PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
LAND USE PLANNING COMMISSION
106 HOGAN ROAD, SUITE 8
BANGOR, MAINE 04401

Memorandum

To: Interested Persons

From: Stacie R. Beyer, Chief Planner

Date: August 3, 2016

Re: Substantive Review, Carroll Removal Petition
LUPC Pre-filed Materials for the Public Hearing

LUPC staff has prepared or identified materials that may be useful to the Commission at the upcoming hearing on the Petition to Remove Carroll Plantation from the Expedited Area for Wind Energy Development. Therefore, the LUPC is pre-filing the materials for the hearing record. The specific documents are as follows:

1. Wind Energy Development Projects in Maine, a Combined List of DEP and LUPC Data. The Department of Environmental Protection data was pre-filed by that agency.
2. DEP Administrative Record for the Bowers Wind Project, 0578 First Wind Exhibit 2 03 15 2013, *Bowers Wind Project User Surveys.*
3. DEP Administrative Record for the Bowers Wind Project, 0694 PPDLW Exhibit O 04 05 2013, *Downeast Lakes User Survey*.

The two documents from the DEP administrative record for the Bowers Wind Project are user surveys conducted by First Wind and the Partnership for the Preservation of the Downeast Lakes Watershed. There is project specific information and analysis in these documents that is not pertinent to the removal petition, which is a rulemaking not an adjudicatory proceeding for a specific permit application. However, the resource use information in these surveys may be helpful to the Commission in its deliberations on the Carroll removal petition. The LUPC would also like to notify interested persons, that the Commission may enter other pertinent documents from the LUPC's or the DEP's administrative record for the Bowers Wind Project, if it is determined that additional information from those records is germane to the Commission's substantive review of the removal petition. We will post on the LUPC's webpage notice of any additional documents entered into the record, as they are identified.

Any interested persons with questions about the LUPC's pre-filed materials should contact Stacie Beyer during normal business hours by telephone at 207-941-4593 or e-mail at stacie.r.beyer@maine.gov.

Enclosures

Wind Energy Development Projects in Maine, A Combined List of DEP and LUPC Data

Agency	Development Name	Developer/Owner	Town(s) with Generating Facilities	Town(s) with Associated Facilities	Status	Capacity (MW)	Startup Date	Turbine Type	Number of Turbines	Notes
DEP & Cross-jurisdictional Projects	Mars Hill Windpower Project	First Wind	Mars Hill (Aroostook)	Mars Hill, Aroostook County	Operational	42	3/27/2007	GE 1.5MW	28	Predates WEA
	Rollins Wind Project	First Wind	Burlington, Lee, Lincoln, Winn (Penobscot)	Burlington, Lee, Lincoln, Mattawamkeag, Winn (Penobscot)	Operational	60	7/26/2011	GE 1.5MW	40	
	Record Hill Wind	Independence Wind	Roxbury (Oxford)	Roxbury (Oxford)	Operational	50.6	12/1/2011	Seimens 2.3MW	22	
	Spruce Mountain Wind	Patriot Renewables	Woodstock (Oxford)	Woodstock (Oxford)	Operational	20	12/1/2011	Gamesa 2.0MW	10	
	Saddleback Ridge Wind	Saddleback Ridge Wind, LLC (Patriot Renewables)	Carthage (Franklin)	Canton, Carthage, Dixfield (Franklin, Oxford)	Operational	33	12/1/2014	GE 2.75MW	12	
	Oakfield Wind	Evergreen Wind Power II, LLC (First Wind)	Oakfield, T4R3 WELS Twp (Aroostook)	Chester, Glenwood Plt, Linneus, Macwahoc Plt, Mattawamkeag, Molunkus Twp, North Yarmouth Academy Grant Twp, Oakfield, Reed Plt, T3R3 WELS Twp, T4R3 WELS Twp, Woodville (Aroostook, Penobscot)	Operational	148	September, 2015	Vestas 3.0MW	148	Turbine capacity in permit is 3.0MW, development website claims 148MW for 48 turbines.
	Canton Mountain Wind	Canton Mountain Wind, LLC (Patriot Renewables)	Canton (Oxford)	Canton, Dixfield (Oxford)	Permitted	22.8	Target is 2016	GE 2.85MW	8	
	Passadumkeag Windpark	Passadumkeag Windpark LLC (Noble Environmental Power LLC)	Grand Falls Twp (Penobscot)	Grand Falls Twp, Greenbush, Greenfield Twp, Summit Mountain Twp (Penobscot)	Permitted	42	Target unknown	Vestas 3.0MW	14	
	Bingham Wind Project	Blue Sky West, LLC & Blue Sky West II, LLC (First Wind)	Bingham, Kingsbury Plt, Mayfield Twp (Piscataquis, Somerset)	Abbott, Bingham, Kingsbury Plt, Parkman, Mayfield Twp (Piscataquis, Somerset)	Under Construction	186	Fall 2016	Vestas 3.0MW	62	
	Hancock Wind	ancock Wind LLC (First Win	T16 MD Twp, T22 MD Twp (Hancock)	Aurora, Osborn, T16 MD Twp, T22 MD Twp (Hancock)	Under Construction	56.1	Fall 2016	Vestas 3.3MW	17	
	Fox Islands Wind	Fox Islands Wind, LLC	Vinalhaven (Knox)	Vinalhaven (Knox)	Operational	4.5	12/1/2009	GE 1.5MW	3	Small-scale wind certification
	Pisgah Mountain Windpower	Pisgah Mountain LLC	Clifton (Penobscot)	Clifton (Penobscot)	Under Construction	9	Target unknown	Vestas 1.8MW	5	Small-scale wind certification
	Beaver Ridge Wind Project	Beaver Ridge LLC (Patriot Renewables)	Freedom (Waldo)	Freedom (Waldo)	Operational	4.5	11/1/2008	GE 1.5MW	3	Not permitted as a wind project. Stormwater permit only.
				DEP Approved Wind Energy Developments (Number Nine, not included)		678.5				
LUPC Projects	Stetson Wind Power Project	Evergreen Wind V, LLC	T8 R3 NBPP, WA; T8 R4 NBPP, WA	NA	Operating	57	1/22/2009	GE 1.5MW	38	DP4788
	Owl Mnt & Jimmy Mtn Wind Project	Stetson II Wind, LLC	T8 R4 NBPP, WA	NA	Operating	25.5	3/12/2010	GE 1.5MW	17	DP4818
	Kibby Wind Power Project (Kibby I)	TransCanada Maine Wind	Kibby Twp., FR; Skinner Twp., FR	Chain of Ponds Twp., Jim Pond Twp., Coplin Plantation, Wyman T	Operating	132	10/30/2009	Vestas V-90 3.0M	44	DP4794
	Bull Hill Wind Project	Blue Sky East, LLC	T16MD, HA	NA	Operating	34.2	11/12/2012	Vestas V-100 1.8I	19	DP4886
				LUPC Approved Wind Energy Developments		248.7				
TOTAL MW Approved Thu 06/10/2016						**927.2**				

BOWERS WIND PROJECT
USER SURVEYS

Prepared for:

First Wind
Portland, ME 04101

Prepared by:

Kleinschmidt

141 Main Street
Pittsfield, ME 04967
www.KleinschmidtUSA.com

September 2012

BOWERS WIND PROJECT
USER SURVEYS

Prepared for:

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September 2012

FIRST WIND

BOWERS WIND PROJECT USER SURVEYS

SEPTEMBER 2012

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FIRST WIND

BOWERS WIND PROJECT USER SURVEYS

SEPTEMBER 2012

1.0 INTRODUCTION

This study investigates the potential effects of the proposed Bowers Wind Project on outdoor recreational users of area resources. Three primary areas of investigation were identified to support this study. These include:

1. Recreation use. This will support an understanding of who uses these resources, where use occurs and how it occurs, and how many people participate in outdoor recreation within the study area.

2. User perceptions. Understand perceptions of the proposed project as perceived by recreational users of the resources.

3. Repeat visitation. Examine the occurrence of repeat visitation by outdoor recreationists if the project were developed.

Addressing these topics required use of intercept surveys to collect information from users of the resources. First Wind retained Kleinschmidt Associates (Kleinschmidt) to complete this study in 2012. Working out of the Pittsfield, Maine office, the study team included Marcia Phillips as the technical expert for this work.

1.1 QUALIFICATIONS OF MS. PHILLIPS

Ms. Phillips was the project manager for this study and is a resource economist specializing in studying outdoor recreational activities, with 20 years of experience. She holds a MS in Agricultural and Resource Economics from the University of Maine, Orono and is published in peer-reviewed journals. She began her career as a Research Assistant at the University of Maine, estimating the value of Maine's fish and wildlife resources. She interned with the U.S. Fish and Wildlife Service, working on the National Survey of Fishing, Hunting and Wildlife Associated Recreation, and entered consulting in 1993 working at HBRS and Hagler Bailly Consulting in Madison, Wisconsin and joined Kleinschmidt in Pittsfield, Maine in 1996.

Ms. Phillips has managed or been the technical lead on many recreation studies around lakes and reservoirs in and outside of Maine. She was the senior analyst for analysis and reporting of recreation use studies in 1996 and 1997, when she toured Sysladobsis, Junior and Scraggly lakes, as well as Pocumcus and West Grand lakes, stopping at all boat launches and campsites. This work included examination of the adequacy of recreation facilities for meeting public needs, and evaluating the effect of changing water levels on recreation resources and evaluation of recreation amenities, reporting of recreation use, and assessment of impact of changing water levels for West Grand, Pocumcus, Pug, Sysladobsis, Junior, Norway, Scraggly, Bottle Lakes in Maine. She has also conducted survey-based research on Saluda Lake in South Carolina, Lakes

Hamilton and Catherine in Arkansas, and Lake Martin in Alabama. These included surveys designed to collect information on recreational use and resource needs. Study results were used to support federal licensing of the projects and shoreline management decisions. These studies targeted boaters, anglers, public park users and other outdoor recreationists. She is currently working on a study to estimate recreational use, recreation needs, and the economic impact of recreation occurring from public and private access locations on Lakes Keowee and Jocassee in South Carolina (ongoing). This study includes survey components with public access site users, shoreline property owners, regional residents, agencies, and nongovernmental organizations. She has worked on smaller studies on the Androscoggin, Saco, Kennebec, and Presumpscott rivers in Maine as well as at other locations in North Carolina, Connecticut, Vermont, Massachusetts, and Michigan, and designed a method for estimating boater density at Grand Lake o' the Cherokees in Oklahoma. Ms. Phillips spent several years working on Lake St. Lawrence in New York, where she inventoried boating hazards, and advised the New York Power Authority on recreation management needs along the St. Lawrence River for local public parks and two state parks. She was the technical lead for the recreation section of a programmatic EIS for TVA, encompassing 35 reservoirs across 7 states. In Maine, she designed and implemented mail and telephone-based surveys to estimate the nonuse value of wildlife species endangered in Maine and federally. For this study, she compared values of Maine residents with the values held by representatives of Inland Fisheries and Wildlife, who were responsible for managing these species.

Ms. Phillips has substantial experience implementing a number of different survey types, including on-site intercept surveys, mail surveys and telephone surveys. She is currently using web-based surveys in one study in North Carolina. Ms. Phillips has surveyed a variety of populations including general public populations, shoreline property owners, and users of shoreline public recreation access sites and parks, including boaters, anglers, and general park users. Other surveyed populations include users of commercial facilities (e.g., marinas) around lakes and reservoirs, state agency personnel, and representatives of nongovernmental interest groups.

Ms. Phillips has visited the study area over time as a recreationist. In the mid-1980s, she paddled and camped through Sysladobsis and Pocumcus lakes, north through Junior Stream, and from there into Junior Lake and Bottle Lake. She has vacationed at Sysladobsis Lake several times during the past 15 years.

Most recently, on June 9, 2012, she visited the project area with Neil Kiely and Kevin Boyle. During this trip, she visited the Brookton boat launch at Baskahegan Lake. Here she viewed the Stetson Wind Farm, visible from the launch, in the same manner and perspective that respondents to the Baskahegan survey would view the wind turbines. She returned to the launch on August 2, 2012, when she trained the interviewer retained to conduct surveys at the launch. On the June 9, 2012 visit, she also visited the boat launch on the southern shore of Pleasant Lake, from which the proposed Bowers Wind Farm would be visible, and looked at a photographic simulation of the wind farm, in much the same manner that a survey respondent would view it. From Pleasant Lake, she traveled to Junior Lake, and toured Junior and Scraggly lakes by boat with Kevin Boyle and Neil Kiely. On both lakes, she observed the view towards where the Bowers project would be developed, and viewed the photographic simulations similar to how survey respondents would view them from the lake.

2.0 STUDY AREA DESCRIPTION

The study area for the Bowers Wind Project encompasses an 8-mile radius around the proposed turbine locations. The area is primarily rural in nature, sparsely populated with small communities (Figure 1). The area's history is one of working commercial forests and related forest products industry. It is located at the northern edge of the Downeast Lakes Region, which is known for its recreational opportunities. The 8-mile radius is bisected by the east/west Route 6, which comprises the major transportation route from Lincoln to Topsfield where it terminates at US Route 1.

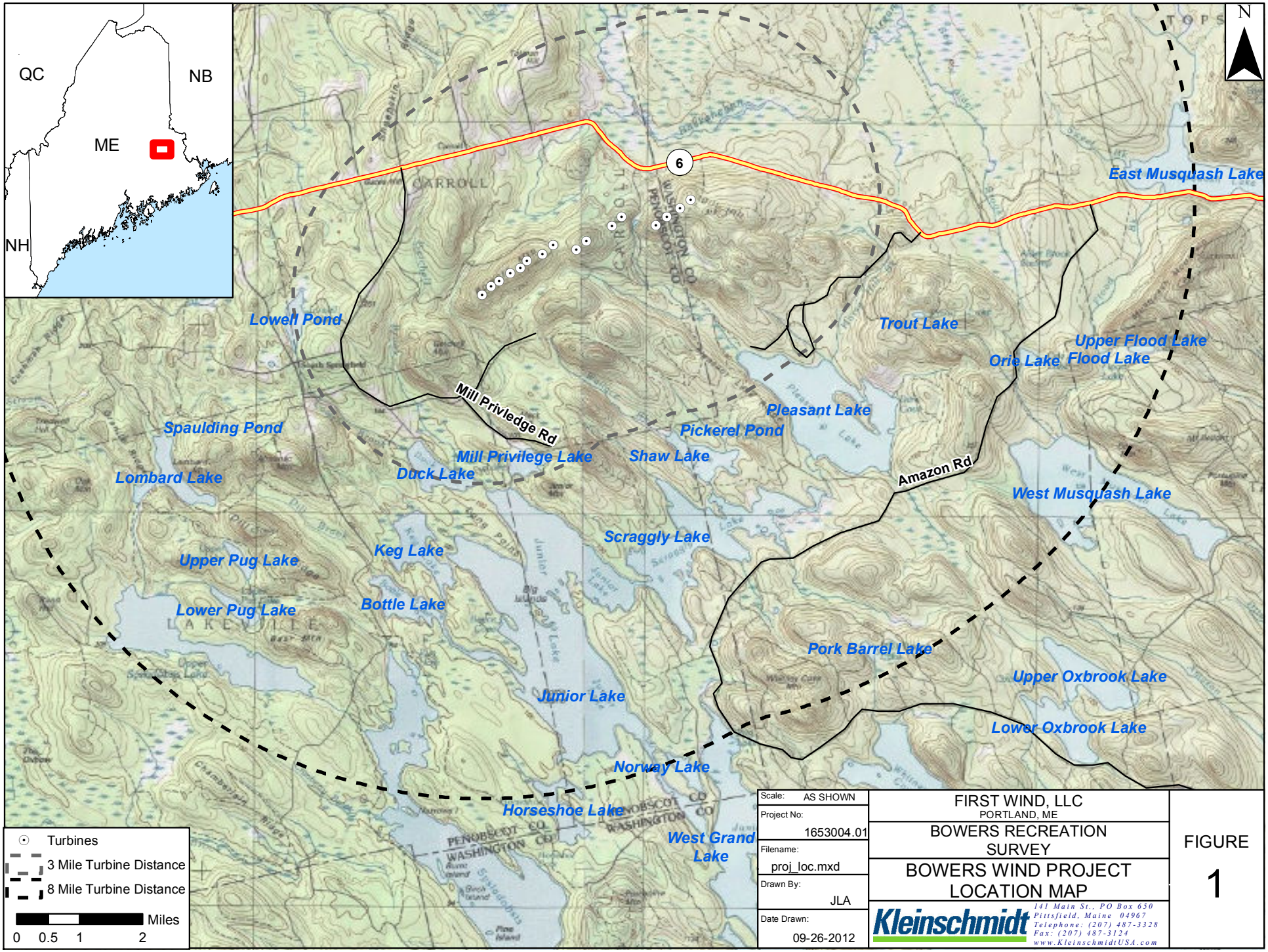
There are 14 lakes within the same radius that were identified as scenic resources of state or national significance pursuant to 35-A M.R.S.A. § 3451(9). These include:

1. Bottle Lake
2. Duck Lake
3. Horseshoe Lake
4. Junior Lake
5. Keg Lake
6. Lombard Lake
7. Norway Lake
8. Pleasant Lake
9. Scraggly Lake
10. Shaw Lake
11. Sysladobsis Lake
12. Upper Sysladobsis Lake
13. West Musquash Lake
14. Pug Lake

The lakes occupy an area nestled between working forests and conservation lands. Access roads to the lakes are used for forest operations, and logging trucks and operations can be heard from within the study area. Located within the headwaters of the West Branch of the St. Croix River, they range in size from 130 acres (Norway Lake) to 5,430 acres (Sysladobsis Lake) (www.lakesofmaine.org).

Recreational activities in the area encompass a variety of consumptive and nonconsumptive, active and passive, traditional and nontraditional activities, and many combinations thereof. While recreationists tend to be more heavily weighted towards consumptive activities (e.g., hunters and anglers), they still tend to boat or camp, even if it is not their primary activity (personal conversation with Paul Farrington, MDIFW Game Warden, May 16, 2012). Outside of winter and mud season (often early spring), a network of logging roads allows vehicular access to forests and lakes for individuals seeking recreational opportunities. While some access may require 4-wheel drive vehicles, there is opportunity for use of larger 5th-wheel campers, as well. The Maine Department of Conservation's 2012 map of ATV trails shows trails extending throughout the lakes to the south of Route 6. During the winter months, local snowmobile trails and Maine's Interconnected Snowmobile Trail System (ITS) provide access to lakes popular with ice fishermen. The presence of multiple ATV and snowmobile clubs in the project vicinity attest to the popularity of these activities.

This report focuses on Junior, Scraggly, Pleasant and Shaw lakes. These lakes were called out and given special attention by the Land Use Regulation Commission (LURC) in its April 17, 2012 draft decision for denial of a permit, citing review criteria for assessing scenic impacts as central to its decision. All four lakes are defined as Great Ponds within the State of Maine (Me. Rev. Stat. Ann. 17, §3860). Pleasant Lake is rated as "outstanding" for scenic quality (Maine Department of Conservation, 1987). Shaw, Junior, and Scraggly lakes are rated as "significant" for scenic quality (id.).


QC
NB
ME
NH
N
6
East Musquash Lake
Lowell Pond
Trout Lake
Upper Flood Lake
Orie Lake
Flood Lake
Mill Privledge Rd
Pleasant Lake
Spaulding Pond
Pickerel Pond
Mill Privilege Lake
Shaw Lake
Duck Lake
Lombard Lake
Amazon Rd
West Musquash Lake
Scraggly Lake
Keg Lake
Upper Pug Lake
Lower Pug Lake
Bottle Lake
Pork Barrel Lake
Upper Oxbrook Lake
Junior Lake
Lower Oxbrook Lake
Norway Lake
Horseshoe Lake
West Grand Lake
CARROLL
PENOBSCOT CO
WASHINGTON CO
Turbines
3 Mile Turbine Distance
8 Mile Turbine Distance
Miles
0 0.5 1 2
Scale: AS SHOWN
Project No: 1653004.01
Filename: proj_loc.mxd
Drawn By: JLA
Date Drawn: 09-26-2012
FIRST WIND, LLC
PORTLAND, ME
BOWERS RECREATION SURVEY
BOWERS WIND PROJECT LOCATION MAP
FIGURE 1
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2.1 LAKE DESCRIPTIONS

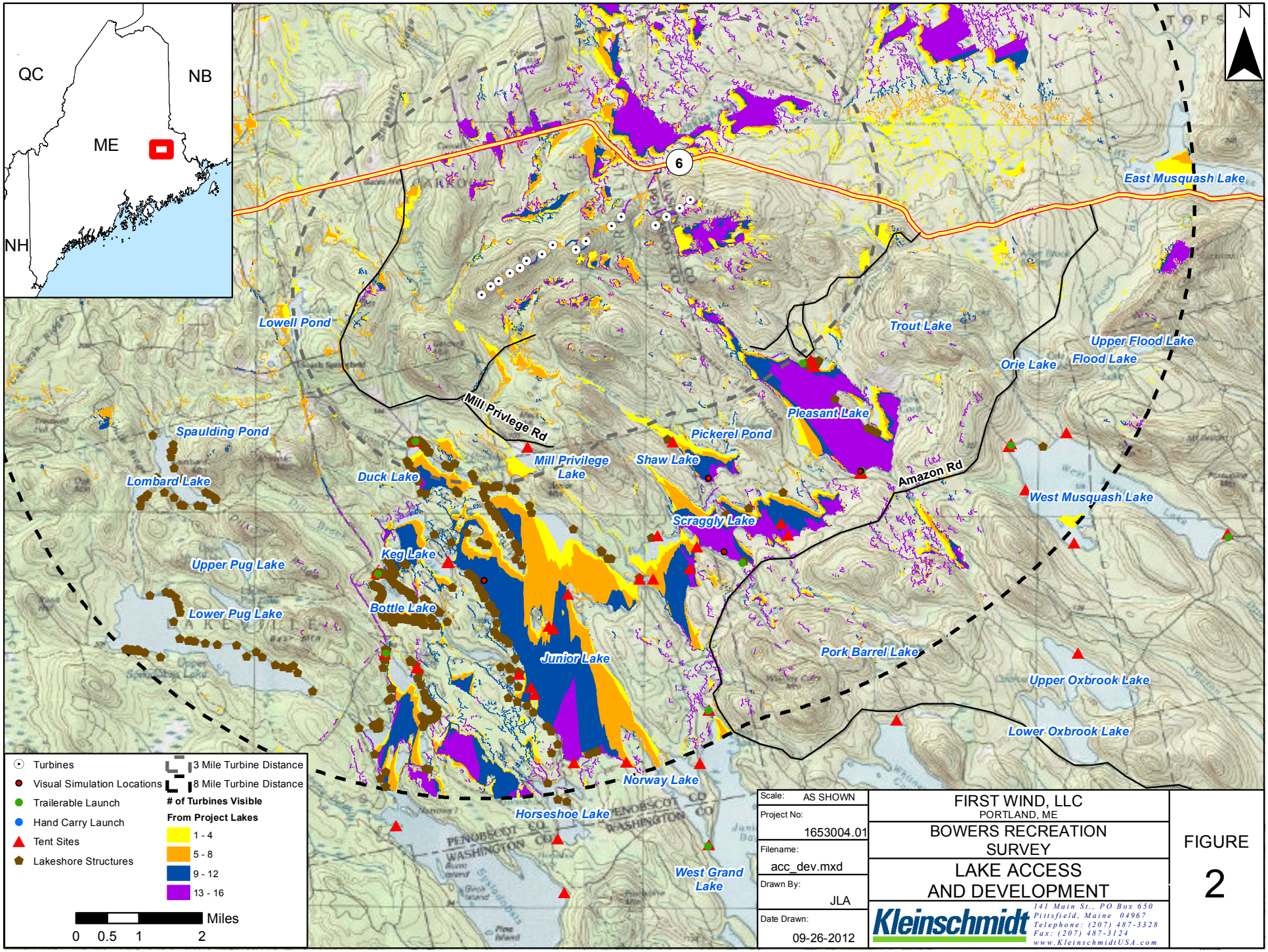
Pleasant and Shaw lakes are well defined geographically. In contrast, Scraggly and Junior lakes are part of a complex system of lakes all connected to one another. Scraggly and Junior lakes are connected by a narrow passage, which was used to mark the border between the two lakes for this study. Junior Lake also is connected to Bottle Lake Stream, Horseshoe Lake and Junior Stream. This study included the lake proper and Junior Stream. Bottle Lake Stream and Horseshoe Lake are outside the study area.

There are no public landings on Junior Lake, although MDIFW is interested in establishing one (personal conversation with Gordon Kramer, MDIFW Fisheries Biologist for Enfield Region F, March 29, 2012). Typically, the lake is accessed by water from Scraggly Lake, Bottle Lake or West Grand Lake via Junior Stream. Junior is the most developed of the four lakes with numerous private camps around the shoreline, primarily on the western and northern shores (Figure 2). For commercial development, there is a bed and breakfast, and Worster's Wild Fox Cabins and Campground, which offers cabin rentals. The shoreline of Junior Lake is shown in Woodland Pulp's relicensing documents as primarily being conservation land or private development, with smaller portions identified as tribal lands and commercial development (Kleinschmidt, 2009). Several of the islands in Junior Lake are owned by Woodland Pulp and are open to the public for camping.

Hasty Cove boat landing on Scraggly Lake is owned and operated by Woodland Pulp. Scraggly Lake supports few private camps, but most of the immediate shoreline is undeveloped (LandWorks, 2011). The shoreline of Scraggly Lake is held primarily as conservation land or is tribal lands (Kleinschmidt, 2009). Several of the islands are part of the hydro project and owned by Woodland Pulp.

There are two landings on Pleasant Lake, one on the north shore and one on the south shore. Maine Wilderness Camps is a privately owned lodging business offering cabins and campsites for rental. The north shore landing is located here. The south shore landing is also operated by Maine Wilderness Camps. It supports a campground as well. Both sites accommodate a range of camping styles, from small tents to large 5th-wheel trailers. With the exception of these campgrounds, the Pleasant Lake shoreline is wooded and undeveloped.

Shaw Lake is the smallest and least developed of the four lakes. Boat access is informal, available at a road culvert where small boats can be launched by hand.



Lakeshore structures, launches, and tent sites were developed by Stantec.
Turbine visibility (developed by LandWorks) shows topography and vegetation/from the hub.

2.2 LAKE USE

Little published information is available that speaks to quantitative recreational use of the study area, and Maine's state agencies do not provide comprehensive estimates of recreational use occurring within the study area. Because of this, we rely on conversations with regional fisheries and wildlife biologists and game wardens to provide insights into typical recreational uses.

The area is used for recreation in all four seasons and around the clock (personal conversation with Paul Farrington, MDIFW Game Warden, May 16, 2012). Weekends are typically busier than weekdays for recreation, with Fridays and Saturdays generally being the busiest days of the week (personal conversation with Paul Farrington, MDIFW Game Warden, May 16, 2012). Guided traffic, however, does not appear to change by day type until the end of the summer, possibly due to a change in clientele from avid anglers to family groups (personal conversation, Brad Richards, MDIFW Game Warden, May 15, 2012). Camping occurs on islands and at other campsites during the summer and people camp in their ice shacks in the winter (personal conversation with Paul Farrington, MDIFW Game Warden, May 16, 2012). Night fishing is permitted for both open water and ice fishing. Boaters make late night tours around the lakes before turning in. Guided hunts are popular, mostly for moose and bear, but deer, rabbit and grouse hunting are also popular, and duck hunting is gaining in popularity. A large number of hunters come from out-of-state (personal conversation, Brad Richards, MDIFW Game Warden, May 15, 2012).

The lakes are known for both warm and coldwater fishing. During open water season, anglers typically troll for land-locked salmon and lake trout after ice-out (personal conversation with Gordon Kramer, MDIFW Fisheries Biologist for Enfield Region F, March 29, 2012). Some people may troll for bass and perch in cold water. Within the area, avid anglers will fish all day long from ice-out until July 1 (personal conversation Brad Richards, MDIFW Game Warden, May 15, 2012). During the winter months, the lakes are used for ice fishing, snowmobiling, and other winter sports.

With respect to fisheries management, MDIFW generally focuses management effort on locations popular with anglers, and therefore receiving higher levels of fishing pressure, and areas where salmonids are stocked (personal conversation, Gorden Kramer, MDIFW Fisheries Biologist for Enfield Region F, August 27, 2012). In May 2012, MDIFW stocked land locked salmon in Junior, Upper Sysladobsis, West Musquash, and Pleasant lakes, and brook trout were stocked in Scraggly and Pleasant. Pleasant Lake supports populations of salmon, wild lake trout, and white fish. Shaw Lake is managed as a warm water lake, and white perch are reportedly large there, but the lake does not see much angler effort due to difficulty of access, so the lake does not receive as much attention in terms of fisheries management, as Junior and Pleasant lakes.

The Project is located approximately 17 miles north of Grand Lake Stream, which is a hub for Registered Maine Guides and commercially operated sporting camps. A few of the camps are within or close to the 8-mile circle around the Bowers project (Maine Wilderness Camps, Worster's Wild Fox Cabins, Spruce Lodge Campground and Grand Lake Wilderness Retreat) but the majority of the commercial camps are located outside that distance. As discussed in Sections 3 and 4, study efforts were designed in part to obtain data on use of these lakes by this group.

A survey of commercial camp owners/operators thought to operate within the boundaries of the West Branch Hydro Project was completed in 1997 as part of the project relicensing effort (Kleinschmidt, 1997). A total of 11 camps were identified; surveys were completed with 6 of the owners. Lakes reported used by their patrons included those within the West Branch Project (Junior, Scraggly, Sysladobsis, Bottle, Norway, West Grand and Pocumcus Lakes) as well as Duck and Musquash Lakes, among others. Bottle Lake, Duck Lake and Musquash Lakes were mentioned by one camp operator as being used by his patrons. Junior Lake was reported by 4 operators, Scraggly by 3 operators, and Sysladobsis by 5 operators. Results indicate limited use of these lakes by camp patrons.

2.3 WATER LEVELS

Junior, Scraggly, Bottle, Keg, Norway, Horseshoe, Sysladobsis, Pocumcus, West Grand, and Pug lakes are part of Woodland Pulp's West Branch Project, a hydro project licensed with the Federal Energy Regulatory Commission as Project No. 2618 (Figure 3). Waters discharged from the dams and dike within the Project flow into Grand Lake Stream and Grand Lake Brook. Water levels in these lakes are controlled by Woodland Pulp (Licensee), in accordance with its federal license requirements. From May through mid-October, water levels are held to a "preferred summer minimum" (Kleinschmidt, 2009). From mid-September through mid-October, water levels in West Grand Lake are reduced approximately 4 feet in anticipation of fall rains. The Licensee attempts to maintain the impoundment level through April 1. Studies conducted in 1996 and 1997 showed that the usability of some trailered launches may be affected under low water conditions, but this occurs outside the traditional summer recreation season from Memorial Day through Labor Day. These studies did not examine navigability of Junior Stream, or passage between Junior and Scraggly lakes during the drawdown. The local game warden reports he has never known the water to be so low that small boats, such as canoes, kayaks, Grand Lakers or 14-foot boats could not make it through Junior Stream, but larger boats (e.g., pontoon boats, bass boats, V-hull boats) could be blocked from passage due to low water levels (personal conversation with Paul Farrington, MDIFW Game Warden, June 18, 2012).

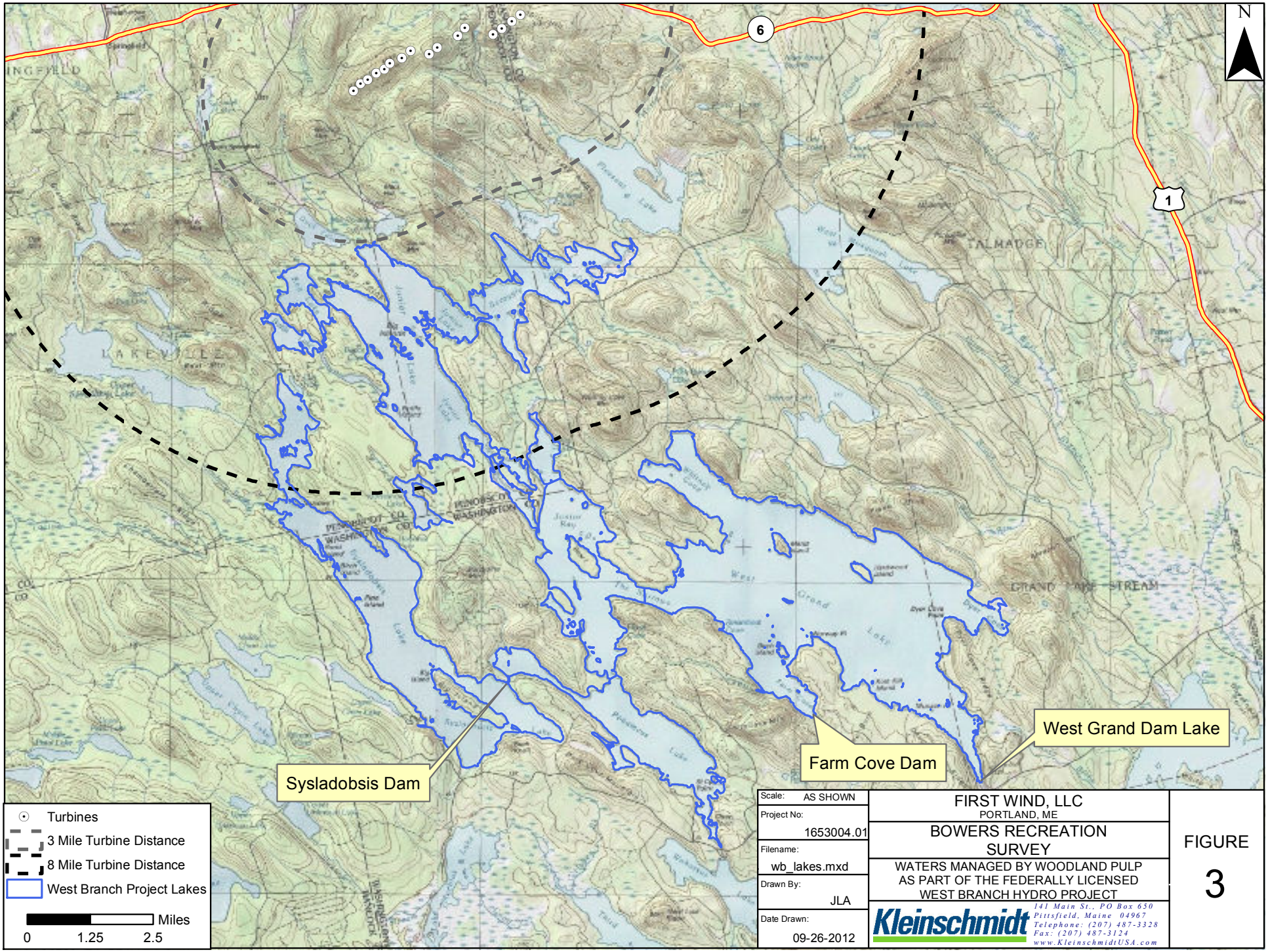

N
6
1
Sysladobsis Dam
Farm Cove Dam
West Grand Dam Lake
Turbines
3 Mile Turbine Distance
8 Mile Turbine Distance
West Branch Project Lakes
Miles
0
1.25
2.5
Scale: AS SHOWN
Project No: 1653004.01
Filename: wb_lakes.mxd
Drawn By: JLA
Date Drawn: 09-26-2012
FIRST WIND, LLC
PORTLAND, ME
BOWERS RECREATION SURVEY
WATERS MANAGED BY WOODLAND PULP AS PART OF THE FEDERALLY LICENSED WEST BRANCH HYDRO PROJECT
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FIGURE
3

3.0 OBSERVATIONS OF RECREATIONAL USE

Junior Stream is a shallow channel that connects Junior Lake to Junior Bay of West Grand Lake. It represents one means of accessing Junior Lake, which has no public access, and is the only water access point connecting West Grand Lake to Junior Lake. This section presents the boat count process and discusses results.

3.1 METHODS

Boaters using Junior Stream to travel between Junior and West Grand lakes were counted in 2011 and 2012.

2011 BOAT COUNTS

The process followed for the 2011 counts, completed by Stantec Consulting Services, Inc., are described in a letter between Joy Prescott (Stantec) and Neil Kiely (Champlain Wind, LLC) dated July 18, 2011. Those methods are summarized here.

Boat counts were conducted on 11 days, from July 4 through July 15, for approximately 12 to 15 hours per day, from pre-dawn to approximately 8:30 pm each day. The observer was stationed at the inlet to Junior Bay, with clear views of both water bodies. All boats traveling within Junior Stream were recorded. Information collected included observation time, boat type, number of people per boat, and potential guided trip.

2012 BOAT COUNTS

Additional boat counts were completed in 2012 between May 25 and August 11. Counts were conducted on 27 of the 78 days available, or 35 percent of the days, double the number of days counted in 2011 (Table 1).

This sample of days was selected to cover the early summer recreation season for anglers and other recreationists, including boaters who are not engaging in fishing, as well as use occurring commercially via use of guide services. With respect to the latter, testimony provided in Rebuttal to Comments on Procedural Order #9 (submitted on July 27, 2011 in DP 4889 pages 20-22), indicates that May and June are generally the busiest months for them.[1]

[1] The same testimony allows that fishing in Grand Lake Stream is always slow in July. While July is a month included in this study, Grand Lake Stream is outside of the study area.

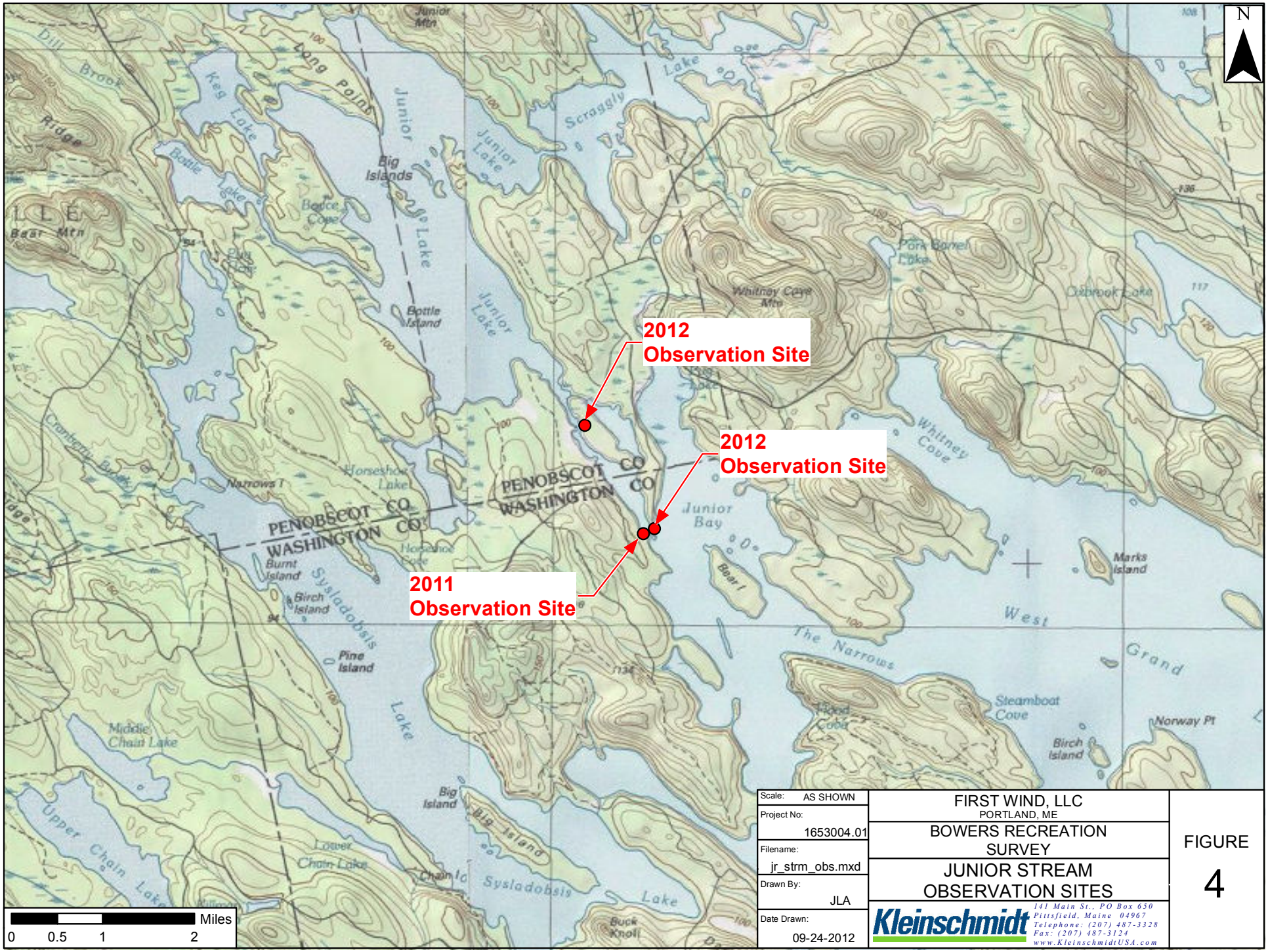
TABLE 1
NUMBER OF DAYS FOR JUNIOR STREAM BOAT COUNTS
MAY 25 THROUGH AUGUST 11, 2012

	TOTAL AVAILABLE			SAMPLE		
	WEEK DAYS	WEEKEND DAYS	TOTAL	WEEK DAYS	WEEKEND DAYS	TOTAL
MAY	5	2	7	4	2	6
JUNE	21	9	30	10	4	14
JULY	22	9	31	3	2	5
AUGUST	8	2	10	2	0	2
	56	22	78	19	8	27

Initially boat counters were positioned near the southern end of Junior Stream. They relocated to the northern end after the site where they had been staying became unavailable.[2] Both locations offered clear views of the stream channel (Figure 4).

Similar to the 2011 effort, all boats traveling within Junior Stream were recorded. Information collected included observation time, boat type, number of people per boat, potential guided trip, and previously documented boat.

[2] The original observation point had, at one time, been a campsite available for public use under the conditions of the West Branch Hydro Project relicensing agreement. The property has since changed hands.



Scale:	AS SHOWN
Project No:	1653004.01
Filename:	jr_strm_obs.mxd
Drawn By:	JLA
Date Drawn:	09-24-2012

FIRST WIND, LLC
PORTLAND, ME

BOWERS RECREATION SURVEY

JUNIOR STREAM OBSERVATION SITES

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FIGURE
4

3.2 RESULTS

Table 2 presents summary results from both the 2011 and 2012 boat counts. According to the results of the 2011 boat counts conducted by Stantec, boats were observed traveling through Junior Stream on 82% of the study days (9 out of 11 days). In total, 96 people and 39 boats were counted. On average, 9 people and 4 boats were observed per day. During 2012, boats were observed on Junior Stream on 74% of the study days, and a total of 206 people and 90 boats were counted passing between Junior Lake and Junior Bay (or West Grand Lake). On average, 8 people and 3 boats per day were observed which is similar to the 2011 results. In both 2011 and 2012, almost all (82%) boats observed, were motor boats. Grand Lakers and freighter canoes are both expected to be used by guides. In 2011, only one Grand Laker and no freighter canoes were observed. In 2012, Grand Lakers and freighter canoes accounted for 9% of observations. No boats with logos or other features that would identify the party as a guided trip were observed. The interaction between one boat operator and others in the boat led the staff counting boats to believe it could have been a guided trip, as the operator appeared to provide direction, advice and guidance to others in the boat.

The low number of canoes and kayaks observed traveling through Junior Stream (15% in 2011 and 9% in 2012) indicates little use of the canoe trails described by Wilson and Hayes (2005). The five canoes observed in 2012 were all in one party, and were observed traveling in one direction (they did not return through Junior Stream during the observation period). All kayaks observed traveled in both directions, indicating they were not participating in a one-way trip on a canoe trail. In places, this is big water and the fetch allows ample opportunity for wind-swept waves, which can be difficult to navigate for novice paddlers or canoes in general, particularly when loaded with gear.

TABLE 2
SUMMARY RESULTS OF 2011 AND 2012 JUNIOR STREAM BOAT COUNTS

	YEAR			
	2011		2012	
OBSERVATION CHARACTERISTICS				
NO. DAYS	11		27	
AVERAGE HOURS/DAY	14		13	
WEEKDAYS	9		19	
WEEKEND DAYS	2		8	
PEOPLE				
TOTAL OBSERVED	96		206	
AVERAGE PER BOAT	2		2	
AVERAGE PER DAY	9		8	
BOATS				
TOTAL OBSERVED	39		90	
AVERAGE PER DAY	4		3	
BOAT TYPE:	NUMBER	PERCENT	NUMBER	PERCENT
MOTOR	32	82%	74	82%
CANOE	6	15%	5	6%
KAYAK	0	0%	3	3%
GRAND LAKER	1	3%	7	8%
FREIGHTER CANOE	0	0%	1	1%
TOTAL	39	100%	90	100%

Source of 2011 data: Stantec, 2011.

4.0 SURVEY RESEARCH

4.1 SURVEY DESIGN

Interviews were designed to be completed with individuals recreating on Junior, Scraggly, Pleasant and Shaw lakes during the summer of 2012, to collect their opinions on the proposed Bowers Project. Questions were similar to previous surveys implemented across Maine, so that regulators may observe similarities and/or differences between the proposed project and others that have been undertaken in Maine. The survey was pretested and refined on the project team. A minor correction was made after the first weekend in the field to facilitate reporting of the number of trips per year to the area. Information collected for each topic area is identified below. A copy of the questionnaire is provided in Attachment A.

Respondent characteristics

- Residency
- Age group
- Home/camp ownership/rental on lakes
- Holding Registered Maine Guide licenses

Trip characteristics

- Whether this is the first trip to the lake
- Recreation activities, night use
- Primary reason for visiting the lake
- Using services of Registered Maine Guide
- Group size (interviewer observation)

Quality of experience

- Overall quality of experience at lake
- Effect of wind farm on quality of experience

Scenic Values

- Places in Maine with high and low scenic qualities
- Rating of current view
- Rating of simulated view
- Effect of wind farm on likelihood to return to lake in the future

Repeat visitation

- Likelihood to return
- Effect of wind farm on likelihood to return
- Effect of wind farm on enjoyment
- Importance of wind power development for Maine

A 7-point Likert-type scale was used for all ratings. Information on respondent and trip characteristics was collected to aid our understanding of who uses the lakes and how.

4.2 SAMPLE

The sampling plan for surveys accommodated both temporal and geographic components. It included consideration of day type (weekday, weekend, and holidays) and location (lake). Interviews occurred on 12 days of the 78 available days between May 25 and August 11, 2012 (Table 3). The schedule included Memorial Day weekend and the weekend after July 4, which fell on a Wednesday in 2012. All interviews were conducted on Fridays and Saturdays in order to capture parties that might be concluding weeklong vacations while also capturing weekends, which, in our experience conducting recreational surveys, typically see the most activity, compared to weekdays. This period also covers part of May and the month of June, when fishing guides are most active in the study area (Rebuttal to Comments on Procedural Order #9, submitted on July 27, 2011 in DP 4889 pages 20-22).

TABLE 3
SAMPLE FRAME FOR INTERCEPT SURVEYS
MAY 25 THROUGH AUGUST 11, 2012

	TOTAL AVAILABLE			SAMPLE		
	WEEK DAYS	WEEKEND DAYS	TOTAL	WEEK DAYS	WEEKEND DAYS	TOTAL
MAY	5	2	7	1	1	2
JUNE	21	9	30	2	2	4
JULY	22	9	31	2	2	4
AUGUST	8	2	10	1	1	2
	56	22	78	6	6	12

Collectively, the four lakes comprise too large an area to survey entirely within a single day. Based on the approximate day length computed for June, July and August in Lincoln ME, we assumed a 15-hour workday for the study period (http://www.sunrisesunset.com/). Days were divided into two 6-hour periods, an AM period—6:00 AM to 12:00 PM—and a PM period—1:00 PM and 7:00 PM, and two lakes were sampled each day, one during the AM period and one during the PM period. The remainder of the workday was reserved for mobilization and demobilization. The time between 12:00 PM and 1:00 PM was used to transfer between lakes, which was necessary for the Group 2 lakes, described below. Transfer time between Scraggly and Junior lakes was negligible.

Lakes were grouped into two pairs. Group 1 included Scraggly and Junior lakes, and Group 2 included Pleasant and Shaw lakes. Lake sampling rotated over the summer such that each lake was sampled during both day types and both periods, and all four lakes were sampled over each two-day period.

After monitoring two full periods at Shaw Lake and finding no people, monitoring at this location was cut back to focus greater effort at the remaining three lakes where the probability of obtaining interviews was higher. This resulted in a reduced monitoring effort at Shaw Lake during the third visit (3 hours), when again, no people were observed. Monitoring at Shaw Lake was completely suspended after that and the excess time available was divided equally between the remaining three lakes.

FIGURE 5
APPROACHING BY BOAT

Approaching a boat in which people are actively recreating (paddling, motoring, fishing, etc.) takes some finesse. You must realize that you are interrupting someone else's privacy and leisure time.

- Do not approach moving boats or jet skis – especially those pulling skiers or tubers (you are unlikely to encounter this on the current job).
- Avoid open, busy water with lots of waves.
- Establish contact in as courteous a manner as possible.
- Use caution when approaching people actively fishing (gear in the water). Approach slowly and far enough away to minimize (if not eliminate) boat wake, avoid tangling an angler's gear, and frightening away fish.
- Call to the boat from a distance that does not interrupt their fishing. Ask if it is okay to move closer and then proceed. Try to gain their trust in the beginning.
- Speak loudly and clearly.
- Once the interview has agreed to the survey, move out of the line of traffic and waves if necessary.
- Because you will be sharing interview material with a respondent, you will need to get close to the boat. Idle the boat and deploy boat bumpers so their boat (and yours) is protected.
- Idle the boat. The boat operator will need to work to keep the boats close but not knocking each other while the interviewer conducts the survey.

4.3 IMPLEMENTATION

Access to Junior, Scraggly, and Pleasant lakes is dispersed and somewhat informal. Users can enter a lake from a variety of locations, most commonly from campgrounds, lodging establishments, homes or camps on the shoreline, or public access areas (e.g., formal or informal areas where boats may be launched or shoreline areas used, or via boat passage from other lakes). Because of this, interviews were planned as roving surveys, a type of on-site intercept surveys commonly used to sample recreational fisheries (Pollock, Jones and Brown, 1994). In this type of survey, individuals are intercepted while participating in a recreational activity. This allowed researchers to identify and interview recreators, regardless of how or from where they accessed the lakes, whether they were along the shoreline or in a boat, or whether they were camp owners, the general public, or customers of commercial camps or guides.

This method of surveying has an advantage over mail and telephone surveys as well, since it avoids issues of recall bias, lack of addresses or valid phone numbers. It also allows use of photographs and simulations, which was identified by Palmer (2011) as an important component of surveys intended to gage the impact of a wind project on recreational uses. There are some biases, however. Malvestuto (1983) demonstrated that anglers interviewed using this method have higher mean trip lengths than all anglers in a fishery. Thus, results are thought to be subject to a length-of-stay bias, as the probability of intercepting an angler is proportional to the duration of their trip (Robson, 1961, 1991; Lucas 1963; Brown 1971). It is anticipated that the same can be inferred for this study, with the exception that respondents will not be limited to anglers. Logically, this could affect study results, as individuals who spend more time on or near the water are more likely to be intercepted and interviewed than individuals who spend less time on the water. By extension, it may be true for other recreators who are avid about their sport. For example, boaters that spend more time on the water are more likely

to be intercepted and interviewed than those that spend less time on the water.

Interviewers travelled around the lakes by boat and intercepted individuals as they were observed, either on shore or on the water. Interviews were conducted using paper surveys on the first weekend of surveying. After that, all interviews were completed electronically using a field computer, preprogrammed with the survey. Paper surveys were available as backup in the event the computer should fail. Locations of all surveys were georeferenced.

Ratings of current and simulated views were accomplished as follows. At the appropriate time in the survey, respondents were handed a photograph showing a view from the lake on which the interview was occurring, and asked to rate the view. One view per lake was used. In other words, all respondents on the same lake reviewed the same photograph. After rating the current view, the photograph was retrieved and respondents were handed a simulation to rate. Each time, respondents were asked to hold the photograph (or simulation) 19 inches from their face. Photographs and photographic simulations for each lake are provided as Attachment B.

Photographs, photographic simulations and viewing distances were provided by LandWorks. Photographs and simulations were printed in color, in 11 by 17-inch format and laminated. The photographs and photographic simulations used in the surveys were taken from areas on the lakes determined by LandWorks to have the greatest number of turbines potentially visible within 8 miles (personal communication with Natalie Steen of LandWorks, September, 2012), and are not necessarily from the location where the intercept surveys occurred.

FIGURE 6
STARTING THE SURVEY

Introduce yourself to the respondent, briefly explain that you are conducting interviews to gather information on their recreational experience today, and ask if he or she minds if you ask them a few questions about their day. The approach is important for a successful survey.

The approach is important for a successful survey. When approaching people:

- Start with Hello and a SMILE
- Provide a greeting such as “How are you today?”, “Did you catch any fish?”, “Hot out here today”, etc.
- Politely ask if they have a few minutes.
- Explain you are conducting a survey.
- State that the survey will take 5 to10 minutes.
- If it’s your first few surveys, it’s okay to tell them that, and that you’re just learning. Typically, people are very patient with that.

It is important to keep a record of the number of people approached, the number interviewed, and the number who refused. If someone refuses to participate, cannot participate due to a language barrier or is not of legal age, you will record that on the survey form and move on.

FIGURE 7
THE INTERVIEW

When someone agrees to be interviewed, proceed to the interview. Take your time and ask each question as it is written and in the order in which it is written.

Some interviews may be completed on paper, while others will be completed using an electronic device called a YUMA.

At all times, remember that it is your job to ask questions and collect information for Kleinschmidt. It is not your job to answer questions about our client. You will be provided with a package of Kleinschmidt business cards. If someone should ask you questions that you cannot answer, or are uncomfortable answering, simply hand out a business card and tell them they are welcome to call if they have any questions or comments regarding the study. You will also be provided with responses to Frequently Asked Questions, which you may use to respond to questions.

Likewise, it is not your job to police people's behavior. If you observe distasteful behavior, someone breaking fishing regulations, etc., make a note of it in your journal and move on. If necessary, we will see that appropriate individuals are informed.

CONCLUDING THE INTERVIEW

At the end of the survey, please thank the respondent for his or her time. Check to make sure that your survey is SAVED on the computer and your paperwork is in order before moving to the next interview.

In the event that there was a group of individuals, one person was randomly selected to participate in an interview. Individuals were eligible to complete one interview during the course of the study. Individuals encountered more than once during the summer were thanked for their input but did not complete a second survey.

Interviewers received instruction on interviewing techniques, advised of who was eligible to participate, and provided guidance on the concept of "random" selection, and safe methods for approaching other boats on the water (Figures 5 through 8). They were also asked to refrain from divulging the survey sponsor until after the survey was completed.

Interviewers were instructed as follows:

1. Each day, flip a coin to randomly determine travel direction around a lake.
2. Interview people who appear 18 years old, or older.
3. Select one person randomly among those in the boat. On one day, select people from right to left, working your way from one end to another. For example, if there are three boats and each boat has three people, interview the person farthest to your left for your first interview. On the second interview, select the person in the middle, and on the third boat, select the person farthest to the right. The next day, reverse the order. Do not allow them to self-select a representative.
4. Select one person per group on shore, within 200 feet of the lake. You will select the person in the group to interview. Do not allow them to self-select a representative. Repeat the same process as described above to randomly select a respondent from a group.

5. If there are so many boats or parties present that you cannot interview them all, you will randomly select every n^{th} person or group, depending on the density of users. If you can interview everyone, do it!
6. Conduct the interview.
7. Photograph the boat or party (after the interview).
8. Record the GPS coordinates where the contact occurred (after interview).

At random intervals during each period, interviewers completed a circuit of the lake and counted individuals observed, whether boating or along the shoreline.

Upon completion of data collection, survey data were cleaned and analyzed using IBM SPSS Statistics, Version 19.

FIGURE 8
INTERVIEWING TIPS

Matters of Form, Delivery and Style

- **Read each question exactly as it is written and in the order in which it appears in the questionnaire.** Surveys only work if everyone is asked the same question in the same manner. Therefore please read the question exactly as it is written with no substitutions, additions or deletions.
- **Ask each respondent every appropriate question.** Do not skip questions because an answer was given earlier and you "know" the response. If that is the case, you may preface your question with a phrase such as "I know we've talked about this…" or "I know you just mentioned this, but I need to ask each question as it appears in the questionnaire…"
- Avoid leading the respondent toward an answer. Remain neutral in your questioning. The quality of your delivery – your style – can affect the quality of the information you collect. Emphasize underlined word to enhance the meaning. Keep your tone neutral and avoid voice inflections that might bias results.
- Read slowly. Take your time and make sure the respondent understands the question. Read the entire question before accepting a response. Remember that although you may have read a question many times, the respondent is hearing it for the very first time.
- Use standard feedback phrases such as "thank you" and "I see" for acceptable responses. This helps "train" the respondent to know what an acceptable response is. If you need a more complete response to a question, you may need to probe for additional information. Use cues such as "Could you tell me more about that?" or "Which would be closer to the way you feel?" If an answer is different from what you expect, do not remind the respondent of an earlier remark or try to force consistency. Record the responses given.
- You should not use phrases such as "good" or "right" that imply a correct answer.
- If a respondent refuses to answer an individual question, please mark refused and proceed to the next question.
- For open ended questions, it is very important that you take the time to record the exact answer verbatim of the respondent. Do not abbreviate or edit responses. Repeat the response back to the respondent to make sure that what you recorded is accurate and acceptable to the respondent. If you do not understand a respondent's reply to an open-ended question, please ask them if they could tell you what they have in mind, what their thoughts are, or what they mean by that. If their answer is incomplete, please follow up with probing questions like "Could you please elaborate on that?" or "Would you tell me more about your thoughts on that?" If the respondent responds, "I don't know" to an open-ended question, follow up with, "What are your thoughts?", "What are your expectations?" Again, the goal is to provide as much general direction and information as necessary without unduly influencing the responses to the survey. If there is not enough space in the computer to record a complete response, you may paraphrase the response and ask the respondent if that accurately reflects his or her comment. It is not okay, however, to paraphrase the questions.

Clarifying Questions for Respondents

- Sometimes a respondent will ask you for additional information or clarification of a question. If an individual needs clarification because he or she did not accurately hear the question, please repeat it. If an individual still has trouble hearing you or understanding the question, you may show them the survey and allow them to read the question for themselves. If the individual asks you to repeat the question or response options, even if they are only questioning part of it, please repeat the entire question and list of response options to them.
- If there are items that are confusing to the individual or they do not understand the question, please provide limited additional information and guidance. We do not want to influence the individual's response but want to provide enough information to the individual to be able to accurately respond to the question. For example, the question "On a scale from 1 to 5, with 1 being light, 3 being moderate, and 5 being heavy, how would you rate the crowdedness at this recreation site today?" may cause confusion for larger recreation sites. If an individual is confused about whether you mean the site as a whole, or the area that they spent most of their time, you could repeat the question and add "Overall" as a preface.

4.4 RESULTS

A total of 486 people and 123 boats were observed during the course of the study (Table 4). Almost half of all the people observed (283 people or 49% of 486) were recorded at Pleasant Lake. Of the remaining, 158 people were observed at Junior Lake and 90 were recorded on Scraggly Lake, representing 33% and 19% of all observations, respectively. No people were observed on Shaw Lake during the study. The maximum number of people observed during any interview period was 74. That occurred on Pleasant Lake, when 28 people were observed on the water, and 46 were seen on shore. Almost all of the boats used by people intercepted on the water were motor boats.

Interviewers selected one person per group to interview. Group sizes ranged from 1 to 15 people, averaging 3 people per group. Eight people who were approached had already taken the survey, and thus were not eligible to participate a second time. Interviewers did not approach people who they recognized as having already taken the survey, however those people were counted each time they were observed and are included in the reported total number of people observed. Interviewer notes indicate that it was common to observe the same people repeatedly during the summer.

Interviews were conducted with 70 individuals within the study area (Table 4, Figure 9). All of the 70 people who were approached and who were eligible to complete the survey did so, for a response rate of 100 percent ((70/70)*100).[3]

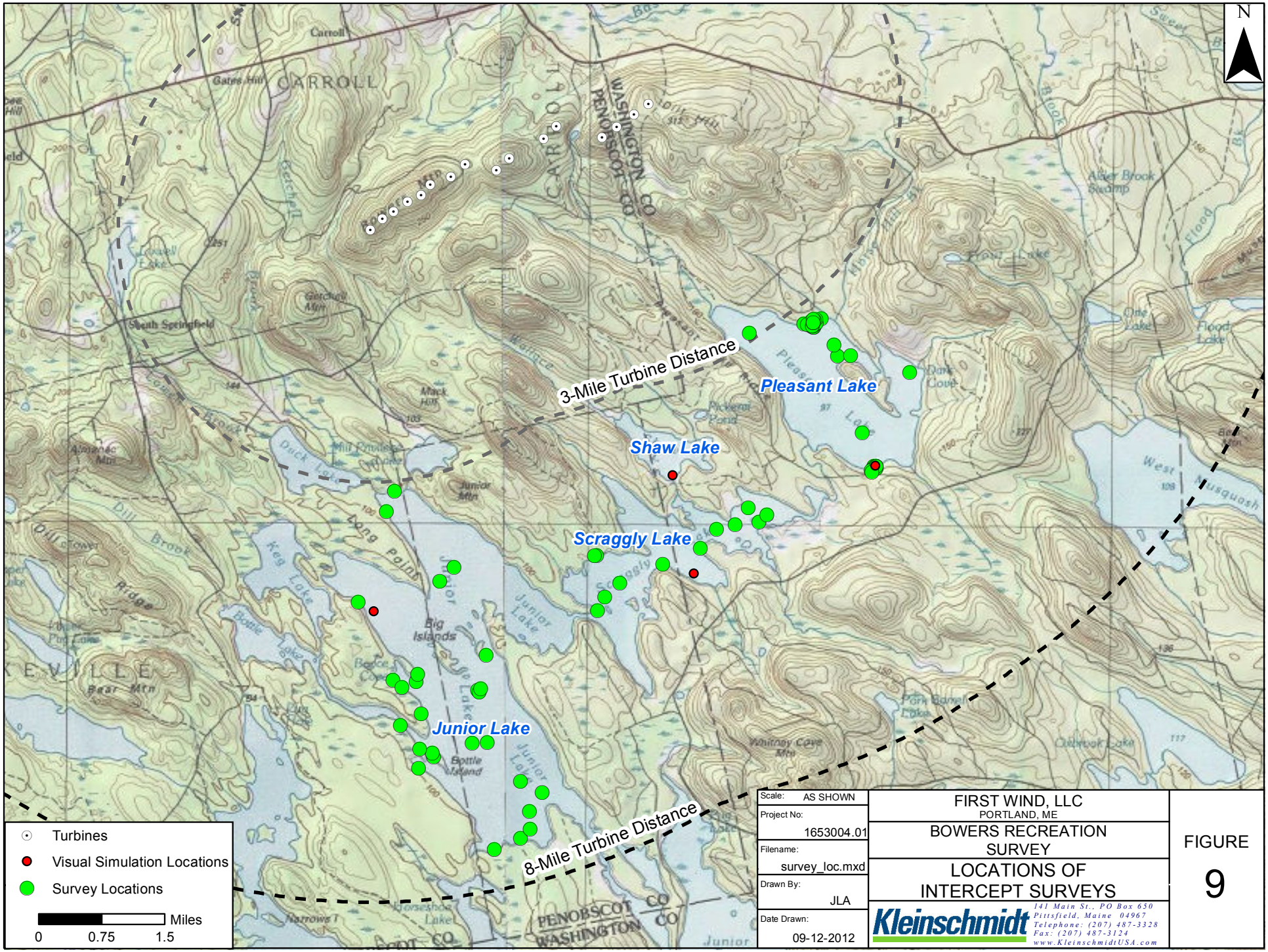
TABLE 4
SURVEY RESPONSE RATE; BOATS AND PEOPLE OBSERVED [a]

	NUMBER	PERCENT
SURVEYS COMPLETED	70	100%
PEOPLE APPROACHED	78	
REFUSALS	0	NA
REPEATS (HAD ALREADY COMPLETED A SURVEY)	8	NA
BOATS OBSERVED	123	NA
AVERAGE NUMBER OBSERVED PER DAY	5	NA
MEDIAN NUMBER OBSERVED PER DAY	3	NA
BOAT TYPE		
MOTOR	29	94%
CANOE	1	3%
OTHER	1	3%
TOTAL	31	100%

[3] Not every respondent answered every question in the survey. Because of this, the total number of responses shown in tables may not always sum to 70.

PEOPLE OBSERVED	486	NA
AVERAGE NUMBER OBSERVED PER DAY	10	NA
MEDIAN NUMBER OBSERVED PER DAY	4	NA
AVERAGE GROUP SIZE	3 PEOPLE	NA

[a] Surveys were completed with one person per group. As a result, not all people observed were eligible to be surveyed. One individual withdrew from the survey after responding to half of the questions. That survey is included as a "completed" questionnaire because the responses obtained up to the point of withdrawal are reported herein.



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Project No:	1653004.01
Filename:	survey_loc.mxd
Drawn By:	JLA
Date Drawn:	09-12-2012

FIRST WIND, LLC
PORTLAND, ME

BOWERS RECREATION SURVEY

LOCATIONS OF INTERCEPT SURVEYS

Kleinschmidt
141 Main St., PO Box 650
Pittsfield, Maine 04967
Telephone: (207) 487-3328
Fax: (207) 487-3124
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FIGURE
9

Approximately one-half of the interviews occurred between boats on the water and half occurred on the shoreline (Table 5). Twenty-six surveys were completed on Junior Lake, 31 on Pleasant Lake and 13 on Scraggly Lake. No one was observed recreating at Shaw Lake during the course of this study; therefore, no interviews occurred at the lake.

Frequencies of survey results are provided in Attachment C.

TABLE 5
INTERVIEW LOCATIONS

	RESPONDENTS	
	NUMBER	PERCENT
INTERVIEW LOCATION		
ON WATER	31	44%
ON SHORE	39	56%
TOTAL	70	100%
LAKE WHERE INTERVIEWED		
JUNIOR LAKE	26	37%
PLEASANT LAKE	31	44%
SCRAGGLY LAKE	13	19%
SHAW LAKE	0	0%
TOTAL	70	100%

The number of interviews obtained at each lake is indicative of the number of groups observed at each lake. Pleasant and Junior lakes had the highest numbers of observations. These lakes are also the most developed. Maine Wilderness Camps is a commercial facility that rents cabins and campground space on the north shore of Pleasant Lake. A second campground is located on the south shore of the lake. Both locations provide boat launches and toilets; access to both is adequate for large 5th wheel campers. The shores of Junior Lake are occupied by a number of camps, particularly around the northern and western shores (Figure 2). By comparison, development on Scraggly Lake is limited.

The number of interviews completed at Junior (26) and Pleasant (31) lakes allows us to draw lake-specific insights from those results. The lower number of completed surveys from Scraggly Lake (13) reflects the lower number of people observed at this lake. Given the low number of surveys obtained for Scraggly Lake, we advise using caution in drawing conclusions from the data for this specific lake. It is, however, appropriate to combine the data with results from Junior and Pleasant lakes and use the combined data to draw conclusions about the larger group. Figure 9 shows the locations where surveys occurred on and around the lakes.

Almost all survey respondents are Maine residents 45 years old or older (Table 6). Fully 45 percent of respondents reported owning or renting property on Junior, Scraggly, and/or Pleasant Lake, primarily on Junior and Pleasant. In reviewing Figure 2, it is notable that most lakeshore development identified is outside of the viewshed of the proposed project. No one reported owning or renting property on Shaw Lake. Only one survey respondent reported using

Registered Maine Guide services during their trip. Almost all respondents (86%) have been to the lake where interviewed before.

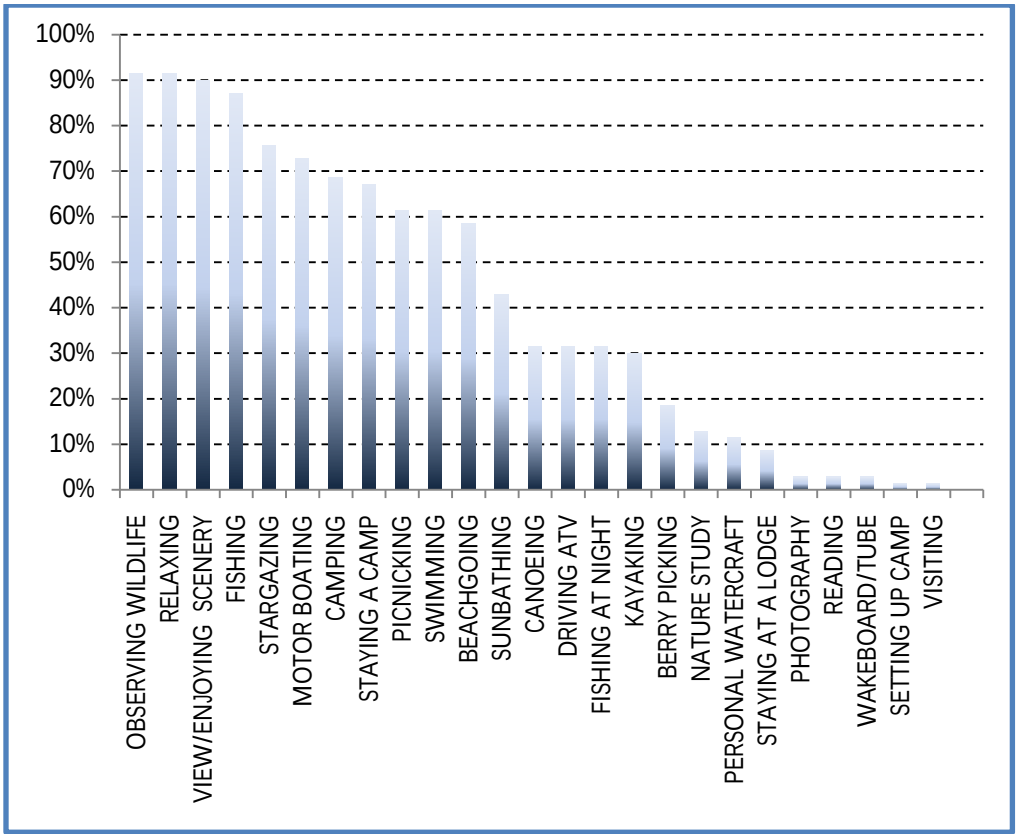
The primary recreation activities in which people participate are relaxing, fishing and camping (Table 6). Only 3% of all respondents stated "viewing the scenery" as a primary activity. Nevertheless, respondents do participate in more than one activity on their trips (Figure 10). Approximately 90 percent of respondents reported observing wildlife, relaxing, viewing the scenery and fishing as among other activities in which they engage.

TABLE 6
RESPONDENT AND TRIP CHARACTERISTICS

	RESPONDENTS	
	NUMBER	PERCENT
RESPONDENT CHARACTERISTICS		
AGE		
18-24	3	4%
25-34	5	7%
35-44	9	13%
45-54	15	22%
55-64	22	32%
65 OR OLDER	15	22%
TOTAL	69	100%
RESPONDENT IS A REGISTERED MAINE GUIDE	0	0%
	(n=70)	
RESIDENCY		
YEAR ROUND MAINE RESIDENT	56	81%
PART TIME MAINE RESIDENT	4	6%
NONRESIDENT	9	13%
TOTAL	69	100%
OWN OR RENT PROPERTY ON		
JUNIOR LAKE	14	20%
SCRAGGLY LAKE	2	3%
PLEASANT LAKE	15	22%
SHAW LAKE	0	0%
TOTAL	31	45%
FIRST VISIT TO LAKE WHERE INTERVIEWED	10	14%
	(n=70)	
TRIP CHARACTERISTICS		
USING GUIDE SERVICES	1	1%
	(n=69)	

PRIMARY ACTIVITY		
RELAXING	28	40%
FISHING	21	32%
CAMPING	10	13%
STAYING AT CAMP	2	4%
MOTOR-BOATING	2	3%
VIEWING THE SCENERY	2	3%
OTHER	3	4%
TOTAL	68	100%

FIGURE 10
OTHER ACTIVITIES IN WHICH PEOPLE REPORTED PARTICIPATING



4.4.1 QUALITY OF EXPERIENCE

All survey respondents rated the overall quality of the experience they expected on their visit as "High" (Table 7). This result is true regardless of where the survey occurred (Table 8).

TABLE 7
RATING OF OVERALL QUALITY OF THE EXPERIENCE EXPECTED ON TRIP
ALL LAKES COMBINED
(SURVEY QUESTION 10)

	RESPONDENTS	
	NUMBER	PERCENT
RATING		
1-VERY LOW QUALITY	0	0%
2	0	0%
3	0	0%
4-NEITHER HIGH NOR LOW QUALITY	0	0%
5	7	10%
6	12	17%
7-VERY HIGH QUALITY	51	73%
TOTAL	70	100%

TABLE 8
RATING OF OVERALL QUALITY OF THE EXPERIENCE EXPECTED ON TRIP
BY LAKE
(SURVEY QUESTION 10)

	JUNIOR LAKE		PLEASANT LAKE		SCRAGGLY LAKE[a]	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
RATING						
1-VERY LOW QUALITY	0	0%	0	0%	0	0%
2	0	0%	0	0%	0	0%
3	0	0%	0	0%	0	0%
4-NEITHER HIGH NOR LOW QUALITY	0	0%	0	0%	0	0%
5	3	12%	1	3%	3	23%
6	4	15%	8	26%	0	0%
7-VERY HIGH QUALITY	19	73%	22	71%	10	77%
TOTAL	26	100%	31	100%	13	100%

[a] Given the low number of surveys obtained for Scraggly Lake, we advise using caution in drawing conclusions from the data for this lake.

4.4.2 SCENIC VALUES

Prior to rating the scenic value of views at the lake, survey respondents identified places in Maine that they feel have "Very Highly Scenic Value" and "Very Low Scenic Value." Respondents identified a range of places, with most citing various "Downeast Lakes and Mountains" or areas in and around "Baxter State Park" (Table 9). A scenic view was the reason most often cited for rating a place as having "Very High Scenic Values."

Locations identified as having “Very Low Scenic Value” included Bangor, Portland Area, Southern Maine, and Lincoln (Table 10). For the first three locations, respondents explained the low ratings as being due to development, cities or people. For Lincoln, however, responses were more specific, attributing the low rating to “Too Many Camps,” “Too Many People,” and “Wind Turbines,” cited by 10%, 6%, and 8% of respondents, respectively.

TABLE 9
PLACES IN MAINE RATED AS HAVING VERY HIGH SCENIC VALUE
ALL LAKES COMBINED
(CROSS TABULATION OF SURVEY QUESTIONS 12 AND 13)

	CHARACTERISTICS THAT MAKE PLACES SCENIC												
HIGHLY SCENIC PLACES IN MAINE	VIEWS, SCENIC	QUIET, PEACEFUL	MOUNTAINS	WILDLIFE	LACK OF DEVELOPMENT, UNDEVELOPED	MAINE	REMOTE, PRIVATE, FEW PEOPLE, FEW SIGNS OF MAN	BEAUTIFUL	NATURE	CLEAN AREA	BIG WATER	OTHER CHARACTERISTICS[c]	TOTAL
DOWNEAST LAKES AND MTNS[a]	6	2	2	3	1	0	1	1	2	0	0	1	19
BAXTER STATE PARK	4	0	2	1	1	0	2	2	0	0	1	0	13
BAR HARBOR AREA	1	0	0	0	0	1	0	0	1	0	0	2	5
MOOSEHEAD LAKE AREA	1	1	0	0	1	0	1	0	0	1	0	0	5
ACADIA NATIONAL PARK	2	1	0	0	0	0	0	0	0	1	0	0	4
NORTHEAST PISCATAQUIS CO.	2	0	1	0	0	0	0	0	0	0	0	0	3
RANGELEY LAKE AREA	2	0	1	0	0	0	0	0	0	0	0	0	3
OTHER PLACES[b]	2	2	0	1	2	4	1	0	0	0	1	1	14
TOTAL	20	6	6	5	5	5	5	3	3	2	2	4	66
PERCENT OF TOTAL	30%	9%	9%	8%	8%	8%	8%	5%	5%	3%	3%	8%	100%

[a] Includes West Grand, Pleasant, Scraggly, West Musquash, and Junior lakes; Almanac and Stetson mountains; Junior Lake area, and; ridge 3 miles east of Pleasant Ridge.
[b]Other places, listed once for each occurrence, include: anywhere north of Bangor, Belgrade area, Chemo Pond, Cobscook Bay State Park, all of Maine, Lubec, Madawaska Lake, Maine River, Millinocket, Petit Manan Island, Sebago Lake, Silver Lake, Sugarloaf, Boothbay Harbor.
[c]Other characteristics, listed once each, included: activity in all seasons, see ships, little boat traffic, and trail options by ocean.

TABLE 10
PLACES IN MAINE RATED AS HAVING VERY LOW SCENIC VALUE
ALL LAKES COMBINED
(CROSS TABULATION OF SURVEY QUESTIONS 14 AND 15)

	CHARACTERISTICS THAT MAKE PLACES HAVE LOW SCENIC VALUE							
PLACES IN MAINE WITH VERY LOW SCENIC QUALITY	TOO MANY CAMPS	DEVELOPMENT, CITY	TOO MANY PEOPLE	WIND TURBINES	DIRTY, RUN DOWN, OLD	NOT MANY SCENIC VIEWS	OTHER	TOTAL
BANGOR	0	7	0	0	0	0	0	7
PORTLAND AREA	0	6	1	0	0	0	0	7
SOUTHERN MAINE	0	6	0	0	0	0	0	6
LINCOLN AREA	1	0	1	2	0	0	1	5
DOWNEAST LAKES AND MOUNTAINS	2	0	0	1	0	0	0	3
LEWISTON	0	0	0	0	2	0	1	3
PUSHAW LAKE	1	1	0	0	0	1	0	3
BAR HARBOR	0	2	0	0	0	0	0	2
OTHER PLACES[a]	1	4	1	1	1	2	6	16
TOTAL	5	26	3	4	3	3	8	52
PERCENT OF TOTAL	10%	50%	6%	8%	6%	6%	15%	100%

[a] Other places, listed once for each occurrence include: Rural Areas, Augusta, Calais, Caribou Pond, Chemo Pond, Elton, Green Lake, Greenland Cove Campground, Lakeville Dump, Wind Towers In Lee, Mattawamkeag, Old Orchard Beach, Stud Mill Road, Wassookeag Lake, Millinocket, Lee Area.

All survey respondents (100%) rate the scenic value of the photograph of current conditions as a "Typical Scenic Value" or higher (Table 11 and Table 12). Almost half (42%) rate a photograph of the same scene showing simulated conditions with wind turbines as having a "Typical Scenic Value" or higher (Table 11 and Table 13). Just over half (58%) report the simulated conditions as having a "Low Scenic Value."

