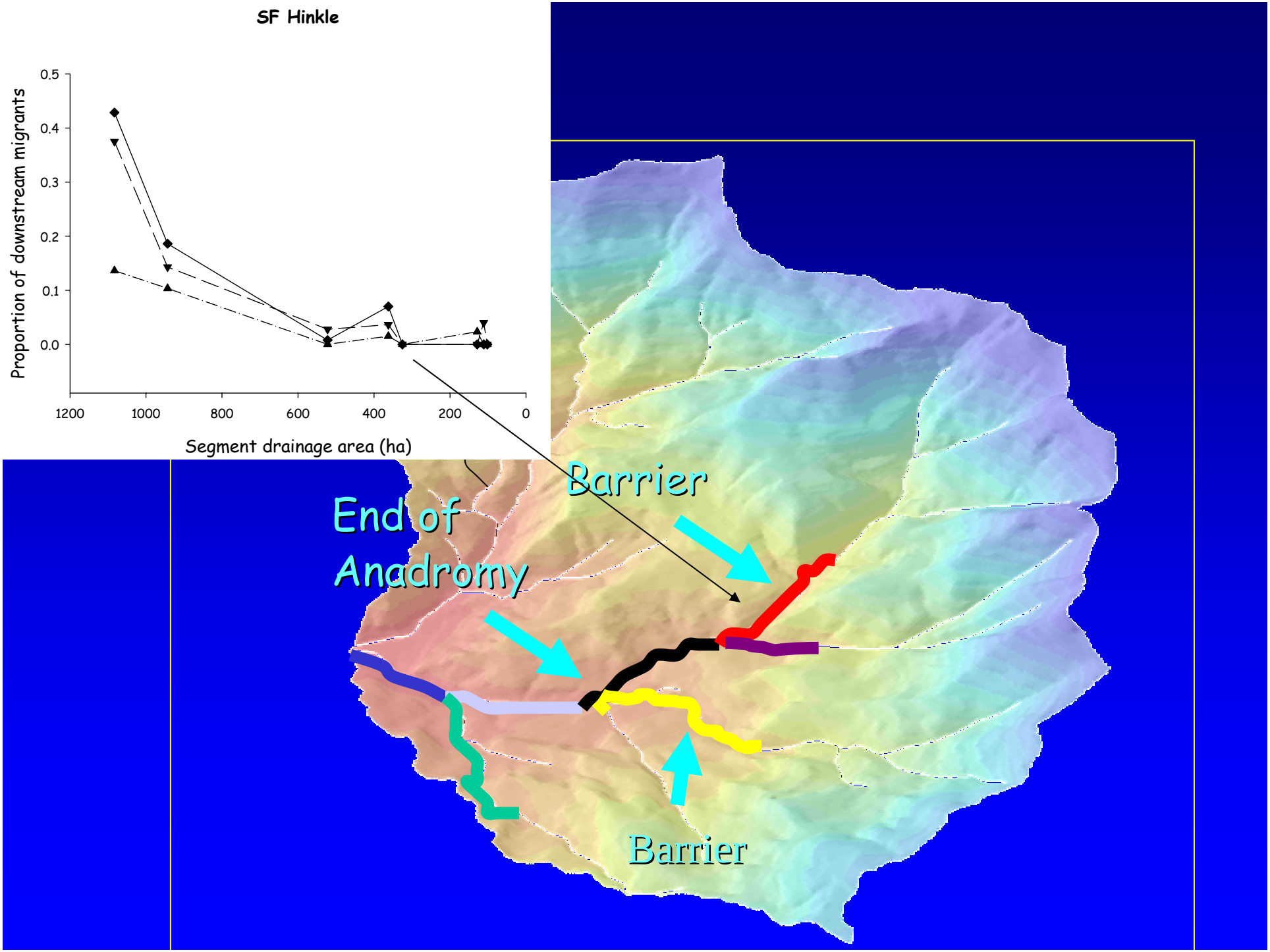
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0.1
