Summary of Infectious Zone Study – Part D

Approach

On Monday, 26 April, 2010, 225 river water samples were taken at 25 sites covering approximately 180 Rkm of the Klamath River. At each site, 3 x 1L water samples were taken in the morning, midday and afternoon (approx 3 hours apart). Each sample was filtered, the DNA present extracted and a qPCR run to determine the amount of *Ceratomyxa shasta* DNA present (where Cq 34 = ~ 1 spore/L).

Results

Data are displayed in two graphs. The temporal view separates the morning, noon and afternoon samplings (each data point is the average Cq value of 3 x 1L water samples, with lines showing the standard deviation of these) whereas these are all combined in the overall view (each data point is the average Cq value of 9 x 1L water samples, with lines showing the standard deviation of these).

Observations:
- Abundance of *C. shasta* varied from less than 1 spore/L to ~ 10 spores/L.
- One ‘hot stretch’ spanning ~ 14 Rkm is apparent (sites 11-14) between index sites Seiad Valley (KSV) and Beaver Creek (KBC).
- At sites outside the ‘hot stretch’, parasite abundance tends to increase during the day.
- Scott River does not exhibit any dilution effect, occurring in the middle of the hot stretch (and there is no apparent contribution of spores from the Scott River as indicated by concurrent monitoring data).
- Spore abundance differs considerably between sites 10 and 11, which are only 4Rkm apart.
- Selection of sites appears appropriate for this time of year i.e. peripheral collection sites have low concentrations of spores and flank a hot spot.
## List of Sites

0. **Estuary** Yurok  
1. **KOR** Karuk  
2. Ike’s Falls  Karuk  
3. Dillon Ck river access, downriver of tributary confluence Rkm 132.1 N 41° 34.588 W 123° 32.245 Karuk  
4. Coon Creek boat launch Rkm 140.15 N 41° 36.813 W 123° 29.742 Karuk  
5. Wingate bar river access Rkm 157.49 N 41° 43.371 W 123° 26.221 Karuk  
6. Indian Creek river access, downriver of trib confluence Rkm 168.49 N 41° 47.383 W 123° 22.800 Karuk  
7. China point river access Rkm 186.89 N 41° 48.079 W 123° 18.856 Karuk  
8. Road mile 53.05, large pull out Rkm 195.57 N 41° 51.979 W 123° 18.159 Karuk  
9. **KSV** Rkm 208 OSU  
10. Rocky Point River Access Rkm 216.04 N41 48.962 W123 07.659 (NAD 83) 4 miles from KSV OSU  
11. Mining Claim Rkm 220.74 N41 47.753 W123 05.536 (NAD 83) OSU  
12. Sara Totten Campground Rkm 225.04 N41 47.246 W123 03.146 (NAD 83) OSU  
13. Fish Trap Rkm 231.78 N41 48.612 W123 00.819 OSU  
14. Horse Creek Rkm 234.88 N41 49.443 W122 59.861 OSU  
15. Off 96 Rkm 240.79 N41 50.055 W122 56.791 OSU  
16. Off Walker Rd. Rkm 245.88 N41 50.670 W122 53.692 OSU  
17. Oak Knoll Grange RM 85.81 Rkm 252.13 N41 50.296 W122 50.400 Yurok  
18. Fisher’s RV Rkm 257.08 Yurok  
19. Dirt Pull Off RM 91.15 Rkm 261.3 N41 51.293 W122 46.003 Yurok  
20. RM 94.96 Rkm 267.27 N41 51.948 W122 42.578 Yurok  
21. Off 96 Rkm 271.58 N41 50.571 W122 40.807 or Cayuse River Access (2miles form site 12) Yurok  
22. Cross Ash Ck Bridge Drive down Klamath River Rd. 1 mile Rkm 278.58 N41 49.870 W122 37.668 Yurok  
23. RM 103.15 Rkm 281.91 N41 49.836 W122 35.809 Yurok  
24. Trap Rkm 287.18 N41 51.780 W122 33.873 Yurok  
25. BLM land cattle access Rkm 291.76 N 41.892 W122.538 (following dirt road toward IG dam) Yurok