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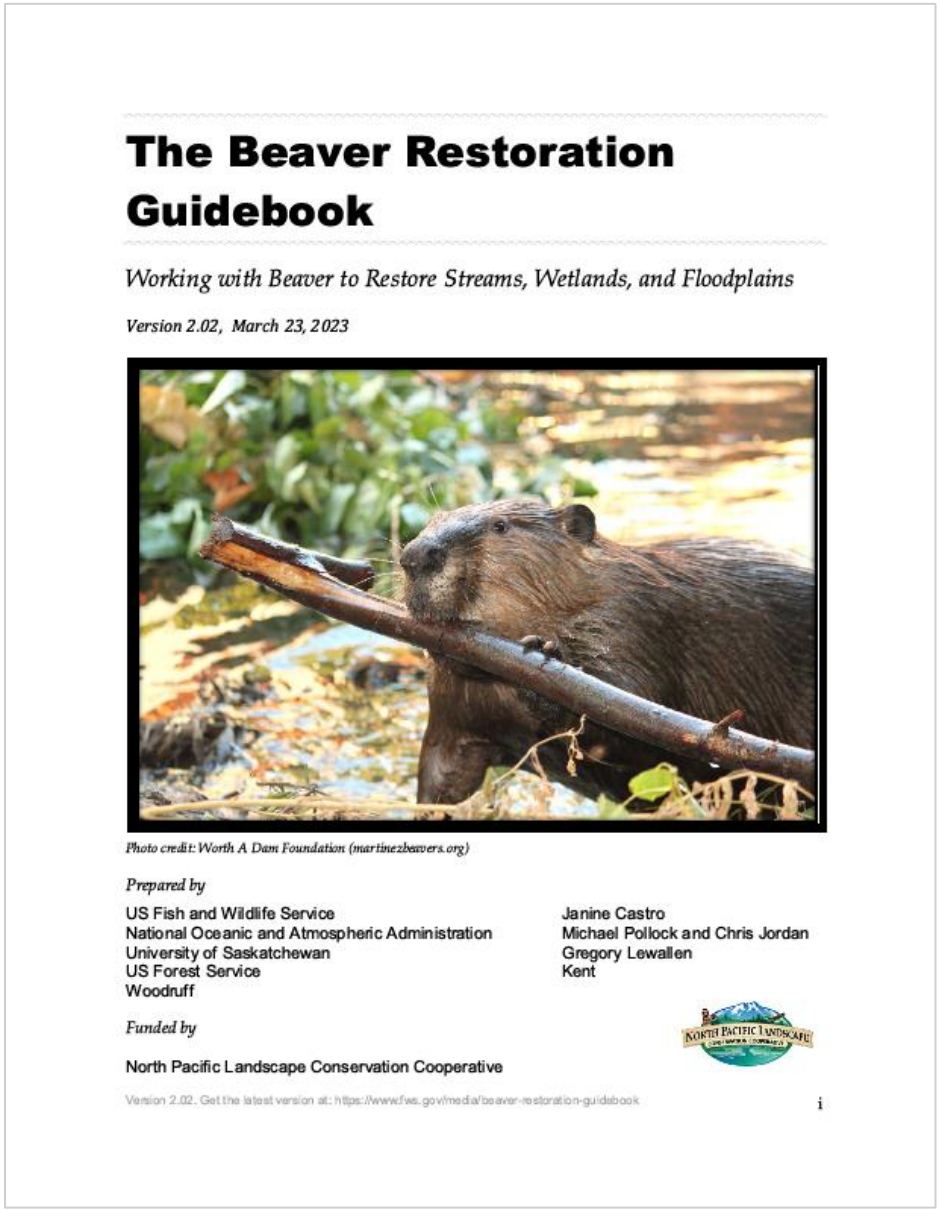
Beaver Dam


