

## FishCam Videomonitoring bei FWH der Kärntner Drau

Tagung für Fischereisachverständige 2017  
1. & 2. Juni 2017

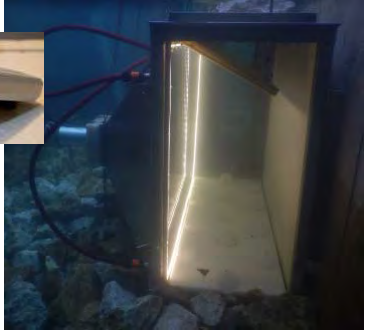





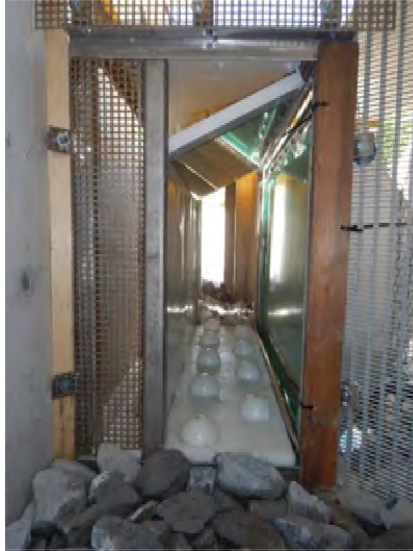


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### Inhalt

- Grundlagen/Methodik
- FishCam/FishNet
- Monitorings
  - FWH Lavamünd
  - FWH Schwabeck
  - FWH Rosegg
- Forschungsbedarf

|  |   |   |
|--|---|---|
| <b>Grundlagen/Methodik</b>   |   | FishCam Monitoring  |
| <b>FishCam Komponenten</b>   |   |   |
| <ul style="list-style-type: none"><li>• LAN Überwachungskamera</li><li>• IP 68 Kameragehäuse</li><li>• Gehäuse (Trinkwasser)</li><li>• LED Licht</li></ul> |  |   |
|   |  | <ul style="list-style-type: none"><li>• Erfassungstunnel</li><li>• Rückwand weiß</li><li>• Strukturierter Boden</li><li>• Spiegeldeckel</li><li>• wireless router</li><li>• NAS storage 2TB</li></ul> |
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|  |   |  |
|--|---|--|
| <b>Grundlagen/Methodik</b>   |   | FishCam Monitoring   |
| <b>Erfassungstunnel</b>  |   |  |
| <ul style="list-style-type: none"><li>• Querschnitt 0.5 / 0.35 / 0.25 X 1.0 m</li><li>• <math>V_{\text{mean}}</math> 0.4 – 0.7 m/s</li></ul> |   |  |
| <b>Vorteile</b>  |   |  |
| <ul style="list-style-type: none"><li>• 24/7 Monitoring</li><li>• Exakte zeitliche Erfassung der Individuen</li></ul>                        |   |  |
|   |  |  |
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**Grundlagen/Methodik** FishNet Auswertung

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Hauptaufgabe Fish – noFish Selektion

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**Grundlagen/Methodik** FishNet Auswertung

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Deep Convolutional Networks

Quelle: [vision03.csail.mit.edu/cnn\\_art/index.html](http://vision03.csail.mit.edu/cnn_art/index.html)  
 (Zeiler, Fergus 2013)  
 (Kratzert in präp.)

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## Monitoring FWH KW Rosegg

Epipotamal Groß

9.10.2014 bis 17.6.2016

- 26 Fischarten (Aalrutte, Aitel, Äsche, Bachforelle, Bachsaibling, Barbe, Brachse, Brasse, Flussbarsch, Giebel, Gründling, Hasel, Hecht, Huchen, Kaulbarsch, Koppe, Laube, Nase, Regenbogenforelle, Rotaugen, Rotfeder, Schied, Schneider)
- 60 mm (Barbe) und 1200 mm (Huchen)
- alle nachgewiesenen Leitarten
- alle typischen Begleitarten
- schwimmschwache Kleinfische
- juvenile Individuen

**Voll funktionsfähig (1,0)**

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## Monitoring FWH KW Rosegg

Epipotamal Groß

**Nase (Chondrostoma nasus)**

- Migrationspotential 3074 ind.
- 1333 Ind. aufgefunden/durchwandert
  - 10.4. ff in 6 d rd. 800 ind.
  - 14.4. 417 ind.

Monitoring anature flügpass, Projekt FWH Rosegg FishCam 2, 13.03.2015 - 01.06.2015  
417424 | Transmitter: 407662

| Datum      | Anzahl |
|------------|--------|
| 13.03.2015 | 0      |
| 14.03.2015 | 0      |
| 15.03.2015 | 0      |
| 16.03.2015 | 0      |
| 17.03.2015 | 0      |
| 18.03.2015 | 0      |
| 19.03.2015 | 0      |
| 20.03.2015 | 0      |
| 21.03.2015 | 0      |
| 22.03.2015 | 0      |
| 23.03.2015 | 0      |
| 24.03.2015 | 0      |
| 25.03.2015 | 0      |
| 26.03.2015 | 0      |
| 27.03.2015 | 0      |
| 28.03.2015 | 0      |
| 29.03.2015 | 0      |
| 30.03.2015 | 0      |
| 31.03.2015 | 0      |
| 01.04.2015 | 0      |
| 02.04.2015 | 0      |
| 03.04.2015 | 0      |
| 04.04.2015 | 0      |
| 05.04.2015 | 0      |
| 06.04.2015 | 0      |
| 07.04.2015 | 0      |
| 08.04.2015 | 0      |
| 09.04.2015 | 0      |
| 10.04.2015 | 0      |
| 11.04.2015 | 0      |
| 12.04.2015 | 0      |
| 13.04.2015 | 0      |
| 14.04.2015 | 0      |
| 15.04.2015 | 0      |
| 16.04.2015 | 0      |
| 17.04.2015 | 0      |
| 18.04.2015 | 0      |
| 19.04.2015 | 0      |
| 20.04.2015 | 0      |
| 21.04.2015 | 0      |
| 22.04.2015 | 0      |
| 23.04.2015 | 0      |
| 24.04.2015 | 0      |
| 25.04.2015 | 0      |
| 26.04.2015 | 0      |
| 27.04.2015 | 0      |
| 28.04.2015 | 0      |
| 29.04.2015 | 0      |
| 30.04.2015 | 0      |
| 01.05.2015 | 0      |
| 02.05.2015 | 0      |
| 03.05.2015 | 0      |
| 04.05.2015 | 0      |
| 05.05.2015 | 0      |
| 06.05.2015 | 0      |
| 07.05.2015 | 0      |
| 08.05.2015 | 0      |
| 09.05.2015 | 0      |
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| 15.05.2015 | 0      |
| 16.05.2015 | 0      |
| 17.05.2015 | 0      |
| 18.05.2015 | 0      |
| 19.05.2015 | 0      |
| 20.05.2015 | 0      |
| 21.05.2015 | 0      |
| 22.05.2015 | 0      |
| 23.05.2015 | 0      |
| 24.05.2015 | 0      |
| 25.05.2015 | 0      |
| 26.05.2015 | 0      |
| 27.05.2015 | 0      |
| 28.05.2015 | 0      |
| 29.05.2015 | 0      |
| 30.05.2015 | 0      |
| 31.05.2015 | 0      |
| 01.06.2015 | 0      |

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| Monitoring FWH KW Rosegg  |          |                                 |                       |                       |                                     |                            | Epipotamal Groß        |
|---------------------------|----------|---------------------------------|-----------------------|-----------------------|-------------------------------------|----------------------------|------------------------|
| Artenspektrum             |          |                                 |                       |                       |                                     |                            |                        |
| Wissenschaftl. Name       | Fischart | Leitbild von Fikm 515,7 bis 412 | UW KW Rosegg Mai 2015 | UW KW Rosegg Mai 2016 | RW Rosegg (inkl. Wehrumpf) Mai 2015 | RW Rosegg (inkl. FWH) 2016 | FishCam Monitoring FWH |
| <i>Squalius cephalus</i>  | Aitel    |                                 |                       |                       |                                     |                            | 1185                   |
| <i>Barbus barbatus</i>    | Barbe    |                                 |                       |                       |                                     |                            | 37                     |
| <i>Hucho hucho</i>        | Huchen   |                                 |                       |                       |                                     |                            | 9                      |
| <i>Chondrostoma nasus</i> | Nase     |                                 |                       |                       |                                     |                            | 1465                   |
| <i>Lota lota</i>          | Aalrutte | b                               | b                     | b                     | b                                   | b                          | 120                    |

