

**Supplementary Statistics File associated with the manuscript:**

**Morphological Variability among Spawning Populations of Bering Cisco *Coregonus laurettae***

Authors: Randy J. Brown and J. Andrés López

On the following pages are the results of all statistical tests we report in this manuscript. We used Minitab Statistical Software version 18 for all analyses. There is one statistical analysis per page presented sequentially as they are presented in tables 2 – 4 and in figures 5 and 6.

## One-way ANOVA: FL\_f versus Group\_f

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor  | Levels | Values                |
|---------|--------|-----------------------|
| Group_f | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source  | DF | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|---------|----|--------|--------------|--------|--------|---------|---------|
| Group_f | 2  | 12976  | 43.37%       | 12976  | 6488.1 | 15.32   | 0.000   |
| Error   | 40 | 16944  | 56.63%       | 16944  | 423.6  |         |         |
| Total   | 42 | 29920  | 100.00%      |        |        |         |         |

### Model Summary

| S       | R-sq   | R-sq(adj) | PRESS   | R-sq(pred) |
|---------|--------|-----------|---------|------------|
| 20.5817 | 43.37% | 40.54%    | 19580.3 | 34.56%     |

### Means

| Group_f | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 10 | 338.80 | 18.51 | (325.65, 351.95) |
| Susitna | 13 | 322.15 | 22.97 | (310.62, 333.69) |
| Yukon   | 20 | 362.05 | 19.90 | (352.75, 371.35) |

*Pooled StDev = 20.5817*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group_f | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Yukon   | 20 | 362.05 | A        |
| Kusko   | 10 | 338.80 | B        |
| Susitna | 13 | 322.15 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI         | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------|---------|------------------|
| Susitna - Kusko      | -16.65              | 8.66             | (-37.70, 4.41) | -1.92   | 0.145            |
| Yukon - Kusko        | 23.25               | 7.97             | (3.86, 42.64)  | 2.92    | 0.016            |
| Yukon - Susitna      | 39.90               | 7.33             | (22.06, 57.73) | 5.44    | 0.000            |

*Individual confidence level = 98.04%*

## One-way ANOVA: FL\_m versus Group\_m

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor  | Levels | Values                |
|---------|--------|-----------------------|
| Group_m | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source  | DF | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|---------|----|--------|--------------|--------|--------|---------|---------|
| Group_m | 2  | 19391  | 36.38%       | 19391  | 9695.6 | 21.44   | 0.000   |
| Error   | 75 | 33911  | 63.62%       | 33911  | 452.1  |         |         |
| Total   | 77 | 53302  | 100.00%      |        |        |         |         |

### Model Summary

| S       | R-sq   | R-sq(adj) | PRESS   | R-sq(pred) |
|---------|--------|-----------|---------|------------|
| 21.2637 | 36.38% | 34.68%    | 36800.3 | 30.96%     |

### Means

| Group_m | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 29 | 330.04 | 19.04 | (322.18, 337.91) |
| Susitna | 27 | 300.56 | 18.23 | (292.40, 308.71) |
| Yukon   | 22 | 337.23 | 26.83 | (328.20, 346.26) |

*Pooled StDev = 21.2637*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group_m | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Yukon   | 22 | 337.23 | A        |
| Kusko   | 29 | 330.04 | A        |
| Susitna | 27 | 300.56 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------|---------|------------------|
| Susitna - Kusko      | -29.49              | 5.69             | (-43.08, -15.89) | -5.19   | 0.000            |
| Yukon - Kusko        | 7.19                | 6.01             | (-7.18, 21.55)   | 1.20    | 0.460            |
| Yukon - Susitna      | 36.67               | 6.11             | (22.08, 51.27)   | 6.00    | 0.000            |

*Individual confidence level = 98.06%*

## One-way ANOVA: WholeWt\_f versus Group\_f

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

Equal variances were assumed for the analysis.

### Factor Information

| Factor  | Levels | Values                |
|---------|--------|-----------------------|
| Group_f | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source  | DF | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|---------|----|--------|--------------|--------|--------|---------|---------|
| Group_f | 2  | 144594 | 26.01%       | 144594 | 72297  | 7.03    | 0.002   |
| Error   | 40 | 411306 | 73.99%       | 411306 | 10283  |         |         |
| Total   | 42 | 555900 | 100.00%      |        |        |         |         |

### Model Summary

| S       | R-sq   | R-sq(adj) | PRESS  | R-sq(pred) |
|---------|--------|-----------|--------|------------|
| 101.403 | 26.01% | 22.31%    | 474159 | 14.70%     |

### Means

| Group_f | N  | Mean  | StDev | 95% CI         |
|---------|----|-------|-------|----------------|
| Kusko   | 10 | 426.5 | 74.8  | (361.7, 491.3) |
| Susitna | 13 | 502.1 | 123.8 | (445.2, 558.9) |
| Yukon   | 20 | 571.7 | 96.6  | (525.9, 617.5) |

Pooled StDev = 101.403

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group_f | N  | Mean  | Grouping |
|---------|----|-------|----------|
| Yukon   | 20 | 571.7 | A        |
| Susitna | 13 | 502.1 | A B      |
| Kusko   | 10 | 426.5 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI         | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------|---------|------------------|
| Susitna - Kusko      | 75.5                | 42.7             | (-28.2, 179.3) | 1.77    | 0.192            |
| Yukon - Kusko        | 145.2               | 39.3             | (49.6, 240.7)  | 3.70    | 0.002            |
| Yukon - Susitna      | 69.6                | 36.1             | (-18.2, 157.5) | 1.93    | 0.144            |

Individual confidence level = 98.04%

## One-way ANOVA: WholeWt\_m versus Group\_m

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

Equal variances were assumed for the analysis.

### Factor Information

| Factor  | Levels | Values                |
|---------|--------|-----------------------|
| Group_m | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source  | DF | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|---------|----|--------|--------------|--------|--------|---------|---------|
| Group_m | 2  | 81050  | 16.71%       | 81050  | 40525  | 7.52    | 0.001   |
| Error   | 75 | 404015 | 83.29%       | 404015 | 5387   |         |         |
| Total   | 77 | 485066 | 100.00%      |        |        |         |         |

### Model Summary

| S       | R-sq   | R-sq(adj) | PRESS  | R-sq(pred) |
|---------|--------|-----------|--------|------------|
| 73.3953 | 16.71% | 14.49%    | 439050 | 9.49%      |

### Means

| Group_m | N  | Mean  | StDev | 95% CI         |
|---------|----|-------|-------|----------------|
| Kusko   | 29 | 371.8 | 58.2  | (344.7, 399.0) |
| Susitna | 27 | 351.7 | 63.5  | (323.6, 379.9) |
| Yukon   | 22 | 431.2 | 98.6  | (400.1, 462.4) |

Pooled StDev = 73.3953

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group_m | N  | Mean  | Grouping |
|---------|----|-------|----------|
| Yukon   | 22 | 431.2 | A        |
| Kusko   | 29 | 371.8 | B        |
| Susitna | 27 | 351.7 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI        | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------|---------|------------------|
| Susitna - Kusko      | -20.1               | 19.6             | (-67.0, 26.8) | -1.03   | 0.563            |
| Yukon - Kusko        | 59.4                | 20.8             | (9.8, 109.0)  | 2.86    | 0.015            |
| Yukon - Susitna      | 79.5                | 21.1             | (29.1, 129.9) | 3.77    | 0.001            |

Individual confidence level = 98.06%

## Kruskal-Wallis Test: Age versus Group

### Descriptive Statistics

| Group   | N   | Median | Mean Rank | Z-Value |
|---------|-----|--------|-----------|---------|
| Kusko   | 37  | 5      | 64.4      | 1.81    |
| Susitna | 35  | 4      | 40.4      | -3.53   |
| Yukon   | 40  | 5      | 63.2      | 1.64    |
| Overall | 112 |        | 56.5      |         |

### Test

Null hypothesis       $H_0$ : All medians are equal  
Alternative hypothesis  $H_1$ : At least one median is different

| Method                | DF | H-Value | P-Value |
|-----------------------|----|---------|---------|
| Not adjusted for ties | 2  | 12.47   | 0.002   |
| Adjusted for ties     | 2  | 13.39   | 0.001   |

Individual contrasts are presented on the next page. Significance was based on  $\alpha = 0.05$  for the multiple group test and at a family level  $\alpha = 0.05$ , which resulted in a Bonferroni adjusted level of  $\alpha = 0.05/3 = 0.017$  for the three individual contrasts (Verhoeven et al. 2005).