Jeremy Monroe © FI

Beaver Restoration Guidebook

- Practical synthesis and resource of best available science and techniques to coexist with beaver to improve ecosystem function.
- Accessible
- Much of the information applicable across range, but focus on western US



The Beaver Restoration Guidebook

Working with Beaver to Restore Streams, Wetlands, and Floodplains

Version 2.02, March 23, 2023

Photo credit: Worth A Dam Foundation (martinezbeavers.org)

Prepared by

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University of Saskatchewan
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Funded by

North Pacific Landscape Conservation Cooperative

Version 2.02. Get the latest version at: https://www.fws.gov/media/beaver-restoration-guidebook

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Beaver Restoration Guidebook

- Five primary editors
  - Janine Castro, USFWS; Michael Pollock and Chris Jordan, NOAA; Gregory Lewallen, Univ. of Saskatchewan; Kent Woodruff, USFS
- Contributions from 48 experts
- Numerous workshops; principal writing 2013-2015; update in 2017

Guidebook Sections

- History (harvest)
- Beaver Ecology
  - Biology
  - Effects of beaver dams on physical and biological processes
- Water quality
  - Sediment retention
  - Temperature moderation
  - Nutrient cycling
  - Reducing contaminants
- Geomorphology
- Response of other species

Guidebook Sections (Continued)

- Restoration and Management
  - Watershed planning
    - Framework for decision making
    - Assessing roadblocks to restoration
  - Relocation
    - Methodology
    - Veterinary care, husbandry
    - Release site considerations
    - Monitoring
    - Risks associated with beaver relocation
  - Beaver Dam Analogues (BDAs)
    - Objectives, purpose, and outcomes
    - Methods for installation and purpose
    - Risks involved in installing BDAs

Guidebook Sections (Continued)

- Restoration and Management
  - Urban beaver population management
    - Introduced in version 2.0
    - Benefits and challenges of managing beaver in urban settings
    - Adaptive management approaches, changes in coexistence strategies for urban landscapes.
    - Knowledge gaps
  - Managing habitat for beaver
    - Food sources/competition
    - Predation

Guidebook Sections (Continued)

- Restoration and Management
  - Non-lethal options for coexistence
    - Organized by ‘problem’
    - Tree cutting
    - Flooding
    - Culvert blocking
    - Fish passage
  - Dam viability matrix
    - Characteristics (slope, landform, flow, etc) to predict dam permanence

Guidebook Sections (Continued)

- Case Studies
  - About ¼ of the guidebook
  - Recognition that for the restoration practitioner, many techniques may not (yet) exist in published literature
  - Place to chronical ongoing experiments (successes and failures) on coexisting with beaver and using beaver to restore ecosystem function

Guidebook Updates

- Initially guidebook intended to have a section on regulations and permitting
- Broad, confusing patchwork of state, federal, tribal, local rules regarding beaver-related restoration and management techniques
- Beyond scope of the initial document

Guidebook Updates

- In 2023, we made some updates to make the document more accessible
- Recognition that beaver-related restoration and knowledge is a rapidly expanding
- In summer-fall 2023, sent out announcements that we were seeking input for the next version of the guidebook

Guidebook Updates

- Particular interest in:
  - Case studies, especially those with novel approaches
  - Recommendations for improving technical information
  - Perspectives from the restoration, regulatory, and funding communities
  - Social aspects of beaver restoration

Guidebook Updates

- We received an overwhelming response to our request for contributions to the next version of the guidebook
- Potentially two new chapters
  - Monitoring
  - Regulatory
- Numerous new case studies, tweaks to older methods, and citations to new research

Next version of the guidebook

- Most of the original editors are back to work on the next version of the guidebook
- No timeline yet on publication of the next version of the guidebook
- Likely be an iterative process, publishing smaller updates as chapters and sections are complete
- Guidebook was meant to be a living document, growing with our understanding of this incredible creature

Questions?
Suggestions?
Contributions?

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- https://www.fws.gov/media/beaver-restoration-guidebook