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| Monitoring FWH KW Rosegg              |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
|---------------------------------------|---|----------|------------------|-------|--|-------|--|--------|--|------|--|----------|--|-------|--|---------|--|-------------|--|-----------|--|-------|--|-------|--|-------|--|----------|----------------|---------|--|-----------|--|---------|----------------|------|----------------|-------------|--|--------------|--|---------------|----------------|-------------------|----------------|-------|--|----------|----------------|---------|--|-----------------------|--|------------|----------------|-------------------|--|------------|----------------|--------------|----------------|------------|--|----------------|----------------|---------------|--|--------|----------------|---------------------------------------|----------------|
| Entwicklungsstadien                   |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
|                                       | <table border="1"> <thead> <tr> <th>Fischart</th> <th>Bewertung (Note)</th> </tr> </thead> <tbody> <tr><td>Aitel</td><td> </td></tr> <tr><td>Barbe</td><td> </td></tr> <tr><td>Huchen</td><td> </td></tr> <tr><td>Nase</td><td> </td></tr> <tr><td>Aalrutte</td><td> </td></tr> <tr><td>Äsche</td><td> </td></tr> <tr><td>Brachse</td><td> </td></tr> <tr><td>Flussbarsch</td><td> </td></tr> <tr><td>Gründling</td><td> </td></tr> <tr><td>Hasel</td><td> </td></tr> <tr><td>Hecht</td><td> </td></tr> <tr><td>Laube</td><td> </td></tr> <tr><td>Neunauge</td><td>Nicht bewertet</td></tr> <tr><td>Rotauge</td><td> </td></tr> <tr><td>Schneider</td><td> </td></tr> <tr><td>Strömer</td><td>Nicht bewertet</td></tr> <tr><td>Wels</td><td>Nicht bewertet</td></tr> <tr><td>Bachforelle</td><td> </td></tr> <tr><td>Bachschmerle</td><td> </td></tr> <tr><td>Frauennerling</td><td>Nicht bewertet</td></tr> <tr><td>Kessler Gründling</td><td>Nicht bewertet</td></tr> <tr><td>Koppe</td><td> </td></tr> <tr><td>Röfleder</td><td>Nicht bewertet</td></tr> <tr><td>Schleie</td><td> </td></tr> <tr><td>Weissflossengründling</td><td> </td></tr> <tr><td>Widkarpfen</td><td>Nicht bewertet</td></tr> <tr><td>Regenbogenforelle</td><td> </td></tr> <tr><td>Seeforelle</td><td>Nicht bewertet</td></tr> <tr><td>Bachsäibling</td><td>Nicht bewertet</td></tr> <tr><td>Kaulbarsch</td><td> </td></tr> <tr><td>Steingrassling</td><td>Nicht bewertet</td></tr> <tr><td>Rapfen/Schied</td><td> </td></tr> <tr><td>Güster</td><td>Nicht bewertet</td></tr> <tr><td><b>GESAMT (arithmetisches Mittel)</b></td><td><b>  (1,0)</b></td></tr> </tbody> </table> | Fischart | Bewertung (Note) | Aitel |  | Barbe |  | Huchen |  | Nase |  | Aalrutte |  | Äsche |  | Brachse |  | Flussbarsch |  | Gründling |  | Hasel |  | Hecht |  | Laube |  | Neunauge | Nicht bewertet | Rotauge |  | Schneider |  | Strömer | Nicht bewertet | Wels | Nicht bewertet | Bachforelle |  | Bachschmerle |  | Frauennerling | Nicht bewertet | Kessler Gründling | Nicht bewertet | Koppe |  | Röfleder | Nicht bewertet | Schleie |  | Weissflossengründling |  | Widkarpfen | Nicht bewertet | Regenbogenforelle |  | Seeforelle | Nicht bewertet | Bachsäibling | Nicht bewertet | Kaulbarsch |  | Steingrassling | Nicht bewertet | Rapfen/Schied |  | Güster | Nicht bewertet | <b>GESAMT (arithmetisches Mittel)</b> | <b>  (1,0)</b> |
| Fischart                              | Bewertung (Note)  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Aitel                                 |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Barbe                                 |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Huchen                                |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Nase                                  |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Aalrutte                              |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Äsche                                 |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Brachse                               |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Flussbarsch                           |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Gründling                             |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Hasel                                 |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Hecht                                 |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Laube                                 |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Neunauge                              | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Rotauge                               |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Schneider                             |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Strömer                               | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Wels                                  | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Bachforelle                           |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Bachschmerle                          |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Frauennerling                         | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Kessler Gründling                     | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Koppe                                 |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Röfleder                              | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Schleie                               |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Weissflossengründling                 |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Widkarpfen                            | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Regenbogenforelle                     |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Seeforelle                            | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Bachsäibling                          | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Kaulbarsch                            |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Steingrassling                        | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Rapfen/Schied                         |   |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| Güster                                | Nicht bewertet  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |
| <b>GESAMT (arithmetisches Mittel)</b> | <b>  (1,0)</b>  |          |                  |       |  |       |  |        |  |      |  |          |  |       |  |         |  |             |  |           |  |       |  |       |  |       |  |          |                |         |  |           |  |         |                |      |                |             |  |              |  |               |                |                   |                |       |  |          |                |         |  |                       |  |            |                |                   |  |            |                |              |                |            |  |                |                |               |  |        |                |                                       |                |

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| <b>Monitoring FWH KW Rosegg</b>                                |                               | Epipotamal Groß |
|--|-------------------------------|-----------------|
| <b>Bewertung</b>   |                               |                 |
| Einzelkriterium nach Woschitz et al. (2003)                    | Bewertung                     |                 |
| Für den qualitativen Fischaufstieg (alle Arten)                |                               |                 |
| - Artenspektrum  | I                             |                 |
| - Entwicklungsstadien  | I                             |                 |
| Für den quantitativen Fischaufstieg (häufige Arten)            |                               |                 |
| - Anzahl aufgestiegener Mittelstreckenwanderer                 | I                             |                 |
| - Anzahl aufgestiegener Kurzstreckenwanderer                   | I                             |                 |
| <b>GESAMTBEWERTUNG</b>   | <b>I<br/>(Mittelwert 1,0)</b> |                 |
| FishCam Monitoring  Fischerei SV Tagung  1. – 2.6.2017 Kärnten |                               | 15 / 38         |

| <b>Monitoring FWH KW Schwabeck</b>  |  | Epipotamal Groß  |
|---|--|--|
| <p>158 Pools, System Mittel (3,0 x 2,17 m)<br/> <math>\Delta h = 13 \text{ cm}</math>, <math>s = 40 \text{ cm}</math>, <math>t_{\min} = 1,05 \text{ m}</math><br/> <math>Q = 390 - 445 \text{ l/s}</math>, <math>E_{\max} = 70 \text{ W/m}^3</math></p> <p>Leitfischarten: Aitel, Barbe, Nase, Huchen<br/>                     Bemessung: Wels 120 cm</p> |  |  |
|  <p>Quelle: VERBUND</p>  |  |  |
| FishCam Monitoring  Fischerei SV Tagung  1. – 2.6.2017 Kärnten  |  | 16 / 38  |