## Kruskal-Wallis Test: Age versus Group

### Descriptive Statistics

| Group   | N  | Median | Mean Rank | Z-Value |
|---------|----|--------|-----------|---------|
| Susitna | 35 | 4      | 29.8      | -3.06   |
| Yukon   | 40 | 5      | 45.2      | 3.06    |
| Overall | 75 |        | 38.0      |         |

### Test

Null hypothesis H<sub>0</sub>: All medians are equal  
Alternative hypothesis H<sub>1</sub>: At least one median is different

| Method                | DF | H-Value | P-Value |
|-----------------------|----|---------|---------|
| Not adjusted for ties | 1  | 9.39    | 0.002   |
| Adjusted for ties     | 1  | 10.08   | 0.001   |

## Kruskal-Wallis Test: Age\_1 versus Group\_1

### Descriptive Statistics

| Group_1 | N  | Median | Mean Rank | Z-Value |
|---------|----|--------|-----------|---------|
| Kusko   | 37 | 5      | 43.9      | 3.08    |
| Susitna | 35 | 4      | 28.7      | -3.08   |
| Overall | 72 |        | 36.5      |         |

### Test

Null hypothesis H<sub>0</sub>: All medians are equal  
Alternative hypothesis H<sub>1</sub>: At least one median is different

| Method                | DF | H-Value | P-Value |
|-----------------------|----|---------|---------|
| Not adjusted for ties | 1  | 9.50    | 0.002   |
| Adjusted for ties     | 1  | 10.21   | 0.001   |

## Kruskal-Wallis Test: Age\_2 versus Group\_2

### Descriptive Statistics

| Group_2 | N  | Median | Mean Rank | Z-Value |
|---------|----|--------|-----------|---------|
| Kusko   | 37 | 5      | 39.5      | 0.19    |
| Yukon   | 40 | 5      | 38.5      | -0.19   |
| Overall | 77 |        | 39.0      |         |

### Test

Null hypothesis H<sub>0</sub>: All medians are equal  
Alternative hypothesis H<sub>1</sub>: At least one median is different

| Method                | DF | H-Value | P-Value |
|-----------------------|----|---------|---------|
| Not adjusted for ties | 1  | 0.04    | 0.846   |
| Adjusted for ties     | 1  | 0.04    | 0.840   |

## One-way ANOVA: Dorsal fin rays versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|--------|-----|--------|--------------|--------|--------|---------|---------|
| Group  | 2   | 5.487  | 6.69%        | 5.487  | 2.7435 | 3.66    | 0.029   |
| Error  | 102 | 76.475 | 93.31%       | 76.475 | 0.7498 |         |         |
| Total  | 104 | 81.962 | 100.00%      |        |        |         |         |

### Model Summary

| S        | R-sq  | R-sq(adj) | PRESS   | R-sq(pred) |
|----------|-------|-----------|---------|------------|
| 0.865883 | 6.69% | 4.87%     | 81.0463 | 1.12%      |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 39 | 14.641 | 0.811 | (14.366, 14.916) |
| Susitna | 29 | 14.103 | 0.860 | (13.785, 14.422) |
| Yukon   | 37 | 14.243 | 0.925 | (13.961, 14.526) |

*Pooled StDev = 0.865883*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Kusko   | 39 | 14.641 | A        |
| Yukon   | 37 | 14.243 | A B      |
| Susitna | 29 | 14.103 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------|---------|------------------|
| Susitna - Kusko      | -0.538              | 0.212            | (-1.042, -0.033) | -2.53   | 0.034            |
| Yukon - Kusko        | -0.398              | 0.199            | (-0.870, 0.074)  | -2.00   | 0.117            |
| Yukon - Susitna      | 0.140               | 0.215            | (-0.370, 0.650)  | 0.65    | 0.792            |

*Individual confidence level = 98.06%*



## One-way ANOVA: Pectoral fin rays versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS  | Contribution | Adj SS  | Adj MS | F-Value | P-Value |
|--------|-----|---------|--------------|---------|--------|---------|---------|
| Group  | 2   | 0.7545  | 1.15%        | 0.7545  | 0.3773 | 0.59    | 0.556   |
| Error  | 102 | 65.0931 | 98.85%       | 65.0931 | 0.6382 |         |         |
| Total  | 104 | 65.8476 | 100.00%      |         |        |         |         |

### Model Summary

| S        | R-sq  | R-sq(adj) | PRESS   | R-sq(pred) |
|----------|-------|-----------|---------|------------|
| 0.798854 | 1.15% | 0.00%     | 68.9854 | 0.00%      |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 39 | 16.487 | 0.885 | (16.233, 16.741) |
| Susitna | 29 | 16.517 | 0.829 | (16.223, 16.811) |
| Yukon   | 37 | 16.324 | 0.669 | (16.064, 16.585) |

*Pooled StDev = 0.798854*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Susitna | 29 | 16.517 | A        |
| Kusko   | 39 | 16.487 | A        |
| Yukon   | 37 | 16.324 | A        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI          | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|-----------------|---------|------------------|
| Susitna - Kusko      | 0.030               | 0.196            | (-0.435, 0.495) | 0.15    | 0.987            |
| Yukon - Kusko        | -0.163              | 0.183            | (-0.598, 0.273) | -0.89   | 0.649            |
| Yukon - Susitna      | -0.193              | 0.198            | (-0.664, 0.278) | -0.97   | 0.595            |

*Individual confidence level = 98.06%*

## One-way ANOVA: Pelvic fin rays versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS  | Contribution | Adj SS  | Adj MS | F-Value | P-Value |
|--------|-----|---------|--------------|---------|--------|---------|---------|
| Group  | 2   | 0.3895  | 0.66%        | 0.3895  | 0.1947 | 0.34    | 0.713   |
| Error  | 102 | 58.4677 | 99.34%       | 58.4677 | 0.5732 |         |         |
| Total  | 104 | 58.8571 | 100.00%      |         |        |         |         |

### Model Summary

| S        | R-sq  | R-sq(adj) | PRESS   | R-sq(pred) |
|----------|-------|-----------|---------|------------|
| 0.757108 | 0.66% | 0.00%     | 62.0451 | 0.00%      |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 39 | 12.103 | 0.754 | (11.862, 12.343) |
| Susitna | 29 | 12.241 | 0.872 | (11.963, 12.520) |
| Yukon   | 37 | 12.108 | 0.658 | (11.861, 12.355) |

*Pooled StDev = 0.757108*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Susitna | 29 | 12.241 | A        |
| Yukon   | 37 | 12.108 | A        |
| Kusko   | 39 | 12.103 | A        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI          | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|-----------------|---------|------------------|
| Susitna - Kusko      | 0.139               | 0.186            | (-0.302, 0.580) | 0.75    | 0.736            |
| Yukon - Kusko        | 0.006               | 0.174            | (-0.407, 0.418) | 0.03    | 0.999            |
| Yukon - Susitna      | -0.133              | 0.188            | (-0.579, 0.313) | -0.71   | 0.758            |

*Individual confidence level = 98.06%*

## One-way ANOVA: Anal fin rays versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|--------|-----|--------|--------------|--------|--------|---------|---------|
| Group  | 2   | 3.899  | 4.72%        | 3.899  | 1.9493 | 2.53    | 0.085   |
| Error  | 102 | 78.616 | 95.28%       | 78.616 | 0.7707 |         |         |
| Total  | 104 | 82.514 | 100.00%      |        |        |         |         |

### Model Summary

| S        | R-sq  | R-sq(adj) | PRESS   | R-sq(pred) |
|----------|-------|-----------|---------|------------|
| 0.877920 | 4.72% | 2.86%     | 83.3908 | 0.00%      |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 39 | 14.410 | 0.850 | (14.131, 14.689) |
| Susitna | 29 | 14.310 | 0.967 | (13.987, 14.634) |
| Yukon   | 37 | 13.973 | 0.833 | (13.687, 14.259) |

*Pooled StDev = 0.877920*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Kusko   | 39 | 14.410 | A        |
| Susitna | 29 | 14.310 | A        |
| Yukon   | 37 | 13.973 | A        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI          | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|-----------------|---------|------------------|
| Susitna - Kusko      | -0.100              | 0.215            | (-0.611, 0.412) | -0.46   | 0.888            |
| Yukon - Kusko        | -0.437              | 0.201            | (-0.916, 0.041) | -2.17   | 0.081            |
| Yukon - Susitna      | -0.337              | 0.218            | (-0.855, 0.180) | -1.55   | 0.272            |

*Individual confidence level = 98.06%*

## One-way ANOVA: Lateral line scales versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 1                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS  | Contribution | Adj SS  | Adj MS | F-Value | P-Value |
|--------|-----|---------|--------------|---------|--------|---------|---------|
| Group  | 2   | 56.91   | 4.30%        | 56.91   | 28.45  | 2.27    | 0.109   |
| Error  | 101 | 1266.75 | 95.70%       | 1266.75 | 12.54  |         |         |
| Total  | 103 | 1323.65 | 100.00%      |         |        |         |         |

### Model Summary

| S       | R-sq  | R-sq(adj) | PRESS   | R-sq(pred) |
|---------|-------|-----------|---------|------------|
| 3.54147 | 4.30% | 2.40%     | 1345.36 | 0.00%      |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 38 | 85.000 | 3.385 | (83.860, 86.140) |
| Susitna | 29 | 86.138 | 4.155 | (84.833, 87.443) |
| Yukon   | 37 | 84.270 | 3.159 | (83.115, 85.425) |

Pooled StDev = 3.54147

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Susitna | 29 | 86.138 | A        |
| Kusko   | 38 | 85.000 | A        |
| Yukon   | 37 | 84.270 | A        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI          | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|-----------------|---------|------------------|
| Susitna - Kusko      | 1.138               | 0.873            | (-0.937, 3.213) | 1.30    | 0.397            |
| Yukon - Kusko        | -0.730              | 0.818            | (-2.673, 1.214) | -0.89   | 0.647            |
| Yukon - Susitna      | -1.868              | 0.878            | (-3.954, 0.219) | -2.13   | 0.090            |

