

Updates on Modeling Efforts of Nueces BBASC Technical Consultant

Presentation to Nueces BBASC
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Discussion

- Nueces Bay & Estuary
 - Attainment Frequencies
 - Recommendation from Workgroup
 - Option 2 – Full Utilization of Existing Order
 - Comparison
 - BBEST vs. Recommendation vs. Current Use
- BBASC vote to adopt an e-flow standard recommendation for Nueces B&E

What is an Attainment Frequency?

- Percent of time (number of seasons or years) in which the inflow into the Nueces Bay and Estuary equals or exceeds a specific volume.
 - There are 70 years / seasons simulated in the model (1934 – 2003).
 - The volumes were determined by the BBEST.
- Three key factors contribute to attainment frequency:
 - Natural Hydrology
 - System Demand
 - System Operations

Nueces Bay and Estuary EFR

- BBASC Direction
 - BBASC Adopted Goal
 - Utilize BBEST Volume Targets
 - Modify Attainment Frequencies for Balance
- Scenarios for Additional Evaluation
 - Existing Agreed Order
 - Current Use Conditions
- Workgroup Recommendation
 - Existing Agreed Order – Attainment Frequencies
 - NEAC Oversight for New Large Water Rights

Nueces BBASC Goal Regarding the Ecological Condition of Nueces Bay and Estuary

The goal of the Nueces BBASC with regard to the Nueces Bay and Delta is to return the Nueces Bay and Delta to ecological conditions existing prior to construction of Choke Canyon Reservoir to the extent possible while preserving existing water rights and yield of the reservoir system. To this end, the Nueces BBASC will recommend instream flow and estuary inflow regimes that may improve the existing ecological condition of the Nueces Bay and Delta, but will not diminish its existing condition, and will set forth, in its work plan, strategies to enhance its ecological condition.

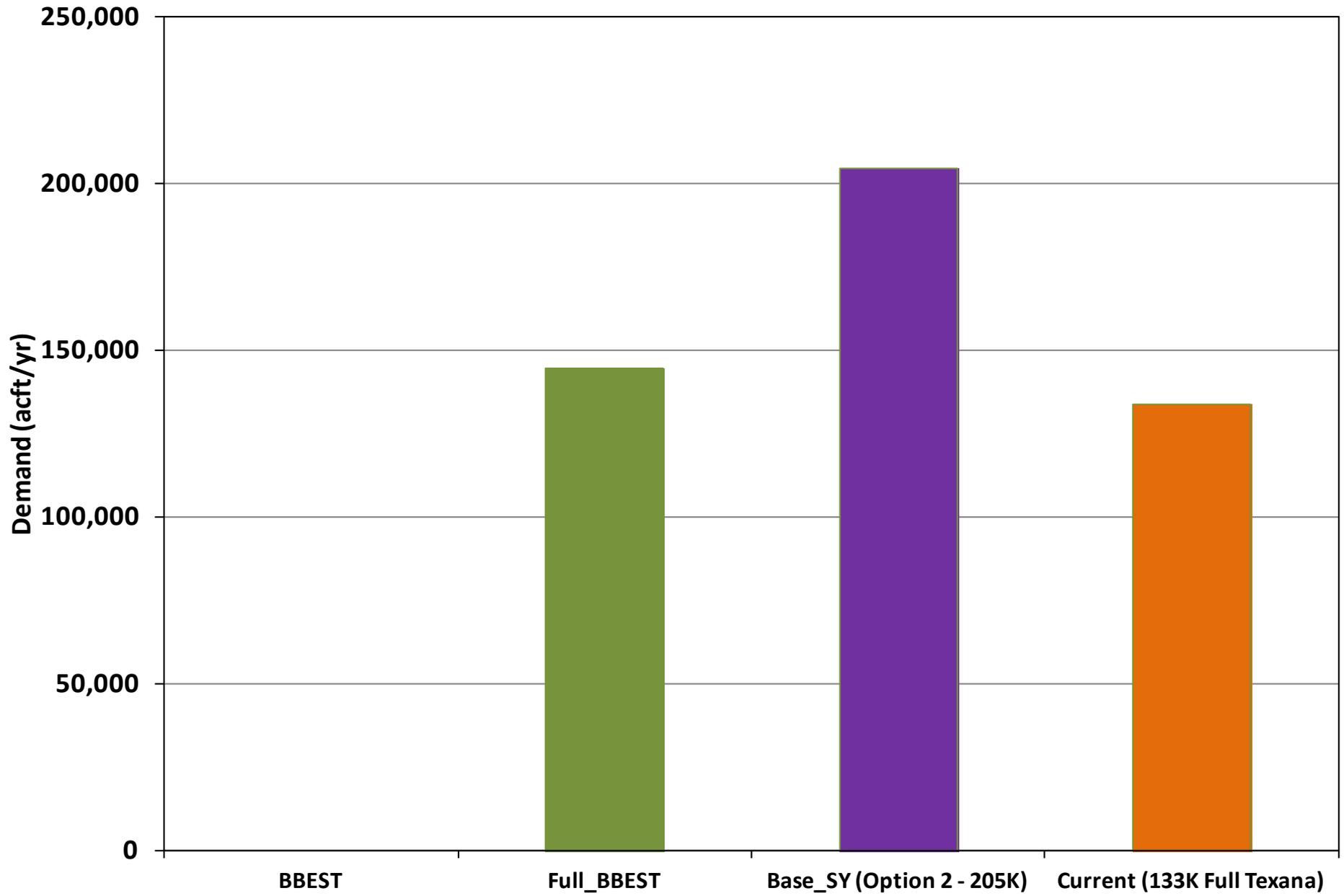
BBEST Recommendation for B&E

Condition (Target Salinity)	Nueces Bay Freshwater Inflow Regime (Attainment)			Recommendations
	One overbanking event per year of 39,000 acft; maximum discharge of 3,600 cfs			Annual Total (acft)
High (10)	125,000 acft (20%)	250,000 acft (25%)	375,000 (20%)	750,000 (25%)
Base (18)	22,000 acft (60%)	88,000 acft (60%)	56,000 (75%)	166,000 (80%)
Sub. (34)	5,000 acft (95%)	10,000 acft (95%)	15,000 acft (95%)	30,000 (95%)
	Winter = Nov - Feb	Spring = Mar - Jun	Summer/Fall = Jul - Oct	