TABLE 11
SCENIC VALUE RATINGS UNDER CURRENT AND SIMULATED CONDITIONS
ALL LAKES COMBINED
(SURVEY QUESTIONS 16 AND 17)

	CURRENT CONDITIONS		SIMULATED CONDITIONS	
	NUMBER	PERCENT	NUMBER	PERCENT
RATING				
1-LOWEST SCENIC VALUE	0	0%	27	39%
2	0	0%	4	6%
3	0	0%	9	13%
4-TYPICAL SCENIC VALUE	7	10%	6	9%
5	16	23%	7	10%
6	20	29%	5	7%
7-HIGHEST SCENIC VALUE	26	38%	11	16%
TOTAL	69	100%	69	100%

TABLE 12
SCENIC VALUE RATINGS UNDER CURRENT CONDITIONS
BY LAKE
(SURVEY QUESTION 16)

	JUNIOR LAKE		PLEASANT LAKE		SCRAGGLY LAKE[a]	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
RATING						
1-LOWEST SCENIC VALUE	0	0%	0	0%	0	0%
2	0	0%	0	0%	0	0%
3	0	0%	0	0%	0	0%
4-TYPICAL SCENIC VALUE	5	19%	2	7%	0	0%
5	6	23%	5	16%	5	39%
6	9	35%	8	27%	3	22%
7-HIGHEST SCENIC VALUE	6	23%	15	50%	5	39%
TOTAL	26	100%	30	100%	13	100%

[a] Given the low number of surveys obtained for Scraggly Lake, we advise using caution in drawing conclusions from the data for this lake.

TABLE 13
SCENIC VALUE RATINGS UNDER SIMULATED CONDITIONS
BY LAKE
(SURVEY QUESTION 17)

	JUNIOR LAKE		PLEASANT LAKE		SCRAGGLY LAKE[a]	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
RATING						
1-LOWEST SCENIC VALUE	12	46%	7	23%	8	61%
2	2	8%	1	3%	1	8%
3	5	19%	4	13%	0	0%
4-TYPICAL SCENIC VALUE	1	4%	4	13%	1	8%
5	1	4%	4	13%	2	15%
6	1	4%	4	13%	0	0%
7-HIGHEST SCENIC VALUE	4	15%	6	20%	1	8%
TOTAL	26	100%	30	98%	13	100%

[a] Given the low number of surveys obtained for Scraggly Lake, we advise using caution in drawing conclusions from the data for this lake.
Percentages may not sum to 100 due to rounding.

4.4.3 REPEAT VISITATION

When asked about the effect of the proposed development on enjoyment of their visit, the largest number of respondents stated there would be no effect (Table 14 and Table 16), stating they did not mind the turbines, that renewable energy is beneficial, and that it would not change why they visit the lakes (Table 15, Table 16). The next largest number of respondents stated the development would negatively affect their enjoyment. While the reasons for the negative rating were more diverse, they commonly touched on the subject of being unpleasant to look at, detracting from the view, scenery or nature and having the added detractions of noise and lights (Table 15). Overall, 55% of respondents stated that the presence of the wind farm would have "No Effect" (36%) or a "Positive Effect" (19%) on their enjoyment of visiting the lake.

TABLE 14
EFFECT OF PROPOSED DEVELOPMENT ON ENJOYMENT OF VISIT
ALL LAKES COMBINED
(QUESTION 18)

	NUMBER	PERCENT
RATING		
1-VERY NEGATIVE EFFECT	21	31%
2	3	4%
3	6	9%
4-NO EFFECT	24	36%
5	4	6%
6	3	4%
7-VERY POSITIVE EFFECT	6	9%
TOTAL	67	99%

Percentages may not sum to 100 due to rounding.

TABLE 15
EFFECT OF PROPOSED DEVELOPMENT ON ENJOYMENT OF VISIT
ALL LAKES COMBINED
(CROSS TABULATION OF SURVEY QUESTIONS 18 AND 19)

	EFFECT OF PROPOSED DEVELOPMENT ON ENJOYMENT							
REASON	VERY NEGATIVE EFFECT 1	2	3	NO EFFECT 4	5	6	VERY POSITIVE EFFECT 7	TOTAL
DO NOT MIND THEM	0	0	0	13	2	1	3	19
RENEWABLE ENERGY IS BENEFICIAL	0	0	0	4	1	1	1	7
AESTHETICALLY UNPLEASING, AKIN TO DEVELOPMENT & INDUSTRY	4	1	1	1	0	0	0	7
WILL NOT CHANGE WHY WE COME HERE	0	1	0	3	0	0	0	4
POWER DOES NOT BENEFIT US LOCALLY	2	1	1	0	0	0	0	4
TAKES AWAY FROM NATURE	2	0	0	0	0	0	1	3
DETRACTS FROM SCENERY	0	0	2	1	0	0	0	3
NOISY	3	0	0	0	0	0	0	3
RUINS VIEW	2	0	1	0	0	0	0	3
DO NOT WANT TO SEE THEM	1	0	1	0	1	0	0	3
LIKES THE LOOK OF THE TURBINES	0	0	0	1	0	0	1	2
FLASHING LIGHTS, LIGHTS	2	0	0	0	0	0	0	2
INCREASE IN PEOPLE	1	0	0	0	0	1	0	2
PUBLIC OPINION DOES NOT MATTER	1	0	0	0	0	0	0	1
UNATTRACTIVE	1	0	0	0	0	0	0	1
NOT NATURAL	1	0	0	0	0	0	0	1
WE LIKE LOOKING AT MOUNTAINS	1	0	0	0	0	0	0	1
TOTALS	21	3	6	23	4	3	6	66
PERCENT OF TOTAL	32%	5%	9%	35%	6%	5%	9%	100%

TABLE 16
EFFECT OF PROPOSED DEVELOPMENT ON ENJOYMENT OF VISIT
BY LAKE
(SURVEY QUESTION 18)

	JUNIOR LAKE		PLEASANT LAKE		SCRAGGLY LAKE[a]	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
RATING						
1-VERY NEGATIVE EFFECT	12	48%	6	20%	3	25%
2	2	8%	0	0%	1	8%
3	1	4%	3	10%	2	17%
4-NO EFFECT	6	24%	16	53%	2	17%
5	1	4%	2	7%	1	8%
6	1	4%	1	3%	1	8%
7-VERY POSITIVE EFFECT	2	8%	2	7%	2	17%
TOTAL	25	100%	30	100%	12	100%

[a] Given the low number of surveys obtained for Scraggly Lake, we advise using caution in drawing conclusions from the data for this lake.

Prior to being provided with information on the proposed development, nearly all (98%) of respondents are likely to return to the lake where they were interviewed in the future (Table 17, Table 19). When subsequently asked how the wind farm would affect their likelihood to return, 80% of respondents said the proposed wind farm would have "No Effect" (19%) on their likelihood of returning to the lake or they would be "Likely to Return" (61%) in the future. Twenty percent of respondents are "Unlikely" to return in the presence of the wind farm.

Responses most commonly cited for returning in the future were that the development had no effect on enjoyment of the lake, ownership of homes and camps on the lake, ties with family and friends, liking the lake area, and enjoying the fishing (Table 18). For respondents indicating they were less likely to visit in the future, the most common response was that the development would change the view making it visually unappealing.

TABLE 17
LIKELIHOOD OF RETURNING UNDER CURRENT AND SIMULATED CONDITIONS
ALL LAKES COMBINED
(SURVEY QUESTIONS 11 AND 20)

	CURRENT CONDITIONS		SIMULATED CONDTIONS	
	NUMBER	PERCENT	NUMBER	PERCENT
RATING				
1-VERY UNLIKELY TO VISIT	1	1%	9	13%
2	0	0%	2	3%
3	0	0%	3	4%
4-NEITHER LIKELY NOR UNLIKELY / NO EFFECT	0	0%	13	19%
5	1	1%	2	3%
6	3	4%	3	4%
7-VERY LIKELY TO VISIT	65	93%	37	54%
TOTAL	70	99%	69	100%

Percentages may not sum to 100 due to rounding.
The scale for current conditions used "neither likely nor unlikely" for the 4 rating. Under simulated conditions, item 4 was labeled as "no effect."

TABLE 18
EXPLANATION FOR RETURNING OR NOT RETURNING UNDER SIMULATED CONDITIONS
ALL LAKES COMBINED
(CROSS TABULATION OF SURVEY QUESTIONS 20 AND 21)

	LIKELIHOOD OF RETURNING IF WIND FARM WERE DEVELOPED							
REASON	VERY UNLIKELY TO VISIT 1	2	3	NO EFFECT 4	5	6	VERY LIKELY TO VISIT 7	TOTAL
NO EFFECT ON ENJOYMENT OF LAKE	0	0	0	3	0	3	12	18
VISUALLY UNAPPEALING, CHANGES VIEW	3	2	3	1	0	0	1	10
OWN HOME OR CAMP HERE	0	0	0	0	0	0	7	7
FAMILY & FRIEND TIES, TRADITION, HISTORY HERE	0	0	0	2	0	0	4	6
LIKE THE LAKE, AREA	0	0	0	0	0	0	5	5
ENJOY FISHING	0	0	0	2	0	0	2	4
CHANGES EXPERIENCE	2	0	0	1	1	0	0	4
IT IS POSTIVE, UNIQUE, I SUPPORT WIND	0	0	0	1	0	0	2	3
BETTER WIND THAN OTHER	0	0	0	0	0	0	2	2
LIKE IT HERE	0	0	0	1	0	0	1	2
WOULD STILL COME HERE	0	0	0	1	0	0	1	2
ENJOY THE EXPERIENCE	0	0	0	1	0	0	0	1
LIKES THE VIEW	1	0	0	0	0	0	0	1
TURBINE NOISE	1	0	0	0	0	0	0	1
WIND TURBINES	1	0	0	0	0	0	0	1
INCREASE IN CIVILIZATION	0	0	0	0	1	0	0	1
TOTALS	8	2	3	13	2	3	37	68
PERCENT OF TOTAL	12%	3%	4%	19%	3%	4%	54%	100%

TABLE 19
LIKELIHOOD OF RETURNING UNDER CURRENT CONDITIONS
BY LAKE
(SURVEY QUESTION 11)

	JUNIOR LAKE		PLEASANT LAKE		SCRAGGLY LAKE[a]	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
RATING						
1-VERY UNLIKELY TO VISIT	0	0%	1	3%	0	0%
2	0	0%	0	0%	0	0%
3	0	0%	0	0%	0	0%
4-NEITHER LIKELY NOR UNLIKELY	0	0%	0	0%	0	0%
5	1	4%	0	0%	0	0%
6	1	4%	1	3%	1	8%
7-VERY LIKELY TO VISIT	24	92%	29	94%	12	92%
TOTAL	26	100%	31	100%	13	100%

[a] Given the low number of surveys obtained for Scraggly Lake, we advise using caution in drawing conclusions from the data for this lake.

TABLE 20
LIKELIHOOD OF RETURNING UNDER SIMULATED CONDITIONS
BY LAKE
(SURVEY QUESTION 20)

	JUNIOR LAKE		PLEASANT LAKE		SCRAGGLY LAKE[a]	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
RATING						
1-VERY UNLIKELY TO VISIT	5	19%	2	7%	2	15%
2	0	0%	2	7%	0	0%
3	2	8%	0	0%	1	8%
4-NO EFFECT	2	8%	9	30%	2	15%
5	2	8%	0	0%	0	0%
6	1	4%	2	7%	0	0%
7-VERY LIKELY TO VISIT	14	54%	15	50%	8	62%
TOTAL	26	101%	30	101%	13	100%

[a] Given the low number of surveys obtained for Scraggly Lake, we advise using caution in drawing conclusions from the data for this lake.
Percentages may not sum to 100 due to rounding.

Respondents were almost evenly split in their rating of the importance of wind power development for Maine (Table 21 and Table 23). Reasons in favor of wind power in Maine included the need to develop alternative and/or more energy and reduce dependency on foreign oil (Table 22). In contrast, reasons for rating wind power in Maine as unimportant or has no effect were the belief that wind power does not benefit Maine, uncertainty as to its effectiveness, and the fact that it is out of place.

TABLE 21
HOW WOULD YOU RATE THE IMPORTANCE OF WIND POWER IN MAINE?
ALL LAKES COMBINED
(QUESTION 22)

	NUMBER	PERCENT[a]
RATING		
1-VERY NEGATIVE EFFECT	16	25%
2	3	5%
3	8	13%
4-NO EFFECT	8	13%
5	12	19%
6	3	5%
7-VERY POSITIVE EFFECT	14	22%
TOTAL	64	102%

[a]Percentages may not round to 100 due to rounding.

TABLE 22
IMPORTANCE OF WIND POWER IN MAINE
ALL LAKES COMBINED
(CROSS TABULATION OF SURVEY QUESTIONS 22 AND 23)

	IMPORTANCE OF WIND POWER IN MAINE							
REASON	VERY UNIMPORTANT 1	2	3	NO EFFECT 4	5	6	VERY IMPORTANT 7	TOTAL
NO RESPONSE[a]	10	3	6	6	6	2	7	40
NEED FOR ALTERNATIVE ENERGY, MORE ENERGY, OFF FOREIGN OIL	0	0	0	0	5	0	5	10
DOES NOT HELP OR BENEFIT MAINE	5	0	1	0	1	0	2	9
UNSURE OF EFFECTIVENESS	0	0	0	2	0	0	0	2
OUT OF PLACE, DISLIKE IT	1	0	1	0	0	0	0	2
NOTHING AGAINST THEM	0	0	0	0	0	1	0	1
TOTAL	16	3	8	8	12	3	14	64
PERCENT OF TOTAL	25%	5%	13%	13%	19%	5%	22%	100%

[a] Due to a programming error, a number of respondents did not receive the question asking them to explain their rating of the importance of wind power in Maine.

TABLE 23
IMPORTANCE OF WIND POWER IN MAINE
BY LAKE
(SURVEY QUESTION 22)

	JUNIOR LAKE		PLEASANT LAKE		SCRAGGLY LAKE[a]	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
RATING						
1-VERY UNIMPORTANT	7	30%	5	17%	4	33%
2	0	0%	1	3%	2	17%
3	3	13%	2	7%	3	25%
4-NO EFFECT	2	9%	6	21%	0	0%
5	5	22%	4	14%	3	25%
6	0	0%	3	10%	0	0%
7-VERY IMPORTANT	6	26%	8	28%	0	0%
TOTAL	23	100%	29	100%	12	100%

[a] Given the low number of surveys obtained for Scraggly Lake, we advise using caution in drawing conclusions from the data for this lake.

5.0 DISCUSSION

Survey respondents are primarily Maine residents with some kind of familiarity with the lake at which they were interviewed, and all anticipated having a quality experience on their trip. Popular activities are relaxation, fishing and camping.

Survey methods developed for this study were designed in part to increase chances of intercepting guided trips, but no guides were interviewed and only one respondent reported using guide services. Combined with the low numbers of Grand Lakers observed in Junior Stream, results indicate a low level of use by guides during the study period.

While a majority of respondents (58%) rate the photographic simulation as having a low value, 55% report the wind farm would have no effect (36%) or a positive effect (19%) on enjoyment of their visits and most (80%) state it would have no effect on their likelihood of returning (19%) or they were likely to return (61%). Respondents will continue to visit for a variety of reasons, ranging from indications they support wind power or it has no effect on their enjoyment of the lakes, to having some kind of tie to the area such as family, history, home or camp. Respondents are almost evenly split in their opinions on the importance of wind power in Maine, with 43% stating it is unimportant and 46% stating it is important. Overall, results indicate that conditions represented in the photographic simulation result in lower scenic ratings, but respondents will continue to enjoy recreation in and return to the study area.

Respondents rate a mix of wooded, lightly populated areas, and coastal tourist areas as having high scenic value in Maine, including locations in and around the study area, collectively referred to as “Downeast lakes and mountains”. Areas rated as having low scenic value tend to share the characteristics of having high population levels (for Maine) and being developed.

Looking at results by lake reveal some differences between Junior and Pleasant lake respondents. Respondents interviewed at Pleasant Lake provide higher scenic ratings for photographs of the current view and the simulated view. They are more likely to indicate the wind farm would have no effect on the enjoyment of their visit, and are more likely to return if the wind farm were developed (Table 20). Finally, they give the importance of wind power in Maine a higher rating than respondents at Junior Lake.

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ATTACHMENT A

QUESTIONNAIRE

BOWERS WIND
QUESTIONNAIRE
JUNIOR, SCRAGGLY, PLEASANT AND SHAW LAKES

1. Is this your first visit to _____Lake? (SELECT ONE NUMBER)

   1 YES→ SKIP TO Q5
   2 NO
   9 REFUSED→ SKIP TO Q5

2. Do you have a home or a camp on this lake? (SELECT ONE NUMBER)

   1 YES
   2 NO→ SKIP TO Q4
   9 REFUSED→ SKIP TO Q4

3. How many months do you live here during the year? (FILL IN THE BLANK)

   _____ MONTHS→ SKIP TO Q5
   99 REFUSED→ SKIP TO Q5

4. <u>During the past year</u>, how many times have you visited _____ Lake? If you cannot recall exactly, please give us your best estimate. (FILL IN THE BLANK.)

   _____ Trips

5. Think about your activities on _____ Lake. What are your plans for <u>today</u>? (HAND LAMINATED CARD TO RESPONDENT; READ LIST AND CHECK ALL THAT APPLY)

   1 Canoeing
   2 Kayaking
   3 Motor boating
   4 Personal watercraft
   5 Berry picking
   6 Viewing the scenery
   7 Camping
   6 Fishing from a boat or shore
   9 Relaxing

10 Stargazing / enjoying the night sky
12 Swimming
13 Enjoying the scenery / scenic viewing
14 Beach going / Using the beach
15 Observing wildlife or nature
16 Staying at a lodge
17 Staying at a camp
18 Driving an ATV
19 Picnicking
20 Sunbathing
21 Nature study
22 Fish at night
23 Anything else? _____

6. What is your primary reason for coming here today? (HAND LAMINATED CARD TO RESPONDENT; READ LIST AND CHECK ALL THAT APPLY)

1 Canoeing
2 Kayaking
3 Motor boating
4 Personal watercraft
5 Berry picking
6 Viewing the scenery
7 Camping
6 Fishing from a boat or shore
9 Relaxing
10 Stargazing / enjoying the night sky
12 Swimming
13 Enjoying the scenery / scenic viewing
14 Beach going / Using the beach
15 Observing wildlife or nature
16 Staying at a lodge
17 Staying at a camp
18 Driving an ATV
19 Picnicking
20 Sunbathing
21 Nature study
22 Fish at night
23 Other _____

7. IF ON LAKE: I'm going to hand you a map. To the best of your ability, please show us the route you have taken on the lake today by drawing directly on the map. Start where you launched your boat and draw the route you took to get to the location where we are now. Use an "x" to indicate places where you may have stopped for a period of time to take a break or go ashore.

   IF ON SHORE: I'm going to hand you a map. Please show us the places that you've visited that are on or around the lake today by drawing directly on the map. Use an "x" to indicate where you are now, as well as other places where you have been today. If you have been on the water today, simply draw the route you took on the water. Use an "x" to mark places where you may have stopped for a period of time to take a break or go ashore.

   HAND RESPONDENT MAP AND BLACK MARKER. THEN ASK:

   Where else on or around _____ Lake do you think you will go today?

   HAND RESPONDENT RED MARKER TO RECORD FUTURE TRAVEL TODAY. RECORD RESPONDENT ID ON THE MAP WHEN IT IS RETURNED

8. How long do you expect to visit the lake today? (RECORD RESPONSE)

   _____ _____ : _____ _____
   HH : MM

   9 REFUSED

9. On this trip, do you use or visit the lake at night for…… (READ LIST; RECORD ALL THAT APPLY)

   1 Star gazing
   2 Fishing
   3 Boating
   4 Canoeing
   5 Kayaking
   6 Camping
   7 Other _____

10. On a scale of 1 to 7, where a 1 is very low quality, a 7 is very high quality, and a 4 is is neither high nor low quality, what was the overall quality of experience you expected on your visit to ____Lake today? (SELECT ONE NUMBER)

VERY LOW QUALITY			NEITHER HIGH NOR LOW QUALITY			VERY HIGH QUALITY	REFUSED
1	2	3	4	5	6	7	9

11. On a scale of 1 to 7, where 1 is very unlikely, 7 is very likely, and 4 is neither unlikely nor likely, how likely is it that you will visit _____ Lake in the future? (SELECT ONE NUMBER)

VERY UNLIKELY			NEITHER UNLIKELY NOR LIKELY			VERY LIKELY	REFUSED
1	2	3	4	5	6	7	9

12. Now I'd like to ask you to think of an outdoor place in Maine that you would rate as having very high scenic quality or outstanding views and which—on a scale of 1 to 7—you would rate as a 7 for the highest scenic quality. What place are you thinking about? (RECORD RESPONSE)

_____

_____

8 DO NOT KNOW OF PLACES IN MAINE → SKIP TO Q14
9 REFUSED

13. What is it about this place that makes it highly scenic? (RECORD RESPONSE)

_____

_____

9 REFUSED

14. Next, can you think of an outdoor place in Maine that you would rate as having a very low scenic quality or views which—on a scale of 1 to 7—you would rate as a 1 for the lowest scenic quality. What place are you thinking about? (RECORD RESPONSE)

_____

_____

8 DO NOT KNOW OF PLACES IN MAINE → SKIP TO Q16
9 REFUSED

15. What is it about this place that gives it a low scenic value? (RECORD RESPONSE)

_____

_____

9 REFUSED

16. We would like you to think about the scenic value of _____ Lake. I am going to show you two photographs, and I would like you to rate the scenic value of the views depicted in the photographs.

If you hold the photograph 19 inches from your face, it will make everything the in the photograph the same size that it would be if you were looking at it from where the photograph was taken.

PLEASANT LAKE: Please take a look at this photograph. It shows a view from Pleasant Lake looking north, northwest.
SHAW LAKE: Please take a look at this photograph. It shows a view from Shaw Lake looking north, northwest.
SCRAGGLY LAKE: Please take a look at this photograph. It shows a view from Scraggly Lake looking north, northwest.
JUNIOR LAKE: Please take a look at this photograph. It shows a view from Junior Lake looking north, northeast.

This is the approximate location on _____ Lake where this photograph was taken. (POINT TO AREA ON MAP – ON BACK OF PHOTOGRAPH)

On a scale of 1 to 7, where 1 is the lowest scenic value in Maine, a 4 is the typical scenic value in Maine, and 7 is the highest scenic value in Maine, how would you rate this view? (SELECT ONE NUMBER)

LOWEST SCENIC VALUE			TYPICAL SCENIC VALUE			HIGHEST SCENIC VALUE	REFUSED
1	2	3	4	5	6	7	9

17. Recently, a wind farm was proposed to be developed near here. A wind farm is a group of wind turbines that capture energy from the wind to generate electricity. This photograph shows how the same view would look if a wind farm was developed. How would you rate the scenic value of this view using the same 7-point scale where 1 is the lowest, 4 is typical and 7 is the highest scenic value? (SELECT ONE NUMBER)

LOWEST SCENIC VALUE			TYPICAL SCENIC VALUE			HIGHEST SCENIC VALUE	REFUSED
1	2	3	4	5	6	7	9

18. Now I'd like you to think about how your <u>enjoyment</u> of visiting the lake would be affected if you were to see the proposed wind project during your visit today. On a scale of 1-7, where a 1 is a very negative effect, a 4 means that it would not change your enjoyment at all, and a 7 is a very positive effect on your enjoyment, how would your enjoyment be affected? (SELECT ONE NUMBER)

VERY NEGATIVE EFFECT			NO EFFECT			VERY POSITIVE EFFECT	REFUSED
1	2	3	4	5	6	7	9

19. Why do you say that? (RECORD RESPONSE)

_____

_____

9 REFUSAL

20. Now I'd like you to think about your trip here today. Imagine the proposed wind project was built. On a scale of 1 to 7, where a 1 means you are very unlikely to return, a 4 means the change in view would have no effect on your return, and a 7 means you are very likely to return, how likely are you to return to _____ Lake given the presence of the wind turbines? (SELECT ONE NUMBER)

VERY UNLIKELY TO VISIT			NO EFFECT			VERY LIKELY TO VISIT	REFUSED
1	2	3	4	5	6	7	9

21. Why is that? (RECORD RESPONSE)

_____

_____

9 REFUSAL

22. Thinking about wind power development in general, please rate how important it is for Maine, on a scale of 1 to 7, where a 1 means wind power is generally very unimportant and a 7 means it is generally very important. (SELECT ONE NUMBER)

VERY UNIMPORTANT			NO EFFECT			VERY IMPORTANT	REFUSED
1	2	3	4	5	6	7	9

23. Why do you feel that way? (RECORD RESPONSE)

_____

_____

9 REFUSAL

24. Have you visited any of the following lakes in the area ….? (READ LIST; DO NOT READ NAME OF LAKE WHERE INTERVIEW IS OCCURRING; CIRCLE ALL THAT APPLY)

	ON THIS TRIP?	AT ALL?
PLEASANT LAKE	1	1
SHAW LAKE	1	1
JUNIOR LAKE	1	1
SCRAGGLY LAKE	1	1
REFUSED	9	9

25. Do you own or rent property on……? (SELECT ALL THAT APPLY)

1 PLEASANT LAKE
2 SHAW LAKE
3 JUNIOR LAKE
4 SCRAGGLY LAKE
5 DO NOT OWN OR RENT PROPERTY ON ABOVE LAKES
9 REFUSED

26. Are you…? (SELECT ONE NUMBER)

1 A YEAR-ROUND RESIDENT OF MAINE
2 PART TIME RESIDENT OF MAINE
3 VISITOR TO MAINE
9 REFUSED

27. What is the zip code of your primary residence? (RECORD RESPONSE)

_ _ _ _ _
9 9 9 9 9 REFUSED

28. Had you heard of this survey before we asked you to participate? (SELECT ONE NUMBER)

1 YES
2 NO
3 NOT SURE
9 REFUSED

29. Are you using the service of a Registered Maine Guide today? (SELECT ONE NUMBER)

1 YES
2 NO
9 REFUSED

30. Please tell me the number that best represents your age group. (HAND CARD TO RESPONDENT. SELECT ONE NUMBER)

1
2
3
4
5
6
9 REFUSED

Those are all the questions that I have for you today. Thank you very much for your time and enjoy your visit to the lake!

RESPONSE CARD FOR Q5

CURRENT TRIP CHARACTERISTICS

5. Think about your activities on _____ Lake. What are your plans for <u>today</u>?

1	Canoeing
2	Kayaking
3	Motor boating
4	Personal watercraft
5	Berry picking
6	Viewing the scenery
7	Camping
8	Fishing from a boat or shore
9	Relaxing
10	Stargazing / enjoying the night sky
12	Swimming
13	Enjoying the scenery / scenic viewing
14	Beach going / Using the beach
15	Observing wildlife or nature
16	Staying at a lodge
17	Staying at a camp
18	Driving an ATV
19	Picnicking
20	Sunbathing
21	Nature study
22	Fish at night
23	Anything else? _____

RESPONSE CARD FOR Q6

6. What is your primary reason for coming here today?

1	Canoeing
2	Kayaking
3	Motor boating
4	Personal watercraft
5	Berry picking
6	Viewing the scenery
7	Camping
8	Fishing from a boat or shore
9	Relaxing
10	Stargazing / enjoying the night sky
12	Swimming
13	Enjoying the scenery / scenic viewing
14	Beach going / Using the beach
15	Observing wildlife or nature
16	Staying at a lodge
17	Staying at a camp
18	Driving an ATV
19	Picnicking
20	Sunbathing
21	Nature study
22	Fish at night
23	Other _____

RESPONSE CARD FOR Q30

30. Please tell me the number that best represents your age group.

1	18-24
2	25-34
3	35-44
4	45-54
5	55-64
6	65 or older

ATTACHMENT B

PHOTOGRAPHS AND PHOTOGRAPHIC SIMULATIONS

Existing View

Junior Lake

Simulated View

Junior Lake

Existing View

Scraggly Lake

Simulated View

Scraggly Lake

Existing View

Pleasant Lake

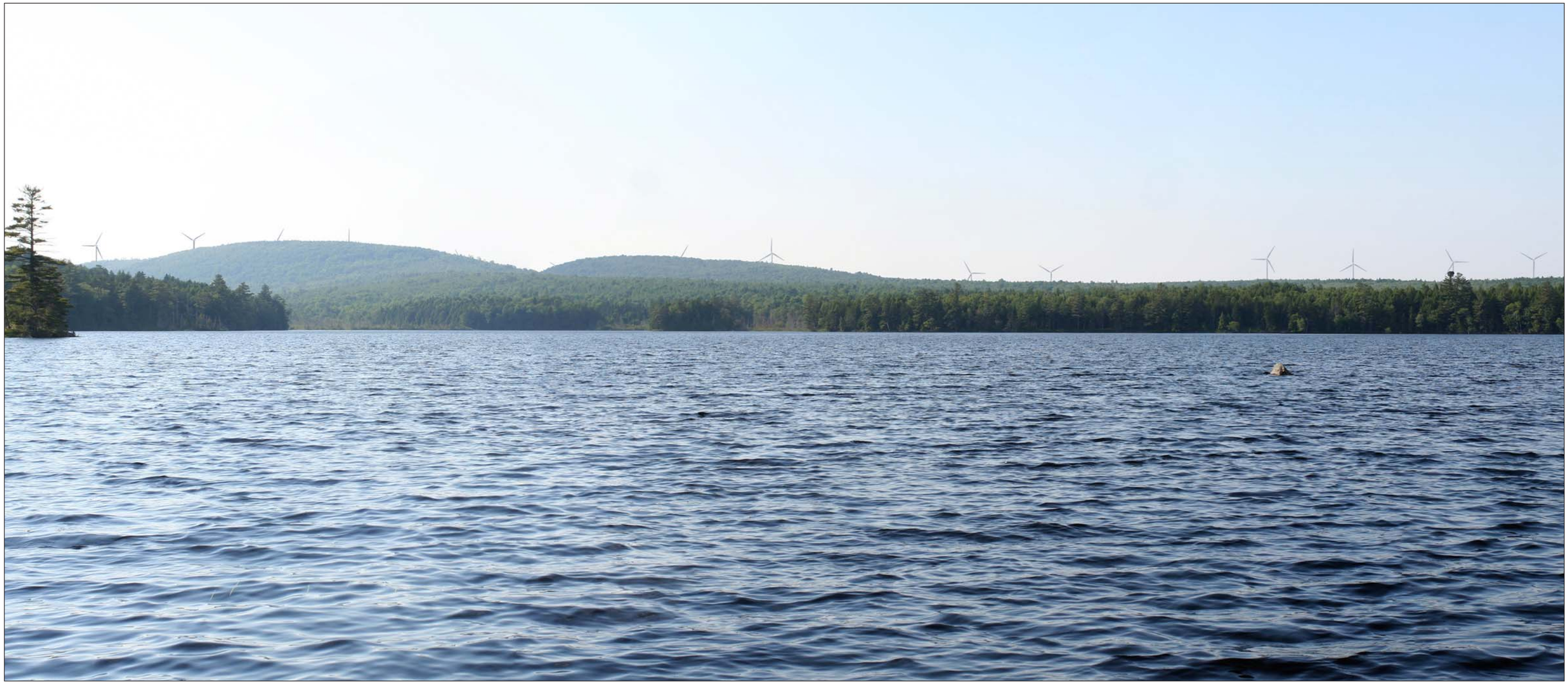
Simulated View

Pleasant Lake

Existing View

Shaw Lake

Simulated View



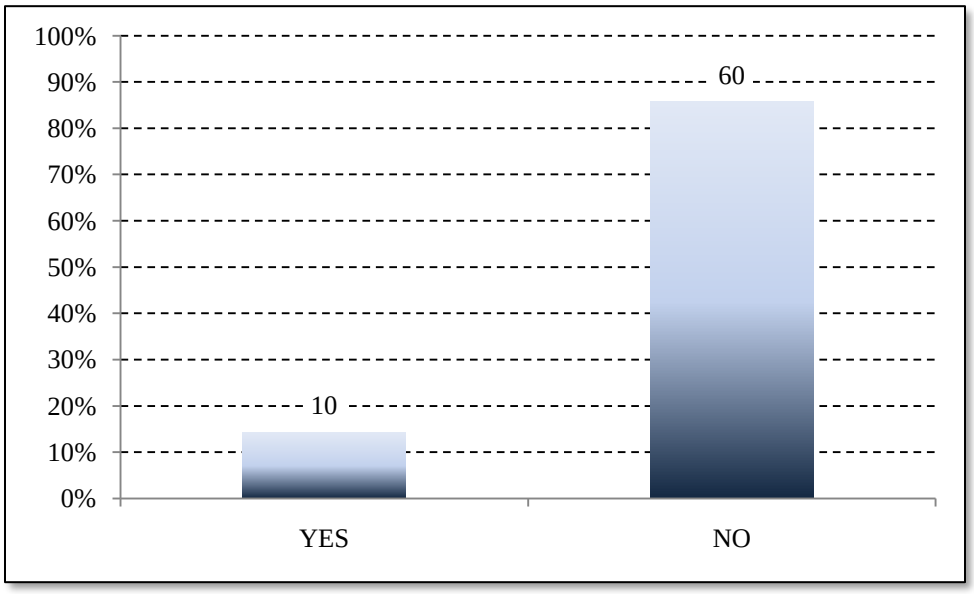
Shaw Lake

ATTACHMENT C

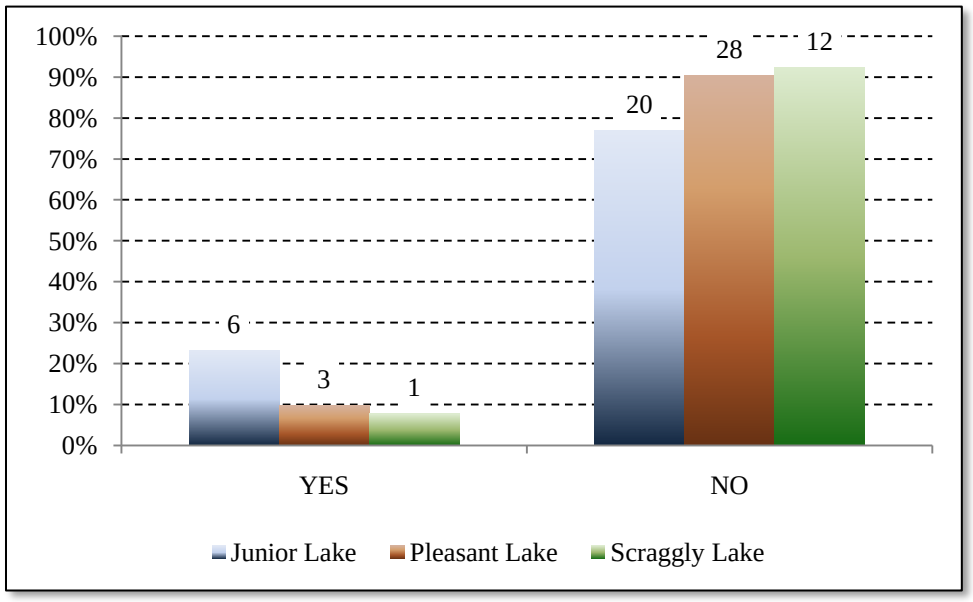
BASIC FREQUENCIES

Bowers Wind Project Intercept Survey Results

Q1: Is this your first visit to the lake?

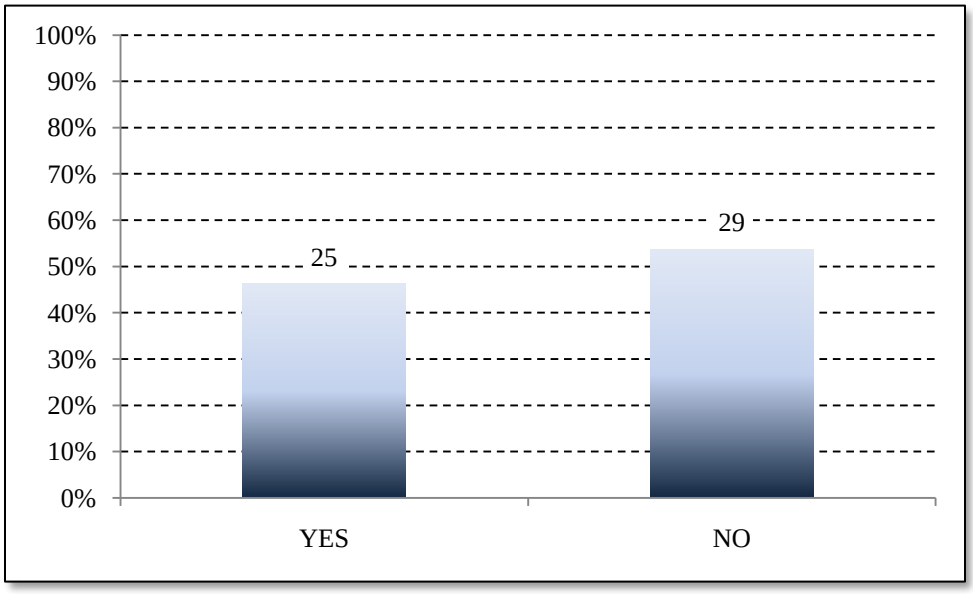


n = 70

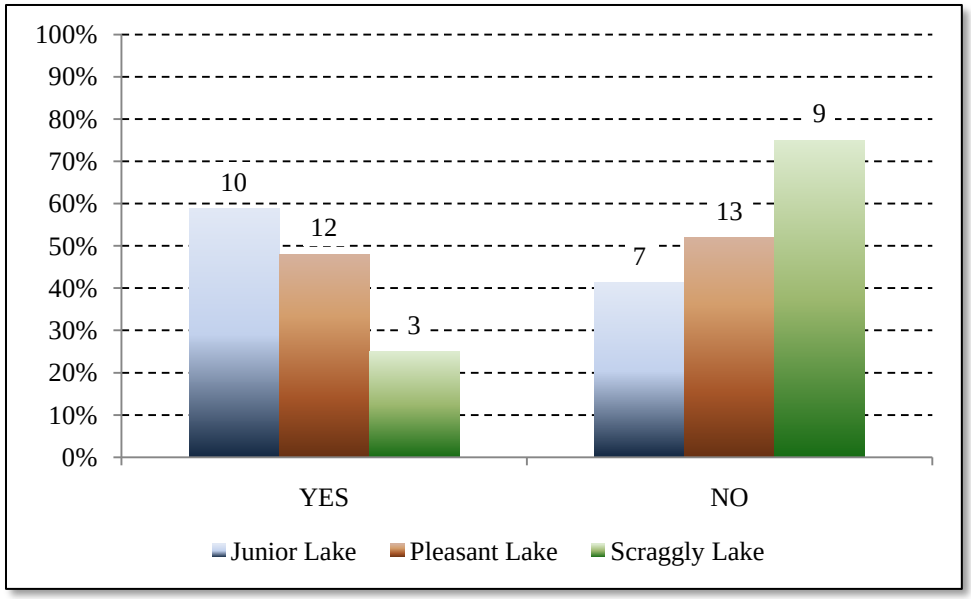


n = 26 (Junior Lake)
n = 31 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q2: Do you have a home or camp on this lake?

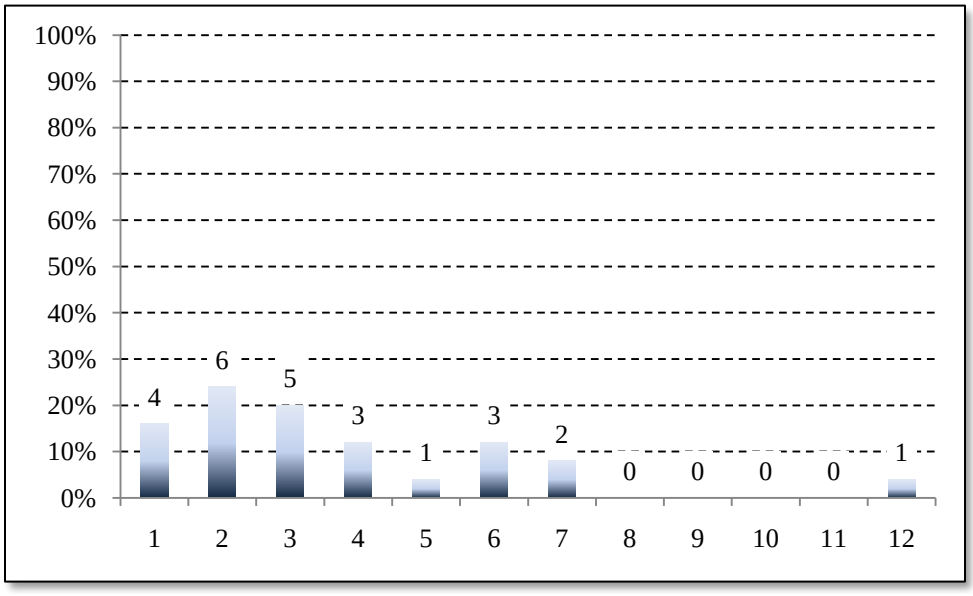


n = 54

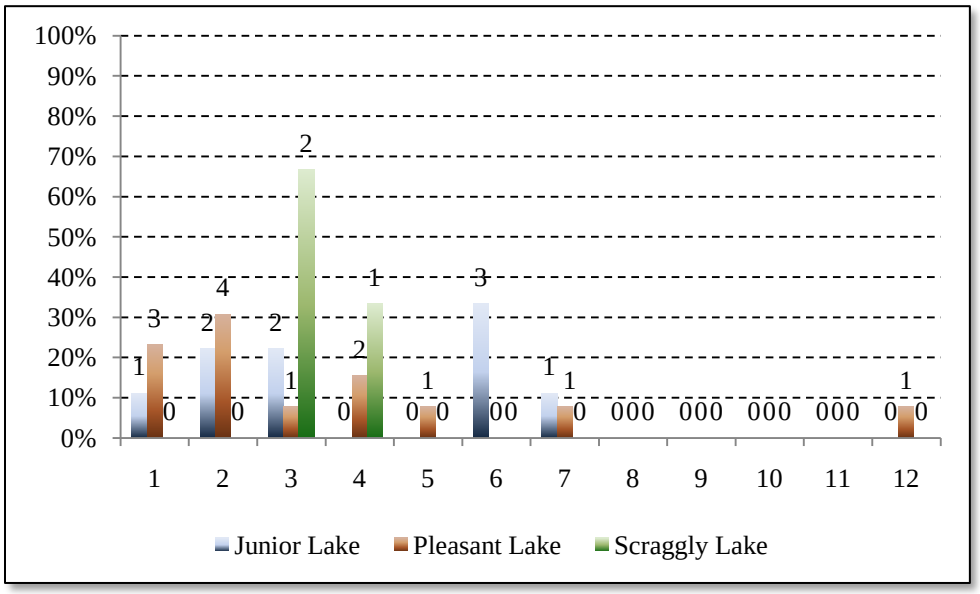


n = 17 (Junior Lake)
n = 25 (Pleasant Lake)
n = 12 (Scraggly Lake)

Q3: How many months do you live here during the year?

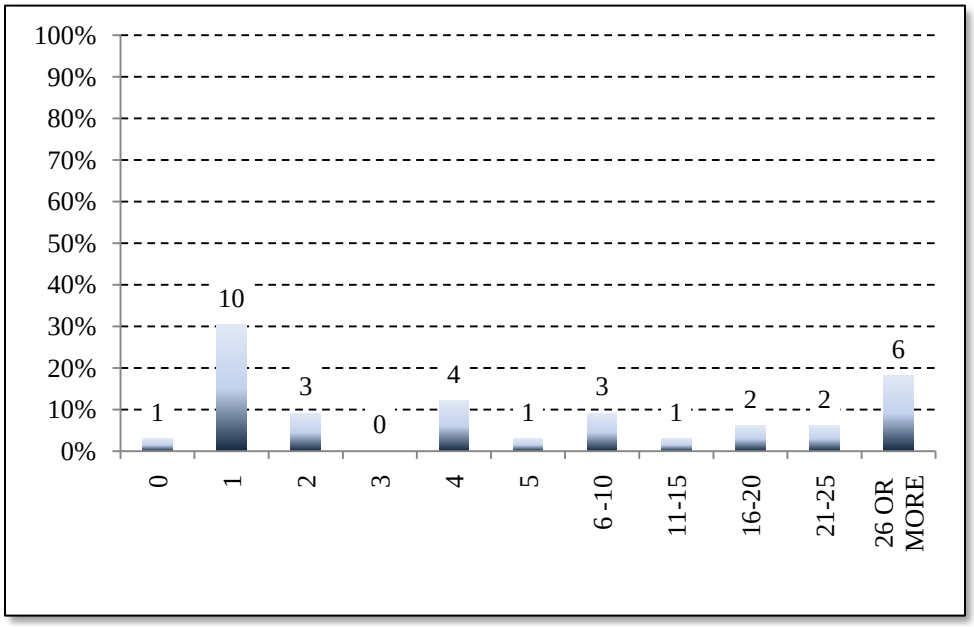


n = 25

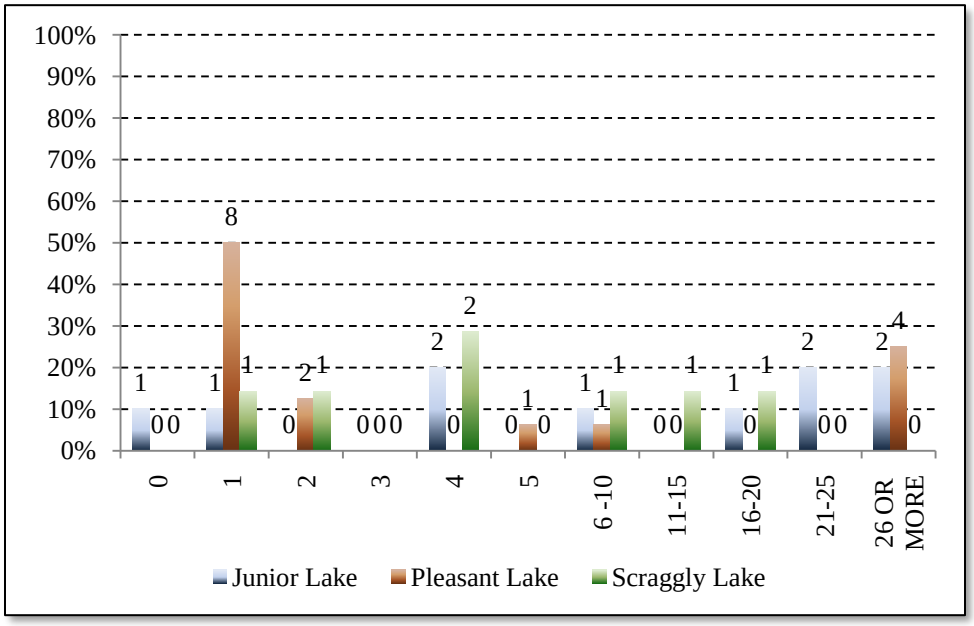


n = 9 (Junior Lake)
n = 13 (Pleasant Lake)
n = 3 (Scraggly Lake)

Q4: During the past year, how many times have you visited the lake?

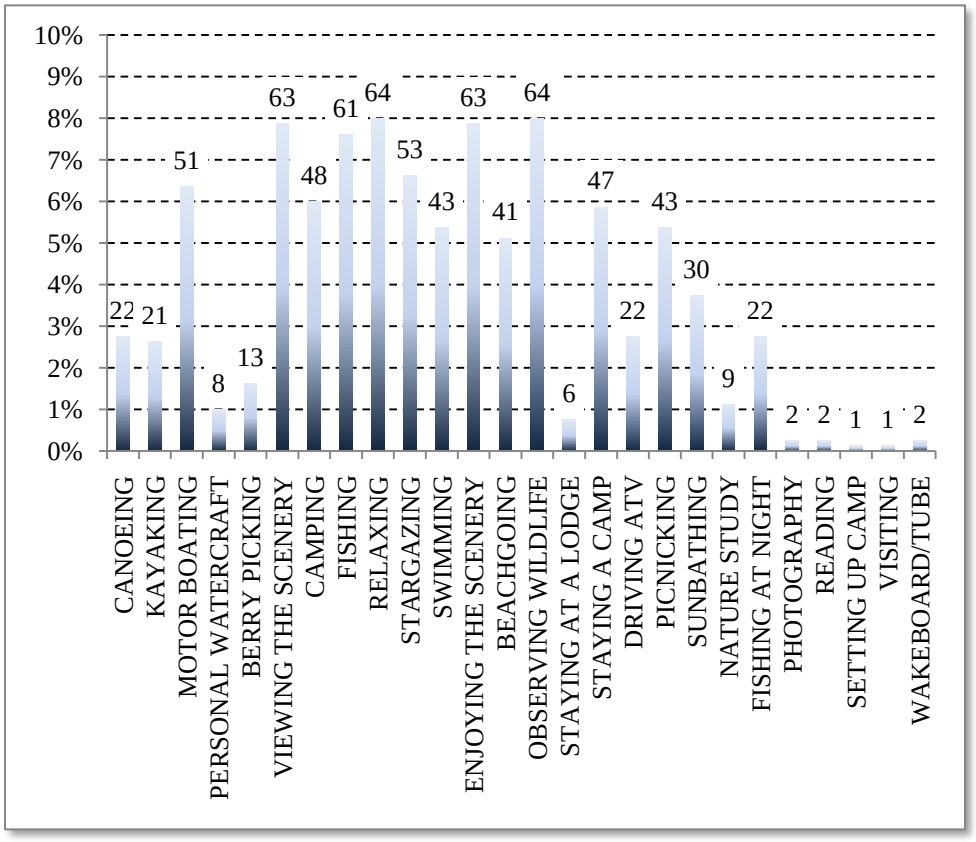


n = 33



n = 10 (Junior Lake)
n = 16 (Pleasant Lake)
n = 7 (Scraggly Lake)

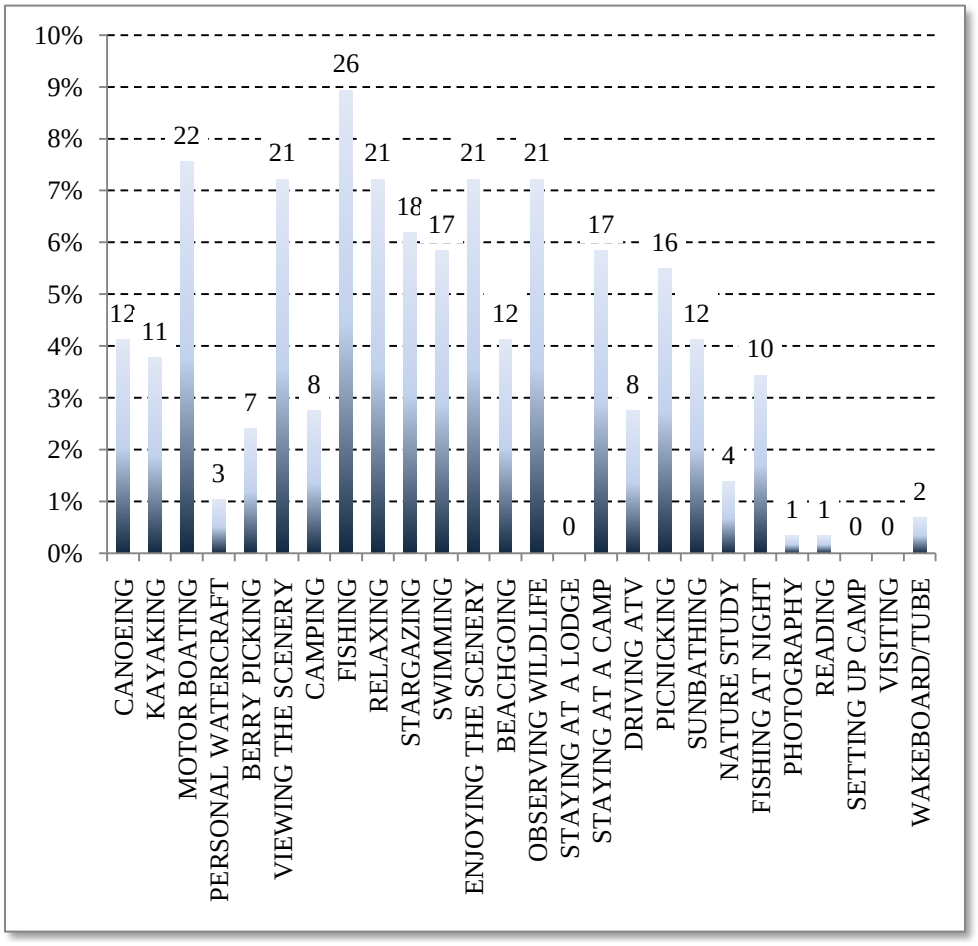
Q5: Think about your activities on the lake. What are your plans for today?



n = 802

Note: Due to multiple responses being allowed for this question, the scale of the frequencies (x-axis) is reduced to a maximum of 10% rather than 100%.

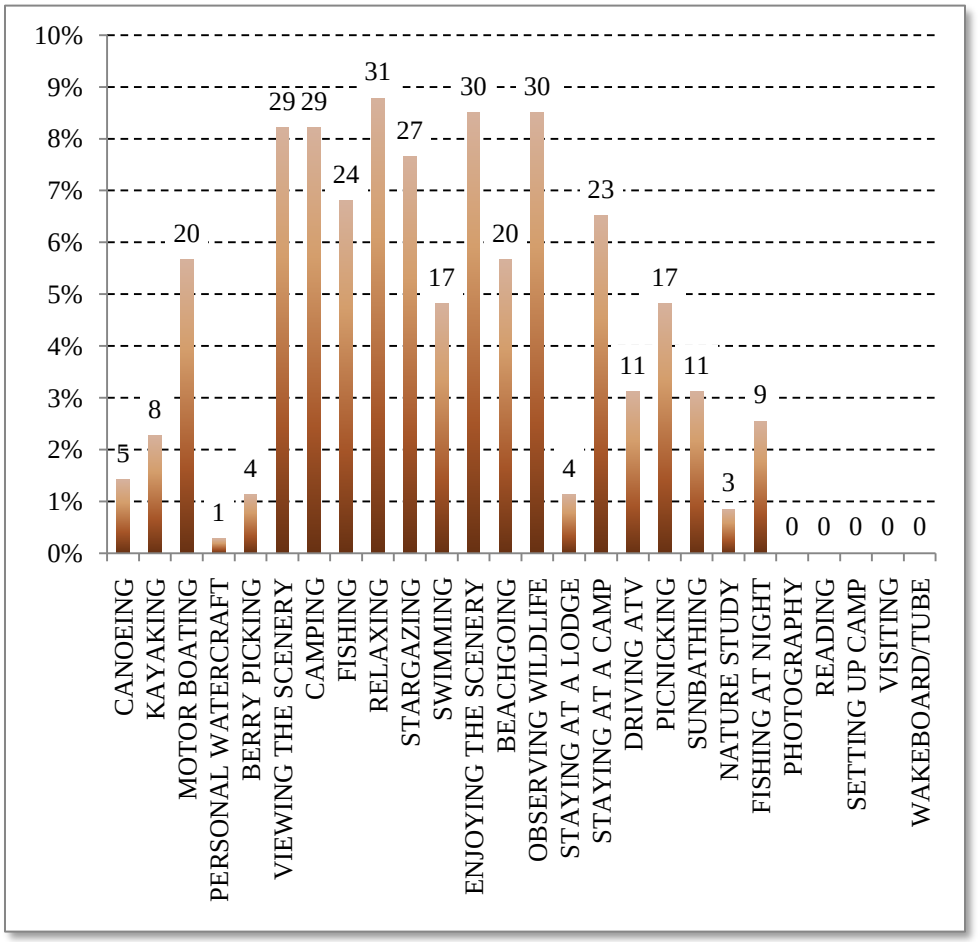
Junior Lake



n = 291

Note: Due to multiple responses being allowed for this question, the scale of the frequencies (x-axis) is reduced to a maximum of 10% rather than 100%.

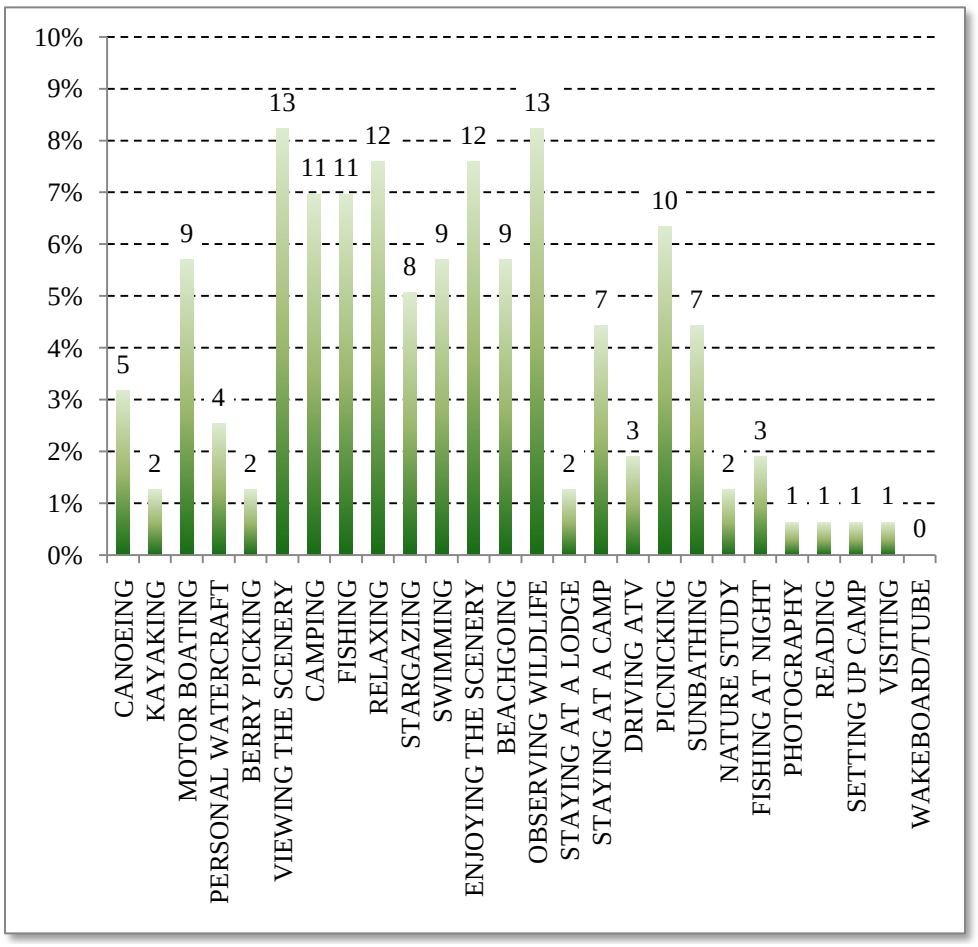
Pleasant Lake



n = 353

Note: Due to multiple responses being allowed for this question, the scale of the frequencies (x-axis) is reduced to a maximum of 10% rather than 100%.

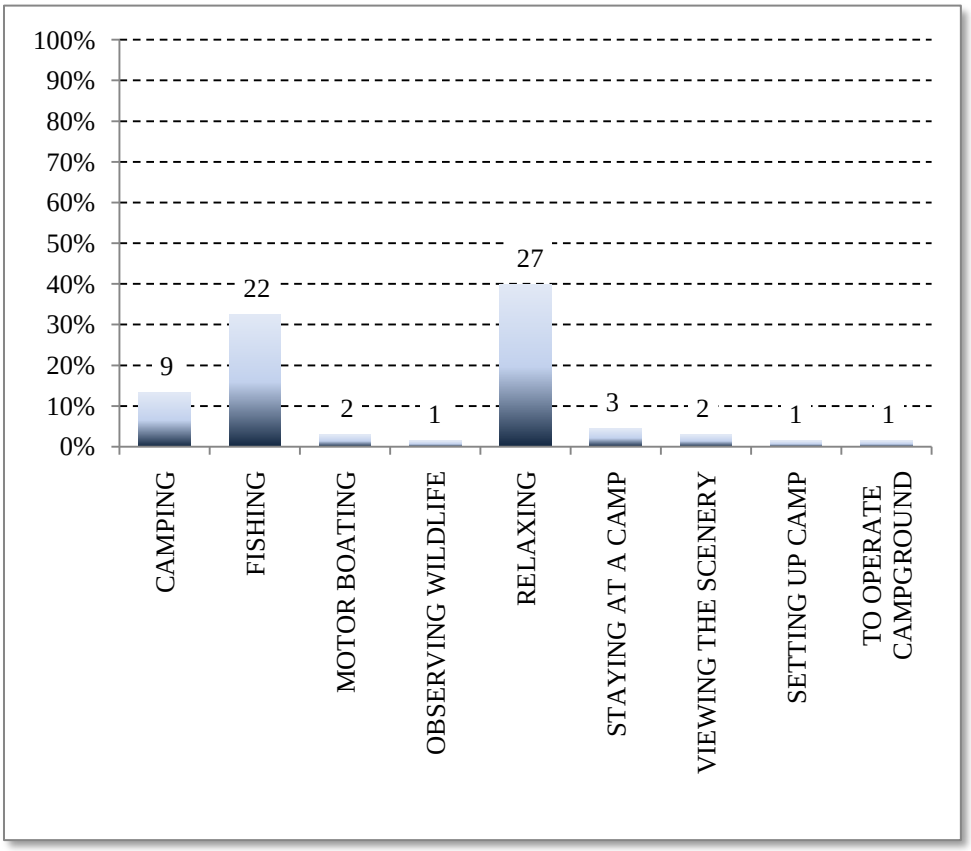
Scraggly Lake



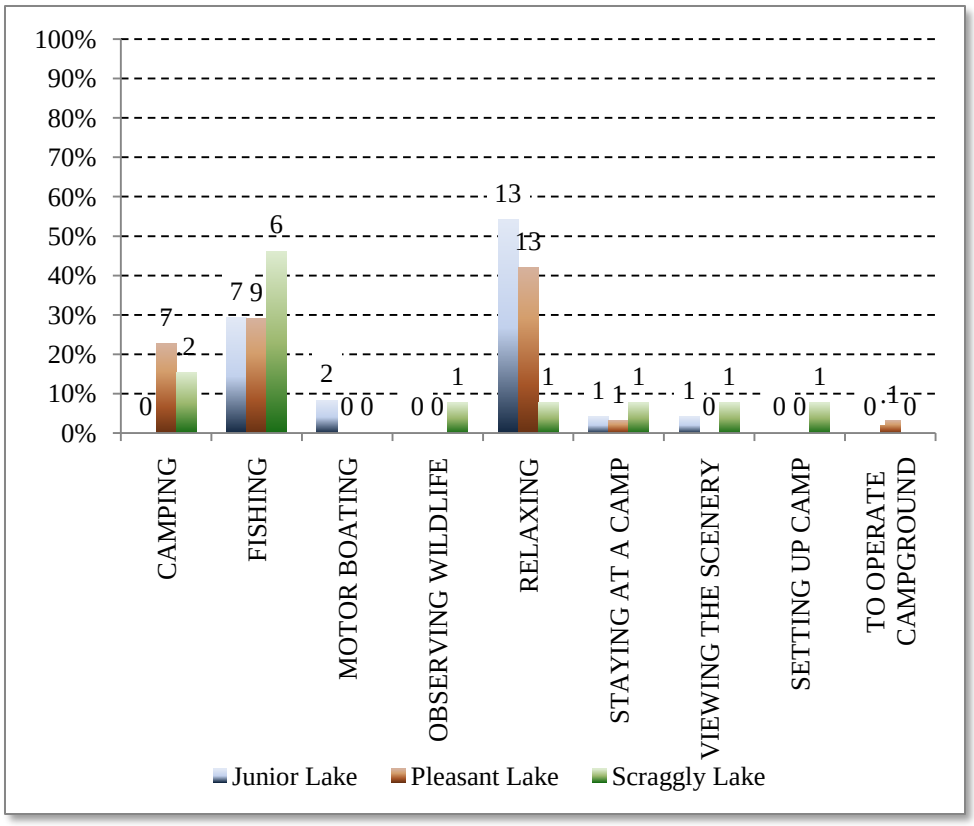
n = 158

Note: Due to multiple responses being allowed for this question, the scale of the frequencies (x-axis) is reduced to a maximum of 10% rather than 100%.

Q6: What is your primary reason for coming here today?



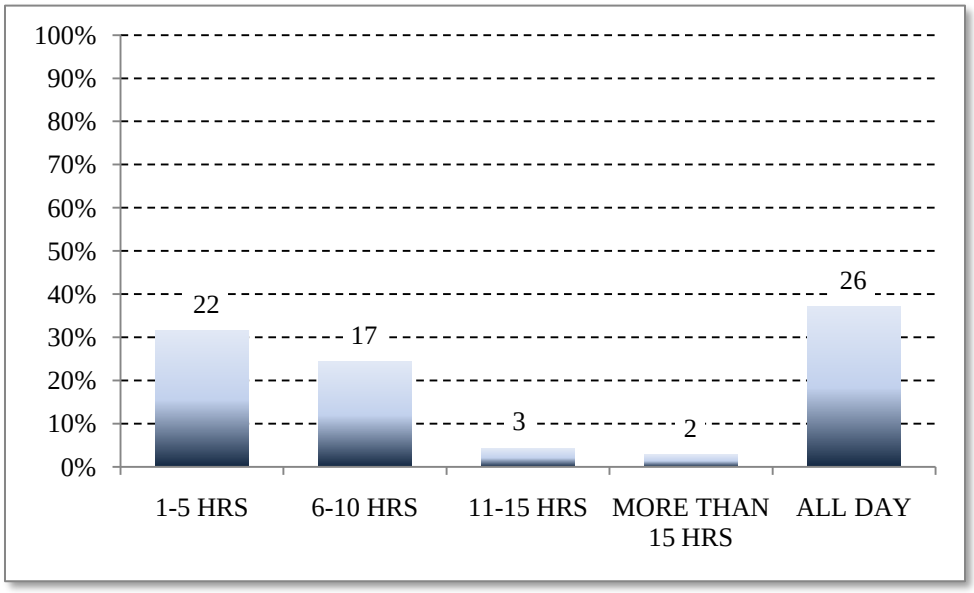
n = 68



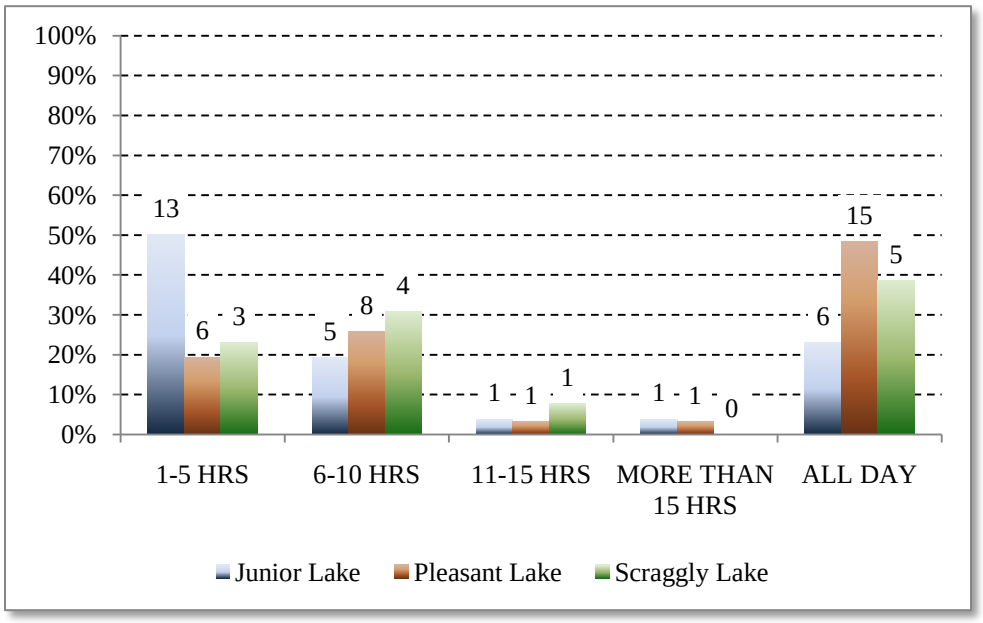
n = 24 (Junior Lake)
n = 31 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q7: Map

Q8: How long do you expect to visit the lake today?

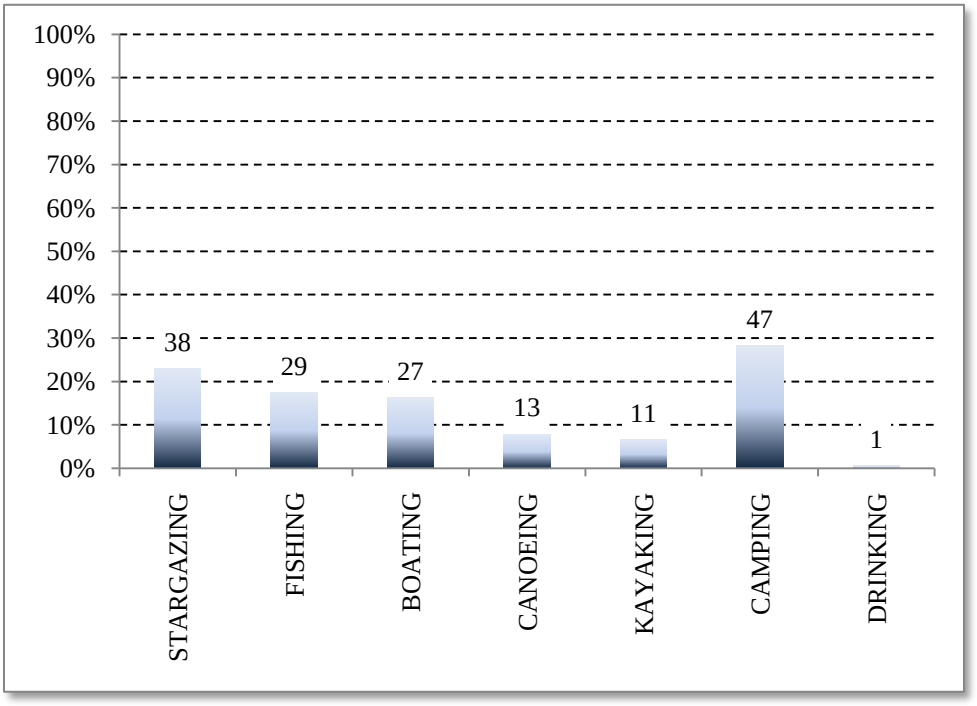


n = 70

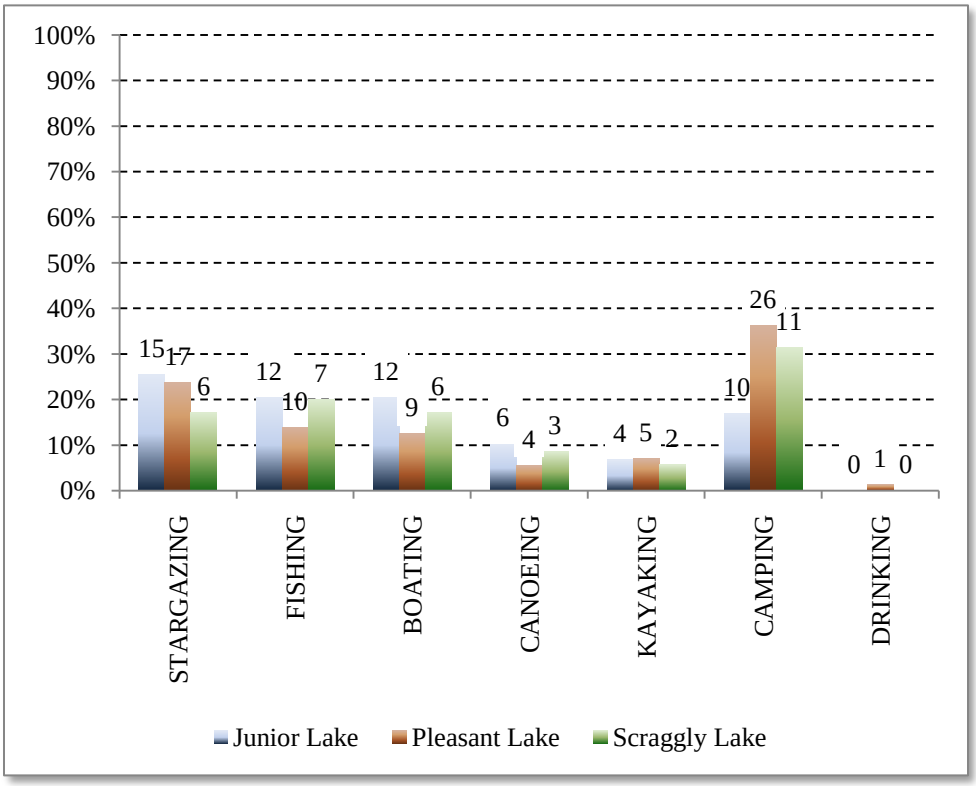


n = 26 (Junior Lake)
n = 31 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q9: On this trip, did you use, or visit, the lake at night for…?

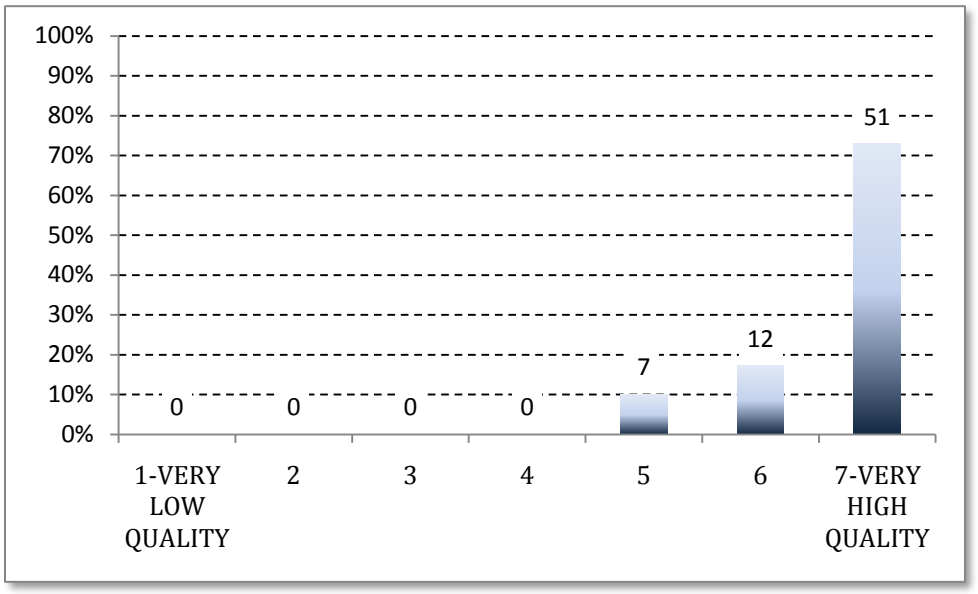


n = 166

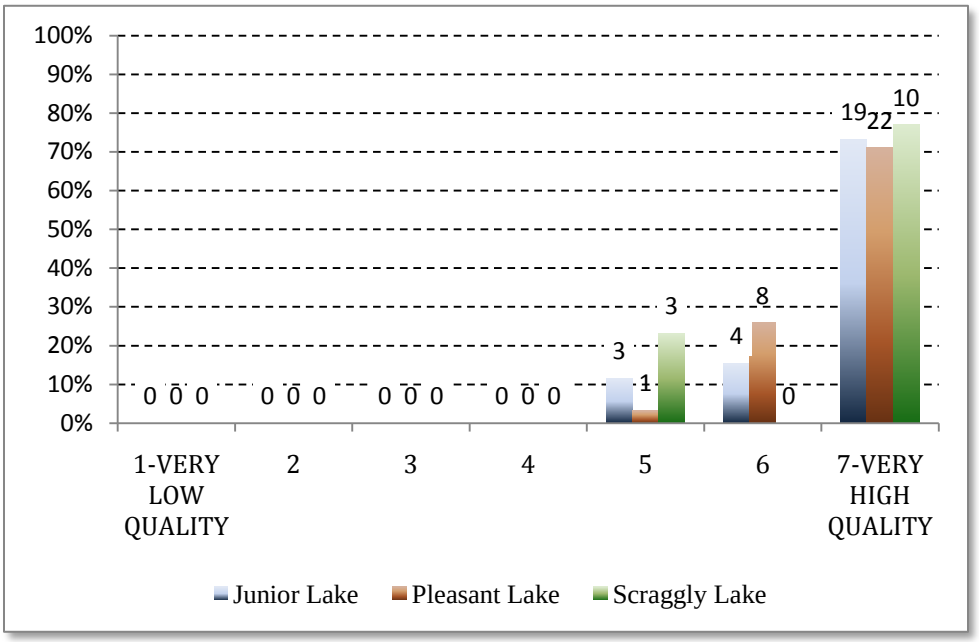


n = 59 (Junior Lake)
n = 72 (Pleasant Lake)
n = 35 (Scraggly Lake)

Q10: On a scale of 1 to 7, where 1 is very low quality, a 7 is very high quality, and a 4 is neither high nor low quality, what is the overall quality of the experience you expected on your visit to the lake today?

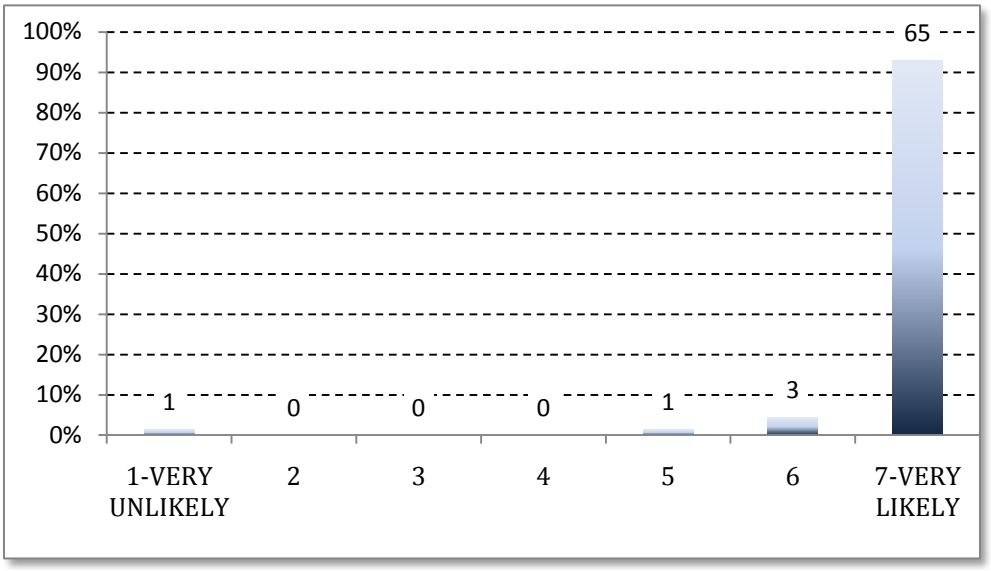


n = 70

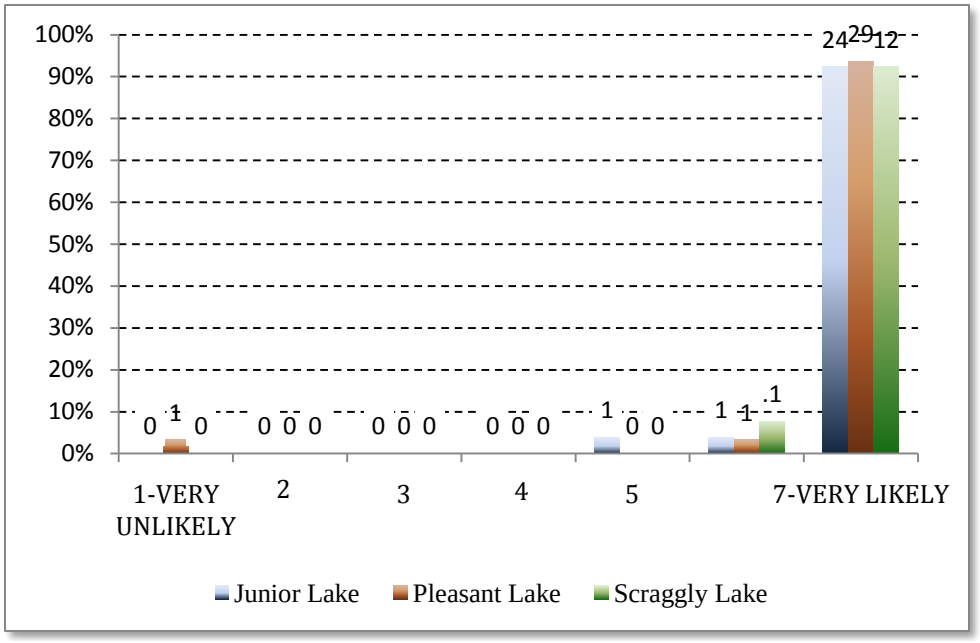


n = 26 (Junior Lake)
n = 31 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q11: On a scale of 1 to 7, where 1 is very unlikely, a 7 is very likely, and a 4 is neither unlikely nor likely, how likely is it that you will visit the lake in the future?