## Monitoring FWH KW Schwabeck

Epipotamal Groß

### Migrationspotential



| Fischart      | > [cm] | %   | UW Schwabegg (rd. 82,5 ha) |                 |                |                 | OWH        |           |           |  |
|---------------|--------|-----|----------------------------|-----------------|----------------|-----------------|------------|-----------|-----------|--|
|               |        |     | Ind. ges./ha               | Ind. ges.       | Ind. theor./ha | Ind. theor.     | Ind./100 m | Min. (cm) | Max. (cm) |  |
| Aalrutte      | 25     | 0   | 0,5                        | 41,1            |                |                 |            |           |           |  |
| Aitel         | 25     | 35  | 12,2                       | 1.007,9         | 4,3            | 352,7           |            |           |           |  |
| Bachforelle   | 20     | 40  | 2,5                        | 205,7           | 1,0            | 82,3            | 1          | 25        | 25        |  |
| Barbe         | 25     | 0   | 0,5                        | 41,1            |                |                 |            |           |           |  |
| Flussbarsch   | 12     | 5   | 15,0                       | 1.234,1         | 0,7            | 61,7            |            |           |           |  |
| Gründling     | 8      | 0   | 0,5                        | 41,1            |                |                 | 3          | 10        | 12        |  |
| Hecht         | 40     | 18  | 5,9                        | 483,4           | 1,1            | 87,9            |            |           |           |  |
| Laube         | 9      | 39  | 570,3                      | <b>47.046,9</b> | 225,1          | <b>18.571,1</b> | 185        | 9         | 14        |  |
| Nase          | 22     | 0   | 6,5                        | 534,8           |                |                 |            |           |           |  |
| Schneider     | 7      | 100 | 75,8                       | <b>6.252,8</b>  | 75,8           | <b>6.252,8</b>  | 42         | 10        | 13        |  |
| Bachsaiibling | 20     |     |                            |                 |                |                 | 1          | 19        | 19        |  |

## Monitoring FWH KW Schwabeck

Epipotamal Groß

3.8.2015 bis 27.7.2016


- 24 Fischarten
- 90 mm (Wels) bis 710 mm (Hecht)
- alle Leitarten & Begleitarten
- schwimmschwache Kleinfische
- juvenile Individuen




Voll funktionsfähig (1,0)

| Wissenschaftlicher Name | Fischart      | Gewässer |     | Bestandsarten |     | FishCam |     |
|-------------------------|---------------|----------|-----|---------------|-----|---------|-----|
|                         |               | UW       | OWH | UW            | OWH | UW      | OWH |
| Alburnus alburnus       | Aitel         | b        | b   | b             | b   | b       | b   |
| Barbus haasi            | Barbe         | b        | b   | b             | b   | b       | b   |
| Carassius auratus       | Flussbarsch   | b        | b   | b             | b   | b       | b   |
| Clupea harengus         | Gründling     | b        | b   | b             | b   | b       | b   |
| Coregonus alpinus       | Hecht         | b        | b   | b             | b   | b       | b   |
| Coregonus hoyi          | Laube         | b        | b   | b             | b   | b       | b   |
| Coregonus macrochasma   | Schneider     | b        | b   | b             | b   | b       | b   |
| Coregonus schizostomus  | Bachsaiibling | b        | b   | b             | b   | b       | b   |
| Coregonus hoyi          | Nase          | b        | b   | b             | b   | b       | b   |
| Coregonus hoyi          | Aalrutte      | b        | b   | b             | b   | b       | b   |

## Monitoring FWH KW Schwabeck Epipotamal Groß

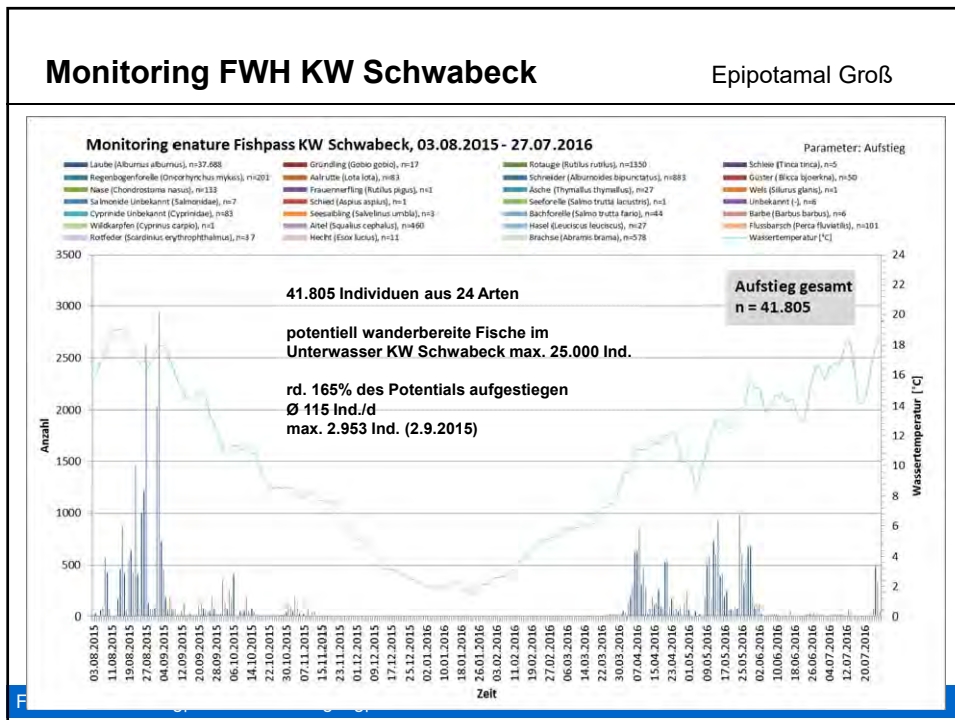


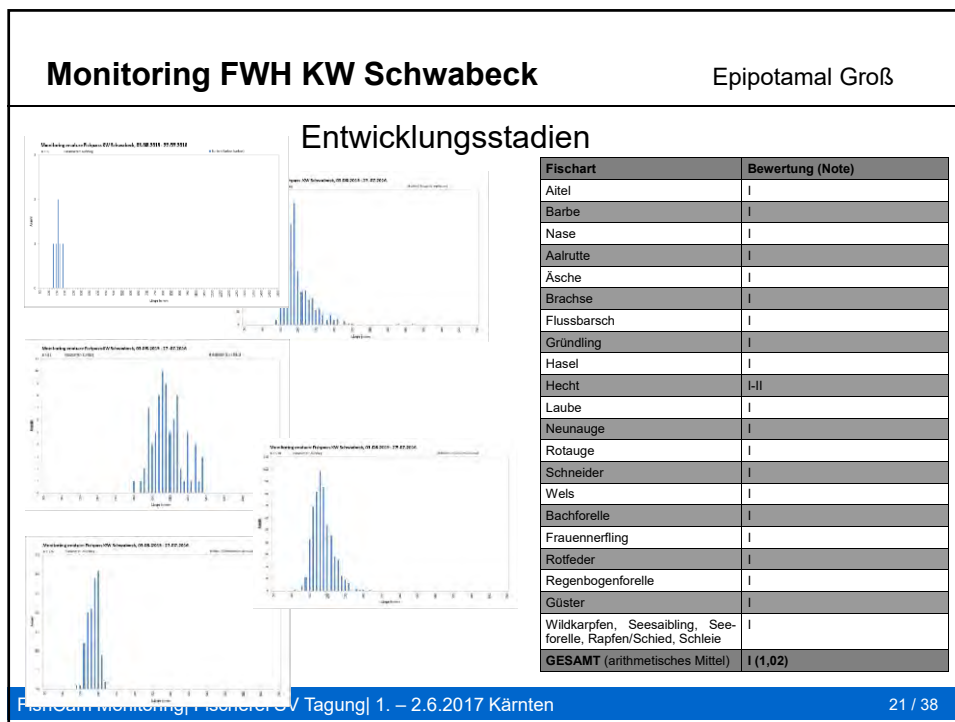
Laubenschwamm rd. 200 Ind.