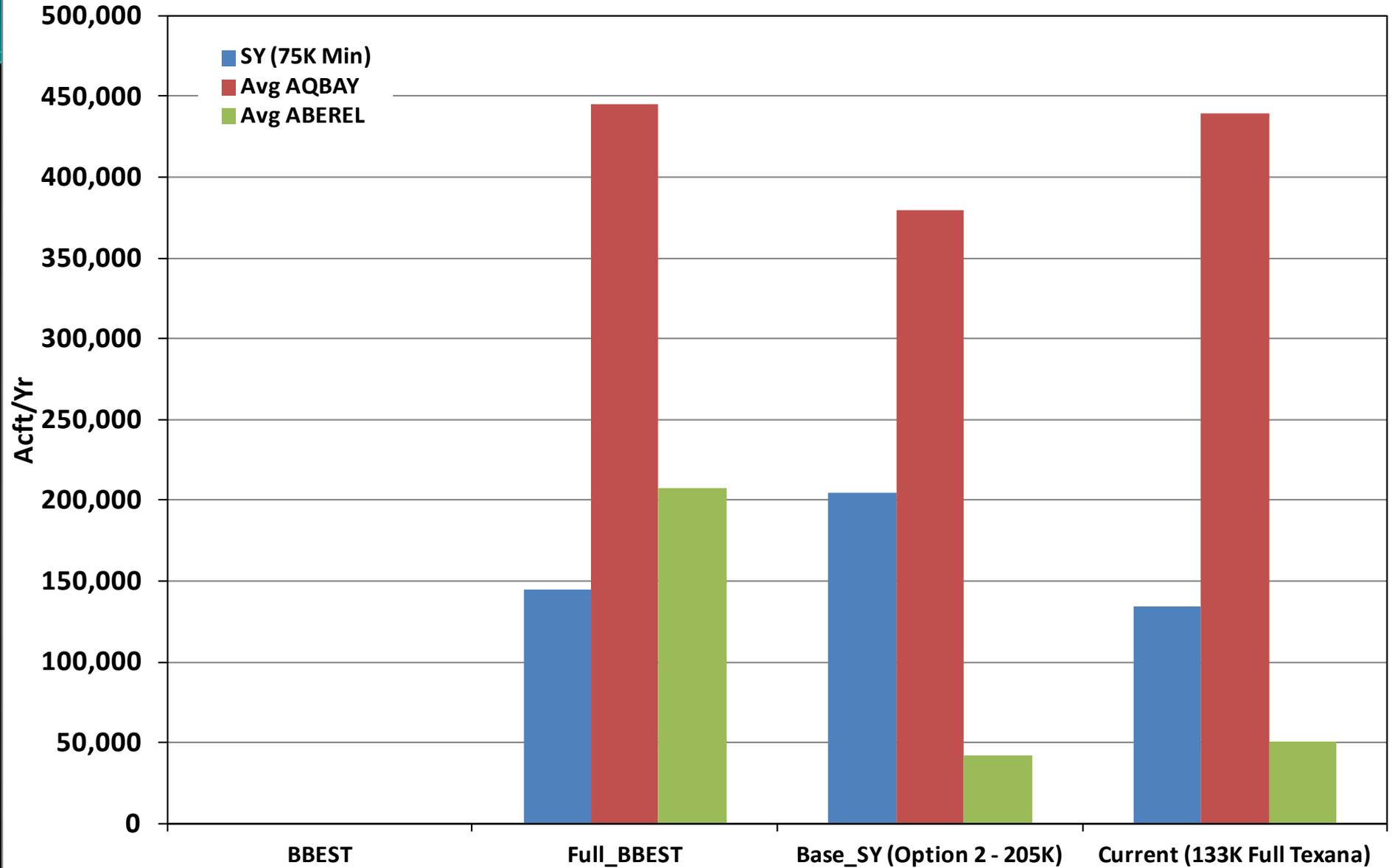
BBASC Workgroup Recommendation for B&E

Condition (Target Salinity)	Nueces Bay Freshwater Inflow Regime (Attainment)			Recommendations
				Annual Total (acft)
High (10)	125,000 acft (11%)	250,000 acft (11%)	375,000 (12%)	750,000 (16%)
Base (18)	22,000 acft (23%)	88,000 acft (30%)	56,000 (40%)	166,000 (47%)
Sub. (34)	5,000 acft (69%)	10,000 acft (88%)	15,000 acft (74%)	30,000 (95%)
	Winter = Nov - Feb	Spring = Mar - Jun	Summer/Fall = Jul - Oct	