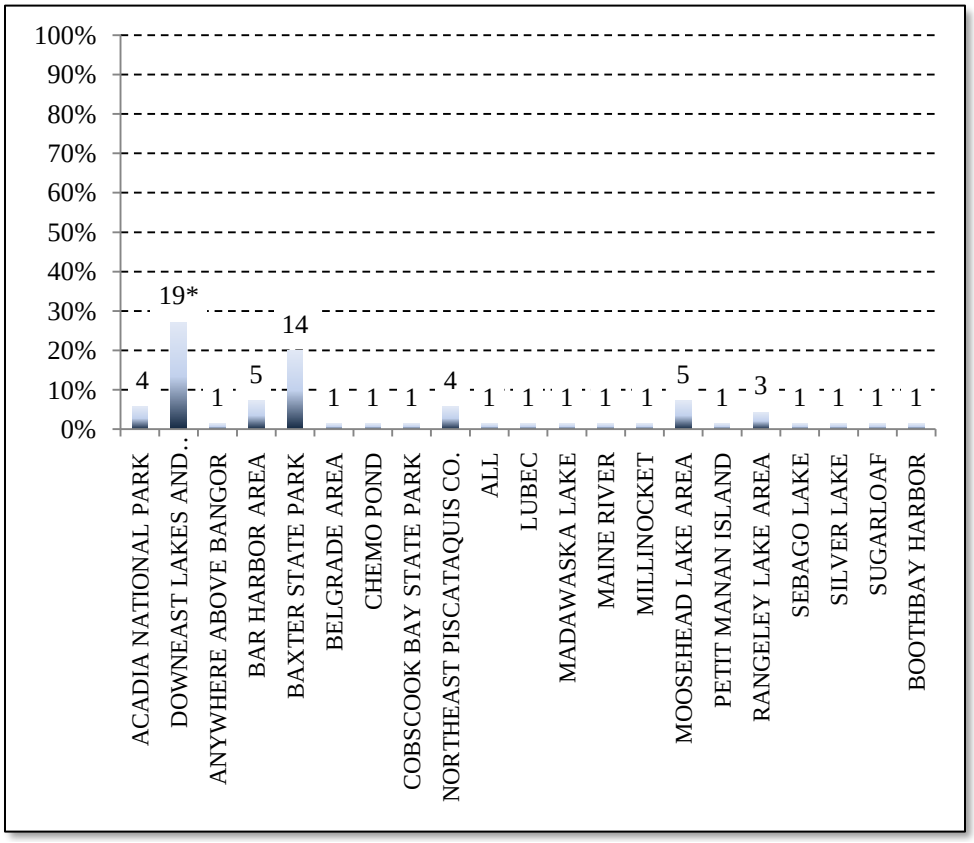


n = 70



n = 24 (Junior Lake)
n = 29 (Pleasant Lake)
n = 12 (Scraggly Lake)

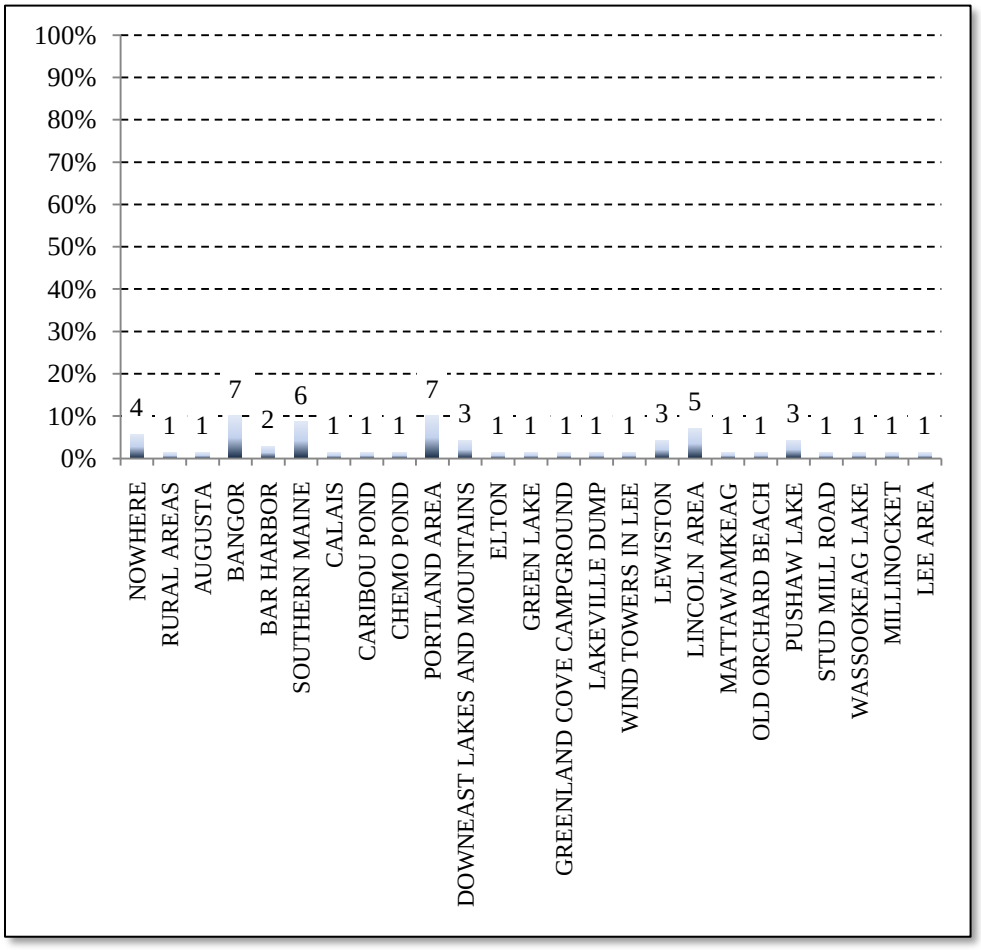
Q12: What is a place in Maine with very high scenic quality?



n=68

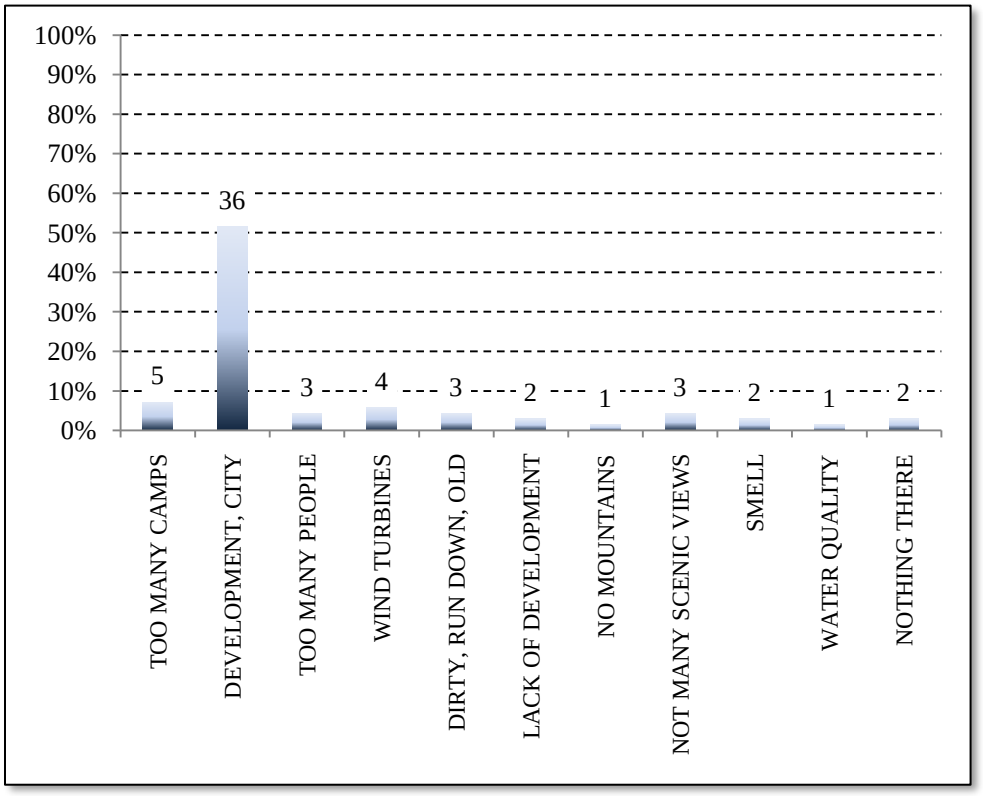
*Category is Downeast Lakes and Mountains

Q14: What is a place in Maine with a very low scenic quality?



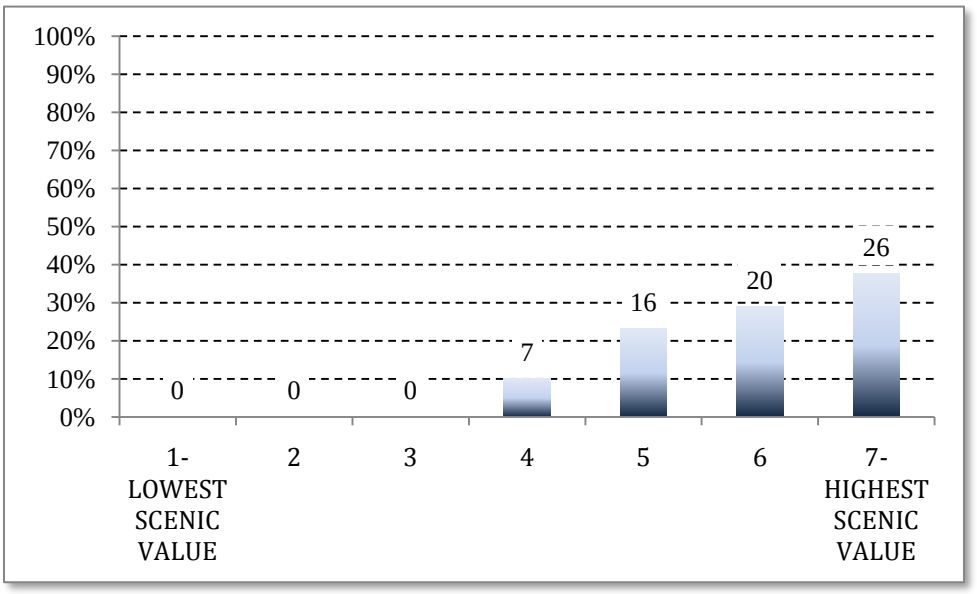
n=56

Q15: What is it that gives it a low scenic value?

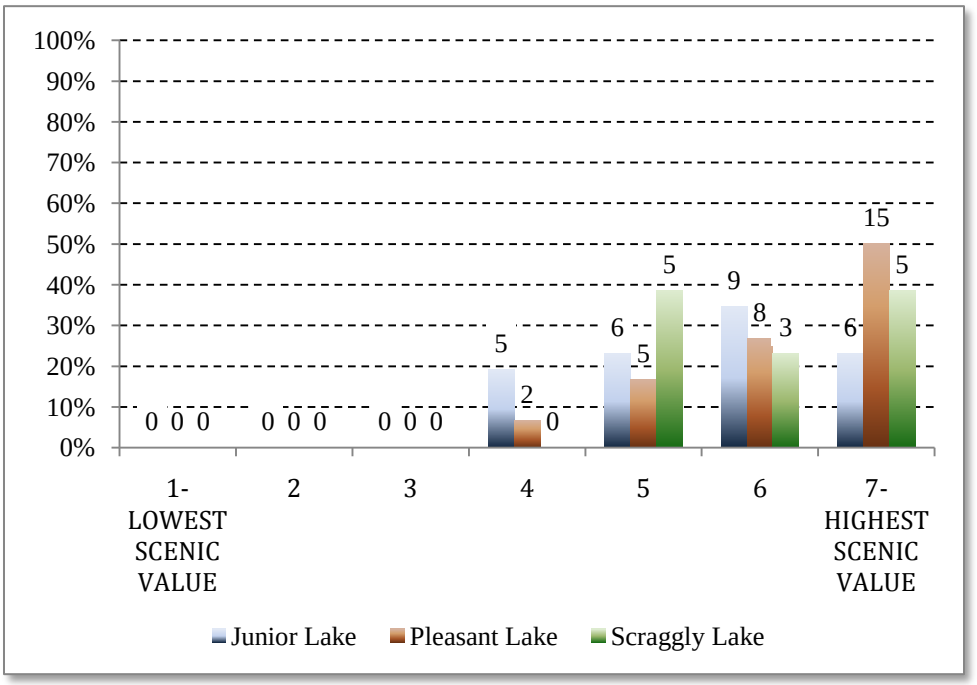


n=62

Q16. We would like you to think about the scenic value of the lake. I am going to show you two photographs and I would like you to rate the scenic value of the views depicted in the photographs. If you hold the photograph 19 inches from your face, it will make everything in the photograph the same size that it would be if you were looking at it from where the photograph was taken. On a scale of 1 to 7 where a 1 is the lowest scenic value in Maine, a 4 is the typical scenic value in Maine, and a 7 is the highest scenic value in Maine, how would you rate this view?

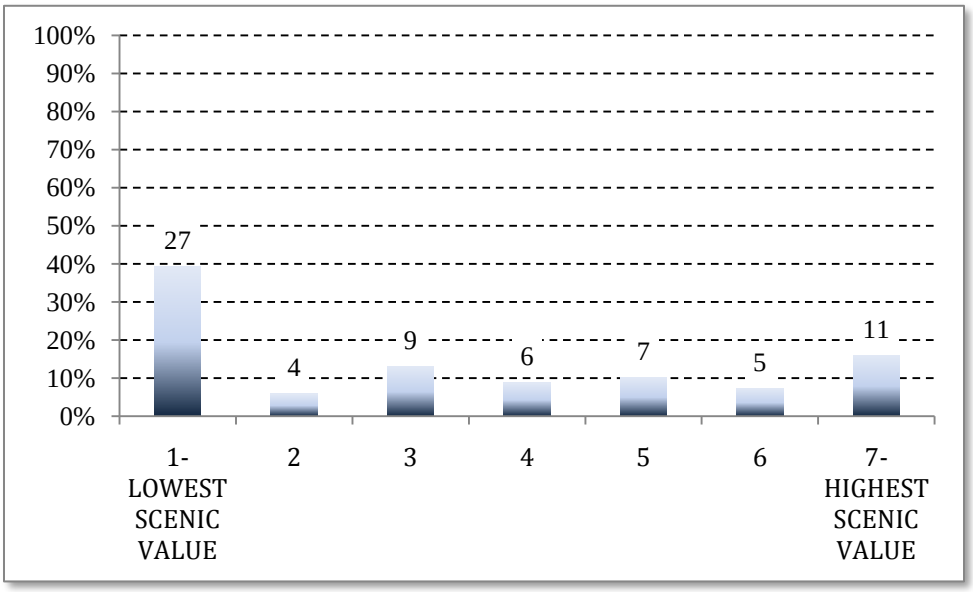


n = 69

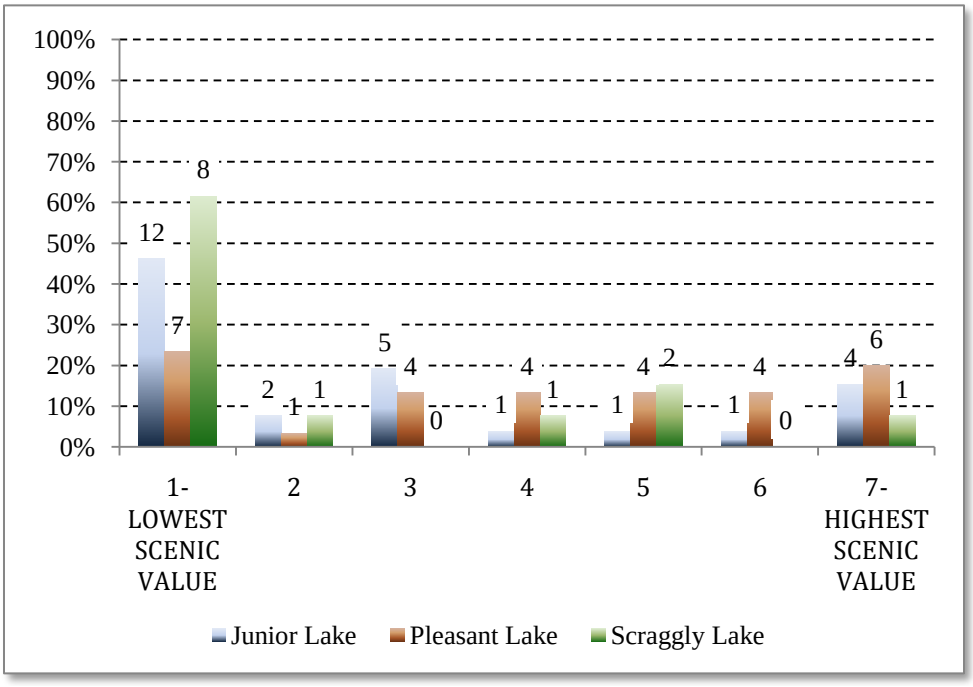


n = 26 (Junior Lake)
n = 30 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q17: Recently, a wind farm was proposed to be developed near here. A wind farm is a group of wind turbines that capture energy from the wind to generate electricity. This photograph shows how the same view would look if a wind farm was developed. How would you rate the scenic value of this view using the same 7-point scale, where 1 is the lowest, 4 is typical, and 7 is the highest scenic value?

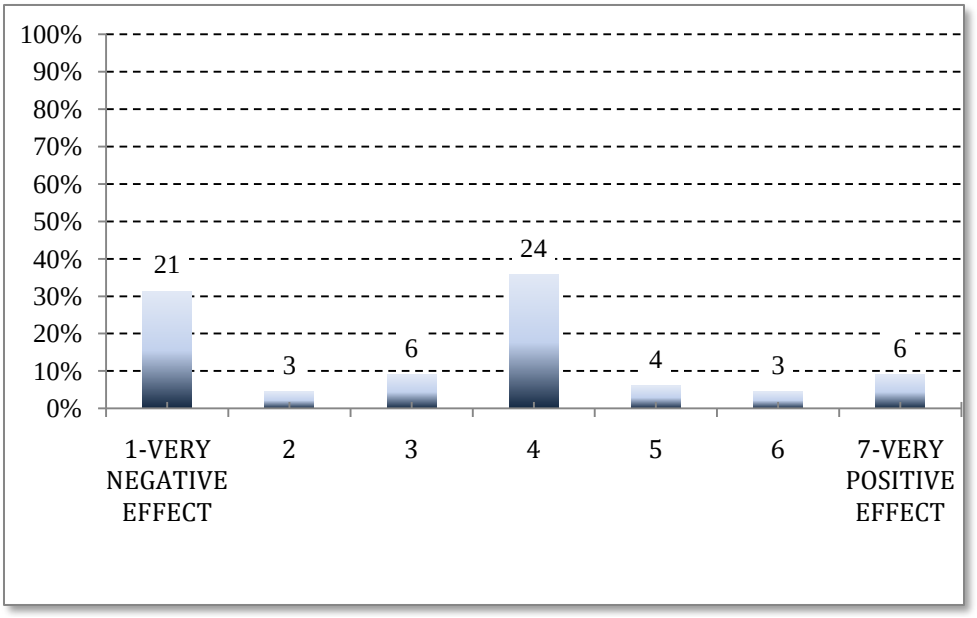


n =69

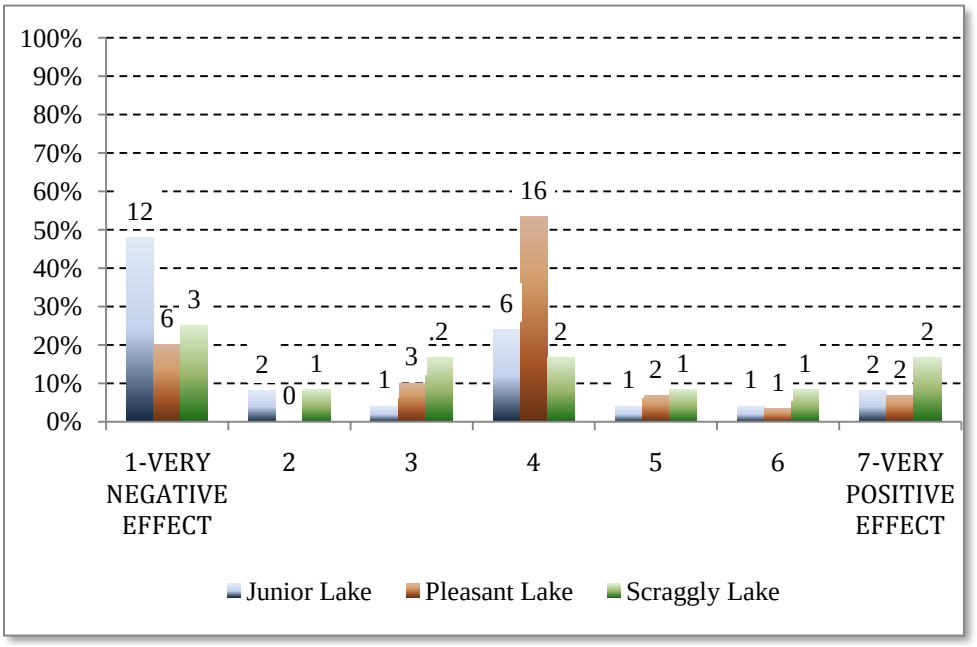


n = 26 (Junior Lake)
n = 31 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q18: Now, I'd like you to think about how your enjoyment of visiting the lake would be affected if you were to see the proposed wind project during your visit today. On a scale of 1 to 7, where a 1 is a very negative effect, a 4 means that it would not change your enjoyment at all, and a 7 is a very positive effect on your enjoyment, how would your enjoyment be affected?

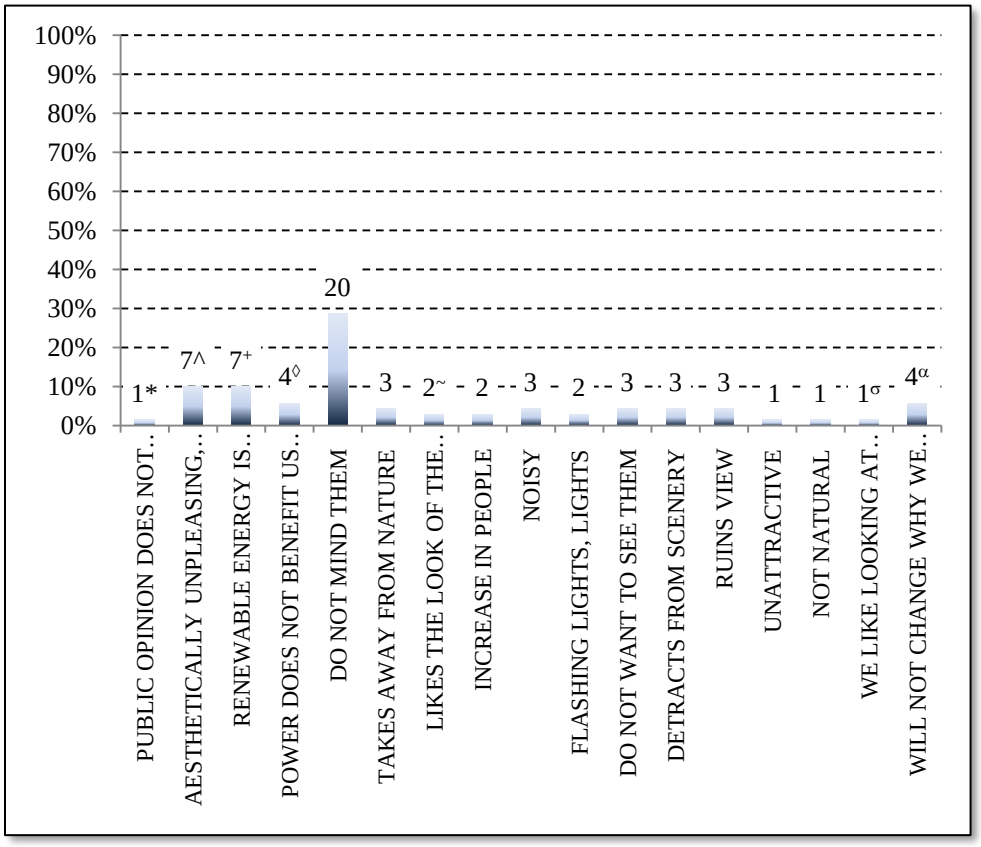


n = 68



n = 26 (Junior Lake)
n = 31 (Pleasant Lake)
n = 13 (Scraggly Lake)

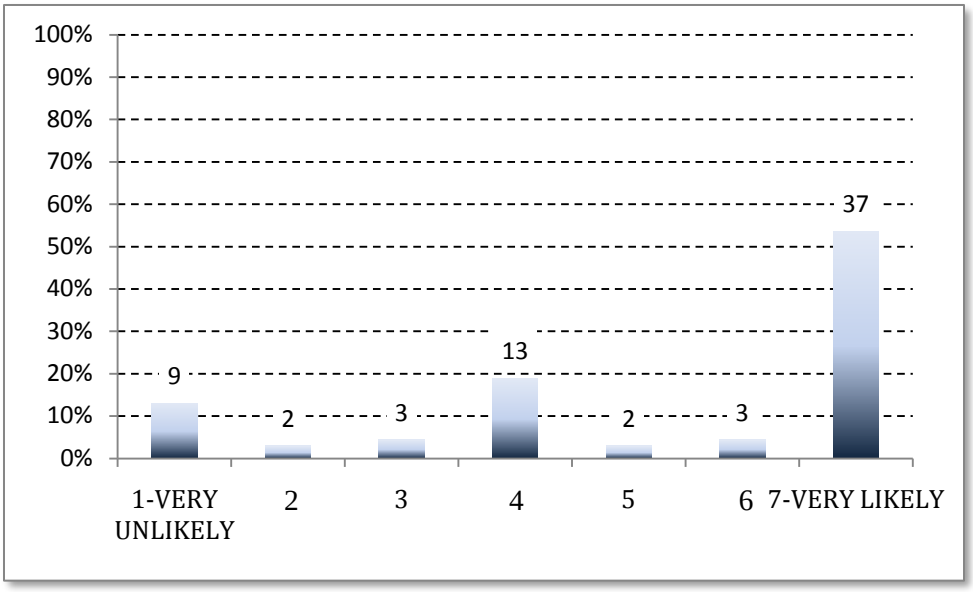
Q19: Why do you say that (enjoyment)?



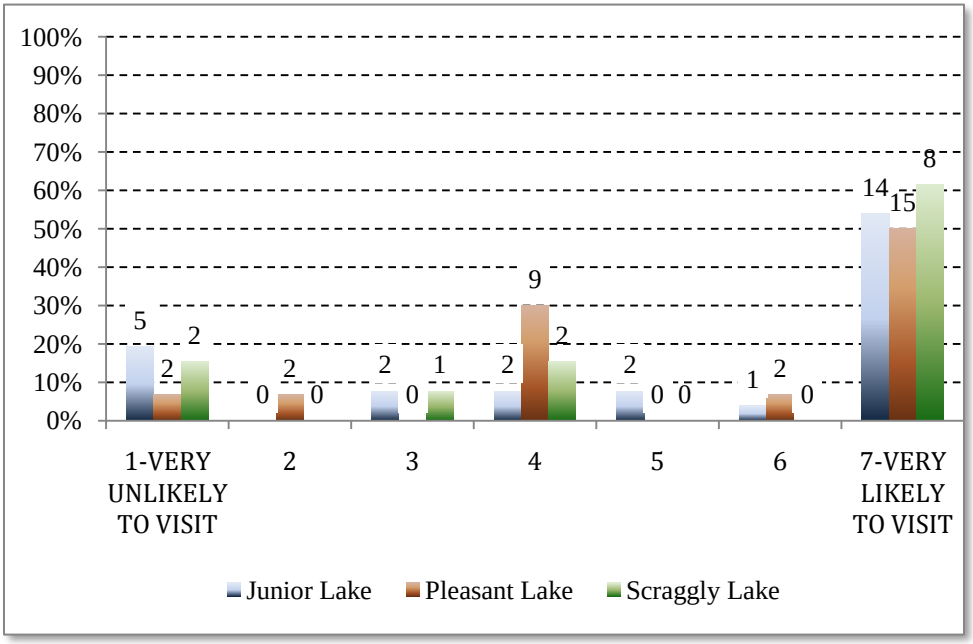
n=67

*Category is Public Opinion Does Not Matter
^Category is Aesthetically Unpleasing, Akin to Development & Industry
+Category is Renewable Energy is Beneficial
◊Category is Power Does Not Benefit Us Locally
~Category is Likes the Look of the Turbines
σCategory is We Like Looking at Mountains
αCategory is Will Not Change Why We Come Here

Q20: Now, I'd like you to think about your trip here today. Imagine the proposed wind project was built. On a scale of 1 to 7, where a 1 means you are very unlikely to return, a 4 means the change in view would have no effect on your return, and a 7 means you are very likely to return, how likely are you to return to given the presence the wind turbines?

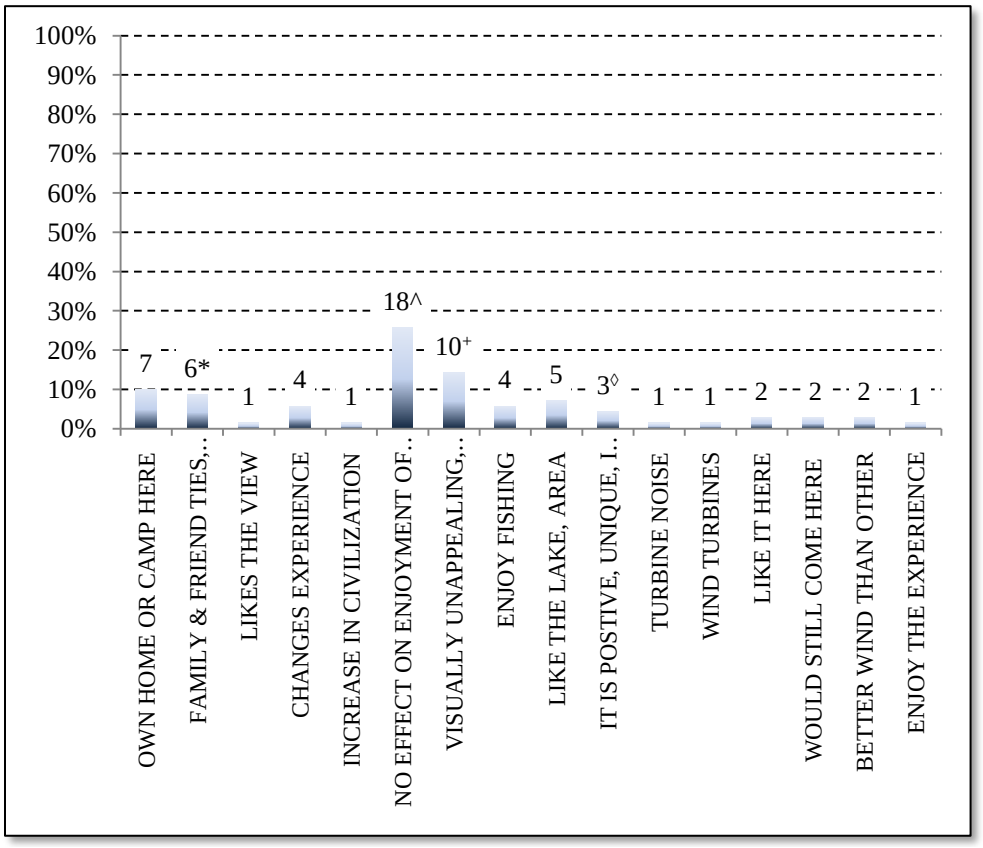


n = 69



n = 26 (Junior Lake)
n = 31 (Pleasant Lake)
n = 13 (Scraggly Lake)

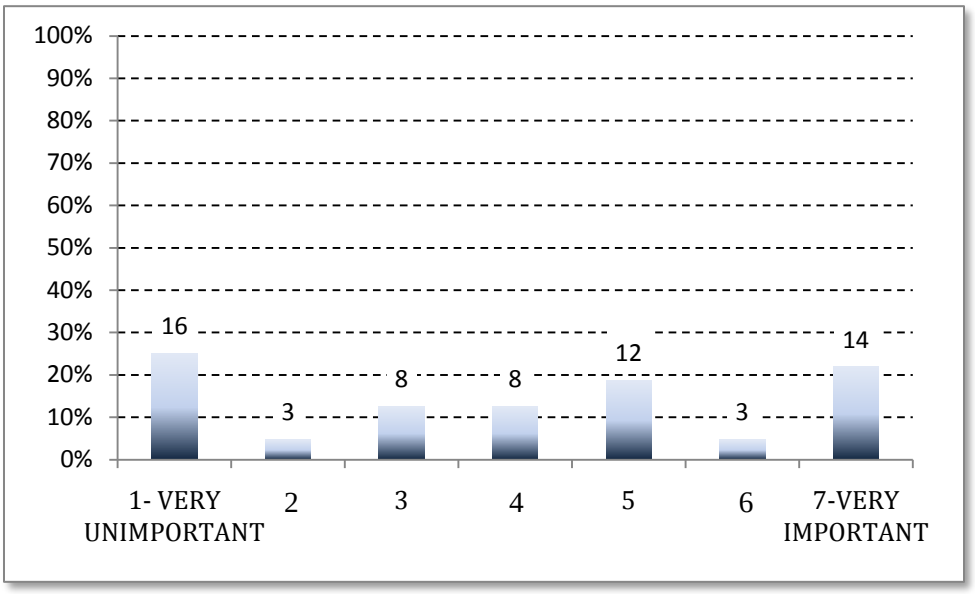
Q21: Why is that (likelihood of return)?



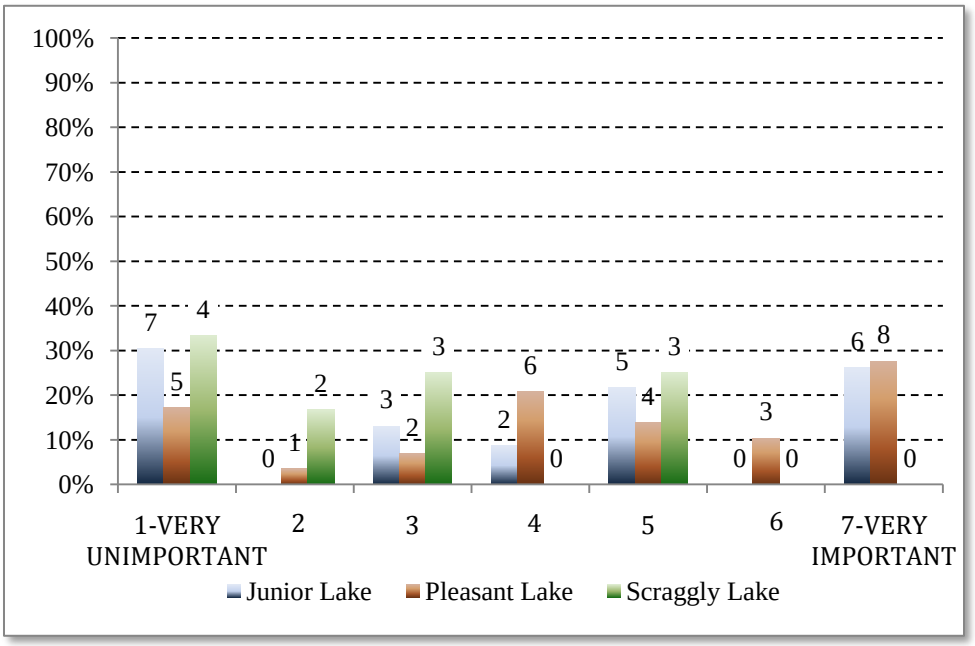
n=68

*Category is Family & Friend Ties, Tradition, History
^Category is No Effect on Enjoyment of Lake
+Category is Visually Unappealing, Changes View
◊Category is It is Positive, Unique, I Support Wind

Q22: Thinking about wind power development in general, please rate how important it is for Maine, on a scale of 1 to 7, where a 1 means wind power is generally very unimportant and a 7 means it is generally very important.

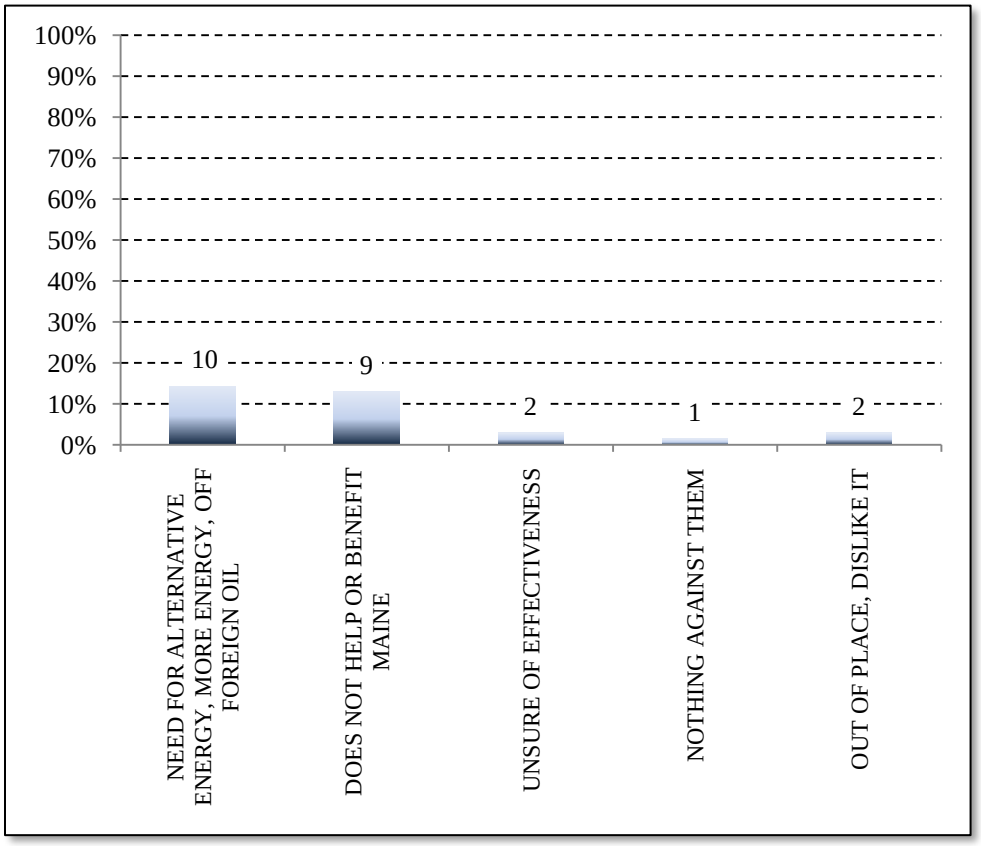


n = 64



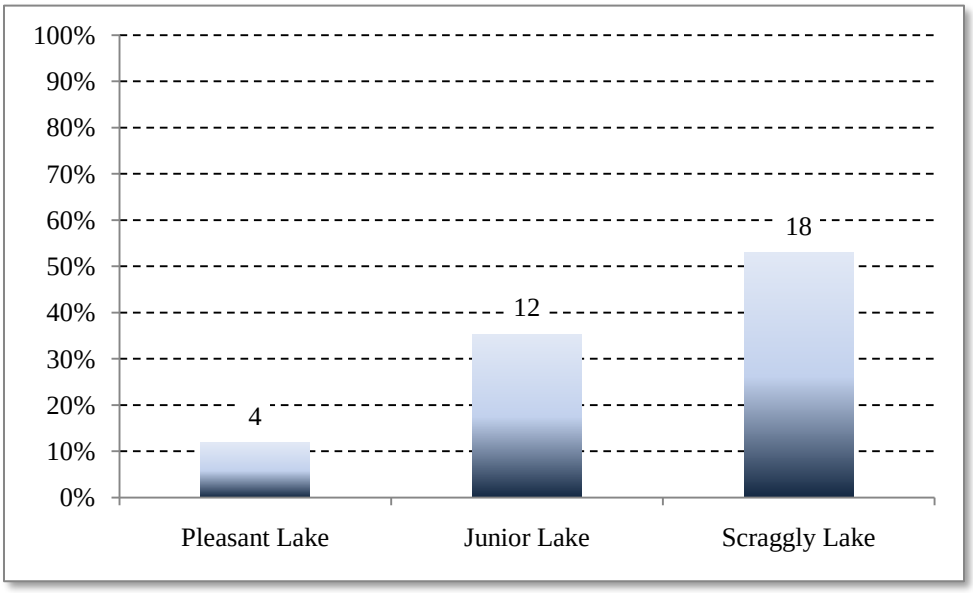
n = 26 (Junior Lake)
n = 31 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q23: Why do you feel that way (wind power for Maine)?

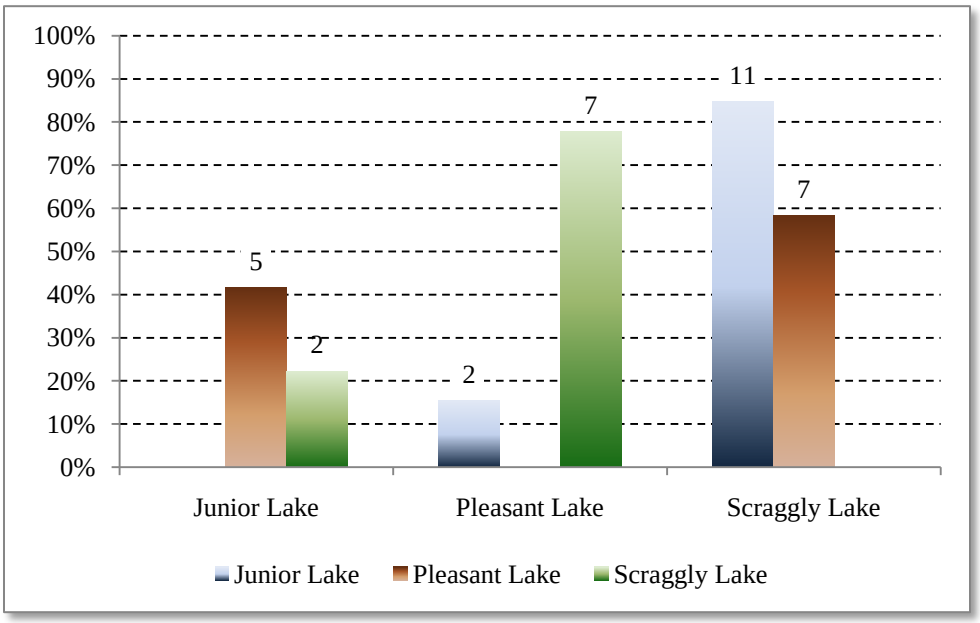


n=24

Q24: Have you visited any of the following lakes in the area on this trip...?

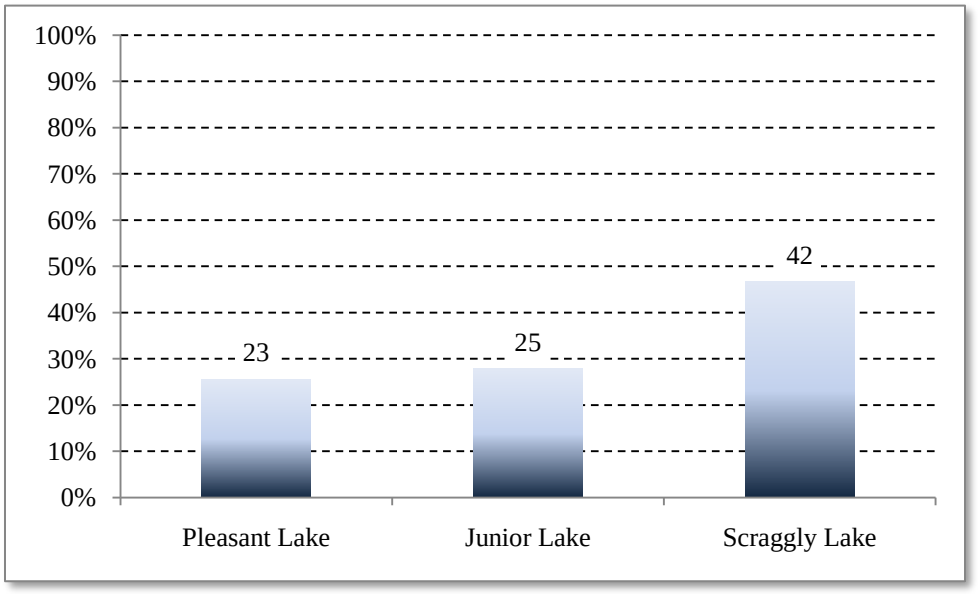


n = 34

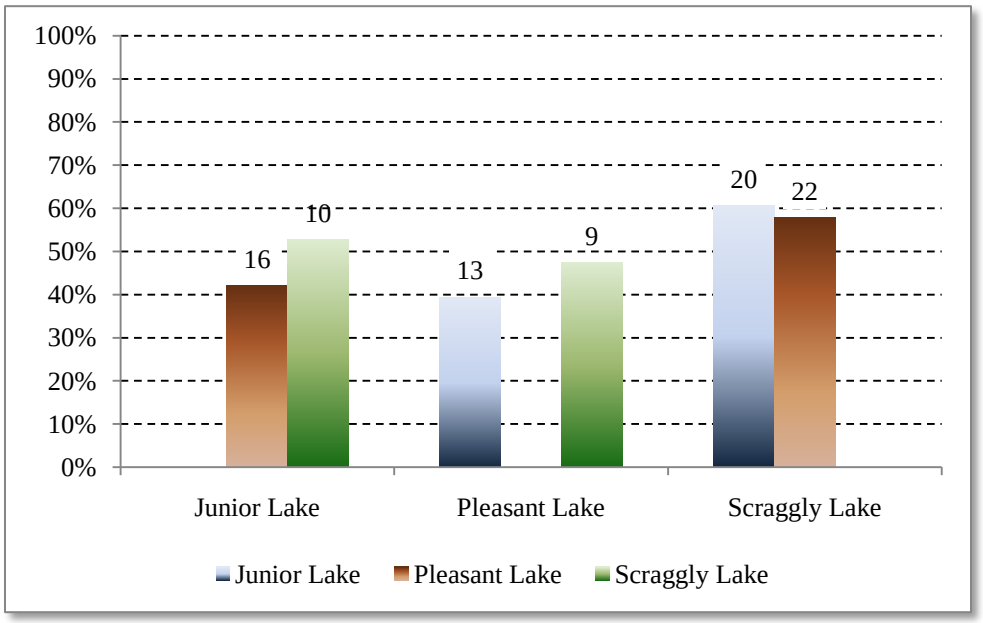


n = 13 (Junior Lake)
n = 12 (Pleasant Lake)
n = 9 (Scraggly Lake)

Have you visited any of the following lakes in the area at all...?

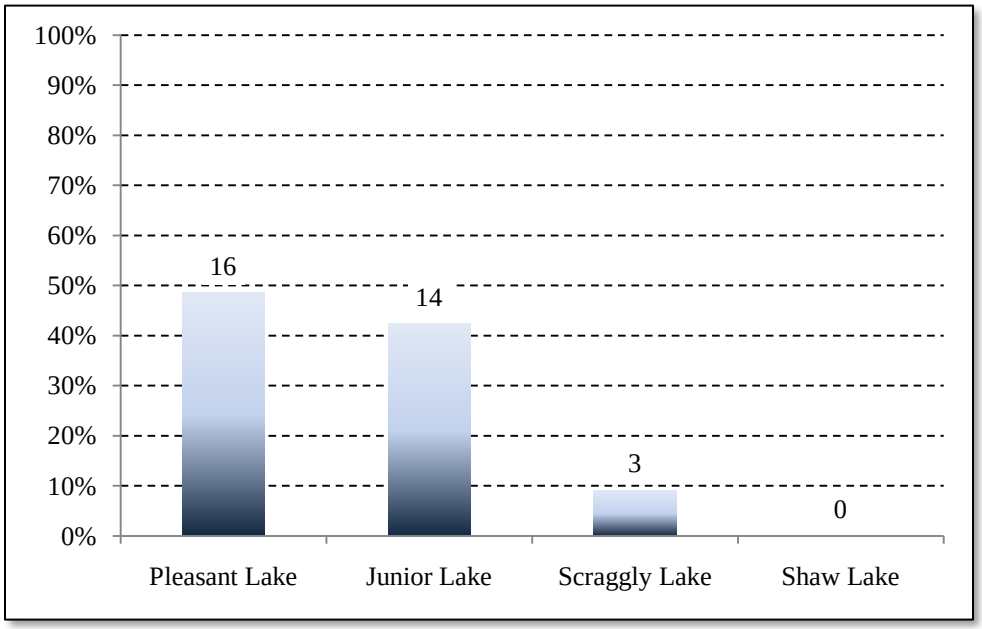


n = 90

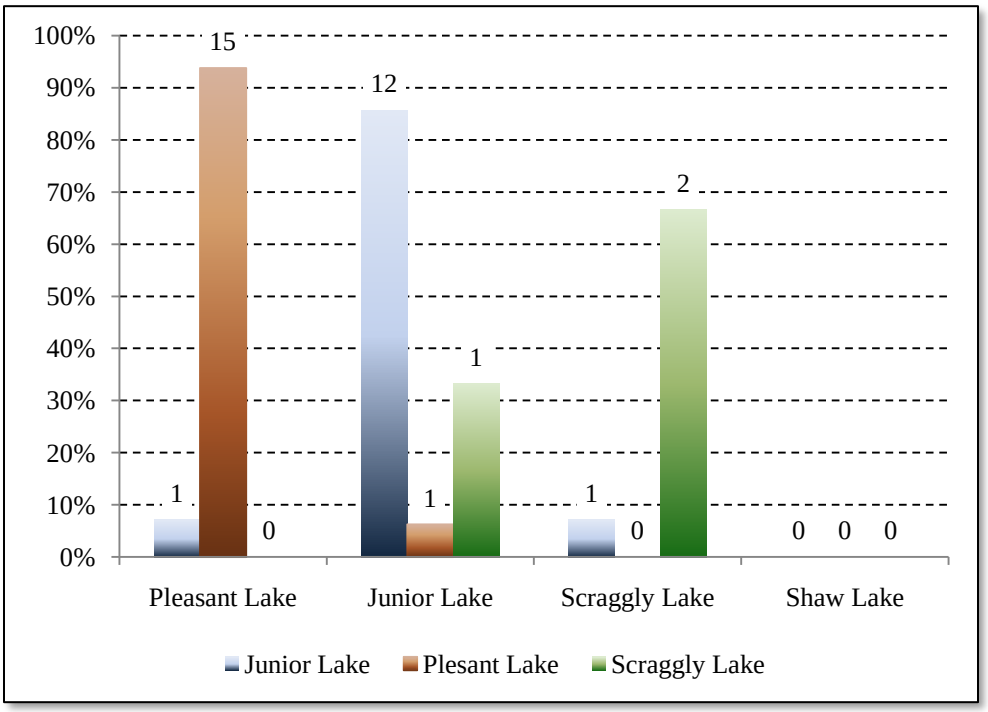


n = 33 (Junior Lake)
n = 38 (Pleasant Lake)
n = 19 (Scraggly Lake)

Q25: Do you own or rent property on…?

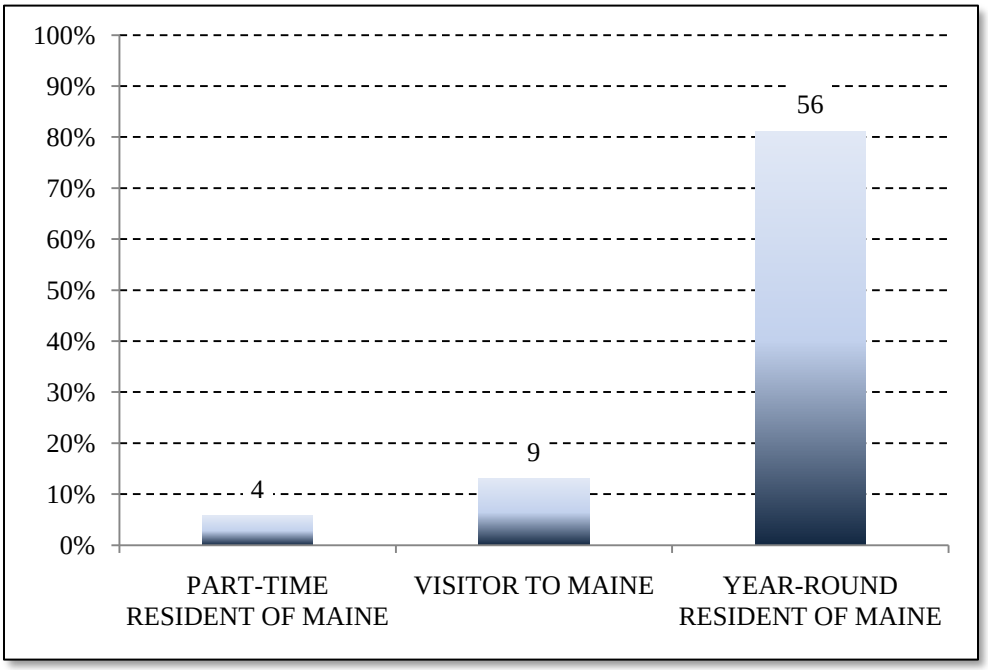


n = 33

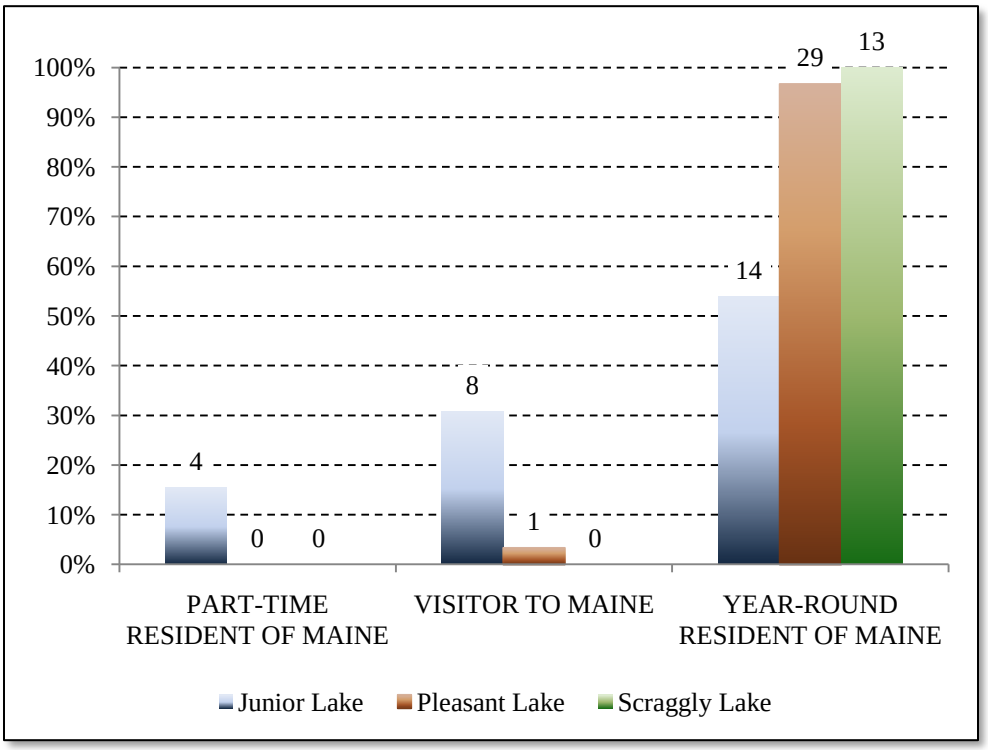


n = 14 (Junior Lake)
n = 16 (Pleasant Lake)
n = 3 (Scraggly Lake)

Q26: Are you…?



n = 69



n = 26 (Junior Lake)
n = 30 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q27: What is the zip code of your primary residence?

	Frequency	Valid Percent
00487	1	1.5
01403	1	1.5
02351	1	1.5
04008	1	1.5
04062	1	1.5
04062	1	1.5
04093	1	1.5
04096	2	2.9
04096	1	1.5
04103	1	1.5
04164	1	1.5
04352	2	2.9
04355	1	1.5
04405	1	1.5
04419	1	1.5
04438	1	1.5
04448	1	1.5
04455	3	4.4
04457	5	7.4
04458	1	1.5
04461	4	5.9
04467	1	1.5
04468	1	1.5
04473	2	2.9
04487	5	7.4
04487	1	1.5
04490	2	2.9
04495	1	1.5
04495	1	1.5
04496	1	1.5
04619	2	2.9
04652	1	1.5
04694	1	1.5
04730	1	1.5
04769	1	1.5
04930	1	1.5
04937	1	1.5
04967	1	1.5
04971	1	1.5
05262	1	1.5

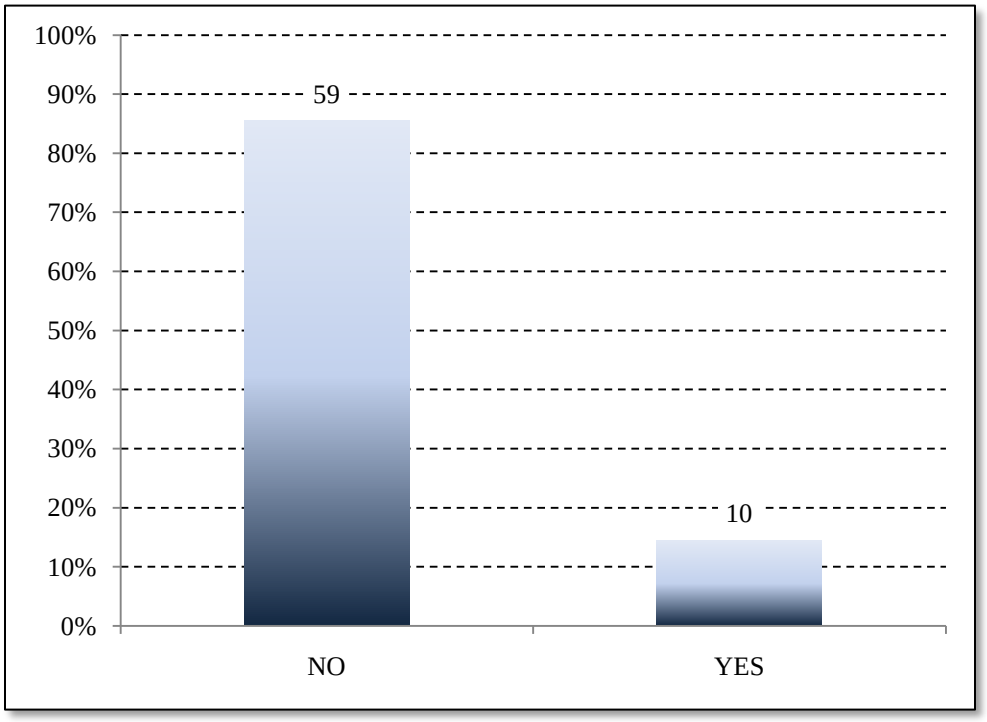
06419	1	1.5
06492	1	1.5
06534	1	1.5
11379	1	1.5
12550	1	1.5
16925	1	1.5
21874	1	1.5
34108	1	1.5
34187	1	1.5
45224	1	1.5
Total	68	100.0
Missing	2	
	70	

What is the zip code of your primary residence?

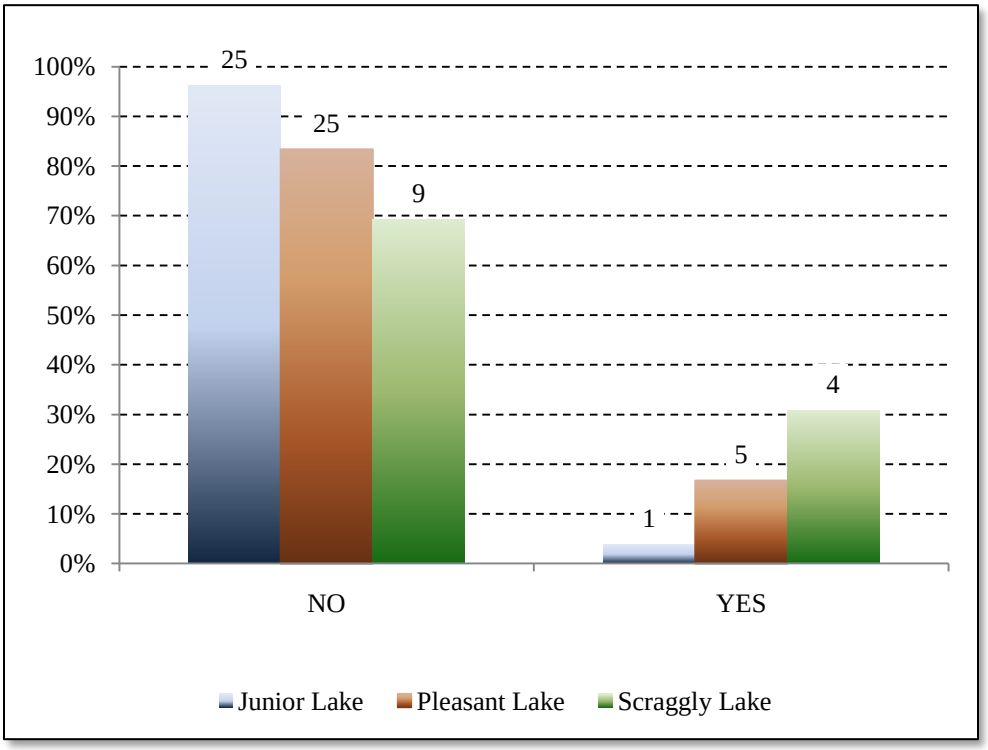
LAKE		Frequency	Valid Percent
JUNIOR LAKE	01403	1	4.0
	04008	1	4.0
	04103	1	4.0
	04164	1	4.0
	04355	1	4.0
	04438	1	4.0
	04457	1	4.0
	04458	1	4.0
	04461	1	4.0
	04468	1	4.0
	04487	1	4.0
	04495	1	4.0
	04937	1	4.0
	05262	1	4.0
	06419	1	4.0
	06492	1	4.0
	06534	1	4.0
	11379	1	4.0
	16925	1	4.0
	21874	1	4.0
	34108	1	4.0
	34187	1	4.0
	02351	1	4.0
	04496	1	4.0
	45224	1	4.0
	Total	25	100.0
	Missing	1	
		26	
PLEASANT LAKE	00487	1	3.3
	04062	1	3.3
	04093	1	3.3
	04419	1	3.3
	04448	1	3.3
	04455	2	6.7
	04457	2	6.7
	04461	2	6.7
	04467	1	3.3
	04473	1	3.3

	04487	2	6.7
	04490	1	3.3
	04619	2	6.7
	04652	1	3.3
	04694	1	3.3
	04730	1	3.3
	04769	1	3.3
	04930	1	3.3
	04967	1	3.3
	04971	1	3.3
	12550	1	3.3
	04062	1	3.3
	04096	1	3.3
	04487	1	3.3
	04495	1	3.3
	Total	30	100.0
	Missing	1	
		31	
SCRAGGLY LAKE	04096	2	15.4
	04352	2	15.4
	04405	1	7.7
	04455	1	7.7
	04457	2	15.4
	04461	1	7.7
	04473	1	7.7
	04487	2	15.4
	04490	1	7.7
	Total	13	100.0

Q28: Had you heard of this survey before we asked you to participate?

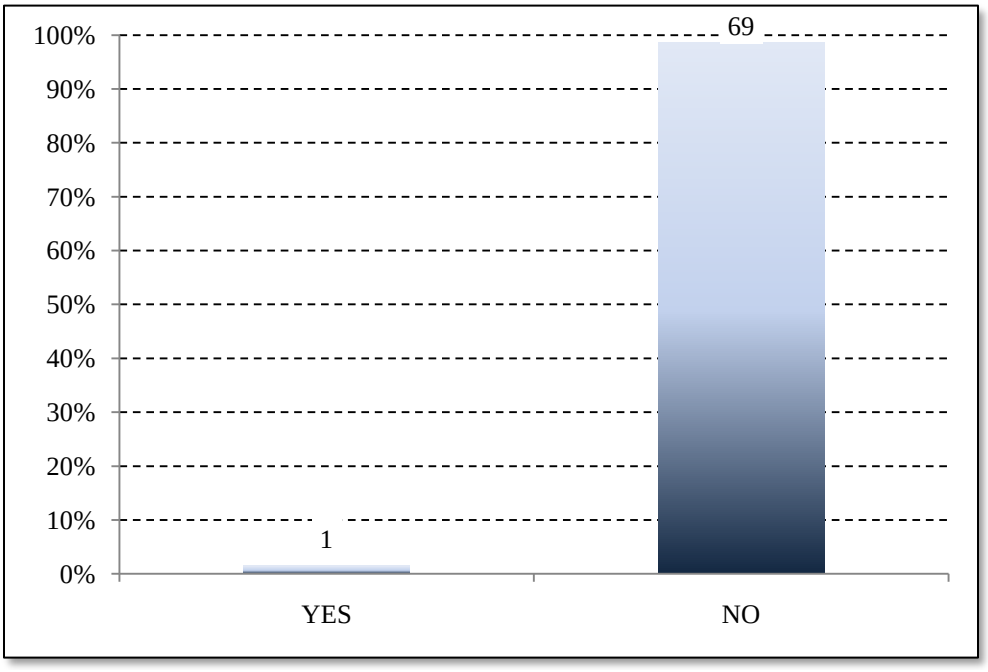


n = 69

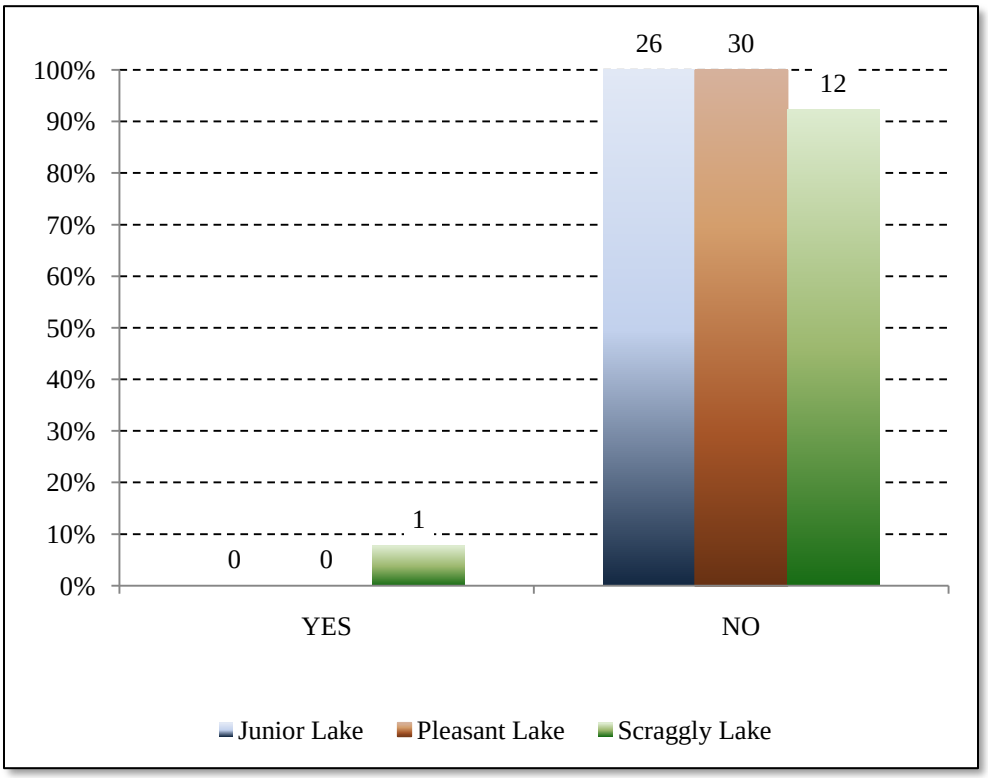


n = 26 (Junior Lake)
n = 30 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q29: Are you using the service of a Registered Maine Guide today?

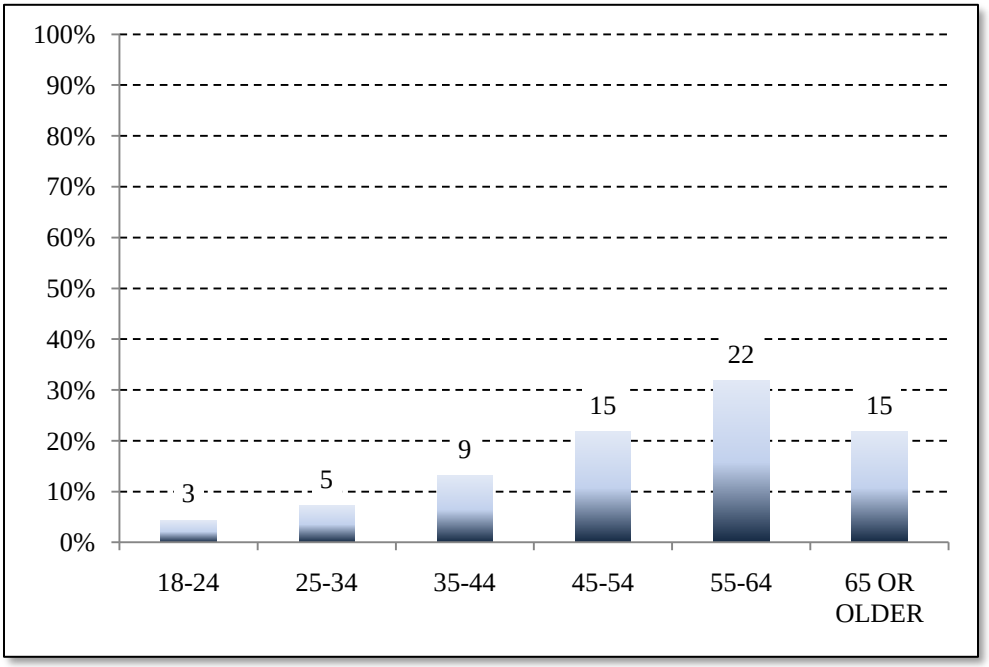


n = 69

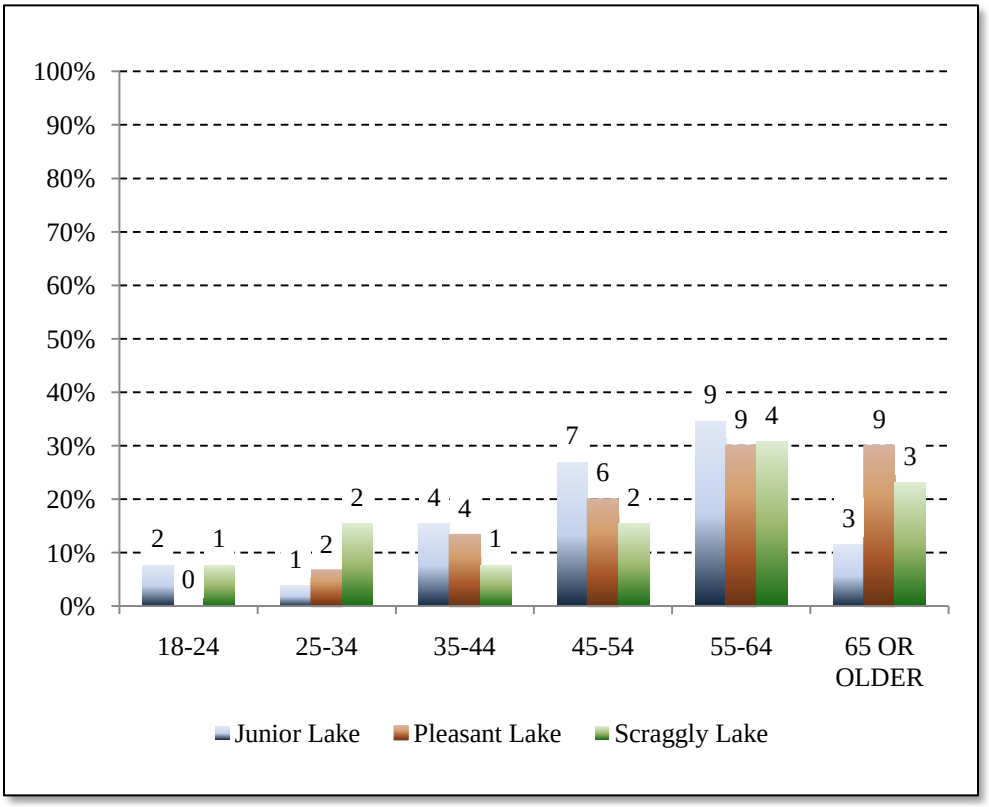


n = 26 (Junior Lake)
n = 30 (Pleasant Lake)
n = 13 (Scraggly Lake)

Q30: Please tell me which best represents your age group.



n = 69



n = 26 (Junior Lake)
n = 30 (Pleasant Lake)
n = 13 (Scraggly Lake)

EXHIBIT O

PARTNERSHIP FOR THE PRESERVATION OF THE DOWNEAST LAKES WATERSHED (PPDLW)

DOWNEAST LAKES USERS SURVEY

OBJECTIVES

Champlain Wind LLC is in the process of seeking approvals to erect a grid-scale wind energy facility on Bowers Mountain in Carroll Plt, Dill Hill in Kossuth Twp and additional ridges and hills in the area. The project's 27 turbines will be visible from numerous lakes in the region, including nine lakes within eight miles that the Maine Wildlands Lake Assessment has deemed to be Scenic Resources of State or National Significance by virtue of their significant or outstanding scenic value. Of those nine lakes, four of them are within three miles of the project, including one that has been rated "outstanding". The Partnership for the Preservation of the Downeast Lakes Watershed (PPDLW) opposes this project on the grounds that 1) it will result in "unreasonable scenic impact" that will negatively affect users' enjoyment of the lakes, and 2) it will do serious damage to the already delicate local economy which is almost entirely dependent upon "escape" tourism.

Because the relevance of the surveys provided by Champlain Wind LLC has been widely questioned, PPDLW commissioned a survey of the users of these lakes in order to help the permitting authority better understand who the users are, what their expectations are and how the presence of the Bowers Mountain Wind Project will impact their continued enjoyment of the resources.

The survey was designed by PPDLW, then refined, hosted and conducted by SurveyMonkey, the world's leading provider of web-based survey solutions. A total of 267 individual users of the Downeast Lakes completed the survey between February 8 and March 1, 2012.

The survey host, SurveyMonkey, employed three tools to prevent duplicate survey responses:

1. In the introduction to the survey users were informed that only one survey would be accepted per computer. This simple notice is sufficient to prevent most would-be 'ballot stuffers'.
2. A cookie was placed on each respondent's computer identifying that computer as having submitted an entry. No additional surveys would be accepted from this computer. On attempting to open the survey a second time, the user received a notice explaining that if a spouse wanted to take the survey and a second computer is not available, that person can contact SurveyMonkey for a separate URL and unique password to take the survey.
3. In case a respondent was able to identify and disabled the cookie on his computer, IP addresses were tracked without the respondent's knowledge.

There were nine cases of spouses requesting the secondary URL and unique password in order to take the survey. In analyzing the entries, we did not find any duplicate IP addresses. We are therefore confident that there are no duplicate responses in the resulting sample.

METHODOLOGY

The survey used in this research was developed by PPDLW. It was designed to be administered over the web via SurveyMonkey's secure SSL connection. A web-based survey presents numerous advantages over a human administered intercept survey. For example:

- With a traditional intercept survey, the subject is often anxious to get back to what he/she was doing.
- Respondents can take a web-based survey when it is convenient for them.
- Respondents can take as long as they like to study photographs and answer the questions.

- Accurate and detailed survey instructions can be provided; they need not be condensed into a sentence or two.
- Greater accuracy is achieved because possible speaking, hearing and writing errors are eliminated.
- Greater accuracy is achieved because it eliminates the possibility of influence by others in the subject's party.
- A web-based survey is not dependent on the season or the weather.
- Without a human administer a web-based survey eliminates the possibility of a subject being influenced by the administrator's facial expression, body language and vocal inflection.

After providing name and residence respondents were asked whether they reside or own property within the area. Subjects are asked how frequently they have visited the Downeast Lakes. Those who have not visited the area were immediately disqualified. At this point the survey process "piped" or split along two paths, one for those who reside or own property, the other for those who recreate in the area as visitors. The latter group was asked questions specific to frequency of visit, length of typical visit, number in party, money spent and the likelihood of their returning should the Bowers Mountain Wind project be built. Those who reside or own property in the area were asked fewer questions overall but were asked how they expect the Bowers Mountain Wind Project will affect their property value.

In questions 14 through 27, all respondents were presented with several simulated photos of the project. The simulations presented were those provided in the Visual Impact Assessment prepared by LandWorks for Champlain Wind and made part of the project application. They were cropped to 648x333 pixels or approximately 8" x 4½" and presented at 72dpi which is the standard for viewing on a monitor. Respondents were asked to study each photo and rate how they felt the presence of turbines impact the scenic value of the subject lake and how they believe the turbines would impact their enjoyment of that lake. Once a survey was submitted, it could no longer be changed or accessed.

Because the survey is specifically intended to understand users of these resources, it is not, and can not be, a random sample except to the extent that it is a random sample of users. The respondents represent a blend of local

property owners and visitors, people from near and far, families and individuals, who make varied uses across all seasons. The availability of the survey was announced to the following groups:

- PPDLW membership
- Those who own property on the lakes
- Owners of sporting camps on the lakes
- Licensed Guides who work the area

In addition, PPDLW members and local property owners were asked to share the survey with anyone else they know to have used the Lakes. Similarly, sporting camp owners and guides were asked to share the survey with their guests and clients to the extent they feel comfortable doing so.

