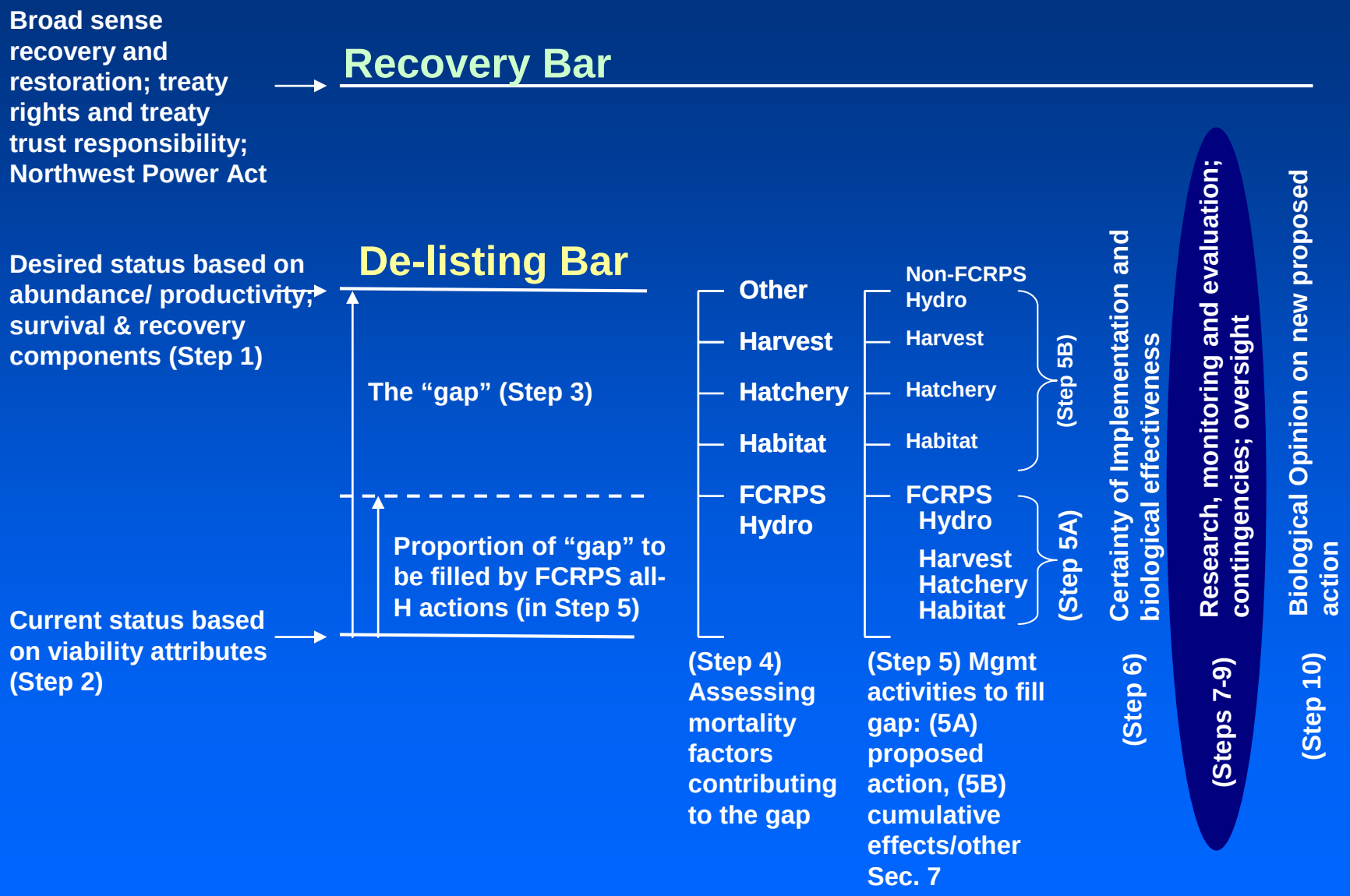
CBFWA
Development of Research, Monitoring & Evaluation Amendments

Topics

- Conceptual Framework
- Context for RM&E
- Work Plan for RM&E Amendments

Conceptual Framework



Monitoring Context

Level 1: ESU Status and Trend Monitoring. Selected pops from ESUs throughout basin. Track adult abundance, full life-cycle productivity, distribution and diversity relative to viability criteria.

Level 2: Overall FCRPS Effects and Combined Action Effectiveness. Aggregated hatchery and hatchery fish from Level 1 pops and comparable pops with less hydrosystem experience. Track overall FCRPS and other all-H effects relative to FCRPS responsibility.