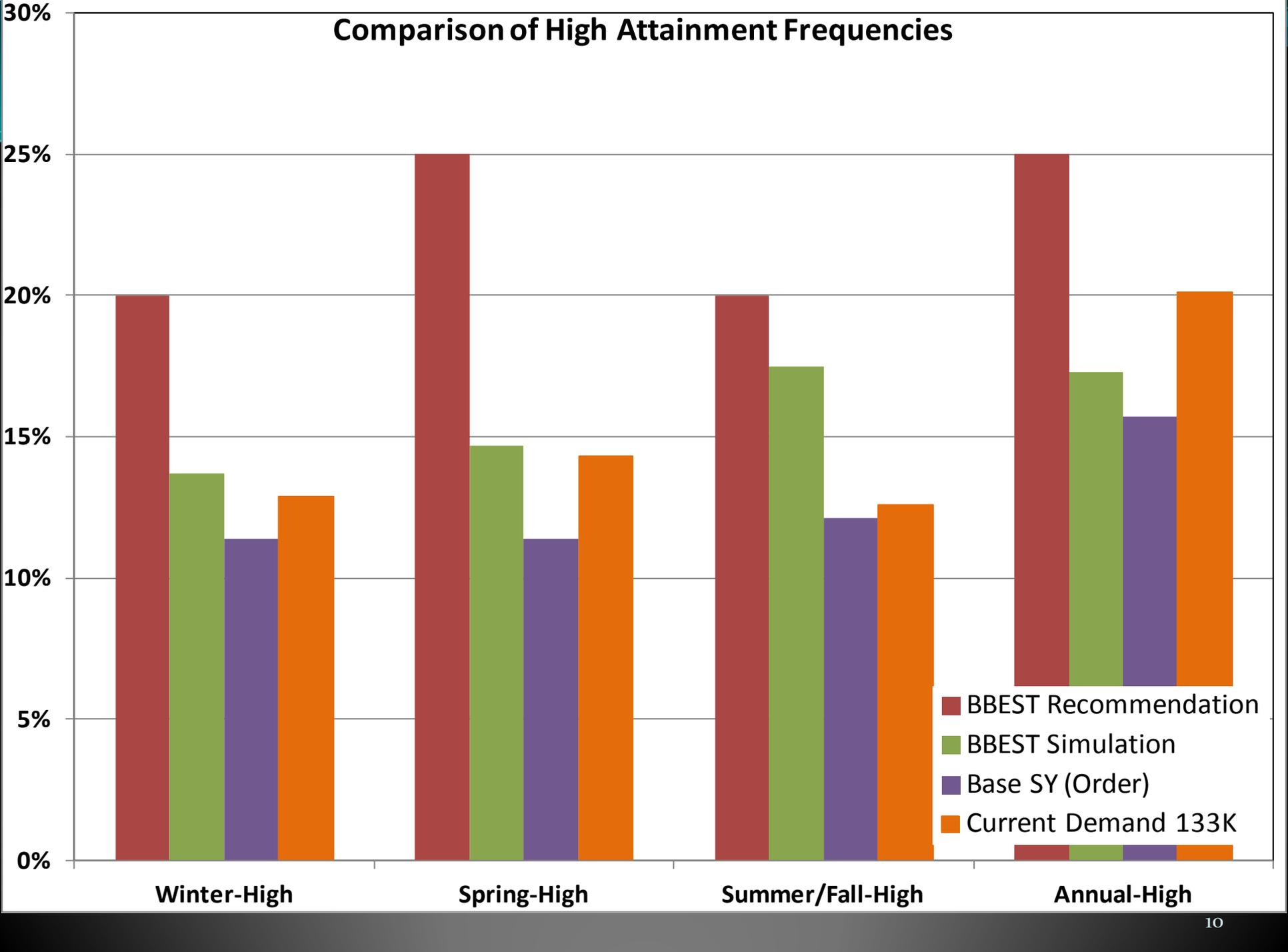
CCR/LCC/LT System Safe Yield / Demand Comparison



CCR/LCC/LT System Safe Yield - Average Annual Bay Inflow - Average Annual B&E Release

