

## Fish Practice RVS Exam Study Guide – 2024

This guide will help you prepare for your ABVP Recognized Veterinary Specialty (RVS) examination this November. The 350 item Combined RVS Exam is given in two parts (each split into two sections) on the same day. The exams are mostly to exclusively multiple-choice type items. There is the possibility of fill in the blank, short answer, essay, or matching for some exam items.

The AVMA best practice is that the examination items align with a Job Task Analysis (JTA) of this RVS Organizing committee and other recognized experts in the field. Additionally, it has been decided that some exam items can come from current journals and a small percentage can be at your Exam Committee's discretion. Please note that items drawn from current journals (with a 5 year look back period) are 1) from a journal on the RVS Reading List, 2) the question is drawn from the abstract only, and 3) the journal abstract must be freely available. The exception to this is Veterinary Clinics of North America (if applicable), where the exam taker is responsible for the whole article.

### Exam Blueprint

Topic domain	% on exam
Aquatic Environment and Life Support Systems	12%
Diagnostics, Treatments and Prophylactic Methods of Fish Diseases	21%
Fish Husbandry and Industries	8%
Legislation, Regulations, and Policies	7%
Pathobiology and Epidemiology of Fish Diseases	28%
Principles of Fish Welfare	4%
Public Health, Zoonoses, and Seafood Safety	2%
Taxonomy, Anatomy, and Physiology	18%

### Study Material

#### Essential Textbooks/References

1. **\*Cartner S, Eisen JS, Farmer SC, Guillemin KJ, Kent ML, and Sanders GE. 2020.** The Zebrafish in Biomedical Research: Biology, Husbandry, Diseases, and Research Applications (American College of Laboratory Animal Medicine Series) 1st Edition. Academic Press (Elsevier), Cambridge, MA. 718 pp.  
***ONLY THESE SPECIFIC SECTIONS for Cartner et al 2020 (see below in italics):***  
*Chapter 1 pg 11, expanding zebrafish (ZF) research into new areas. A good overview of why ZF are used for research and how*  
*Chapter 2 pgs 19-20, Zebrafish and its relation to other fish model species and Evolutionary Mutant Fish models. Talks about the relationship between ZF and other fish species, and a little overview of other teleost species utilized in biomedical research*  
*Ch 26, Pg 284 Mating tanks section how demands are met for research production*



*Ch 26 pg 286, Environmental enrichment, importance of group housing as environmental enrichment*

*Ch 27 pg 200 abstract section - differences between cleaning, disinfection, sterilization*

*Ch 27 pg 304-cleaning agents and techniques used in aquatics facilities, goes through the agents used in ZF systems and techniques*

*Ch 29 pg 322-324, Making water in for controlled aquatic environments, discusses how to utilize sources of water for research facilities*

*Ch 29, table 29.2, pg 333, Summarizes water quality parameters for ZF culture*

*Ch30 PGS 343-344, table 30.1, overview table of mechanical filtration, this chapter also has great pics of filtration systems*

*Ch 30, pgs 352-354, Disinfection, covers some specifics of UV and ozone disinfection, target intensities, use in ZF facilities*

*Ch 31, pgs 357-359, Spawning and the Sexes, discusses breeding ZF and sexing males vs females*

*Ch32, pgs 366-369, Feeding, Discusses nutrient requirements and feed options for ZF larvae*

*Ch34, pg 412, Euthanasia guidelines, entire chapter is a good overview of analgesics and anesthesia. Euthanasia guidelines main good focus.*

*Ch35, pgs 419-424, Health Surveillance Sampling sources, very relevant in lab animal environment and also other colony management areas, good overview for how to sample for health monitoring of a fish colony*

*Ch38, pg 451-452, USDA DHHS, ILAR sections, discuss where zebrafish and fish fall via regulatory bodies*

*Ch 38, pg 455, about IACUC*

*Ch43 pg 531, some neoplastic dz in ZF can be relevant like this section for research purposes, infxs disease repercussions (pseudocapillaria) and toxicology studies*

*Ch45 pg 560-561, The emergence of ZF as a versatile vertebrate model system to understand embryology, quick summary of why ZF are used for embryology research and benefits*

*Ch50 pg 649-650, What is a genetic screen and why are zebrafish useful and overview of why zf are used for genetics*

2. Hadfield CA, Clayton LA (Eds). 2021. Clinical Guide to Fish Medicine. Wiley-Blackwell, Hoboken, NJ. 624 pp.
3. Lucas JS, Southgate PC, Tucker CS. (Eds). 2019. Aquaculture: Farming Aquatic Animals and Plants 3rd Edition. John Wiley & Sons, Inc. Hoboken, NJ. 633 pp.
4. Noga EJ (Ed). 2010. Fish Disease Diagnosis and Treatment, 2<sup>nd</sup> Edition. Mosby-Yearbook, St. Louis, MO. 378 pp.
5. Smith SA (Ed). 2019. Fish Diseases and Medicine. CRC Press, Boca Raton, FL. 397 pp.
6. Smith M, Warmolts D, Thoney D, Hueter R. (Ed). 2004. The Elasmobranch Husbandry Manual: Captive Care of Sharks, Rays and their Relatives Editors. Special Publication of the Ohio Biological Survey.