Individual confidence level = 98.06%

## One-way ANOVA: Scales above lateral line versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS | Contribution | Adj SS | Adj MS  | F-Value | P-Value |
|--------|-----|--------|--------------|--------|---------|---------|---------|
| Group  | 2   | 25.78  | 27.39%       | 25.78  | 12.8903 | 19.24   | 0.000   |
| Error  | 102 | 68.35  | 72.61%       | 68.35  | 0.6701  |         |         |
| Total  | 104 | 94.13  | 100.00%      |        |         |         |         |

### Model Summary

| S        | R-sq   | R-sq(adj) | PRESS   | R-sq(pred) |
|----------|--------|-----------|---------|------------|
| 0.818611 | 27.39% | 25.96%    | 72.6411 | 22.83%     |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 39 | 9.769  | 0.667 | (9.509, 10.029)  |
| Susitna | 29 | 10.931 | 1.033 | (10.630, 11.233) |
| Yukon   | 37 | 9.892  | 0.774 | (9.625, 10.159)  |

*Pooled StDev = 0.818611*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Susitna | 29 | 10.931 | A        |
| Yukon   | 37 | 9.892  | B        |
| Kusko   | 39 | 9.769  | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------|---------|------------------|
| Susitna - Kusko      | 1.162               | 0.201            | (0.685, 1.639)   | 5.79    | 0.000            |
| Yukon - Kusko        | 0.123               | 0.188            | (-0.324, 0.569)  | 0.65    | 0.791            |
| Yukon - Susitna      | -1.039              | 0.203            | (-1.522, -0.557) | -5.12   | 0.000            |

*Individual confidence level = 98.06%*

## One-way ANOVA: Scales below lateral line versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|--------|-----|--------|--------------|--------|--------|---------|---------|
| Group  | 2   | 18.87  | 25.73%       | 18.87  | 9.4358 | 17.67   | 0.000   |
| Error  | 102 | 54.46  | 74.27%       | 54.46  | 0.5339 |         |         |
| Total  | 104 | 73.33  | 100.00%      |        |        |         |         |

### Model Summary

| S        | R-sq   | R-sq(adj) | PRESS   | R-sq(pred) |
|----------|--------|-----------|---------|------------|
| 0.730710 | 25.73% | 24.28%    | 57.7590 | 21.24%     |

### Means

| Group   | N  | Mean   | StDev  | 95% CI           |
|---------|----|--------|--------|------------------|
| Kusko   | 39 | 9.333  | 0.806  | (9.101, 9.565)   |
| Susitna | 29 | 10.345 | 0.814  | (10.076, 10.614) |
| Yukon   | 37 | 9.4865 | 0.5588 | (9.2482, 9.7248) |

*Pooled StDev = 0.730710*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Susitna | 29 | 10.345 | A        |
| Yukon   | 37 | 9.4865 | B        |
| Kusko   | 39 | 9.333  | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------|---------|------------------|
| Susitna - Kusko      | 1.011               | 0.179            | (0.586, 1.437)   | 5.65    | 0.000            |
| Yukon - Kusko        | 0.153               | 0.168            | (-0.245, 0.552)  | 0.91    | 0.633            |
| Yukon - Susitna      | -0.858              | 0.181            | (-1.289, -0.428) | -4.74   | 0.000            |

*Individual confidence level = 98.06%*



## One-way ANOVA: Gill rakers (lower) versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|--------|-----|--------|--------------|--------|--------|---------|---------|
| Group  | 2   | 103.5  | 45.01%       | 103.5  | 51.772 | 48.29   | 0.000   |
| Error  | 118 | 126.5  | 54.99%       | 126.5  | 1.072  |         |         |
| Total  | 120 | 230.0  | 100.00%      |        |        |         |         |

### Model Summary

| S       | R-sq   | R-sq(adj) | PRESS   | R-sq(pred) |
|---------|--------|-----------|---------|------------|
| 1.03541 | 45.01% | 44.08%    | 133.048 | 42.17%     |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 39 | 22.051 | 1.099 | (21.723, 22.380) |
| Susitna | 40 | 24.075 | 1.071 | (23.751, 24.399) |
| Yukon   | 42 | 22.167 | 0.935 | (21.850, 22.483) |

*Pooled StDev = 1.03541*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Susitna | 40 | 24.075 | A        |
| Yukon   | 42 | 22.167 | B        |
| Kusko   | 39 | 22.051 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------|---------|------------------|
| Susitna - Kusko      | 2.024               | 0.233            | (1.470, 2.577)   | 8.69    | 0.000            |
| Yukon - Kusko        | 0.115               | 0.230            | (-0.432, 0.662)  | 0.50    | 0.871            |
| Yukon - Susitna      | -1.908              | 0.229            | (-2.452, -1.365) | -8.34   | 0.000            |

*Individual confidence level = 98.09%*

## One-way ANOVA: Gill rakers (upper) versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 5                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|--------|-----|--------|--------------|--------|--------|---------|---------|
| Group  | 2   | 18.59  | 17.30%       | 18.59  | 9.2931 | 11.82   | 0.000   |
| Error  | 113 | 88.86  | 82.70%       | 88.86  | 0.7864 |         |         |
| Total  | 115 | 107.45 | 100.00%      |        |        |         |         |

### Model Summary

| S        | R-sq   | R-sq(adj) | PRESS   | R-sq(pred) |
|----------|--------|-----------|---------|------------|
| 0.886786 | 17.30% | 15.83%    | 93.6165 | 12.87%     |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 39 | 12.564 | 1.095 | (12.283, 12.845) |
| Susitna | 40 | 13.475 | 0.816 | (13.197, 13.753) |
| Yukon   | 37 | 12.730 | 0.693 | (12.441, 13.019) |

Pooled StDev = 0.886786

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Susitna | 40 | 13.475 | A        |
| Yukon   | 37 | 12.730 | B        |
| Kusko   | 39 | 12.564 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------|---------|------------------|
| Susitna - Kusko      | 0.911               | 0.200            | (0.437, 1.385)   | 4.56    | 0.000            |
| Yukon - Kusko        | 0.166               | 0.204            | (-0.318, 0.649)  | 0.81    | 0.695            |
| Yukon - Susitna      | -0.745              | 0.202            | (-1.226, -0.265) | -3.68   | 0.001            |

Individual confidence level = 98.08%



## One-way ANOVA: Gill rakers (total) versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 5                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS | Contribution | Adj SS | Adj MS  | F-Value | P-Value |
|--------|-----|--------|--------------|--------|---------|---------|---------|
| Group  | 2   | 203.7  | 41.85%       | 203.7  | 101.846 | 40.66   | 0.000   |
| Error  | 113 | 283.0  | 58.15%       | 283.0  | 2.505   |         |         |
| Total  | 115 | 486.7  | 100.00%      |        |         |         |         |

### Model Summary

| S       | R-sq   | R-sq(adj) | PRESS   | R-sq(pred) |
|---------|--------|-----------|---------|------------|
| 1.58260 | 41.85% | 40.82%    | 298.188 | 38.73%     |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 39 | 34.615 | 1.830 | (34.113, 35.117) |
| Susitna | 40 | 37.550 | 1.518 | (37.054, 38.046) |
| Yukon   | 37 | 34.946 | 1.353 | (34.430, 35.461) |

Pooled StDev = 1.58260

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Susitna | 40 | 37.550 | A        |
| Yukon   | 37 | 34.946 | B        |
| Kusko   | 39 | 34.615 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------|---------|------------------|
| Susitna - Kusko      | 2.935               | 0.356            | (2.088, 3.781)   | 8.24    | 0.000            |
| Yukon - Kusko        | 0.331               | 0.363            | (-0.532, 1.193)  | 0.91    | 0.635            |
| Yukon - Susitna      | -2.604              | 0.361            | (-3.462, -1.746) | -7.21   | 0.000            |

Individual confidence level = 98.08%

## One-way ANOVA: Branchiostegal bones versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 1                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|--------|-----|--------|--------------|--------|--------|---------|---------|
| Group  | 2   | 2.434  | 5.78%        | 2.434  | 1.2172 | 3.10    | 0.050   |
| Error  | 101 | 39.719 | 94.22%       | 39.719 | 0.3933 |         |         |
| Total  | 103 | 42.154 | 100.00%      |        |        |         |         |

### Model Summary

| S        | R-sq  | R-sq(adj) | PRESS   | R-sq(pred) |
|----------|-------|-----------|---------|------------|
| 0.627106 | 5.78% | 3.91%     | 42.2786 | 0.00%      |

### Means

| Group   | N  | Mean   | StDev  | 95% CI           |
|---------|----|--------|--------|------------------|
| Kusko   | 39 | 9.4872 | 0.5559 | (9.2880, 9.6864) |
| Susitna | 28 | 9.107  | 0.832  | (8.872, 9.342)   |
| Yukon   | 37 | 9.2703 | 0.5082 | (9.0658, 9.4748) |

Pooled StDev = 0.627106

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Kusko   | 39 | 9.4872 | A        |
| Yukon   | 37 | 9.2703 | A B      |
| Susitna | 28 | 9.107  | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------|---------|------------------|
| Susitna - Kusko      | -0.380              | 0.155            | (-0.749, -0.011) | -2.45   | 0.042            |
| Yukon - Kusko        | -0.217              | 0.144            | (-0.559, 0.125)  | -1.51   | 0.292            |
| Yukon - Susitna      | 0.163               | 0.157            | (-0.210, 0.536)  | 1.04    | 0.554            |