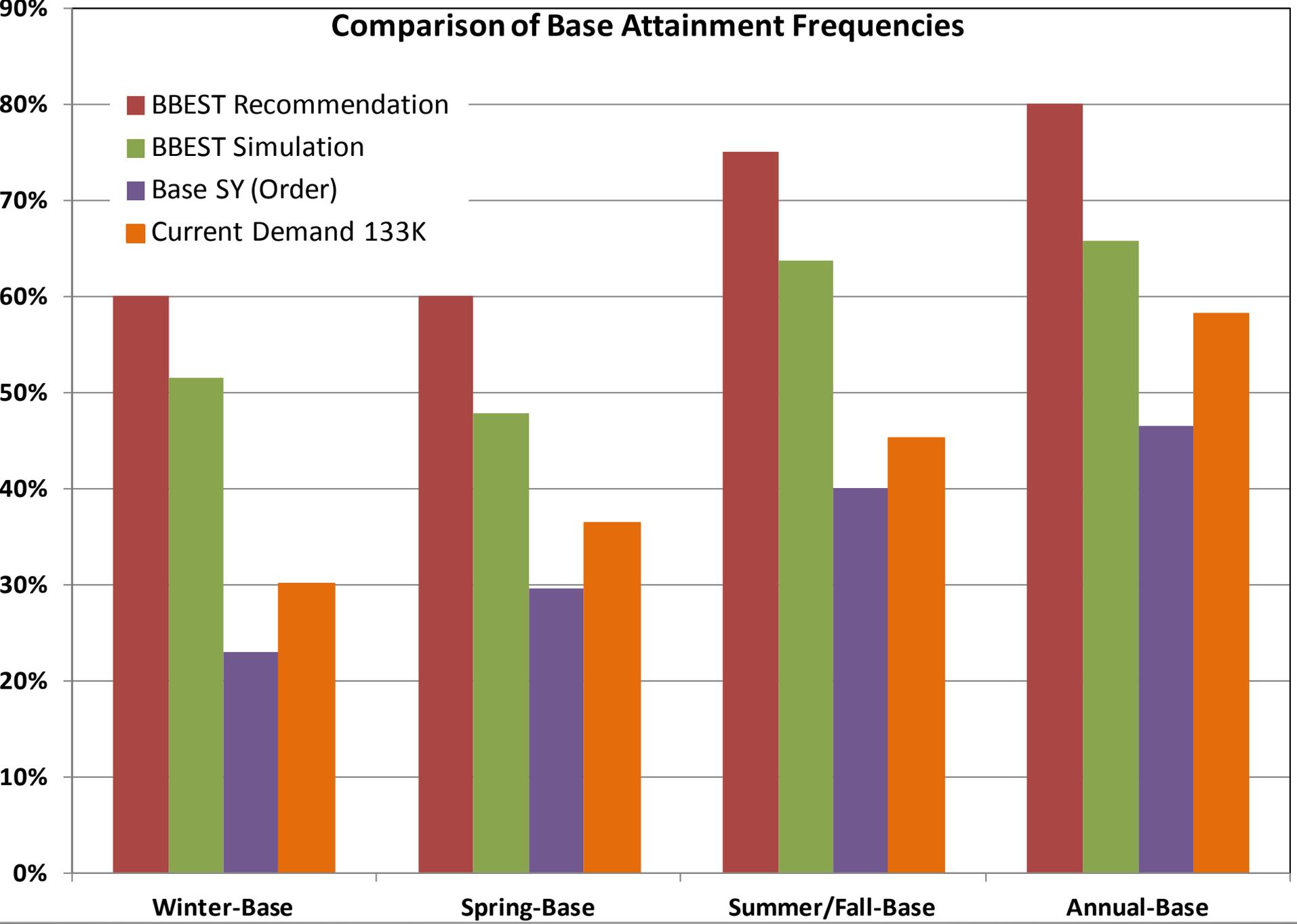


Comparison of High Attainment Frequencies

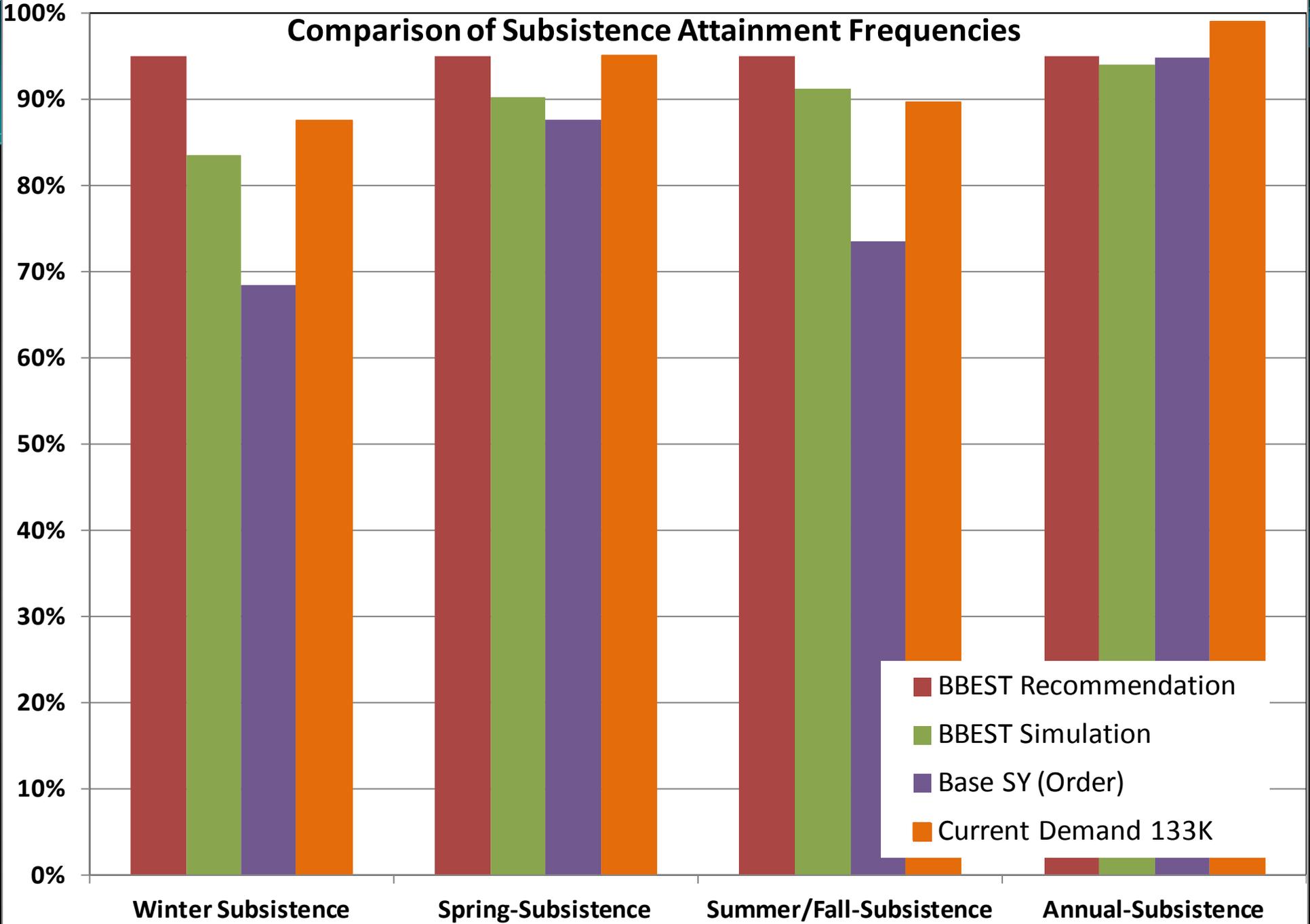


Comparison of Base Attainment Frequencies

- BBEST Recommendation
- BBEST Simulation
- Base SY (Order)
- Current Demand 133K