* * * * *

Note: Unless labeled otherwise all questions were asked of all participants. Those which were directed specifically at visitors or property owners are clearly labeled as such.

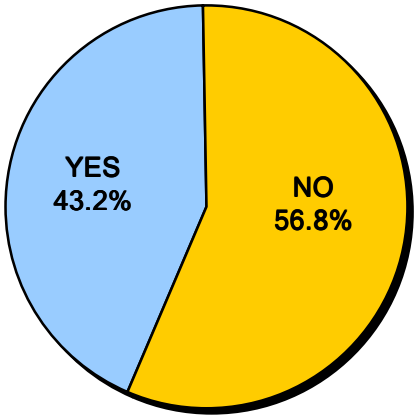

Topsfield
Springfield
Pleasant Lake
West Musquash Lake
Upper Sysladobsis Lake
Junior Lake
Scraggly Lake
Sysladobsis Lake
West Grand Lake
Pocumcus Lake
Grand Lake Stream

QUESTION 3 **This question refers to the map on the previous page.**

Do you reside or own property within the shaded area on the map shown on the previous page?

Answer Options	Response Percent	Response Count
Yes	43.2%	115
No	56.8%	151
	answered question:	**266**
	skipped question:	**1**

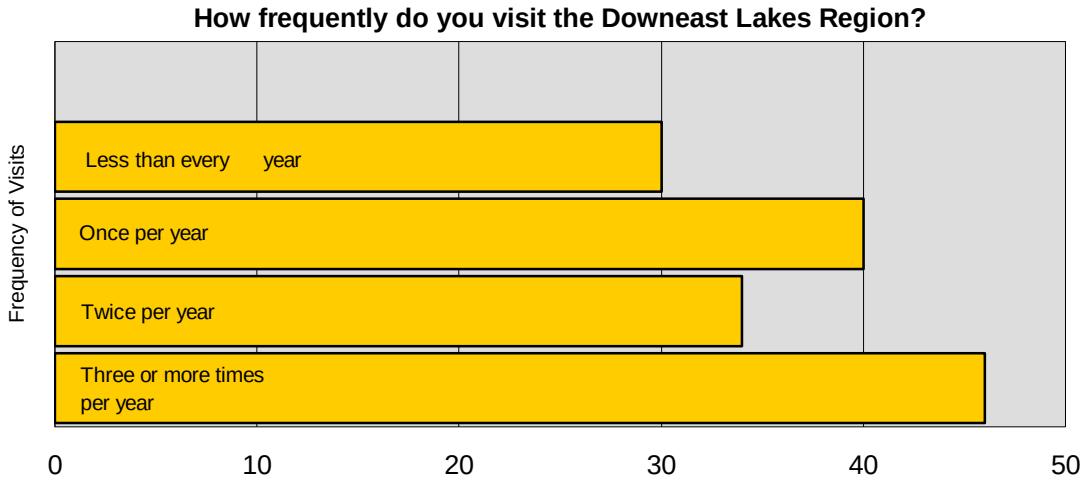
Do you reside or own property within the shaded area on the map shown on the previous page?



QUESTION 4 **(asked of visitors only)**

How frequently do you visit the Downeast Lakes Region?

Answer Options	Response Percent	Response Count
I have never visited the Downeast Lakes Region	0.0%	0
Less than every year	20.0%	30
Once per year	26.7%	40
Twice per year	22.7%	34
Three or more times per year	30.7%	46
answered question:		**150**
skipped question:		**1**

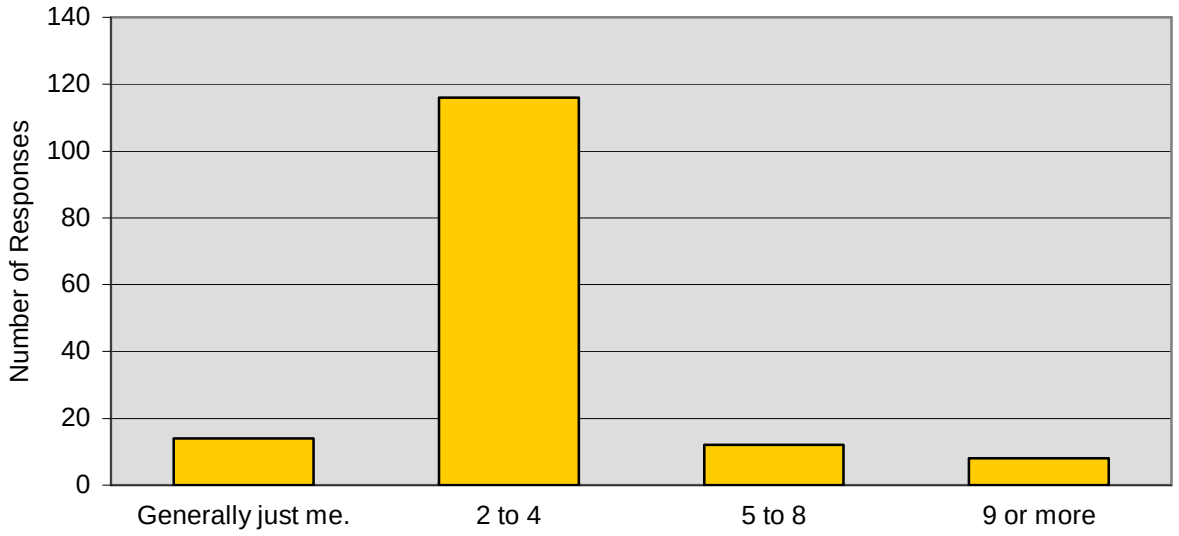


QUESTION 5 **(asked of visitors only)**

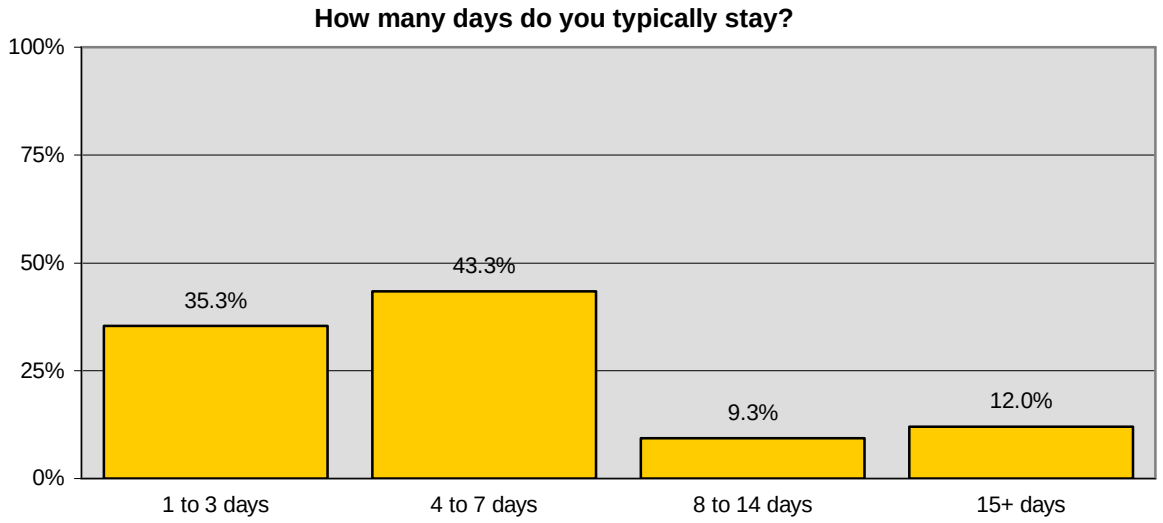
When you visit the Downeast Lakes Region do you generally come with a group? If so, how many are typically in your group?

Answer Options	Response Percent	Response Count
Generally just me.	9.3%	14
2 to 4	77.3%	116
5 to 8	8.0%	12
9 or more	5.3%	8
answered question:		**150**
skipped question:		**1**

When you visit the Downeast Lakes Region do you generally come with a group? If so, how many are typically in your party?



QUESTION 6	(asked of visitors only)	
How many days do you typically stay?		
Answer Options	**Response Percent**	**Response Count**
1 to 3 days	35.3%	53
4 to 7 days	43.3%	65
8 to 14 days	9.3%	14
15+ days	12.0%	18
	answered question:	**150**
	skipped question:	**1**



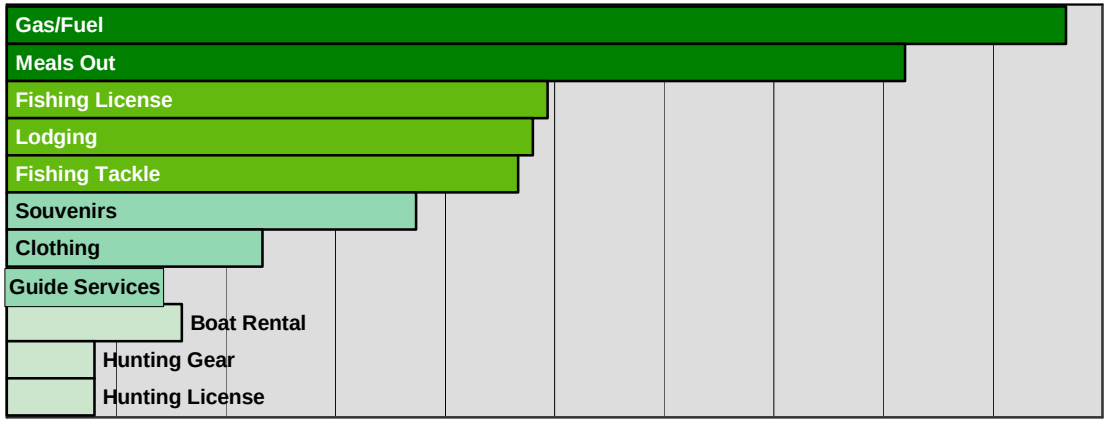
QUESTION 7 **(asked of visitors only)**

What sort of expenses do you incur when visiting the Downeast Lakes Region? (check all that apply)

Answer Options	Response Percent	Response Count
Gas / Fuel	96.7%	145
Meals Out	82.0%	123
Fishing License	49.3%	74
Lodging	48.0%	72
Fishing Tackle	46.7%	70
Souvenirs	37.3%	56
Clothing	23.3%	35
Guide Service	20.7%	31
Boat Rental	16.0%	24
Hunting Gear	8.0%	12
Hunting License	8.0%	12
Other (please specify)*	10.7%	16
	answered question:	**150**
	skipped question:	**1**

* Under "Other" people mentioned spending on Groceries, Car Rentals, Beer, Cosmetics and Entertainment.

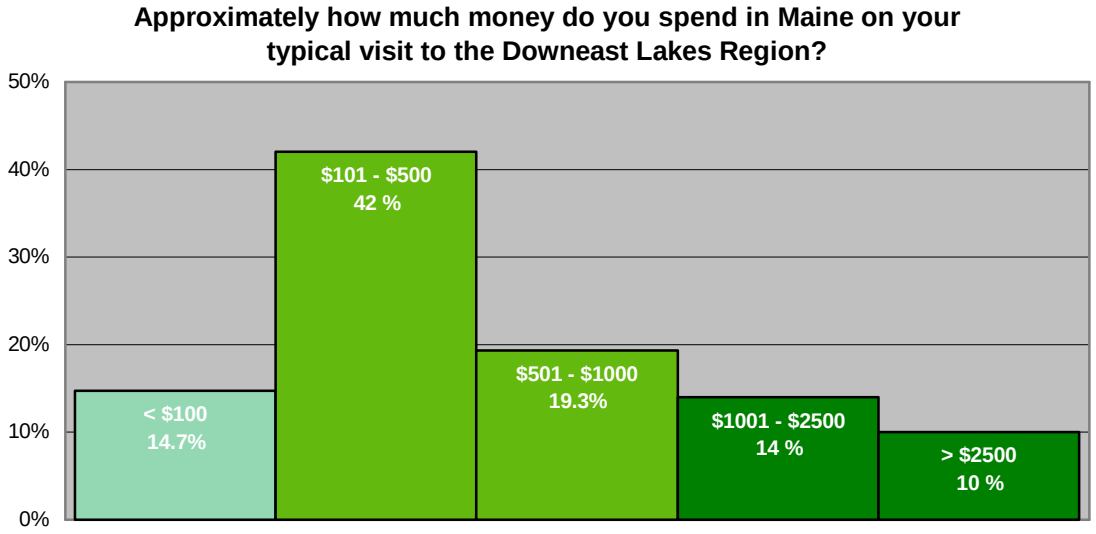
What sort of expenses do you incur when visiting the Downeast Lakes Region?



QUESTION 8 **(asked of visitors only)**

Approximately how much money do you spend in Maine on your typical visit to the Downeast Lakes Region?

Answer Options	Response Percent	Response Count
< $100	14.7%	22
$101-$500	42.0%	63
$501-$1000	19.3%	29
$1001-$2500	14.0%	21
> $2500	10.0%	15
	answered question:	**150**
	skipped question:	**1**



QUESTION 9

Which of the following Downeast Lakes have you used (visited, paddled, hiked, fished, etc)? (please check all that apply)

Answer Options	Response Percent	Response Count
Junior Lake	74.3%	197
West Grand Lake	70.9%	188
Bottle Lake	56.6%	150
Scraggly Lake	55.1%	146
Sysladobsis Lake	49.8%	132
Duck Lake	40.0%	106
Keg Lake	38.5%	102
Pleasant Lake	34.0%	90
Pocumcus Lake	33.6%	89
Upper Sysladobsis Lake	28.7%	76
The Machias Lakes	28.3%	75
Horseshoe Lake	26.4%	70
West Musquash Lake	24.9%	66
The Chain Lakes	24.5%	65
Upper & Lower Pug Lakes	23.4%	62
Norway Lake	23.0%	61
Mill Privilege Lake	20.8%	55
Wabassus Lake	18.9%	50
Shaw Lake	15.1%	40
Pork Barrel Lake	11.3%	30
The Oxbrook Lakes	10.9%	29
Lombard Lake	10.9%	29
Trout Pond	7.9%	21
None of them	0.8%	2
Other	8.3%	22
	answered question:	**265**
	skipped question:	**2**

QUESTION 10

What recreational activities do you enjoy in the Downeast Lakes Region? (please check all that apply)

Answer Options	Response Percent	Response Count
Fishing	81.1%	215
Wildlife Viewing	79.6%	211
Boating	72.5%	192
Swimming	71.3%	189
Canoeing	69.4%	184
Night Sky Viewing	68.7%	182
Hiking	61.1%	162
Berry Picking	57.4%	152
Nature Photography	55.8%	148
Kayaking	51.7%	137
Camping	51.3%	136
Bird Watching	48.7%	129
ATVing	32.5%	86
Ice Fishing	32.1%	85
GLS Folk Art Festival	29.4%	78
The Springfield Fair	27.9%	74
Hunting	26.0%	69
Snowmobiling	25.7%	68
Conservation Activities	23.8%	63
Shopping	23.0%	61
Antiquing	21.5%	57
Land Trust Activities	19.2%	51
Cross Country Skiing	17.7%	47
Mushrooming	16.2%	43
Bicycle Touring	15.8%	42
Museums	11.7%	31
Grand Lake Canoe Race	10.2%	27
Painting / Sketching	7.9%	21
Native American Activities	7.5%	20
Fishing Derbies	6.4%	17
Rock Climbing	5.3%	14
Visiting Wind Farms	0.4%	1
Other (please specify)	5.7%	15
	answered question:	**265**
	skipped question:	**2**

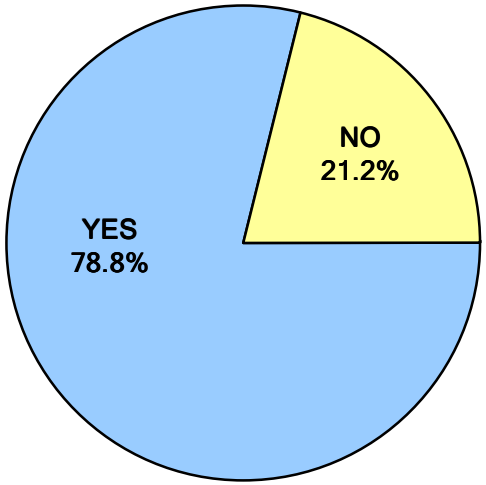
* Under "Other" people mentioned enjoying the solitude, dog sledding, backwoods trout fishing, canoe camping with portages and trapping.

QUESTION 11

Have you ever taken a paddling trip in either a canoe or kayak during which you visited more than one lake?

Answer Options	Response Percent	Response Count
Yes	78.8%	208
No	21.2%	56
	answered question:	**264**
	skipped question:	**3**

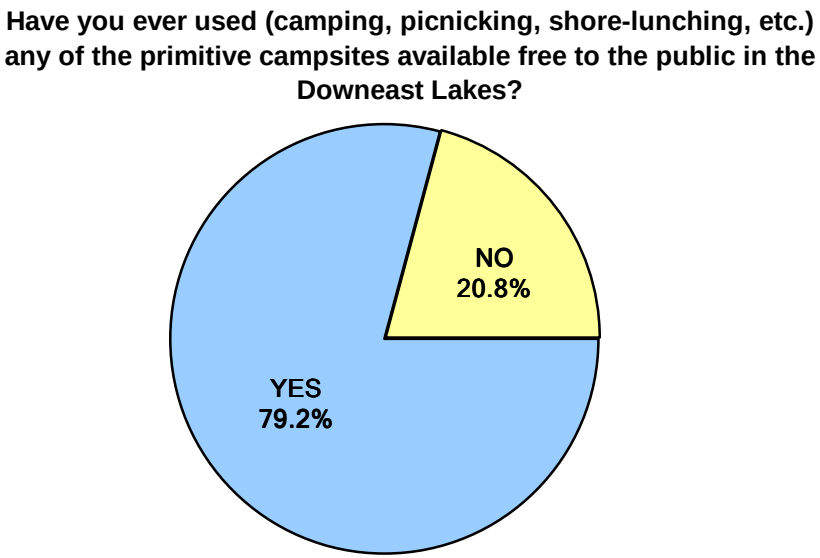
Have you ever taken a paddling trip in either a canoe or kayak during which you visited more than one lake?



QUESTION 12

Have you ever used (camping, picnicking, shore-lunching, etc.) of any of the primitive campsites available free to the public in the Downeast Lakes?

Answer Options	Response Percent	Response Count
Yes	79.2%	209
No	20.8%	55
	answered question:	**264**
	skipped question:	**3**

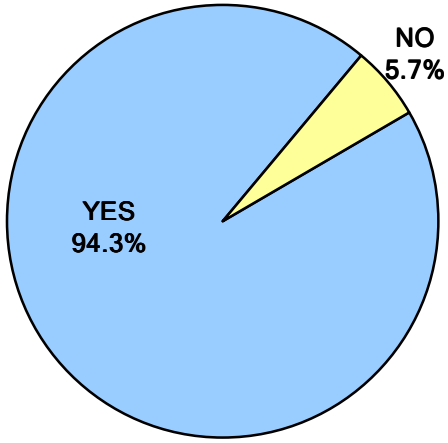


QUESTION 13

Have you ever seen a wind project in person, either in Maine or elsewhere?

Answer Options	Response Percent	Response Count
Yes, I have.	94.3%	249
No, I haven't.	5.7%	15
	answered question:	**264**
	skipped question:	**3**

Have you ever seen a wind project in person, either in Maine or elsewhere?



Developer's Simulation -- Pleasant Lake **Direction of View: NW**

QUESTION 14

Based on this simulated photo, how would you characterize the impact the wind turbines have on the scenic value of Pleasant Lake?

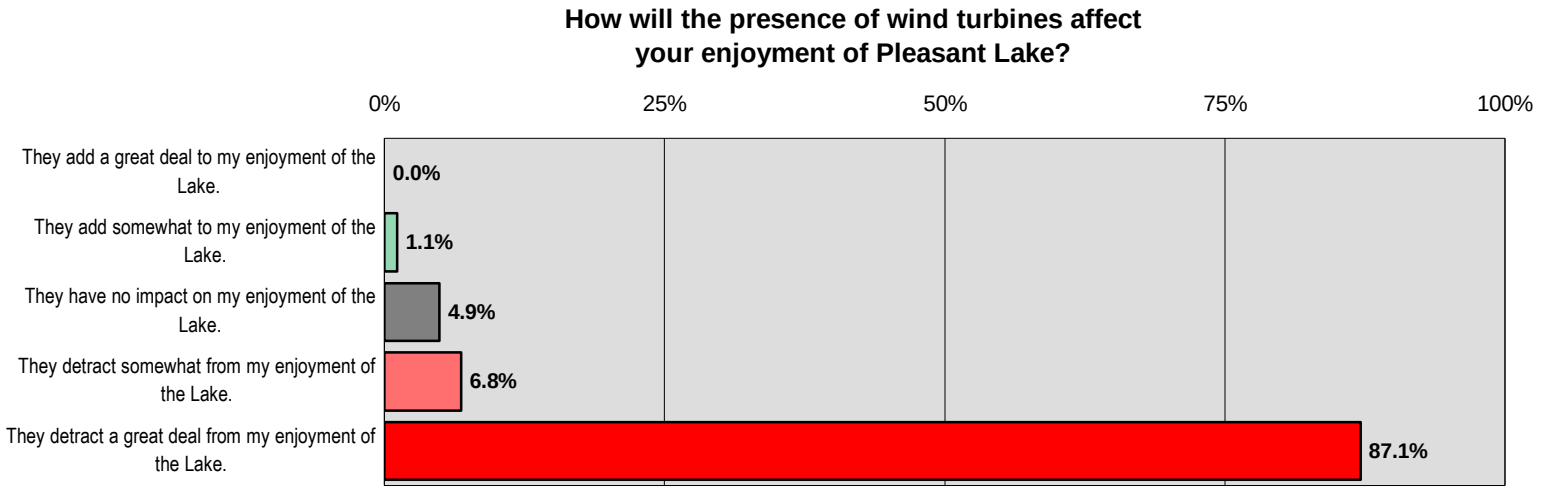
Answer Options	Response Percent	Response Count
They add a great deal to the Lake's scenic value.	0.4%	1
They add somewhat to the Lake's scenic value.	0.4%	1
They have no impact on the Lake's scenic value.	3.4%	9
They detract somewhat from the Lake's scenic value.	5.7%	15
They detract a great deal from the Lake's scenic value.	90.2%	238
answered question:		**264**
skipped question:		**3**

This question refers to the photo simulation of Pleasant Lake on the previous page.

QUESTION 15

Imagine yourself paddling, snowmobiling, fishing or camping on this Lake both before and after the Bowers Mountain Wind project is built. How does the presence of wind turbines affect your enjoyment of Pleasant Lake?

Answer Options	Response Percent	Response Count
They add a great deal to my enjoyment of the Lake.	0.0%	0
They add somewhat to my enjoyment of the Lake.	1.1%	3
They have no impact on my enjoyment of the Lake.	4.9%	13
They detract somewhat from my enjoyment of the Lake.	6.8%	18
They detract a great deal from my enjoyment of the Lake.	87.1%	230
answered question:		**264**
skipped question:		**3**



Developer's Simulation -- Scraggly Lake **Direction of View: NNW**

QUESTION 16

Based on this simulated photo, how would you characterize the impact the wind turbines have on the scenic value of Scraggly Lake?

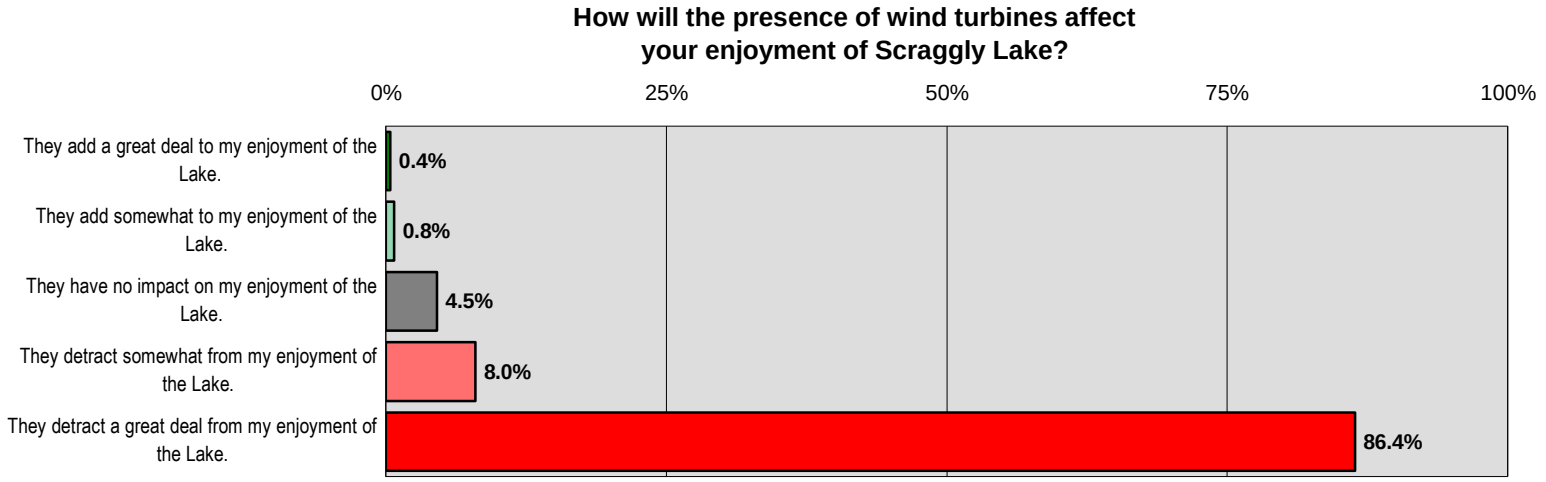
Answer Options	Response Percent	Response Count
They add a great deal to the Lake's scenic value.	0.8%	2
They add somewhat to the Lake's scenic value.	0.4%	1
They have no impact on the Lake's scenic value.	4.2%	11
They detract somewhat from the Lake's scenic value.	8.7%	23
They detract a great deal from the Lake's scenic value.	86.0%	227
answered question:		**264**
skipped question:		**3**

This question refers to the photo simulation of Scraggly Lake on the previous page.

QUESTION 17

Imagine yourself paddling, snowmobiling, fishing or camping on this Lake both before and after the Bowers Mountain Wind project is built. How does the presence of wind turbines affect your enjoyment of Scraggly Lake?

Answer Options	Response Percent	Response Count
They add a great deal to my enjoyment of the Lake.	0.4%	1
They add somewhat to my enjoyment of the Lake.	0.8%	2
They have no impact on my enjoyment of the Lake.	4.5%	12
They detract somewhat from my enjoyment of the Lake.	8.0%	21
They detract a great deal from my enjoyment of the Lake.	86.4%	228
answered question:		**264**
skipped question:		**3**



Developer's Simulation -- Shaw Lake **Direction of View: NNW**

QUESTION 18

Based on this simulated photo, how would you characterize the impact the wind turbines have on the scenic value of Shaw Lake?

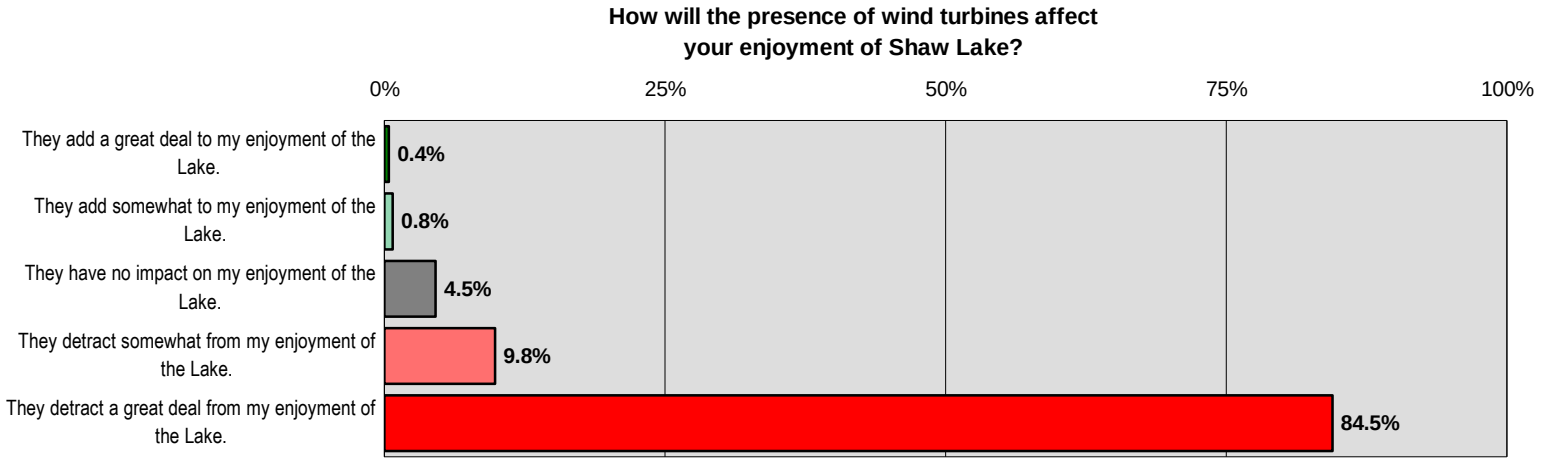
Answer Options	Response Percent	Response Count
They add a great deal to the Lake's scenic value.	0.4%	1
They add somewhat to the Lake's scenic value.	0.4%	1
They have no impact on the Lake's scenic value.	4.5%	12
They detract somewhat from the Lake's scenic value.	8.7%	23
They detract a great deal from the Lake's scenic value.	86.0%	227
answered question:		**264**
skipped question:		**3**

This question refers to the photo simulation of Shaw Lake on the previous page.

QUESTION 19

Imagine yourself paddling, snowmobiling, fishing or camping on this Lake both before and after the Bowers Mountain Wind project is built. How does the presence of wind turbines affect your enjoyment of Shaw Lake?

Answer Options	Response Percent	Response Count
They add a great deal to my enjoyment of the Lake.	0.4%	1
They add somewhat to my enjoyment of the Lake.	0.8%	2
They have no impact on my enjoyment of the Lake.	4.5%	12
They detract somewhat from my enjoyment of the Lake.	9.8%	26
They detract a great deal from my enjoyment of the Lake.	84.5%	223
answered question:		**264**
skipped question:		**3**



Developer's Simulation -- Junior Lake **Direction of View: NNE**

QUESTION 20

Based on this simulated photo, how would you characterize the impact the wind turbines have on the scenic value of Junior Lake?

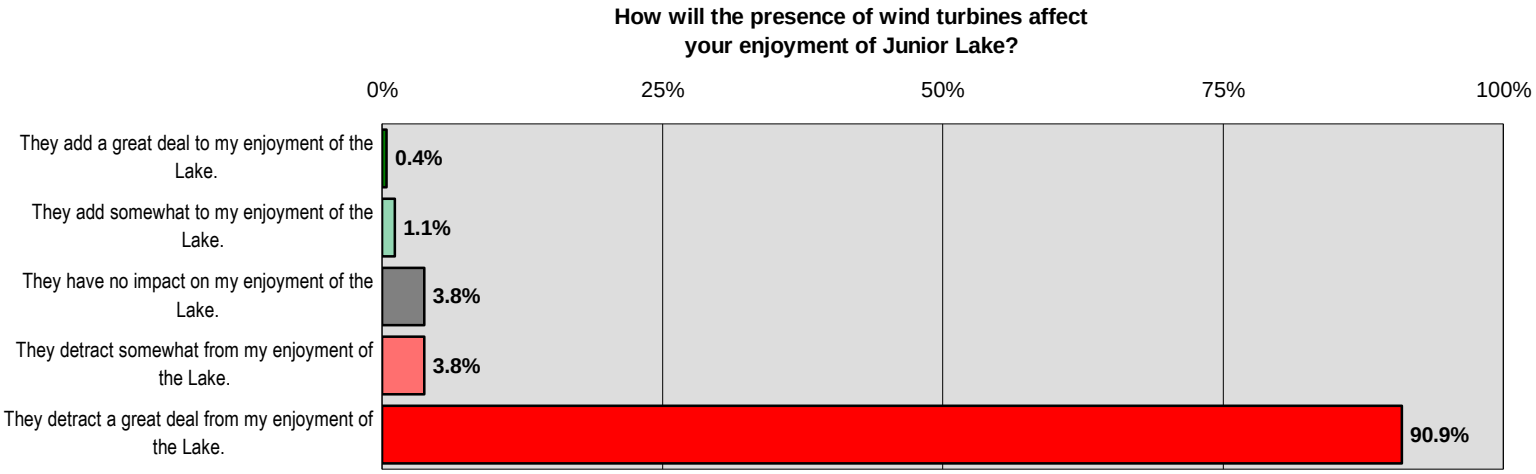
Answer Options	Response Percent	Response Count
They add a great deal to the Lake's scenic value.	0.4%	1
They add somewhat to the Lake's scenic value.	0.8%	2
They have no impact on the Lake's scenic value.	3.0%	8
They detract somewhat from the Lake's scenic value.	4.2%	11
They detract a great deal from the Lake's scenic value.	91.7%	242
answered question:		**264**
skipped question:		**3**

This question refers to the photo simulation of Junior Lake on the previous page.

QUESTION 21

Imagine yourself paddling, snowmobiling, fishing or camping on this Lake both before and after the Bowers Mountain Wind project is built. How does the presence of wind turbines affect your enjoyment of Junior Lake?

Answer Options	Response Percent	Response Count
They add a great deal to my enjoyment of the Lake.	0.4%	1
They add somewhat to my enjoyment of the Lake.	1.1%	3
They have no impact on my enjoyment of the Lake.	3.8%	10
They detract somewhat from my enjoyment of the Lake.	3.8%	10
They detract a great deal from my enjoyment of the Lake.	90.9%	240
answered question:		**264**
skipped question:		**3**



Developer's Simulation -- Keg Lake **Direction of View: NNE**

QUESTION 22

Based on this simulated photo, how would you characterize the impact the wind turbines have on the scenic value of Keg Lake?

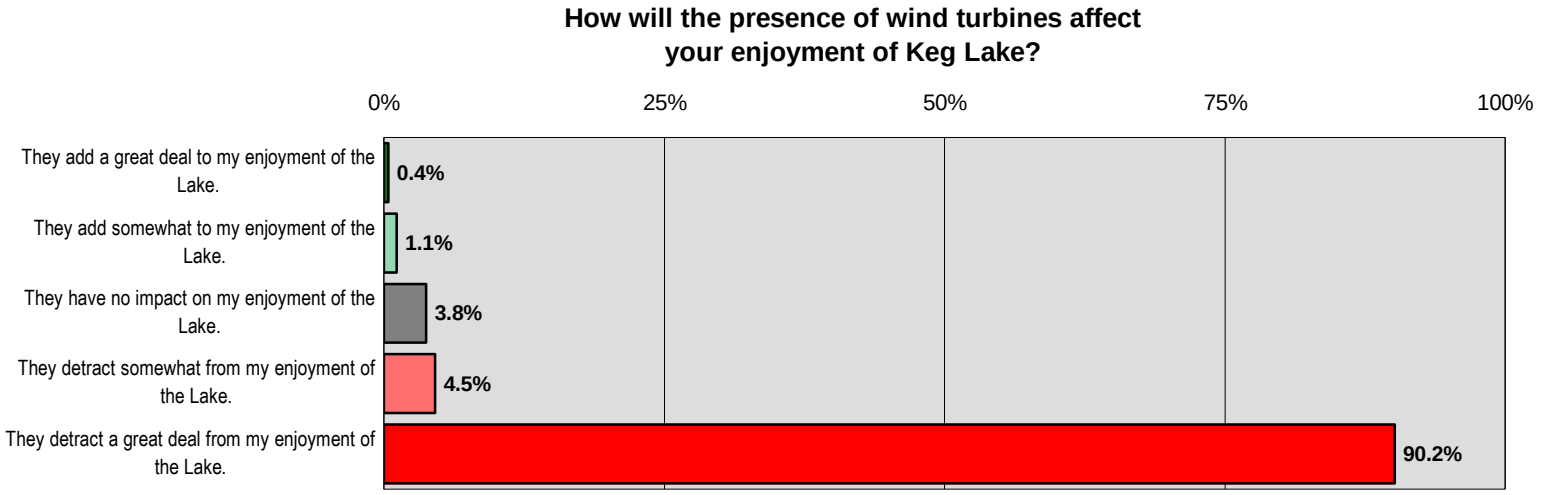
Answer Options	Response Percent	Response Count
They add a great deal to the Lake's scenic value.	0.4%	1
They add somewhat to the Lake's scenic value.	0.8%	2
They have no impact on the Lake's scenic value.	3.0%	8
They detract somewhat from the Lake's scenic value.	3.8%	10
They detract a great deal from the Lake's scenic value.	92.0%	243
answered question:		**264**
skipped question:		**3**

This question refers to the photo simulation of Keg Lake on the previous page.

QUESTION 23

Imagine yourself paddling, snowmobiling, fishing or camping on this Lake both before and after the Bowers Mountain Wind project is built. How does the presence of wind turbines affect your enjoyment of Keg Lake?

Answer Options	Response Percent	Response Count
They add a great deal to my enjoyment of the Lake.	0.4%	1
They add somewhat to my enjoyment of the Lake.	1.1%	3
They have no impact on my enjoyment of the Lake.	3.8%	10
They detract somewhat from my enjoyment of the Lake.	4.5%	12
They detract a great deal from my enjoyment of the Lake.	90.2%	238
answered question:		**264**
skipped question:		**3**



Developer's Simulation -- Duck Lake Direction of View: NE

QUESTION 24

Based on this simulated photo, how would you characterize the impact the wind turbines have on the scenic value of Duck Lake?

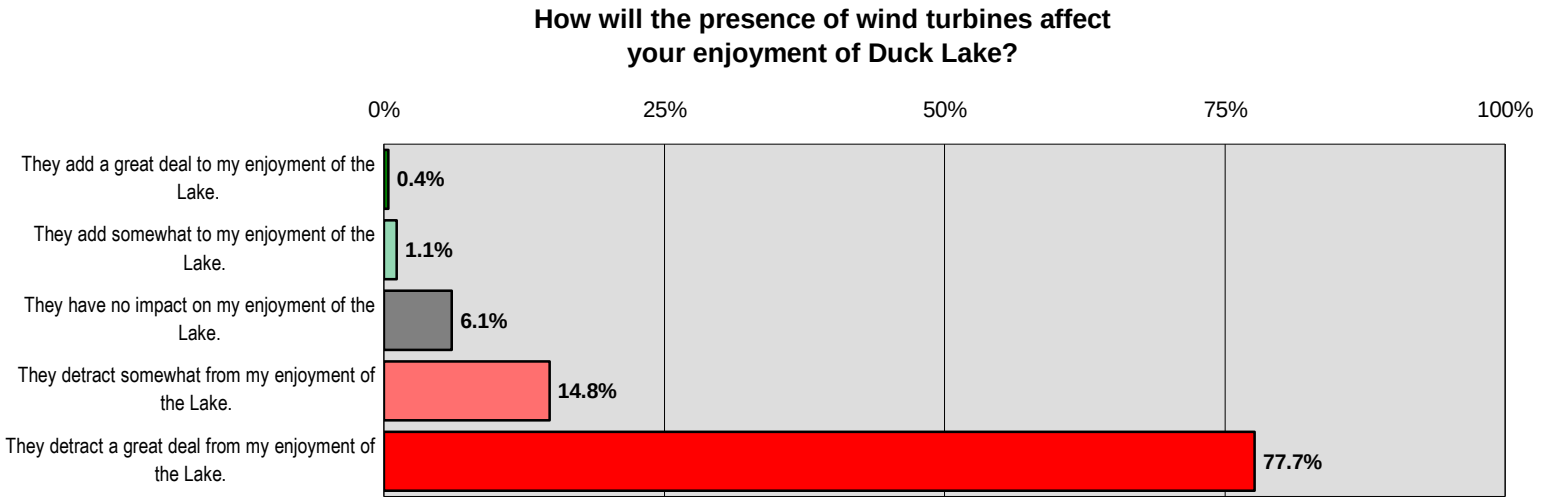
Answer Options	Response Percent	Response Count
They add a great deal to the Lake's scenic value.	0.4%	1
They add somewhat to the Lake's scenic value.	0.8%	2
They have no impact on the Lake's scenic value.	4.2%	11
They detract somewhat from the Lake's scenic value.	17.8%	47
They detract a great deal from the Lake's scenic value.	76.9%	203
answered question:		**264**
skipped question:		**3**

This question refers to the photo simulation of Duck Lake on the previous page.

QUESTION 25

Imagine yourself paddling, snowmobiling, fishing or camping on this Lake both before and after the Bowers Mountain Wind project is built. How does the presence of wind turbines affect your enjoyment of Duck Lake?

Answer Options	Response Percent	Response Count
They add a great deal to my enjoyment of the Lake.	0.4%	1
They add somewhat to my enjoyment of the Lake.	1.1%	3
They have no impact on my enjoyment of the Lake.	6.1%	16
They detract somewhat from my enjoyment of the Lake.	14.8%	39
They detract a great deal from my enjoyment of the Lake.	77.7%	205
answered question:		**264**
skipped question:		**3**



Developer's Simulation -- Sysladobsis Lake **Direction of View: NNE**

QUESTION 26

Based on this simulated photo, how would you characterize the impact the wind turbines have on the scenic value of Sysladobsis Lake?

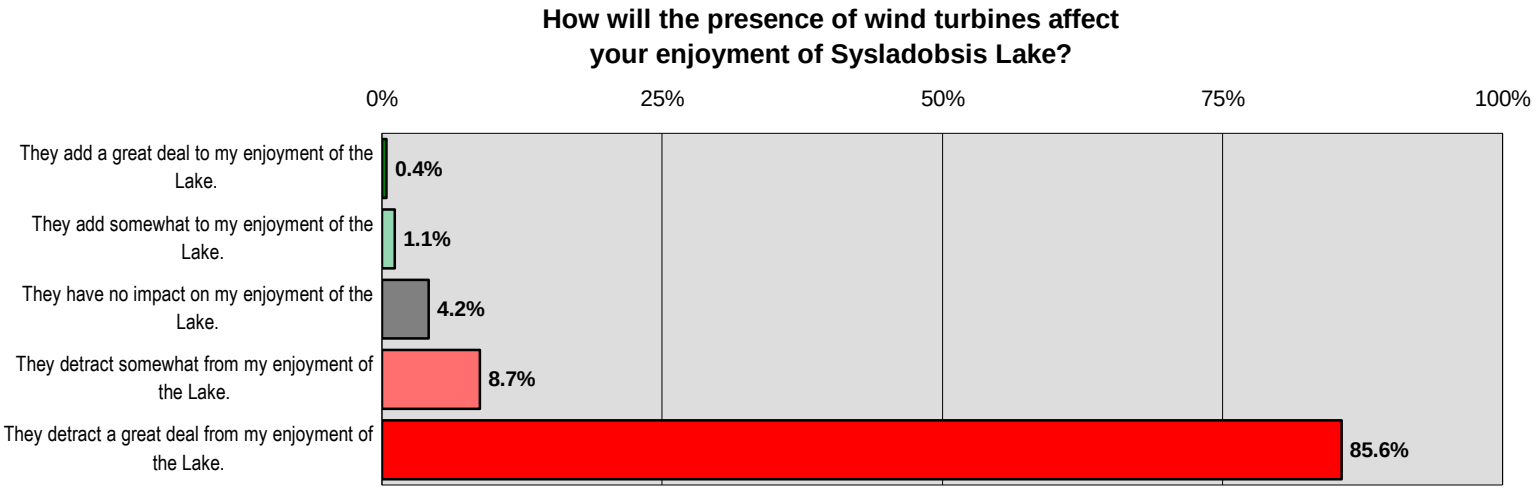
Answer Options	Response Percent	Response Count
They add a great deal to the Lake's scenic value.	0.4%	1
They add somewhat to the Lake's scenic value.	0.8%	2
They have no impact on the Lake's scenic value.	3.4%	9
They detract somewhat from the Lake's scenic value.	10.2%	27
They detract a great deal from the Lake's scenic value.	85.2%	225
answered question:		**264**
skipped question:		**3**

This question refers to the photo simulation of Sysladobsis Lake on the previous page.

QUESTION 27

Imagine yourself paddling, snowmobiling, fishing or camping on this Lake both before and after the Bowers Mountain Wind project is built. How does the presence of wind turbines affect your enjoyment of Sysladobsis Lake?

Answer Options	Response Percent	Response Count
They add a great deal to my enjoyment of the Lake.	0.4%	1
They add somewhat to my enjoyment of the Lake.	1.1%	3
They have no impact on my enjoyment of the Lake.	4.2%	11
They detract somewhat from my enjoyment of the Lake.	8.7%	23
They detract a great deal from my enjoyment of the Lake.	85.6%	226
answered question:		**264**
skipped question:		**3**

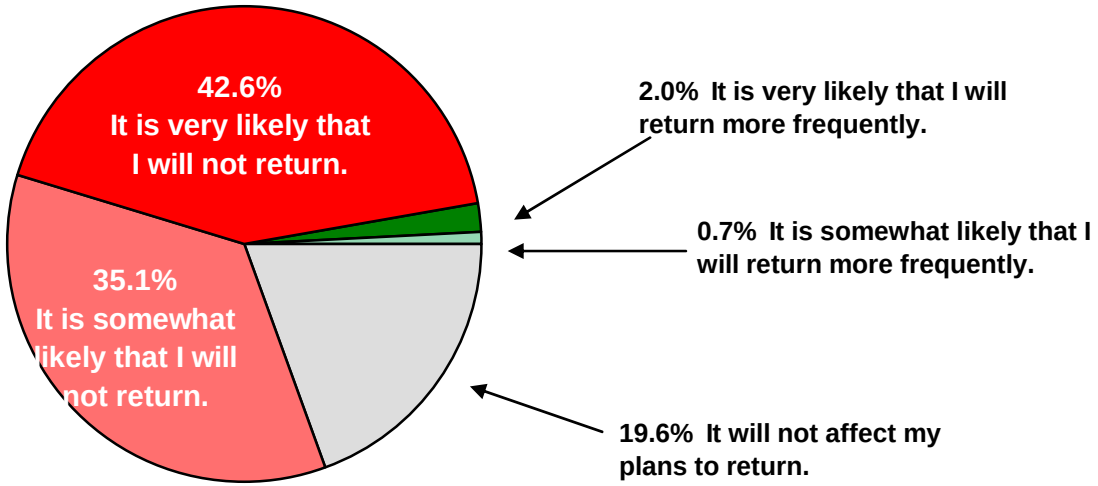


QUESTION 28 ***(asked of visitors only)***

As a visitor to the Downeast Lakes Region, how will the presence of the Bowers Mountain Wind project affect the likelihood of your returning to the Region to recreate?

Answer Options	Response Percent	Response Count
It is very likely that I will return more frequently.	2.0%	3
It is somewhat likely that I will return more frequently	0.7%	1
It will not affect my plans to return.	19.6%	29
It is somewhat likely that I will not return.	35.1%	52
It is very likely that I will not return.	42.6%	63
answered question:		**148**
skipped question:		**3**

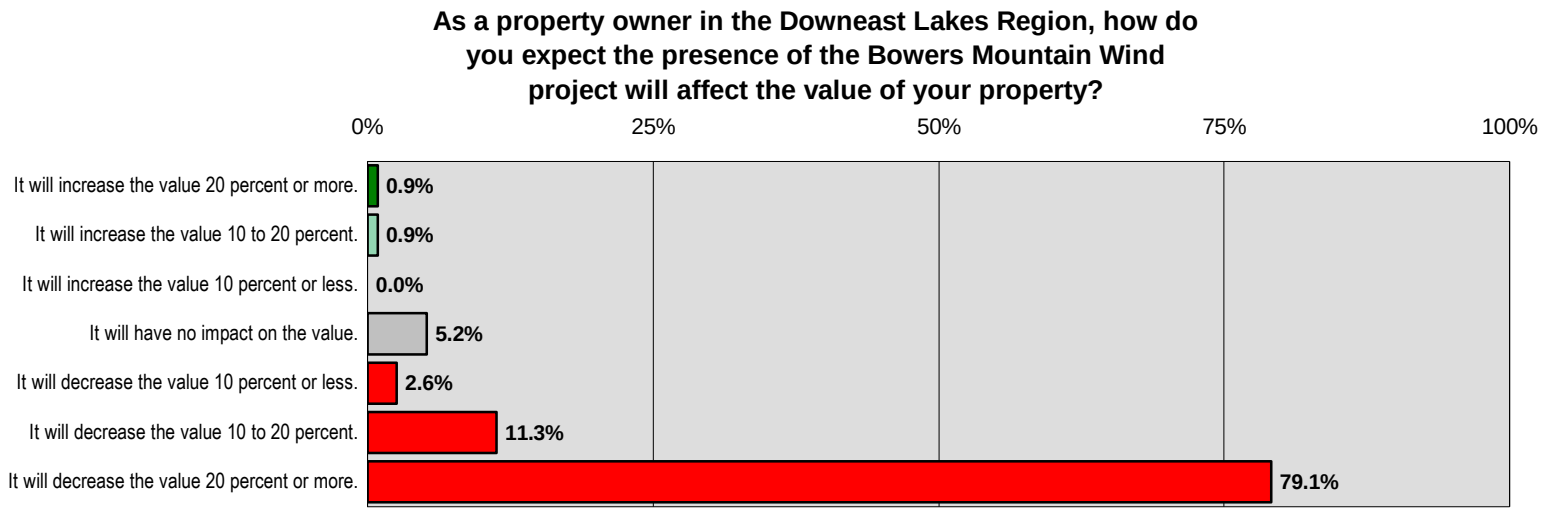
As a visitor to the Downeast Lakes Region, how will the presence of the Bowers Mountain Wind project affect the likelihood of your returning to the Region to recreate?



QUESTION 29 **(asked of property owners only)**

As a property owner in the Downeast Lakes Region, how do you expect the presence of the Bowers Mountain Wind project will affect the value of your property?

Answer Options	Response Percent	Response Count
It will increase the value 20 percent or more.	0.9%	1
It will increase the value 10 to 20 percent.	0.9%	1
It will increase the value 10 percent or less.	0.0%	0
It will have no impact on the value.	5.2%	6
It will decrease the value 10 percent or less.	2.6%	3
It will decrease the value 10 to 20 percent.	11.3%	13
It will decrease the value 20 percent or more.	79.1%	91
answered question:		**115**
skipped question:		**0**



QUESTION 30

You've reached the end of the survey. Thank you for your time. If you have any comments you'd like to share, please enter them here:

	Response Count
answered question	188
skipped question	79

After years of not traveling to Maine because of the distance, I went and fell in love with the pristine wilderness of it. What a sin it would be to mar the beauty of these lakes.

A.V., Camden, CT

Maine is known for it's natural scenic beauty, it should not be jeopardized for many reasons but most especially for wind turbines that have not proved effectual and/or cost effective in other installations.

J.O., Carroll Plt, ME

Please stop First Wind and their windfarm from destroying the downeast lakes.

D.W., Carroll Plt, ME

While I'm not opposed to wind power in general, placing large turbines in this region will surely detract from its scenic beauty and make it much less attractive as a recreational destination.

M.P., Somerville, MA

The Downeast Lakes region is one of the most beautiful places we have ever visited and a place that represents not only one of the last sites in northern United States to experience nature's glorious bounty but is also the signature calling card of the great state of Maine. The "natural state" found in the Downeast Lakes region with majestic ecosystems combining land, trees, water, wildlife, into vistas that are breathtaking are unique, very important ecologically to both Maine and to the nation at large and are rapidly disappearing across the United States. A visit to the Downeast Lakes region gave us the golden opportunity to introduce this unspoiled nature to our son and provided a restful escape from the uncivilized barrage of everyday life like no other trip we have ever taken. Any intrusion by this or any other wind turbine project (regardless of claims of energy benefit which we do not believe to be true) into this incredibly wondrous area would be a crime to nature and humanity that cannot be allowed to proceed, lest another one of our nation's national (and natural) treasures be lost forever to today's and future generations.

S.W., Brooklyn, NY

Are you kidding me? Aren't there better places you can put windmills where it's already developed? This area is too beautiful to be scarred with windmills!

M.G. Colorado Springs, CO

In Texas we have wind farms (Abilene, Permian Basin, South Texas) that cover thousands of acres, which include hundreds of turbines on each project. It's one thing to see them out on the prairie, where there's no one to disturb but cattle; but in some of the most scenic countryside in America? I'm generally a big supporter of wind power and have worked on several large projects in Texas, but the lakes of Maine are NOT the proper place for these. Face it - breathtaking scenery is the greatest asset Maine has. Don't mess it up!

D.R., McKinney, TX

There will be prettier places to visit if these turbines are put up, and that's where we will go. We like to vacation in a pristine natural setting and so far Downeast Lakes area has provided me and my family with that experience.

S.F., Ellsworth, ME

First Wind needs to be prevented from destroying the Downeast Lakes Watershed!

L.W., Carroll Plt, ME

Each year a group of us lug our canoes and camping gear these lakes. We love the feeling of getting away from civilization, the wildness and the wildlife. Canoeing and camping from island to island, lake to lake, without a schedule is incredibly wonderful. I'm from New Hampshire and we don't have anything like this. If someone can build a windfarm here, then where will we go for this kind of experience? I'm all for renewable energy but we have to draw the line somewhere!

T.N., Manchester, NH

I camp on the islands in Junior and Scraggly with friends. I work construction and I worked on a windfarm in NY. We need the jobs but I don't think these lakes are the right place.

John Doe, ME

My family will probably continue to visit Maine. We love it. We like the feeling of unspoiled wilderness. I want my three daughters to learn to appreciate wilderness. We're from Colorado where we have some of that but almost everywhere you look there are signs of man. Maine is a very special place and I hope you understand how lucky you are that you haven't developed every last inch of it. I support a diversified portfolio of energy sources but I also recognize that there are places that simply ought not be developed. It's the untouched scenery that makes it special. Please don't destroy that. Build the windfarms closer to the population centers that consume the energy. These places already have industrial development.

T.G., Colorado Springs, CO

The visual intrusion of wind turbines/towers upon the Maine landscape is horrendous, as it is in any natural landscape.- spoken as a Landscape Architect just returned from Hawaii where I saw wind towers on beautiful tropical islands. And, from an electrical production standpoint, they are ridiculous, not economical, not useful, don't fit the grid, etc.

D.W., Tolland, CT

I (we) came for nature, not industry. If I wanted to see windmills, I could have stayed in Boston. If they would produce a lot of reliable electricity - used right here - one would have to reconsider. But they don't! The only means of survival in that area is nature tourism. This no longer exists in the southern part of the state. Let us protect it, not destroy it!

G.E., Lincoln, ME

The main reason I go to that area is because I can canoe and fish several lakes without hardly seeing any signs of people. I used to fish on Folsom and Upper Pond in Lincoln, but now they are ruined with windmills. Pretty soon there won't be anywhere you can go to get away from them. PLEASE do the right thing and prohibit windmills from this rare and beautiful lake area.

R.T., Bangor, ME

Putting windmills in the proposed areas is sheer insanity. They will destroy the scenic beauty of the lakes and have a negative effect on the economy of the area.

R.B., Waldoboro, ME

When we visit there is nothing so amazing as to sit in total darkness and stare up at the stars. It is so unaffected by artificial light and you can almost touch the stars. These structures are a blight on the natural landscape and should not be considered in these lake regions. It will affect the tourist trade and thus money spent in the region.

M.R., Suwanee, GA

It's possible I would return but certainly not as often. I would try to find somewhere else that is unspoiled I believe in wind. I do not believe it belongs on ridgetops next to a spectacular public resource. Junior, Keg, Scraggly and Keg in particular are such gems. If these turbines go up, I might as well go paddle in Boston harbor. Lakeville will no longer be an escape from the world. It will be an industrial landscape. And for what? temporary jobs? These lakes are a resource that should be preserved for future generations.

J.D., Augusta, ME

The effect of the simulated turbine photos indicate a FAR MORE detrimental impact than I ever imagined! PLEASE protect this valuable recreational asset for all people who seek a retreat into Gods Country!

D.M., Orono, ME

I can't believe that picture of Scraggly Lake with the turbines. It's ugly! The whole reason I go there is because it's so peaceful and wild. It seems there are windmills popping up everywhere but I absolutely can't believe anyone would put them up on the mountains around these lakes. It is the height of selfishness.

K.W. Groton, MA

It would be a tragedy to change the scenic beauty of this area with wind turbines. This whole area depends upon its unique, pristine beauty to attract people who want to enjoy life in a much simpler way. What a huge loss if these turbines are installed and we lose the most magnificent night sky and will undoubtedly lose countless other visitors who will travel to other areas because this area will be marred by these turbines.

M.G., Manchester, MA

The towers are completely out of place in the context of this near wilderness area.

N.A. Marietta, GA

When fishing and relaxing, I want to be on a pristine lake with beautiful views as much as possible. I do not want to see industrial windmills in my views of the lake. I will definitely go elsewhere in the United States if the view is destroyed by commercial windmills.

B.L., Weston, ME

I have enjoyed this area from the first time I attended a wilderness canoeing camp there in the early 60s. The wilderness that is there has become part of my being and I have sent the children of many of my friends as well as my own daughter to the camp and to that area to affect their ontology and their environmental ethic. One of the unique aspects of this place is that one feels like one is surrounded by what is left of wilderness with none of the trappings and encumberments of our modern electronic society. I have led trips of young people through the woods for weeks in this area where they experienced their lives in a state of simplicity. Looming wind turbines will destroy that wilderness experience, that immersion experience.

L.F., Dix Hills, NY

I like to visit places that provide me with an experience of unspoiled nature. Downeast Lakes area is one place that still affords this opportunity to me and to my friends and family who live elsewhere and vacation here. It is our destination of choice! Downeast Lakes region is a jewel and should not be despoiled by these industrial turbines. It is hard to believe that this extensive wind installation is even being considered for this wild place.

P.J., Eastbrook, ME

The ability to visit rural areas like the Downeast Lakes Region is very important. People need to be able to get away from areas that are industrialized in order to recreate, relax, and re-charge their spirits before they return to their hectic work lives. The presence of wind turbines only serves to "industrialize" the Downeast Lakes - the very thing visitors are trying to get away from. If I knew that this project were going to be built, I would never return, but seek solace in other areas of the state. These wind turbines are the largest industrial machines we have on our planet. They have no business being located in pristine wilderness areas.

G.P. Holden, ME

I am the Executive Director of a not for profit wilderness canoe trip camp for children that depends on the wilderness scenic value of these lakes to attract clients from all over the US and the world. The construction of the Bowers Mountain would irreparably damage our ability to sustain our operations in the area and to continue to offer the recreational and educational services we provide. This in turn would have a significant economic impact on the many local vendors and business upon whom we depend.

A.B., Boones Mill, VA

I am a Passamaquoddy Tribal member and believe that we should take care of Mother Earth and not exploit it for greed and saying it is best for the environment because it is not best for the environment. If you take a realistic look at wind power there are far more environmental damages done than getting a few cents worth of electricity by greedy wind developers who use us to foot the bill in many ways.

B.A., Pleasant Point, ME

Putting towers on Bowers Mtn & Dill Hill will take away the feeling of wilderness/ isolation on the lake. Yes there are houses on the shores - but at least in Junior lake- most are 150 ft from the shore line and not obtrusive. Some of the older houses on the other lakes are closer;; most grandfathered in --- and still allow for a rustic/ camp like feel when boating, skiing or snowmobiling on the lakes. The day time impact is bad enough - worse yet - is the impact those FLASHING RED LIGHTS will have on the skies at night. There are few places in the NE where the absence of light pollution from nearby cities allows for such dark skies and such great enjoyment of the night sky. The flashing red lights would not only be distracting but would also take away from the opportunity to sit back in your boat, or on the ice, and enjoy such a spectacular display of stars, planets and meteors.

T.A., Mineral Bluff, GA

I visit friends on Sysiladosis Lake. If they move I won't be returning. If they stay, I probably will keep visiting even though one thing I love about that lake is you can't see any development.

K.V., Oak Hill, VA

I would stop visiting this area and go elsewhere if I had to view these turbines.

M.A., Orono, ME

I go to the woods and lakes Down East for an experience in the wild, to leave industrialization and commerce behind for awhile, and to connect with nature. Being surrounded with windmills is more like a trip to a theme park than to natural wild lands. I will go to where the wild lands are with minimal development and will spend my time and money there. Put windmills elsewhere.... like off shore.

K.C., Fairfield, ME

We would consider selling our property if the Bowers Project goes through. It would be very detrimental to the region.

G&T.C., Raymond, ME

I personally enjoy the area, I also work seasonally at a wilderness trip and canoe camp and this will put an end to my visiting and any chances that anyone would want to come to the area to enjoy its pleasant nature. It should be a crime to even consider this.

B.K., Bangor, ME

What I seek as a getaway is a pristine environment where nature dominates the skyline and shoreline.

P.R., Lewiston, ME

I have spent the last 24 years enjoying the beautiful scenery and wildlife that Duck Lake has to offer. If all of these wind turbines are built I will NOT enjoy my time on Duck Lake.

K.L., Portland, ME

I know no one likes change and the sight of turbines does make a change to the landscape in the area. Something must be done to create energy though. In the "big picture" I'm note quite sure how much this will hurt the area. I have been coming to the GLS area since 1964 and it has changed alot in that time. To me, it's not an easy choice, knowing we need clean energy that is renewable and knowing it will be seen for miles around. I don't think the environmental impact will be much after the roads are in (look at how logging has made so many roads). I believe it's the matter of it not looking as it has in the past that has so many people against it.

B.H., Mohnton, PA

Industrial wind development has little value and great consequenses to existing businesses and recreationists. It adds no value to Maine and destroys some of our greatest resources.

D.R., Cushing, ME

The damage to wildlife, cold water sources, and the habitat is tremendous and uncalled for. Maine does not need any of the power generated, We currently produce more power than we need, the excess is shipped out of state. So my question to you is "why should what God has created be defaced and ruined forever?". This area as well as the western mountain region of Maine is the last stronghold in the eastern United States of large forestland. It is unacceptable that it be destroyed because of some politically connected individuals greed and at a great loss of tax dollars that we don't have. Much of this is driven by organizations, people, and cooperation's from out side of this country. The adverse affects to nature and our precious resources are horrific. The bottom line is that the destruction of Maine's natural resources for this bogus scam is sickening.

D.M., Lexington, ME

This project will destroy the character of this region that is so cherished by those who live and visit here. Allowing this monstrosity to be built is contrary to the values that the public holds dear for places as special as this. It will demoralize the locals and collapse a fragile economy.

D.D., Chandler, AZ

People who visit this Downeast Region are in awe of it's beauty and can't imagine what it's like for us to actually live here and make our living here. As Town Clerk/Tax Collector, I enjoy getting phone calls from camp owners and chatting about the weather or what fish are biting or, most recently, the condition of the newly paved road to our little village. Windmills would mar the beauty and simplicity of this piece of paradise.

J.T., Grand Lake Stream, ME

One of the greatest spots in Maine for recreation, getting away from technology, industry, etc. This must be saved! Fishermen do care for views! Fishing is not equal to catching fish! It is zen! It is to feel nature, to become part of nature. I don't want to become part of an industrial complex!

R.E., Lincoln, ME

If the wind project is permitted then I and my family will vacation elsewhere so we can still enjoy the solitude and natural untarnished beauty that nature has to offer.

M.M., Middletown, CT

Industrial wind turbines have no place along the amazing, unprecedented and pristine mountainous landscapes that we know of anywhere in Maine, or near lakes and watersheds especially as scenically beautiful, unique, and historical as these landscapes presently are in their natural state. Every simulated photo in this survey made me want to cry. Thank you.

K.B., Salem Twp, ME

The wind turbines that have already been built, such as Stetson Mountain, completely ruin the sense of wilderness that this part of Maine used to have, They make what was a wild fishing OR HUNTING experience feel like recreation next to an urban power plant. And the destruction to wildlife habitat is unforgivable, since this does absolutely NOTHING to reduce our dependence on foreign oil. It attacks everything required for deer, birds, black bears. And the negative affect on people's health from the noise and shadow flicker is well documented. WIND POWER IS A HUGE MISTAKE FOR MAINE.

J.G., Lakeville, ME

I hear regularly from folks from out of state who are considering vacationing or retiring in Maine. The one question that the constantly ask is: What the hell is going on up in Maine with wind turbines? If the madness does not stop, they tell me that they will not be visiting or retiring in Maine!

J.T., Montville, ME

When we fish, we like to start on Junior and move into Pocumcus and down into West Grand, sometimes from Junior into Scraggly. That also makes for a great canoe paddle and the campsites (forest service) are a welcome rest stop along the way. This area is like the North Woods without the long travel time. It needs to be preserved and not trashed by the windsprawl industry.

M.D., Lincoln, ME

Please do not destroy the natural beauty of the area.

R.B., Middletown, CT

This wind project will destroy my enjoyment of these lakes. I will no longer visit this area because of the wind turbines. I will no longer need to employ local tradespeople to work on my property, guides to help me fish nor will I purchase groceries, gas, meals from local stores and restaurants. I travel half way across the United States to enjoy pristine beauty of this chain of lakes, spending days to drive. Eleven months waiting for vacation to come . I come for one reason. Natural, unspoilt beauty. Eagles circling above my head, a diamond mine of stars in the night, fishing and wondering what is over the next hillside. The Bowers project will destroy all of this.

T.D., Manhattan, KS

I used to hunt deer on Stetson Mountain where turbine 32 now sits. Since the completion of the Stetson project, I have seen a total of one deer, three moose, and less than ten grouse. This used to be a hunters paradise. Now it is a barren wasteland. I, for the life of me, cannot understand how these people call themselves "stewards of the land". I have a friend with a camp on the Stud Mill Road near Clifford Lake. When the pipeline went through there, the DEP and EPA rode herd every inch of the way. Wetlands were protected and when the project was done, you could not find so much as a cigarette butt or gum wrapper left behind. The area was replanted and returned to natural usage. All First Wind has done is to strip cut Stetson Mountain and create an environmental disaster with the transmission lines. They need to be stopped, or at least get the same environmental scrutiny applied to other utilities and projects.

M.A., Hallowell, ME

We have seen these turbines in the mountains of PA. It offers a very erie feeling, (so much that we had to find a campsite out of view),and greatly takes away from the NATURAL scenery that we seek out. This would be a great disappointment to the beautiful views of the area, that we have been visiting for over 50 years!

B.C., Douglassville, PA

I understand and support the need for alternate energy development, but I can't understand why this project is even being given serious consideration given it's impact on one of our most precious natural resources.

R.C., Summerfield, FL

When a pristine view is interrupted by one or twenty seven structures it is no longer pristine. When this view exist from an area as large as the Downeast lakes watershed to alter to eliminate it is unthinkable. To eliminate this view for a project as unsound and misrepresented as the Bowers MT project, is a crime.

W.M., Veazie, ME

Please do not build these...they GREATLY detract from the scenic beauty of the area. We will not vacation in this area if these are built.

C.M., Atlanta, GA

After years of not traveling to Maine because of the distance, I went and fell in love with the pristine wilderness of it. What a sin it would be to mar the beauty of the lakes.

A.J., Hamden, CT

My husband, son and I were lucky enough to have visited Junior Lake in the Downeast Lakes Region during the past two years, spending time with wonderful friends who introduced us to the area. The Downeast Lakes region is one of the most beautiful places we have ever visited and a place that represents not only one of the last sites in northern United States to experience nature's glorious bounty but is also the signature calling card of the great state of Maine. The "natural state" found in the Downeast Lakes region with majestic ecosystems combining land, trees, water, wildlife, into vistas that are breathtaking are unique, very important ecologically to both Maine and to the nation at large and are rapidly disappearing across the United States. A visit to the Downeast Lakes region gave us the golden opportunity to introduce this unspoiled nature to our son and provided a restful escape from the uncivilized barrage of everyday life like no other trip we have ever taken. Any intrusion by this or any other wind turbine project (regardless of claims of energy benefit which we do not believe to be true) into this incredibly wondrous area would be a crime to nature and humanity that cannot be allowed to proceed, lest another one of our nation's national (and natural) treasures be lost forever to today's and future generations.

S.W., Brooklyn, NY

We have visitors from all over the U.S. They come to the Downeast Lakes to get AWAY from industrial development. They come back year after year because they know they will find total escape from development here. These turbines would ruin the 'wilderness feel' of the lake chain and would severely damage the tourist industry and the enjoyment of these special and highly-rated lakes.

K.C., Hingham, MA

We have first hand knowledge of our property value already decreasing due to the proposal of the wind turbine project. Our property is on the Brown Road, directly across from the Moose Road. We listed the property for sale last August and the sale price which was more than a reasonable however with zero interest we took it off the market in December. The realtor told us we cannot expect to get any return on our investment at this time due the pending nature of this project and if authorized expect to have our land value go down even more.

C.T., Gardiner, ME

We bought property on Keg Lake 27 years ago specifically to enjoy the overwhelming scenic beauty, the pitch black nights for star gazing, the feeling of going back in time to the days when Native Americans gently used this land. We feel rejuvenated every time we go for a long paddle in our kayaks, every morning as we watch the loons, eagles, ducks and hummingbirds from our porch sipping that first cup of coffee, the rainy days spent reading, the evenings by the campfires. We DO NOT want to feel invaded by huge wind towers marching across the ridgeline, flashing lights at us at night. We bring visitors to our camp every summer and none of them want to see the wind towers either. Both sets of parents camped, fished, boated and hunted on these lakes. They would be appalled by this proposal. There are so many other better, more viable, less destructive forms of energy available. Why destroy the beauty of this wilderness with a technology that's already becoming outdated, has an efficiency rate of less than 25%, harms birds and bats, destroys wetlands (in order to be built), etc. And when the monetary incentives for this form of energy dries up and the wind companies have greedily sucked every last cent, they will close their doors, go out of business and leave a man-made mess rotting on our pristine landscape. Please do not let this happen!

K.P., Vernon, CT

Each wind turbine has a blinking red light on top. They light up the sky with chaos as they all blink at different intervals. It's almost maddening. I am against the wind farms in the state of Maine.

Z.R., McKinney, TX

I am against the wind farms in the state of Maine.

D.N., Camden, ME

The proposed wind towers would be an unforgiveable deformation of a scenic beauty that could never be replaced.

B.P., Vernon, CT

Stop the wind farms!

D.B., Middletown, CT

A local real estate agent suggested that the real estate values will be negatively impacted by at LEAST 15%. My neighbor had people who would not make an offer on his home unless this project was voted down. The buyers are looking elsewhere. At the present rate of wind expansion there will be nowhere in this area to go without a view of wind towers.

M.F., Naples, FL

wind power should be junked because it is junk and does not nor ever will benefit the people of maine. all it does is detract from and ruin our beautiful state.

J.D., Abbot, ME

These industrial sites are not compatible with tourism and nearly any outdoor experience.

N.K., Carrying Place Town Twp, ME

Nature does not include Wind Turbines. I love the natural values of the DownEast area and I would not like to see it spoiled. I am willing to pay more for my electricity so that I can enjoy "Life the way it should be", in Maine.

V.B., Lexington, ME

I am not in favor of wind turbines.

H.W., Horsham, PA

My family has lived in Maine for generations, and to me it is very demoralizing that we now cannot rely on the officials we have entrusted to protect our beautiful state to do their jobs. Maine people have, for the most part, been careful stewards of our priceless resources. It is unconscionable that a few people on the LURC commission can forever ruin what many many people have cherished all their lives. I know my family and many others who's lives revolve around their trips into the wilds of Maine. It makes me sick at heart and very angry that the hard working people of Maine are rendered virtually helpless to save this state from senseless exploitation. Contrary to what First Wind and Champlain say, these lakes ARE very special. Many of us who dare to find out the truth, know that these wind projects are not cost effective business propositions. You would not find investors if the state was not taking taxpayers money and using it as start-up money for these projects. I can only hope that the LURC commissioners will find the courage to do their job and uphold the Recreational, Scenic and Water Resources Standards of the Comprehensive Plan and not cave in to powerful interests that only want to exploit us.

R.E., Cushing, ME

PUT THEM OFFSHORE (BEYOND THE 3 MILE LIMIT!)

R.D., Tarrytown, NY

It's not just the sight of the wind mills, it's the distruction of the land that will never be able to return to it's natural self after the towers are decomissioned or just not maintained after the companies have used up all the tax payers money and they have made their profits from us. Our electric bills will continue to rise, for the power goes out of state.

R.H., Fairfield, ME

I worry about the noise as well as the view. They appear to be very close to the shores of the lakes so I suspect the thumping noise (yes, I've experienced it) will carry further over the water. I think there must be better places to build a windfarm. This area is so beautiful as it is.

W.C., Novato, CA

It is interesting that the government is talking about stopping the tax incentives for these wind projects. There will be a rush to complete as many as possible in the 2012 year and then what? There is little data to show the life expectancy of these behemoth structures and so far the electricity produced is not enough to warrant the scarring of the beautiful environment in which they would be placed. The consumers of the electricity would not be the people impacted by these structures.

D.S., Glenview, IL

This is definitely not a good place to build this industrial energy project. It doesn't fit with the landscape at all.

M.G., Lakeville, ME

I am not against anything that will produce power but these turbines destroy the look of the landscape. Liberals and people who love green energy are very hypocritical. Just because this is green energy doesn't mean it doesn't destroy the natural beauty of the area. These wind turbines are ugly. They absolutely destroy the natural beauty of this part of Maine. I don't come here to look at wind mills. Try putting an oil rig or a natural gas well on these locations if the resource was available. Every liberal on earth would be having heart attacks. Try putting a wind mill in front of the Kennedy compound in Hyannis. You'll see hypocrisy at its worst.

J.D., Cape Coral, FL

Short term benefit should not replace long term injury. Maine is unique. Every effort should be made to insure that such status is appreciated and preserved.

R.L., Hendersonville, NC

All projects must be maintained by local dollars. They do not produce enough to carry costs. They become a burden to the community.

P.P., Forest City Twp, ME

LEAVE THE NATURAL LOOK THE WAY IT IS..THAT IS ONE OF THE REASONS I LOVE MAINE.

R.W., Wappingers Falls, NY

Honestly, how can anyone look at those photos and not think it doesn't detract from the view and scenery and the whole experience, Geeze!

S.W., Ramsay, MN

I prefer cheap energy for everyone..... to 'scenic beauty' for the privildged.

H.B., Gloucester, MA

PLEASE DO NOT SPOIL THE PRISTINE BEAUTY OF THE DOWNEAST LAKES WATERSHED WITH WIND TURBINES!

S.G., Tuxedo, NY

I do not come to this region of Maine to view wind farms. I have come here with my family since 1972 first and foremost to experience the unspoiled lands and waters and vistas that do not have industrial development right in a setting where it most certainly does not belong. I come here to escape that very thing, as do the folks who also come to spend time with me for fishing and hunting.

J.G., Forest City, ME

These wind turbines are a total farse and in 25 years time the only one to benefit from them will be the original ones that built them and the folks that made money off from them. It is a total shame that the uneducated folks in the area don't put a stop to this RIGHT NOW!

E.B., Brookton, ME

In no way do the wind towers enhance the beauty and pristine qualities of this beautiful area. These wind towers disparage much of the work done over several years by the Downeast Land Trust.

W.B., Forest City, ME

The intrusion of turbines in this pristine region is an insult to its residents, the visitors who spend hard earned recreational dollars to get away from their already transformed congested and over built urban environment will come no more, and the very pristine nature of this County will be impacted forever.

A.W., Forest City, ME

I have fished these lakes for many years and wind mills have no place along the sky line.....The natural beauty of this area is its greatest asset and this project will only ruin this for future generations to come.

S.W., Lunenburg, MA

This is special country, because it shows little evidence of humanity. The wind project suggests one is near Boston. That is not why people come to the north Maine woods.

D.W., Forest City, ME

Don't mess up a great natural place for hunting and fishing.

G.L., Ellsworth, ME

This system, if installed, will significantly and adversely effect human visual enjoyment of the area. An impact of such massive impact should be permitted only if there is a valid need and only if it meets the strictest criteria. The actual, not the theoretical, yield of KWH must be used in the value estimation. The actual value for KWH generation must be based on the yield of existing turbine projects in the region. Liability for remediation of environmental impact must be accepted in perpetuity and in writing by the turbine manufacturer(s), installer(s), or operator(s). In addition, an environmental impact statement from the petitioner must be independently reviewed and conclude that timber cutting, erosion and other turbine-related activities which are known to diminish high value habitats and kill wildlife, e.g. trout streams, nesting/breeding areas, migratory flyways, raptor habitat and behaviors, etc. will have a de minimis impact. If these criteria are not met then the proposed project should be rejected.

R.C., Lansdale, PA

Find other areas in the state for wind farms. We have them in Texas, but they are sited on the plains, not in areas dependent on tourist dollars. Leave Maine wild, please!!

R.C., Austin, TX

We go to the lake for peace and quiet so we can enjoy the unmarred beauty of the area. If we have to look at these it detracts greatly from the scenery as our place faces them.

R.W., Gorham, ME

Over the years I have seen several examples of these hideous wind farms: they dot the plains of central Illinois, they mar the horizon off the coast of Denmark near Copenhagen. They whir and emit stroboscopic red flashes in the breadbasket of Austria. Among the early adopters, many European nations are now abandoning or scaling back these projects as ugly eyesores, which are net negative in terms of energy output as compared to the energy needed to construct, maintain, then decommission obsolete towers over their lifespans. No benefit inures to the citizens of Washington County, who will not be hooked up to this grid; but, rather will see their unique pristine wilderness environment degraded by the presence of these gangly behemoths.

S.S., Talmadge, ME

I've made my living from the natural resources of this region my entire adult life. To change this for myself and others, trying to scratch out a living in this region would be a travisty.

D.T., Grand Lake Stream, ME

This project is an economic disaster and a travesty for those of us who travel these lakes regularly, who appreciate remote scenery and a sense of serenity. Please don't destroy the viewshed of this magnificent watershed.

E.W., Grand Lake Stream, ME

Do not allow First Wind to ruin the pristine wilderness of this area.

E.T., Dedham, ME

Please make the windmills go away.

K.G., Hampden, ME

I feel that they could construct these wind projects in a way where they wouldn't upset the pristine look of our most beautiful areas. Thank You.

M.C., Lakeville, ME

The night time sky with the red lights on the wind towers was very disturbing.

I.C., Cushing, ME

I live within a few miles of the wind project in Unity, New Hampshire. When we moved to the area, the Greater Lake Sunapee Area, we were entranced by its unspoiled beauty. Having grown up in Aroostook County without any real mountains, the hilly areas around the Sunapee Lakes area were areas where one could recreate and enjoy nature's blessings. Now that the wind farm is up, it is difficult to drive south from Grantham into Newport without being distracted by the large turbines which despoil the distant hills and mountains. It not only disturbs the scenery; it disturbs the senses. The unspoiled beauty of the Sunapee Lakes area is no longer intact, and that is especially a shame in the summer and autumn. I have inquired of friends in the towns of Unity/Goshen/Newport to see if they know of any of the locals who are employed by the company who owns the turbines. Nobody seems to know of anyone currently employed, and few residents were involved in the erection of the turbines. Many of my college friends who visit us and had visited the area prior to the completion of the wind farm are as saddened as we are by the disturbing outcroppings that the turbines cause to the rolling hills. Owing to the proximity to Concord/Manchester, and the Dartmouth College/Dartmouth Hitchcock Medical Center, it would be very difficult to assess the impact of the wind farm on this particular area. However, the impact upon the pristine environs of Maine's Downeast Lakes Watershed by the erection of this proposed Wind Farm would be catastrophic. Maine can no longer claim to be a agricultural stonghold. Its fishing industry is under seige. To deal a blow like this to the tourist/sportsmans industry would be catastrophic. Find an area like Mars Hill where you've already screwed up the landscape(and from years of having travelled through the town) and haven't contributed anything to the growth of the town to add more turbines. I can almost hear the residents saying, "Okay! Cha-Ching, Cha-Ching!! HA!!