All chapters *except*: Chapter 1, Chapter 3, Chapter 12, Chapters 31- 32, Chapter 36, Chapters 37-38 (FREE ONLINE)

<https://www.researchgate.net/publication/268339849> The Elasmobranch Husbandry Manual Captive Care of Sharks Rays and their Relatives Editors

7. Smith M, Warmolts D, Thoney D, Hueter R. (Ed). 2017. The Elasmobranch Husbandry Manual II - Recent Advances in the Care of Sharks, Rays and their Relatives  
*All chapters except: Chapters 1-10, Chapters 15-16, Chapter 19, Chapters 22-24, Chapters 40-41 (FREE ONLINE)*

<https://www.researchgate.net/publication/319762551> The Elasmobranch Husbandry Manual II - Recent Advances in the Care of Sharks Rays and their Relatives

8. The AVMA Guidelines for the Euthanasia of Animals, 2020 Edition (fish-specific articles)  
<https://www.avma.org/resources-tools/avma-policies/avma-guidelines-euthanasia-animals>

9. The AVMA Guidelines for the Humane Slaughter of Animals, 2016 Edition (fish-specific articles)

<https://www.avma.org/resources-tools/avma-policies/guidelines-humane-slaughter-animals>

10. The AVMA Guidelines for the Depopulation of Animals, 2019 Edition (fish-specific articles)

<https://www.avma.org/resources-tools/avma-policies/avma-guidelines-depopulation-animals>

#### **Primary Journals (Articles within the past 5 years)**

1. Diseases of Aquatic Organisms (Fish-specific articles)
2. Journal of Aquatic Animal Health
3. Journal of Fish Diseases
4. Journal of Zoo and Wildlife Medicine (Fish-specific articles)
5. Journal of the American Veterinary Medical Association (Fish-specific articles)

#### **Supplemental Textbooks**

1. Lewbart GA (Ed.) 2017. Ornamental Fishes and Aquatic Invertebrates: Self-Assessment Color Review, 2<sup>nd</sup> Edition. CRC Press, Taylor & Francis Group, Boca Raton, FL. 234 pp.
2. Lewbart GA (Ed.) 1998. Self-Assessment Color Review of Ornamental Fish. Iowa State University Press, Ames, Iowa. 192 pp.
3. Roberts HE (Ed). 2009. Fundamentals of Ornamental Fish Health. Wiley-Blackwell, Ames, IA. 255 pp.
4. Stoskopf MK (Ed). 1993. Fish Medicine. Saunders, Philadelphia, PA. 882 pp.
5. Wildgoose W (Ed). 2001. British Small Animal Veterinary Association Manual of Ornamental Fish, 2<sup>nd</sup> Edition. BSAVA, Gloucester, UK. 304 pp.
6. Urdes L, Walster C, Tepper J (Eds). 2022. Fundamentals of Aquatic Veterinary Medicine, 1<sup>st</sup> Edition. Wiley-Blackwell, Hoboken, NJ.
7. Woo PTK (Ed). 2006. Fish Diseases and Disorders, Vol 1: Protozoan and Metazoan Infections. CABI Publishing, New York, NY. 416 pp.



8. Leatherland JF, Woo PTK (Eds). 2010. Fish Diseases and Disorders, Vol 2: Non-infectious Disorders. CABI Publishing, New York, NY. 416 pp.
9. Woo PTK, Bruno DW (Eds). 2010. Fish Diseases and Disorders, Vol 3: Viral, Bacterial, and Fungal Infections. CABI Publishing, New York, NY. 896 pp.

**Supplemental Journals (Articles within the past 5 years; for all, fish-specific articles only)**

1. Veterinary Clinics of North America, Exotic Animal Practice
2. Journal of Zoo and Aquarium Research
3. Journal of Exotic Pet Medicine
4. American Journal of Veterinary Research
5. Aquaculture
6. Fish and Shellfish Immunology