Individual confidence level = 98.06%

## One-way ANOVA: Vertebrae versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 6                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF | Seq SS | Contribution | Adj SS | Adj MS | F-Value | P-Value |
|--------|----|--------|--------------|--------|--------|---------|---------|
| Group  | 2  | 64.87  | 27.53%       | 64.87  | 32.436 | 18.23   | 0.000   |
| Error  | 96 | 170.76 | 72.47%       | 170.76 | 1.779  |         |         |
| Total  | 98 | 235.64 | 100.00%      |        |        |         |         |

### Model Summary

| S       | R-sq   | R-sq(adj) | PRESS   | R-sq(pred) |
|---------|--------|-----------|---------|------------|
| 1.33372 | 27.53% | 26.02%    | 181.974 | 22.77%     |

### Means

| Group   | N  | Mean   | StDev | 95% CI           |
|---------|----|--------|-------|------------------|
| Kusko   | 37 | 62.838 | 1.214 | (62.403, 63.273) |
| Susitna | 27 | 61.074 | 1.567 | (60.565, 61.584) |
| Yukon   | 35 | 62.943 | 1.259 | (62.495, 63.390) |

Pooled StDev = 1.33372

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean   | Grouping |
|---------|----|--------|----------|
| Yukon   | 35 | 62.943 | A        |
| Kusko   | 37 | 62.838 | A        |
| Susitna | 27 | 61.074 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------|---------|------------------|
| Susitna - Kusko      | -1.764              | 0.338            | (-2.568, -0.959) | -5.22   | 0.000            |
| Yukon - Kusko        | 0.105               | 0.314            | (-0.644, 0.854)  | 0.33    | 0.940            |
| Yukon - Susitna      | 1.869               | 0.342            | (1.055, 2.683)   | 5.47    | 0.000            |

Individual confidence level = 98.09%

## One-way ANOVA: HL/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000052 | 1.25%        | 0.000052 | 0.000026 | 0.64    | 0.527   |
| Error  | 102 | 0.004074 | 98.75%       | 0.004074 | 0.000040 |         |         |
| Total  | 104 | 0.004126 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0063202 | 1.25% | 0.00%     | 0.0043148 | 0.00%      |

### Means

| Group   | N  | Mean     | StDev    | 95% CI               |
|---------|----|----------|----------|----------------------|
| Kusko   | 39 | 0.201900 | 0.005502 | (0.199893, 0.203907) |
| Susitna | 29 | 0.20366  | 0.00560  | (0.20133, 0.20598)   |
| Yukon   | 37 | 0.20257  | 0.00754  | (0.20051, 0.20463)   |

*Pooled StDev = 0.00632017*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean     | Grouping |
|---------|----|----------|----------|
| Susitna | 29 | 0.20366  | A        |
| Yukon   | 37 | 0.20257  | A        |
| Kusko   | 39 | 0.201900 | A        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00176             | 0.00155          | (-0.00192, 0.00544) | 1.13    | 0.496            |
| Yukon - Kusko        | 0.00067             | 0.00145          | (-0.00278, 0.00412) | 0.46    | 0.889            |
| Yukon - Susitna      | -0.00109            | 0.00157          | (-0.00481, 0.00264) | -0.69   | 0.768            |

*Individual confidence level = 98.06%*

## One-way ANOVA: S-DEOO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000064 | 1.92%        | 0.000064 | 0.000032 | 1.00    | 0.372   |
| Error  | 102 | 0.003267 | 98.08%       | 0.003267 | 0.000032 |         |         |
| Total  | 104 | 0.003331 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0056596 | 1.92% | 0.00%     | 0.0034626 | 0.00%      |

### Means

| Group   | N  | Mean     | StDev    | 95% CI               |
|---------|----|----------|----------|----------------------|
| Kusko   | 39 | 0.146968 | 0.005391 | (0.145171, 0.148766) |
| Susitna | 29 | 0.14872  | 0.00566  | (0.14664, 0.15081)   |
| Yukon   | 37 | 0.146989 | 0.005928 | (0.145144, 0.148835) |

Pooled StDev = 0.00565957

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean     | Grouping |
|---------|----|----------|----------|
| Susitna | 29 | 0.14872  | A        |
| Yukon   | 37 | 0.146989 | A        |
| Kusko   | 39 | 0.146968 | A        |

Means that do not share a letter are significantly different.

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00176             | 0.00139          | (-0.00154, 0.00505) | 1.27    | 0.418            |
| Yukon - Kusko        | 0.00002             | 0.00130          | (-0.00307, 0.00311) | 0.02    | 1.000            |
| Yukon - Susitna      | -0.00174            | 0.00140          | (-0.00507, 0.00160) | -1.24   | 0.435            |

Individual confidence level = 98.06%

## One-way ANOVA: S-Pect/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000154 | 1.69%        | 0.000154 | 0.000077 | 0.88    | 0.419   |
| Error  | 102 | 0.008966 | 98.31%       | 0.008966 | 0.000088 |         |         |
| Total  | 104 | 0.009121 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0093758 | 1.69% | 0.00%     | 0.0095016 | 0.00%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.20493 | 0.00827 | (0.20195, 0.20791) |
| Susitna | 29 | 0.20203 | 0.00911 | (0.19857, 0.20548) |
| Yukon   | 37 | 0.20446 | 0.01060 | (0.20140, 0.20751) |

*Pooled StDev = 0.00937577*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Kusko   | 39 | 0.20493 | A        |
| Yukon   | 37 | 0.20446 | A        |
| Susitna | 29 | 0.20203 | A        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | -0.00290            | 0.00230          | (-0.00837, 0.00256) | -1.26   | 0.419            |
| Yukon - Kusko        | -0.00047            | 0.00215          | (-0.00559, 0.00464) | -0.22   | 0.974            |
| Yukon - Susitna      | 0.00243             | 0.00233          | (-0.00309, 0.00795) | 1.04    | 0.550            |

*Individual confidence level = 98.06%*



## One-way ANOVA: S-DO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.004082 | 28.15%       | 0.004082 | 0.002041 | 19.98   | 0.000   |
| Error  | 102 | 0.010421 | 71.85%       | 0.010421 | 0.000102 |         |         |
| Total  | 104 | 0.014503 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0101079 | 28.15% | 26.74%    | 0.0110580 | 23.76%     |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.41124 | 0.00995 | (0.40803, 0.41445) |
| Susitna | 29 | 0.42334 | 0.01154 | (0.41961, 0.42706) |
| Yukon   | 37 | 0.42470 | 0.00902 | (0.42140, 0.42799) |

*Pooled StDev = 0.0101079*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Yukon   | 37 | 0.42470 | A        |
| Susitna | 29 | 0.42334 | A        |
| Kusko   | 39 | 0.41124 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.01209             | 0.00248          | (0.00621, 0.01798)  | 4.88    | 0.000            |
| Yukon - Kusko        | 0.01345             | 0.00232          | (0.00794, 0.01897)  | 5.80    | 0.000            |
| Yukon - Susitna      | 0.00136             | 0.00251          | (-0.00460, 0.00732) | 0.54    | 0.851            |

*Individual confidence level = 98.06%*

## One-way ANOVA: S-Pelv/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.003548 | 12.48%       | 0.003548 | 0.001774 | 7.27    | 0.001   |
| Error  | 102 | 0.024883 | 87.52%       | 0.024883 | 0.000244 |         |         |
| Total  | 104 | 0.028431 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0156189 | 12.48% | 10.76%    | 0.0263502 | 7.32%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.45969 | 0.01888 | (0.45473, 0.46465) |
| Susitna | 29 | 0.46208 | 0.01524 | (0.45633, 0.46783) |
| Yukon   | 37 | 0.47271 | 0.01160 | (0.46762, 0.47781) |

*Pooled StDev = 0.0156189*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Yukon   | 37 | 0.47271 | A        |
| Susitna | 29 | 0.46208 | B        |
| Kusko   | 39 | 0.45969 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00240             | 0.00383          | (-0.00670, 0.01149) | 0.63    | 0.807            |
| Yukon - Kusko        | 0.01303             | 0.00358          | (0.00451, 0.02154)  | 3.63    | 0.001            |
| Yukon - Susitna      | 0.01063             | 0.00387          | (0.00143, 0.01983)  | 2.74    | 0.019            |

*Individual confidence level = 98.06%*



## One-way ANOVA: S-AnO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 1                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.003696 | 15.79%       | 0.003696 | 0.001848 | 9.47    | 0.000   |
| Error  | 101 | 0.019708 | 84.21%       | 0.019708 | 0.000195 |         |         |
| Total  | 103 | 0.023405 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0139690 | 15.79% | 14.12%    | 0.0209218 | 10.61%     |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.67909 | 0.01375 | (0.67466, 0.68353) |
| Susitna | 29 | 0.68525 | 0.01590 | (0.68010, 0.69039) |
| Yukon   | 36 | 0.69313 | 0.01247 | (0.68851, 0.69775) |

Pooled StDev = 0.0139690

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Yukon   | 36 | 0.69313 | A        |
| Susitna | 29 | 0.68525 | A B      |
| Kusko   | 39 | 0.67909 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00615             | 0.00343          | (-0.00198, 0.01429) | 1.80    | 0.176            |
| Yukon - Kusko        | 0.01404             | 0.00323          | (0.00637, 0.02171)  | 4.35    | 0.000            |
| Yukon - Susitna      | 0.00788             | 0.00349          | (-0.00040, 0.01616) | 2.26    | 0.066            |