J.B., Grantham, NH

West Grand Lake is one of the few remaining areas one can get away from these turbines. Let's keep it that way.

P.C., Grand Lake Stream, ME

Maine's "quality of place" is our most precious resource--it is what calls people here "from away" and the reason many native Mainers stay. Wind turbine facilities in Maine's rural regions will absolutely detract from Maine's brand. To allow such large-scale industrial changes to our landscape--especially when Maine does not need the low-value power produced--seems incredibly foolhardy in a state which relies on the $10Bilion/year tourism industry.

K.P., Lexington Twp, ME

I'm so in love with the wilderness of this area please do not harm it! especially on Sysiladobsis lake.. I wish i could spell that word!

C.C., Waltham, MA

I spend a great deal of time on a relative's property on Junior Lake. I went to the University of Maine, I have resided in Maine and I love being in the quiet woods of Maine. Therefore, I would prefer it if there were no giant wind turbines to ruin the beautiful landscape I so enjoy.

R.C., Guilford, CT

I have enjoyed this area for many years and the proposed industrial look of the area will affect my future plans for visiting Downeast Lakes.

G.B., Ellsworth, ME

It's my understanding that there will be a limited amount of power generated by the turbines in this location. The project would get a better return of power by placing them off the coast. This will cost the company more, and they don't want to spend the extra money. Their intent isn't to make money off the electricity the towers generate, but to get money from incentive programs offered by the Government. By placing them on Bowers they'll destroy property values in the area, wildlife will be harmed, and the scenic value of this area degraded. This makes no sense to me, when they can find a better location off the coast that generates more electricity.

B.M., Chandler, AZ

These turbines would take away the sense of isolation and remoteness enjoyed when out on the lakes. It would totally wreck the wilderness feel of this region.

W.M., Ferrum, VA

I believe in property owners having the right to do what they want with their property. But not if it affects the rights of other ajoining property owners. Because of the extreme height of this project it will be visible by many people from many different surrounding lands. One of the big reasons people visit here and live here is scenic beauty. Windmills severely hurt the areas scenic beauty.

L.C., Grand Lake Stream, ME

The sight of the towers are just plain UGLY!! It does not appear that there will be any benefit from them for us. The gross sight will never be able to make it right. Scratch this deal! Thank you.

K.S., Grand Lake Stream, ME

There are no benefits to landowners, just property value reduction.

D.O., Manchester, CT

The chain of lakes in this region should be valued for its near pristine vistas and wilderness accessibility. They should be developed as eco-tourism destinations so as to preserve the unique assets that are present.

P.F., Naples, FL

Please just say no no no to these wind towers on this GREAT WATERSHED. THANK YOU.

G.S., Sanbornville, NH

My family has a cabin on the lake and I will do anything to protect it from the banker-backed financiers currently controlling wind. Wind is not inherently a bad thing, but the bankers ruin as they ruin everything.

C.M., Albany, NY

i can see maybe 3 or 4 wind mills being ok but more than that would ruin the view. these lakes are beautiful as they are. i hope they won't be ruined by the greenies.

K.D., Ontario

I love this area because it is so undeveloped. Looking at your pictures, I don't think the windmills totally destroy the scenery. But even seeing two or three windmills will be enough to ruin the peaceful, return to the earth experience that I crave. Please don't pollute this area with these industrial white elephants.

B.M., Burlington, MA

I have been to Grand Lake Stream once for a few days. The beauty there is breath taking. I so bad do not want this pristine area of Maine devastated by wind turbines. These projects are going after subsidies from the federal government, payed for by my tax dollars and lining the pockets of a few men that don't care how they get it. Members of my family go to these areas to fish and enjoy the beauty offered there. This would be a good place for the federal and state governments to wake up and save this country!

M.L., South Portland, ME

I'm delighted to have wind as an option for Maine power. Considering the options for power creation of fossil fuels or nuclear--or even hydroelectric, wind is superior. In Maine, solar is limited, and it is crushing thinking of life without power most of the time (though my property in this area is without power or running water!) but the cost of such power is harsh. When I drive through Lincoln, and I see their turbines, I am heartened. People complain about the sight of the turbines, but no one seems to complain about the cell towers. I find those much more disturbing to the view, as they blink at night. I realize I am not in the majority of these camp owners, but my family has had this land since 1936. A lot of changes have occurred since then. Some have been less elegant than others. Compared to radio and cell towers, the wind turbines are lovely.

E.B., Bangor, ME

Tell this wind turbine company that if the presence of these wind turbines is so unobtrusive, then why don't they propose putting them in the Grand Tetons, or Glacier National Park, or on top of Mount Rushmore. If they're so unobtrusive, then why was a huge wind farm proposed off of Martha's Vineyard stopped by Vineyard residents? Wind power is and always will be too inefficient to be marketable without Federal subsidies, because it is not a "concentrated" form of energy such as nuclear, gas, oil, coal.

D.C., Eagan, MN

Save the Lake area. Let's leave the kids of the next generation, a view to the Natural Beauty of the State of Maine.

D.G., Kannapolis, ME

Thank you for allowing us some input on the wind farm proposed. My family and I have had a camp on Duck lake for almost 100 years, 5 generations now. change is not necessarily bad but a wind farm here, seriously!

P.S., Maynard, MA

The impact of the turbines on the vista, night views and scenic value of our resource negates the energy afforded. Maine should preserve our brand as the way life should be. The turbine farms should be located away from our scenic waterways.

V.A., Beals, ME

Over time, I think people will find other places than Downeast Lakes area to vacation--places that continue to offer unspoiled natural settings and views to those of us who value that when selecting a vacation spot. I'd rather see greater efforts nationally to conserve electricity.

M.E., West Chester, PA

I think no matter what is said and done Lurc , wind towers, or Land Trust have people in place to do what they want. Small land owers will have no say. A good example is the land sales that just happen 2 years ago with Webber LLC. Meetings were held. Lurc and Webber made deals with the lots storey we're told . Then bang 90 days is what you have to make things happen or get. If you get money your in, if not too bad. The people around here dont want changes, look what changes have been made in the last 50 years. Lodges have change ,fishing changed, Guiding changed, Hunting changed, everthing has change do to the large land owners to fit their needs.It still comes down to a few directors wanting what they want and buying or giving land on the lakes to poeple that work with them or for them. So here we go again.

G.S., Grand Lake Stream, ME

I visit the region because of what it is. Pristine, peaceful, quiet, natural. Wind farms will destroy all that.

J.S., Gilford, NH

I have grown up spending my summers on Bottle Lake. One of my favorite parts of being there is the dark nights with no street lights and blackness that enables you to the stars more brightly. I also love that there is very little distraction from the natural beauty. I love not having internet, and having limited electricity.

J.C., Northfield, VT

My wife and I have traveled this great country quite a bit. We have seen many wind farms in the California area and all of them interfere with scenery in the area. They also destroy a good portion of the bird population in the area they are in.

E.C., The Villages, FL

When I was looking for a camp my main concern was that the area would not become over-developed. Having to look at wind turbines on the horizon totally destroys the most valuable asset. The feeling that you are no longer in the city. That's what I came here for. That's what most of our visitors come for.

G.C., Hingham, MA

I was at the "Grand Lake Stream" meeting with this outfit, and I greatly disagree with this project. Especially so, due to the fact, that all the power generated.."GOES OUT OF STATE". It does "nothing " for Maine, and "specifically" destroys the beauty of the Downeast Lakes Watershed. This is totally unacceptable as far as I'm concerned.

R.S., Grand Lake Stream, ME

My family has owned a camp on Duck Lake since the early 1900's. We would have a direct view of the proposed project and it would greatly negatively affect our enjoyment of the lakes in that region. It would be the first thing we'd see arising on the sleeping porch of a camp built in the 1890's and we'd be seeing (and hearing) it all day long. We come to Maine and bring money into area businesses and pay taxes to enjoy the vast physical beauty of the region. This project would essentially ruin our enjoyment of the lakes and have a detrimental effect on tourism.

C.K., Santa Barbara, CA

I have not camped over night on the island but I hope to. But if there are going to be red lights flashing maybe I won't.

M.J., Manchester, NH

I go to this region for the quiet and natural beauty. The windmills will detract greatly from this particularly with flashing red lights. There are very few places that have the peace and solitude of this region. Please don't spoil it with the windmills.

E.G., Winchester, MA

I am very concerned about the impact on the night sky which is one of the most beautiful aspects of this area. There are not many places I have visited in the world in my 62 years where the sky is so clear because of the lack of man made light. These massive towers with their bright red lights will totally destroy this aspect of the region, and that in my opinion is a huge loss for the state of Maine. I planned to return to Maine soon when I retire as I was born in Portland where I lived my first 40 years. However, I will re-think that plan if the state allows such poor treatment of it's land resources.

L.L., Clinton, CT

I remain hopeful that the LURC and the people of Maine will realize the folly of this venture and turn down the project. There are things that all of us can do to decrease our energy use and protect our state.

K.R., Bangor, ME

There are better alternatives than wind power. Maintenance and replacement of worn out of faulty ones would be add futher damage and destruction of the beautiful environment Maine provides.

R.C., Frederick, MD

I'm worried about what affect this industrial wind power plant will have on my ability to continue guiding for a living. My whole livelihood depends on a wilderness experience

D.T., Grand Lake Stream, ME

Please leave our natural beauty of a sightline natural.

K.G., Wantagh, NY

I own property in Weston on East Grand Lake and often fish and kayak on the Hot Brook Lakes and Baskahegan lake. The Stetson Mt. wind farms have not effected my experience in any negative way and feel the same is true for the Bowers Mt. project. Benefits will outweigh any perceived negative impacts at the distance from the Lakes where the towers are proposed.

D.K., Easport, ME

One critical impact of the wind turbines not discussed in the survey is the night-time affect: Lights are flashing all the time. Do not underestimate the affect flashing lights have on your environment. I live 20 miles from a wind farm on the St Lawrence River (Wolfe Island in Canada). Miles down river, we see the flashing lights of the turbines. It is obnoxious and does spoil the night sky. Also, the birds and bats are affected by turbines. Surprisingly, the bat deaths far exceed those of the migratory birds according to studies by Bill Evans of Old Bird, inc. He was hired by the wind company to document the impact and his numbers show devastating results for the bat population already affected by white nose syndrome. Sadly, I will lose the sense of wilderness and remoteness that I so enjoy when I escape to Duck Lake.

D.G., Clayton, NY

This doesn't even touch on the huge, stripped tracts of land where the wires run down to the collectors, and doesn't mention the phosphorus and other run-off that decimates the trout populations. And who's going to fix these, or take them down when they no longer work? I'll bet that Ill Wind will be long gone when that needs to be done. There's precious little electricity being generated by these (30% efficient at best, often not turning at all), and no lowered energy costs. This is not the answer. Not here. Find an uninterrupted wind field, like the ocean or the plains. People come here for the beauty of the land and night sky. Do you think they'll come to see the blinking windmills and the forests criss-crossed with chopped-out lanes of high-tension wires?

R.H., Bridgewater, NJ

Wind power is NOT THE ANSWER! This is an overwhelmingly government subsidized construction project that would not be able to compete in an energy "free market. There are many more economical and proven ways to produce usable energy that could help not only the Great State of Maine but also, the world.

J.T., East Northport, NY

Just thinking of them there makes my blood boil!!!

B.L., Coventry, CT

Leave the Lakes ALONE!!!!!

E.C., Woodstock, GA

I am a current resident of Aspen, CO with a family summer camp on Duck Lake near the town of Springfield. I grew up in upstate NY in the St. Lawrence River Valley where the threat of wind farms not only threatens to destroy the ambiance that the area has built its economic well-being on, but also the ecosystem of the area.

E.G., Aspen, CO

We enjoy our Maine vacationland because of its natural beauty. The worst possible idea for this area is to mar it with monster wind turbines where many people come to relax and enjoy nature at its finest.

L.C., Wantagh, NY

Please don't do this. Since I was a little girl visiting my grandmother, I've loved the natural beauty of this area. And now, having my own kids and property here, I can't imagine casting for white perch off the wharf at dusk and looking up to see a bunch of flashing red lights. Or seeing those big ugly things from our canoe or when waking up in the morning. They are an eyesore, they DO NOT blend, and they are just one big ugly reminder of how one of the last remote and naturally gorgeous places on earth was sacrificed against the will just about everyone who lives in or enjoys this area.

J.B., Lenexa, KS

GO FOR IT!!!!!!

M.P., Berwick, ME

I will not return to this area if I have wind turbines in view. I no longer visit Lincoln because of the wind turbines.

L.D., Orono, ME

THIS PROJECT WOULD DEFACE THE NATURAL BEAUTY OF THIS WHOLE AREA, ONE OF MOST SCENIC IN THE STATE OF MAINE.

M.H., South Berwick, ME

I think its important to consider the impact that the existing windpower projects already have on the beauty of the area within several miles of these lakes.

M.L., Essex Junction, VT

I think it's a fact that most of the wind farms are being built for financial benefit and tax breaks for the builders. The notion that these wind farms will help with the unemployment situation in the state of Maine is rubbish. I live on Molasses Pond, where the Bull Hill project is going to be built nearby. It will be a hideous blight on the previously pristine hillside. I believe that the people in Downeast Maine will not benefit one bit from this project with regard to the cost of electricity. The previous first Selectman, recently deceased, bought into the lies hook, line and sinker, and sold the town out to First Wind. There is no provision for the time when the wind turbines are no longer functional, they will no doubt affect the real estate negatively, certainly impact my evening peacefulness on my dock, and in general ruin the experience of Molasses Pond that I have enjoyed since I was a child. I will sell my home on Molasses Pond when the real estate market regains momentum, which is unfortunate because I was looking forward to sharing it with my granddaughter. My prediction is that this project will not benefit Downeast Maine in any way, and my belief is that land-based wind turbines are an inefficient and minimal way to produce energy. It's all about tax breaks, and the greed of men who have exploited the great woods of Maine. I'm disgusted.

C.A., Eastbrook, ME

If I wanted towers and "art" as some people have stated, I would head to the cities. I can't believe how many of Maine's pristine areas are being destroyed by out of state companies that have no concern for our quality of life. I have lived here all my life, found more to enjoy in my own backyard and never wanted to be anywhere else for a reason. Maine is pretty much heaven on earth and it is being ruined one turbine at a time.

T.N., Bar Harbor, ME

Not only do I think the scenic beauty of these lakes will be tremendously diminished, but am also concerned about the environmental impact it would have!

R.L., Lakeville, ME

The energy wind farms provide isn't worth the loss they create to our landscape. Drill new oil wells or develop tidal power.

R.M., Baileyville, ME

Wind towers have their place, just not here.

A.K., Gouldsboro, ME

WE NEED GREEN ENRGY. I DON'T LIKE THE "NIMBY" MENTALITY, GET ER' DONE!

B.C., Lubec, ME

Perhaps Maine Board of Tourism can come up with a list of lakes we can visit if we want to enjoy the Maine wilderness. Flashing lights in a night sky are not conducive to my vacation in Maine, I can just stay in Connecticut where light pollution and noise is every where.

C.C., Old Lyme, CT

Wind turbines have no place spread out over some of the last scenic wilderness left in the Northeast. They are industrial in nature and should be located and clustered in farms and in areas that have been highly developed. The scenic legacy of Maine is irreplaceable and should not be allowed to be sold off to outside interests with promises of jobs and support for civic projects.

R.H., Lakeville, ME

Don’t destroy the region with windmills.

W.B., Lunenburg, MA

It might be better if the windfarm were to downsize. I am not opposed to wind power in general but to line up multiple turbines on the top of a mountain ridge in the way that is displayed seems quite extreme and excessive. I am also concerned with the effect this large scale development may have on eagles and migrating birds.

E.B., Pleasant Point, ME

Why is the wind farm project being proposed for installation in the ocean being built so far offshore that it will be out of sight? Because most people don't want them to be seen. Please don't approve the Bowers Mountain project it will be a permanent blight on a unique watershed.

B.L., Portland, ME

Studies have indicated that wind power is an inefficient method for producing power. Wind power is noisy and the flicker effect of the blade shadows would drive me nuts. Wind power is only a temporary job creator.

D.C., Minneapolis, MN

My country, my land, my freedom, my lakes, keep Maine the way it should be - no windmills on our ridges in the lake country.

D.P., Lakeville, ME

Horrible idea. One of few unspoiled areas of the country would be destroyed.

A.D., Overland, Park, KS

I first came to this.area in the early 70's to enjoy canoe camping and fishing on the Grand Lake Chain of Lakes. It reminded me of experiences with my father in remote parts of Canada. Until 15 years ago I continued to return to these lakes for their quality and then .... I moved here!

T.P., Lakeville, ME

My family resides in New York where the natural beauty of the land has been destroyed for industrial and residential development. We bought our place in Maine in order to try to recapture that feeling of the great wilderness and to allow our children to experience those feelings that come when one feels as a part of this wilderness as we had when we were children. Mainers have come to call this recreating. It can not be accomplished when one is staring at a large industrial structure on the horizon which obviously does not belong and is totally out of place. Had we known ten years ago that there was a good possibility of this coming to pass we would have looked elsewhere for our piece of heaven which is what we have had these past ten years. We could have just stayed in New York and looked across the Long Island Sound to the power generation plants in Connecticut with their twenty four hour flashing lights and stacks reaching up toward the sky but we chose instead to purchase our little camp and to gaze out across the lakes and forest with an unobstructed view for as far as we could see save the trees and birds. If these industrial monstrocities are built on Bowers though our camp value will no doubt decrease we will more than likely sell and attempt to find a new piece of open space that has the same endearing qualities as our current camp. Though a new place may not have the same attributes as our current camp we will be sure it never has an overlook on unnecessary industrial sprawl. Thank you.

J.T., East Northport, NY

My family owns property in the Downeast Lakes area and has for generations. While I am currently a visitor to Maine, I will be a future resident. I will absolutely return time and time again but the proposed windfarm will have a profound negative impact on the scenic value of the area. I worked at a large windfarm in California and can attest that the actual number of local jobs created and sustained after development is very low. In this beautiful, wild area, I think they will permanently change the character of the land that generations before have used and enjoyed sustainably.

C.B., Santa Barbara, CA

Please listen to the people who have spoken and value their sentiments.

S.N., Orrington, ME

If the scenic beauty of the Grand Lake Stream region is destroyed by First Wind and their wind machines, there will be no difference in living or recreating in Maine in this area than with Iowa. Please do not allow the destruction of this nature’s gift.

R.W., Freemont, NH

Please dont do it! Thanks.

D.J., Ashland, MA

One of the most important assets of Maine is it's scenic beauty from and environmental and economic view point. Maine is the last frontier of the East. No matter where you go in the world , if you mention you're from Maine people comment on how lucky you are and how beautiful Maine is.

N.W., New Portland, ME

Wind power is an unproven solution to the high price of power in Maine. Without massive Federal subsidies, these wind farms would not be built. There are other solutions to our energy needs that will have significantly less impact on our scenic areas.

R.M., Kennebunk, ME

Thank you for the opportunity to express my distaste for the windmill project at this location.

E.M.S., Veazie, ME

This area is absolutely legendary to me and my family. The scenic viewsheds and wild nature of the Down East Lakes Region is priceless. The Maine guides are the best. This entire area embodies what the true nature of Maine represents. Industrial activities have no place here. They should be banned. Tourism, hunting, fishing and nature based recreation and sustainable forestry are the current economic base as well as the future salvation of this area. Much has been invested to preserve this region for future generations to discover, explore and come to love the way we have. Keep the wind developers and other industrial development out.

P.G., Fort Kent, ME

Having lived in the area for fifteen years and visiting yearly since then, I believe the towers will ruin what is special about the area and devastate what is a beautiful piece of Maine.

P.D., Mineral Bluff, GA

I'm currently saving towards purchasing property in Maine in the future. I work in the biological sciences for a living and I hope to own property some day in the Downeast lakes area, specifically Junior or Bottle Lake, for low impact camping and nature observation. The draw of the area is that it is one of the last places left in New England and the Northeastern U.S. that is nearly free from the constant disturbance of industrialized society. This development of Wind Turbines would not only be an ecological disturbance but also a pernicious reminder that even in the great Maine woods man's influence is inescapable.

R.C., Middletown, CT

Once the wild character of unique ecosystem known as the Downeast Lakes is gone, it will be gone forever.

D.S., Holliston, MA

Given the paltry amount of energy land-based wind turbines produce, and the cost to Maine tax payers who foot the bill for transmission lines, it is not worth the degradation and destruction of the Downeast Lakes area. This project has turned me into a national park advocate. There does not seem to be any other way to protect Maine's natural resources for generations to come.

P.M., Orono, ME

The wild atmosphere is what caused me to decide to buy a home in this area. There is plenty of room for logging and other activities in this area with out messing up the horizons with turbines. I have folks come to visit and they say that it is nice to have an area as remote as this. They enjoy the beauty of it all and turbines have no place in this area. There must be plenty of other areas in the state without destroying the ambiance of this place,. Build windmills in areas that do not affect such beautiful scenery. There are enough units already in place without adding more to such a nice area.

V.C., Lakeville, ME

I own property and vacation in Grand Lake Stream to relax and get away from all the commercialization of an industrialized city environment. I've seen these wind mills in Illinois in fields outside Chicago. They are huge and overwhelming and dominate the landscape in ways unimaginable. Placing these wind mills in such a rare and pristine environment in Maine will absolutely ruin it for everyone who comes to enjoy the beautiful wilderness scenery. Furthermore, this is not something easily undone once undertaken and, if undertaken, will become a permanent blemish on the Downeast Lakes Watershed. I'm simply heartbroken that this endeavor is even being considered.

K.B., Cincinnati, OH

I work at a wilderness camp located at the west end of West Grand Lake. I am deeply attached to this watershed, so I will continue to visit the lakes no matter what. But the erection of this "wind farm" would seriously detract from the kind of wilderness experience that we promise our campers. As an individual, I would want to stay; as the president of the Board of Directors, I would have to urge the Board to consider seriously relocating our base camp to a less developed area--and that would mean, most likely, out of Maine. Our camp spends large amounts of money in Washington County every summer (for starters, $8-10k at Hannaford in Calais), and we bring tourists in the form of camper families to the region. The erection of these towers would be catastrophic for our business and for the sport-fishing industry.

M.T., Clinton, NY

I feel that the windmills detract heavily from the scenic beauty of a wilderness lake... I invested heavily in this area because my wife and I really appreciate the beauty of the forest lakes... As avid bird watchers we are also very aware of the high kill rate in windmill areas.

J.H., Santa Monica, CA

With my family I have spent twelve full summers in a camp on Junior Lake which would have these lake views. The wind towers would ruin the view, and change everything about the place. Don't allow it!

H.R., Houlton, ME

The property owners who abutt and can visually see these wind turbines will be affected the most and benefit the least. These governmentally subsidised projects do not ever realize a return on the investment. It's a joke. Have them put all the turbines in the middle of the ocean, 100's of them, even thousands of them. This way they won't affect anyone and the benefit can be huge. When their life span is up (20-25 years) you simply remove them. On these beautiful mountains, when they have gone beyond their usefullness, they simply leave them. They are too expensive to remove. The whole thing is a godamm joke.

R.G., Lakeville, ME

I started camping on Junior Stream back in 1962. I returned every year to salmon fish in the spring and bass fish in the fall. We have fished every lake that is being potentially ruined by this project. We love it so much that we built two camps on Long Point on Junior Lake - in 1990 and 2005. Our family spends almost every weekend there --as we are snowmobiling enthusiasts as well. Windmills do not fit in this scenic and pristine part of the world.

E.G., Southborough, MA

The only people to benefit from this monstrosity are the tax payer subsidized developers and their contractors.

G.C., Monroe, ME

Wind Farms do not belong near our great ponds!

M.S., Belfast, ME

I live just outside of the area shaded on your map. This affected my responses - I visit the area on a daily basis, as opposed to for occasional or periodic vacations. Because I live here, my visits will continue.

M.B., Princeton, ME

This watershed has a very rich history of hosting "sports" from around the globe and needs to be protected from this industrial eye-sore that will change the wilderness character of the area forever. This IS NOT an appropriate site for a grid scale wind power project. One would have to be blind or extremely greedy to be in favor of it.

K.G., Lakeville, ME

The scenic impact of this project is terrible. I can not believe that anyone would even consider permitting such a project. The affect on the area will be devastating!

D.C., Concord Twp, ME

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
LAND USE PLANNING COMMISSION
106 HOGAN ROAD, SUITE 8
BANGOR, MAINE 04401

PAUL R. LEPAGE
GOVERNOR

WALTER E. WHITCOMB
COMMISSIONER

NICHOLAS D. LIVESAY
EXECUTIVE DIRECTOR

Memorandum

To: Interested Persons

From: Stacie R. Beyer, Chief Planner

Date: September 21, 2016

Re: Substantive Review, Carroll Removal Petition
Additional Materials for the Public Hearing

LUPC staff has identified or prepared additional materials that may be beneficial to the Commission at the upcoming hearing on the Petition to Remove Carroll Plantation from the Expedited Area for Wind Energy Development. LUPC staff plans to have these materials at the hearing and to enter them into the hearing record. The specific documents are as follows:

1. Carroll Plt, Penobscot County, Substantive Review. This is a map developed by the Land Use Planning Commission to show existing development and resources in the region, and assist the Commission in understanding testimony at the hearing.
2. Table 1-Key Siting Considerations, an excerpt from the Pre-filed Direct Testimony of Matt Kearns, Neil Kiely, and Geoff West on behalf of Champlain Wind, LLC in the matter of Development Application DP 4889, Champlain Wind, LLC, Bowers Wind Project.
3. The public hearing testimony of SGC Engineering, LLC in the matter of the Petition to Remove Milton Township from the Expedited Permitting Area for Wind Energy Development.
4. MHPC, CARMA, Carroll Plt, a map from the online MDOT, CARMA database for Carroll Plt, http://www.maine.gov/mhpc/carma_disclaimer.html , accessed on September 21, 2016.

Copies are enclosed for your reference. Any comments that you would like to submit regarding the content of these documents must be submitted to the Land Use Planning Commission by ***2:00 PM*** on ***September 27, 2016***.

If you have any questions about the additional materials, please contact me. I can be reached during normal business hours by telephone at 207-557-2535 or e-mail at stacie.r.beyer@maine.gov .

Attachments

Land Use Planning Commission

Petition to Remove Carroll from the
Expedited Permitting Area for Wind Energy Development;
Substantive Review

Attachment 1

LUPC Map: Carroll Plt, Penobscot County, Substantive Review

Carroll Plt
Penobscot County

Sustantive Review

0 1 2 4 Miles

N

- Surrounding Towns
- Towns
- Outstanding Lakes
- Waterbodies
- County Lines
- BP & L Campsites
- Transmission Lines
- U.S. Routes
- State Routes
- Statewide Conserved Lands
- Wind Development Projects
- P-RR: Recreation

Sources:
Maine Office of GIS, USGS,
Land Use Planning Commission,
BP&L, DOT, PUC

Locus Map

August 5, 2016

Land Use Planning Commission

Petition to Remove Carroll from the
Expedited Permitting Area for Wind Energy Development;
Substantive Review

Attachment 2

Table 1- Key Siting Considerations, Bowers Wind Project

Table 1-Key Siting Considerations

Category	Siting Considerations for Bowers Wind Project	Comment
Wind and Permitting	Wind Resource	On-site met tower data indicates prevailing wind speed is west-northwest and average wind speed is 7.5 m/s.
	Proximity to Transmission	Project is 5.2 miles from an existing 115-kV transmission line.
	Expedited Permitting Area	Project is fully within the expedited wind permitting area.
Natural Resources	Federally-listed species	Project is outside Critical Habitat for lynx and salmon, and there are no bald eagle nests within four miles of the project.
	Birds	Surveys indicated similar results to Stetson, where post-construction surveys demonstrated low risk.
	Bats	Surveys indicated similar results to Stetson, where post-construction surveys demonstrated low risk.
	Wetlands	Wetlands were fully delineated throughout project area and the design minimizes impact to 0.10 acres of permanent wetland fill and 3.79 acres of wetland clearing.
	Significant Wildlife Habitat	Only one SVP was documented and the design avoids all impacts. There are no impacts to DWA. The design minimizes impacts to 0.14 acres of upland clearing near an IWWH.
	Unusual Natural Areas	The design avoids any impact to rare plants.
Cultural Resources	Scenic Resources	Only one type of scenic resource - Great Ponds with scenic quality - are located within 8 miles of turbines and will have visibility of the Project. Four will have visibility within three miles and four will have visibility within 3-8 miles. These lakes are located within a working forested landscape, none of these lakes are unique when compared with other similar lakes in region or in Maine, and in all instances the visibility of the turbines will not unreasonably impact existing uses.
	Historic and Archaeological	Only one historic structure within 8 miles and which will have no visibility. Surveys indicated no evidence of archaeological resources
	Shadow Flicker	Two non-participating structures potentially will receive shadow flicker, based on the worst-case prediction, both of which will have maximum shadow for less than 30 hours per year
	Public Safety	Turbines are 1.9 to 6.3 times the distance of the maximum blade height to the nearest parcel line, structure, or public road.
	Sound	The design complies with sound requirements and no easements are required.

Land Use Planning Commission

Petition to Remove Carroll from the
Expedited Permitting Area for Wind Energy Development;
Substantive Review

Attachment 3

SGC Engineering, LLC Public Hearing Testimony, Milton

In its June 29, 2016 Comments to LUPC ("ISO Comments"), ISO-New England (ISO-NE) identifies constraints that exist in the Maine transmission system and the need for upgrades to accommodate new generation. Although constraints exist, there are a number of reasons why the existing transmission system should be able to accommodate the Bryant Mountain project.[1] The map included as Exhibit A identifies Maine's major interfaces and the key constraint areas identified by ISO-NE in its comments. This map was included in a December 18, 2014 report that ISO New England presented to the ISO-NE Planning Advisory Committee, *Strategic Transmission Analysis: Wind Integration Study: Maine and Northern Vermont Updates* ("2014 ISO Study"). The key interfaces are the Orrington-South interface in northern Maine, the Surowiec-South interface in southern Maine, and the Maine-New Hampshire interface at the Maine and New Hampshire border. They are depicted by the green-dashed lines on Exhibit A. There are several more localized constraint areas, shown in purple dashed lines on Exhibit A. They include the Keene Road, Wyman Hydro, and Rumford export areas. The most constrained area is north of the Orrington-South interface and, in particular, north of Keene Road. ISO-NE notes in its comments that the major constraint that affects new wind generation is located in northern Maine. (ISO Comments at pp. 2-3.)

The northern Maine constraint identified by ISO-NE does not affect the Bryant Mountain project, which is located south of Rumford and therefore is not affected by the constraints in the system to the north.

The Bryant Mountain project is subject to the Surowiec-South and Maine-New Hampshire interfaces and constraints that might exist in those locations but, as discussed below, ISO-NE has studied those constraints and the impact they might have on wind generation and concluded they are minimal. In the March 28, 2016 report by ISO-NE and presented to the ISO-NE Planning Advisory Committee Meeting, *2015 Economic Study Strategic Transmission Analysis – Onshore Wind Integration Draft Results* ("ISO Economic Study"), it was determined that Maine Interface Upgrades would produce: **"Little to no savings: Infrequent interface constraints and small amounts of bottled-in energy."**[2] Meaning that because wind generation is not constrained for significant amounts of time, there would be minimal economic benefit to

[1] As discussed in my initial June 29, 2016 Letter that was Exhibit B to EverPower's pre-filed testimony, the project will undergo a multi-year system impact study at ISO-NE that will identify any specific upgrades required as part of the project interconnecting with the electrical grid. The costs of those upgrades will be paid for by the generator.

[2] A complete copy of the ISO Economic Study is included as Exhibit C. This reference is on slide 14 associated with dispatch scenarios 1,2,3 and 4, which are existing generation plus generation north of Suroweic interface 453, 623, 857, 1149MW.

implementing upgrades to reduce or eliminate those constraints. Further, upgrades associated with projects as required by ISO-NE studies actually often increase transmission capacity and reduce congestion on the system.

When ISO-NE discusses capacity of the existing transmission system, typically it is evaluating the ability of the system to operate during periods of peak demand. Wind resources typically do not operate at maximum capacity during periods of peak demand. For example, wind projects have a lower output during the summer, when demand in New England peaks. Therefore, the potential constraints identified by ISO-NE, which occur during periods of peak demand, typically do not limit operation of wind power projects. This is evident in Exhibit B, which includes several slides from the ISO Economic Study. Slide 61 depicts flows across the Maine-New Hampshire interface and shows that during 2015 that interface was not constrained for wind or any other resources. Similarly, Slide 53 depicts flows across the Surowiec-South interface and shows that during 2015 that interface was not constrained for wind or other resources. It is possible those interfaces could be constrained during periods of higher demand not experienced in 2015, and ISO-NE specifically evaluated the potential for constraints at those interfaces under several hypothetical scenarios. The ISO Economic Study evaluated several scenarios, including a scenario in which all of the wind that was in the ISO-NE queue as of April 1, 2015 (identified as Scenario 6 on Slide 8 of Exhibit B, and which includes approximately 3,727 MW of wind power in addition to the 453 MW of wind power that was then in service in Maine) was operating. Under this scenario, there would be significant constraints at the Orrington-South interface, but no constraints at the Maine-New Hampshire interface, and minimal constraints at the Surowiec South interface. Exhibit B Slide 15. This study takes into account the variable nature of wind generation and aligns it with load as well as price signals which encourage other generators to operate, and as such it provides a more complete picture of the impact that existing transmission constraints might have on operation of existing and new wind resources.

In short, although there are constraints in the existing system, the Bryant Mountain project is not located in the areas of most significant constraints. Additionally, the constraints do not significantly affect wind resources, which do not operate during periods of time of maximum constraint in the system.

It has also been noted that there is a significant volume of wind generation proposed in the ISO-NE generation interconnection queue. Not all projects in the interconnection queue proceed to the next phase of study or are ever built. For example,[3] since 1996, less than 5,000 MW out of a total of 65,000 MW of proposed interconnections (including Elective Transmission Upgrades, which may only be elimination of congestion bottle necks vs. actual new generation) proceeded to the stage of filing an Interconnection Application. (The information from 1996-

[3] Based on the ISO New England Generator Interconnection Queue as of 7/28/2016

2004 is limited and it is likely the number of proposed interconnections is even higher.) In recent months, there have been a number of market signals (for example, Massachusetts, Rhode Island and Connecticut have issued a joint request for clean energy and transmission to deliver that clean energy) that have promoted competing applications of renewable generation into the ISO-NE queue, much of which will never come to completion. As reflected in the ISO Comments, the majority of proposed wind development in Maine is in northern Maine, Aroostook County. (ISO Comments at 3.) There is only minimal new generation proposed in Oxford County (63 MW, which includes the 40 MW Bryant Mountain project).

Jeffrey H Fenn P.E.
Director Electrical Engineering

EXHIBIT A

Strategic Transmission Analysis: Wind Integration Study: Maine and Northern Vermont Updates

Planning Advisory Committee

Stan Doe

MANAGER, TRANSMISSION STRATEGY

Maine's Major Interfaces and Relationship to Wind Resources

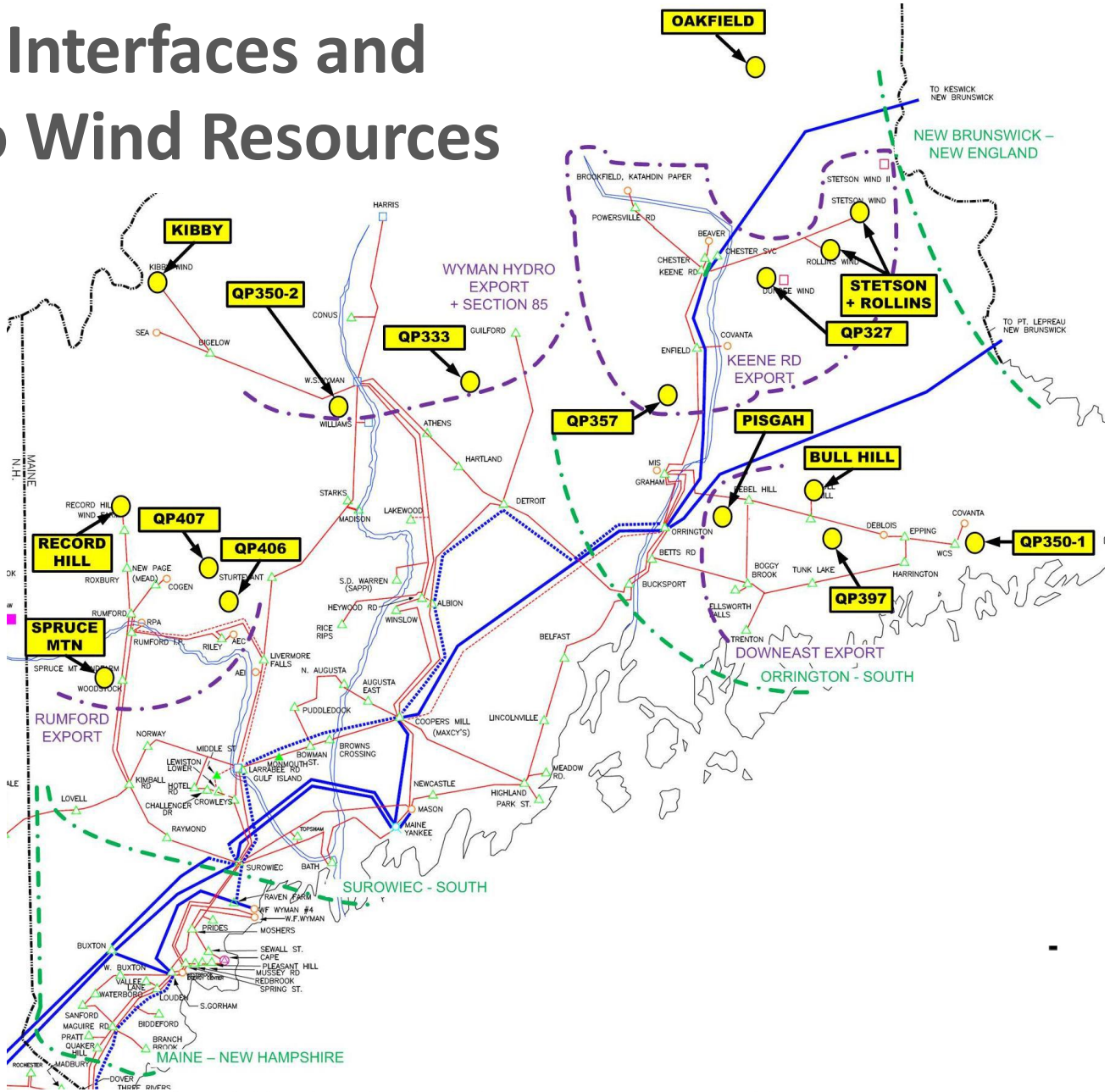


EXHIBIT B

2015 Economic Study
Strategic Transmission Analysis – Onshore Wind Integration
Draft Results

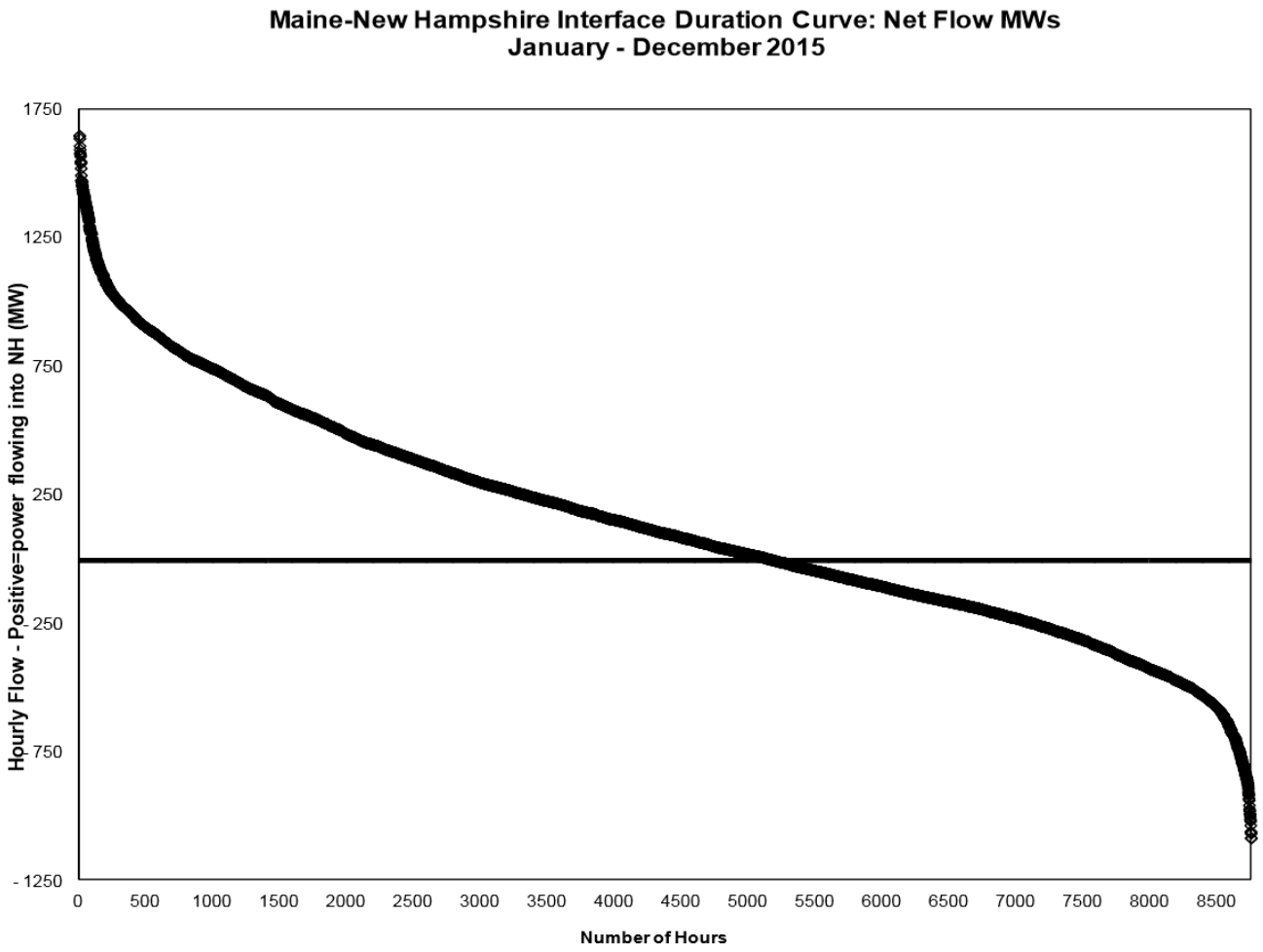
Planning Advisory Committee Meeting

Jessica Lau and Wayne Coste

SYSTEM PLANNING

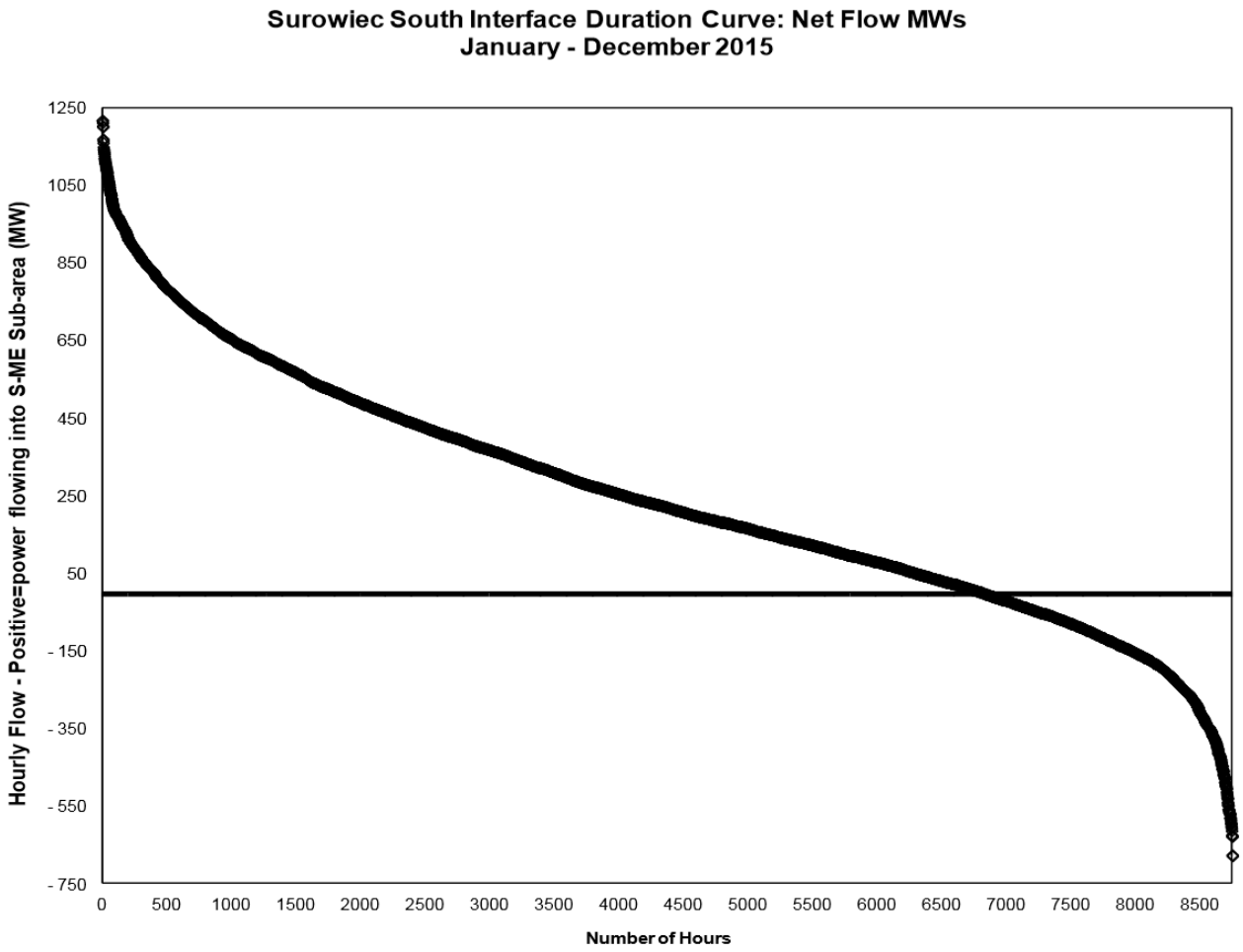
2015 Historical Interface Flow (MW)

Maine – New Hampshire (1,900 MW limit)



2015 Historical Interface Flow (MW)

Surowiec South (1,500 MW limit)



Wind Scenarios

New England Wind Nameplate (MW)

	Scenarios	Wind Nameplate (MW)		
		Maine	Outside of Maine	**New England Total**
1	**Existing Wind in New England (In-Service as of 4/1/15) ***	453	426	878
2	**RENEW Sensitivity 1 (Less Wind) ***	623	426	1,049
3	**Proposed Wind in New England with I.3.9 approval (as of 4/1/15)**	857	489	1,345
4	**RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) ***	1,149	426	1,575
5	**RENEW Sensitivity 2 (More Wind)***	2,084	426	2,510
5_{NB}	**RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch**	2,084	426	2,510
6	**All Future Queue Wind in New England (as of 4/1/15)**	3,727	678	4,405

Note: Values may not sum to total due to rounding

*Outside Maine, assumed only "existing wind" as of 4/1/15

Percent of Time Interface is at Limit (% of Year)

Orrington South is the most limited and leads to minimal congestion at Surowiec South and ME-NH

	Scenarios	Orrington South Export Limit		Surowiec South Export Limit		ME-NH Export Limit	
		Pre-Upgrades (1,325 MW)	Post-Upgrades (1,650 MW)	Pre-Upgrades (1,500 MW)	Post-Upgrades (2,100 MW)	Pre-Upgrades (1,900 MW)	Post-Upgrades (2,300 MW)
1	Existing Wind in New England (In-Service as of 4/1/15) *	1	0	0	0	0	0
2	RENEW Sensitivity 1 (Less Wind) *	6	0	0	0	0	0
3	Proposed Wind in New England with I.3.9 approval (as of 4/1/15)	8	0	1	0	0	0
4	RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) *	13	0	4	0	0	0
5	RENEW Sensitivity 2 (More Wind)*	43	19	11	0	0	0
5_{NB}	RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch	83	57	12	0	0	0
6	All Future Queue Wind in New England (as of 4/1/15)	69	52	11	0	0	0

*Outside Maine, assumed only "existing wind" as of 4/1/15

EXHIBIT C

2015 Economic Study
Strategic Transmission Analysis – Onshore Wind Integration
Draft Results

Planning Advisory Committee Meeting

Jessica Lau and Wayne Coste

SYSTEM PLANNING

Outline

- Overview
- Background and Assumptions
- Study Results
- Appendix
  I. Scenarios
  II. Generation by Resource Type Metrics
  III. Air Emissions Metrics
  IV. Bottled-In Energy Metrics
  V. Interface Flow Metrics
  VI. LMP Metrics
  VII. Modeling Assumptions

Overview

- The ISO is performing three 2015 Economic Studies
  - Keene Road area wind development and analysis of local interface constraints (request by SunEdison)
  - Offshore Wind Deployment (request by Massachusetts Clean Energy Center)
  - Maine Upgrades Identified in ISO-NE's Strategic Transmission Analysis for Wind Integration – Onshore Wind (request by RENEW Northeast)
- Today the ISO is seeking PAC input on the draft results of the **Strategic Transmission Analysis – Onshore Wind**
  - Estimate extent that transmission constraints are binding
  - Measure the economic benefits of relieving those transmission system constraints
- This analysis includes future resources in some scenarios, but may not account for all the necessary transmission facilities associated with the interconnection of the resource
  - All future constraints may not be captured in this analysis
- Final study results and report will be completed after consultation with the PAC
  - The results may be used to inform the region on the needs for future transmission upgrades in the Maine area

Background

- The Onshore Wind – Strategic Transmission Analysis scope of work and assumptions were developed with PAC input at the May and June 2015 meetings
  - Scope of Work
  - Study Assumptions
  - Stakeholder Comments on Scope of Work

Background

Strategic Transmission Analysis

2012-2014

- ISO-NE conducted the Strategic Transmission Analysis for Wind Integration (**STA-WI**)
  - Designed to understand transmission constraints in Maine affecting wind resources in northern New England
  - Focused on potential upgrades that would not require major new transmission construction

2016

- ISO-NE will conduct an updated **Strategic Transmission Analysis for Maine** as discussed in 3/28/2016 PAC agenda item 2.0
  - The Maine transmission topology has changed
  - Some upgrades identified in the previous study have been implemented
  - Some upgrades are no longer appropriate for current system

Background

2015 *Economic Study of Strategic Transmission Analysis – Onshore Wind*

Study Objective: Evaluate the impact of increasing transfer capability along the Maine corridor

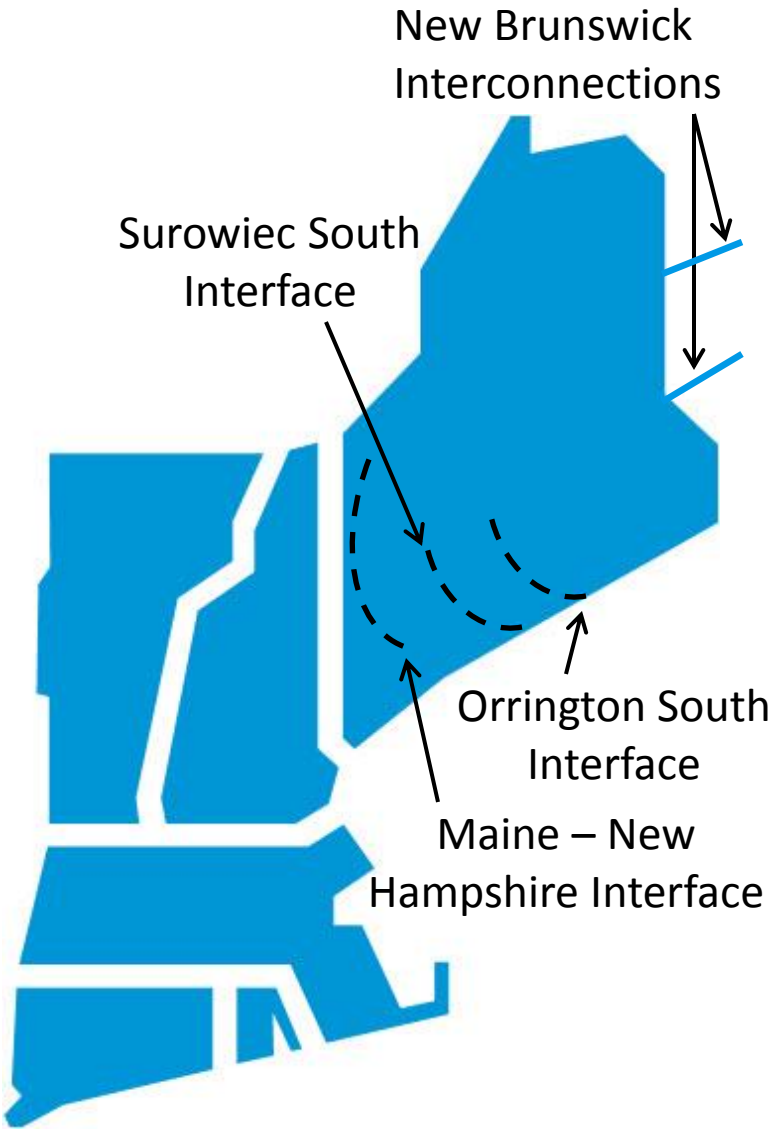
- The effect of increasing transfer limits of major ME interfaces
  - Were identified in the Strategic Transmission Analysis – Wind Integration
  - Higher ME interface limits are not directly attributable to specific transmission upgrades
- Pre-contingency thermal limits are respected in the Gridview software
  - Operation of wind resources can be constrained by local thermal limits
- Other local constraints are not modeled
  - Local, voltage and stability constraints
    - E.g. Keene Road, Wyman and Rumford areas
  - Could constrain the operation of impacted resources

Key Study Assumptions

Study Year 2021

- System Characteristics
  - 2015 CELT loads, EE & PV Forecast
  - FCA #9 resources with a Capacity Supply Obligation (CSO) and 2015 CELT resources without a CSO
  - NREL wind hourly profiles
  - Hourly imports and exports available for dispatch
  - 2015 EIA Annual Energy Outlook Fuel Forecast

ME Interface Export Limit	Pre-Upgrades Cases (MW)	Post-Upgrades Cases (MW)
Keene Road, Wyman, Rumford	Unconstrained	Unconstrained
Orrington South	1,325	1,650
Surowiec South	1,500	2,100
Maine – New Hampshire	1,900	2,300



Wind Scenarios

New England Wind Nameplate (MW)

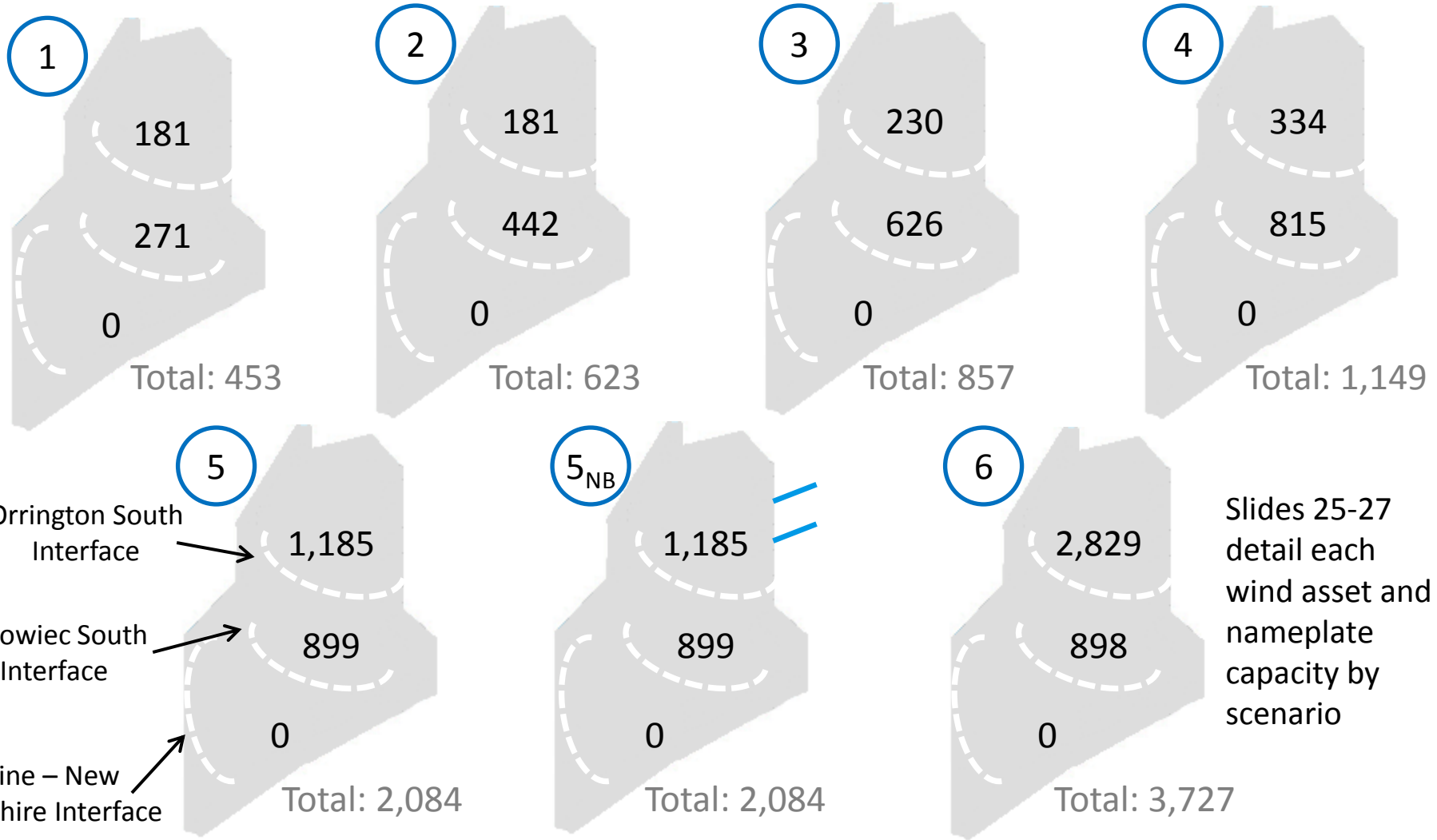
	Scenarios	Wind Nameplate (MW)		
		Maine	Outside of Maine	**New England Total**
1	**Existing Wind in New England (In-Service as of 4/1/15) ***	453	426	878
2	**RENEW Sensitivity 1 (Less Wind) ***	623	426	1,049
3	**Proposed Wind in New England with I.3.9 approval (as of 4/1/15)**	857	489	1,345
4	**RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) ***	1,149	426	1,575
5	**RENEW Sensitivity 2 (More Wind)***	2,084	426	2,510
5_{NB}	**RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch**	2,084	426	2,510
6	**All Future Queue Wind in New England (as of 4/1/15)**	3,727	678	4,405

Note: Values may not sum to total due to rounding

*Outside Maine, assumed only "existing wind" as of 4/1/15

Wind Scenarios

Maine Wind Nameplate (MW)



Slides 25-27 detail each wind asset and nameplate capacity by scenario

Note: Values may not sum to total due to rounding

DRAFT STUDY RESULTS

Summary of Draft Results

Study Year 2021

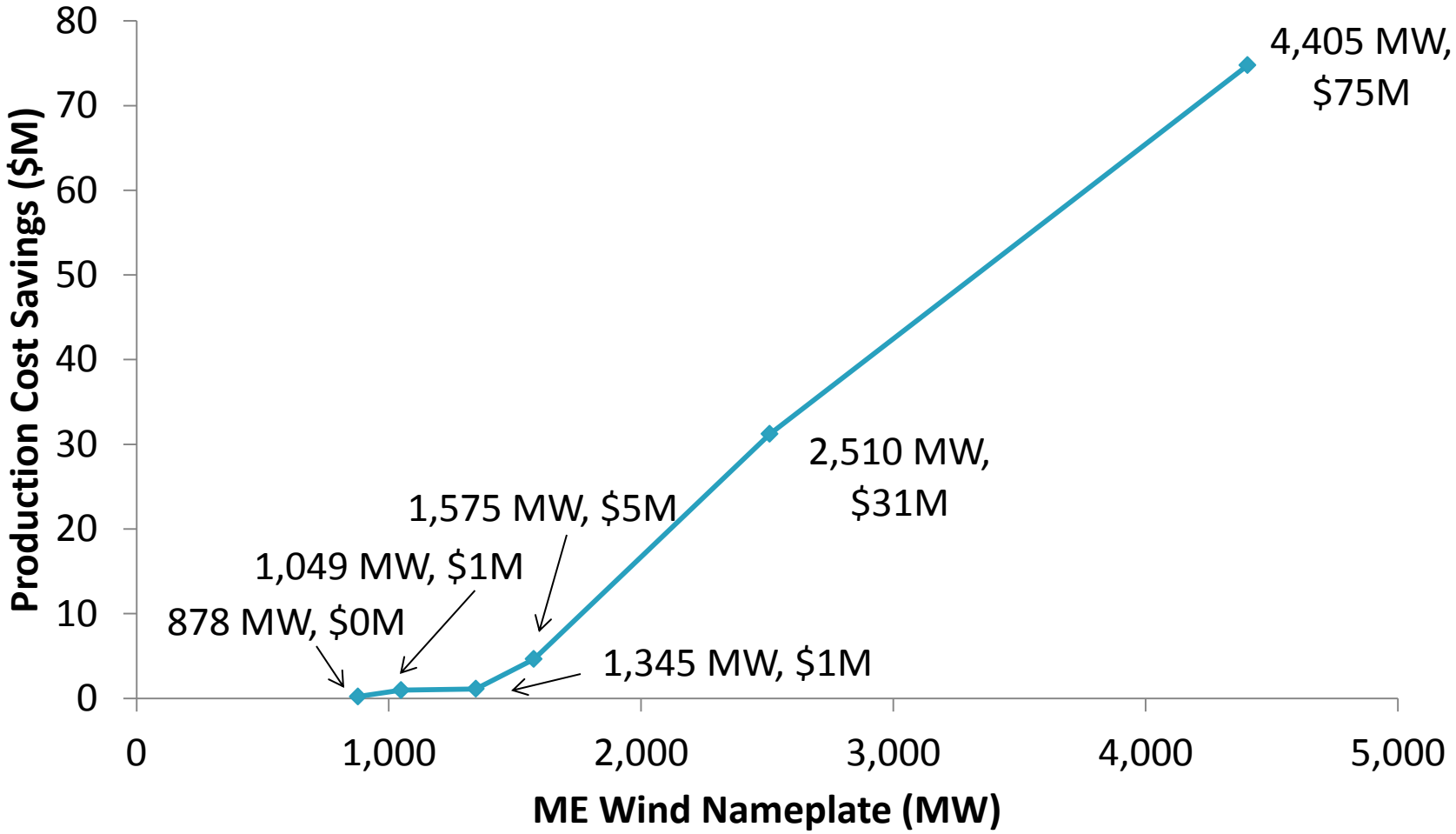
- For 453 MW to 1,149 MW of total wind integration in Maine
  - $0M to $5M production cost savings due to increasing Maine corridor interfaces
  - Orrington South interface becomes more constrained as more wind resources are added
- With 2,084 MW to 3,727 MW of total wind integration in Maine
  - $31M to $75M production cost savings result from increasing the Maine interface transfer limit constraints
  - Orrington South interface is the major constraint
    - Most wind resources are located north of Orrington South
    - Affects the ability to transport economically dispatched resources to South of Orrington (including New Brunswick imports)
  - Relieving the Maine corridor results in the North-South interface becoming increasingly constrained
- Reminder that the above calculations are associated only with the changes in transfer capabilities on the major interfaces
  - Bottled-in energy was observed due to both interface and local thermal constraints
  - Study does not reflect influence of future interconnections on local system constraints

Production Cost Savings due to ME Interface Upgrades ($M/Year)

	Scenarios	Production Cost		Production Cost Savings	Case Shows
		Pre-Upgrades	Post-Upgrades		
1	**Existing Wind in New England (In-Service as of 4/1/15) ***	3,668	3,667	**0**	***Little to no savings**: Infrequent interface constraints and small amounts of bottled-in energy*
2	**RENEW Sensitivity 1 (Less Wind) ***	3,639	3,638	**1**	
3	**Proposed Wind in New England with I.3.9 approval (as of 4/1/15)**	3,593	3,592	**1**	
4	**RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) ***	3,563	3,559	**5**	
5	**RENEW Sensitivity 2 (More Wind)***	3,458	3,427	**31**	***When > 2,084 MW of Maine Wind:** Production cost savings are realized from relaxing interfaces and releasing bottled-in energy*
5_{NB}	**RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch**	3,338	3,261	**78**	
6	**All Future Queue Wind in New England (as of 4/1/15)**	3,351	3,276	**75**	

Note: Values may not sum to total due to rounding
*Outside Maine, assumed only "existing wind" as of 4/1/15

Production Cost Savings ($M/Year) vs. New England Wind Nameplate (MW)



Note: New Brunswick sensitivity (1,000 MW of NB imports available for dispatch) is excluded in this graph

Load Serving Entity (LSE) Expense Savings due to ME Interface Upgrades ($M/Year)

	Scenarios	LSE Expense		LSE Expense Savings	Cases Shows
		Pre-Upgrades	Post-Upgrades		
1	**Existing Wind in New England (In-Service as of 4/1/15) ***	7,246	7,245	**1**	***Little to no savings**: Infrequent interface constraints and small amounts of bottled-in energy*
2	**RENEW Sensitivity 1 (Less Wind) ***	7,217	7,215	**1**	
3	**Proposed Wind in New England with I.3.9 approval (as of 4/1/15)**	7,178	7,177	**1**	
4	**RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) ***	7,167	7,165	**2**	
5	**RENEW Sensitivity 2 (More Wind)***	7,093	7,054	**39**	***When > 2,084 MW of Maine Wind:** LSE expense savings are realized from relaxing interfaces and releasing bottled-in energy*
5_{NB}	**RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch**	7,002	6,922	**80**	
6	**All Future Queue Wind in New England (as of 4/1/15)**	6,959	6,883	**76**	

Note: Values may not sum to total due to rounding
*Outside Maine, assumed only "existing wind" as of 4/1/15

Percent of Time Interface is at Limit (% of Year)

Orrington South is the most limited and leads to minimal congestion at Surowiec South and ME-NH

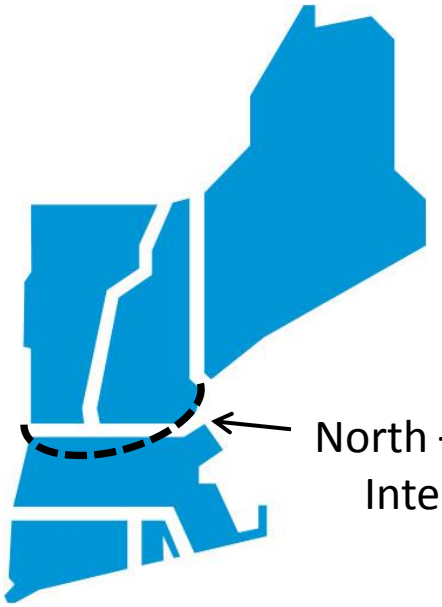
	Scenarios	Orrington South Export Limit		Surowiec South Export Limit		ME-NH Export Limit	
		Pre-Upgrades (1,325 MW)	Post-Upgrades (1,650 MW)	Pre-Upgrades (1,500 MW)	Post-Upgrades (2,100 MW)	Pre-Upgrades (1,900 MW)	Post-Upgrades (2,300 MW)
1	Existing Wind in New England (In-Service as of 4/1/15) *	1	0	0	0	0	0
2	RENEW Sensitivity 1 (Less Wind) *	6	0	0	0	0	0
3	Proposed Wind in New England with I.3.9 approval (as of 4/1/15)	8	0	1	0	0	0
4	RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) *	13	0	4	0	0	0
5	RENEW Sensitivity 2 (More Wind)*	43	19	11	0	0	0
5_{NB}	RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch	83	57	12	0	0	0
6	All Future Queue Wind in New England (as of 4/1/15)	69	52	11	0	0	0

*Outside Maine, assumed only "existing wind" as of 4/1/15

Percent of Time Interface is at Limit (% of Year), Cont.

North – South Interface

	Scenarios	North-South Export Limit (2,675 MW)	
		Pre-Upgrade	Post-Upgrade
1	Existing Wind in New England (In-Service as of 4/1/15) *	0	0
2	RENEW Sensitivity 1 (Less Wind) *	1	1
3	Proposed Wind in New England with I.3.9 approval (as of 4/1/15)	2	2
4	RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) *	2	3
5	RENEW Sensitivity 2 (More Wind)*	3	9
5_{NB}	RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch	4	13
6	All Future Queue Wind in New England (as of 4/1/15)	6	17



When there is >2,084 MW of wind nameplate in Maine, the North-South interface begins to experience more congestion

*Outside Maine, assumed only "existing wind" as of 4/1/15

Maine Bottled-In Energy (GWh)

Operation of some wind resources were constrained by local thermal limits. This cannot be relieved by increasing Maine corridor transfer capability.

