

# Animal Ethics Manual – Wildlife

## STANDARD OPERATING PROCEDURES

**SOP No:** W-2

**SUBJECT:** Electro-fishing in Freshwater.

**POLICY:**

1. Only people trained in animal welfare and human safety may use electro-fishing techniques<sup>1</sup>.
2. All electrofishing activities must comply with the Australian Code of Electrofishing Practice<sup>9</sup>.
3. Impacts on non-target animals must be minimised<sup>1, 10</sup>.
4. Target animals must be monitored for electro-fishing effects.
5. Water conductivity, temperature, season and time of day should be considered so as to not result in excessive mortality<sup>7,8</sup>.
6. Direct current should be used wherever possible rather than alternating current to minimize injury to fish<sup>7</sup>.

**PRECAUTIONS:** Operator safety. (Note: as per Policy item # 2 (above), it is required that the operator will have been trained either formally through completion of an electrofishing course or have been trained by an experienced (and trained) operator.

**EQUIPMENT:** Electro-fishing apparatus (backpack, bank-mounted, electrofishing boat).

**PROCEDURE:**


1. Electrofishing should be undertaken while observing the following key principles:  
“Only the minimum power necessary to attract and capture fish effectively should be used. Fish should be removed from the field as quickly as possible. If adverse effects are observed in sampled fish, electrofishing settings should be adjusted accordingly. Contact of fish with live anodes should be avoided, as the resulting shock will be much greater. If threatened species are observed that are not being targeted, appropriate measures must be taken to minimise disturbance and stress to these fish”<sup>10</sup>.  
Precise electrofishing sampling methods and sampling effort will vary depending on the objectives of the sampling program and equipment being used (e.g. see 2, 3, 4, 10).

2. Electro-narcotized fish must be held in aerated water until they show recovery and then processed (weighed or measured) rapidly. The size of container (and amount of water) will need to be appropriate for both number and size of fish and reported in sampling protocols. Water temperature should also be carefully monitored to ensure fish are not stressed in holding tanks.
  
3. On recovery target and non-target animals must be carefully monitored for any stress or ill-health (e.g. healthy fish are able to maintain an upright position in the water, distressed fish will exhibit stress behaviour such as rapid-gill movements, jerky behaviours<sup>5</sup>). Once determined healthy, fish should be released as close to the point of capture as possible and any pests disposed of according to permit conditions<sup>6</sup>. Please also ensure that cleaning and disinfection requirements are followed as per the biosecurity obligations after each fieldwork.
  
4. If fish are to be held for a longer period due to other non-standard procedures (e.g. tagging) then additional monitoring and holding procedures will need to be implemented (e.g. frequent changes to water – so no build-up of nitrates, maintenance of appropriate water temperature and oxygenation, and extensive monitoring of animals for stress). Anesthesia should be considered in such instances of extended holding.

**RECOMMENDATIONS:** \*Specify frequency or timing in the AEC application.

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| <b>APPROVED DOCUMENT ON INTRANET ONLY – UNCONTROLLED DOCUMENT WHEN PRINTED.</b> |                 |                         |  |                 |      |             |
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| V03   | Electro-fishing | Animal Ethics Committee |  | #56618          | 2021 | 2023        |
| V04   | Electro-fishing | Animal Ethics Committee |  | #27800          | 2024 | 2026        |

## REFERENCES

1. NHMRC (2004) *Australian code of practice for the care and use of animals for scientific purposes (7th edition)*. Australian Government.
2. Davies PE, Harris JH, Hillman T, Walker KF (2010). The sustainable Rivers Audit: assessing river ecosystem health in the Murray Darling Basin, Australia. *Marine and Freshwater Research*. **61**, 764-777.
3. Pusey BJ., Kennard MJ, Arthur JM, Arthington AH (1998). Quantitative sampling of stream fish assemblages: single versus multiple pass electrofishing. *Australian Journal of Ecology*. **23**, 365-374.
4. Kennard MJ, Pusey BJ, Harch BH, Dore E, Arthington AH (2006). Estimating local stream fish assemblage attributes: sampling effort and efficiency at two spatial scales. *Marine and Freshwater Research* **57**, 675-686.
5. Blessing, JJ, Marshall, JC, Balcombe SR (2010) Humane killing of fish for scientific research: a comparison of two methods. *Journal of Fish Biology* **76**, 2571-2577.
6. Dept. of Primary Industries and Fisheries. ( <http://www.dpi.qld.gov.au/fishweb/14519.html> )
7. Syracuse Research Corporation (2001). *Fish Collection by Seining or Electrofishing*. [https://www.epa.gov/sites/default/files/documents/r8-src\\_src-ogden-03.pdf](https://www.epa.gov/sites/default/files/documents/r8-src_src-ogden-03.pdf)
8. Barker D., Allan G.L., Rowland S.J. & Pickles J.M. (2017) A Guide to Acceptable Procedures and Practices for Aquaculture and Fisheries Research 4th Edition. Port Stephens, NSW: NSW Fisheries Animal Care and Ethics Committee, Port Stephens Fisheries Centre, New South Wales. [https://www.dpi.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0004/638680/ACEC-Guide-2015-FINAL-WITH-AQUI\\_S-2.pdf](https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/638680/ACEC-Guide-2015-FINAL-WITH-AQUI_S-2.pdf).
9. New South Wales Fisheries (1997). Australian code of electrofishing practice, NSW Fisheries Management Publication No 1. Available at: [https://environment.des.qld.gov.au/\\_data/assets/pdf\\_file/0022/90751/biological-assessment-sampling-fish-communities-using-electrofishers.pdf](https://environment.des.qld.gov.au/_data/assets/pdf_file/0022/90751/biological-assessment-sampling-fish-communities-using-electrofishers.pdf)
10. NSW Department of Primary Industries (2017). A Guide to Acceptable Procedures and Practices for Aquaculture and Fisheries Research, 4th Edition. Available at: [https://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0004/638680/ACEC-Guide-2015-FINAL-WITH-AQUI\\_S-2.pdf](https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0004/638680/ACEC-Guide-2015-FINAL-WITH-AQUI_S-2.pdf)