0.0
1200
1000
800
600
400
200
0
Segment drainage area (ha)
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End of
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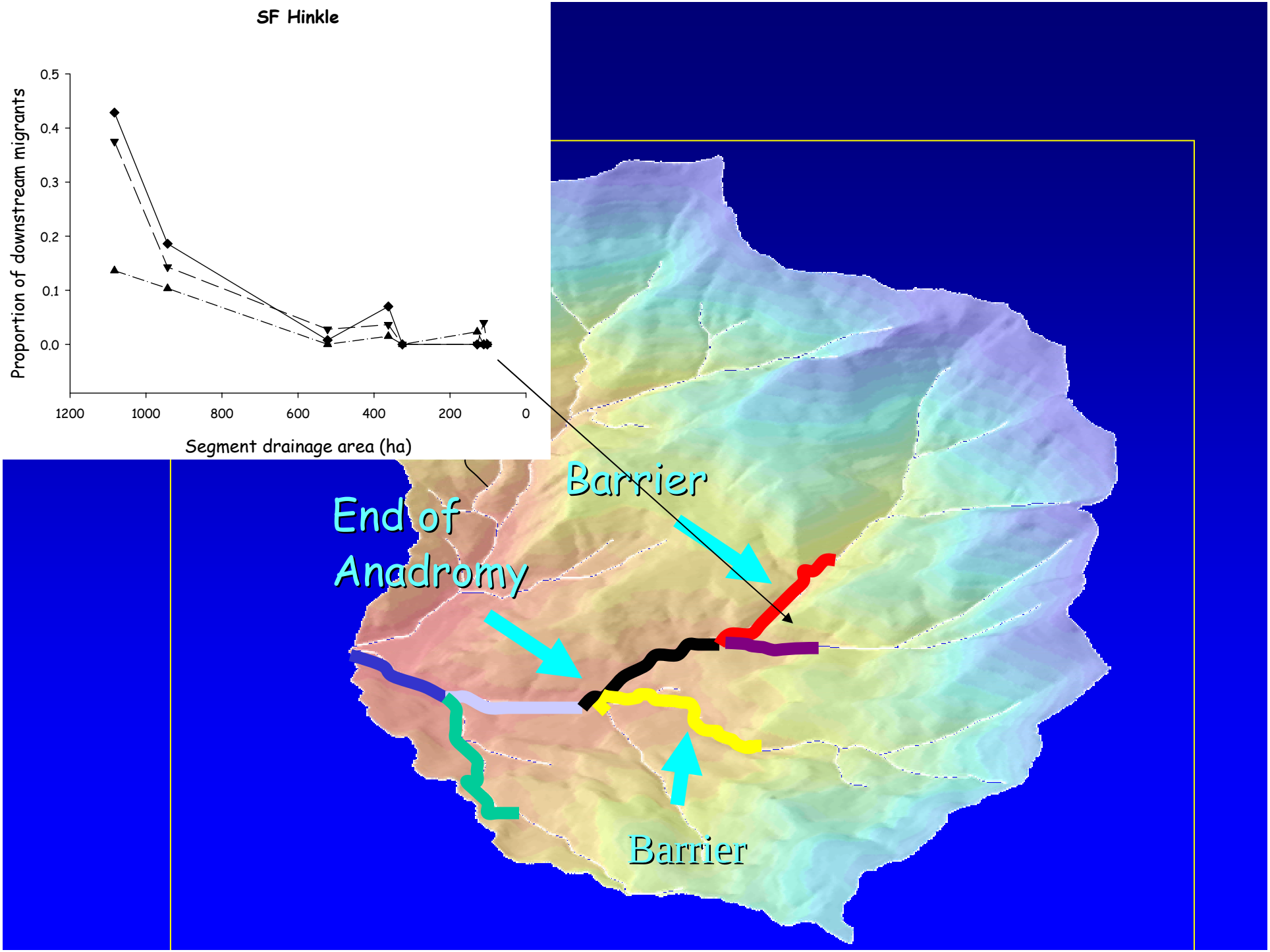
Barrier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