Fischotterpärenchen

FishCam Monitoring| Fischerei SV Tagung| 1. – 2.6.2017 Kärnten 19 / 38





**Monitoring FWH KW Schwabeck** Epipotamal Groß

### Vorläufige Bewertung

| Einzelkriterium nach Woschitz et al. (2003)         | Bewertung                     |
|---|-------------------------------|
| Für den qualitativen Fischaufstieg (alle Arten)     |                               |
| - Artenspektrum                                     | I                             |
| - Entwicklungsstadien                               | I                             |
| Für den quantitativen Fischaufstieg (häufige Arten) |                               |
| - Anzahl aufgestiegener Mittelstreckenwanderer      | I                             |
| - Anzahl aufgestiegener Kurzstreckenwanderer        | I                             |
| <b>GESAMTBEWERTUNG</b>                              | <b>I<br/>(Mittelwert 1,0)</b> |

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## Monitoring FWH KW Lavamünd Epipotamal Groß

74 Pools, System Mittel (3,0 x 2,17 m),  $\Delta h = 13 \text{ cm}$   
 $s = 40 \text{ cm}$ ,  $t_{\min} = 1,05 \text{ m}$

Bemessung: Wels 120 cm




Quelle: VERBUND






FishCam Monitoring| Fischerei SV Tagung| 1. – 2.6.2017 Kärnten 23 / 38

## Monitoring FWH KW Lavamünd Epipotamal Groß

### Migrationspotential

| Fischart         | flussab Lavantmündung (rd. 73,95 ha) |     |              |           |                |                |
|------------------|--------------------------------------|-----|--------------|-----------|----------------|----------------|
|                  | > [cm]                               | %   | Ind. ges./ha | Ind. ges. | Ind. theor./ha | Ind. theor.    |
| Aalrutte         | 25                                   | 0   | 0            | 27        | 0              | 0              |
| Aitel            | 25                                   | 25  | 82           | 6.081     | 21             | <b>1.531</b>   |
| Bachforelle      | 20                                   | 38  | 3            | 201       | 1              | 75             |
| Barbe            | 25                                   | 0   | 64           | 4.756     | 0              | 0              |
| Blaubandbärbling | 3                                    | 0   | 3            | 250       | 0              | 0              |
| Flussbarsch      | 12                                   | 0   | 10           | 729       | 0              | 0              |
| Gründling        | 8                                    | 100 | 5            | 377       | 5              | 377            |
| Hasel            | 11                                   | 60  | 2            | 125       | 1              | 75             |
| Hecht            | 40                                   | 0   | 2            | 130       | 0              | 0              |
| Koppe            | 10                                   | 0   | 31           | 2.305     | 0              | 0              |
| Laube            | 9                                    | 19  | 1.457        | 107.744   | 283            | <b>20.904</b>  |
| Nase             | 22                                   | 14  | 2            | 183       | 0              | 26             |
| Neunauge         | 8                                    | 40  | 2            | 122       | 1              | 49             |
| Regenbogenf.     | 25                                   | 100 | 0            | 24        | 0              | 24             |
| Rotauger         | 14                                   | 33  | 10           | 766       | 3              | 255            |
| Rotfeder         | 8                                    | 100 | 5            | 333       | 5              | 333            |
| Schneider        | 7                                    | 49  | 5.369        | 397.044   | 2.641          | <b>195.308</b> |
| Seeforelle       | 22                                   | 100 | 0            | 24        | 0              | 24             |



FishCam Monitoring| Fischerei SV Tagung| 1. – 2.6.2017 Kärnten 24 / 38

| Monitoring FWH KW Lavamünd           |        | Epipotamal Groß |              |           |                |               |
|--------------------------------------|--------|-----------------|--------------|-----------|----------------|---------------|
| Migrationspotential                  |        |                 |              |           |                |               |
| flussauf Lavantmündung (rd. 5,95 ha) |        |                 |              |           |                |               |
| Fischart                             | > [cm] | %               | Ind. ges./ha | Ind. ges. | Ind. theor./ha | Ind. theor.   |
| Aalrutte                             | 25     | 0               | 47           | 281       | 0              | 0             |
| Aitel                                | 25     | 55              | 29           | 171       | 16             | 93            |
| Bachforelle                          | 20     | 0               | 9            | 51        | 0              | 0             |
| Barbe                                | 25     | 0               | 5            | 29        | 0              | 0             |
| Flussbarsch                          | 12     | 0               | 11           | 65        | 0              | 0             |
| Gründling                            | 8      | 0               | 2            | 15        | 0              | 0             |
| Hasel                                | 11     | 100             | 96           | 574       | 96             | 574           |
| Hecht                                | 40     | 0               | 3            | 17        | 0              | 0             |
| Kessler Gründling                    | 8      | 100             | 5            | 30        | 5              | 30            |
| Koppe                                | 10     | 0               | 10           | 61        | 0              | 0             |
| Laube                                | 9      | 80              | 2.273        | 13.523    | 1.818          | <b>10.818</b> |
| Nase                                 | 22     | 17              | 2.078        | 12.362    | 349            | <b>2.078</b>  |
| Neunauge                             | 8      | 100             | 3            | 15        | 3              | 15            |
| Rotauge                              | 14     | 67              | 50           | 296       | 33             | 198           |
| Rotfeder                             | 8      | 100             | 8            | 49        | 8              | 49            |
| Schneider                            | 7      | 29              | 4.135        | 24.602    | 1.190          | <b>7.078</b>  |



