**Placer County Water Agency - Middle Fork American River Project**

**REC-4 Contingency Whitewater Flow Study - Rubicon River**

**2011 Online Whitewater Flow Study Data**

**Summary**

**Estimate of “Minimum Acceptable,” “Optimum,” and “Maximum Acceptable Flow”**

**Day 1 Put-in Flow at Ellicott Bridge - 216 cfs (n=1)**

**Rating Scale**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Much Lower Flow** | **Slightly Lower Flow** | **About the Same Flow** | **Slightly Higher Flow** | **Much Higher Flow** |
| 1 | 2 | 3 | 4 | 5 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Minimum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 4 |
| **Estimated Minimum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Minimum Acceptable Flow | 600 |
| Lowest Estimated Minimum Acceptable Flow | 600 |
| Highest Estimated Minimum Acceptable Flow | 600 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Optimal Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 5 |
| **Estimated Optimum Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Optimum Flow | 1000 |
| Lowest Estimated Minimum Optimum Flow | 1000 |
| Highest Estimated Minimum Optimum Flow | 1000 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Maximum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 5 |
| **Estimated Maximum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Maximum Acceptable Flow | 1500 |
| Lowest Estimated Maximum Acceptable Flow | 1500 |
| Highest Estimated Maximum Acceptable Flow | 1500 |

**Summary**

**Estimate of “Minimum Acceptable”, “Optimum”, and “Maximum Acceptable Flow”**

**Day 1 Put-in Flow at Ellicott Bridge - 291 - 305 cfs (n=9)**

**Rating Scale**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Much Lower Flow** | **Slightly Lower Flow** | **About the Same Flow** | **Slightly Higher Flow** | **Much Higher Flow** |
| 1 | 2 | 3 | 4 | 5 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Minimum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 3.8 |
| **Estimated Minimum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Minimum Acceptable Flow | 616 |
| Lowest Estimated Minimum Acceptable Flow | 450 |
| Highest Estimated Minimum Acceptable Flow | 800 |

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| **Based on the flow boated during this trip, what is your estimate of the "Optimal Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 4.4 |
| **Estimated Optimum Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Optimum Flow | 923 |
| Lowest Estimated Minimum Optimum Flow | 800 |
| Highest Estimated Minimum Optimum Flow | 1000 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Maximum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 4.9 |
| **Estimated Maximum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Maximum Acceptable Flow | 1224 |
| Lowest Estimated Maximum Acceptable Flow | 705 |
| Highest Estimated Maximum Acceptable Flow | 2000 |

**Summary**

**Estimate of “Minimum Acceptable”, “Optimum”, and “Maximum Acceptable Flow”**

**Day 1 Put-in Flow at Ellicott Bridge - 575 - 616 cfs (n=7)**

**Rating Scale**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Much Lower Flow** | **Slightly Lower Flow** | **About the Same Flow** | **Slightly Higher Flow** | **Much Higher Flow** |
| 1 | 2 | 3 | 4 | 5 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Minimum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 3.3 |
| **Estimated Minimum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Minimum Acceptable Flow | 553 |
| Lowest Estimated Minimum Acceptable Flow | 350 |
| Highest Estimated Minimum Acceptable Flow | 750 |

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| **Based on the flow boated during this trip, what is your estimate of the "Optimal Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 4.3 |
| **Estimated Optimum Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Optimum Flow | 811 |
| Lowest Estimated Minimum Optimum Flow | 700 |
| Highest Estimated Minimum Optimum Flow | 900 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Maximum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 4.9 |
| **Estimated Maximum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Maximum Acceptable Flow | 1248 |
| Lowest Estimated Maximum Acceptable Flow | 925 |
| Highest Estimated Maximum Acceptable Flow | 1500 |

**Summary**

**Estimate of “Minimum Acceptable”, “Optimum”, and “Maximum Acceptable Flow”**

**Day 1 Put-in Flow at Ellicott Bridge - 634 - 648 cfs (n=7)**

**Rating Scale:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Much Lower Flow** | **Slightly Lower Flow** | **About the Same Flow** | **Slightly Higher Flow** | **Much Higher Flow** |
| 1 | 2 | 3 | 4 | 5 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Minimum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 3.2 |
| **Estimated Minimum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Minimum Acceptable Flow | 590 |
| Lowest Estimated Minimum Acceptable Flow | 400 |
| Highest Estimated Minimum Acceptable Flow | 650 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Optimal Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 4.0 |
| **Estimated Optimum Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Optimum Flow | 871 |
| Lowest Estimated Minimum Optimum Flow | 700 |
| Highest Estimated Minimum Optimum Flow | 1000 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Maximum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 5.0 |
| **Estimated Maximum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Maximum Acceptable Flow | 1438 |
| Lowest Estimated Maximum Acceptable Flow | 1140 |
| Highest Estimated Maximum Acceptable Flow | 1750 |

**Summary**

 **Estimate of “Minimum Acceptable”, “Optimum”, and “Maximum Acceptable Flow”**

**Day 1 Put-in Flow at Ellicott Bridge - 783 -798 cfs (n=2)**

**Rating Scale:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Much Lower Flow** | **Slightly Lower Flow** | **About the Same Flow** | **Slightly Higher Flow** | **Much Higher Flow** |
| 1 | 2 | 3 | 4 | 5 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Minimum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 1.5 |
| **Estimated Minimum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Minimum Acceptable Flow | 590 |
| Lowest Estimated Minimum Acceptable Flow | 580 |
| Highest Estimated Minimum Acceptable Flow | 600 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Optimal Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 2.5 |
| **Estimated Optimum Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Optimum Flow | 740 |
| Lowest Estimated Minimum Optimum Flow | 680 |
| Highest Estimated Minimum Optimum Flow | 800 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Maximum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 4.0 |
| **Estimated Maximum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Maximum Acceptable Flow | 983 |
| Lowest Estimated Maximum Acceptable Flow | 983 |
| Highest Estimated Maximum Acceptable Flow | 983 |