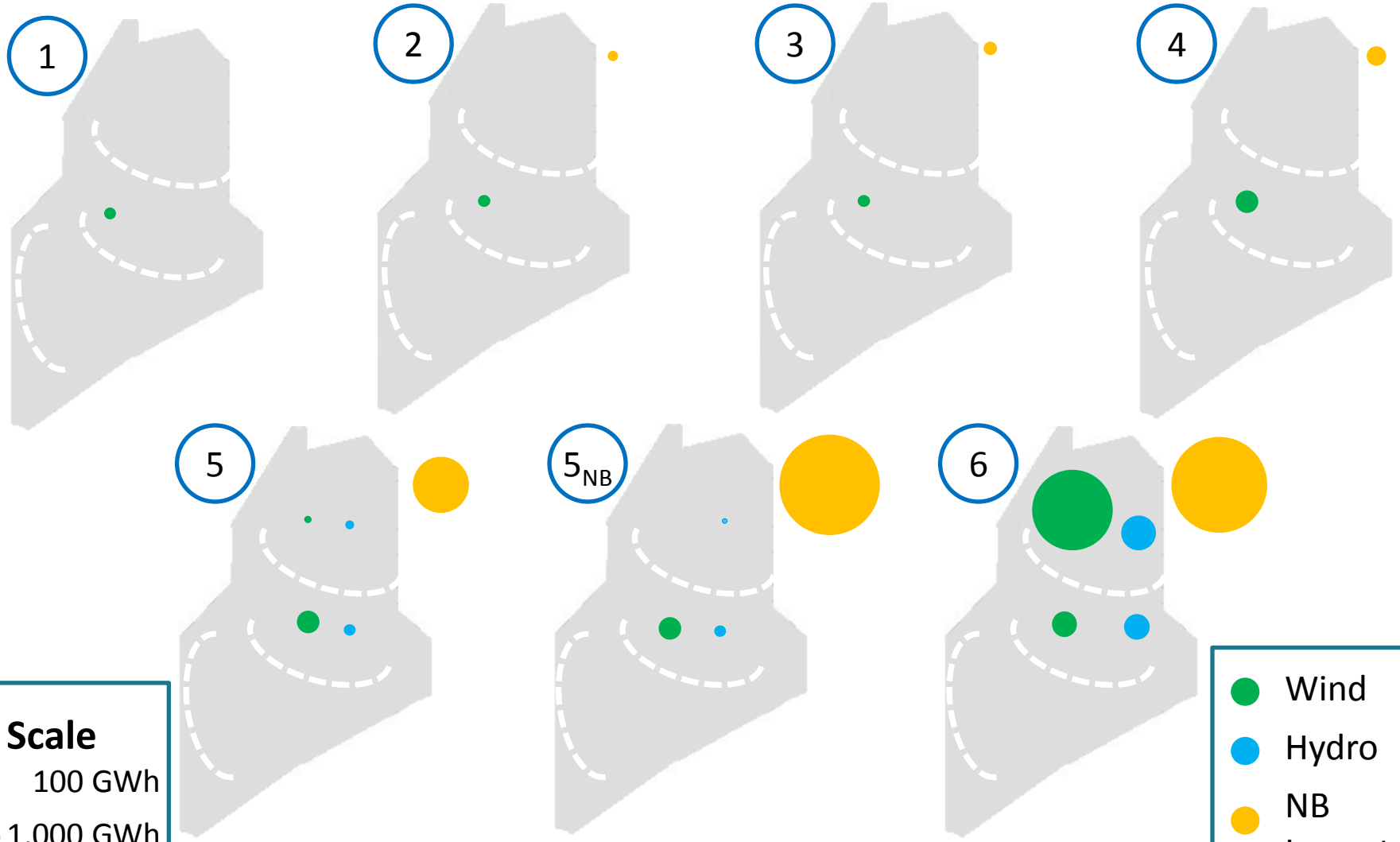
Scenarios	Wind ($0 Threshold Price)		Hydro ($5 Threshold Price)		NB Import ($10 Threshold Price)	
	Pre-Upgrades	Post-Upgrades	Pre-Upgrades	Post-Upgrades	Pre-Upgrades	Post-Upgrades
1	14	14	0	0	0	0
2	14	14	0	0	9	0
3	15	15	0	0	19	0
4	92	91	0	0	57	0
5	97	92	17	12	702	194
5_{NB}	92	89	13	12	2,435	1,028
6	1,641	941	362	270	2,174	1,560

Note: Values may not sum to total due to rounding

*Outside Maine, assumed only "existing wind" as of 4/1/15

Maine Bottled-In Energy (GWh)

Pre-Upgrades (approximately represented by shape size in subarea)



CO_2 Systemwide Reductions due to ME Interface Upgrades (kton**)

Changes (%) in CO_2 emissions are small relative to systemwide emissions of 32,000 kton/year

	Scenarios	CO_2 Reduction		Cases Show
		kton	(%)	*Overall, as wind penetration increases, there is more CO_2 reduction due to Maine interface upgrades.* *Negative CO_2 reduction occurs in cases 2 and 3 due to change in unit commitment after Maine interface upgrades. The system conducts least-cost dispatch and not least-emission dispatch. ($20 CO_2 cost is taken into account)*
1	**Existing Wind in New England (In-Service as of 4/1/15) ***	1	**0**	
2	**RENEW Sensitivity 1 (Less Wind) ***	-3	**0**	
3	**Proposed Wind in New England with I.3.9 approval (as of 4/1/15)**	-7	**0**	
4	**RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) ***	3	**0**	
5	**RENEW Sensitivity 2 (More Wind)***	216	**1**	
5_{NB}	**RENEW Sensitivity 2 (More Wind)* and 1,000 MW of of NB imports available for dispatch**	618	**2**	
6	**All Future Queue Wind in New England (as of 4/1/15)**	701	**2**	

Note: Values may not sum to total due to rounding

*Outside Maine, assumed only "existing wind" as of 4/1/15

**1 kton = 1,000 short ton = 2,000,000 lb

2015 Economic Study: Next Steps

- Review stakeholder comments and continue stakeholder discussions at future PAC meetings
- Develop report summarizing the Onshore Wind – Strategic Transmission Analysis Study

Questions

APPENDICES

I – Scenarios

II – Generation by Resource Type Metrics

III – Air Emissions Metrics

IV – Bottled-In Energy Metrics

V – Interface Flow Metrics

VI – LMP Metrics

VII – Modeling Assumptions

APPENDIX I

Scenarios

Table of Scenarios

Cases

Scenarios		Case Names	
		Pre-Upgrades	**Post-Upgrades**
1	**Existing Wind in New England (In-Service as of 4/1/15) ***	Pre-E	Post-E
2	**RENEW Sensitivity 1 (Less Wind) ***	Pre-Less	Post-Less
3	**Proposed Wind in New England with I.3.9 approval (as of 4/1/15)**	Pre-P	Post-P
4	**RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) ***	Pre-Base	Post-Base
5	**RENEW Sensitivity 2 (More Wind)***	Pre-More	Post-More
5_{NB}	**RENEW Sensitivity 2 (More Wind)* and 1,000 MW of of NB imports available for dispatch**	Pre-More-NB	Post-More-NB
6	**All Future Queue Wind in New England (as of 4/1/15)**	Pre-F	Post-F

*Outside Maine, assumed only "existing wind" as of 4/1/15

Wind Units by Scenario and Subarea (1/3)

BHE (MW)

Area	Name	1 Existing Wind in New England (In-service 4/1/15)	2 RENEW Sensitivity 1 (Less Wind)	3 Proposed Wind in New England with I.3.9 (as of 4/1/15)	4 RENEW Basecase - STA-WI Studied Wind (as of 10/1/13)	5 RENEW Sensitivity 2 (More Wind)	5_{NB} Sensitivity 2 (More Wind) and 1,000 MW of NB imports available for dispatch	6 All Queue Wind in New England (as of 4/1/15)
BHE	QP357_Passadumkeag Windpark	0.0	0.0	40.0	40.0	40.0	40.0	40.0
BHE	QP476_Wind	0.0	0.0	0.0	52.8	52.8	52.8	52.8
BHE	Rollins Wind Plant	61.8	61.8	61.8	61.8	61.8	61.8	61.8
BHE	Stetson II Wind Farm	26.3	26.3	26.3	26.3	26.3	26.3	26.3
BHE	Stetson Wind Farm	58.7	58.7	58.7	58.7	58.7	58.7	58.7
BHE	Bull Hill Wind	34.5	34.5	34.5	34.5	34.5	34.5	34.5
BHE	QP349_Pisgah Mountain	0.0	0.0	9.1	9.1	9.1	9.1	9.1
BHE	QP397_Hancock Wind Project	0.0	0.0	0.0	51.0	51.0	51.0	51.0
BHE	QP400_Wind	0.0	0.0	0.0	0.0	0.0	0.0	90.0
BHE	QP403_Pisgah Mountain Increase (see QP249)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
BHE	QP417_Wind	0.0	0.0	0.0	0.0	250.0	250.0	250.0
BHE	QP420_Wind	0.0	0.0	0.0	0.0	0.0	0.0	72.6
BHE	QP435_Wind	0.0	0.0	0.0	0.0	0.0	0.0	111.0
BHE	QP458_Wind	0.0	0.0	0.0	0.0	0.0	0.0	104.0
BHE	QP459_Wind	0.0	0.0	0.0	0.0	0.0	0.0	104.0
BHE	QP460_Wind	0.0	0.0	0.0	0.0	0.0	0.0	104.0
BHE	QP461_Wind	0.0	0.0	0.0	0.0	0.0	0.0	104.0
BHE	QP462_Wind	0.0	0.0	0.0	0.0	0.0	0.0	104.0
BHE	QP470_Wind	0.0	0.0	0.0	0.0	600.6	600.6	600.6
BHE	QP471_Wind	0.0	0.0	0.0	0.0	0.0	0.0	600.6
BHE	QP486_Wind	0.0	0.0	0.0	0.0	0.0	0.0	250.0
BHE Total		**181.3**	**181.3**	**230.3**	**334.1**	**1184.7**	**1184.7**	**2829.0**

Wind Units by Scenario and Subarea (2/3)

ME (MW)

Area	Name	1 Existing Wind in New England (In-service 4/1/15)	2 RENEW Sensitivity 1 (Less Wind)	3 Proposed Wind in New England with I.3.9 (as of 4/1/15)	4 RENEW Basecase - STA-WI Studied Wind (as of 10/1/13)	5 RENEW Sensitivity 2 (More Wind)	5_{NB} Sensitivity 2 (More Wind) and 1,000 MW of NB imports available for dispatch	6 All Queue Wind in New England (as of 4/1/15)
ME	GMCW	10.5	10.5	10.5	10.5	10.5	10.5	10.5
ME	Kibby Wind Power	149.6	149.6	149.6	149.6	149.6	149.6	149.6
ME	QP272_Oakfield II Wind – Keene Road	0.0	147.6	147.6	147.6	147.6	147.6	147.6
ME	Saddleback Ridge Wind	34.2	34.2	34.2	34.2	34.2	34.2	34.2
ME	Spruce Mountain Wind	20.0	20.0	20.0	20.0	20.0	20.0	20.0
ME	QP300_Canton Mountain Winds	0.0	22.8	22.8	22.8	22.8	22.8	22.8
ME	QP333_Bingham Wind	0.0	0.0	184.8	184.8	184.8	184.8	184.8
ME	QP350-1_Wind (Withdrawn as of 4/1/15)	0.0	0.0	0.0	92.0	92.0	92.0	0.0
ME	QP350-2_Wind	0.0	0.0	0.0	96.9	96.9	96.9	96.9
ME	QP393_Wind	0.0	0.0	0.0	0.0	84.0	84.0	84.0
ME	QP406_Canton Increase and CNR (see QP300)	0.0	0.0	0.0	0.0	0.0	0.0	3.6
ME	QP407_Saddleback Increase and CNR (see QP287)	0.0	0.0	0.0	0.0	0.0	0.0	1.2
ME	QP452_Wind	0.0	0.0	0.0	0.0	0.0	0.0	85.8
ME	Record Hill Wind	50.6	50.6	50.6	50.6	50.6	50.6	50.6
ME	WND_MISC_ME	6.3	6.3	6.3	6.3	6.3	6.3	6.3
ME Total		**271.2**	**441.6**	**626.4**	**815.3**	**899.3**	**899.3**	**897.9**

Wind Units by Scenario and Subarea (3/3)

BST, CMA/NEMA, NH, RI, SEMA, VT, WMA (MW)

Area	Name	1 Existing Wind in New England (In-service 4/1/15)	2 RENEW Sensitivity 1 (Less Wind)	3 Proposed Wind in New England with I.3.9 (as of 4/1/15)	4 RENEW Basecase - STA-WI Studied Wind (as of 10/1/13)	5 RENEW Sensitivity 2 (More Wind)	5_{NB} Sensitivity 2 (More Wind) and 1,000 MW of NB imports available for dispatch	6 All Queue Wind in New England (as of 4/1/15)
BST	WND_MISC_BST	12.2	12.2	12.2	12.2	12.2	12.2	12.2
CMA NEMA	WND_MISC_CMANEMA	4.0	4.0	4.0	4.0	4.0	4.0	4.0
CMA NEMA	Princeton Wind Farm Project	3.0	3.0	3.0	3.0	3.0	3.0	3.0
NH	Lempster Wind	25.3	25.3	25.3	25.3	25.3	25.3	25.3
NH	Granite Reliable Power	120.2	120.2	120.2	120.2	120.2	120.2	120.2
NH	QP415_Jericho Wind	0.0	0.0	12.1	0.0	0.0	0.0	12.1
NH	Groton Wind Project	50.5	50.5	50.5	50.5	50.5	50.5	50.5
NH	QP390_Wind	0.0	0.0	50.8	0.0	0.0	0.0	50.8
NH	QP543_Wind	0.0	0.0	0.0	0.0	0.0	0.0	28.4
RI	WND_MISC_RI	7.2	7.2	7.2	7.2	7.2	7.2	7.2
SEMA	WND_MISC_SEMA	22.9	22.9	22.9	22.9	22.9	22.9	22.9
VT	Sheffield Wind Farm	40.0	40.0	40.0	40.0	40.0	40.0	40.0
VT	Searsburg Wind	1.7	1.7	1.7	1.7	1.7	1.7	1.7
VT	Kingdom Community Wind	81.5	81.5	81.5	81.5	81.5	81.5	81.5
VT	QP532_Wind	0.0	0.0	0.0	0.0	0.0	0.0	19.9
VT	QP536_Wind	0.0	0.0	0.0	0.0	0.0	0.0	5.0
VT	QP488_Wind	0.0	0.0	0.0	0.0	0.0	0.0	96.9
WMA	QP396_Berkshire Wind Increase	0.0	0.0	0.0	0.0	0.0	0.0	4.8
WMA	QP539_CNR Only	31.7	31.7	31.7	31.7	31.7	31.7	31.7
WMA	QP477_Wind	0.0	0.0	0.0	0.0	0.0	0.0	30.0
WMA	QP535_Wind	0.0	0.0	0.0	0.0	0.0	0.0	5.0
WMA	Berkshire East Wind	16.7	16.7	16.7	16.7	16.7	16.7	16.7
WMA	WND_MISC_WMA	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Outside Maine Total		**425.6**	**425.6**	**488.5**	**425.6**	**425.6**	**425.6**	**678.4**

Maine Interface Upgrades

- Conceptual transmission upgrades
  - Used upgraded interface limits identified in the 2012-2014 Strategic Transmission Analysis – Wind Integration
  - Specific upgrades to accomplish changes are not defined
- Maine stability / voltage interface limit increases
  - Orrington-South
    - 2021 limit is 1,325 MW
    - 2021 plus upgrades limit is 1,650 MW
  - Surowiec-South
    - 2021 limit is 1,500 MW
    - 2021 plus upgrades limit is 2,100 MW
  - ME-NH
    - 2021 limit is 1,900 MW
    - 2021 plus upgrades limit is 2,300 MW

Scenario Specific

New Brunswick Imports

- Cases 1, 2, 3, 4, 5, and 6
  - Daily diurnal curves
  - Historical monthly maximum imports for 2013-2014
- Sensitivity case (5_{NB}) evaluate the impact of additional New Brunswick imports
  - Assumed 1,000 MW of available imports for dispatch ($10/MWh threshold price)

APPENDIX II

Generation by Resource Type Metrics

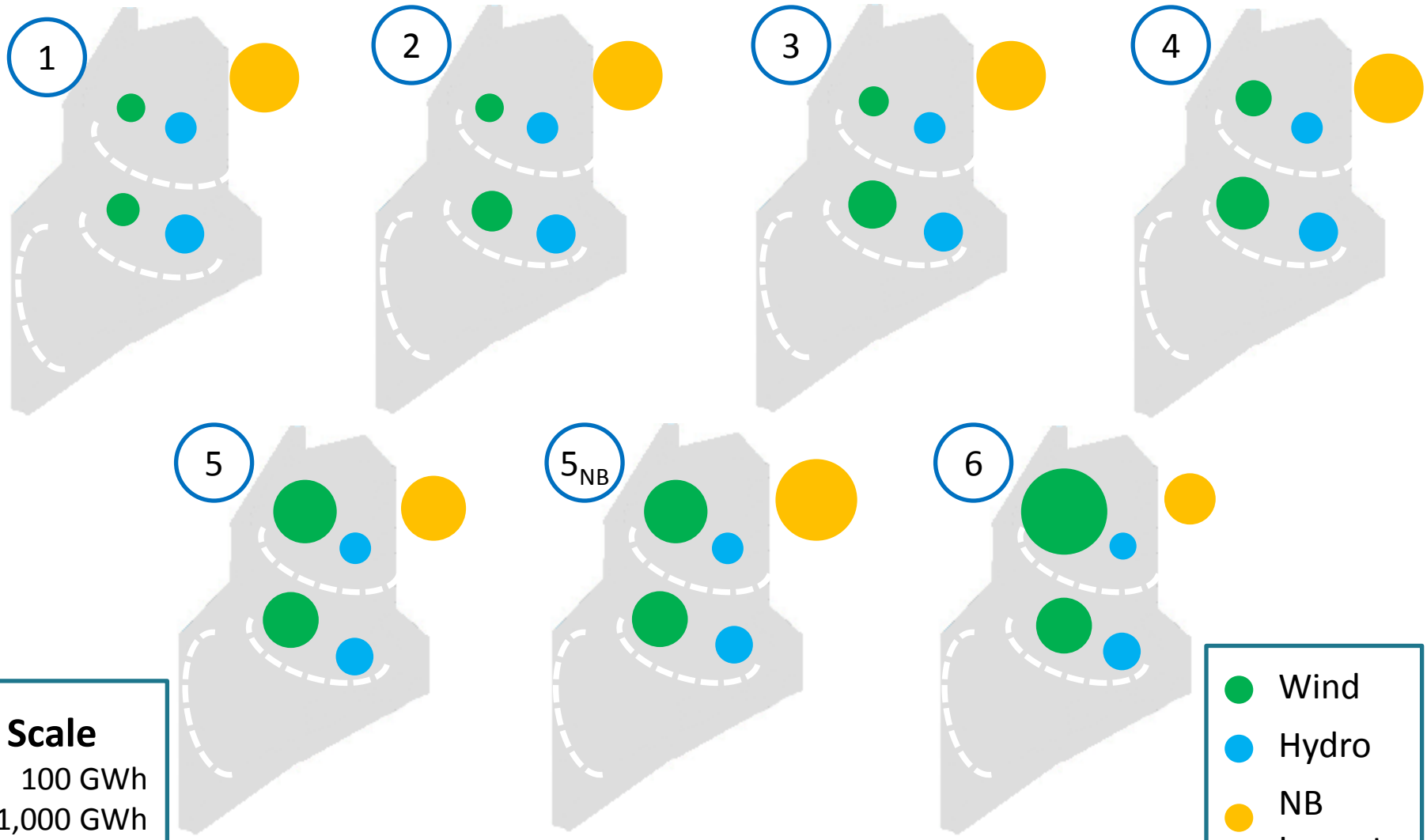
Maine Generation (GWh)

Scenarios	Wind ($0 Threshold Price)		Hydro ($5 Threshold Price)		NB Import ($10 Threshold Price)	
	Pre-Upgrades	Post-Upgrades	Pre-Upgrades	Post-Upgrades	Pre-Upgrades	Post-Upgrades
1	1,454	1,454	2,060	2,060	4,592	4,592
2	2,025	2,025	2,060	2,060	4,582	4,592
3	2,793	2,793	2,060	2,060	4,573	4,592
4	3,634	3,635	2,060	2,060	4,535	4,592
5	6,615	6,620	2,042	2,047	3,889	4,398
5_{NB}	6,620	6,623	2,046	2,047	6,325	7,732
6	10,058	10,758	1,698	1,790	2,418	3,032

Note: Values may not sum to total due to rounding
*Outside Maine, assumed only "existing wind" as of 4/1/15

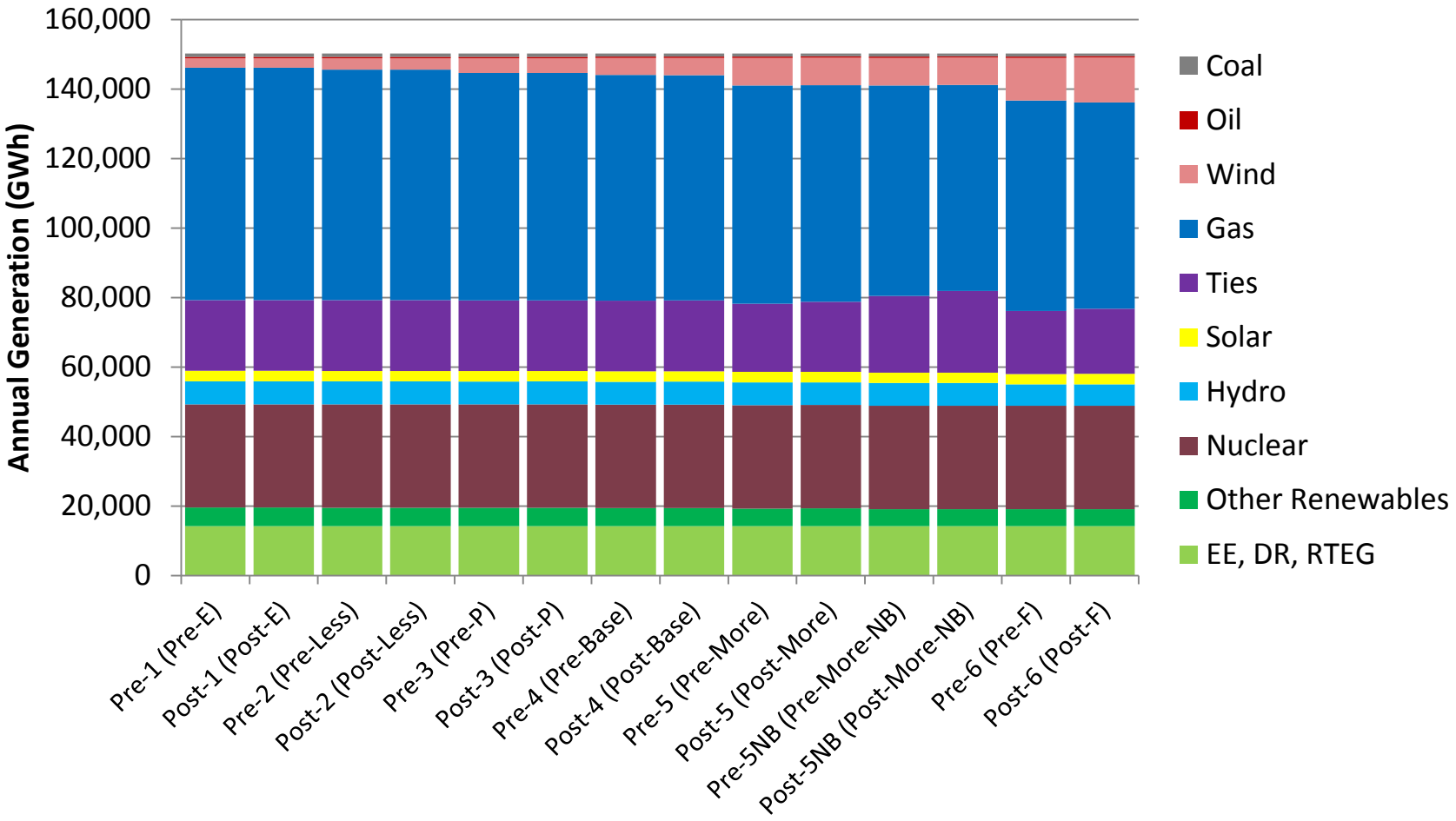
Maine Generation (GWh)

Pre-Upgrades (approximately represented by shape size in subarea)



Annual Generation by Resource Type

Graph



Annual Generation by Resource Type (GWH)

Table

Cases	Resource Type									
	EE, DR, RTEG	Other Renewables	Nuclear	Hydro	Solar	Ties	Gas	Wind	Oil	Coal
Pre-1 (Pre-E)	14,238	5,307	29,754	6,631	2,990	20,371	66,852	2,735	405	938
Post-1 (Post-E)	14,238	5,308	29,754	6,631	2,990	20,371	66,853	2,735	403	938
Pre-2 (Pre-Less)	14,238	5,279	29,754	6,625	2,990	20,362	66,325	3,324	405	919
Post-2 (Post-Less)	14,238	5,289	29,754	6,626	2,990	20,371	66,309	3,324	402	919
Pre-3 (Pre-P)	14,238	5,242	29,754	6,614	2,990	20,344	65,438	4,264	403	936
Post-3 (Post-P)	14,238	5,256	29,754	6,615	2,990	20,363	65,401	4,264	405	935
Pre-4 (Pre-Base)	14,238	5,179	29,754	6,611	2,990	20,308	64,951	4,933	407	850
Post-4 (Post-Base)	14,238	5,199	29,754	6,609	2,990	20,364	64,874	4,934	402	858
Pre-5 (Pre-More)	14,238	5,041	29,754	6,572	2,990	19,664	62,806	7,914	400	840
Post-5 (Post-More)	14,238	5,079	29,754	6,550	2,990	20,167	62,350	7,920	386	786
Pre-5NB (Pre-More-NB)	14,238	4,844	29,754	6,563	2,990	22,100	60,570	7,920	400	842
Post-5NB (Post-More-NB)	14,238	4,889	29,754	6,521	2,990	23,502	59,270	7,922	381	753
Pre-6 (Pre-F)	14,238	4,871	29,754	6,153	2,989	18,179	60,551	12,207	413	843
Post-6 (Post-F)	14,238	4,864	29,754	6,190	2,990	18,784	59,369	12,907	378	724

Annual Generation by Resource Type (GWH)

Table - Effect of Relaxing Maine Interfaces (Post minus Pre)

Scenarios	Resource Type									
	EE, DR, RTEG	Other Renewables	Nuclear	Hydro	Solar	Ties	Gas	Wind	Oil	Coal
1	0.0	1.0	0.0	0.0	0.0	0.0	0.8	0.0	-1.7	-0.1
2	0.0	9.6	0.0	1.0	0.0	9.2	-16.2	0.0	-3.4	-0.4
3	0.0	14.8	0.0	1.5	0.0	19.1	-36.6	0.0	2.0	-0.9
4	0.0	19.7	0.0	-1.9	0.0	56.1	-76.9	0.6	-5.6	8.0
5	0.0	37.9	0.0	-22.0	0.0	502.7	-455.7	5.5	-14.0	-54.3
5_{NB}	0.0	44.2	0.0	-41.4	0.0	1,402.4	-1,299.6	2.3	-19.1	-88.7
6	0.0	-6.5	0.0	36.7	0.3	605.0	-1,182.1	699.9	-34.3	-118.9

APPENDIX III

Air Emissions Metrics

CO_2 Systemwide Emission Reductions due to ME Interface Upgrades (k short ton**)

Changes (%) in emissions are small relative to systemwide emissions

	Scenarios	CO_2 Emissions (kton)		CO_2 Reduction	
		Pre-Upgrades	Post-Upgrades	kton	% of 32,000 kton
1	Existing Wind in New England (In-Service as of 4/1/15) *	31,775	31,775	1	**0**
2	RENEW Sensitivity 1 (Less Wind) *	31,483	31,485	-3	**0**
3	Proposed Wind in New England with I.3.9 approval (as of 4/1/15)	31,047	31,054	-7	**0**
4	RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) *	30,633	30,631	3	**0**
5	RENEW Sensitivity 2 (More Wind)*	29,462	29,246	216	**1**
5_{NB}	RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch	28,190	27,572	618	**2**
6	All Future Queue Wind in New England (as of 4/1/15)	28,250	27,549	701	**2**

Note: Values may not sum to total due to rounding

*Outside Maine, assumed only "existing wind" as of 4/1/15

**1 kton = 1,000 short ton = 2,000,000 lb

SO_2 Systemwide Emission Reductions due to ME Interface Upgrades (short ton**)

Changes (%) in emissions are small relative to systemwide emissions

	Scenarios	SO_2 Emissions (ton)		SO_2 Reduction	
		Pre-Upgrades	Post-Upgrades	ton	% of 3,200 ton
1	Existing Wind in New England (In-Service as of 4/1/15) *	3,054	3,050	4	**0**
2	RENEW Sensitivity 1 (Less Wind) *	3,020	3,014	7	**0**
3	Proposed Wind in New England with I.3.9 approval (as of 4/1/15)	3,010	3,016	-6	**0**
4	RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) *	2,923	2,901	22	**1**
5	RENEW Sensitivity 2 (More Wind)*	2,864	2,737	127	**4**
5_{NB}	RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch	2,817	2,614	203	**6**
6	All Future Queue Wind in New England (as of 4/1/15)	2,801	2,536	264	**8**

Note: Values may not sum to total due to rounding

*Outside Maine, assumed only "existing wind" as of 4/1/15

**1 short ton = 2,000 lb

NO_X Systemwide Emission Reductions due to ME Interface Upgrades (short ton**)

Changes (%) in emissions are small relative to systemwide emissions

	Scenarios	NO_X Emissions (ton)		NO_X Reduction	
		Pre-Upgrades	Post-Upgrades	ton	% of 9,300 ton
1	Existing Wind in New England (In-Service as of 4/1/15) *	9,284	9,283	1	**0**
2	RENEW Sensitivity 1 (Less Wind) *	9,199	9,199	-1	**0**
3	Proposed Wind in New England with I.3.9 approval (as of 4/1/15)	9,121	9,132	-11	**0**
4	RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) *	8,921	8,935	-14	**0**
5	RENEW Sensitivity 2 (More Wind)*	8,632	8,535	97	**1**
5_{NB}	RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch	8,314	8,108	205	**2**
6	All Future Queue Wind in New England (as of 4/1/15)	8,346	8,037	309	**3**

Note: Values may not sum to total due to rounding

*Outside Maine, assumed only "existing wind" as of 4/1/15

**1 short ton = 2,000 lb

APPENDIX IV

Bottled-in Energy

Bottled-In Energy (GWh)

BHE - RSP Subarea

Scenarios	Wind ($0 Threshold Price)		Hydro ($5 Threshold Price)		NB Import ($10 Threshold Price)	
	Pre-Upgrades	Post-Upgrades	Pre-Upgrades	Post-Upgrades	Pre-Upgrades	Post-Upgrades
1	0	0	0	0	0	0
2	0	0	0	0	9	0
3	0	0	0	0	19	0
4	0	0	0	0	57	0
5	2	0	5	4	702	194
5_{NB}	0	0	1	0	2,435	1,028
6	1,529	836	250	171	2,174	1,560

*Outside Maine, assumed only "existing wind" as of 4/1/15

Bottled-In Energy (GWh)

ME - RSP Subarea

Scenarios	Wind ($0 Threshold Price)		Hydro ($5 Threshold Price)	
	Pre-Upgrades	Post-Upgrades	Pre-Upgrades	Post-Upgrades
1	14	14	0	0
2	14	14	0	0
3	15	15	0	0
4	92	91	0	0
5	97	92	17	12
5_{NB}	92	89	13	12
6	1,641	941	362	270

*Outside Maine, assumed only "existing wind" as of 4/1/15

Bottled-In Energy (GWh)

SME - RSP Subarea

Scenarios	Wind ($0 Threshold Price)		Hydro ($5 Threshold Price)	
	Pre-Upgrades	Post-Upgrades	Pre-Upgrades	Post-Upgrades
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
5_{NB}	0	0	0	0
6	0	0	0	0

*Outside Maine, assumed only "existing wind" as of 4/1/15

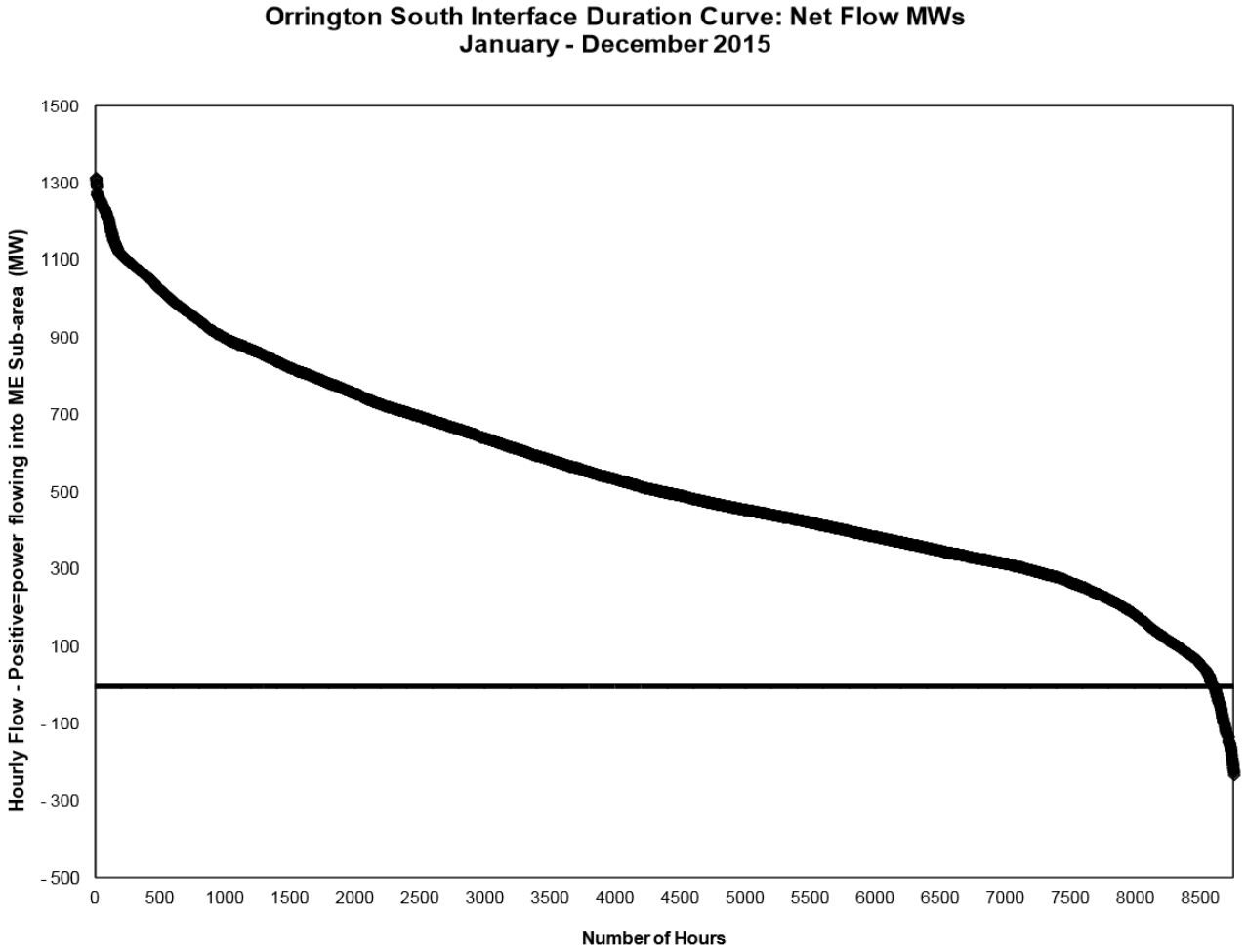
APPENDIX V

Interface Flow Metrics

- *Historical*
- *Draft Study Results*

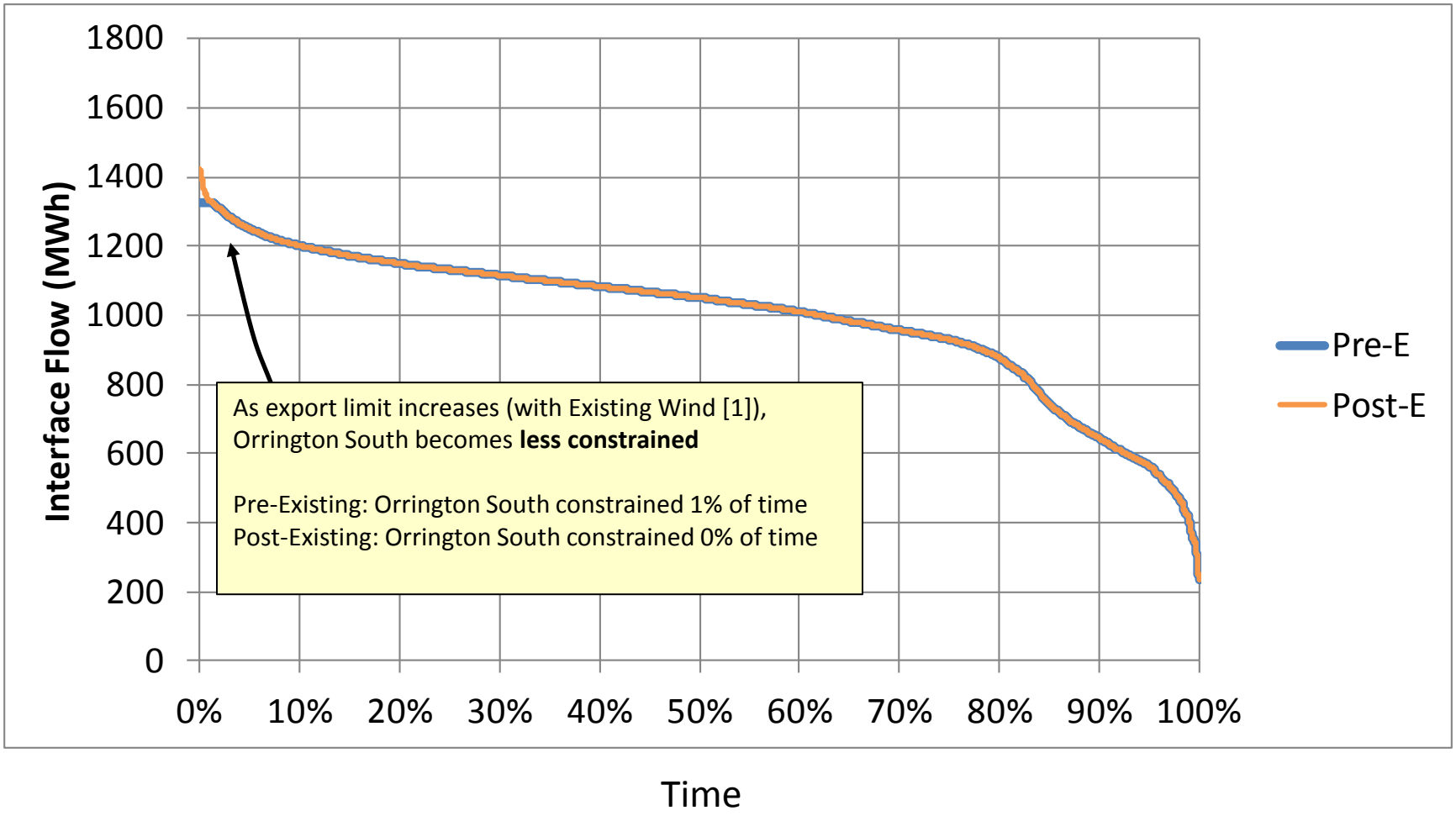
2015 Historical Interface Flow (MW)

Orrington South (1,325 MW limit)



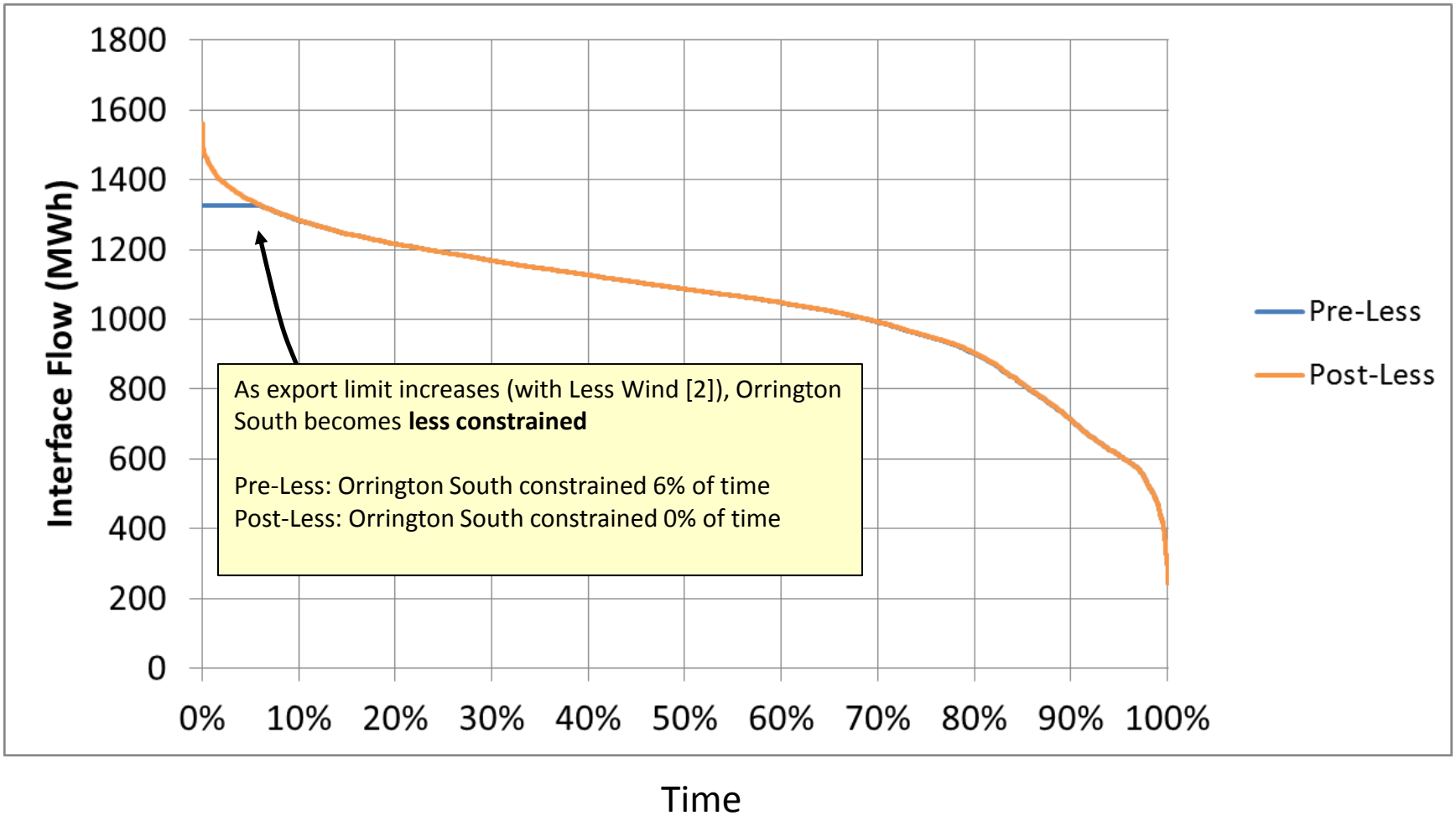
Interface: Orrington South – Existing Wind

Duration Curve



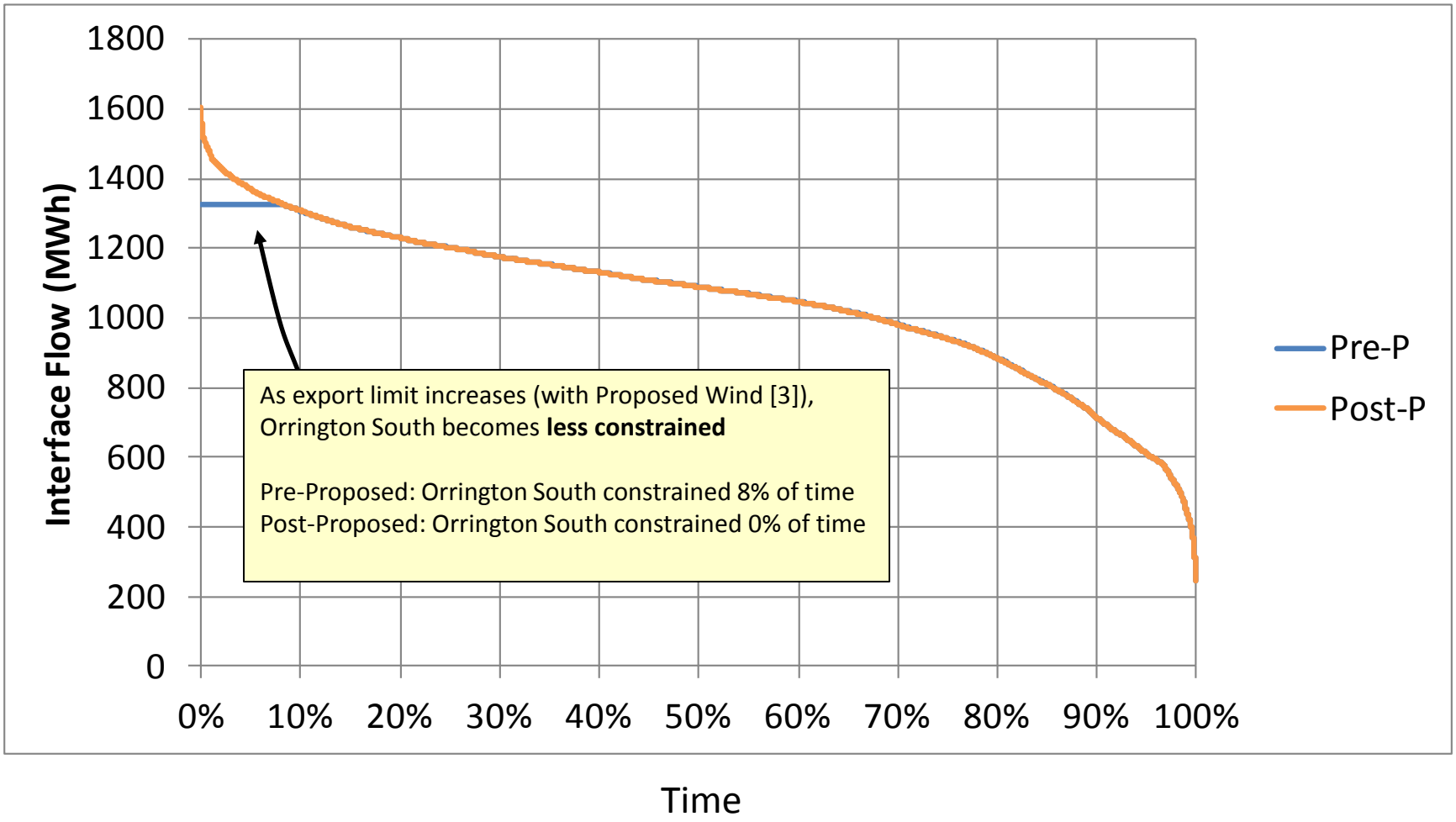
Interface: Orrington South – Less Wind

Duration Curve



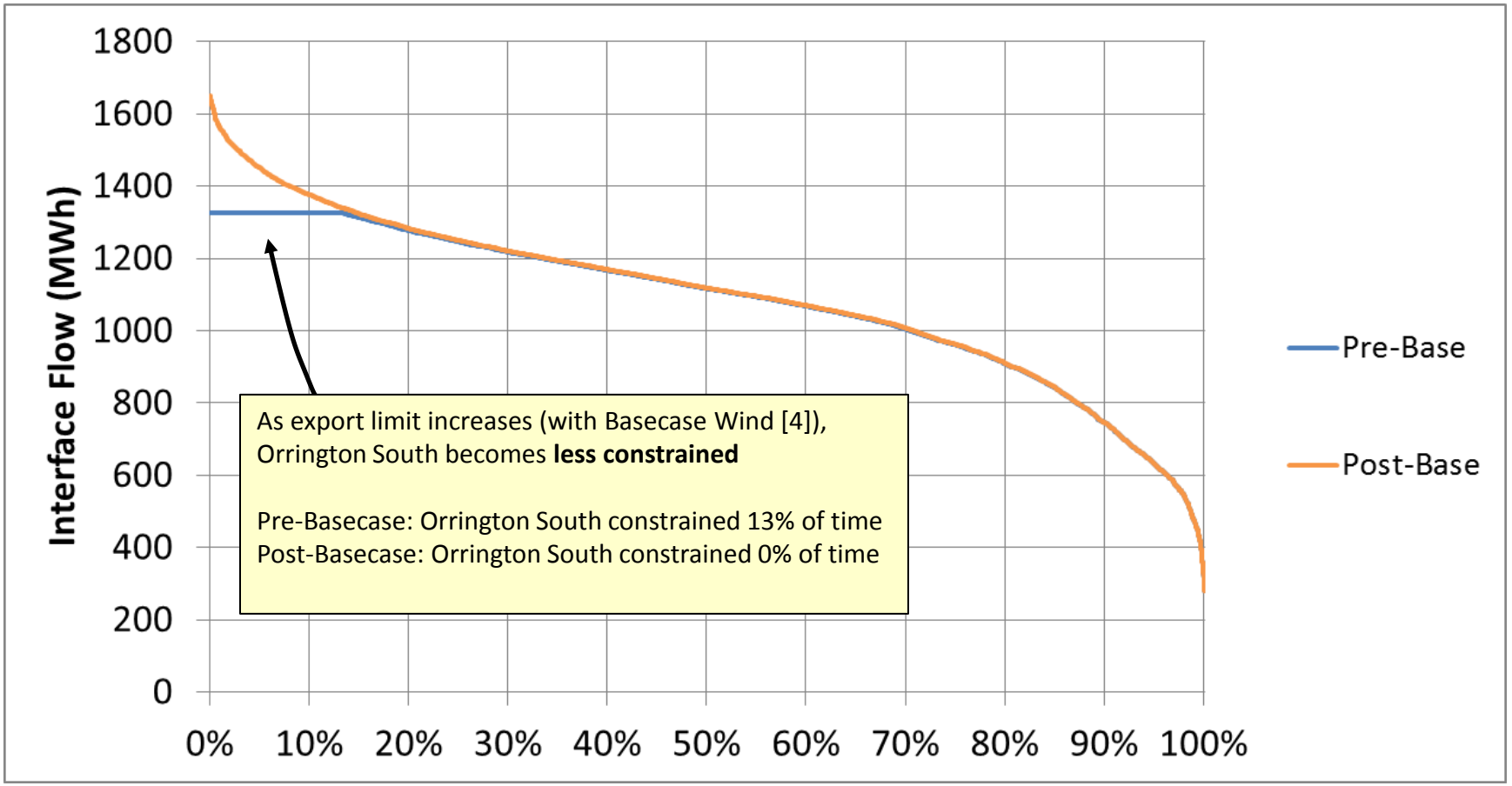
Interface: Orrington South – Proposed Wind

Duration Curve



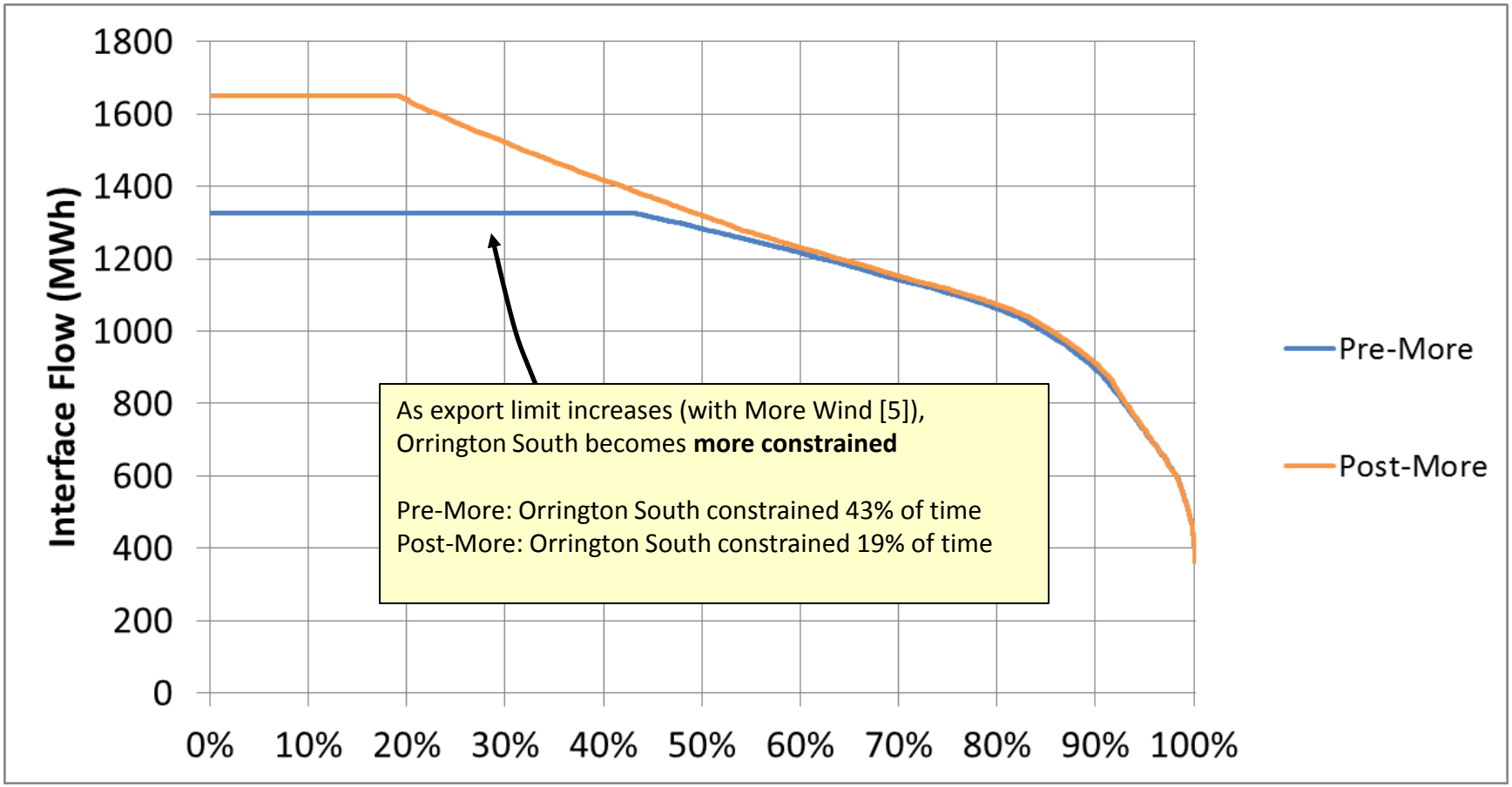
Interface: Orrington South – Basecase Wind

Duration Curve



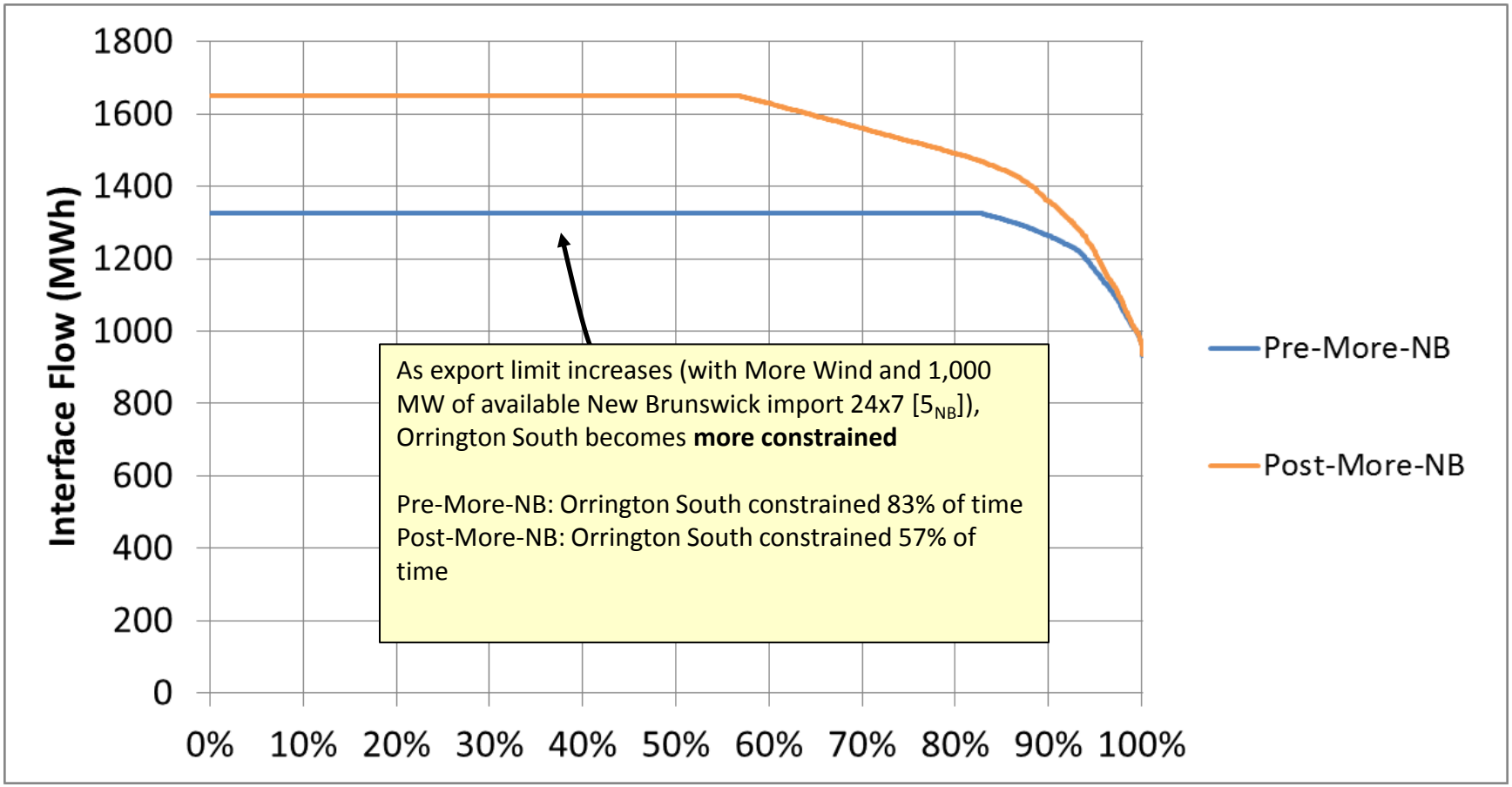
Interface: Orrington South – More Wind

Duration Curve



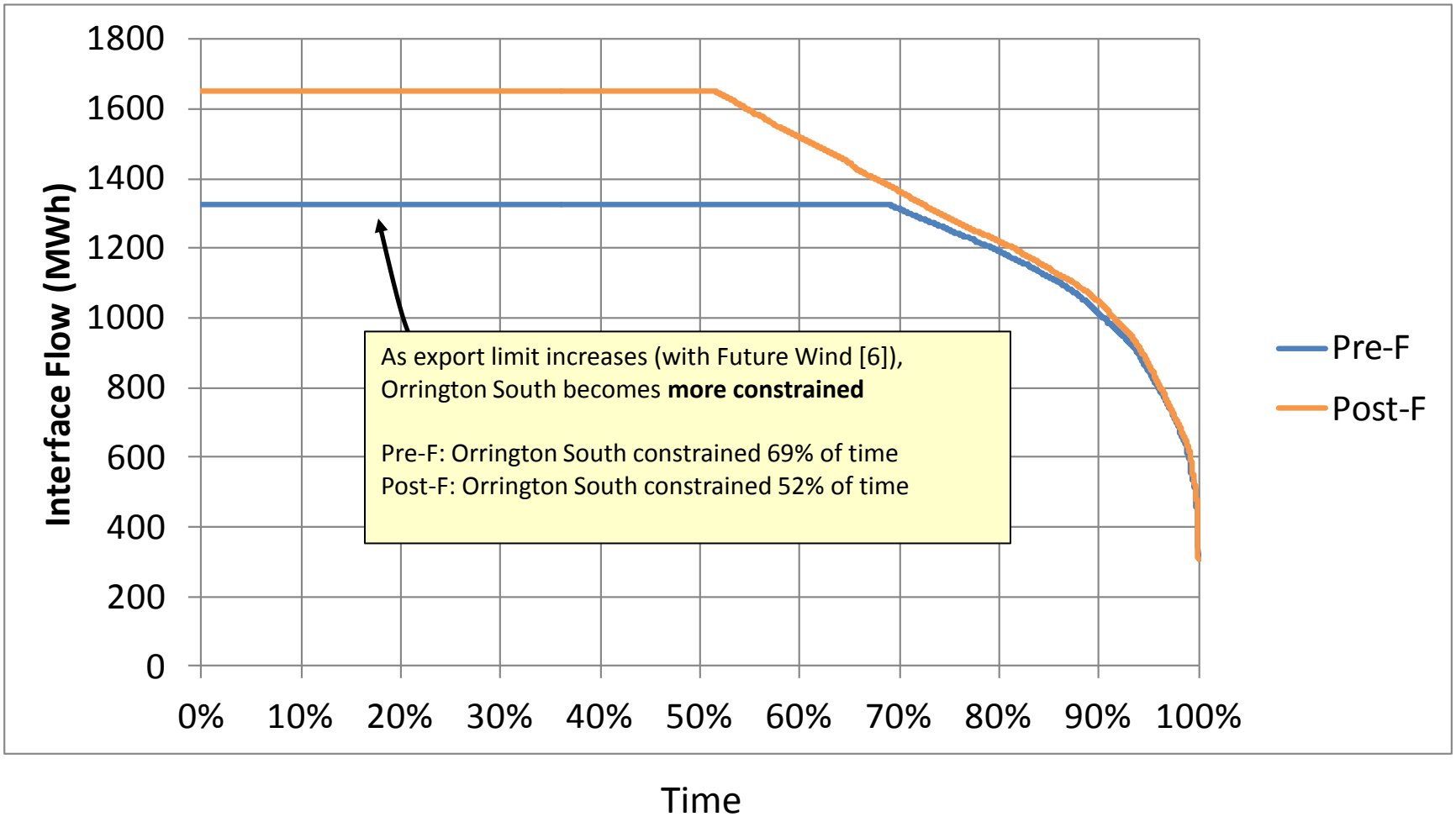
Interface: Orrington South – More Wind with NB at 1000 MW

Duration Curve



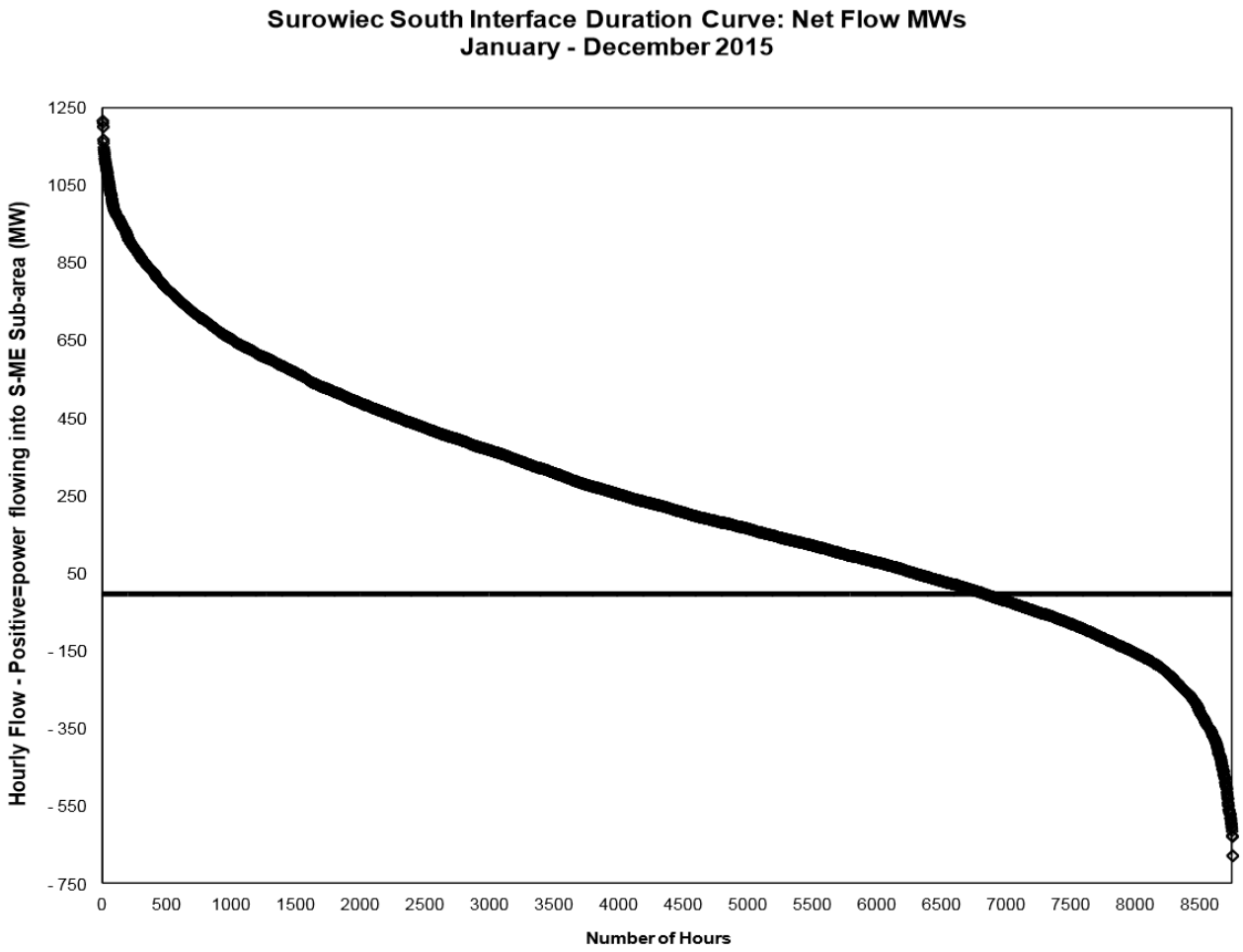
Interface: Orrington South – Future Wind

Duration Curve



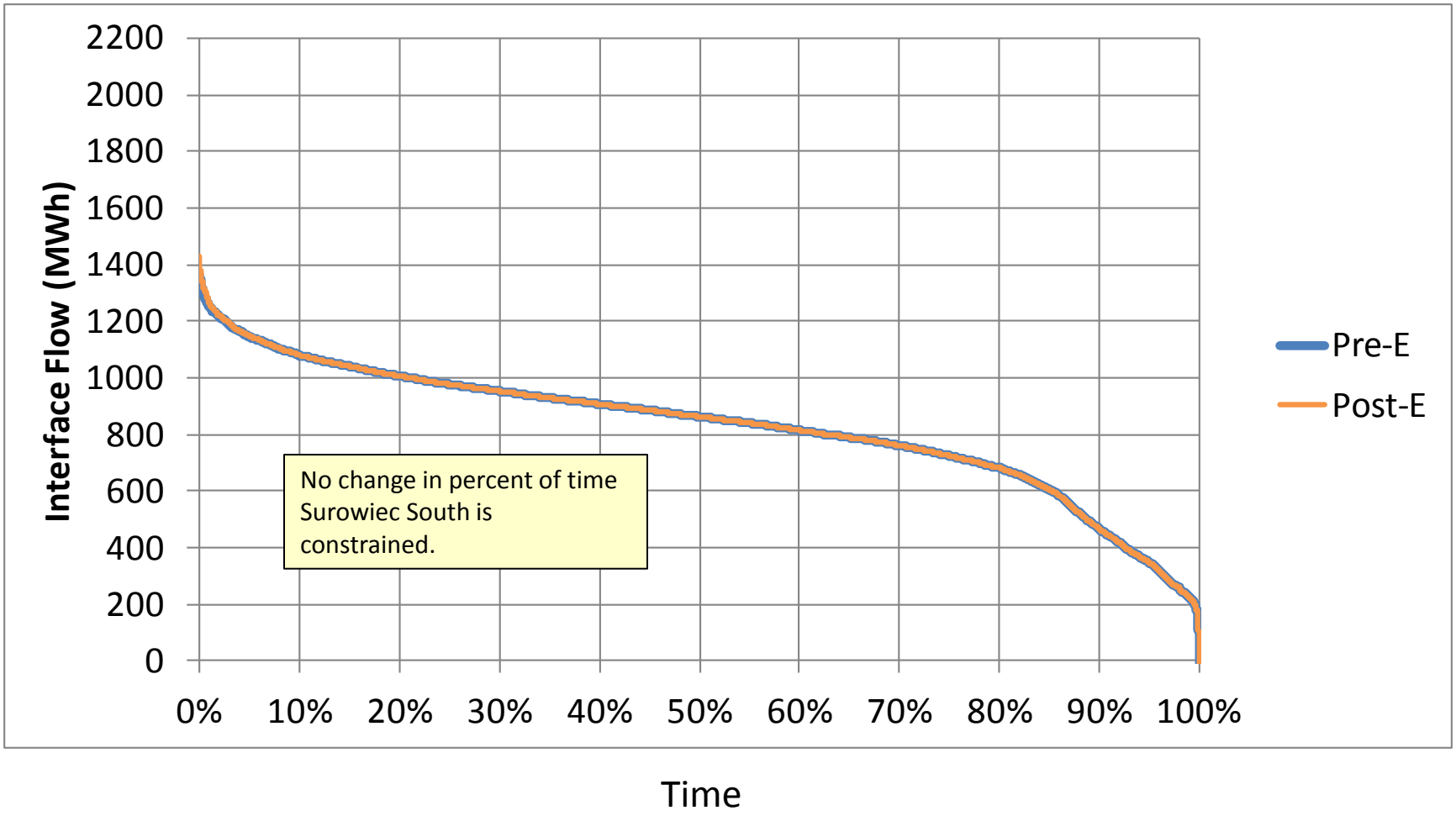
2015 Historical Interface Flow (MW)

Surowiec South (1,500 MW limit)



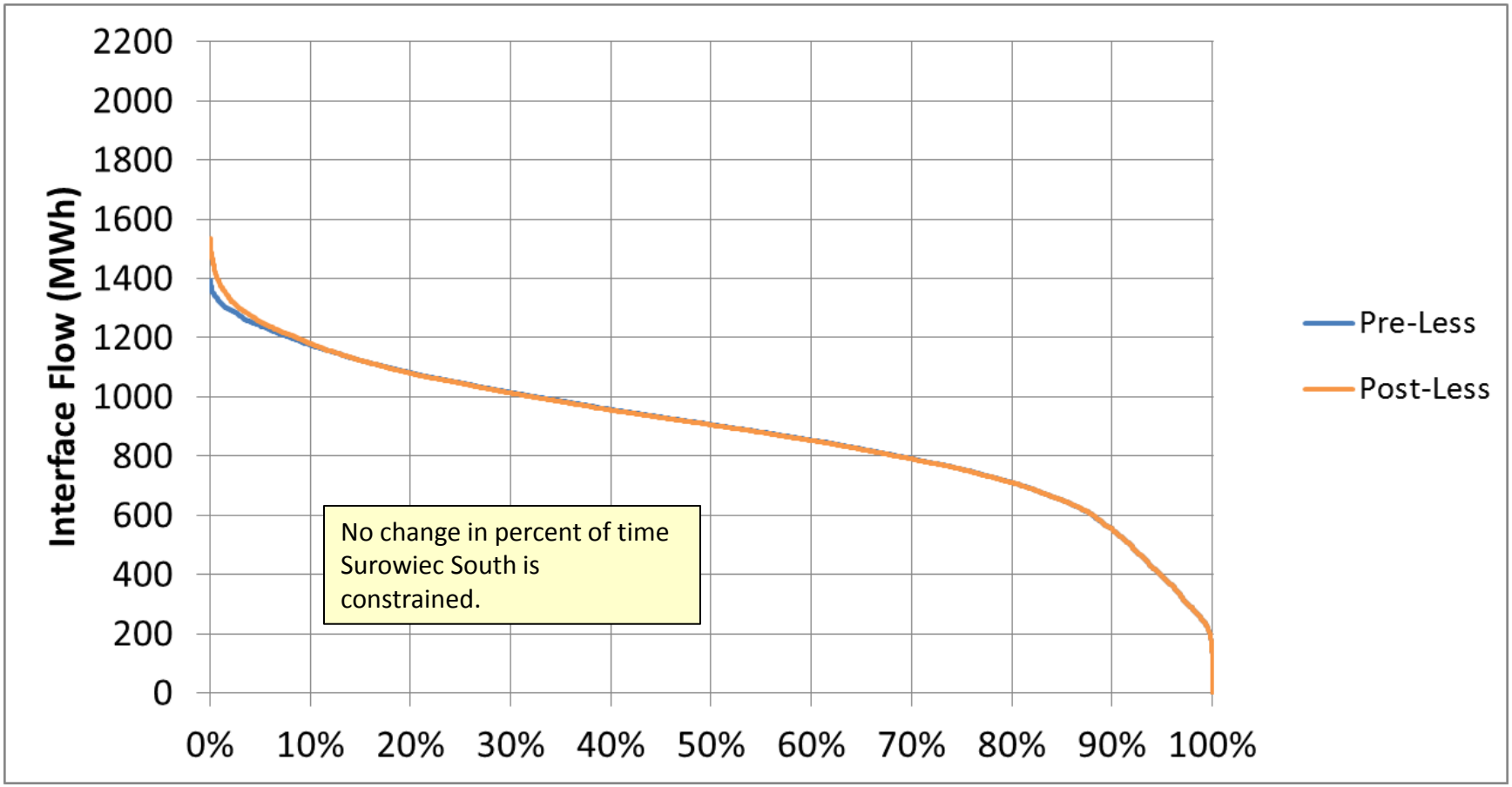
Interface: Surowiec South – Existing Wind

Duration Curve



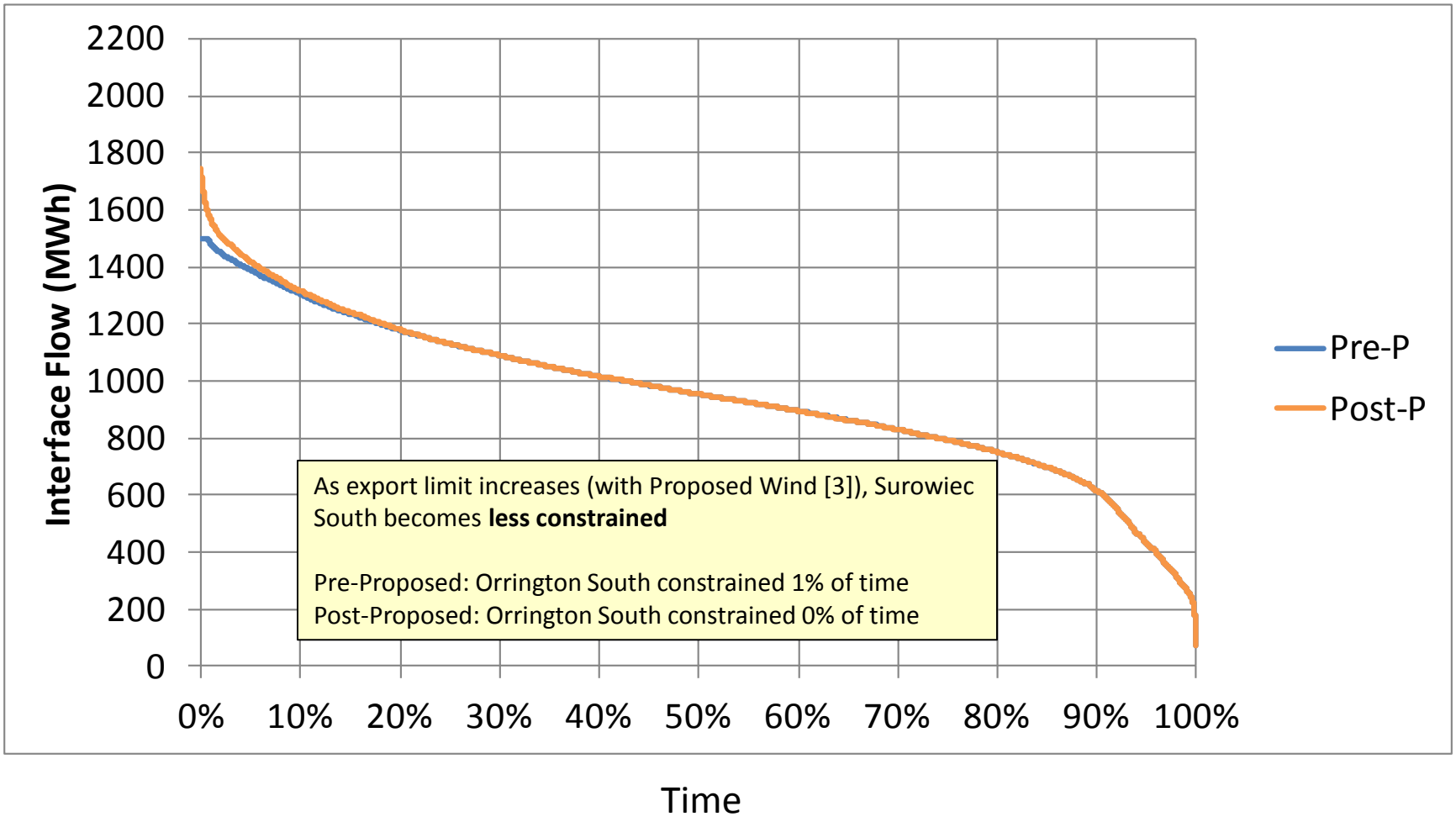
Interface: Surowiec South – Less Wind

Duration Curve



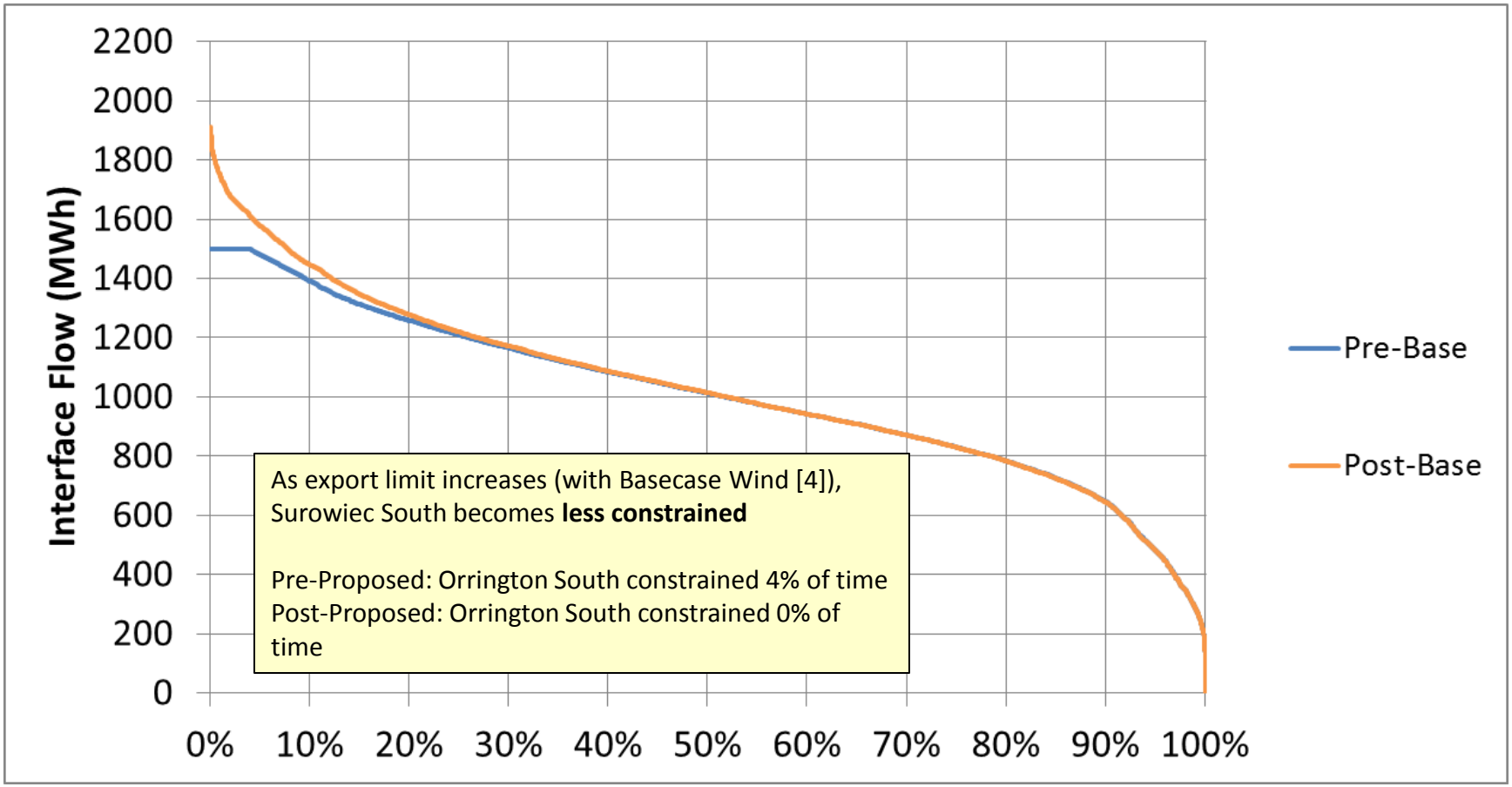
Interface: Surowiec South – Proposed Wind

Duration Curve



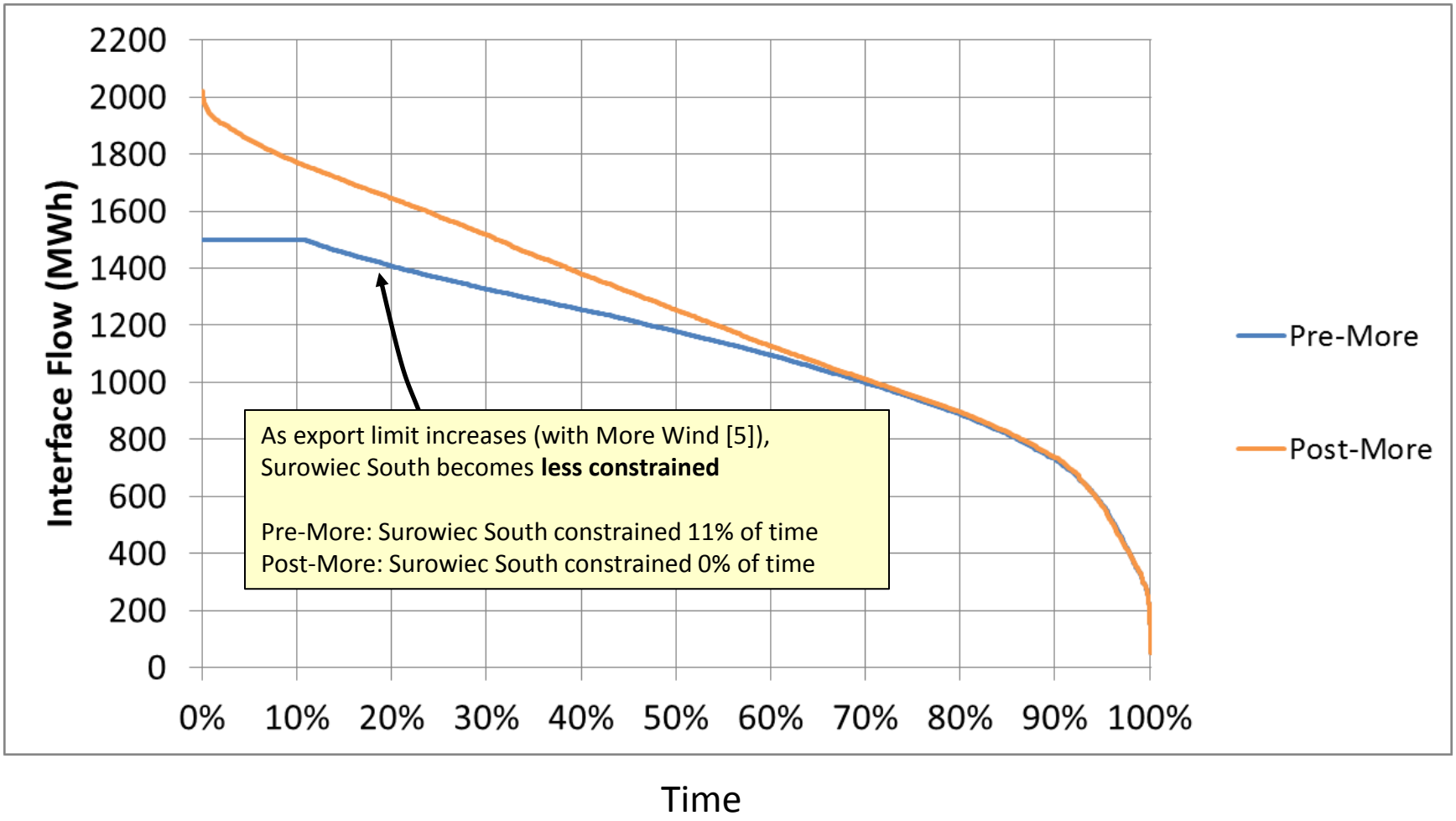
Interface: Surowiec South – Basecase Wind