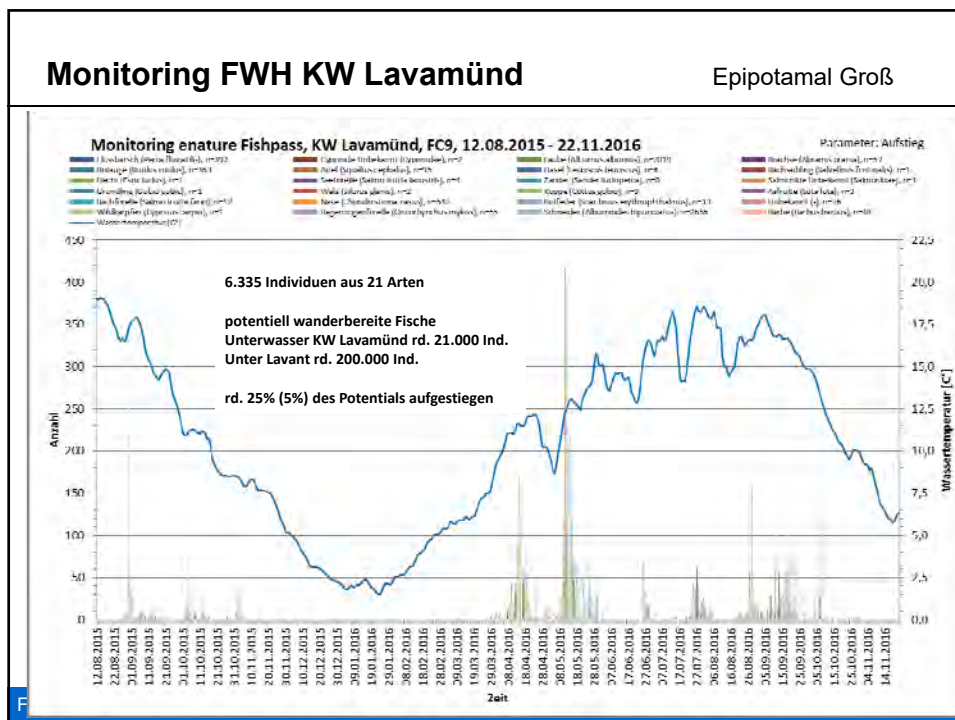


| Monitoring FWH KW Lavamünd |                      | Epipotamal Groß |                             |                             |                             |                         |                        |
|----------------------------|----------------------|-----------------|-----------------------------|-----------------------------|-----------------------------|-------------------------|------------------------|
| Artenspektrum              | GEWÄSSER             | Drau            | Lebensraum                  | AUFSTIEG                    | ABSTIEG                     | Fischbestand            | Drau                   |
|                            | ABSCHNITT            | Vilach-Lavamünd | enture Fishpass KW Lavamünd | enture Fishpass KW Lavamünd | enture Fishpass KW Lavamünd | Unterwasser KW Lavamünd | Grenzbereich Slowenien |
|                            | ROUTE-ID             | 47-40220        |                             |                             |                             |                         | 47-40220               |
|                            | VON FLUSS-KM:        | 515,7           | 413                         | 413                         | 413                         | 409 - 413               | 412,0                  |
|                            | BIS FLUSS-KM:        | 412,0           |                             |                             |                             |                         | 407,0                  |
|                            | BELEG / QUELLE       | Hartig-Edenburg | E - Befischung              | FishCam Monitoring          | FishCam Monitoring          | E - Befischung          | FIBEWAS                |
| Datum                      | 18.10.06             | 08.04.2016      | 12.8.2015-22.11.2016        | 12.8.2015-22.11.2016        | 07.04.2016                  | 24.01.08                |                        |
| Wissenschaftlicher Name    | Fischart             | 8               | 21                          | 17                          | 19                          | 38                      |                        |
| Lobis lobis                | Aalrutte             | b               | b                           | 3                           | 2                           | 1                       |                        |
| Squalius cephalus          | Aitel                |                 | 16                          | 1                           | 1                           | 1                       |                        |
| Thymallus thymallus        | Äsche                | b               |                             |                             |                             | b                       |                        |
| Salmo trutta fario         | Bachforelle          | s               | s                           | 12                          | 6                           | s                       |                        |
| Barbus haasi               | Bachschmerle         | s               |                             |                             |                             | s                       |                        |
| Barbus barbus              | Barbe                | 1               | 1                           | 48                          | 2                           | 1                       |                        |
| Rhodeus amarus             | Bitterling           | s               |                             |                             |                             | s                       |                        |
| Abramis brama              | Brachse              | b               |                             | 59                          | 4                           | s                       |                        |
| Phoxinus phoxinus          | Ehrlitz              | s               |                             |                             |                             | s                       |                        |
| Perca fluviatilis          | Flussbarsch          | b               |                             | 391                         | 21                          | s                       |                        |
| Rutilus rutilus            | Frauenfingling       | s               | s                           |                             |                             | s                       |                        |
| Gobio gobio                | Gründling            | b               |                             | 1                           |                             | s                       |                        |
| Blicca blicca              | Güster               | b               |                             | 6                           |                             | s                       |                        |
| Leuciscus leuciscus        | Heist                | b               |                             |                             |                             | 1                       |                        |
| Esox lucius                | Hecht                | b               |                             | 1                           | 2                           | b                       |                        |
| Hucho hucho                | Huchen               |                 |                             |                             |                             |                         |                        |
| Cottus crassius            | Kernschmerle         | s               |                             |                             |                             | s                       |                        |
| Romanogobio kassleri       | Kesseler Gründling   | s               |                             |                             |                             | s                       |                        |
| Cottus gobio               | Koppe                | s               |                             | 3                           | 3                           | s                       |                        |
| Alburnus alburnus          | Laube                | b               | b                           | 2.016                       | 120                         | b                       |                        |
| Chondrostoma toxostoma     | Nase                 | 1               |                             | 542                         | 4                           | 1                       |                        |
| Eudontomyzon mariae        | Neunauge             | b               | b                           |                             | 17                          | b                       |                        |
| Rutilus rutilus            | Rotauge              | b               | b                           | 363                         | 17                          | b                       |                        |
| Scardinus erythrophthalmus | Rotfieder            | s               |                             | 33                          | 3                           | s                       |                        |
| Wimba vimba                | Rußsee               | s               |                             |                             |                             | s                       |                        |
| Tinca tinca                | Schleie              | s               |                             |                             |                             | s                       |                        |
| Alburnoides bipunctatus    | Schneider            | b               | b                           | 2.886                       | 107                         | b                       |                        |
| Gymnocyphus schraetzeri    | Schraetzer           | s               |                             |                             |                             | s                       |                        |
| Alburnus mento             | Seebaue              | s               |                             |                             |                             | s                       |                        |
| Barbus balcanicus          | Semling              | s               |                             |                             |                             | s                       |                        |
| Cobitis elongatoides       | Steinbeißer          | s               |                             |                             |                             | s                       |                        |
| Romanogobio uanensis       | Steingröbling        | s               |                             |                             |                             | s                       |                        |
| Acipenser ruthenus         | Stör                 | s               |                             |                             |                             | s                       |                        |
| Zingel streber             | Streber              | s               |                             |                             |                             | s                       |                        |
| Talotates souffia          | Süßling              | b               |                             |                             |                             | b                       |                        |
| Romanogobio vladkovi       | Weißbläsen Gründling | s               |                             |                             |                             | s                       |                        |
| Stizostedion gairdneri     | Wels                 | b               |                             | 2                           |                             |                         |                        |
| Cyprinus carpio            | Wildkarpfen          | s               |                             | 1                           | 2                           |                         |                        |
| Zingel zingel              | Zingel               | s               |                             |                             |                             | s                       |                        |
| Salmo trutta lacustris     | Seeforelle           |                 |                             | 4                           | 2                           | X                       |                        |
| Micropterus dolomieu       | Regenbogenforelle    |                 |                             | 55                          | 16                          | X                       |                        |
| Pseudorasbora parva        | Blaubandbarschling   |                 |                             |                             |                             | X                       |                        |
| Salvelinus fontinalis      | Bachsaibling         |                 |                             | 1                           |                             |                         |                        |
| Sander lucioperca          | Zander               |                 |                             |                             | 1                           |                         |                        |

FishCam Monitoring | Fischerei SV T

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| Monitoring FWH KW Lavamünd                                       |                  | Epipotamal Groß   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
|--|------------------|---|--|----------|------------------|----------|---|-------|---|-------|---|-------|---|------|---|-------|----|-------|---|----------|----|---------|---|-----------|---|-------------|---|---------|---|-------------|---|-------|----|------|---|-------------|---|------------|---|-------------------|---|--------------|---|---------------------------------------|-----------------|
| Entwicklungsstadien  |                  |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
|  |                  | <table border="1"> <thead> <tr> <th>Fischart</th> <th>Bewertung (Note)</th> </tr> </thead> <tbody> <tr><td>Aalrutte</td><td>I</td></tr> <tr><td>Aitel</td><td>I</td></tr> <tr><td>Barbe</td><td>I</td></tr> <tr><td>Hasel</td><td>I</td></tr> <tr><td>Nase</td><td>I</td></tr> <tr><td>Hecht</td><td>II</td></tr> <tr><td>Laube</td><td>I</td></tr> <tr><td>Neunauge</td><td>II</td></tr> <tr><td>Rotauge</td><td>I</td></tr> <tr><td>Schneider</td><td>I</td></tr> <tr><td>Bachforelle</td><td>I</td></tr> <tr><td>Brachse</td><td>I</td></tr> <tr><td>Flussbarsch</td><td>I</td></tr> <tr><td>Koppe</td><td>II</td></tr> <tr><td>Wels</td><td>I</td></tr> <tr><td>Wildkarpfen</td><td>I</td></tr> <tr><td>Seeforelle</td><td>I</td></tr> <tr><td>Regenbogenforelle</td><td>I</td></tr> <tr><td>Bachsäibling</td><td>I</td></tr> <tr><td><b>GESAMT (arithmetisches Mittel)</b></td><td><b>I (1,16)</b></td></tr> </tbody> </table> |  | Fischart | Bewertung (Note) | Aalrutte | I | Aitel | I | Barbe | I | Hasel | I | Nase | I | Hecht | II | Laube | I | Neunauge | II | Rotauge | I | Schneider | I | Bachforelle | I | Brachse | I | Flussbarsch | I | Koppe | II | Wels | I | Wildkarpfen | I | Seeforelle | I | Regenbogenforelle | I | Bachsäibling | I | <b>GESAMT (arithmetisches Mittel)</b> | <b>I (1,16)</b> |
| Fischart   | Bewertung (Note) |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Aalrutte   | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Aitel  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Barbe  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Hasel  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Nase   | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Hecht  | II               |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Laube  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Neunauge   | II               |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Rotauge  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Schneider  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Bachforelle  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Brachse  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Flussbarsch  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Koppe  | II               |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Wels   | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Wildkarpfen  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Seeforelle   | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Regenbogenforelle  | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| Bachsäibling   | I                |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| <b>GESAMT (arithmetisches Mittel)</b>                            | <b>I (1,16)</b>  |   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |
| FishCam Monitoring   Fischerei SV Tagung   1. – 2.6.2017 Kärnten |                  | 28 / 38   |  |          |                  |          |   |       |   |       |   |       |   |      |   |       |    |       |   |          |    |         |   |           |   |             |   |         |   |             |   |       |    |      |   |             |   |            |   |                   |   |              |   |                                       |                 |