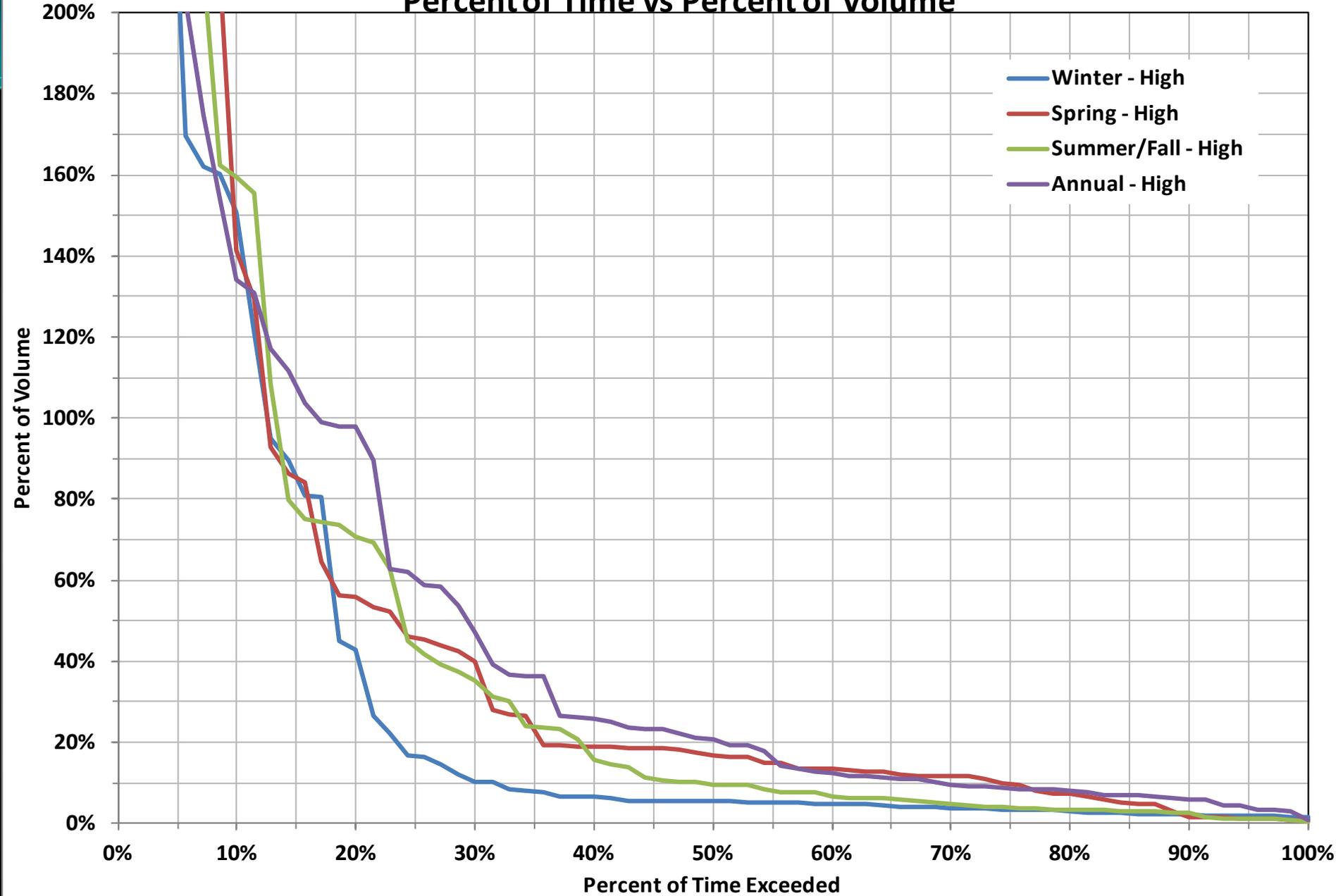


Comparison of Subsistence Attainment Frequencies



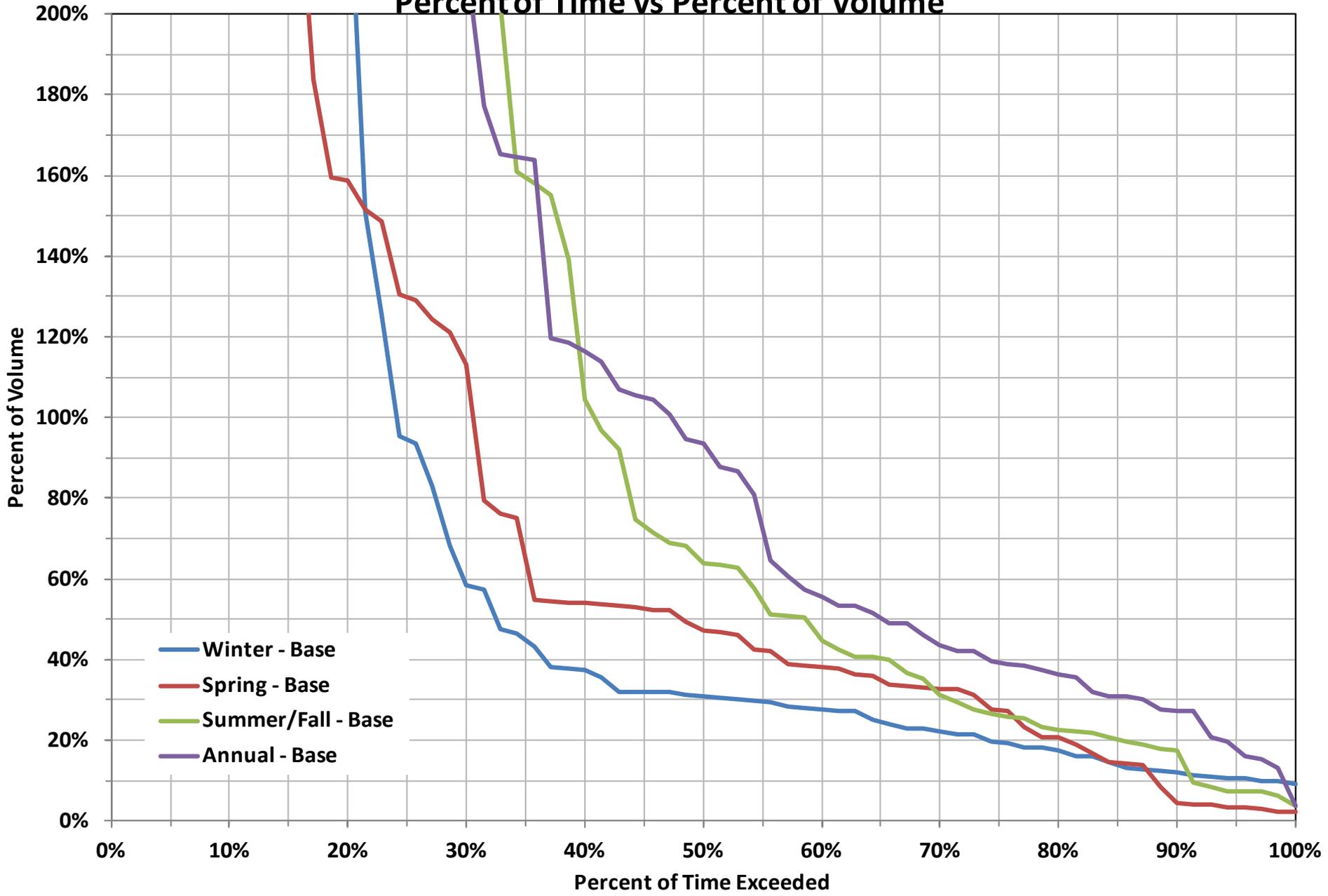
BBASC B&E High Inflow Recommendation

Percent of Time vs Percent of Volume