Individual confidence level = 98.06%

## One-way ANOVA: S-AdO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.001741 | 5.79%        | 0.001741 | 0.000871 | 3.13    | 0.048   |
| Error  | 102 | 0.028335 | 94.21%       | 0.028335 | 0.000278 |         |         |
| Total  | 104 | 0.030077 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0166673 | 5.79% | 3.94%     | 0.0299399 | 0.45%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.75040 | 0.01989 | (0.74511, 0.75569) |
| Susitna | 29 | 0.75992 | 0.01081 | (0.75378, 0.76606) |
| Yukon   | 37 | 0.75759 | 0.01669 | (0.75215, 0.76302) |

*Pooled StDev = 0.0166673*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.75992 | A        |
| Yukon   | 37 | 0.75759 | A        |
| Kusko   | 39 | 0.75040 | A        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00952             | 0.00409          | (-0.00019, 0.01923) | 2.33    | 0.056            |
| Yukon - Kusko        | 0.00719             | 0.00383          | (-0.00190, 0.01627) | 1.88    | 0.150            |
| Yukon - Susitna      | -0.00233            | 0.00413          | (-0.01215, 0.00749) | -0.56   | 0.839            |

*Individual confidence level = 98.06%*

## One-way ANOVA: DFB/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000938 | 16.45%       | 0.000938 | 0.000469 | 10.04   | 0.000   |
| Error  | 102 | 0.004766 | 83.55%       | 0.004766 | 0.000047 |         |         |
| Total  | 104 | 0.005704 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0068355 | 16.45% | 14.81%    | 0.0050477 | 11.51%     |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.12660 | 0.00736 | (0.12443, 0.12877) |
| Susitna | 29 | 0.12061 | 0.00654 | (0.11809, 0.12313) |
| Yukon   | 37 | 0.12027 | 0.00648 | (0.11804, 0.12250) |

*Pooled StDev = 0.00683551*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Kusko   | 39 | 0.12660 | A        |
| Susitna | 29 | 0.12061 | B        |
| Yukon   | 37 | 0.12027 | B        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | -0.00599            | 0.00168          | (-0.00997, -0.00201) | -3.57   | 0.002            |
| Yukon - Kusko        | -0.00633            | 0.00157          | (-0.01006, -0.00260) | -4.04   | 0.000            |
| Yukon - Susitna      | -0.00034            | 0.00170          | (-0.00437, 0.00369)  | -0.20   | 0.978            |

*Individual confidence level = 98.06%*

## One-way ANOVA: DFL/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.002784 | 3.13%        | 0.002784 | 0.001392 | 1.65    | 0.197   |
| Error  | 102 | 0.086016 | 96.87%       | 0.086016 | 0.000843 |         |         |
| Total  | 104 | 0.088800 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0290395 | 3.13% | 1.24%     | 0.0912571 | 0.00%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.12883 | 0.02420 | (0.11961, 0.13805) |
| Susitna | 29 | 0.13619 | 0.03178 | (0.12550, 0.14689) |
| Yukon   | 37 | 0.12311 | 0.03140 | (0.11364, 0.13258) |

*Pooled StDev = 0.0290395*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.13619 | A        |
| Kusko   | 39 | 0.12883 | A        |
| Yukon   | 37 | 0.12311 | A        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00736             | 0.00712          | (-0.00956, 0.02428) | 1.03    | 0.557            |
| Yukon - Kusko        | -0.00572            | 0.00666          | (-0.02156, 0.01011) | -0.86   | 0.667            |
| Yukon - Susitna      | -0.01309            | 0.00720          | (-0.03020, 0.00403) | -1.82   | 0.169            |

*Individual confidence level = 98.06%*

## One-way ANOVA: DFO-PelvFO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 1                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.008389 | 30.25%       | 0.008389 | 0.004195 | 21.90   | 0.000   |
| Error  | 101 | 0.019347 | 69.75%       | 0.019347 | 0.000192 |         |         |
| Total  | 103 | 0.027737 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0138404 | 30.25% | 28.87%    | 0.0205253 | 26.00%     |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.19786 | 0.01496 | (0.19346, 0.20225) |
| Susitna | 29 | 0.21924 | 0.01526 | (0.21415, 0.22434) |
| Yukon   | 36 | 0.20121 | 0.01111 | (0.19663, 0.20579) |

Pooled StDev = 0.0138404

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.21924 | A        |
| Yukon   | 36 | 0.20121 | B        |
| Kusko   | 39 | 0.19786 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.02138             | 0.00339          | (0.01332, 0.02945)   | 6.30    | 0.000            |
| Yukon - Kusko        | 0.00335             | 0.00320          | (-0.00425, 0.01095)  | 1.05    | 0.549            |
| Yukon - Susitna      | -0.01803            | 0.00345          | (-0.02624, -0.00983) | -5.22   | 0.000            |

Individual confidence level = 98.06%

## One-way ANOVA: DFO-PectFO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.004853 | 29.34%       | 0.004853 | 0.002427 | 21.17   | 0.000   |
| Error  | 102 | 0.011690 | 70.66%       | 0.011690 | 0.000115 |         |         |
| Total  | 104 | 0.016544 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0107057 | 29.34% | 27.95%    | 0.0123896 | 25.11%     |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.26610 | 0.00905 | (0.26270, 0.26950) |
| Susitna | 29 | 0.28251 | 0.01044 | (0.27856, 0.28645) |
| Yukon   | 37 | 0.27705 | 0.01238 | (0.27356, 0.28054) |

*Pooled StDev = 0.0107057*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.28251 | A        |
| Yukon   | 37 | 0.27705 | A        |
| Kusko   | 39 | 0.26610 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.01641             | 0.00263          | (0.01017, 0.02265)  | 6.25    | 0.000            |
| Yukon - Kusko        | 0.01095             | 0.00246          | (0.00511, 0.01679)  | 4.46    | 0.000            |
| Yukon - Susitna      | -0.00546            | 0.00266          | (-0.01177, 0.00085) | -2.06   | 0.104            |

*Individual confidence level = 98.06%*



## One-way ANOVA: DFO-AnFO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.002059 | 15.54%       | 0.002059 | 0.001029 | 9.39    | 0.000   |
| Error  | 102 | 0.011187 | 84.46%       | 0.011187 | 0.000110 |         |         |
| Total  | 104 | 0.013246 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0104726 | 15.54% | 13.89%    | 0.0118721 | 10.37%     |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.32707 | 0.00995 | (0.32374, 0.33040) |
| Susitna | 29 | 0.33819 | 0.01204 | (0.33433, 0.34205) |
| Yukon   | 37 | 0.33156 | 0.00967 | (0.32814, 0.33497) |

*Pooled StDev = 0.0104726*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.33819 | A        |
| Yukon   | 37 | 0.33156 | B        |
| Kusko   | 39 | 0.32707 | B        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.01112             | 0.00257          | (0.00502, 0.01722)   | 4.33    | 0.000            |
| Yukon - Kusko        | 0.00449             | 0.00240          | (-0.00122, 0.01020)  | 1.87    | 0.154            |
| Yukon - Susitna      | -0.00664            | 0.00260          | (-0.01281, -0.00046) | -2.55   | 0.032            |

*Individual confidence level = 98.06%*

## One-way ANOVA: DFO-AFO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000302 | 2.52%        | 0.000302 | 0.000151 | 1.32    | 0.271   |
| Error  | 102 | 0.011665 | 97.48%       | 0.011665 | 0.000114 |         |         |
| Total  | 104 | 0.011967 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0106941 | 2.52% | 0.61%     | 0.0123764 | 0.00%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.35633 | 0.01032 | (0.35293, 0.35972) |
| Susitna | 29 | 0.35736 | 0.01203 | (0.35342, 0.36130) |
| Yukon   | 37 | 0.35332 | 0.00996 | (0.34984, 0.35681) |

*Pooled StDev = 0.0106941*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.35736 | A        |
| Kusko   | 39 | 0.35633 | A        |
| Yukon   | 37 | 0.35332 | A        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00103             | 0.00262          | (-0.00520, 0.00726) | 0.39    | 0.918            |
| Yukon - Kusko        | -0.00300            | 0.00245          | (-0.00884, 0.00283) | -1.22   | 0.442            |
| Yukon - Susitna      | -0.00404            | 0.00265          | (-0.01034, 0.00226) | -1.52   | 0.285            |

*Individual confidence level = 98.06%*



## One-way ANOVA: PectFB/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 2                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000303 | 26.03%       | 0.000303 | 0.000152 | 17.59   | 0.000   |
| Error  | 100 | 0.000862 | 73.97%       | 0.000862 | 0.000009 |         |         |
| Total  | 102 | 0.001166 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0029367 | 26.03% | 24.55%    | 0.0009129 | 21.70%     |

### Means

| Group   | N  | Mean     | StDev    | 95% CI               |
|---------|----|----------|----------|----------------------|
| Kusko   | 39 | 0.039492 | 0.003153 | (0.038559, 0.040424) |
| Susitna | 28 | 0.040734 | 0.002167 | (0.039632, 0.041835) |
| Yukon   | 36 | 0.036563 | 0.003198 | (0.035592, 0.037534) |

Pooled StDev = 0.00293673

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean     | Grouping |
|---------|----|----------|----------|
| Susitna | 28 | 0.040734 | A        |
| Kusko   | 39 | 0.039492 | A        |
| Yukon   | 36 | 0.036563 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI                 | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------------|---------|------------------|
| Susitna - Kusko      | 0.001242            | 0.000727         | (-0.000486, 0.002970)  | 1.71    | 0.207            |
| Yukon - Kusko        | -0.002929           | 0.000679         | (-0.004541, -0.001316) | -4.31   | 0.000            |
| Yukon - Susitna      | -0.004171           | 0.000740         | (-0.005929, -0.002412) | -5.64   | 0.000            |