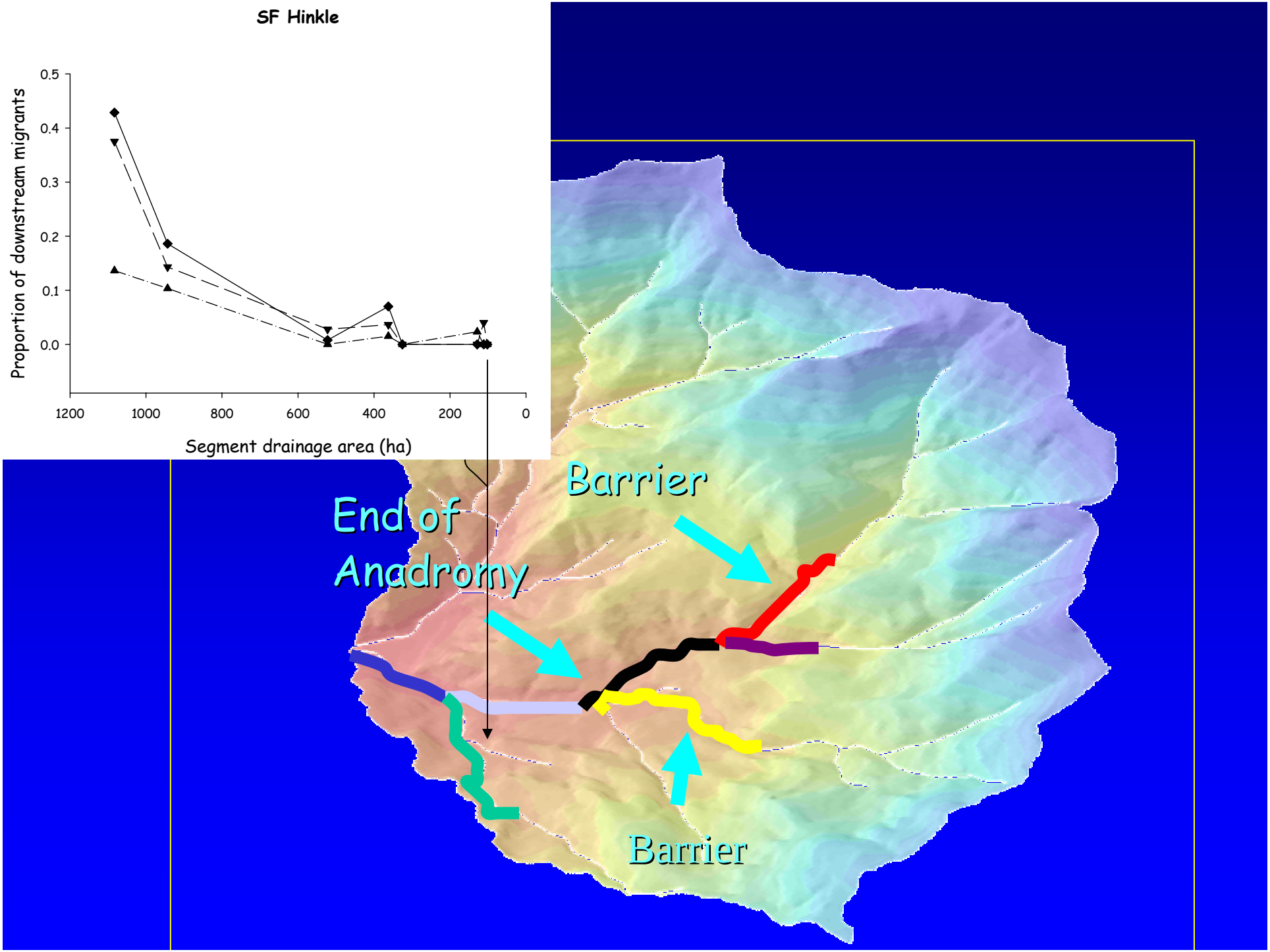
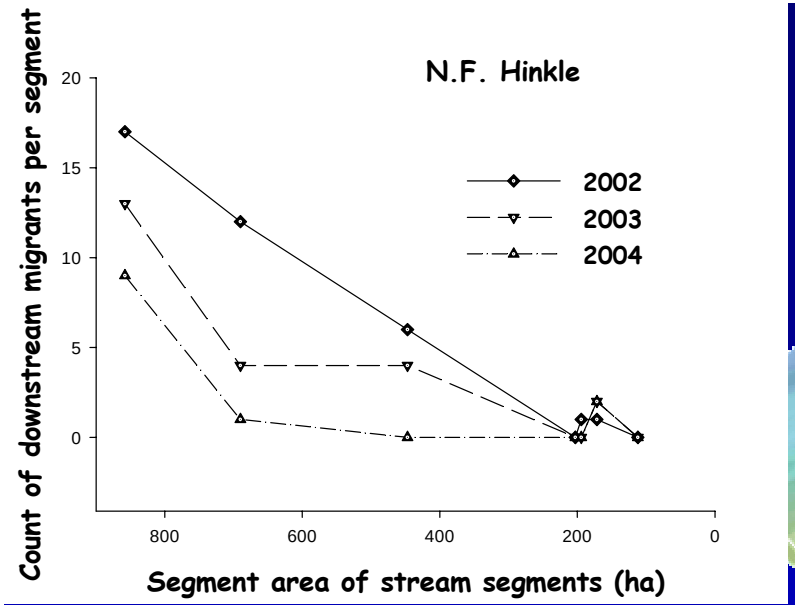
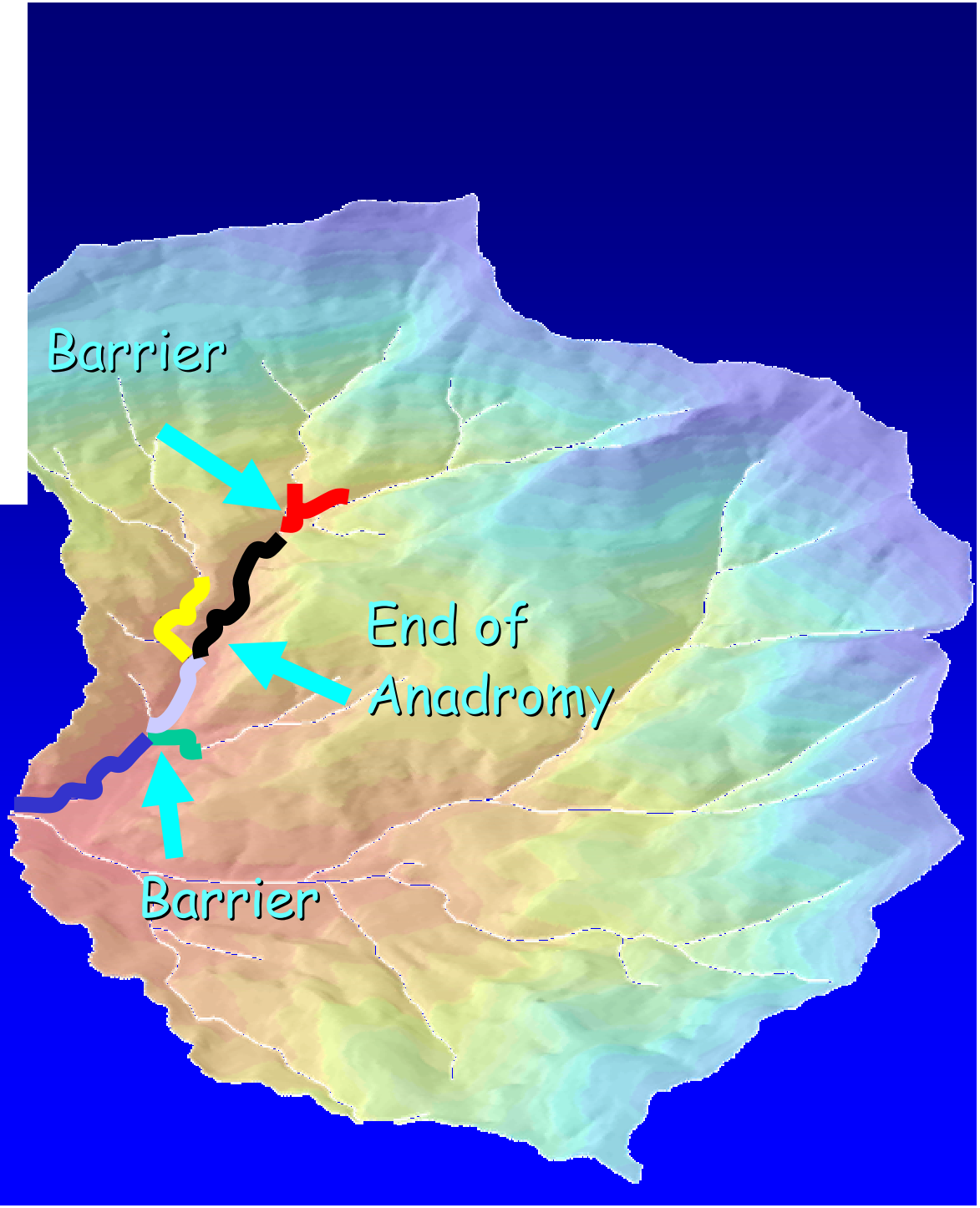