### Monitoring FWH KW Lavamünd Epipotamal Groß

#### Bewertung

| Einzelkriterium nach Woschitz et al. (2003)         | Bewertung                            |
|---|--------------------------------------|
| Für den qualitativen Fischaufstieg (alle Arten)     |                                      |
| - Artenspektrum                                     | I                                    |
| - Entwicklungsstadien                               | I                                    |
| Für den quantitativen Fischaufstieg (häufige Arten) |                                      |
| - Anzahl aufgestiegener Mittelstreckenwanderer      | I                                    |
| - Anzahl aufgestiegener Kurzstreckenwanderer        | II                                   |
| <b>GESAMTBEWERTUNG</b>                              | <b>I</b><br><b>(Mittelwert 1,25)</b> |

FishCam Monitoring | Fischerei SV Tagung | 1. – 2.6.2017 Kärnten 30 / 38

## Resumee

FishCam & FishNet

### **FWH Rosegg, Schwabeck, Lavamünd**

(nach Woschitz et al. 2003)

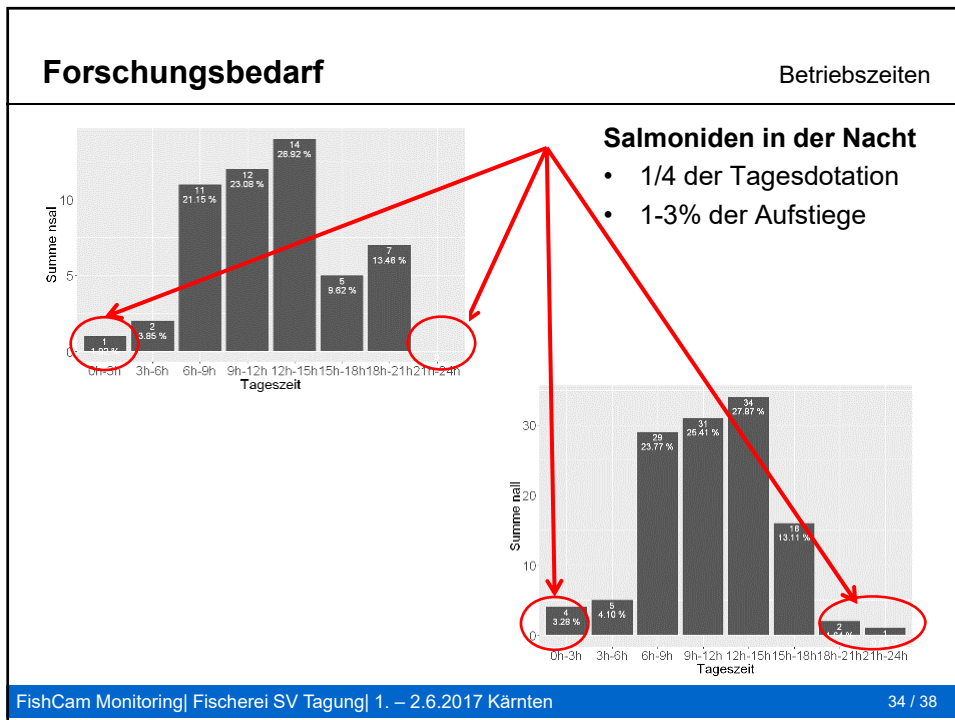
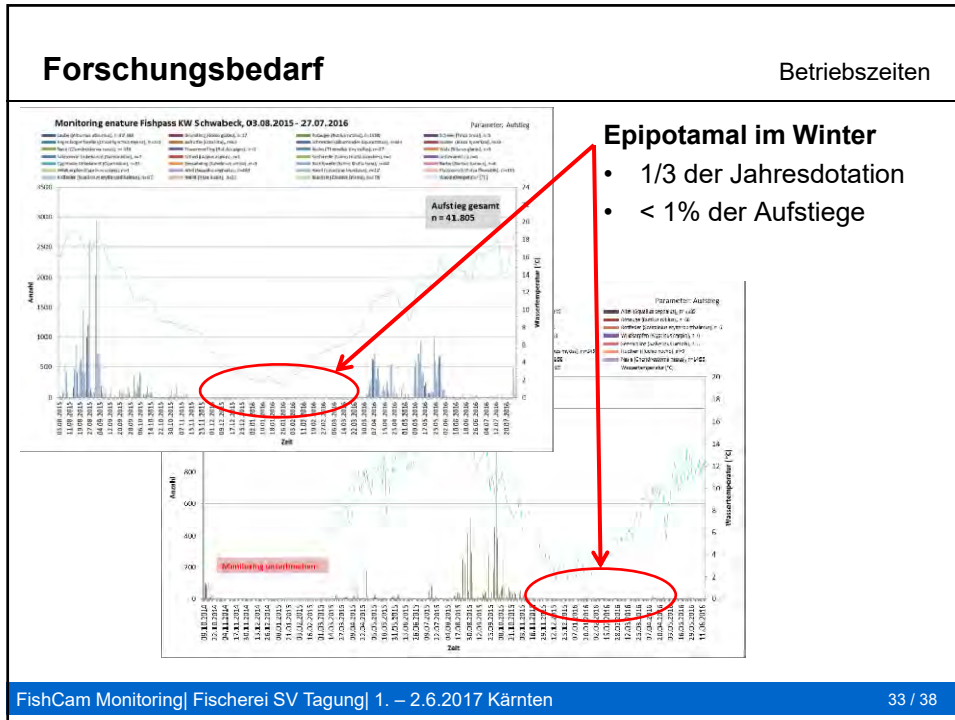
- voll funktionsfähig
- 1,0 – 1,25

## Resumee

FishCam & FishNet

### **FishCam**

- Einsatz in Epirhithral bis Epiptamal
- Erfolgreiche Erfassung der Bemessungsfische
  - Huchen 120 cm bei s = 35 cm
  - Wels 135 cm bei s = 40 cm
  - Hecht 114 cm bei s = 35 cm
- Fischmigration 24/7 erfasst
- ohne Kontakt / ohne Stress
- Aufstieg / Abstieg
- Zeitstempel
- >95% richtige Objektklassifizierung



|  |                |
|--|----------------|
| <b>Forschungsbedarf</b>  | Auffindbarkeit |
| <p><b>Schlüsselreize</b></p> <ul style="list-style-type: none"> <li>• Rheotaxis</li> <li>• Phonotaxis</li> <li>• Thermotaxis</li> <li>• Phototaxis</li> </ul> <p><b>Versuchsordnung</b></p> <ul style="list-style-type: none"> <li>• <u>Schwabeck</u><br/>                     konkurrierende Abflüsse im Bereich 0.03 % - 0.5 %<br/>                     ohne Zusatzdotation 0.1 – 0.5 m<sup>3</sup>/s</li> </ul> |                |
| FishCam Monitoring  Fischerei SV Tagung  1. – 2.6.2017 Kärnten   |                |
| 35 / 38  |                |