Duration Curve



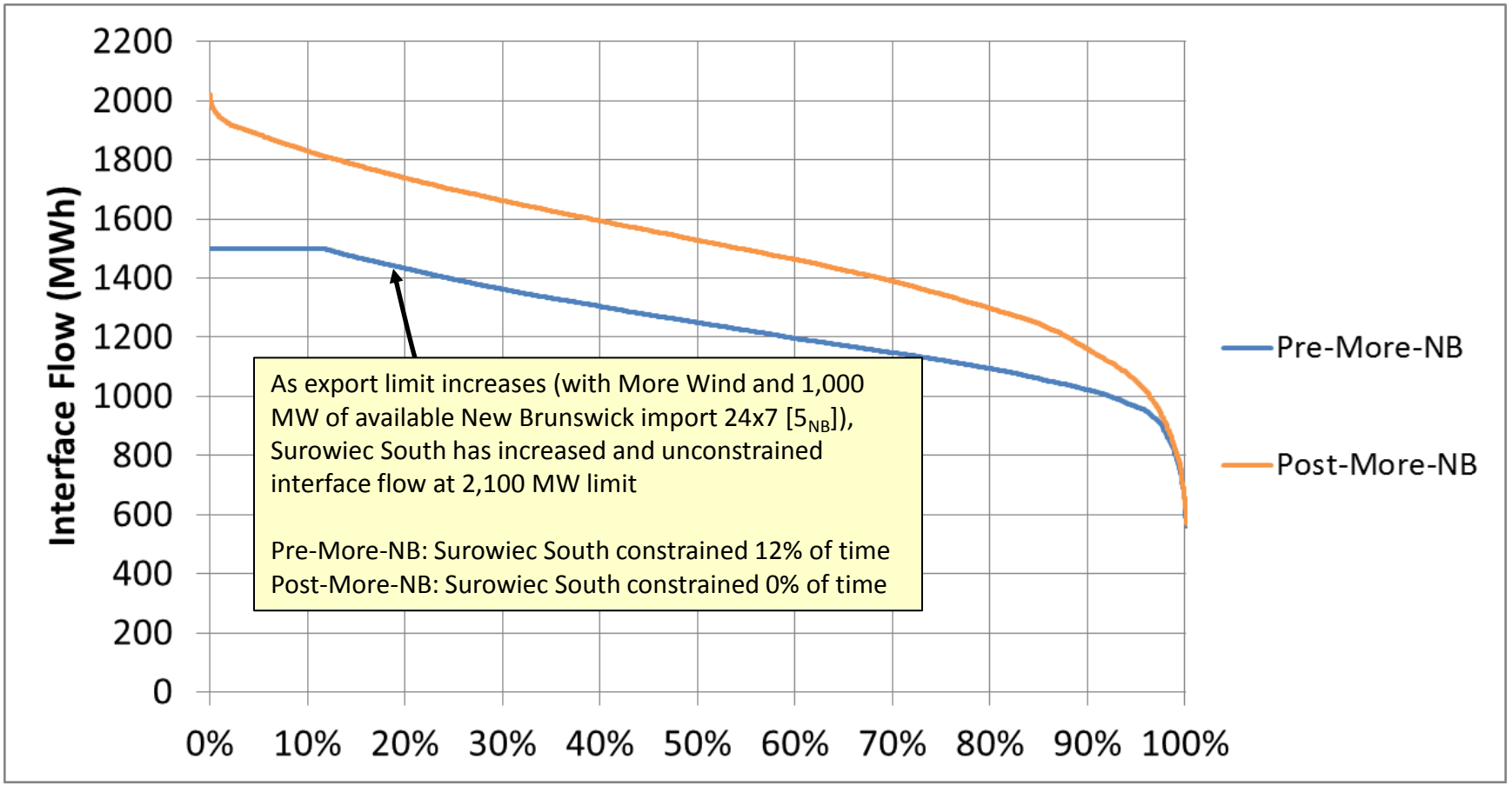
Interface: Surowiec South – More Wind

Duration Curve



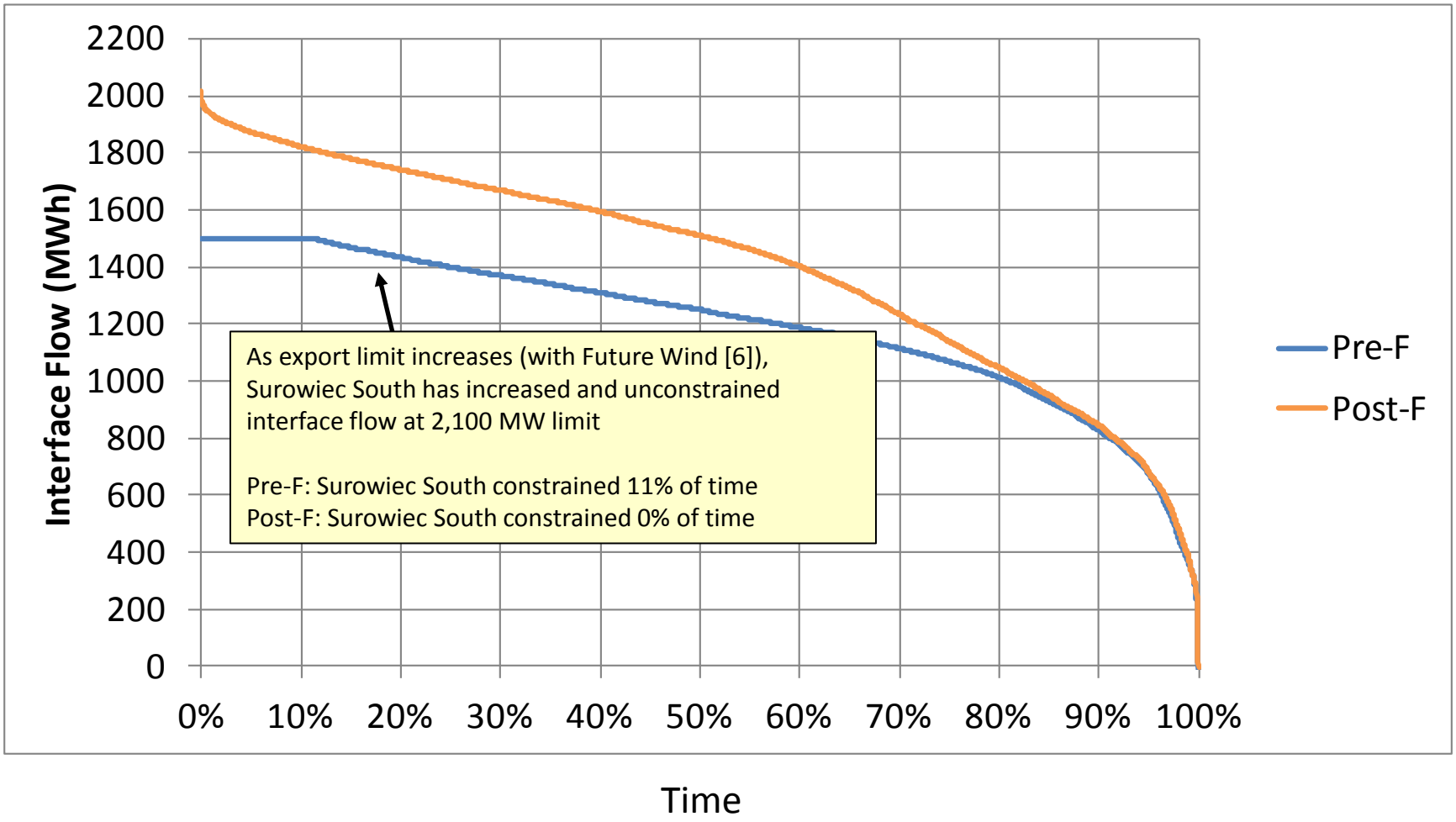
Interface: Surowiec South – More Wind with NB at 1000 MW

Duration Curve



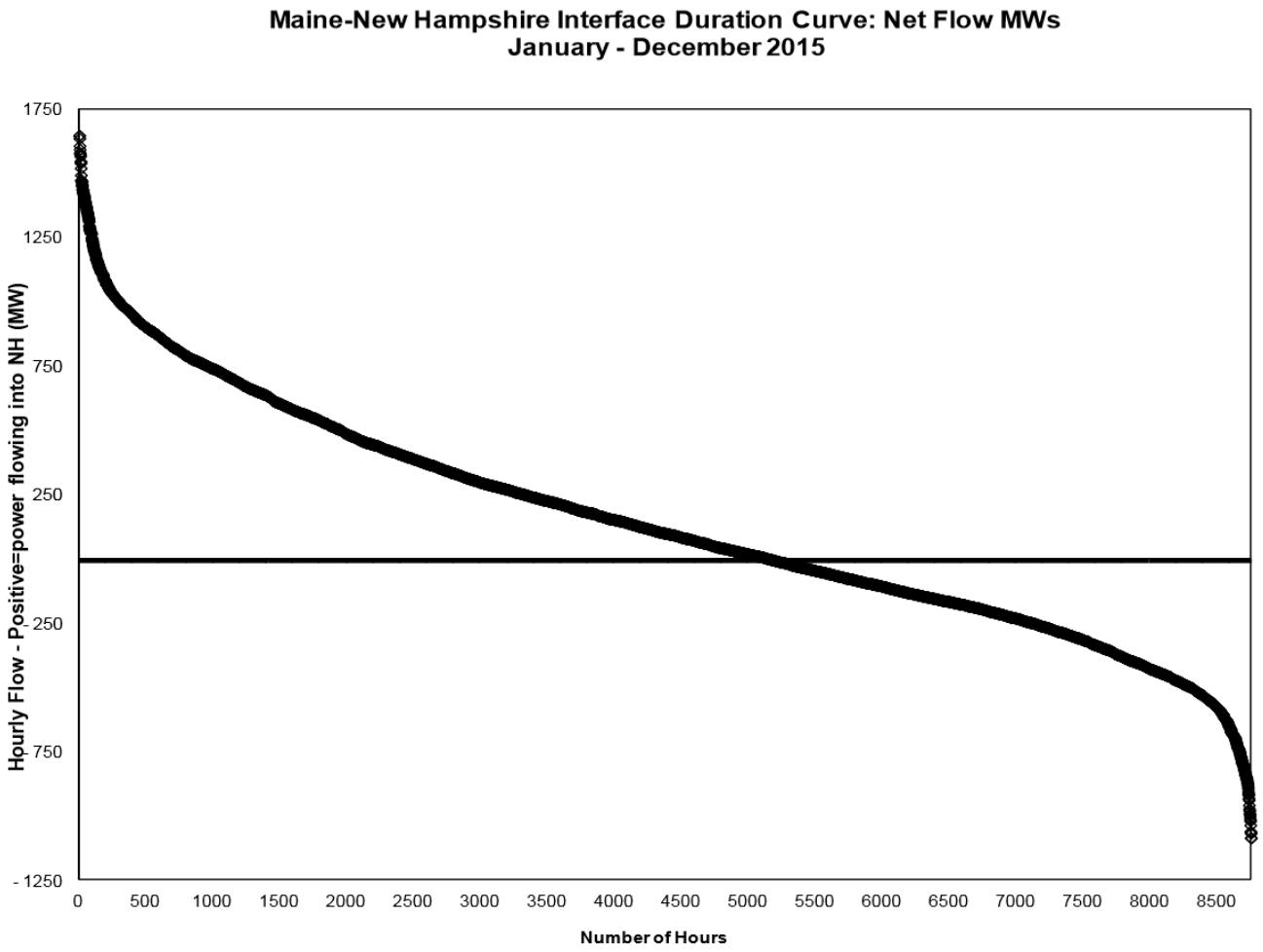
Interface: Surowiec South – Future Wind

Duration Curve



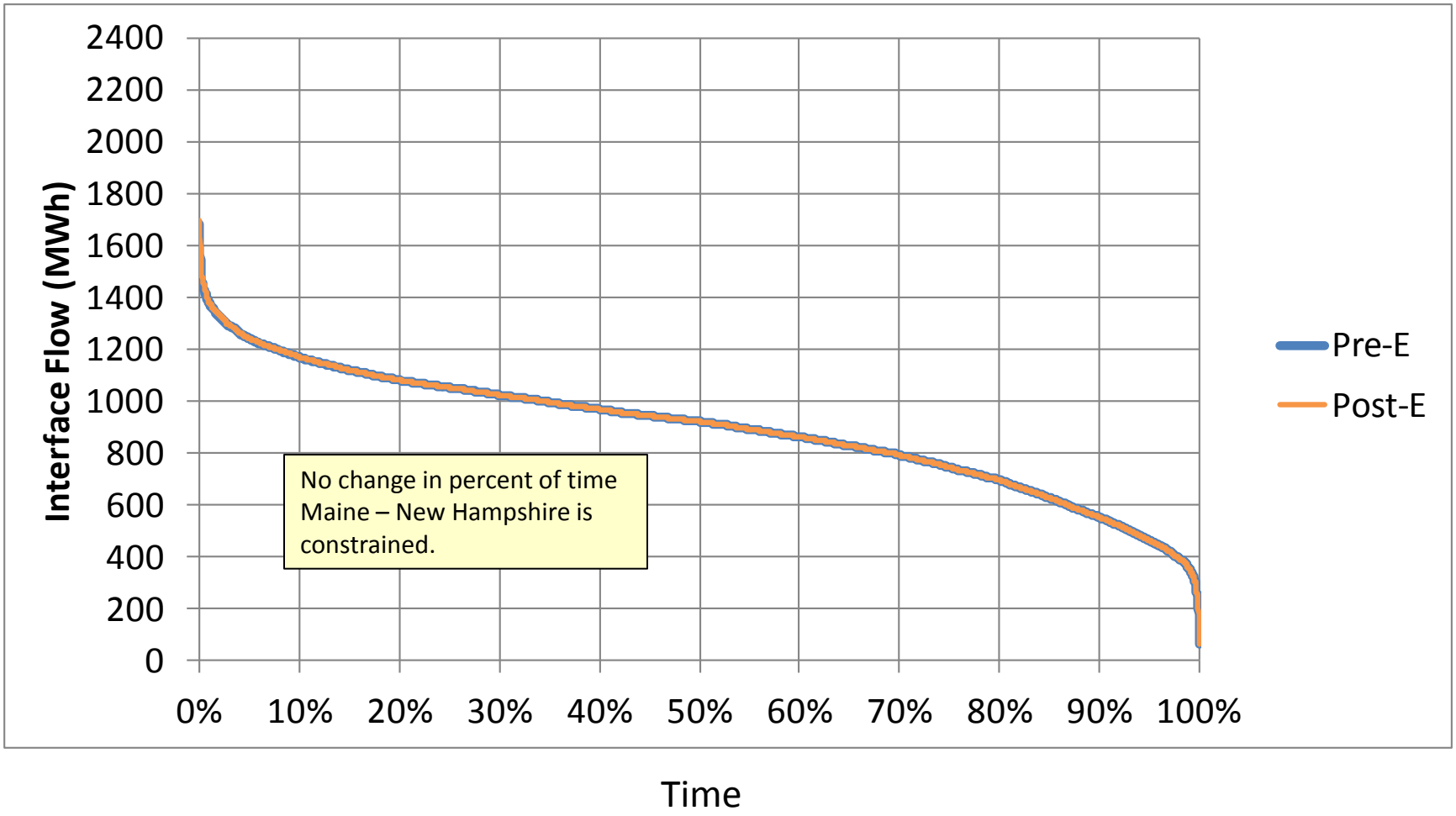
2015 Historical Interface Flow (MW)

Maine – New Hampshire (1,900 MW limit)



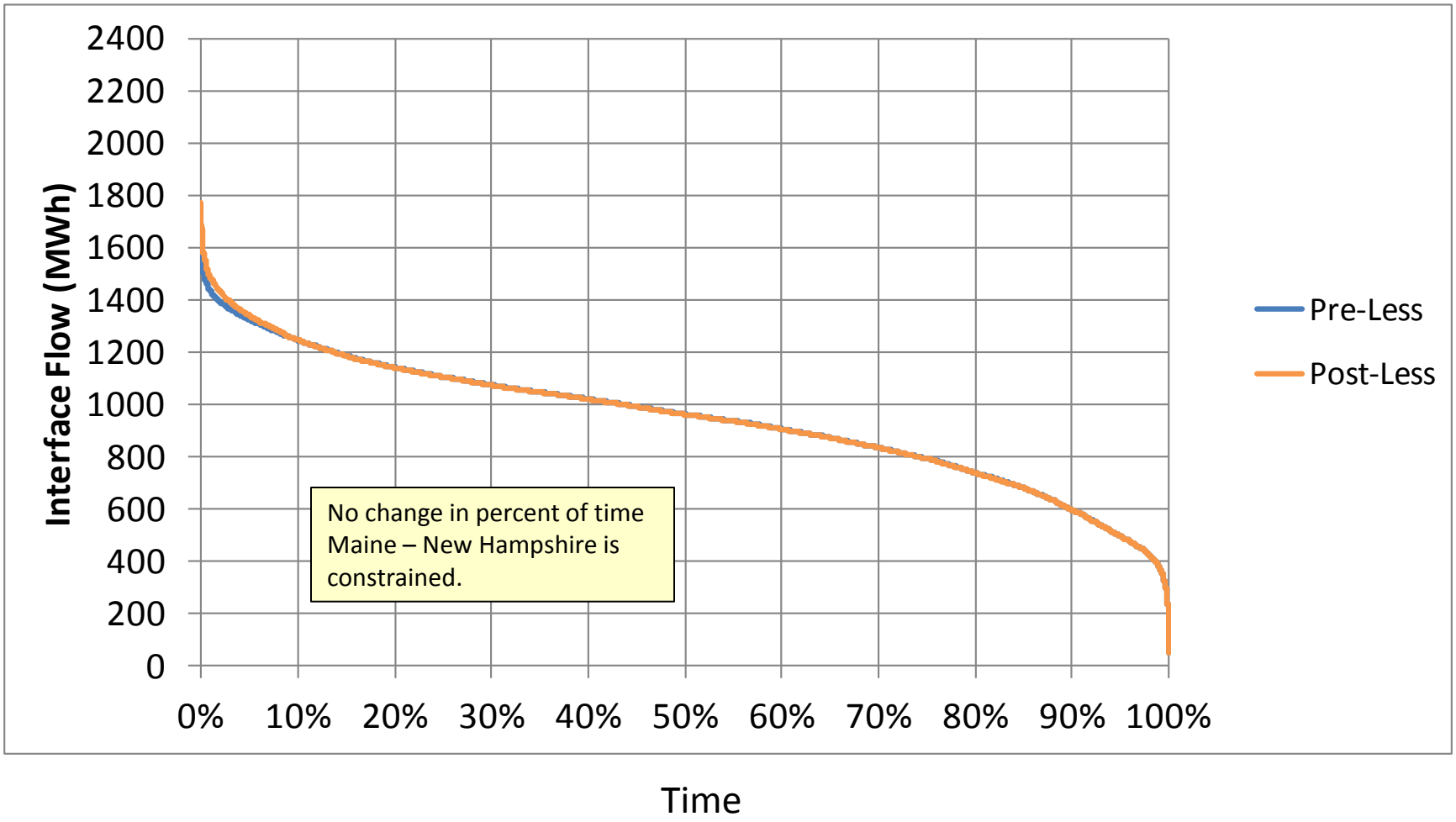
Interface: ME-NH – Existing Wind

Duration Curve



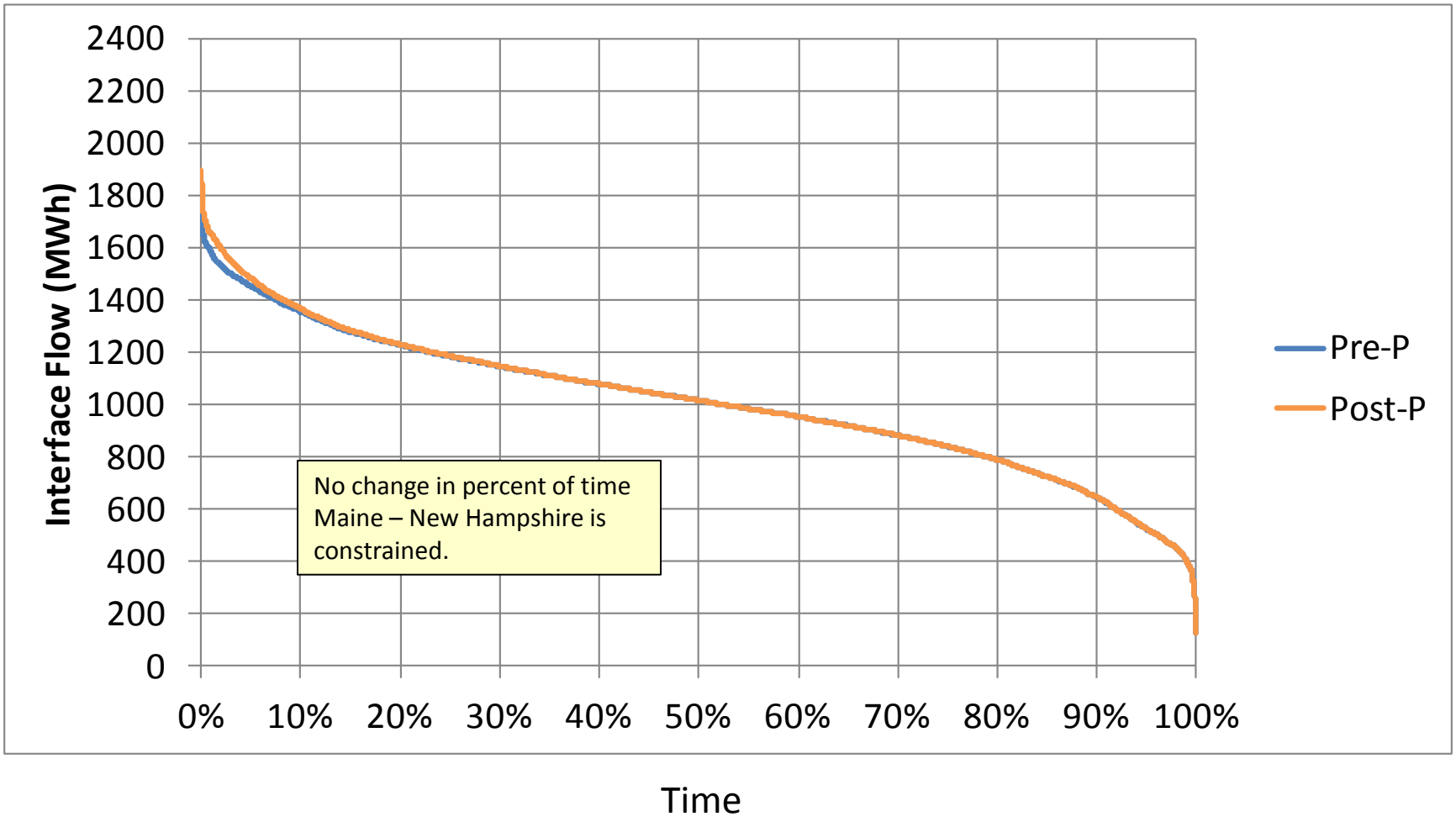
Interface: ME-NH – Less Wind

Duration Curve



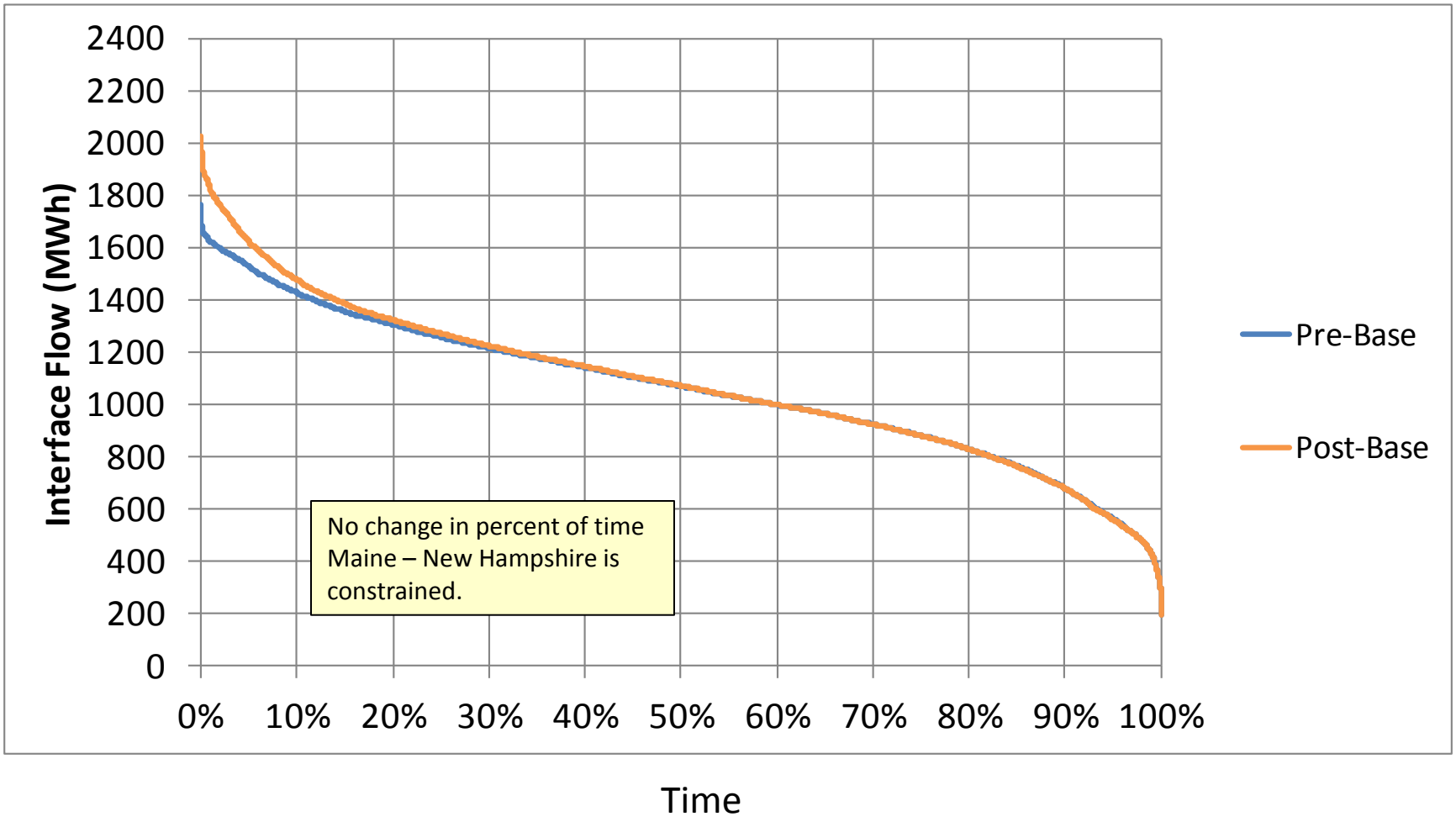
Interface: ME-NH – Proposed Wind

Duration Curve



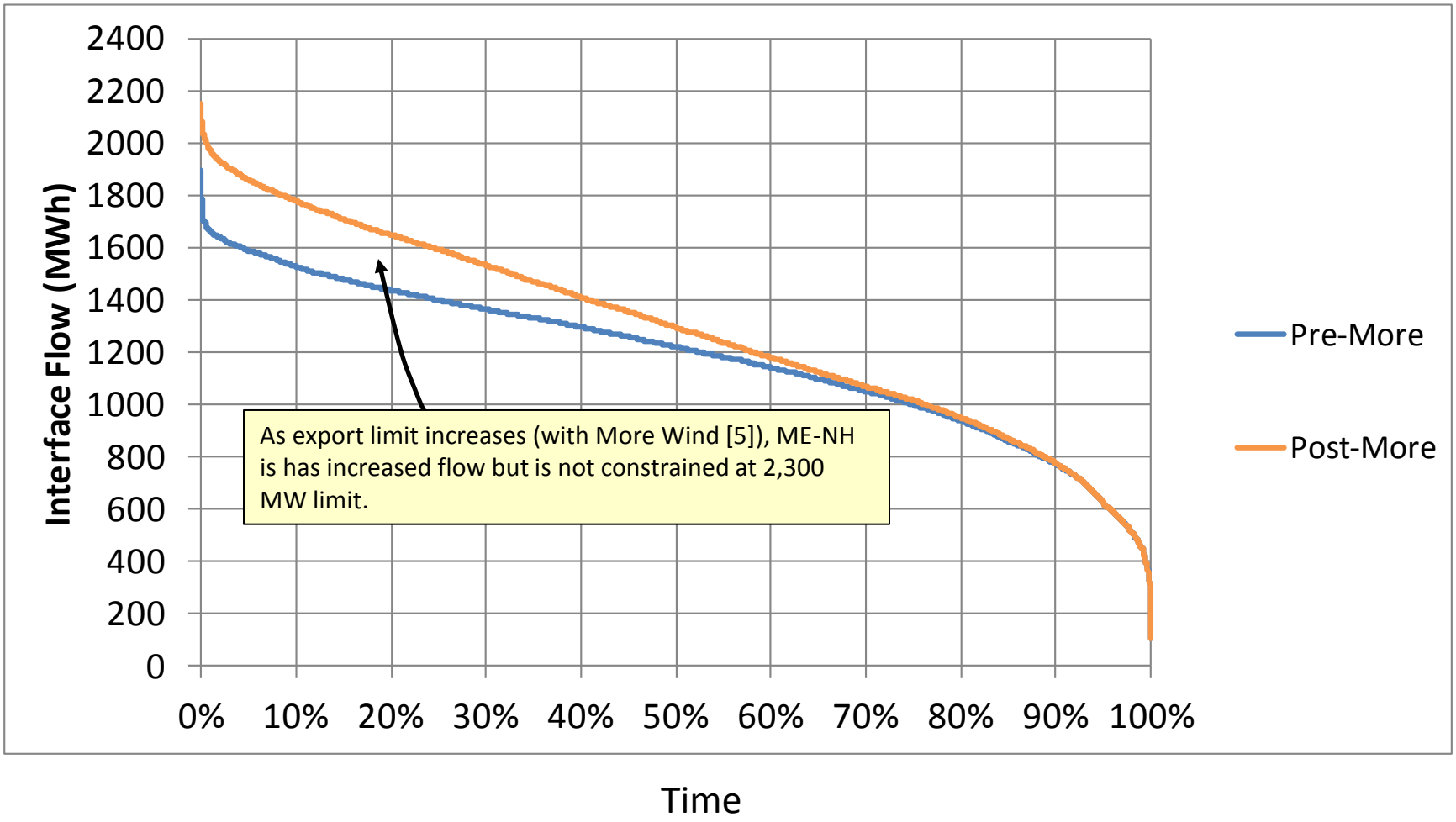
Interface: ME-NH – Basecase Wind

Duration Curve



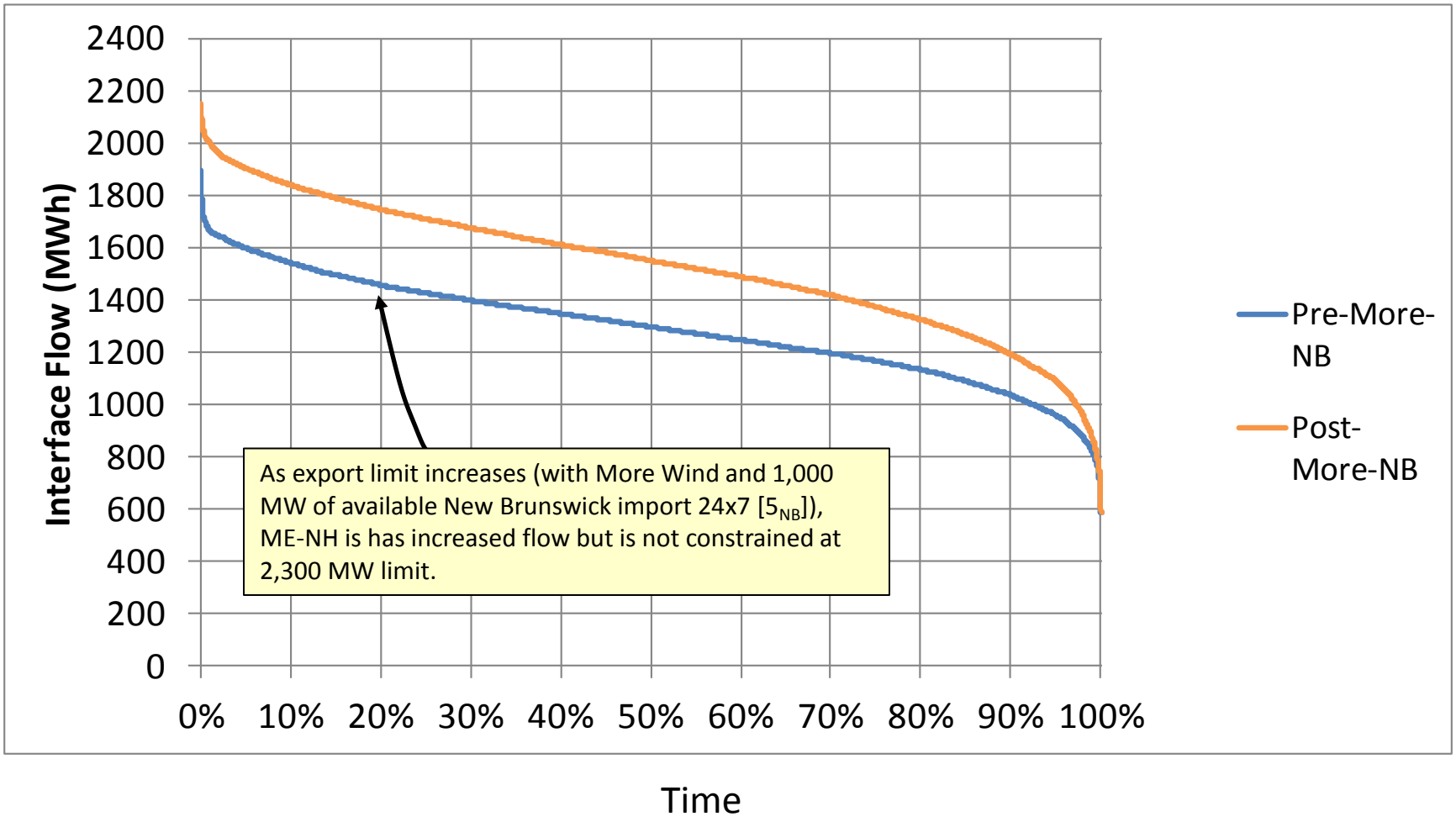
Interface: ME-NH – More Wind

Duration Curve



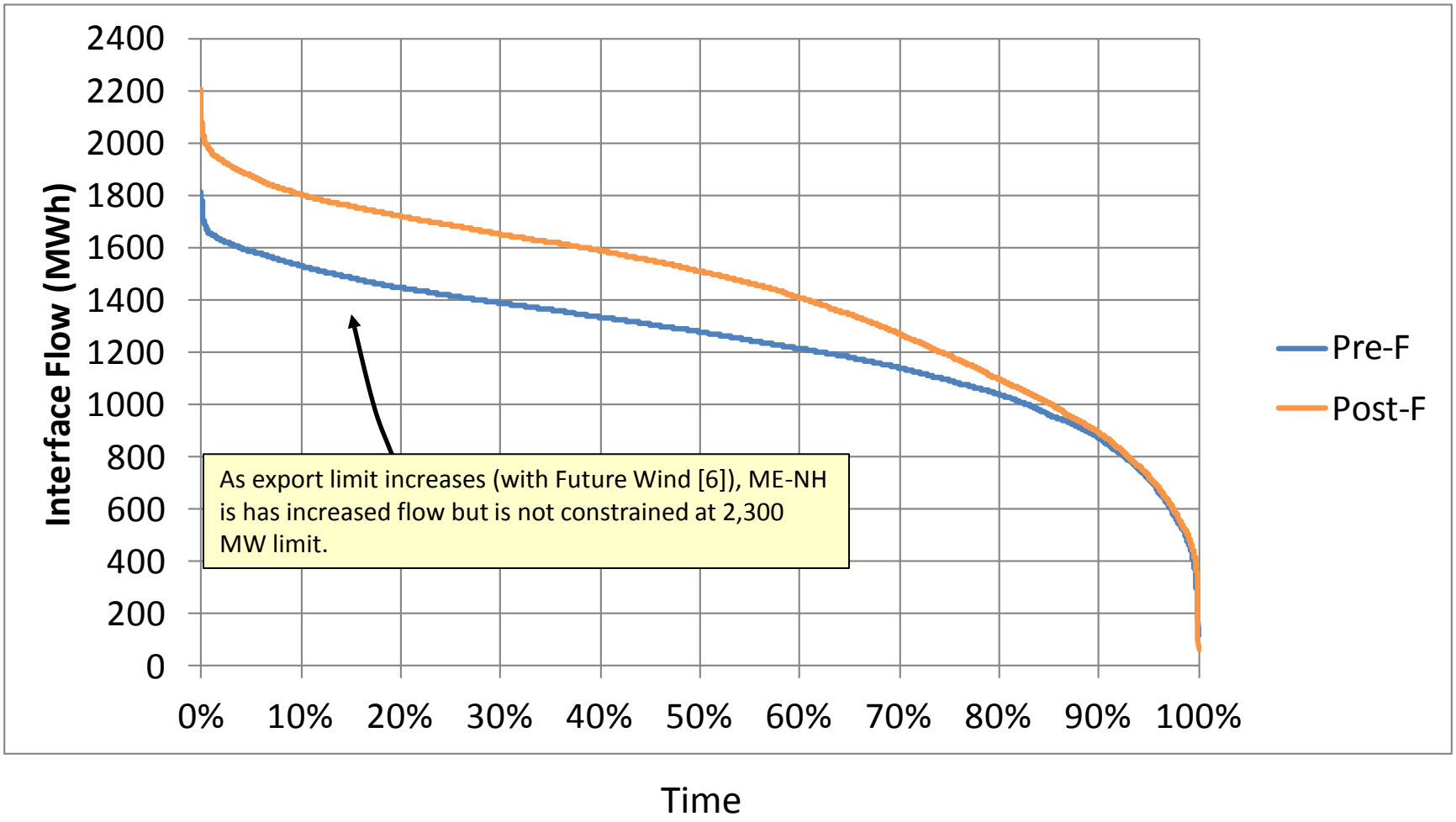
Interface: ME-NH – More Wind with NB at 1000 MW

Duration Curve



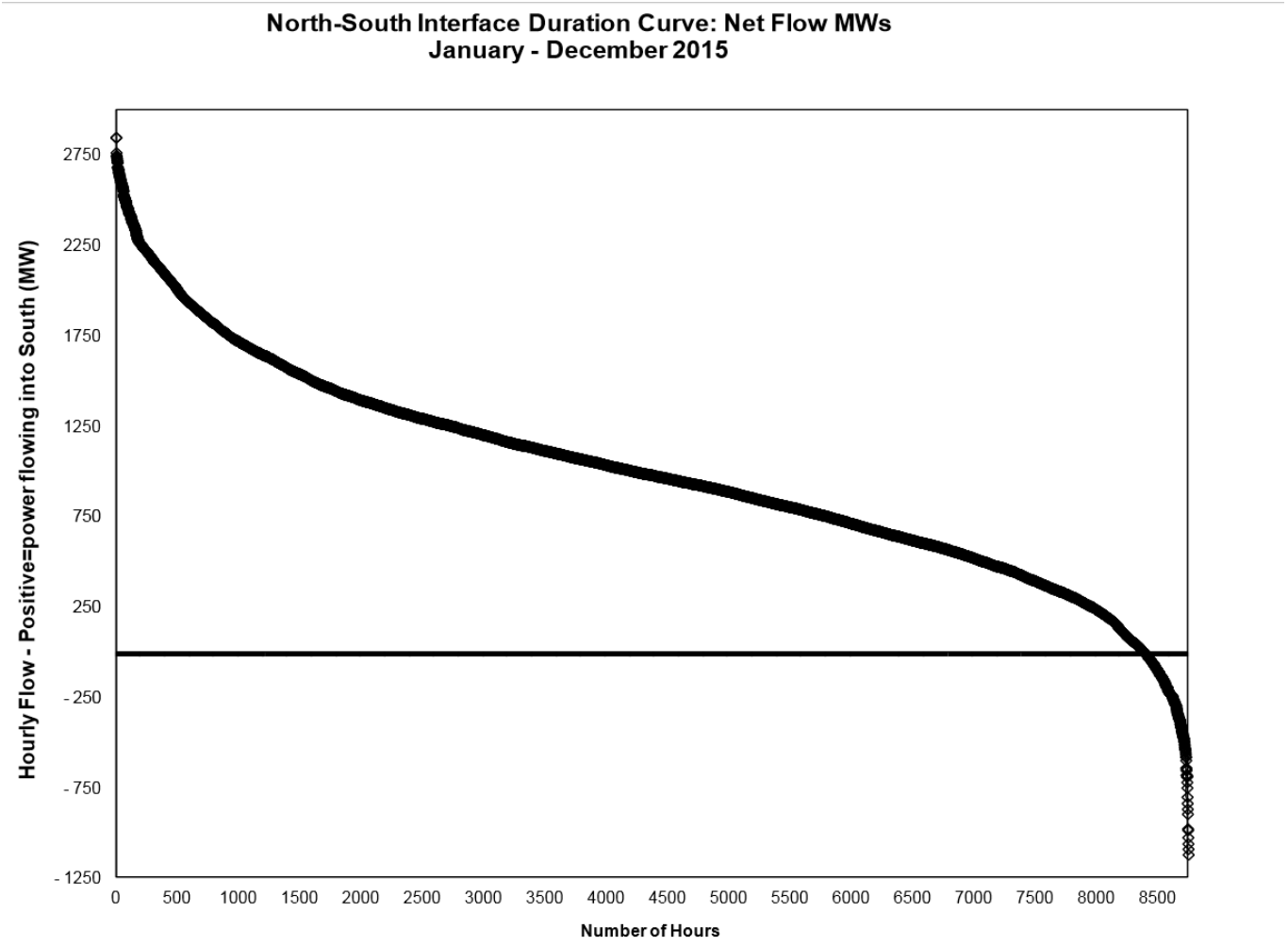
Interface: ME-NH – Future Wind

Duration Curve



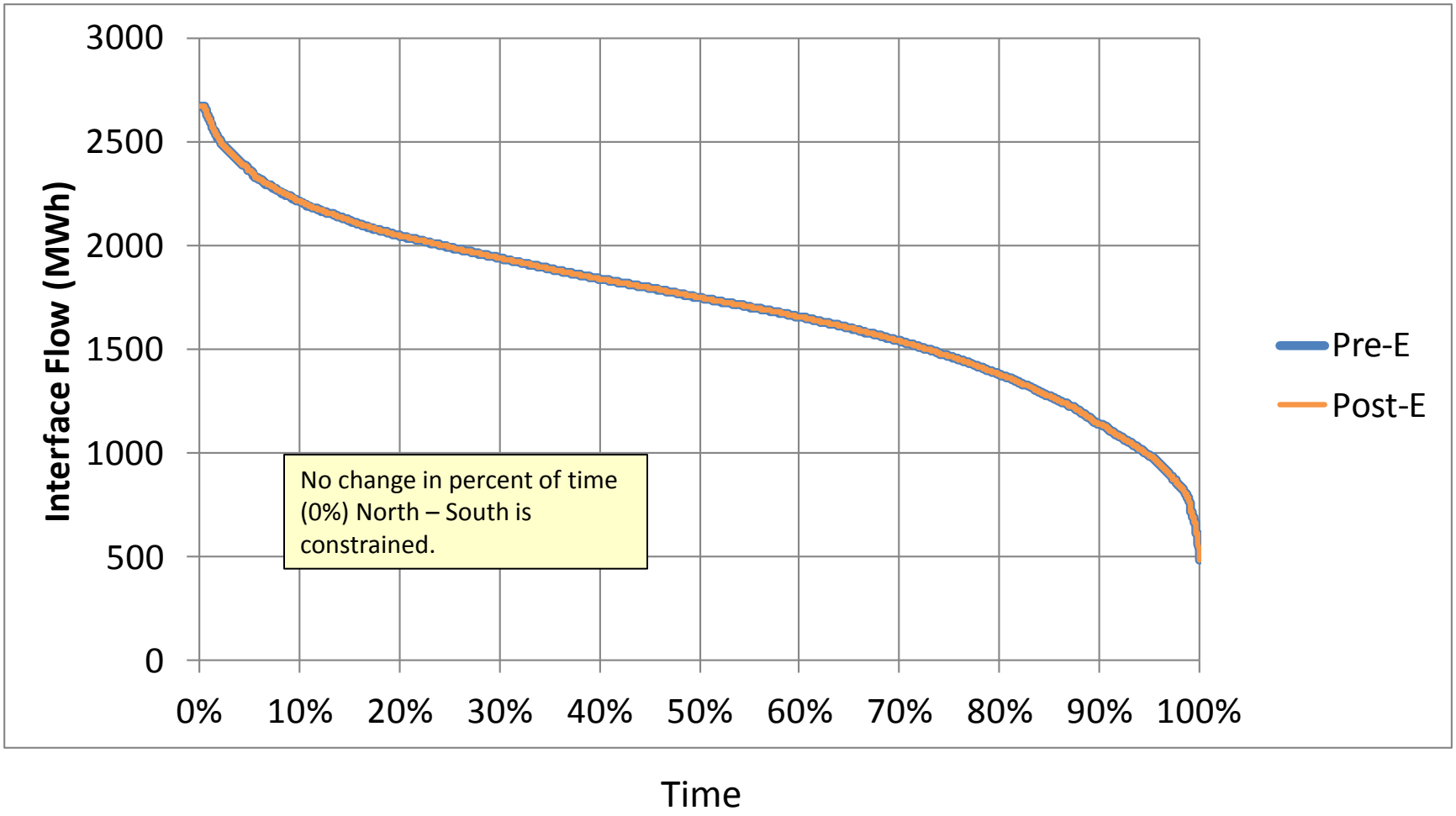
2015 Historical Interface Flow (MW)

North – South (2,675 MW limit)



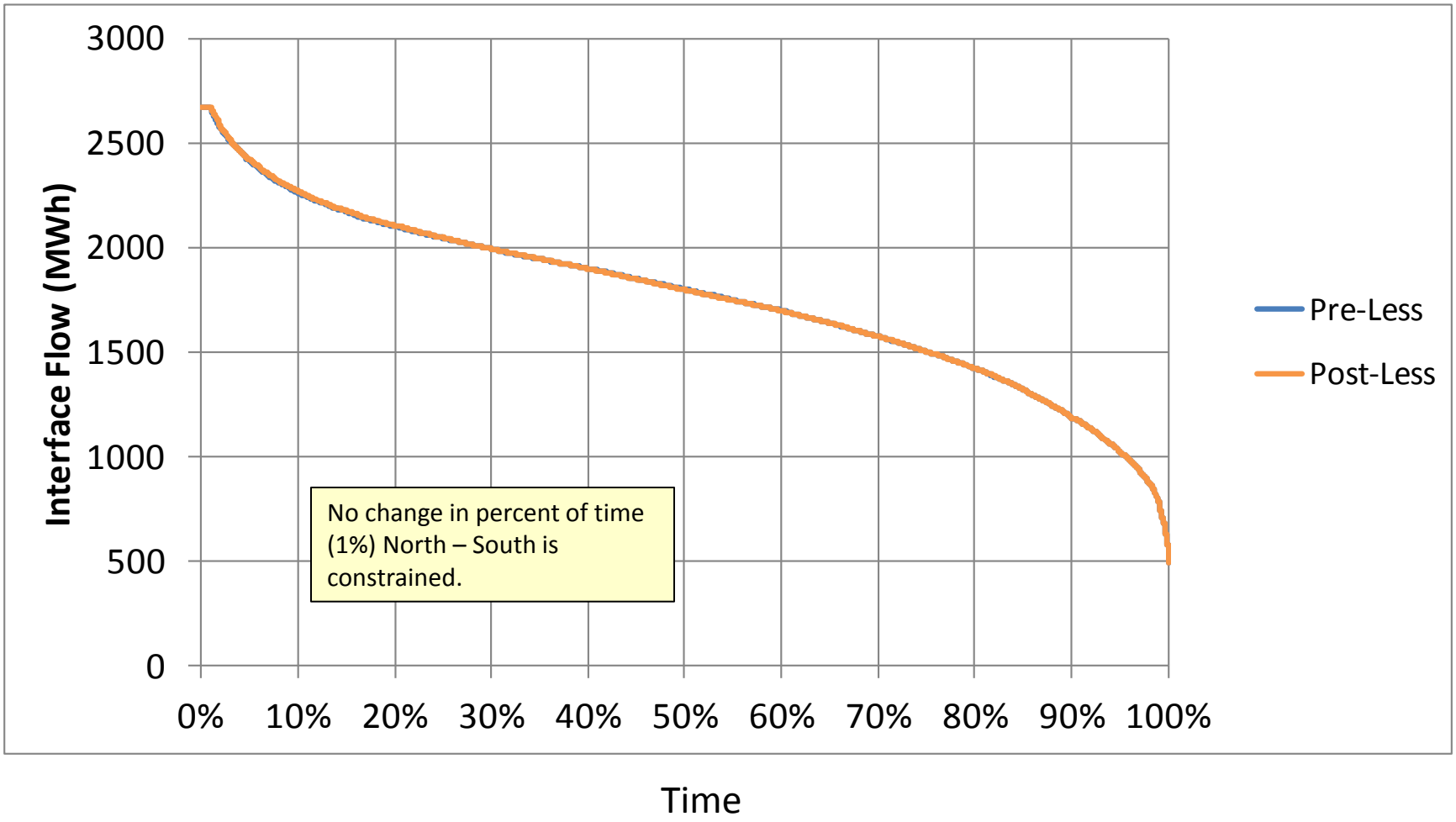
Interface: North-South – Existing Wind

Duration Curve



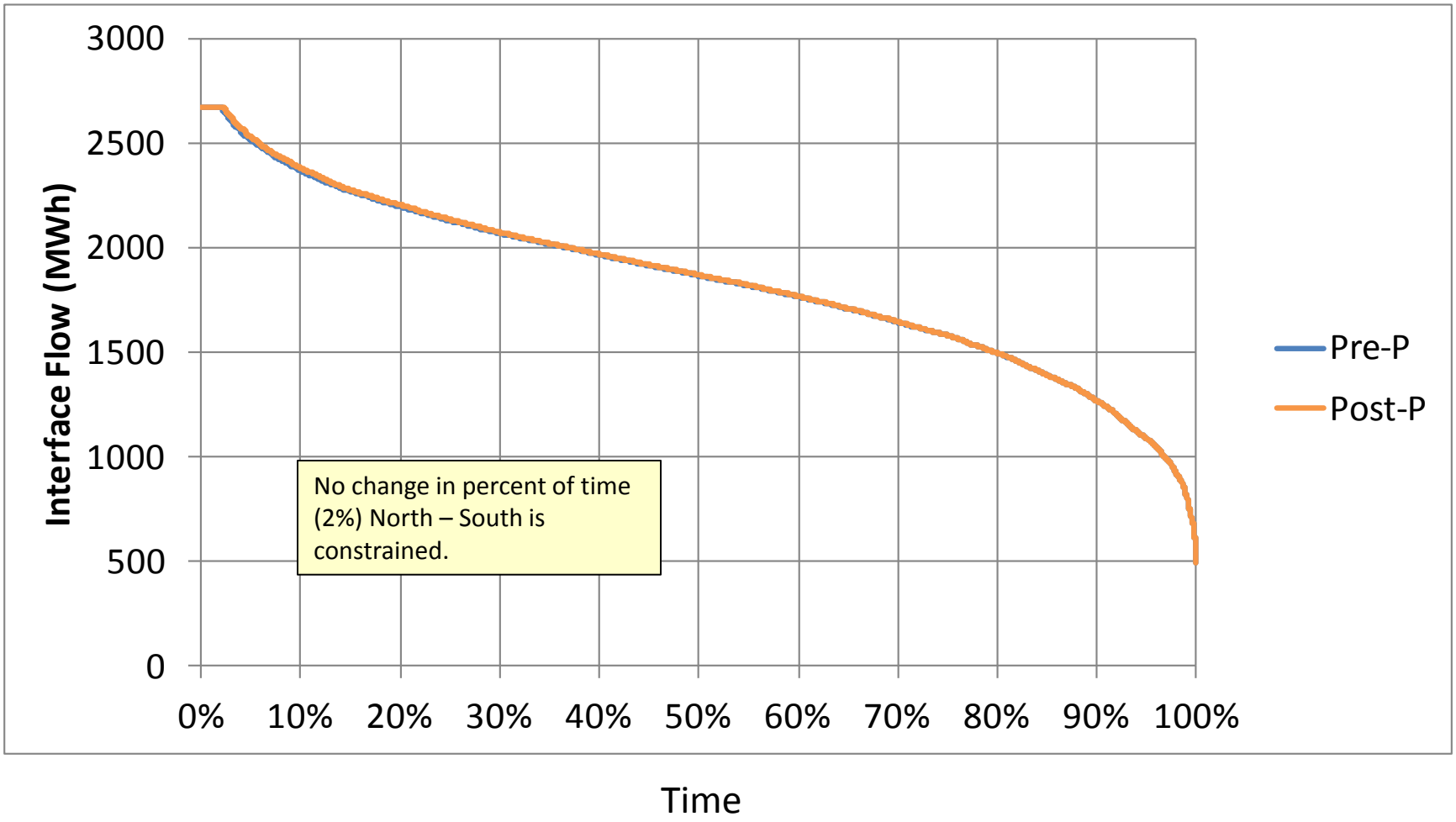
Interface: North-South – Less Wind

Duration Curve



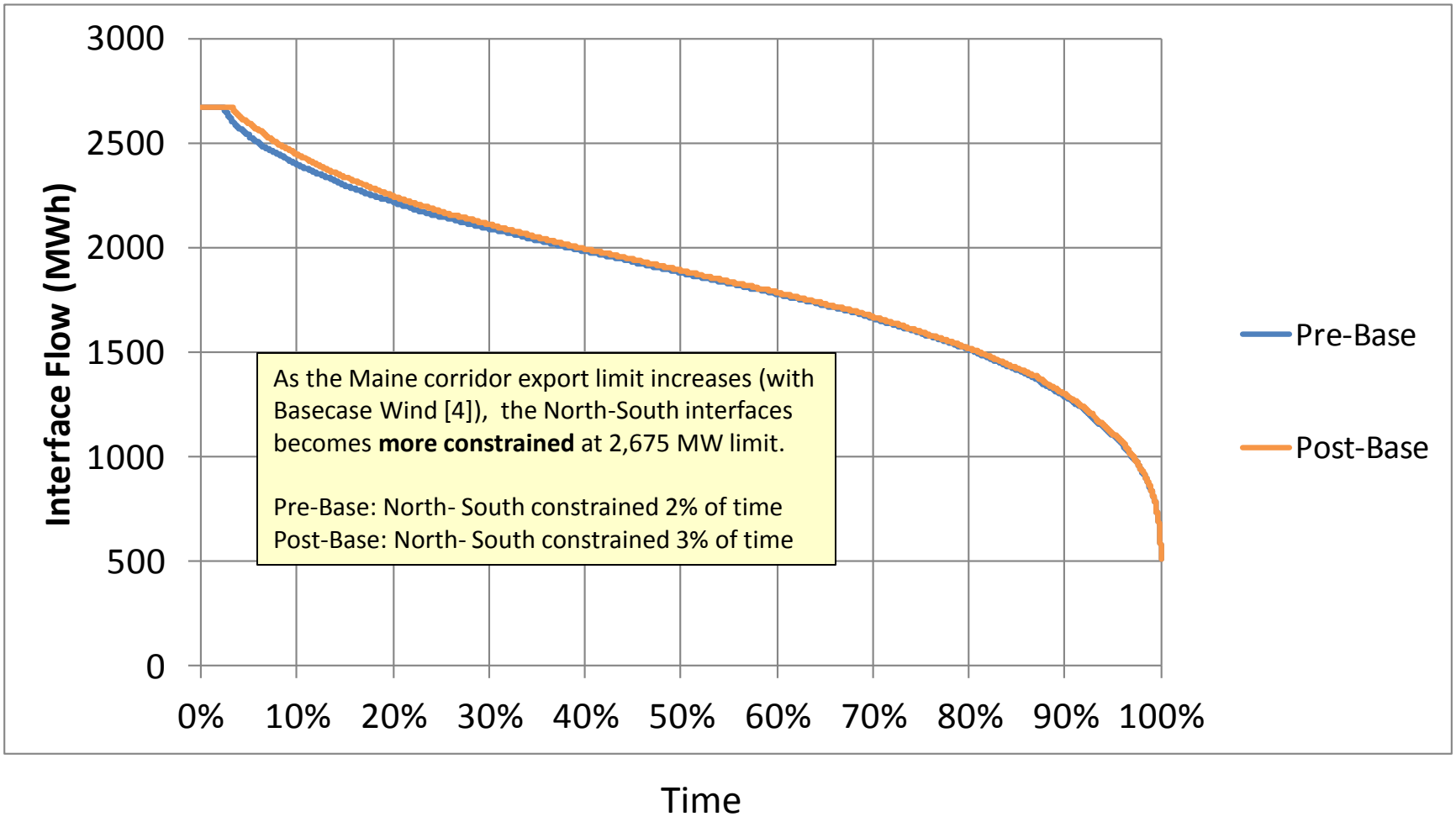
Interface: North-South – Proposed Wind

Duration Curve



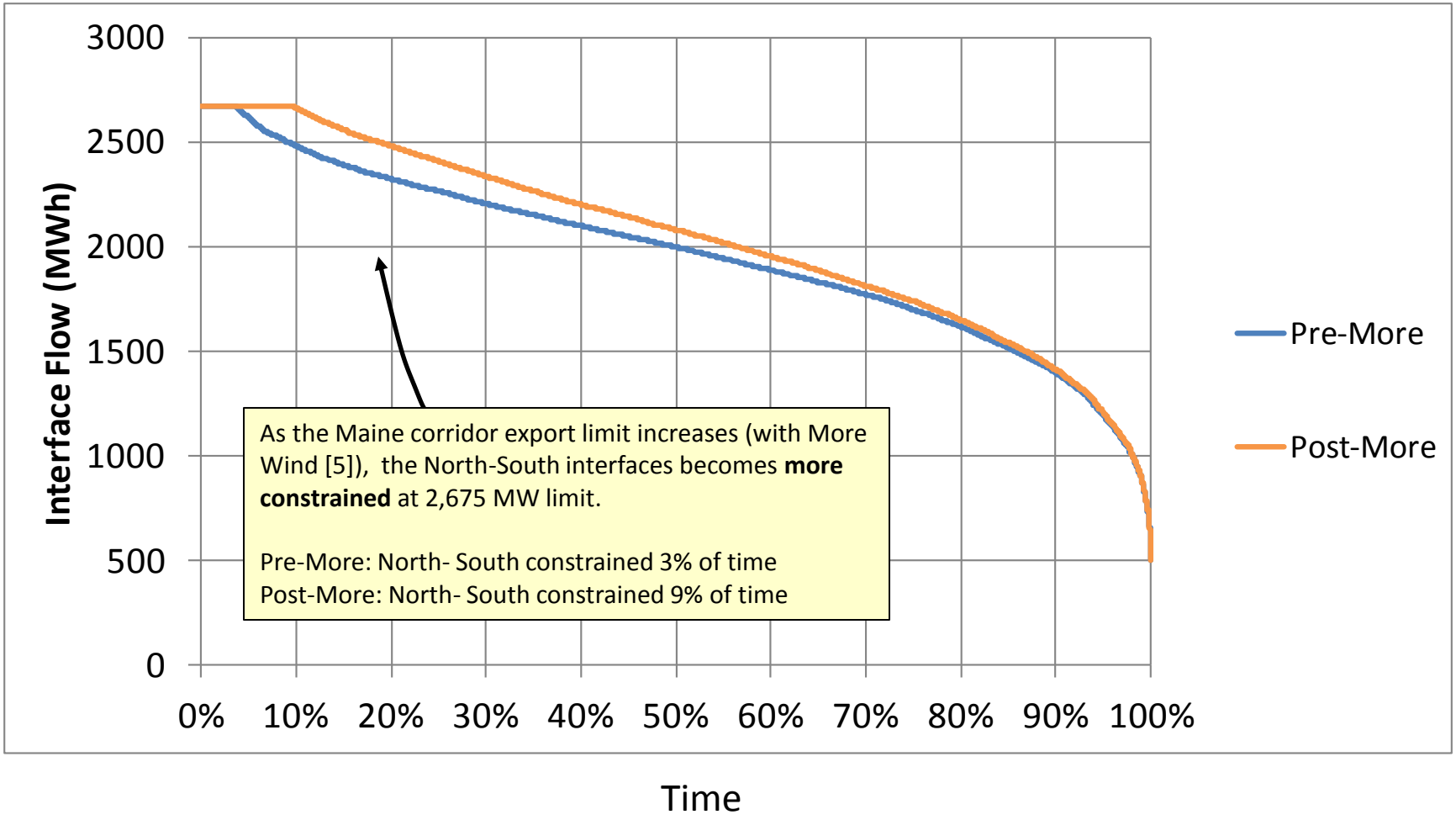
Interface: North-South – Basecase Wind

Duration Curve



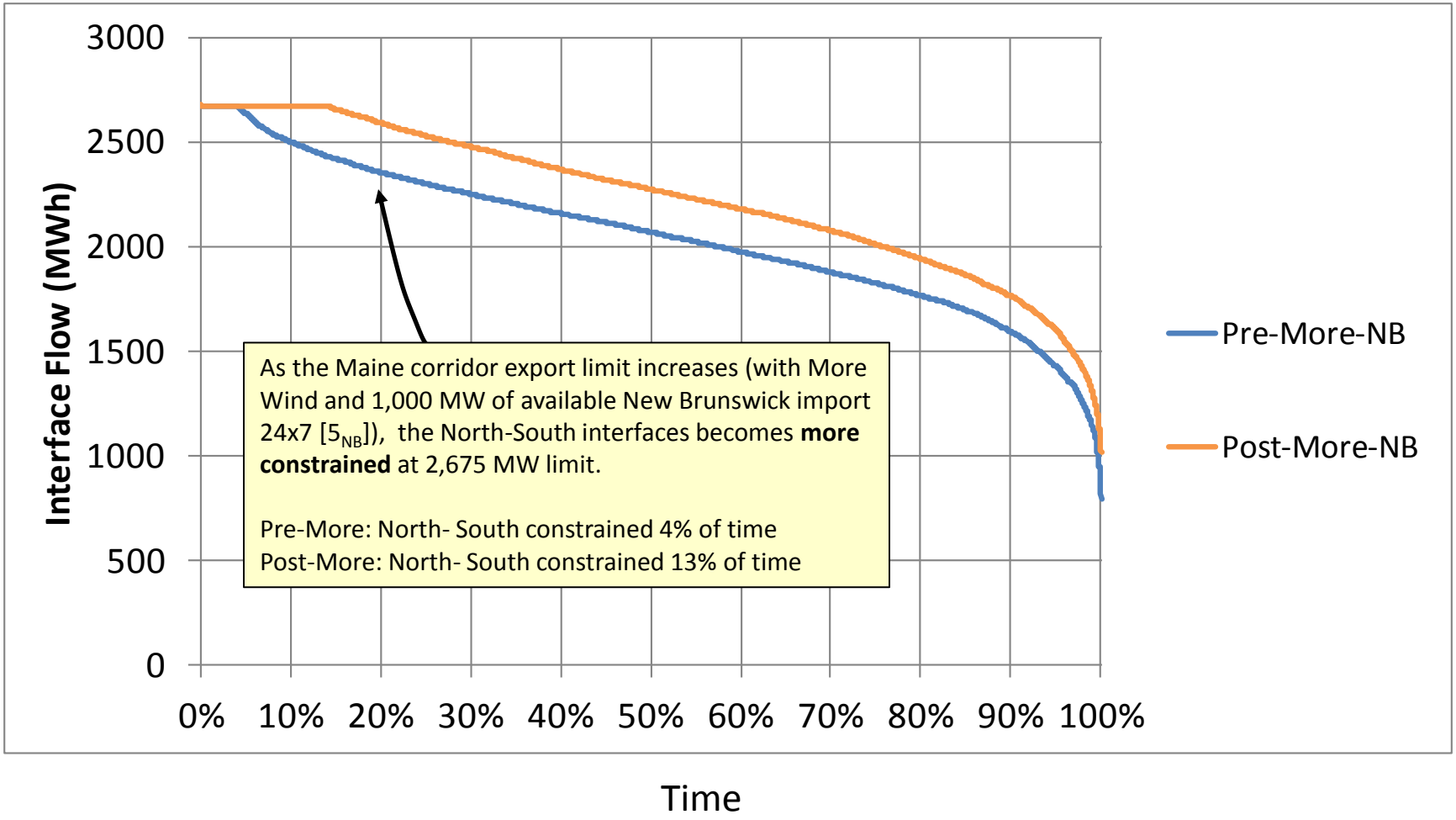
Interface: North-South – More Wind

Duration Curve



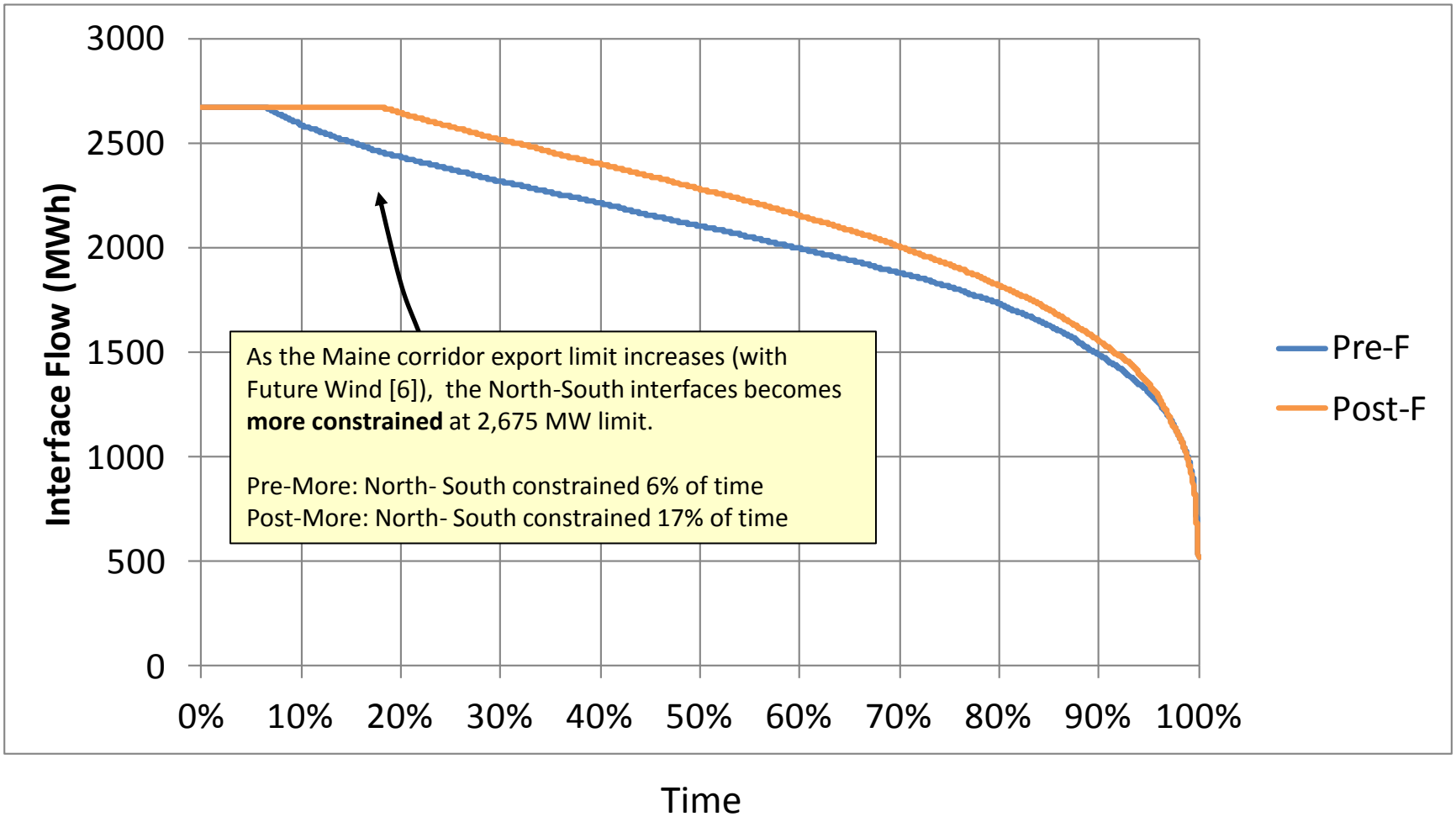
Interface: North-South – More Wind with NB at 1000 MW

Duration Curve



Interface: North-South – Future Wind

Duration Curve



APPENDIX VI

LMP Metrics

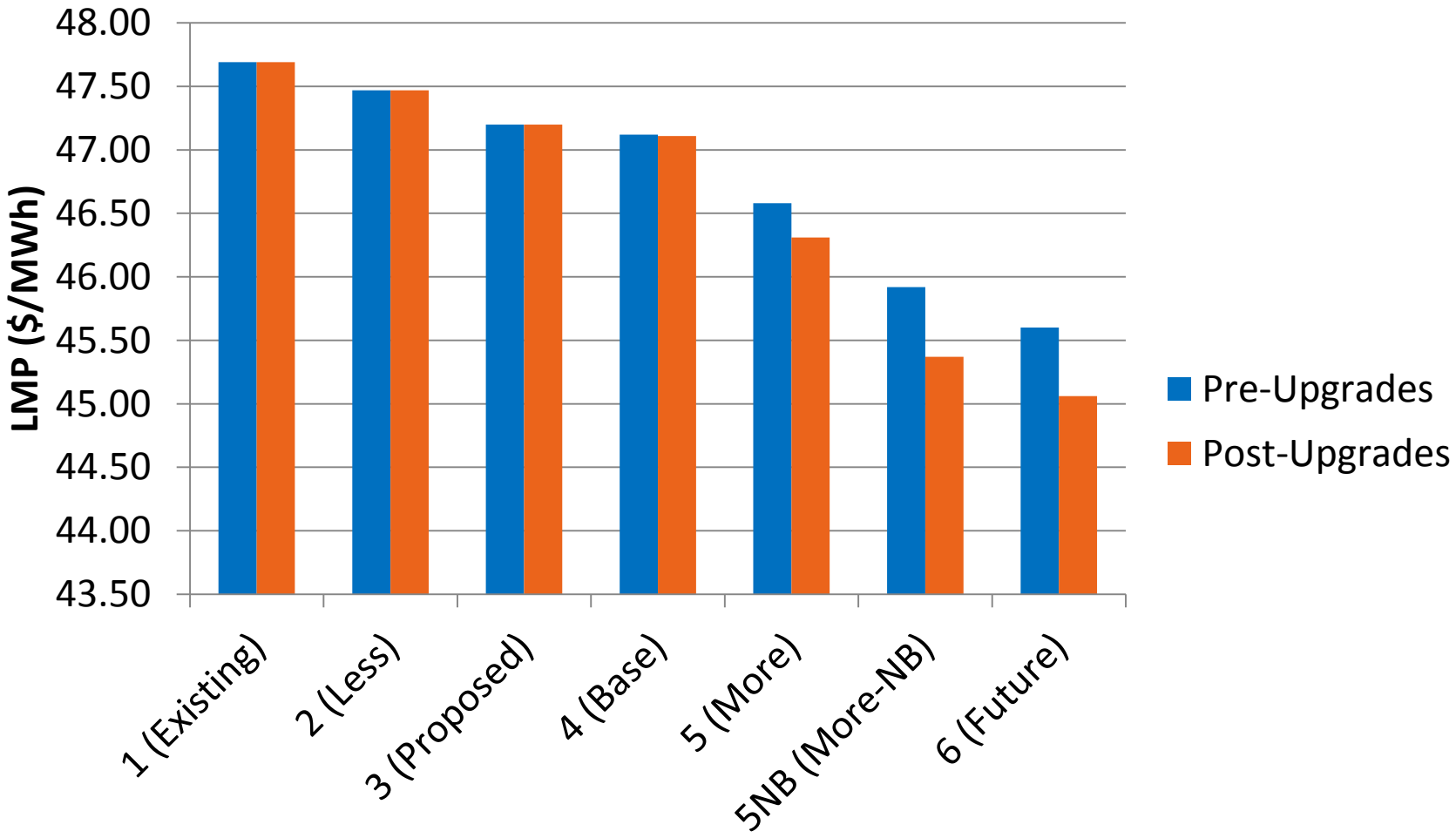
Summary

LMP Metrics

- LMP duration curves allow the effect of the three classes of study resources to be seen
  - At $0/MWh wind-on-wind competition spills wind
  - At $5/MWh hydro is spilled
  - At $10/MWh imports are curtailed

New England LMP – weighted by load ($/MWh)

Graph



New England LMP – weighted by load ($/MWh)

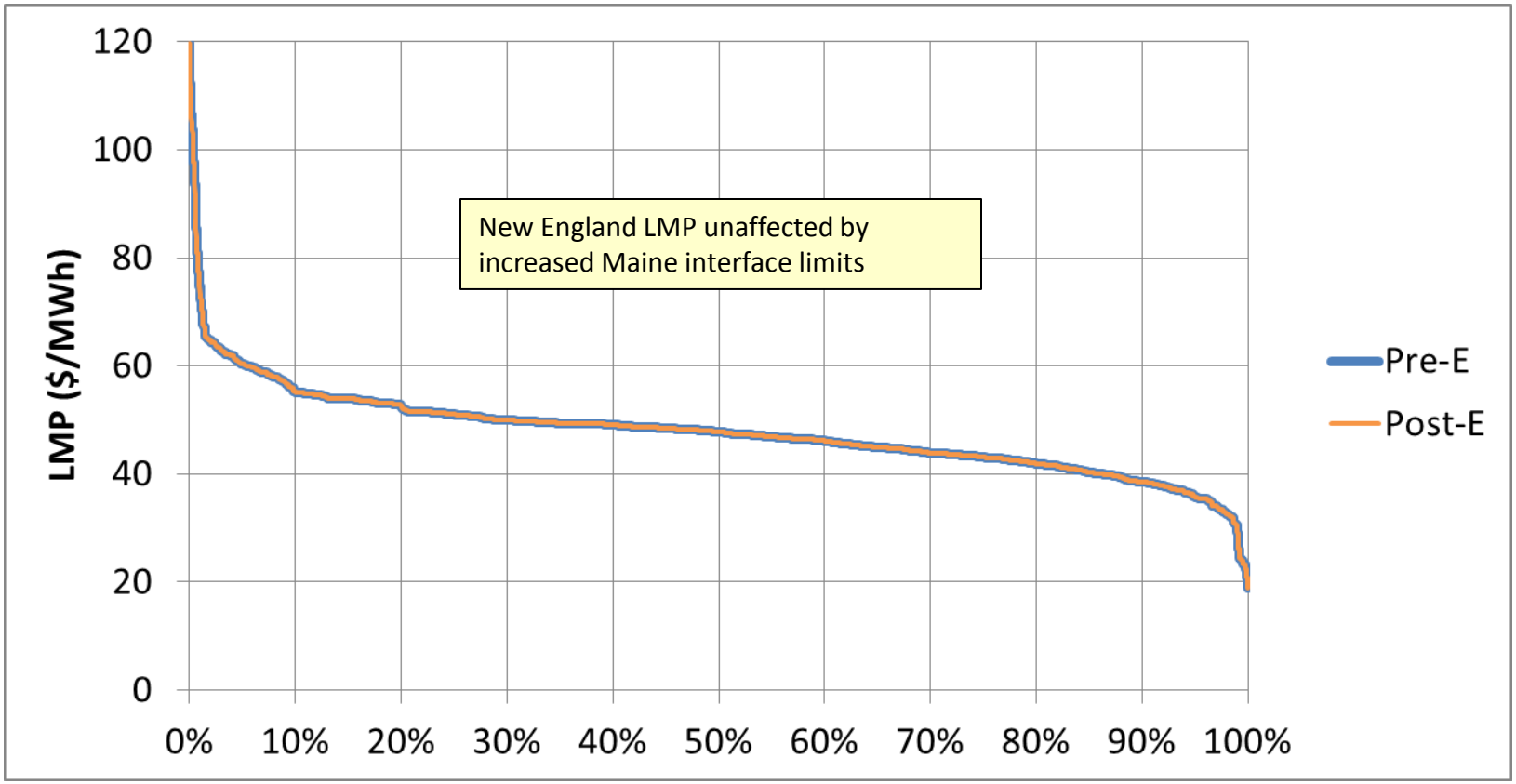
Table

Scenarios		LMP ($/MWh)	
		Pre-Upgrades	Post-Upgrades
1	Existing Wind in New England (In-Service as of 4/1/15) *	47.69	47.69
2	RENEW Sensitivity 1 (Less Wind) *	47.47	47.47
3	Proposed Wind in New England with I.3.9 approval (as of 4/1/15)	47.20	47.20
4	RENEW Basecase – STA-WI Studied Wind (as of 10/1/13) *	47.12	47.11
5	RENEW Sensitivity 2 (More Wind)*	46.58	46.31
5_{NB}	RENEW Sensitivity 2 (More Wind)* and 1,000 MW of NB imports available for dispatch	45.92	45.37
6	All Future Queue Wind in New England Wind (as of 4/1/15)	45.60	45.06