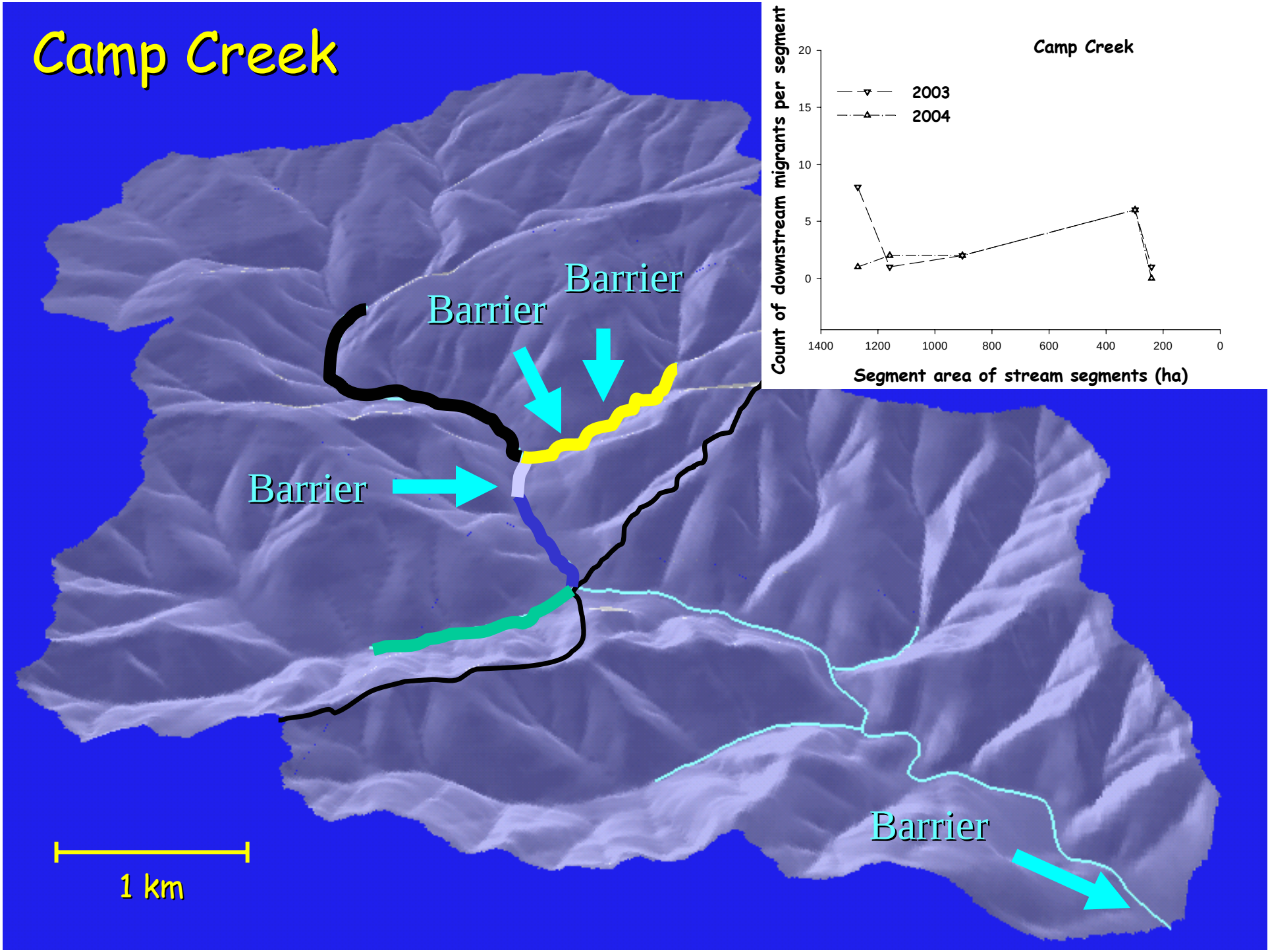
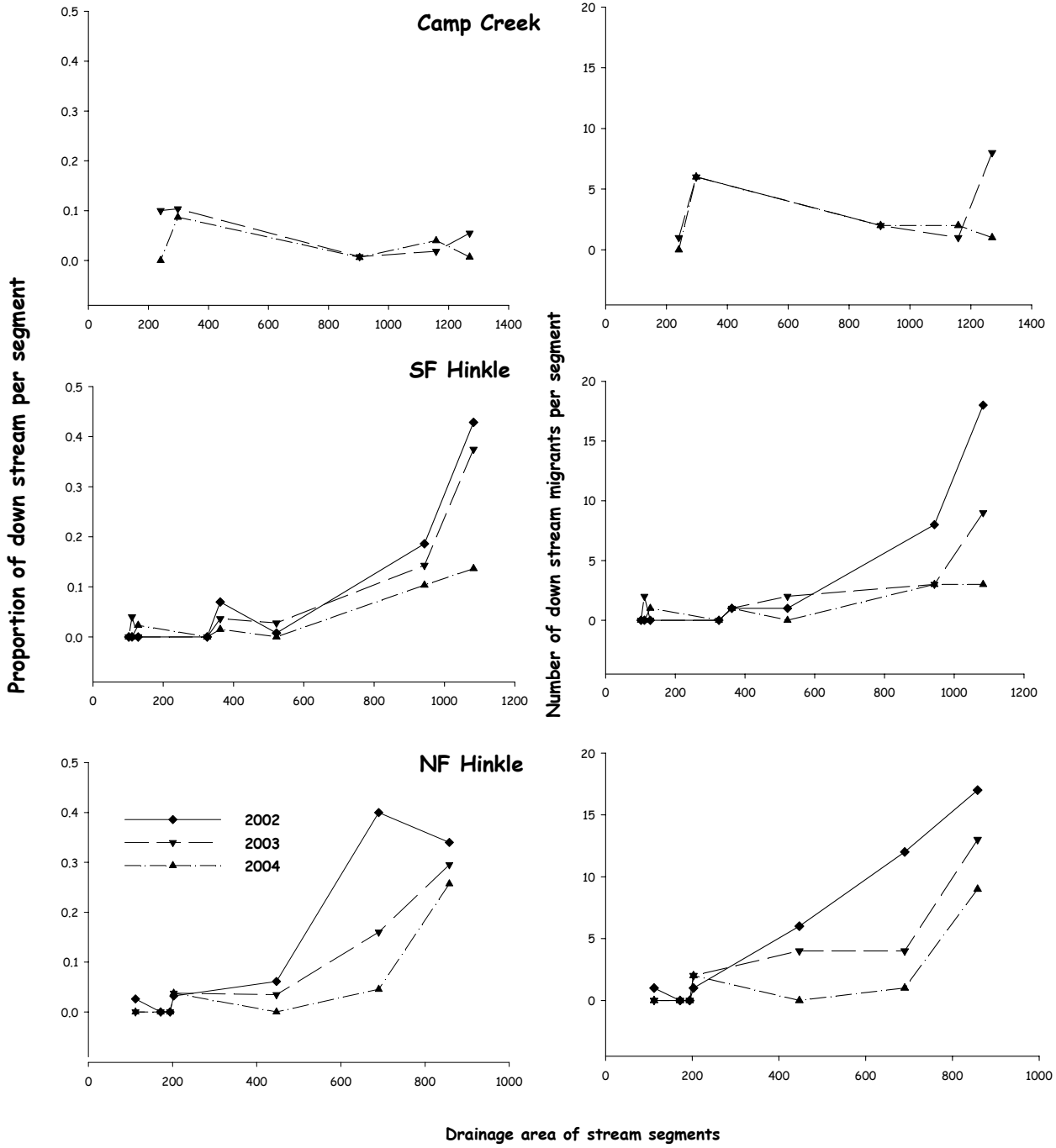