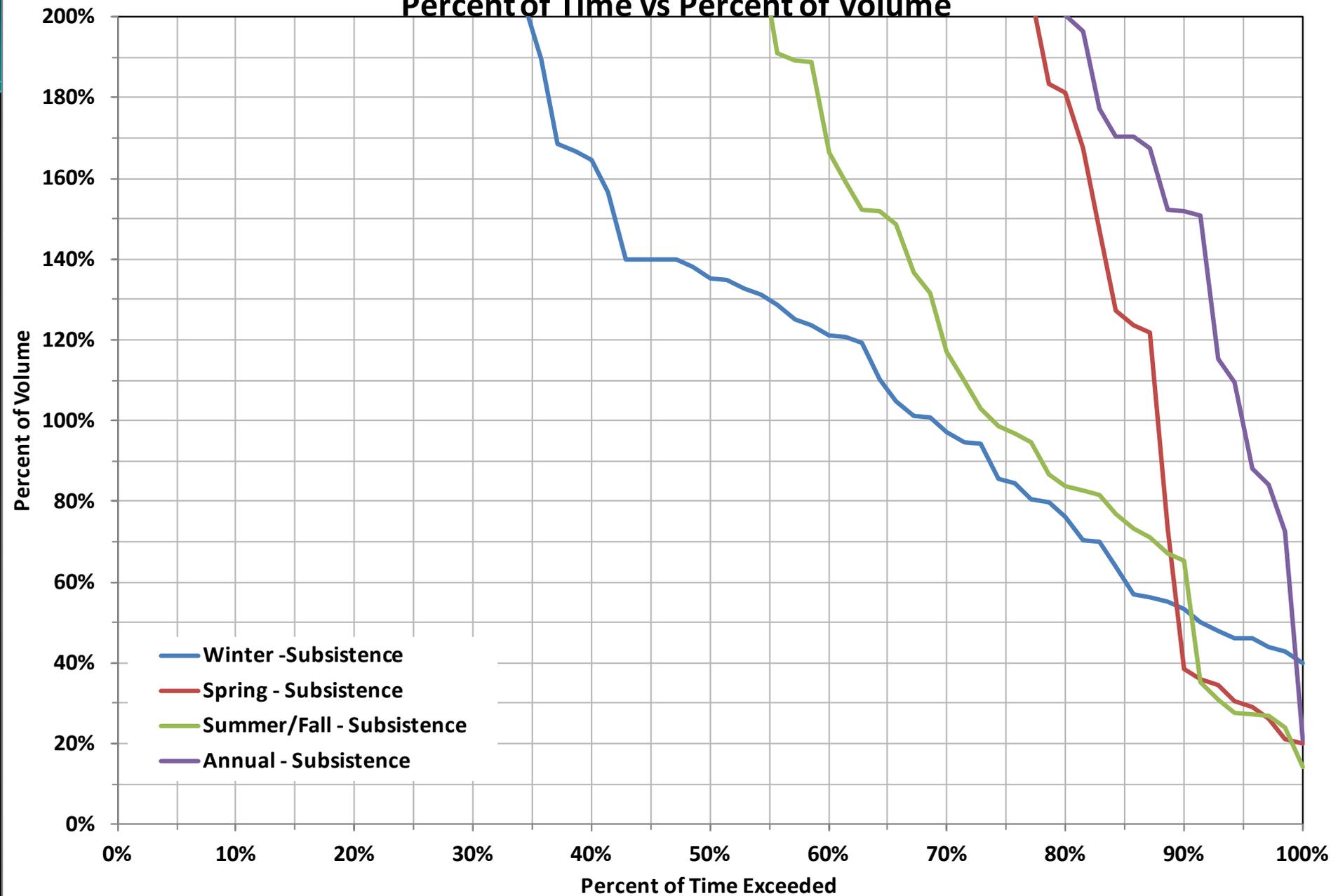
BBASC B&E Base Inflow Recommendation

Percent of Time vs Percent of Volume

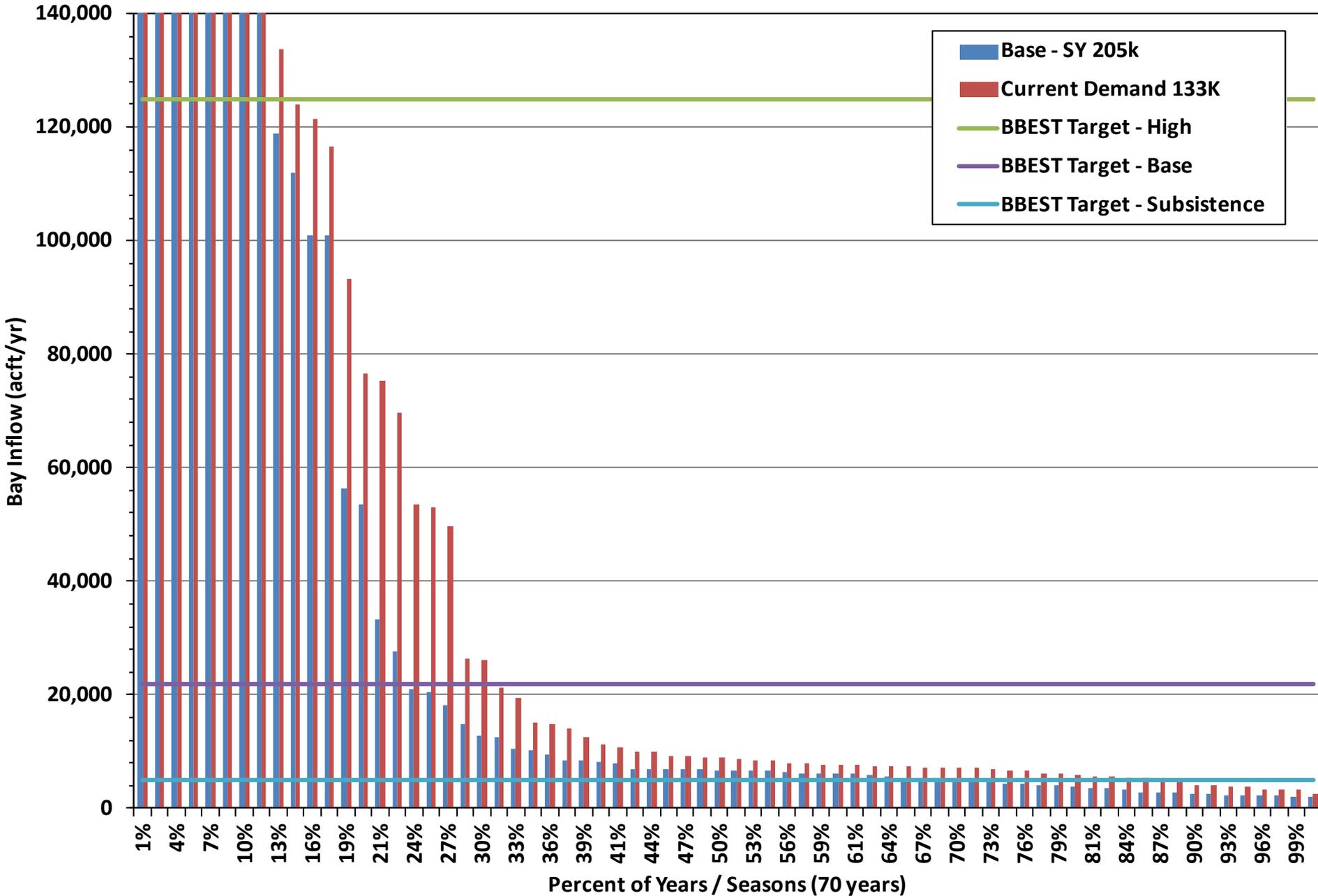


BBASC B&E Subsistence Inflow Recommendation