**Summary**

**Estimate of “Minimum Acceptable”, “Optimum”, and “Maximum Acceptable Flow”**

**Day 1 Put-in Flow at Ellicott Bridge - 860 - 888 cfs (n=9)**

**Rating Scale:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Much Lower Flow** | **Slightly Lower Flow** | **About the Same Flow** | **Slightly Higher Flow** | **Much Higher Flow** |
| 1 | 2 | 3 | 4 | 5 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Minimum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 2.1 |
| **Estimated Minimum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Minimum Acceptable Flow | 775 |
| Lowest Estimated Minimum Acceptable Flow | 560 |
| Highest Estimated Minimum Acceptable Flow | 865 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Optimal Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 3.0 |
| **Estimated Optimum Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Optimum Flow | 854 |
| Lowest Estimated Minimum Optimum Flow | 800 |
| Highest Estimated Minimum Optimum Flow | 865 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Maximum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 3.9 |
| **Estimated Maximum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Maximum Acceptable Flow | 1364 |
| Lowest Estimated Maximum Acceptable Flow | 860 |
| Highest Estimated Maximum Acceptable Flow | 2000 |

**Summary**

**Estimate of “Minimum Acceptable”, “Optimum”, and “Maximum Acceptable Flow”**

**Day 1 Put-in Flow at Ellicott Bridge - 907 - 945 cfs (n=15)**

**Rating Scale:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Much Lower Flow** | **Slightly Lower Flow** | **About the Same Flow** | **Slightly Higher Flow** | **Much Higher Flow** |
| 1 | 2 | 3 | 4 | 5 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Minimum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 2.0 |
| **Estimated Minimum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Minimum Acceptable Flow | 735 |
| Lowest Estimated Minimum Acceptable Flow | 500 |
| Highest Estimated Minimum Acceptable Flow | 926 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Optimal Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 2.8 |
| **Estimated Optimum Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Optimum Flow | 923 |
| Lowest Estimated Minimum Optimum Flow | 800 |
| Highest Estimated Minimum Optimum Flow | 1026 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Maximum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 3.7 |
| **Estimated Maximum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Maximum Acceptable Flow | 1223 |
| Lowest Estimated Maximum Acceptable Flow | 807 |
| Highest Estimated Maximum Acceptable Flow | 1721 |

**Summary**

**Estimate of “Minimum Acceptable”, “Optimum”, and “Maximum Acceptable Flow”**

**Day 1 Put-in Flow at Ellicott Bridge - 989 - 994 cfs (n=2)**

**Rating Scale:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Much Lower Flow** | **Slightly Lower Flow** | **About the Same Flow** | **Slightly Higher Flow** | **Much Higher Flow** |
| 1 | 2 | 3 | 4 | 5 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Minimum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 2.5 |
| **Estimated Minimum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Minimum Acceptable Flow | 990 |
| Lowest Estimated Minimum Acceptable Flow | 990 |
| Highest Estimated Minimum Acceptable Flow | 990 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Optimal Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 2.5 |
| **Estimated Optimum Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Optimum Flow | 895 |
| Lowest Estimated Minimum Optimum Flow | 800 |
| Highest Estimated Minimum Optimum Flow | 990 |

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| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Maximum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 3.5 |
| **Estimated Maximum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Maximum Acceptable Flow | 1345 |
| Lowest Estimated Maximum Acceptable Flow | 1300 |
| Highest Estimated Maximum Acceptable Flow | 1389 |

**Summary**

**Estimate of “Minimum Acceptable”, “Optimum”, and “Maximum Acceptable Flow”**

**Day 1 Put-in Flow at Ellicott Bridge - 1044 - 1416 cfs (n=6)**

**Rating Scale:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Much Lower Flow** | **Slightly Lower Flow** | **About the Same Flow** | **Slightly Higher Flow** | **Much Higher Flow** |
| 1 | 2 | 3 | 4 | 5 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Minimum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 2.5 |
| **Estimated Minimum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Minimum Acceptable Flow | 1100 |
| Lowest Estimated Minimum Acceptable Flow | 700 |
| Highest Estimated Minimum Acceptable Flow | 1616 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Optimal Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 3.2 |
| **Estimated Optimum Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Optimum Flow | 1211 |
| Lowest Estimated Minimum Optimum Flow | 950 |
| Highest Estimated Minimum Optimum Flow | 1616 |

|  |  |
| --- | --- |
| **Based on the flow boated during this trip, what is your estimate of the "Maximum Acceptable Flow" - the lowest flow at which you would be willing to return to boat this reach** | **Average Rating** |
|  | 4.0 |
| **Estimated Maximum Acceptable Flow****Based on actual flow at day-1 put-in time, or stated flow on the survey form.** | **Estimated Minimum Acceptable Flow (CFS)** |
| Average Estimated Maximum Acceptable Flow | 1721 |
| Lowest Estimated Maximum Acceptable Flow | 1200 |
| Highest Estimated Maximum Acceptable Flow | 2290 |