| <b>Forschungsbedarf</b>   | Auffindbarkeit |          |          |       |          |      |          |       |          |      |          |       |           |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
|---|----------------|----------|----------|-------|----------|------|----------|-------|----------|------|----------|-------|-----------|------|-----------|-------|------|--|----------|--|---------|--|----------|--|---------|--|----------|--|---------|--|----------|--|---------|--|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|-------|------|-------|-------|------|------|-------|------|------|------|-------|------|------|------|-------|------|------|--|------|--|-------|--|------|--|-------|--|------|--|-------|--|------|--|------|------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|--|--|------|---------------------|--|--|------|------|--|--|--|------|------|--|--|--|--|--|--|------|------|-----------|----------|--|--|--|----------|--|--|--|----------|--|--|--|-----------|--|--|--|----------|--|---------|--|----------|--|---------|--|----------|--|---------|--|----------|--|---------|--|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|------|------|-------|------|------|-------|------|------|------|-------|------|------|------|-------|------|------|--|--|--|--|--|--|-------|--|--|--|--|-------|--|--|--|--|------------------|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|-------|-----------------|--|--|------|-------|--|--|--|--|--|--|--|--|--|--|--|--|---------------------|--|--|--|------|------|--|--|------|------|--|--|--|--|--|--|------|------|
| <p><b>Abfluss in der OWH</b></p> <ul style="list-style-type: none"> <li>• Hyporhithral ohne Einfluss</li> <li>• <b>Epipotamal</b> (insbes. Cypriniden), bei geringerem Abfluss in OWH signifikant höhere Anzahl aufsteigender Individuen pro Zeitintervall</li> </ul>   |                |          |          |       |          |      |          |       |          |      |          |       |           |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
|   |                |          |          |       |          |      |          |       |          |      |          |       |           |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th rowspan="3">nnol=888</th> <th colspan="4">1h Daten</th> <th colspan="4">3h Daten</th> <th colspan="4">6h Daten</th> <th colspan="4">12h Daten</th> </tr> <tr> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> </tr> <tr> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> </tr> </thead> <tbody> <tr> <td>Inter</td> <td>-0.28</td> <td>-2.5</td> <td>&lt;0.01</td> <td>&lt;0.01</td> <td>0.82</td> <td>-1.2</td> <td>&lt;0.01</td> <td>0.36</td> <td>1.35</td> <td>1.20</td> <td>&lt;0.01</td> <td>0.83</td> <td>2.20</td> <td>0.09</td> <td>&lt;0.01</td> <td>0.91</td> </tr> <tr> <td>temp</td> <td></td> <td>0.19</td> <td></td> <td>&lt;0.01</td> <td></td> <td>0.21</td> <td></td> <td>&lt;0.01</td> <td></td> <td>0.21</td> <td></td> <td>&lt;0.01</td> <td></td> <td>0.18</td> <td></td> <td>0.01</td> </tr> <tr> <td>Q<sub>ZAH</sub></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-3.1</td> <td></td> <td>0.01</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.02</td> </tr> <tr> <td>R<sup>2</sup> McF.</td> <td></td> <td></td> <td>0.00</td> <td>0.04</td> <td></td> <td></td> <td></td> <td>0.00</td> <td>0.04</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.00</td> <td>0.06</td> </tr> </tbody> </table><br><table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th rowspan="3">nIau=1744</th> <th colspan="4">1h Daten</th> <th colspan="4">3h Daten</th> <th colspan="4">6h Daten</th> <th colspan="4">12h Daten</th> </tr> <tr> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> </tr> <tr> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> </tr> </thead> <tbody> <tr> <td>Inter</td> <td>0.39</td> <td>1.50</td> <td>0.03</td> <td>&lt;0.01</td> <td>1.49</td> <td>-0.7</td> <td>&lt;0.01</td> <td>0.35</td> <td>2.18</td> <td>1.20</td> <td>&lt;0.01</td> <td>0.83</td> <td>2.88</td> <td>0.48</td> <td>&lt;0.01</td> <td>0.67</td> </tr> <tr> <td>temp</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>&lt;0.01</td> <td></td> <td></td> <td></td> <td></td> <td>&lt;0.01</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Q<sub>ZAH</sub></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.01</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Q<sub>neu</sub></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.01</td> <td></td> <td>&lt;0.01</td> </tr> <tr> <td>Q<sub>LS</sub></td> <td></td> <td></td> <td>-8.5</td> <td>&lt;0.01</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>R<sup>2</sup> McF.</td> <td></td> <td></td> <td></td> <td>0.00</td> <td>0.04</td> <td></td> <td></td> <td>0.00</td> <td>0.04</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.00</td> <td>0.07</td> </tr> </tbody> </table> |                | nnol=888 | 1h Daten |       |          |      | 3h Daten |       |          |      | 6h Daten |       |           |      | 12h Daten |       |      |  | Estimate |  | p-Value |  | Estimate |  | p-Value |  | Estimate |  | p-Value |  | Estimate |  | p-Value |  | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | Inter | -0.28 | -2.5 | <0.01 | <0.01 | 0.82 | -1.2 | <0.01 | 0.36 | 1.35 | 1.20 | <0.01 | 0.83 | 2.20 | 0.09 | <0.01 | 0.91 | temp |  | 0.19 |  | <0.01 |  | 0.21 |  | <0.01 |  | 0.21 |  | <0.01 |  | 0.18 |  | 0.01 | Q <sub>ZAH</sub> |  |  |  |  |  | -3.1 |  | 0.01 |  |  |  |  |  |  |  | 0.02 | R <sup>2</sup> McF. |  |  | 0.00 | 0.04 |  |  |  | 0.00 | 0.04 |  |  |  |  |  |  | 0.00 | 0.06 | nIau=1744 | 1h Daten |  |  |  | 3h Daten |  |  |  | 6h Daten |  |  |  | 12h Daten |  |  |  | Estimate |  | p-Value |  | Estimate |  | p-Value |  | Estimate |  | p-Value |  | Estimate |  | p-Value |  | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | Inter | 0.39 | 1.50 | 0.03 | <0.01 | 1.49 | -0.7 | <0.01 | 0.35 | 2.18 | 1.20 | <0.01 | 0.83 | 2.88 | 0.48 | <0.01 | 0.67 | temp |  |  |  |  |  |  | <0.01 |  |  |  |  | <0.01 |  |  |  |  | Q <sub>ZAH</sub> |  |  |  |  |  |  |  | 0.01 |  |  |  |  |  |  |  |  | Q <sub>neu</sub> |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.01 |  | <0.01 | Q <sub>LS</sub> |  |  | -8.5 | <0.01 |  |  |  |  |  |  |  |  |  |  |  |  | R <sup>2</sup> McF. |  |  |  | 0.00 | 0.04 |  |  | 0.00 | 0.04 |  |  |  |  |  |  | 0.00 | 0.07 |
| nnol=888  | 1h Daten       |          |          |       | 3h Daten |      |          |       | 6h Daten |      |          |       | 12h Daten |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
|   | Estimate       |          | p-Value  |       | Estimate |      | p-Value  |       | Estimate |      | p-Value  |       | Estimate  |      | p-Value   |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
|   | lasso          | step     | lasso    | step  | lasso    | step | lasso    | step  | lasso    | step | lasso    | step  | lasso     | step | lasso     | step  |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| Inter   | -0.28          | -2.5     | <0.01    | <0.01 | 0.82     | -1.2 | <0.01    | 0.36  | 1.35     | 1.20 | <0.01    | 0.83  | 2.20      | 0.09 | <0.01     | 0.91  |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| temp  |                | 0.19     |          | <0.01 |          | 0.21 |          | <0.01 |          | 0.21 |          | <0.01 |           | 0.18 |           | 0.01  |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| Q <sub>ZAH</sub>  |                |          |          |       |          | -3.1 |          | 0.01  |          |      |          |       |           |      |           | 0.02  |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| R <sup>2</sup> McF.   |                |          | 0.00     | 0.04  |          |      |          | 0.00  | 0.04     |      |          |       |           |      |           | 0.00  | 0.06 |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| nIau=1744   | 1h Daten       |          |          |       | 3h Daten |      |          |       | 6h Daten |      |          |       | 12h Daten |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
|   | Estimate       |          | p-Value  |       | Estimate |      | p-Value  |       | Estimate |      | p-Value  |       | Estimate  |      | p-Value   |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
|   | lasso          | step     | lasso    | step  | lasso    | step | lasso    | step  | lasso    | step | lasso    | step  | lasso     | step | lasso     | step  |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| Inter   | 0.39           | 1.50     | 0.03     | <0.01 | 1.49     | -0.7 | <0.01    | 0.35  | 2.18     | 1.20 | <0.01    | 0.83  | 2.88      | 0.48 | <0.01     | 0.67  |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| temp  |                |          |          |       |          |      | <0.01    |       |          |      |          | <0.01 |           |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| Q <sub>ZAH</sub>  |                |          |          |       |          |      |          | 0.01  |          |      |          |       |           |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| Q <sub>neu</sub>  |                |          |          |       |          |      |          |       |          |      |          |       |           | 0.01 |           | <0.01 |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| Q <sub>LS</sub>   |                |          | -8.5     | <0.01 |          |      |          |       |          |      |          |       |           |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| R <sup>2</sup> McF.   |                |          |          | 0.00  | 0.04     |      |          | 0.00  | 0.04     |      |          |       |           |      |           | 0.00  | 0.07 |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| Regressionsanalyse Schwabeck (erste Ergebnisse)   |                |          |          |       |          |      |          |       |          |      |          |       |           |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| FishCam Monitoring  Fischerei SV Tagung  1. – 2.6.2017 Kärnten  |                |          |          |       |          |      |          |       |          |      |          |       |           |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |
| 36 / 38   |                |          |          |       |          |      |          |       |          |      |          |       |           |      |           |       |      |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |       |      |       |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |      |  |       |  |      |  |       |  |      |  |       |  |      |  |      |                  |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |      |                     |  |  |      |      |  |  |  |      |      |  |  |  |  |  |  |      |      |           |          |  |  |  |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |      |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |  |       |  |  |  |  |       |  |  |  |  |                  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |                 |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |  |      |      |  |  |      |      |  |  |  |  |  |  |      |      |