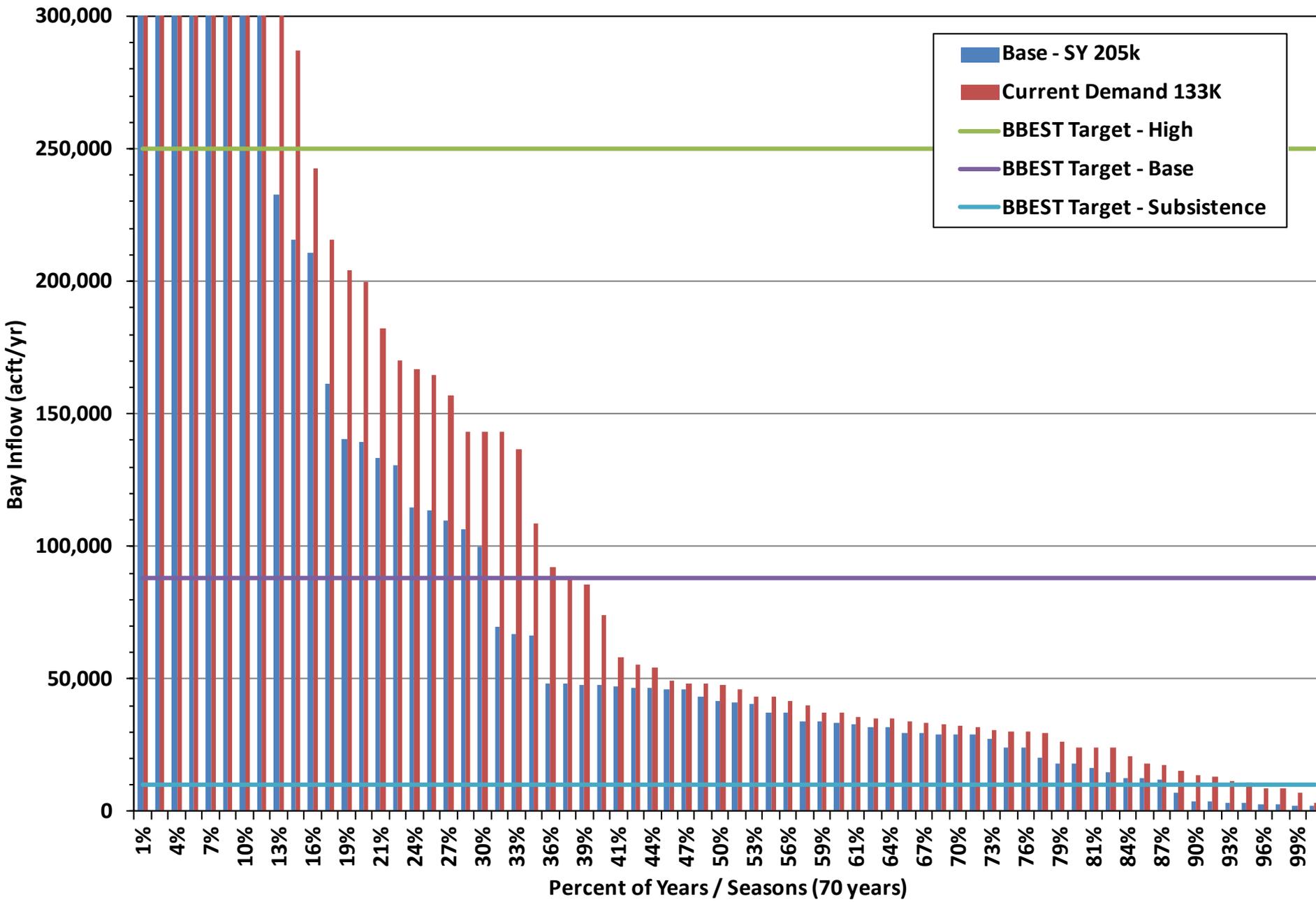
Percent of Time vs Percent of Volume



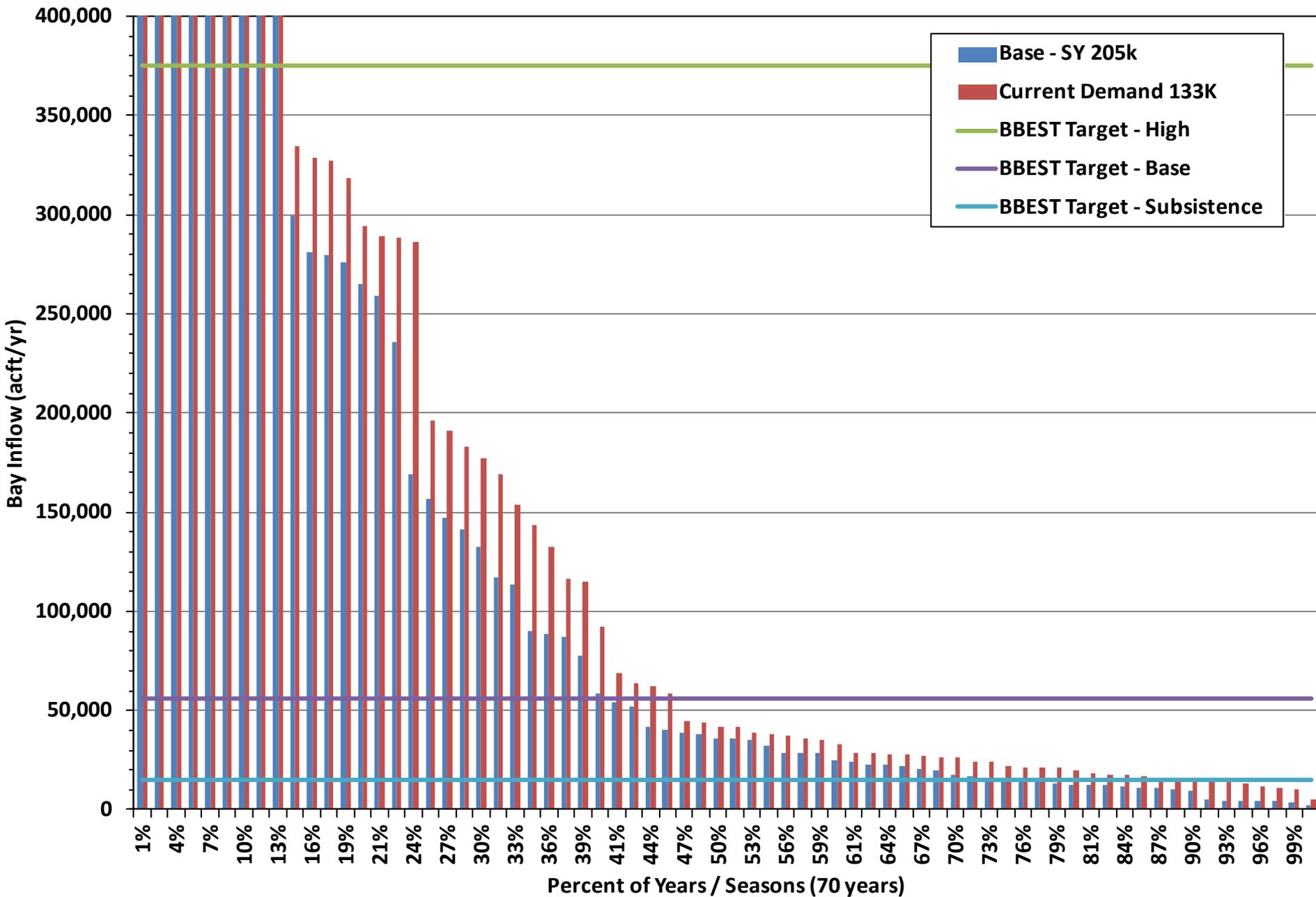
Ranked Comparison of Seasonal Bay Inflow - Winter Season