Individual confidence level = 98.06%

## One-way ANOVA: PectFL/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 1                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000616 | 6.37%        | 0.000616 | 0.000308 | 3.44    | 0.036   |
| Error  | 101 | 0.009057 | 93.63%       | 0.009057 | 0.000090 |         |         |
| Total  | 103 | 0.009673 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0094694 | 6.37% | 4.52%     | 0.0095940 | 0.81%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 38 | 0.15028 | 0.01029 | (0.14723, 0.15333) |
| Susitna | 29 | 0.15395 | 0.00852 | (0.15046, 0.15743) |
| Yukon   | 37 | 0.14780 | 0.00929 | (0.14471, 0.15088) |

Pooled StDev = 0.00946939

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.15395 | A        |
| Kusko   | 38 | 0.15028 | A B      |
| Yukon   | 37 | 0.14780 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.00367             | 0.00233          | (-0.00188, 0.00921)  | 1.57    | 0.263            |
| Yukon - Kusko        | -0.00248            | 0.00219          | (-0.00768, 0.00271)  | -1.14   | 0.494            |
| Yukon - Susitna      | -0.00615            | 0.00235          | (-0.01173, -0.00057) | -2.62   | 0.027            |

Individual confidence level = 98.06%

## One-way ANOVA: PelvFB/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 1                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000620 | 21.28%       | 0.000620 | 0.000310 | 13.65   | 0.000   |
| Error  | 101 | 0.002295 | 78.72%       | 0.002295 | 0.000023 |         |         |
| Total  | 103 | 0.002915 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0047669 | 21.28% | 19.72%    | 0.0024352 | 16.47%     |

### Means

| Group   | N  | Mean     | StDev    | 95% CI               |
|---------|----|----------|----------|----------------------|
| Kusko   | 38 | 0.046674 | 0.005043 | (0.045140, 0.048208) |
| Susitna | 29 | 0.048262 | 0.005179 | (0.046506, 0.050018) |
| Yukon   | 37 | 0.042434 | 0.004093 | (0.040879, 0.043988) |

Pooled StDev = 0.00476692

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean     | Grouping |
|---------|----|----------|----------|
| Susitna | 29 | 0.048262 | A        |
| Kusko   | 38 | 0.046674 | A        |
| Yukon   | 37 | 0.042434 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.00159             | 0.00118          | (-0.00121, 0.00438)  | 1.35    | 0.371            |
| Yukon - Kusko        | -0.00424            | 0.00110          | (-0.00686, -0.00162) | -3.85   | 0.001            |
| Yukon - Susitna      | -0.00583            | 0.00118          | (-0.00864, -0.00302) | -4.93   | 0.000            |

Individual confidence level = 98.06%

## One-way ANOVA: PelvFL/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.001552 | 16.11%       | 0.001552 | 0.000776 | 9.80    | 0.000   |
| Error  | 102 | 0.008080 | 83.89%       | 0.008080 | 0.000079 |         |         |
| Total  | 104 | 0.009632 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0089004 | 16.11% | 14.47%    | 0.0085613 | 11.12%     |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.13793 | 0.00986 | (0.13510, 0.14076) |
| Susitna | 29 | 0.14192 | 0.00900 | (0.13864, 0.14520) |
| Yukon   | 37 | 0.13230 | 0.00767 | (0.12940, 0.13521) |

*Pooled StDev = 0.00890041*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.14192 | A        |
| Kusko   | 39 | 0.13793 | A        |
| Yukon   | 37 | 0.13230 | B        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.00399             | 0.00218          | (-0.00119, 0.00918)  | 1.83    | 0.165            |
| Yukon - Kusko        | -0.00563            | 0.00204          | (-0.01048, -0.00077) | -2.75   | 0.019            |
| Yukon - Susitna      | -0.00962            | 0.00221          | (-0.01486, -0.00437) | -4.36   | 0.000            |

*Individual confidence level = 98.06%*

## One-way ANOVA: PelvFO-PectFO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.001854 | 8.92%        | 0.001854 | 0.000927 | 4.99    | 0.009   |
| Error  | 102 | 0.018935 | 91.08%       | 0.018935 | 0.000186 |         |         |
| Total  | 104 | 0.020789 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0136249 | 8.92% | 7.13%     | 0.0201066 | 3.28%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.26742 | 0.01294 | (0.26309, 0.27174) |
| Susitna | 29 | 0.27069 | 0.01645 | (0.26567, 0.27570) |
| Yukon   | 37 | 0.27717 | 0.01178 | (0.27273, 0.28162) |

*Pooled StDev = 0.0136249*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Yukon   | 37 | 0.27717 | A        |
| Susitna | 29 | 0.27069 | A B      |
| Kusko   | 39 | 0.26742 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00327             | 0.00334          | (-0.00467, 0.01121) | 0.98    | 0.592            |
| Yukon - Kusko        | 0.00976             | 0.00313          | (0.00233, 0.01719)  | 3.12    | 0.007            |
| Yukon - Susitna      | 0.00649             | 0.00338          | (-0.00154, 0.01452) | 1.92    | 0.138            |

*Individual confidence level = 98.06%*

## One-way ANOVA: AnFB/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.003652 | 47.43%       | 0.003652 | 0.001826 | 46.02   | 0.000   |
| Error  | 102 | 0.004047 | 52.57%       | 0.004047 | 0.000040 |         |         |
| Total  | 104 | 0.007699 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0062990 | 47.43% | 46.40%    | 0.0042957 | 44.20%     |

### Means

| Group   | N  | Mean     | StDev    | 95% CI               |
|---------|----|----------|----------|----------------------|
| Kusko   | 39 | 0.116414 | 0.005387 | (0.114413, 0.118415) |
| Susitna | 29 | 0.11896  | 0.00723  | (0.11664, 0.12128)   |
| Yukon   | 37 | 0.10534  | 0.00642  | (0.10329, 0.10739)   |

*Pooled StDev = 0.00629904*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean     | Grouping |
|---------|----|----------|----------|
| Susitna | 29 | 0.11896  | A        |
| Kusko   | 39 | 0.116414 | A        |
| Yukon   | 37 | 0.10534  | B        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.00255             | 0.00154          | (-0.00112, 0.00622)  | 1.65    | 0.230            |
| Yukon - Kusko        | -0.01107            | 0.00145          | (-0.01451, -0.00764) | -7.66   | 0.000            |
| Yukon - Susitna      | -0.01362            | 0.00156          | (-0.01733, -0.00991) | -8.72   | 0.000            |

*Individual confidence level = 98.06%*



## One-way ANOVA: AnFL/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 1                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.002429 | 9.04%        | 0.002429 | 0.001215 | 5.02    | 0.008   |
| Error  | 101 | 0.024451 | 90.96%       | 0.024451 | 0.000242 |         |         |
| Total  | 103 | 0.026881 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0155593 | 9.04% | 7.24%     | 0.0259310 | 3.53%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.09678 | 0.01456 | (0.09184, 0.10173) |
| Susitna | 28 | 0.10696 | 0.01567 | (0.10113, 0.11280) |
| Yukon   | 37 | 0.09547 | 0.01648 | (0.09039, 0.10054) |

Pooled StDev = 0.0155593

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 28 | 0.10696 | A        |
| Kusko   | 39 | 0.09678 | B        |
| Yukon   | 37 | 0.09547 | B        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.01018             | 0.00385          | (0.00102, 0.01934)   | 2.64    | 0.026            |
| Yukon - Kusko        | -0.00132            | 0.00357          | (-0.00980, 0.00717)  | -0.37   | 0.928            |
| Yukon - Susitna      | -0.01150            | 0.00390          | (-0.02076, -0.00224) | -2.95   | 0.011            |

Individual confidence level = 98.06%

## One-way ANOVA: AnFO-AdFO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.004779 | 48.96%       | 0.004779 | 0.002389 | 48.93   | 0.000   |
| Error  | 102 | 0.004981 | 51.04%       | 0.004981 | 0.000049 |         |         |
| Total  | 104 | 0.009760 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0069883 | 48.96% | 47.96%    | 0.0052765 | 45.94%     |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.15424 | 0.00767 | (0.15202, 0.15646) |
| Susitna | 29 | 0.16786 | 0.00682 | (0.16528, 0.17043) |
| Yukon   | 37 | 0.15164 | 0.00634 | (0.14936, 0.15392) |

*Pooled StDev = 0.00698834*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.16786 | A        |
| Kusko   | 39 | 0.15424 | B        |
| Yukon   | 37 | 0.15164 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.01361             | 0.00171          | (0.00954, 0.01769)   | 7.95    | 0.000            |
| Yukon - Kusko        | -0.00261            | 0.00160          | (-0.00642, 0.00120)  | -1.63   | 0.240            |
| Yukon - Susitna      | -0.01622            | 0.00173          | (-0.02034, -0.01210) | -9.36   | 0.000            |