| <b>Forschungsbedarf</b>   |          |      |         |       |          |       |         |      |          | Auffindbarkeit                                  |         |           |           |      |         |      |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
|---|----------|------|---------|-------|----------|-------|---------|------|----------|---|---------|-----------|-----------|------|---------|------|----------|--|--|--|----------|--|--|--|-----------|--|--|--|----------|--|---------|--|----------|--|---------|--|----------|--|---------|--|----------|--|---------|--|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|------|------|-------|------|-------|-------|------|------|------|-------|------|------|------|-------|------|------|--|--|--|--|--|------|-------|------|--|--|-------|--|--|--|--|--|------------------|--|--|--|--|--|-------|------|------|--|--|------|--|--|--|--|--|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|------|--|-------|--|----------------|--|--|------|-------|--|--|--|--|--|--|--|--|--|--|--|--|---------------------|--|--|------|------|--|--|------|------|--|--|------|------|--|--|------|------|
| <p><b>Leitströmung</b></p> <ul style="list-style-type: none"> <li>• Hyporhithral ohne Einfluss</li> <li>• <b>Epipotamal</b> (insbes. Cypriniden), signifikanter Einfluss, bei geringerer Leitströmung mehr Aufstiege pro Zeitintervall</li> </ul>   |          |      |         |       |          |       |         |      |          |   |         |           |           |      |         |      |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
| <table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <thead> <tr> <th rowspan="3">nIau=1744</th> <th colspan="4">1h Daten</th> <th colspan="4">3h Daten</th> <th colspan="4">6h Daten</th> <th colspan="4">12h Daten</th> </tr> <tr> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> <th colspan="2">Estimate</th> <th colspan="2">p-Value</th> </tr> <tr> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> <th>lasso</th> <th>step</th> </tr> </thead> <tbody> <tr> <td>inter</td> <td>0.39</td> <td>1.50</td> <td>0.03</td> <td>&lt;0.01</td> <td>1.49</td> <td>-0.70</td> <td>&lt;0.01</td> <td>0.35</td> <td>2.18</td> <td>0.20</td> <td>&lt;0.01</td> <td>0.83</td> <td>2.88</td> <td>0.48</td> <td>&lt;0.01</td> <td>0.67</td> </tr> <tr> <td>temp</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.21</td> <td>&lt;0.01</td> <td>0.21</td> <td></td> <td></td> <td>&lt;0.01</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Q<sub>ZRH</sub></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-3.12</td> <td>0.01</td> <td>-3.9</td> <td></td> <td></td> <td>0.02</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Q<sub>ZREV</sub></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.01</td> <td></td> <td>&lt;0.01</td> <td></td> </tr> <tr> <td>Q<sub>L</sub></td> <td></td> <td></td> <td>-8.5</td> <td>&lt;0.01</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>R<sup>2</sup> McF.</td> <td></td> <td></td> <td>0.00</td> <td>0.04</td> <td></td> <td></td> <td>0.00</td> <td>0.04</td> <td></td> <td></td> <td>0.00</td> <td>0.06</td> <td></td> <td></td> <td>0.00</td> <td>0.07</td> </tr> </tbody> </table> |          |      |         |       |          |       |         |      |          |   |         | nIau=1744 | 1h Daten  |      |         |      | 3h Daten |  |  |  | 6h Daten |  |  |  | 12h Daten |  |  |  | Estimate |  | p-Value |  | Estimate |  | p-Value |  | Estimate |  | p-Value |  | Estimate |  | p-Value |  | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | lasso | step | inter | 0.39 | 1.50 | 0.03 | <0.01 | 1.49 | -0.70 | <0.01 | 0.35 | 2.18 | 0.20 | <0.01 | 0.83 | 2.88 | 0.48 | <0.01 | 0.67 | temp |  |  |  |  |  | 0.21 | <0.01 | 0.21 |  |  | <0.01 |  |  |  |  |  | Q <sub>ZRH</sub> |  |  |  |  |  | -3.12 | 0.01 | -3.9 |  |  | 0.02 |  |  |  |  |  | Q <sub>ZREV</sub> |  |  |  |  |  |  |  |  |  |  |  |  | 0.01 |  | <0.01 |  | Q <sub>L</sub> |  |  | -8.5 | <0.01 |  |  |  |  |  |  |  |  |  |  |  |  | R <sup>2</sup> McF. |  |  | 0.00 | 0.04 |  |  | 0.00 | 0.04 |  |  | 0.00 | 0.06 |  |  | 0.00 | 0.07 |
| nIau=1744   | 1h Daten |      |         |       | 3h Daten |       |         |      | 6h Daten |   |         |           | 12h Daten |      |         |      |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
|   | Estimate |      | p-Value |       | Estimate |       | p-Value |      | Estimate |   | p-Value |           | Estimate  |      | p-Value |      |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
|   | lasso    | step | lasso   | step  | lasso    | step  | lasso   | step | lasso    | step  | lasso   | step      | lasso     | step | lasso   | step |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
| inter   | 0.39     | 1.50 | 0.03    | <0.01 | 1.49     | -0.70 | <0.01   | 0.35 | 2.18     | 0.20  | <0.01   | 0.83      | 2.88      | 0.48 | <0.01   | 0.67 |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
| temp  |          |      |         |       |          | 0.21  | <0.01   | 0.21 |          |   | <0.01   |           |           |      |         |      |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
| Q <sub>ZRH</sub>  |          |      |         |       |          | -3.12 | 0.01    | -3.9 |          |   | 0.02    |           |           |      |         |      |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
| Q <sub>ZREV</sub>   |          |      |         |       |          |       |         |      |          |   |         |           | 0.01      |      | <0.01   |      |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
| Q <sub>L</sub>  |          |      | -8.5    | <0.01 |          |       |         |      |          |   |         |           |           |      |         |      |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
| R <sup>2</sup> McF.   |          |      | 0.00    | 0.04  |          |       | 0.00    | 0.04 |          |   | 0.00    | 0.06      |           |      | 0.00    | 0.07 |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |
| FishCam Monitoring  Fischerei SV Tagung  1. – 2.6.2017 Kärnten  |          |      |         |       |          |       |         |      |          | Regressionsanalyse Schwabeck (erste Ergebnisse) |         |           |           |      |         |      |          |  |  |  |          |  |  |  |           |  |  |  |          |  |         |  |          |  |         |  |          |  |         |  |          |  |         |  |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |       |      |      |      |       |      |       |       |      |      |      |       |      |      |      |       |      |      |  |  |  |  |  |      |       |      |  |  |       |  |  |  |  |  |                  |  |  |  |  |  |       |      |      |  |  |      |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |  |  |  |      |  |       |  |                |  |  |      |       |  |  |  |  |  |  |  |  |  |  |  |  |                     |  |  |      |      |  |  |      |      |  |  |      |      |  |  |      |      |