Level 3a: Specific FCRPS Action Effectiveness. Utilizing or expand as necessary, fish marked and monitored in Level 2, evaluate the effectiveness of specific FCRPS actions relative to identified performance standards.

Level 3b: Specific FCRPS Other-H Action Effectiveness. Utilizing or expand as necessary, fish marked and monitored in Level 1 and 2, evaluate the effectiveness of specific FCRPS other-H actions relative to identified performance standards.

Evaluation Context

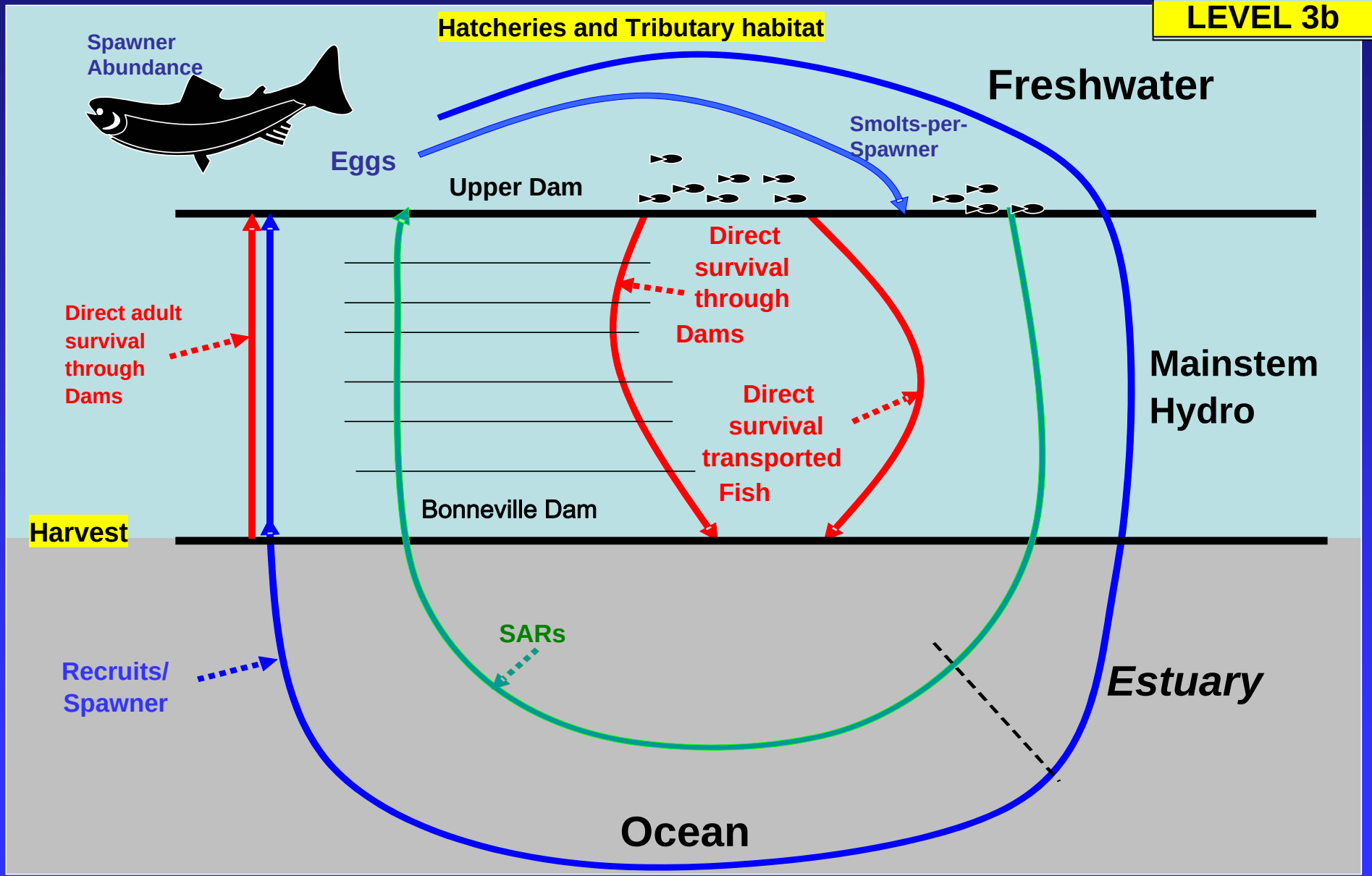
Utilizing monitoring frameworks and projects (e.g., CBFWA Staff Support, CSS, AFEP, CSMEP, etc.), evaluate and coordinate monitoring programs and provide reports and updates to federal, state and tribal fish managers and sovereigns.