*Individual confidence level = 98.06%*



## One-way ANOVA: AnFO-PelvFO/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000669 | 3.98%        | 0.000669 | 0.000334 | 2.12    | 0.126   |
| Error  | 102 | 0.016123 | 96.02%       | 0.016123 | 0.000158 |         |         |
| Total  | 104 | 0.016792 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0125727 | 3.98% | 2.10%     | 0.0170984 | 0.00%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.23446 | 0.01024 | (0.23047, 0.23846) |
| Susitna | 29 | 0.24016 | 0.01311 | (0.23553, 0.24479) |
| Yukon   | 37 | 0.23458 | 0.01427 | (0.23048, 0.23868) |

*Pooled StDev = 0.0125727*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.24016 | A        |
| Yukon   | 37 | 0.23458 | A        |
| Kusko   | 39 | 0.23446 | A        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00570             | 0.00308          | (-0.00163, 0.01302) | 1.85    | 0.159            |
| Yukon - Kusko        | 0.00012             | 0.00289          | (-0.00674, 0.00697) | 0.04    | 0.999            |
| Yukon - Susitna      | -0.00558            | 0.00312          | (-0.01299, 0.00182) | -1.79   | 0.178            |

*Individual confidence level = 98.06%*

## One-way ANOVA: CPedW/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000656 | 16.30%       | 0.000656 | 0.000328 | 9.93    | 0.000   |
| Error  | 102 | 0.003368 | 83.70%       | 0.003368 | 0.000033 |         |         |
| Total  | 104 | 0.004024 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0057464 | 16.30% | 14.66%    | 0.0035787 | 11.07%     |

### Means

| Group   | N  | Mean     | StDev    | 95% CI               |
|---------|----|----------|----------|----------------------|
| Kusko   | 39 | 0.038520 | 0.005698 | (0.036695, 0.040346) |
| Susitna | 29 | 0.04479  | 0.00732  | (0.04267, 0.04690)   |
| Yukon   | 37 | 0.040849 | 0.004193 | (0.038975, 0.042723) |

*Pooled StDev = 0.00574636*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean     | Grouping |
|---------|----|----------|----------|
| Susitna | 29 | 0.04479  | A        |
| Yukon   | 37 | 0.040849 | B        |
| Kusko   | 39 | 0.038520 | B        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.00627             | 0.00141          | (0.00292, 0.00961)   | 4.45    | 0.000            |
| Yukon - Kusko        | 0.00233             | 0.00132          | (-0.00080, 0.00546)  | 1.77    | 0.186            |
| Yukon - Susitna      | -0.00394            | 0.00143          | (-0.00732, -0.00055) | -2.76   | 0.019            |

*Individual confidence level = 98.06%*

## One-way ANOVA: CPedD/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000396 | 21.88%       | 0.000396 | 0.000198 | 14.29   | 0.000   |
| Error  | 102 | 0.001415 | 78.12%       | 0.001415 | 0.000014 |         |         |
| Total  | 104 | 0.001811 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0037242 | 21.88% | 20.35%    | 0.0014954 | 17.43%     |

### Means

| Group   | N  | Mean     | StDev    | 95% CI               |
|---------|----|----------|----------|----------------------|
| Kusko   | 39 | 0.070482 | 0.004834 | (0.069300, 0.071665) |
| Susitna | 29 | 0.074989 | 0.002821 | (0.073617, 0.076360) |
| Yukon   | 37 | 0.070841 | 0.002906 | (0.069627, 0.072055) |

*Pooled StDev = 0.00372418*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean     | Grouping |
|---------|----|----------|----------|
| Susitna | 29 | 0.074989 | A        |
| Yukon   | 37 | 0.070841 | B        |
| Kusko   | 39 | 0.070482 | B        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI                 | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|------------------------|---------|------------------|
| Susitna - Kusko      | 0.004506            | 0.000913         | (0.002337, 0.006676)   | 4.93    | 0.000            |
| Yukon - Kusko        | 0.000358            | 0.000855         | (-0.001672, 0.002389)  | 0.42    | 0.908            |
| Yukon - Susitna      | -0.004148           | 0.000924         | (-0.006342, -0.001953) | -4.49   | 0.000            |

*Individual confidence level = 98.06%*

## One-way ANOVA: BD/FL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.008321 | 25.93%       | 0.008321 | 0.004160 | 17.85   | 0.000   |
| Error  | 102 | 0.023771 | 74.07%       | 0.023771 | 0.000233 |         |         |
| Total  | 104 | 0.032092 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq   | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|--------|-----------|-----------|------------|
| 0.0152659 | 25.93% | 24.48%    | 0.0252015 | 21.47%     |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.20545 | 0.01392 | (0.20060, 0.21030) |
| Susitna | 29 | 0.22544 | 0.01575 | (0.21982, 0.23106) |
| Yukon   | 37 | 0.20561 | 0.01621 | (0.20063, 0.21059) |

*Pooled StDev = 0.0152659*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.22544 | A        |
| Yukon   | 37 | 0.20561 | B        |
| Kusko   | 39 | 0.20545 | B        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | 0.01999             | 0.00374          | (0.01109, 0.02888)   | 5.34    | 0.000            |
| Yukon - Kusko        | 0.00016             | 0.00350          | (-0.00817, 0.00848)  | 0.05    | 0.999            |
| Yukon - Susitna      | -0.01983            | 0.00379          | (-0.02882, -0.01083) | -5.24   | 0.000            |

*Individual confidence level = 98.06%*

## One-way ANOVA: HD/HL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |
| Rows unused            | 1                       |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.003355 | 2.41%        | 0.003355 | 0.001678 | 1.25    | 0.292   |
| Error  | 101 | 0.136011 | 97.59%       | 0.136011 | 0.001347 |         |         |
| Total  | 103 | 0.139366 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS    | R-sq(pred) |
|-----------|-------|-----------|----------|------------|
| 0.0366966 | 2.41% | 0.48%     | 0.144165 | 0.00%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 38 | 0.62287 | 0.04453 | (0.61107, 0.63468) |
| Susitna | 29 | 0.63075 | 0.03635 | (0.61723, 0.64427) |
| Yukon   | 37 | 0.61639 | 0.02668 | (0.60442, 0.62835) |

Pooled StDev = 0.0366966

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Susitna | 29 | 0.63075 | A        |
| Kusko   | 38 | 0.62287 | A        |
| Yukon   | 37 | 0.61639 | A        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00788             | 0.00905          | (-0.01362, 0.02938) | 0.87    | 0.660            |
| Yukon - Kusko        | -0.00649            | 0.00848          | (-0.02662, 0.01365) | -0.77   | 0.725            |
| Yukon - Susitna      | -0.01436            | 0.00910          | (-0.03599, 0.00726) | -1.58   | 0.260            |

Individual confidence level = 98.06%

## One-way ANOVA: S-AEM/HL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000801 | 1.68%        | 0.000801 | 0.000400 | 0.87    | 0.422   |
| Error  | 102 | 0.046888 | 98.32%       | 0.046888 | 0.000460 |         |         |
| Total  | 104 | 0.047689 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0214404 | 1.68% | 0.00%     | 0.0496856 | 0.00%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.23014 | 0.02083 | (0.22333, 0.23695) |
| Susitna | 29 | 0.22324 | 0.02118 | (0.21534, 0.23113) |
| Yukon   | 37 | 0.22775 | 0.02226 | (0.22076, 0.23474) |

*Pooled StDev = 0.0214404*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Kusko   | 39 | 0.23014 | A        |
| Yukon   | 37 | 0.22775 | A        |
| Susitna | 29 | 0.22324 | A        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | -0.00691            | 0.00526          | (-0.01940, 0.00558) | -1.31   | 0.391            |
| Yukon - Kusko        | -0.00239            | 0.00492          | (-0.01408, 0.00930) | -0.49   | 0.878            |
| Yukon - Susitna      | 0.00451             | 0.00532          | (-0.00812, 0.01715) | 0.85    | 0.674            |

*Individual confidence level = 98.06%*



## One-way ANOVA: ED/HL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.003069 | 5.21%        | 0.003069 | 0.001535 | 2.80    | 0.065   |
| Error  | 102 | 0.055883 | 94.79%       | 0.055883 | 0.000548 |         |         |
| Total  | 104 | 0.058952 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0234067 | 5.21% | 3.35%     | 0.0593066 | 0.00%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.21291 | 0.02000 | (0.20548, 0.22035) |
| Susitna | 29 | 0.20060 | 0.02647 | (0.19198, 0.20922) |
| Yukon   | 37 | 0.20288 | 0.02420 | (0.19525, 0.21051) |

*Pooled StDev = 0.0234067*

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Kusko   | 39 | 0.21291 | A        |
| Yukon   | 37 | 0.20288 | A        |
| Susitna | 29 | 0.20060 | A        |

*Means that do not share a letter are significantly different.*

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | -0.01231            | 0.00574          | (-0.02595, 0.00133) | -2.14   | 0.086            |
| Yukon - Kusko        | -0.01003            | 0.00537          | (-0.02280, 0.00273) | -1.87   | 0.153            |
| Yukon - Susitna      | 0.00228             | 0.00581          | (-0.01152, 0.01607) | 0.39    | 0.919            |

*Individual confidence level = 98.06%*

## One-way ANOVA: IOD/HL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.004021 | 7.66%        | 0.004021 | 0.002010 | 4.23    | 0.017   |
| Error  | 102 | 0.048444 | 92.34%       | 0.048444 | 0.000475 |         |         |
| Total  | 104 | 0.052464 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0217931 | 7.66% | 5.85%     | 0.0513562 | 2.11%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.27988 | 0.02398 | (0.27296, 0.28680) |
| Susitna | 29 | 0.28722 | 0.02332 | (0.27919, 0.29525) |
| Yukon   | 37 | 0.29443 | 0.01777 | (0.28732, 0.30153) |