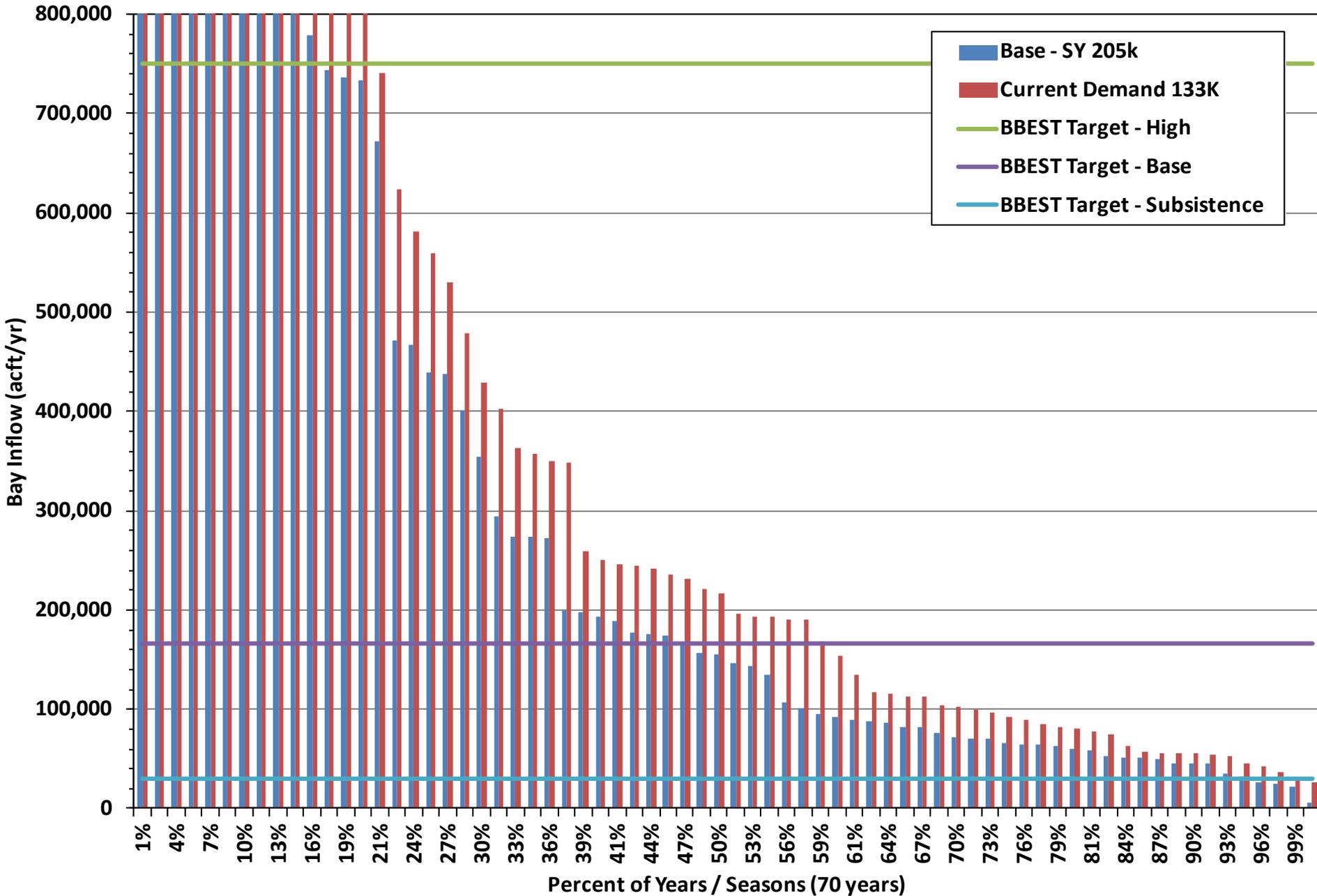
Ranked Comparison of Seasonal Bay Inflow - Spring Season



Ranked Comparison of Seasonal Bay Inflow - Summer/Fall Season



Ranked Comparison of Seasonal Bay Inflow - Annual



For BBASC Consideration

- BBASC Adopt an Estuary & Delta Environmental Flow Standard Recommendation
 - BBEST Volume Targets
 - BBASC Attainment Frequencies
 - Agreed Order Safe Yield (205K)
- NEAC review and recommendations to TCEQ for applications for new appropriations in excess of 1,000 acft/yr.

BBASC Recommendation for B&E

Condition (Target Salinity)	Nueces Bay Freshwater Inflow Regime (Attainment)			Recommendations
				Annual Total (acft)
High (10)	125,000 acft (11%)	250,000 acft (11%)	375,000 (12%)	750,000 (16%)
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	Winter = Nov - Feb	Spring = Mar - Jun	Summer/Fall = Jul - Oct	

*NEAC review and recommendations to TCEQ for applications for new appropriations in excess of 500 acft/yr.