SF Hinkle
Proportion of downstream migrants
0.5
0.4
0.3
0.2
0.1
0.0
1200
1000
800
600
400
200
0
Segment drainage area (ha)
Barrier
End of
Anadromy
Barrier

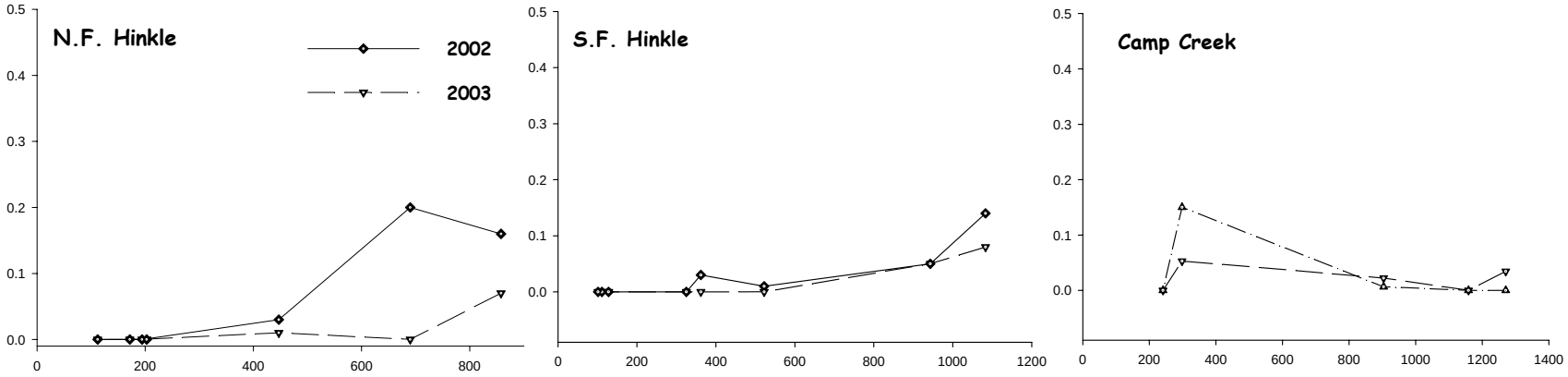

N.F. Hinkle
2002
2003
2004
Count of downstream migrants per segment
Segment area of stream segments (ha)
20
15
10
5
0
800
600
400
200
0


Barrier
End of
Anadromy
Barrier


Camp Creek
Barrier
Barrier
Barrier
Barrier
1 km
Camp Creek
2003
2004
Count of downstream migrants per segment
Segment area of stream segments (ha)
20
15
10
5
0
1400
1200
1000
800
600
400
200
0


Camp Creek
SF Hinkle
NF Hinkle
2002
2003
2004
Proportion of down stream per segment
Number of down stream migrants per segment
Drainage area of stream segments

Proportion of Fish Passing Through Downstream Antenna by Segment



Area of stream segments

Summary

- Headwater streams do produce some downstream migrants

- The number of migrants varies within and among streams and years

- Variation in abundance of downstream migrants may be related to channel connectivity

Some Observations On Behaviors

- Some fish left
- Some fish returned
- Some fish returned to another headwater system

C.A.T. 01-00

O. clarkii, 210mm, F.L.
CAMP CREEK COASTAL CUTTHROAT