*Pooled StDev = 0.0217931*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Yukon   | 37 | 0.29443 | A        |
| Susitna | 29 | 0.28722 | A B      |
| Kusko   | 39 | 0.27988 | B        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | 0.00734             | 0.00534          | (-0.00536, 0.02004) | 1.37    | 0.359            |
| Yukon - Kusko        | 0.01455             | 0.00500          | (0.00267, 0.02643)  | 2.91    | 0.012            |
| Yukon - Susitna      | 0.00721             | 0.00540          | (-0.00563, 0.02005) | 1.33    | 0.380            |

*Individual confidence level = 98.06%*

## One-way ANOVA: UJ/HL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.000083 | 0.45%        | 0.000083 | 0.000041 | 0.23    | 0.796   |
| Error  | 102 | 0.018459 | 99.55%       | 0.018459 | 0.000181 |         |         |
| Total  | 104 | 0.018542 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS     | R-sq(pred) |
|-----------|-------|-----------|-----------|------------|
| 0.0134525 | 0.45% | 0.00%     | 0.0195793 | 0.00%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.33943 | 0.01291 | (0.33515, 0.34370) |
| Susitna | 29 | 0.33942 | 0.01474 | (0.33447, 0.34438) |
| Yukon   | 37 | 0.33757 | 0.01296 | (0.33318, 0.34195) |

*Pooled StDev = 0.0134525*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Kusko   | 39 | 0.33943 | A        |
| Susitna | 29 | 0.33942 | A        |
| Yukon   | 37 | 0.33757 | A        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI              | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|---------------------|---------|------------------|
| Susitna - Kusko      | -0.00001            | 0.00330          | (-0.00784, 0.00783) | -0.00   | 1.000            |
| Yukon - Kusko        | -0.00186            | 0.00309          | (-0.00920, 0.00547) | -0.60   | 0.819            |
| Yukon - Susitna      | -0.00186            | 0.00334          | (-0.00978, 0.00607) | -0.56   | 0.844            |

*Individual confidence level = 98.06%*

## One-way ANOVA: LJ/HL versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

*Equal variances were assumed for the analysis.*

### Factor Information

| Factor | Levels | Values                |
|--------|--------|-----------------------|
| Group  | 3      | Kusko, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS   | Contribution | Adj SS   | Adj MS   | F-Value | P-Value |
|--------|-----|----------|--------------|----------|----------|---------|---------|
| Group  | 2   | 0.007827 | 6.87%        | 0.007827 | 0.003913 | 3.76    | 0.026   |
| Error  | 102 | 0.106070 | 93.13%       | 0.106070 | 0.001040 |         |         |
| Total  | 104 | 0.113897 | 100.00%      |          |          |         |         |

### Model Summary

| S         | R-sq  | R-sq(adj) | PRESS    | R-sq(pred) |
|-----------|-------|-----------|----------|------------|
| 0.0322476 | 6.87% | 5.05%     | 0.112434 | 1.28%      |

### Means

| Group   | N  | Mean    | StDev   | 95% CI             |
|---------|----|---------|---------|--------------------|
| Kusko   | 39 | 0.42735 | 0.02635 | (0.41711, 0.43759) |
| Susitna | 29 | 0.40782 | 0.03194 | (0.39594, 0.41969) |
| Yukon   | 37 | 0.41116 | 0.03768 | (0.40064, 0.42167) |

*Pooled StDev = 0.0322476*

## Tukey Pairwise Comparisons

### Grouping Information Using the Tukey Method and 95% Confidence

| Group   | N  | Mean    | Grouping |
|---------|----|---------|----------|
| Kusko   | 39 | 0.42735 | A        |
| Yukon   | 37 | 0.41116 | A B      |
| Susitna | 29 | 0.40782 | B        |

*Means that do not share a letter are significantly different.*

### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels | Difference of Means | SE of Difference | 95% CI               | T-Value | Adjusted P-Value |
|----------------------|---------------------|------------------|----------------------|---------|------------------|
| Susitna - Kusko      | -0.01953            | 0.00791          | (-0.03832, -0.00075) | -2.47   | 0.040            |
| Yukon - Kusko        | -0.01619            | 0.00740          | (-0.03377, 0.00139)  | -2.19   | 0.078            |
| Yukon - Susitna      | 0.00334             | 0.00800          | (-0.01566, 0.02234)  | 0.42    | 0.908            |

*Individual confidence level = 98.06%*

## One-way ANOVA: LLGillRaker versus Group

### Method

|                        |                         |
|------------------------|-------------------------|
| Null hypothesis        | All means are equal     |
| Alternative hypothesis | Not all means are equal |
| Significance level     | $\alpha = 0.05$         |

Equal variances were assumed for the analysis.

### Factor Information

| Factor | Levels | Values                                      |
|--------|--------|---|
| Group  | 5      | Kusko, McPArctic, McPBering, Susitna, Yukon |

### Analysis of Variance

| Source | DF  | Seq SS | Contribution | Adj SS | Adj MS  | F-Value | P-Value |
|--------|-----|--------|--------------|--------|---------|---------|---------|
| Group  | 4   | 1343.6 | 84.14%       | 1343.6 | 335.889 | 328.98  | 0.000   |
| Error  | 248 | 253.2  | 15.86%       | 253.2  | 1.021   |         |         |
| Total  | 252 | 1596.8 | 100.00%      |        |         |         |         |

### Model Summary

| S       | R-sq   | R-sq(adj) | PRESS   | R-sq(pred) |
|---------|--------|-----------|---------|------------|
| 1.01045 | 84.14% | 83.89%    | 263.725 | 83.48%     |

### Means

| Group     | N  | Mean   | StDev | 95% CI           |
|-----------|----|--------|-------|------------------|
| Kusko     | 39 | 22.051 | 1.099 | (21.733, 22.370) |
| McPArctic | 76 | 27.671 | 0.958 | (27.443, 27.899) |
| McPBering | 56 | 23.036 | 1.026 | (22.770, 23.302) |
| Susitna   | 40 | 24.075 | 1.071 | (23.760, 24.390) |
| Yukon     | 42 | 22.167 | 0.935 | (21.860, 22.474) |

Pooled StDev = 1.01045

### Tukey Pairwise Comparisons

#### Grouping Information Using the Tukey Method and 95% Confidence

| Group     | N  | Mean   | Grouping |
|-----------|----|--------|----------|
| McPArctic | 76 | 27.671 | A        |
| Susitna   | 40 | 24.075 | B        |
| McPBering | 56 | 23.036 | C        |
| Yukon     | 42 | 22.167 | D        |
| Kusko     | 39 | 22.051 | D        |

Means that do not share a letter are significantly different.

#### Tukey Simultaneous Tests for Differences of Means

| Difference of Levels  | Difference of Means | SE of Difference | 95% CI           | T-Value | Adjusted P-Value |
|-----------------------|---------------------|------------------|------------------|---------|------------------|
| McPArctic - Kusko     | 5.620               | 0.199            | (5.077, 6.163)   | 28.24   | 0.000            |
| McPBering - Kusko     | 0.984               | 0.211            | (0.409, 1.560)   | 4.67    | 0.000            |
| Susitna - Kusko       | 2.024               | 0.227            | (1.403, 2.644)   | 8.90    | 0.000            |
| Yukon - Kusko         | 0.115               | 0.225            | (-0.498, 0.729)  | 0.51    | 0.986            |
| McPBering - McPArctic | -4.635              | 0.178            | (-5.121, -4.150) | -26.05  | 0.000            |
| Susitna - McPArctic   | -3.596              | 0.197            | (-4.135, -3.057) | -18.22  | 0.000            |
| Yukon - McPArctic     | -5.504              | 0.194            | (-6.035, -4.974) | -28.33  | 0.000            |
| Susitna - McPBering   | 1.039               | 0.209            | (0.468, 1.610)   | 4.97    | 0.000            |
| Yukon - McPBering     | -0.869              | 0.206            | (-1.432, -0.306) | -4.21   | 0.000            |
| Yukon - Susitna       | -1.908              | 0.223            | (-2.518, -1.299) | -8.55   | 0.000            |

Individual confidence level = 99.32%

## Chi-Square Test for Association: C1, Worksheet columns

Rows: C1 Columns: Worksheet columns

|         | 75-<81  | 81-<84  | 84-<87  | 87-<90  | 90-<96  | All |
|---------|---------|---------|---------|---------|---------|-----|
| McPhail | 5       | 5       | 12      | 7       | 4       | 33  |
|         | 3.85    | 6.02    | 13.01   | 6.02    | 4.09    |     |
|         | 0.34076 | 0.17341 | 0.07801 | 0.15887 | 0.00220 |     |
| Current | 11      | 20      | 42      | 18      | 13      | 104 |
|         | 12.15   | 18.98   | 40.99   | 18.98   | 12.91   |     |
|         | 0.10812 | 0.05503 | 0.02475 | 0.05041 | 0.00070 |     |
| All     | 16      | 25      | 54      | 25      | 17      | 137 |

Cell Contents

Count

Expected count

Contribution to Chi-square

### Chi-Square Test

|                  | Chi-Square | DF | P-Value |
|------------------|------------|----|---------|
| Pearson          | 0.992      | 4  | 0.911   |
| Likelihood Ratio | 0.971      | 4  | 0.914   |

2 cell(s) with expected counts less than 5.