Research Context

Utilizing the Evaluation Context identified above as well as additional scientific resources, resolve critical uncertainties and test key assumptions within Levels 1-3

Monitoring Context

LEVEL 1
LEVEL 2
LEVEL 3a
LEVEL 3b



Current Annual PIT-tagging Targets for Hatchery and Wild Smolts by General Release Area

Annual hatchery PIT-tag releases	SR	UCR	LCR	Sum
yearling spring/summer chinook salmon	198,000	15,000	59,000	272,000
subyearling summer chinook salmon			6,000	6,000
summer steelhead (excluding Group-B)	0	0	0	0
summer steelhead (Group-B only)				
subyearling fall chinook salmon	328,000	3,000	0	331,000
Sum of hatchery PIT-tag releases	**526,000**	**18,000**	**65,000**	**609,000**
Annual PIT-tagging targets for wild fish				0
yearling spring/summer chinook salmon	135,000	7,000	21,000	163,000
subyearling summer chinook salmon	0	0	0	0
summer steelhead (excluding Group-B)	50,000	5,000	8,000	63,000
summer steelhead (Group-B only)				
subyearling fall chinook salmon	0	0	0	0
Sum of wild fish PIT-tag releases	**185,000**	**12,000**	**29,000**	**226,000**
Sum of annual hatchery and wild fish PIT-tag releases	**711,000**	**30,000**	**94,000**	**835,000**

Additional Need for Annual PIT-tag Releases of Hatchery and Wild Smolts by General Release Area

	SR	UCR	LCR	Sum
Annual hatchery PIT-tag releases				
yearling spring/summer chinook salmon	63,000	50,000	30,000	143,000
subyearling summer chinook salmon	0	0	0	0
summer steelhead (excluding Group-B)	141,000	25,000	30,000	196,000
summer steelhead (Group-B only)				
subyearling fall chinook salmon	42,000	25,000	50,000	117,000
Sum of hatchery PIT-tag releases	**246,000**	**100,000**	**110,000**	**456,000**
Annual PIT-tagging targets for wild fish				
yearling spring/summer chinook salmon	45,000	33,000	4,000	82,000
subyearling summer chinook salmon	0	0	0	0
summer steelhead (excluding Group-B)	20,000	5,000	12,000	37,000
summer steelhead (Group-B only)				
subyearling fall chinook salmon	0	0	40,000	40,000
Sum of wild fish PIT-tag releases	**65,000**	**38,000**	**56,000**	**159,000**
Sum of annual hatchery and wild fish PIT-tag releases	**311,000**	**138,000**	**166,000**	**615,000**

Evaluation Context

- Build upon existing and functioning collaborative monitoring frameworks and projects that involve state, tribal, and federal managers
- Integrate RME programs basin-wide to maximize efficiency and multiple application to management questions
- Evaluate and coordinate monitoring programs to maintain long-term continuity and consistency of established migration data time series
- Provide routine and periodic reports and updates of data time series such as survival, timing, travel time, passage distribution and smolt-to-adult return

Reporting

- Level 1: (CSMEP & SOTR) Annual characterization of VSP parameters or performance targets
- Level 2: (CSS) Annual Overall FCRPS Effects
- Level 3: Specific Acion Effectiveness Monitoring
  - **Level 3a: Improved AFEP**
  - **Level 3b:**

    Hatchery & Harvest – TAC & CSMEP

    Habitat Status & Trends - coordinate with land/water quality managers; ISEMP, IMW, AREMP, PIBO, EPA

Adaptive Management

- Groups Provide Recommendations for Changes in Local Monitoring to Inform Regional Information Needs

Research Context

- Use and build on scientific resources described in the evaluation context to resolve critical uncertainties and test key assumptions
- Maximize application of present data to address new and innovative analyses, while designing RME mark groups to support additional analysis

CBFWA Work Plan to Develop Amendments

- Ad hoc RM&E group:
  Broaden BiOp recommendations to Program recommendations, i.e. include non-listed fish species and wildlife
- Ad hoc Operations Group:
  Recommendations based on material developed for BiOp review and comments

RM&E Group

Develop Program Measures to Address:

- Monitoring
  - Status and Trends
  - Action Effectiveness
- Evaluation Projects
- Research Context

Operations Group

Develop Recommendations for:

- Mainstem Habitat
- Juvenile and Adult Passage, in General
- Juvenile Fish Transportation
- Spill
- Juvenile Bypass Systems
- Adult Passage
- Water Management
- Annual and In-Season Decision Making

DISCUSSION