*Outside Maine, assumed only "existing wind" as of 4/1/15

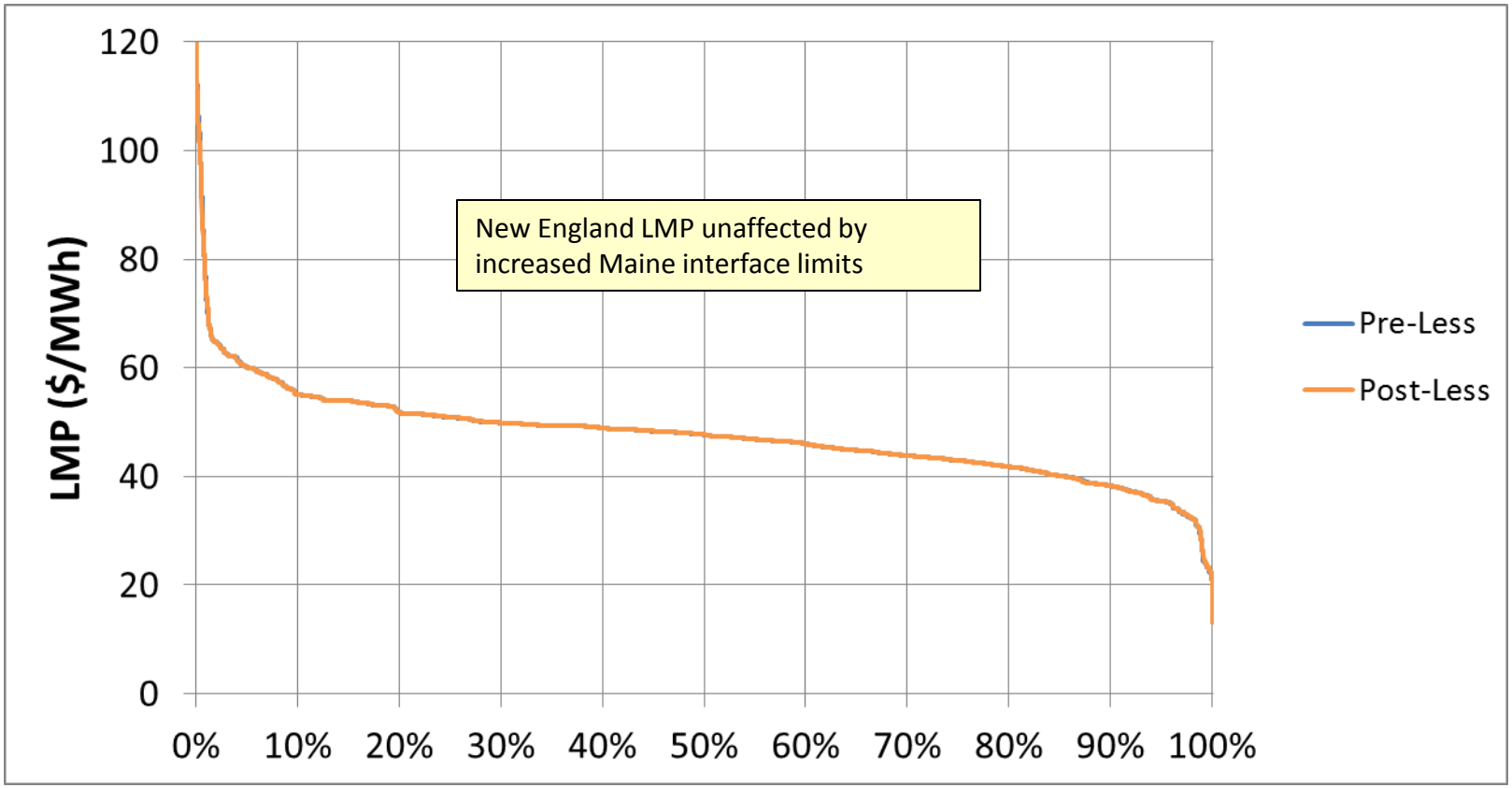
LMP: New England – Existing Wind

Duration Curve



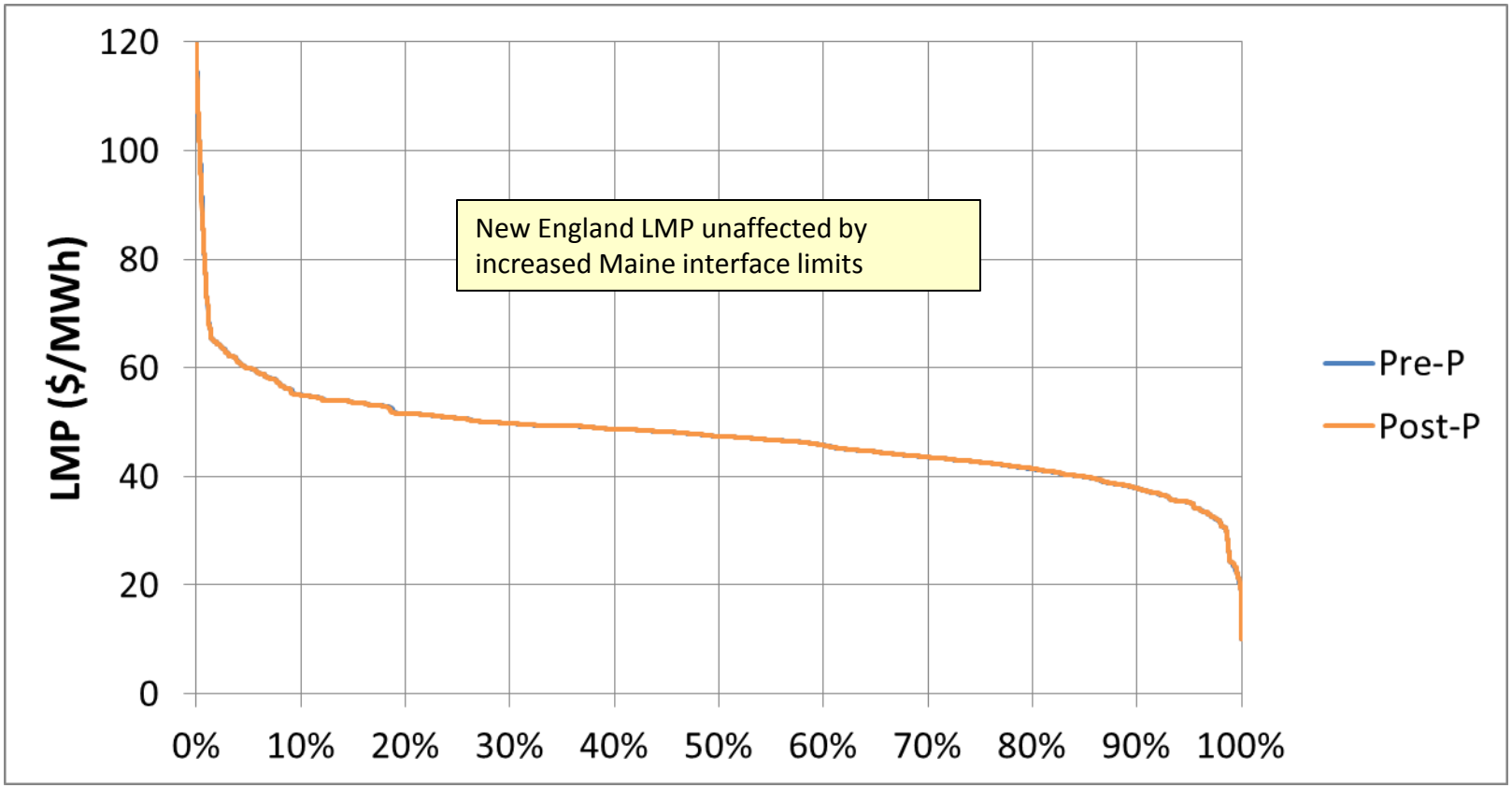
LMP: New England – Less Wind

Duration Curve



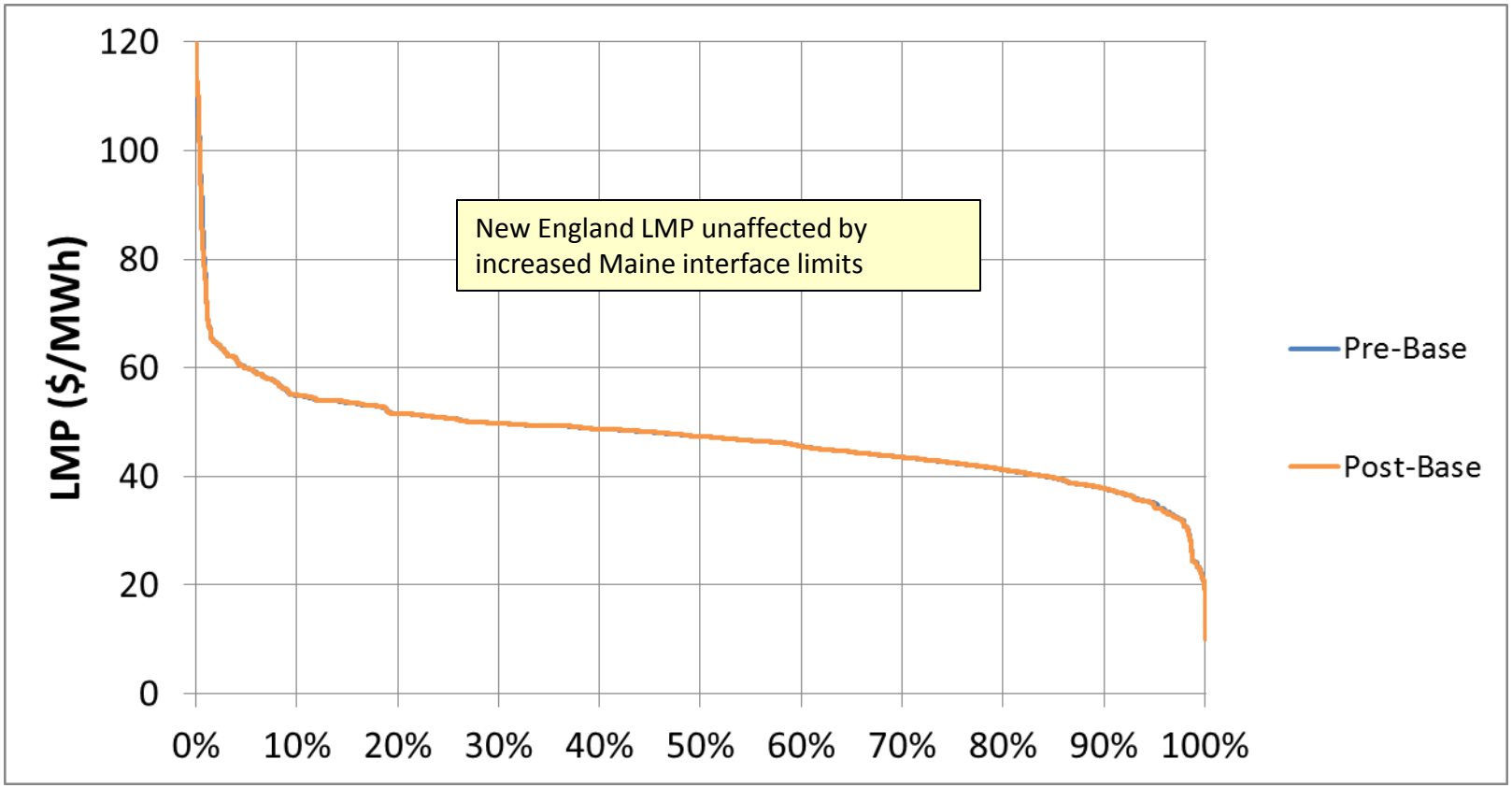
LMP: New England – Proposed Wind

Duration Curve



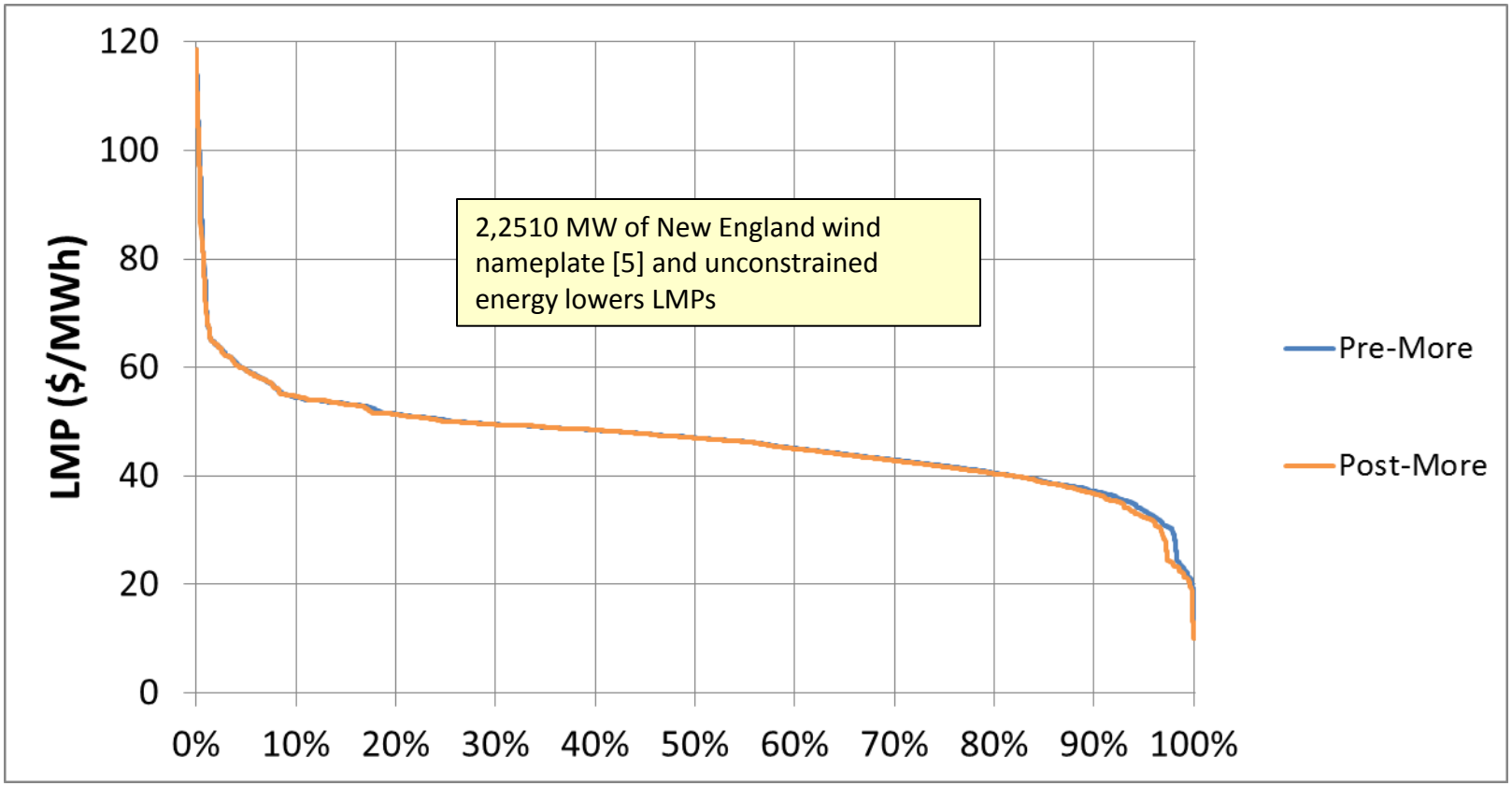
LMP: New England – Basecase Wind

Duration Curve



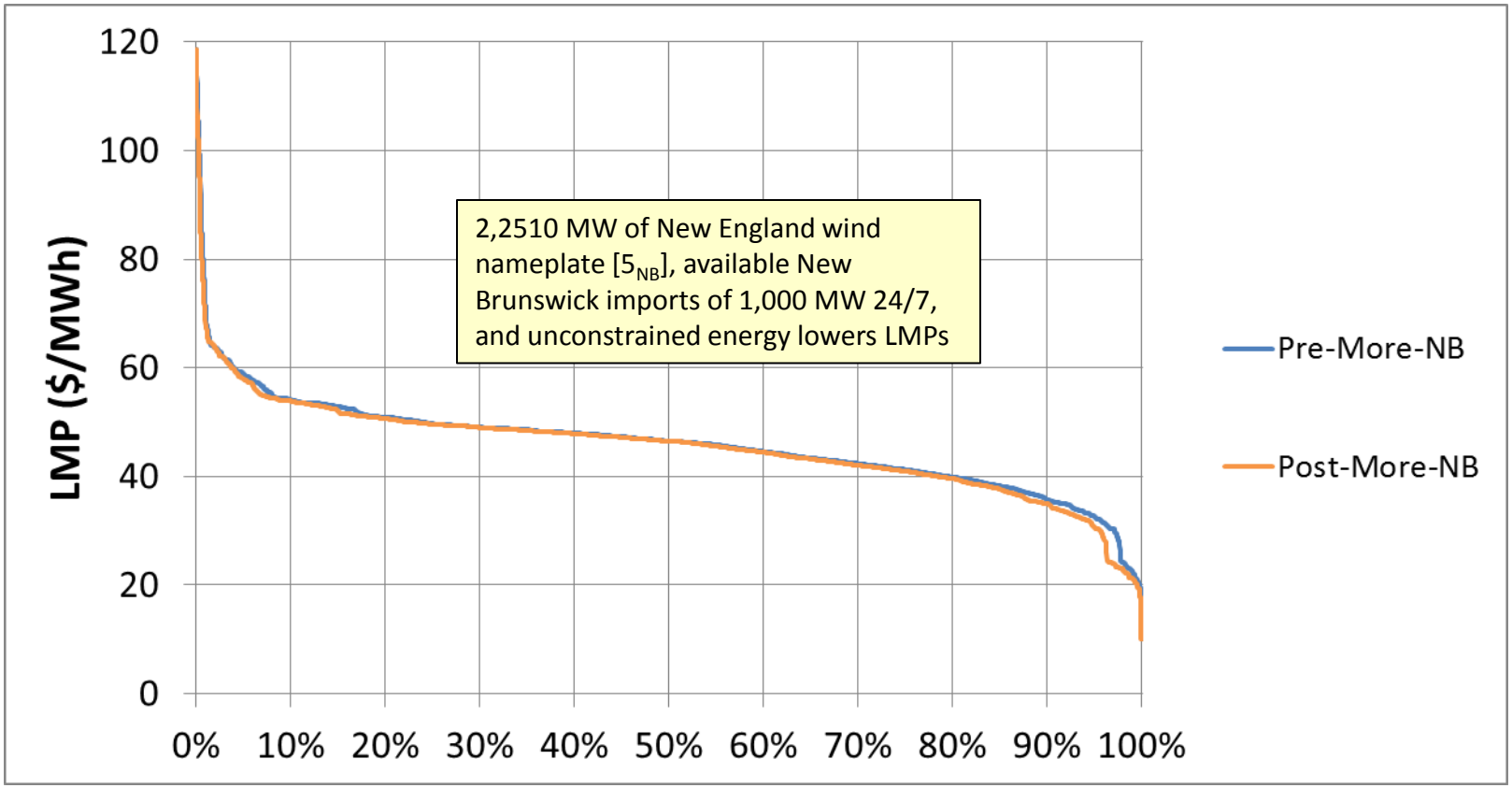
LMP: New England – More Wind

Duration Curve



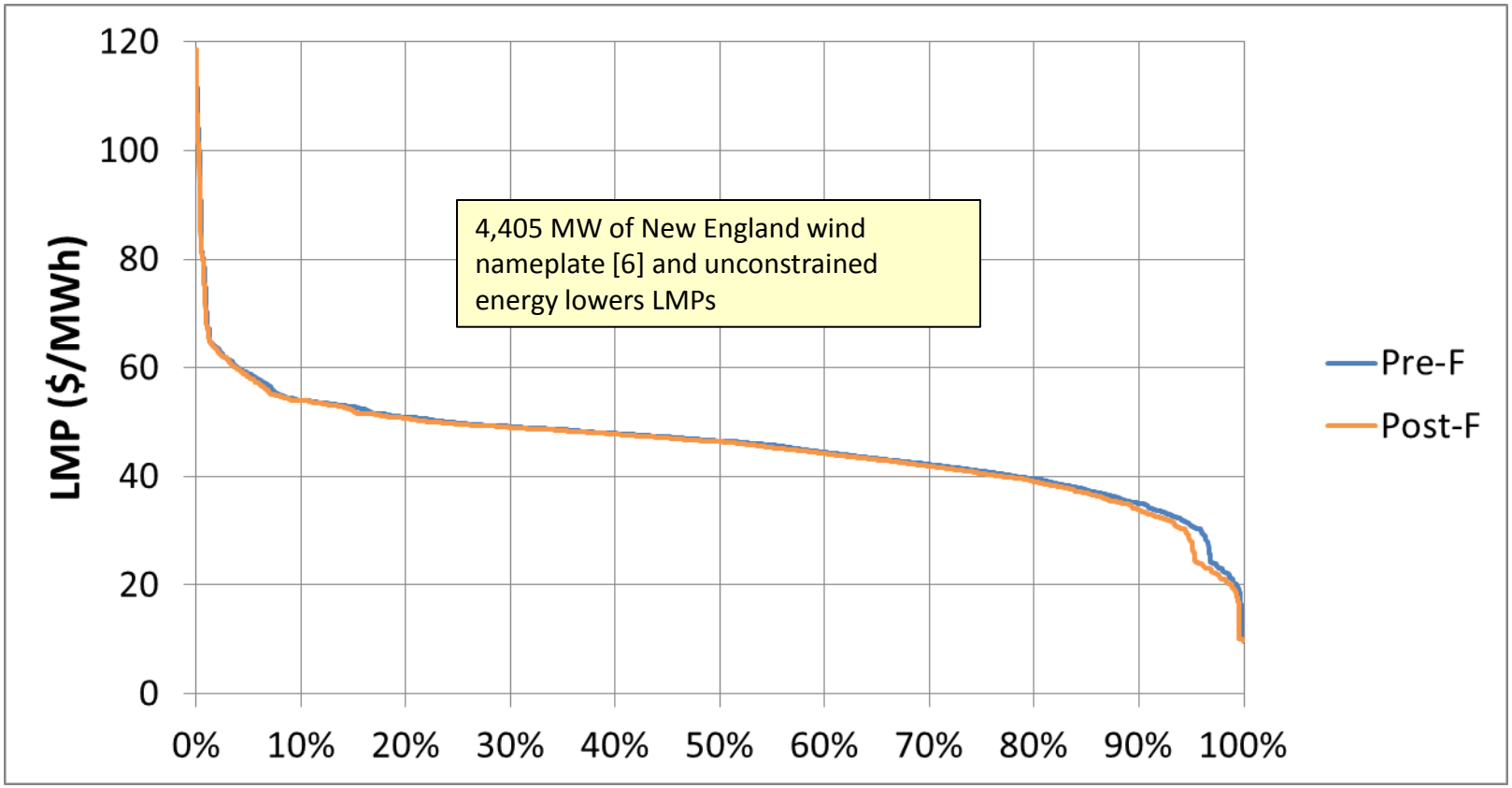
LMP: New England – More Wind with NB at 1000 MW

Duration Curve



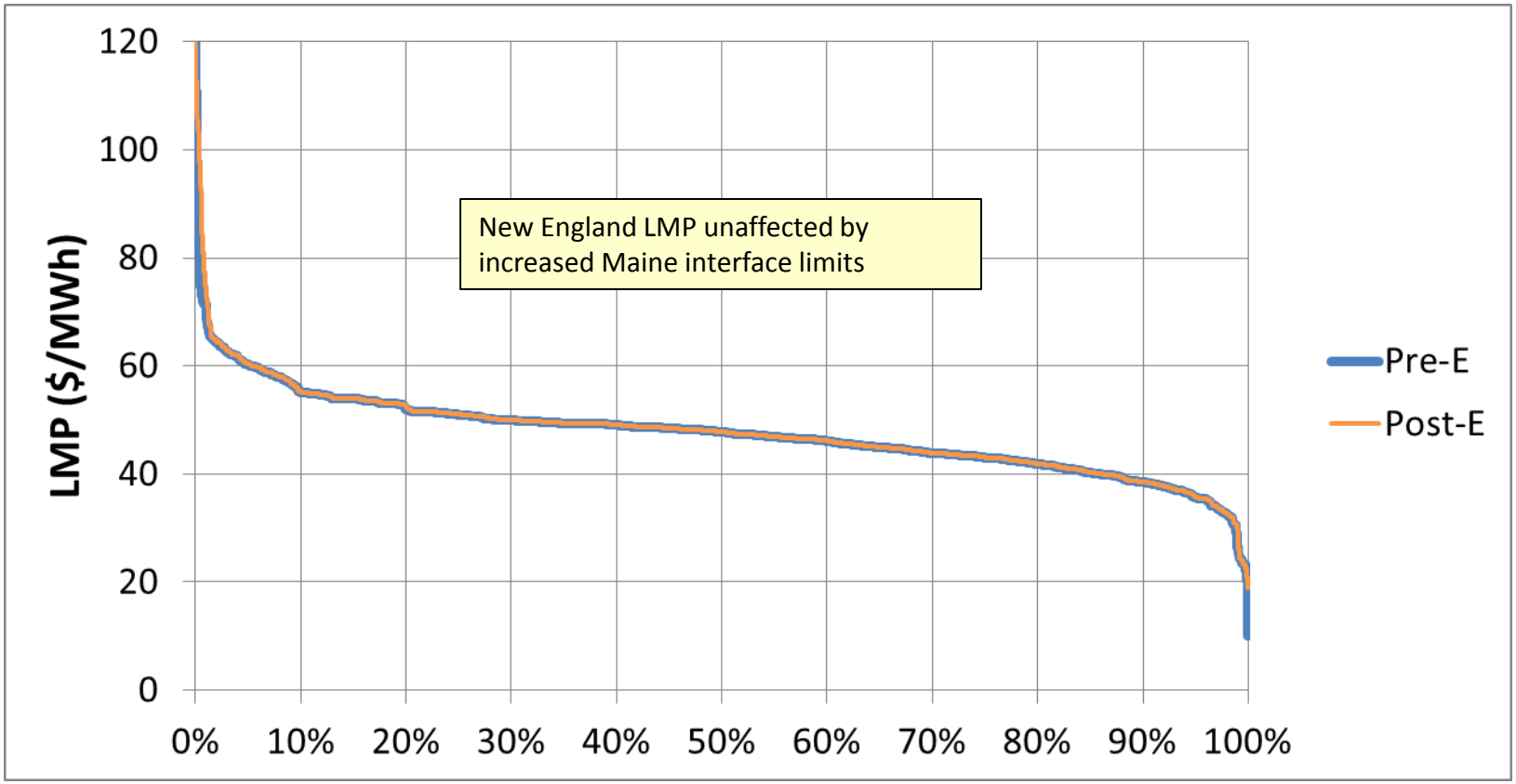
LMP: New England – Future Wind

Duration Curve



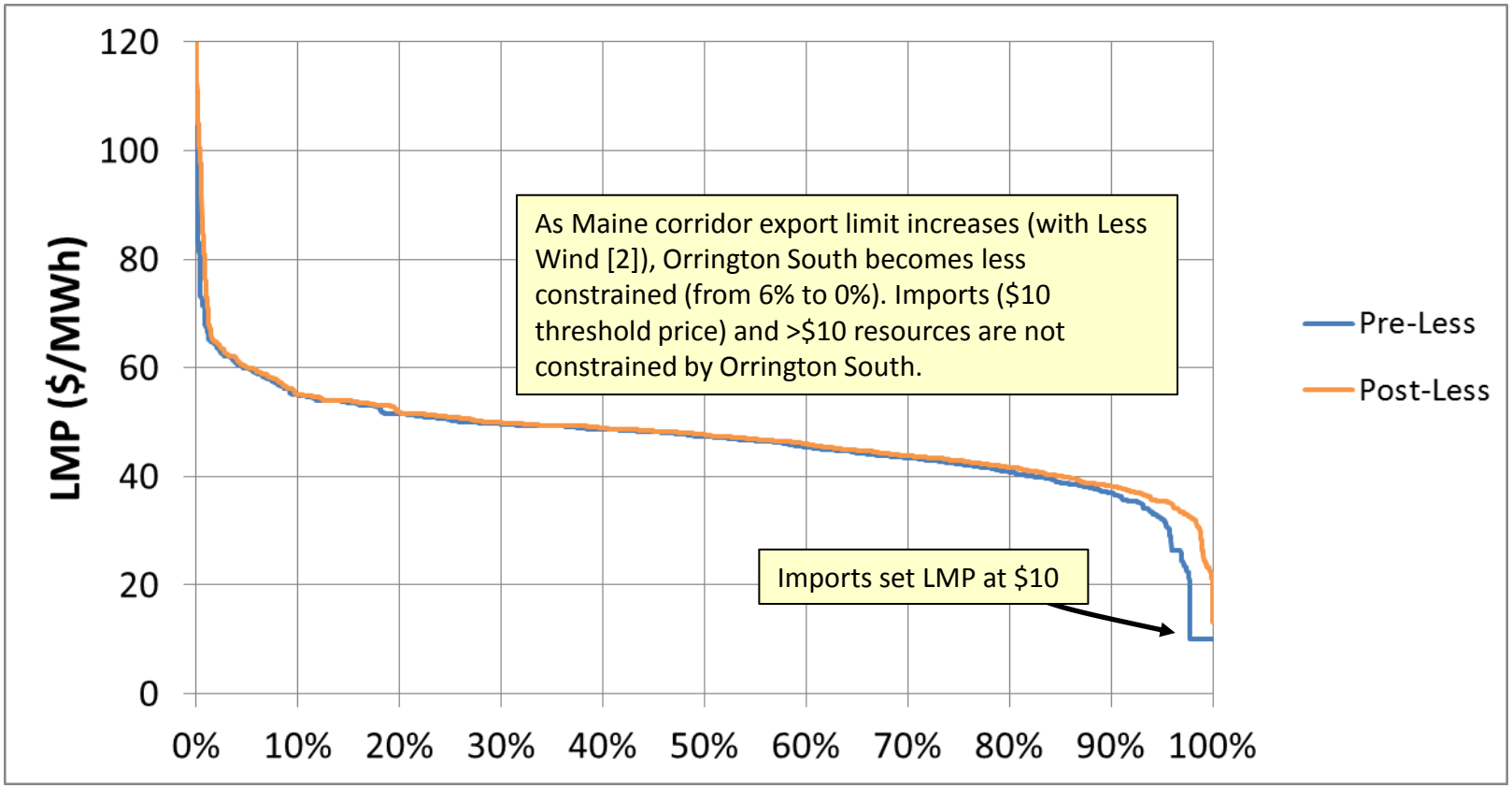
LMP: BHE – Existing Wind

Duration Curve



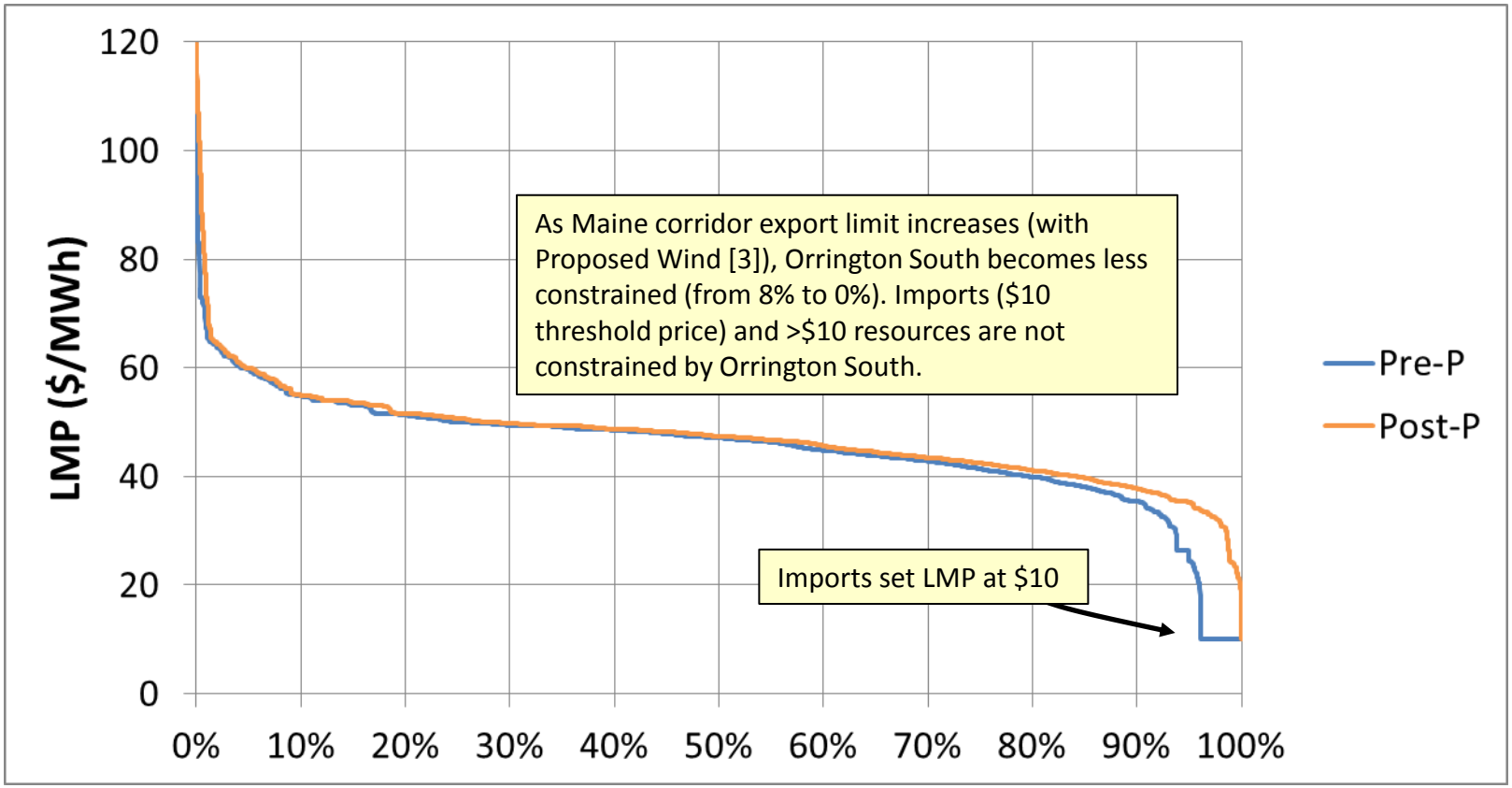
LMP: BHE – Less Wind

Duration Curve



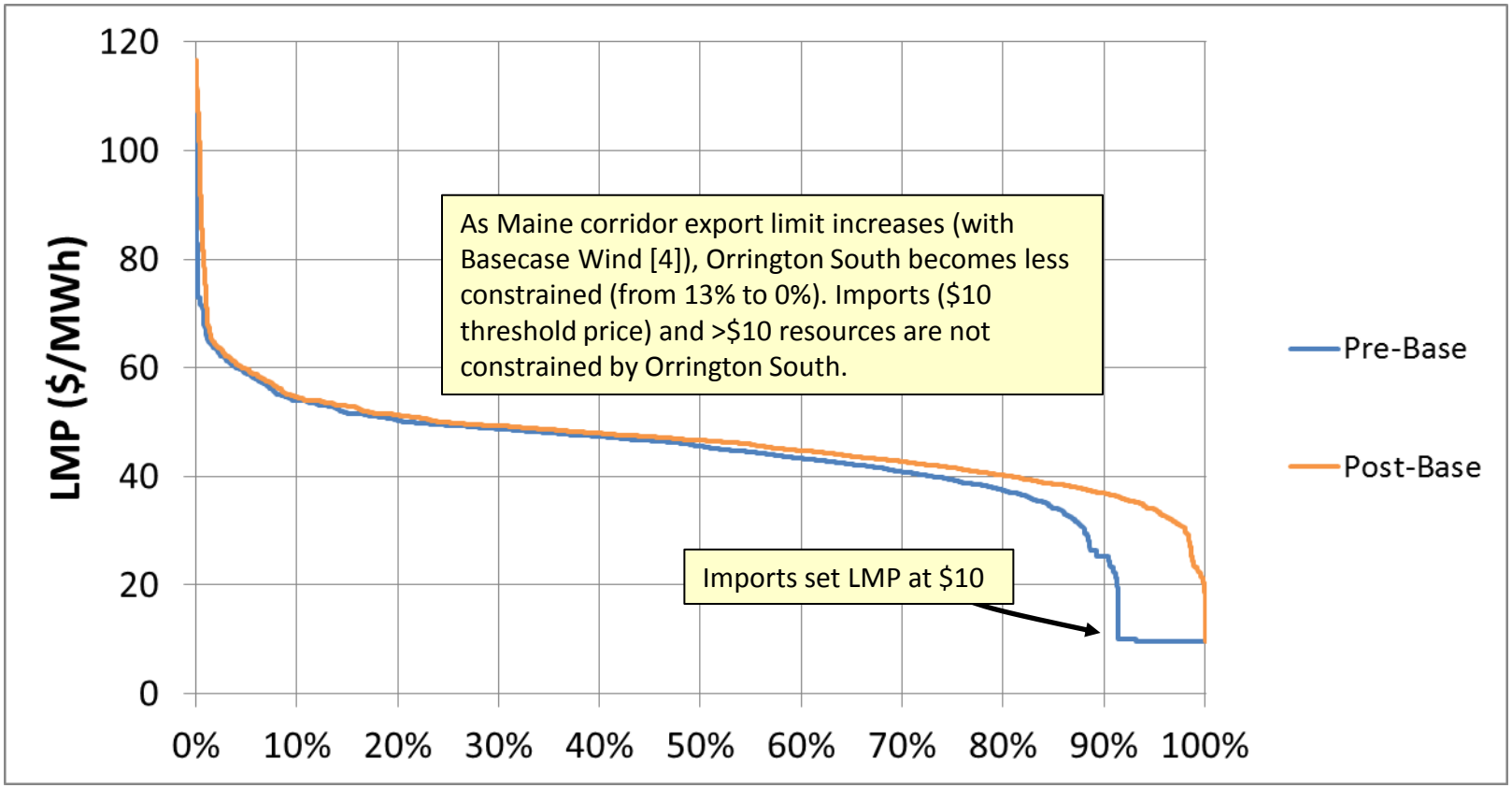
LMP: BHE – Proposed Wind

Duration Curve



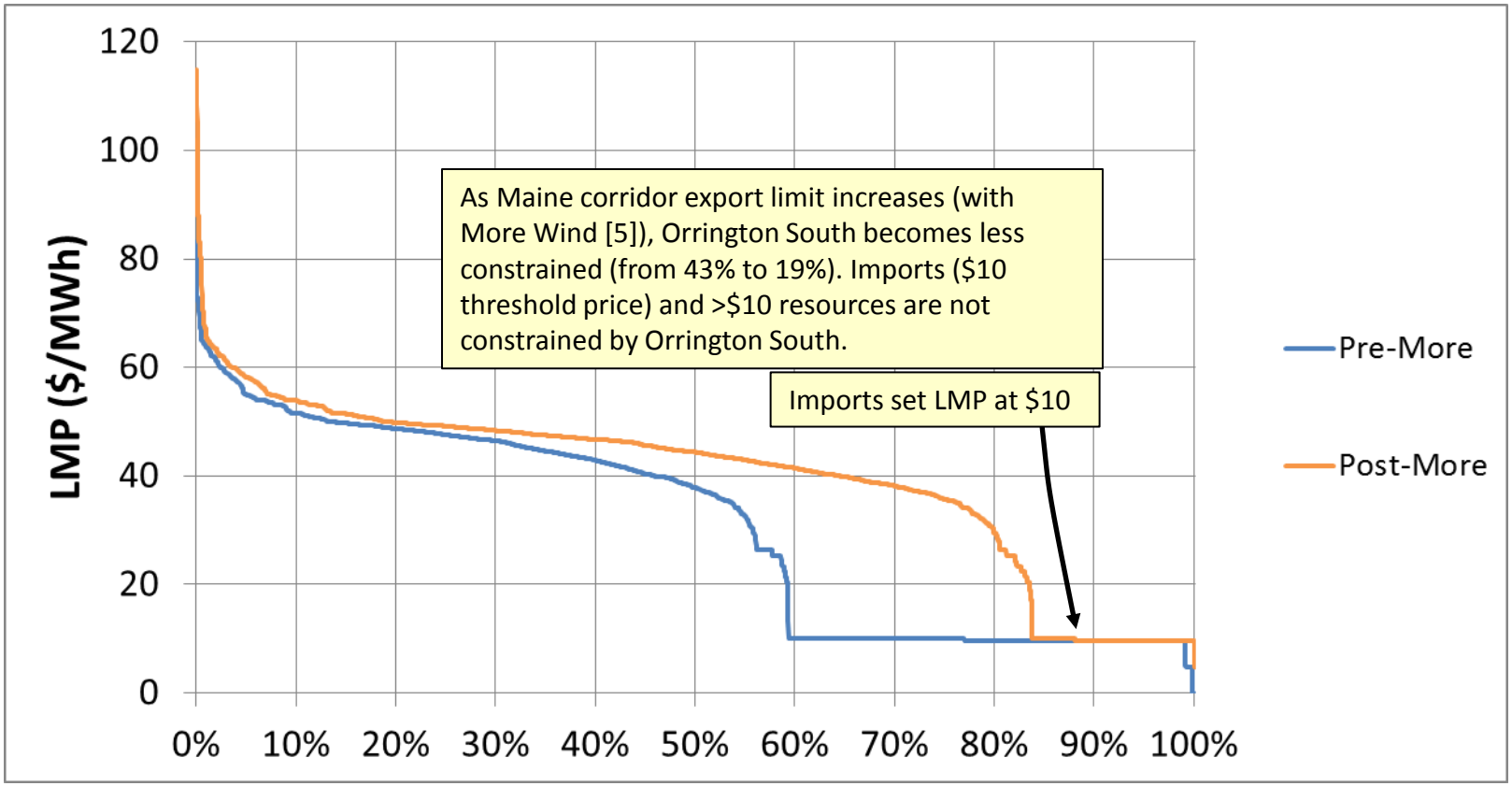
LMP: BHE – Basecase Wind

Duration Curve



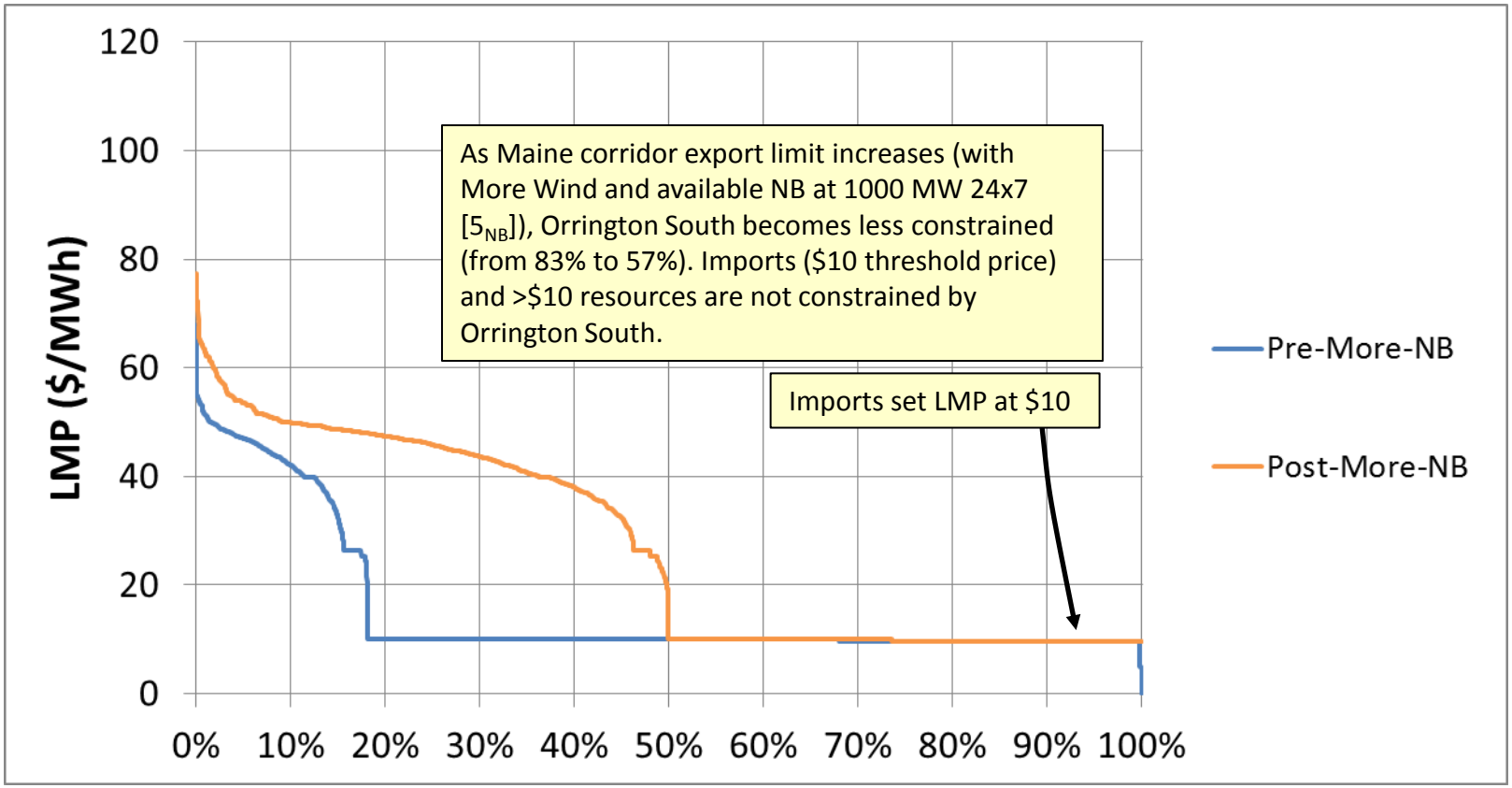
LMP: BHE – More Wind

Duration Curve



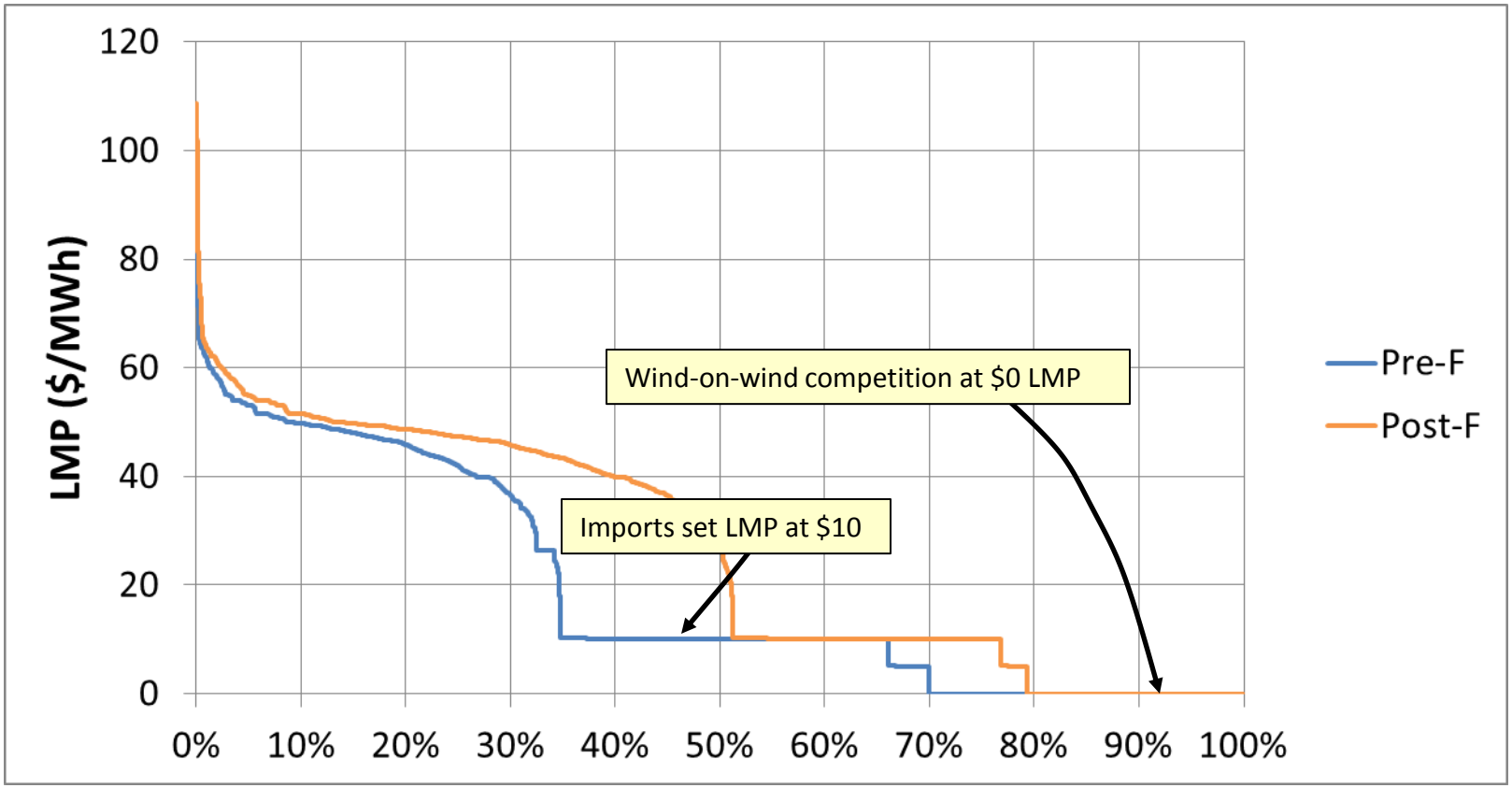
LMP: BHE – More Wind with NB at 1000 MW

Duration Curve



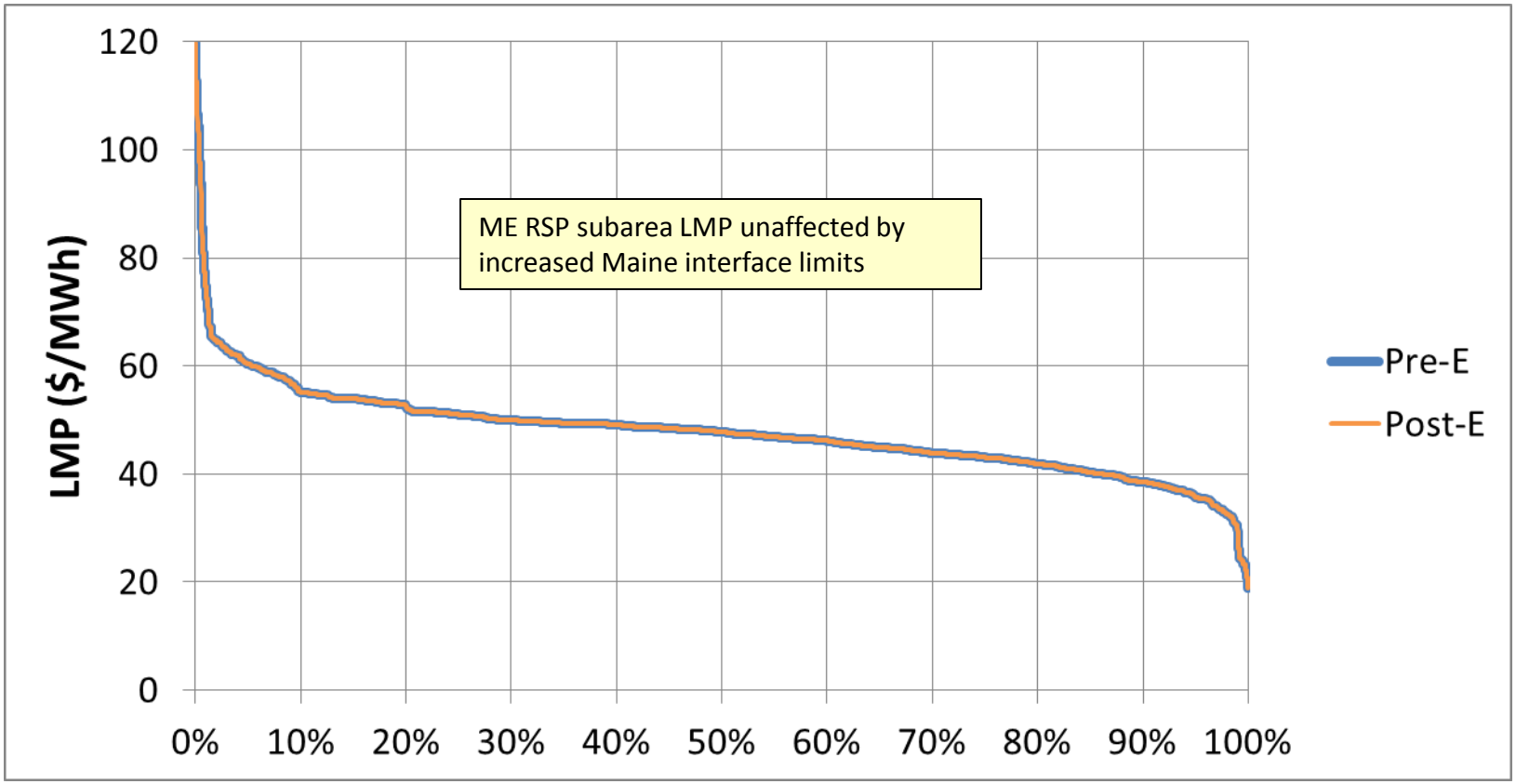
LMP: BHE – Future Wind

Duration Curve



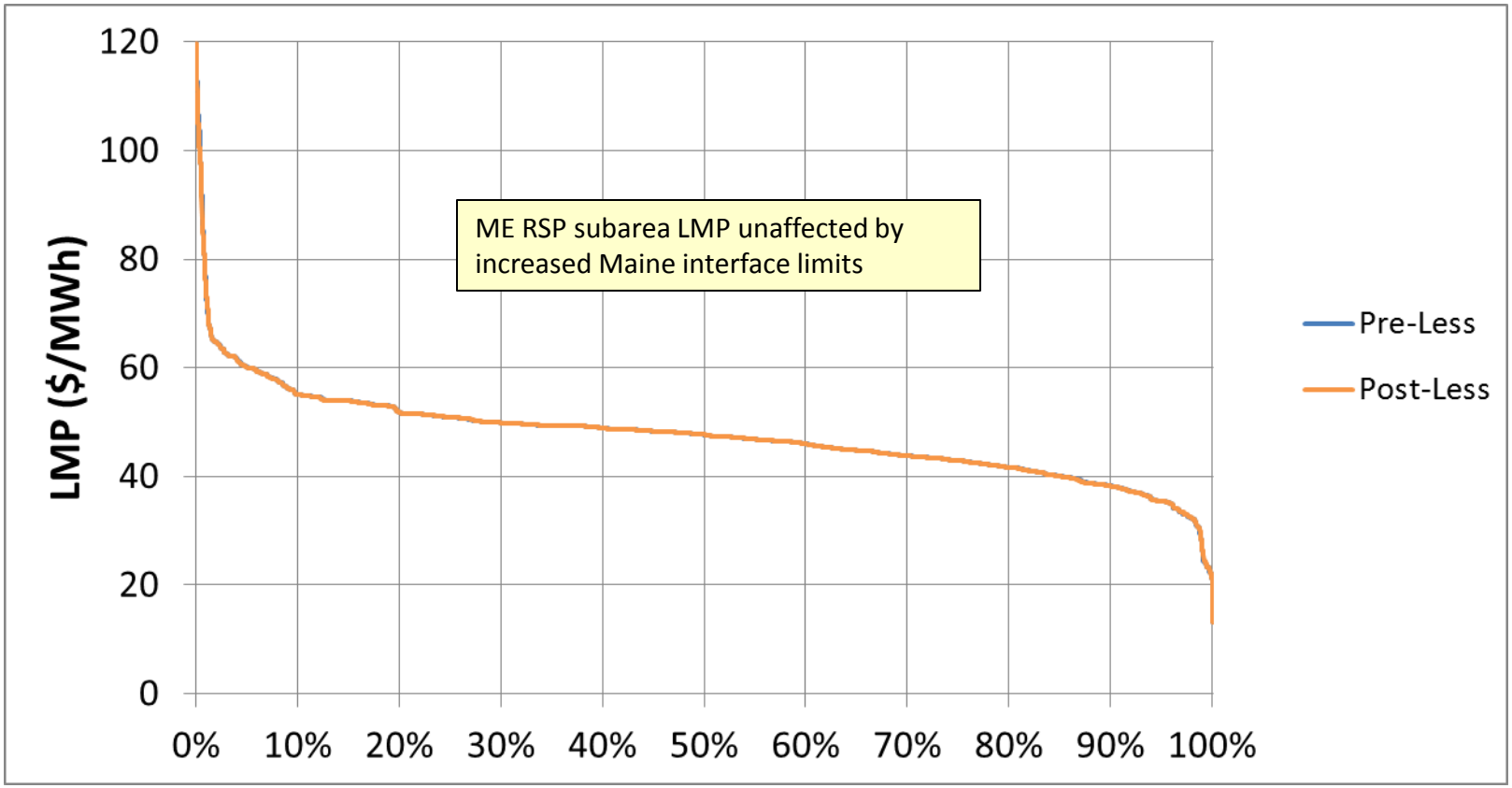
LMP: ME – Existing Wind

Duration Curve



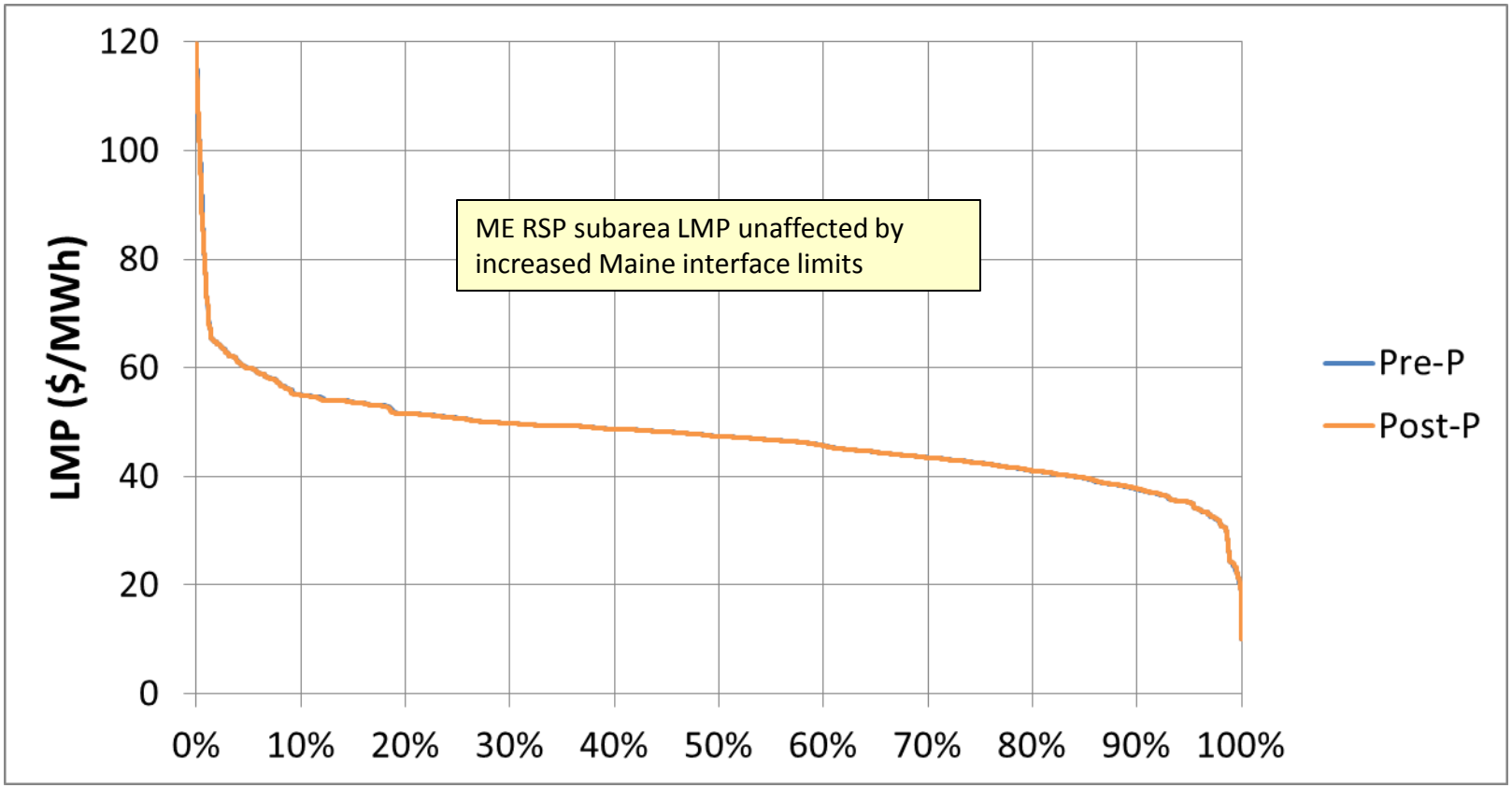
LMP: ME – Less Wind

Duration Curve



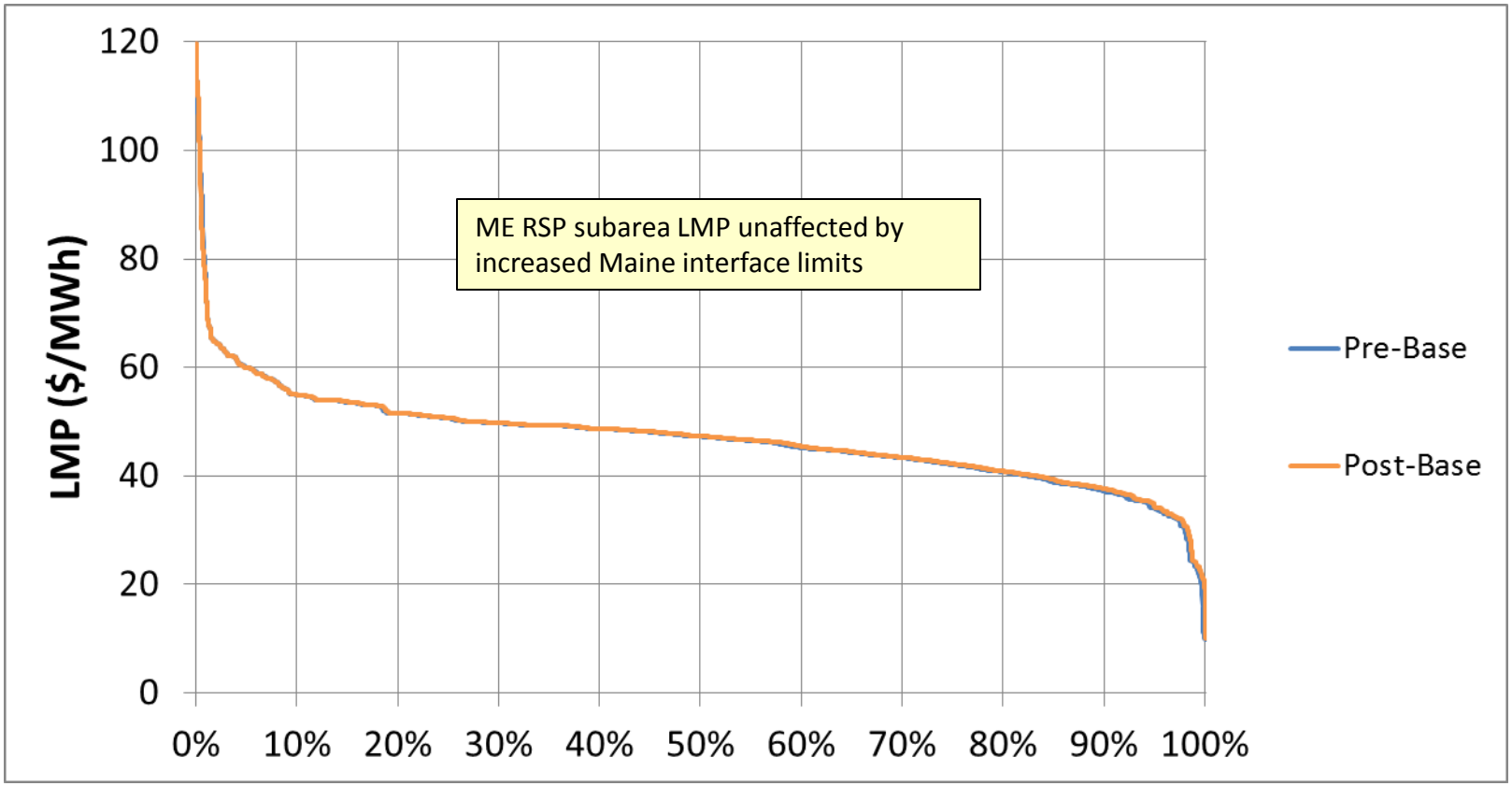
LMP: ME – Proposed Wind

Duration Curve



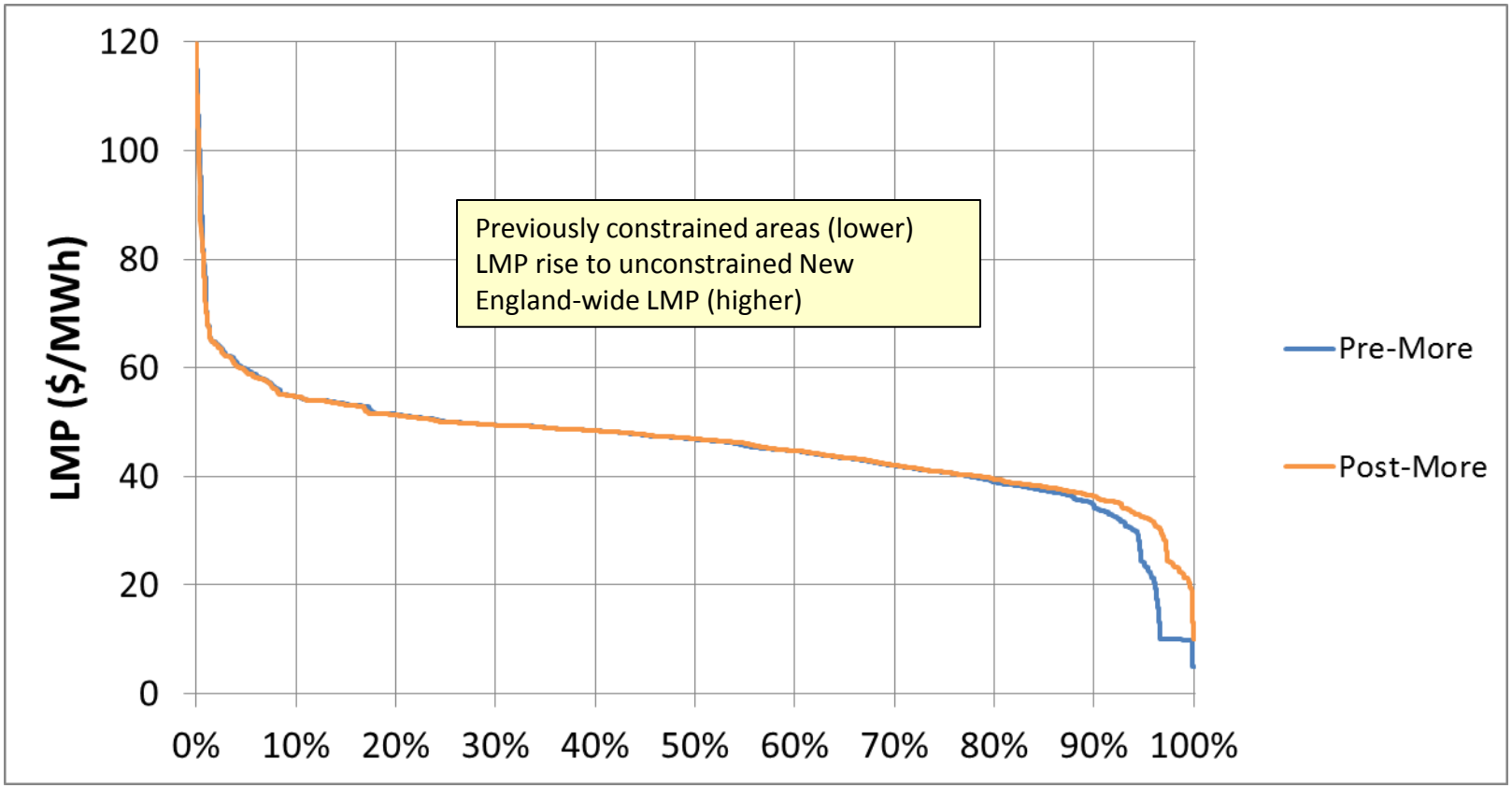
LMP: ME – Basecase Wind

Duration Curve



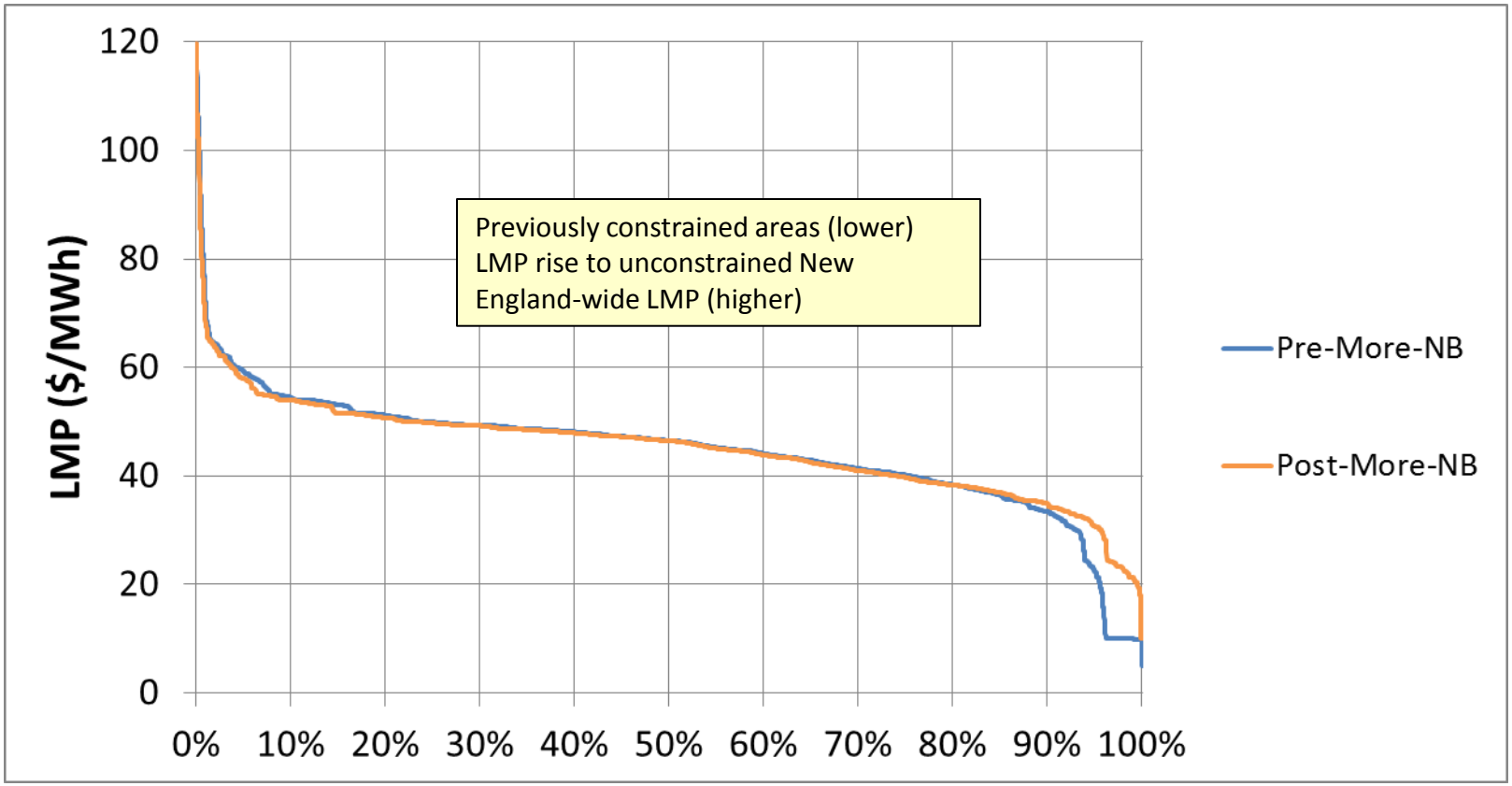
LMP: ME – More Wind

Duration Curve



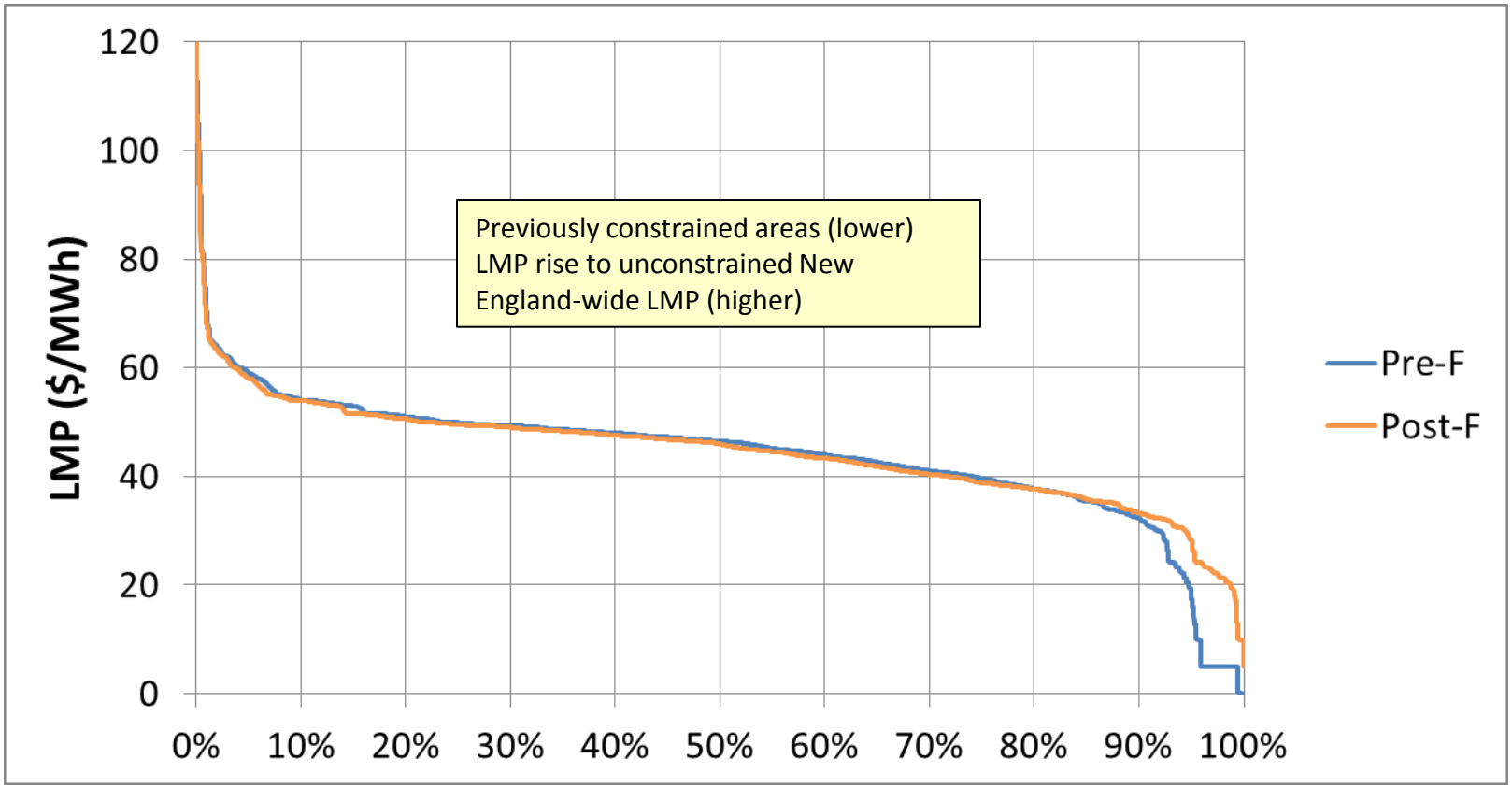
LMP: ME – More Wind with NB at 1000 MW

Duration Curve



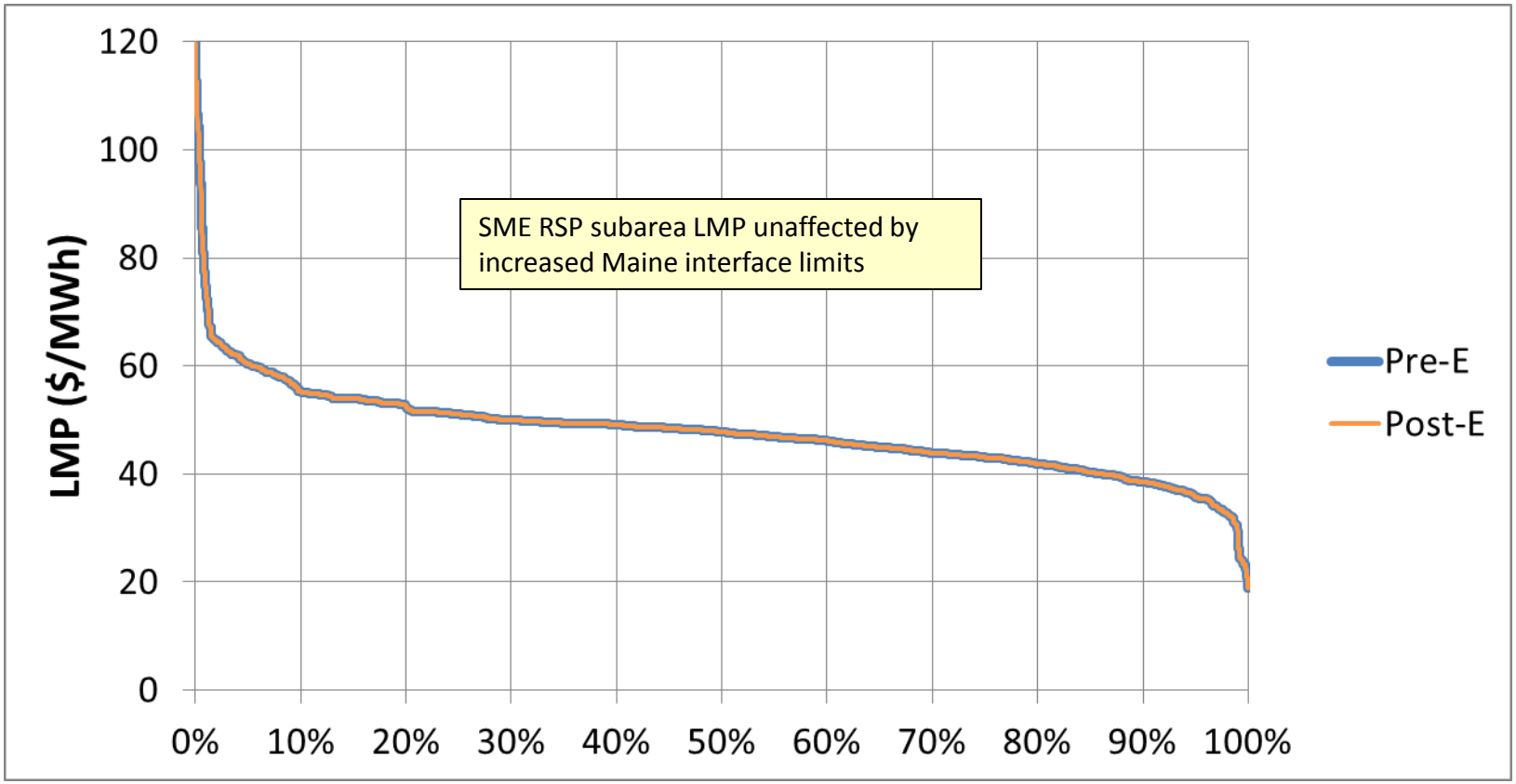
LMP: ME – Future Wind

Duration Curve



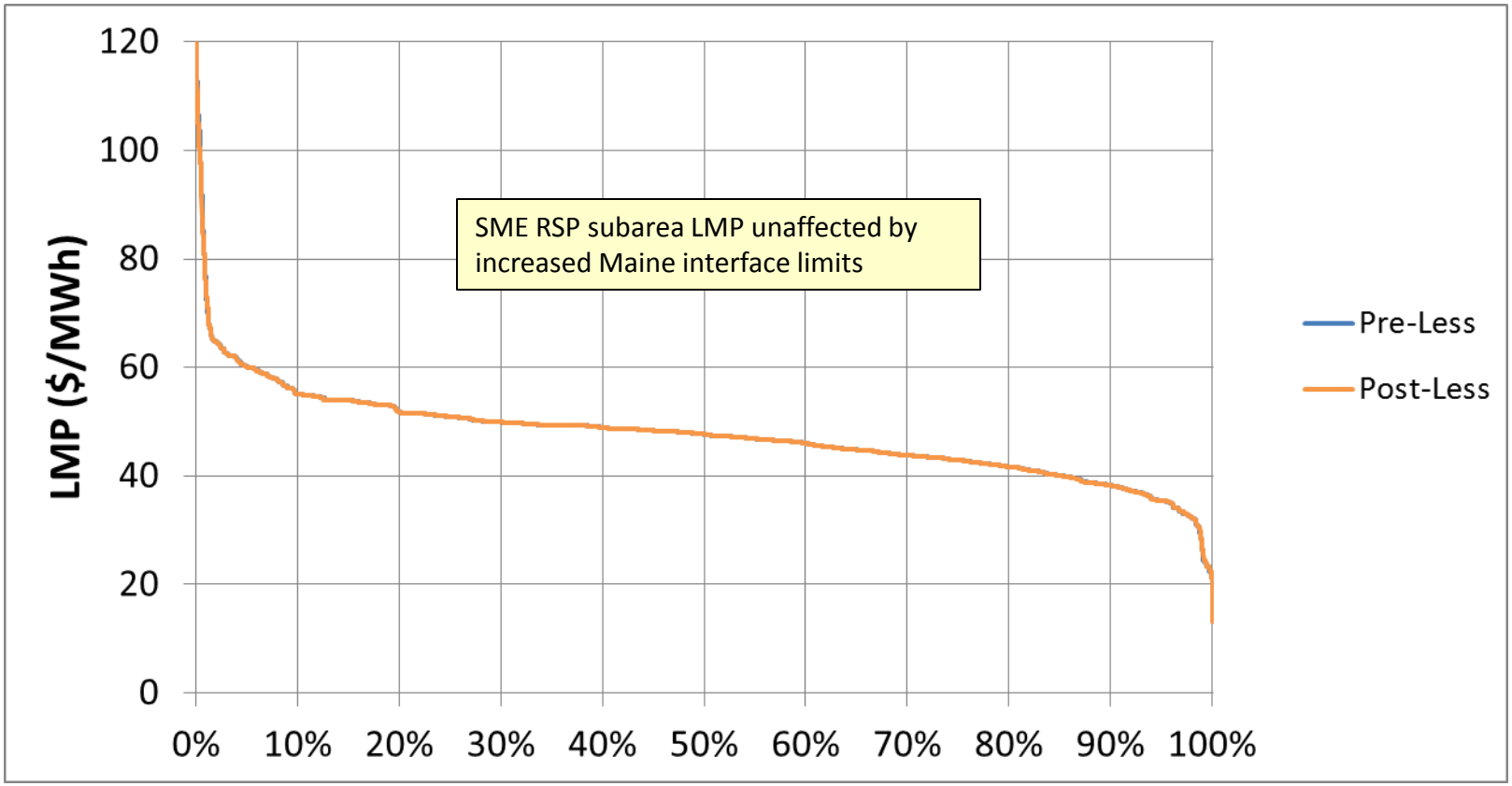
LMP: SME – Existing Wind

Duration Curve



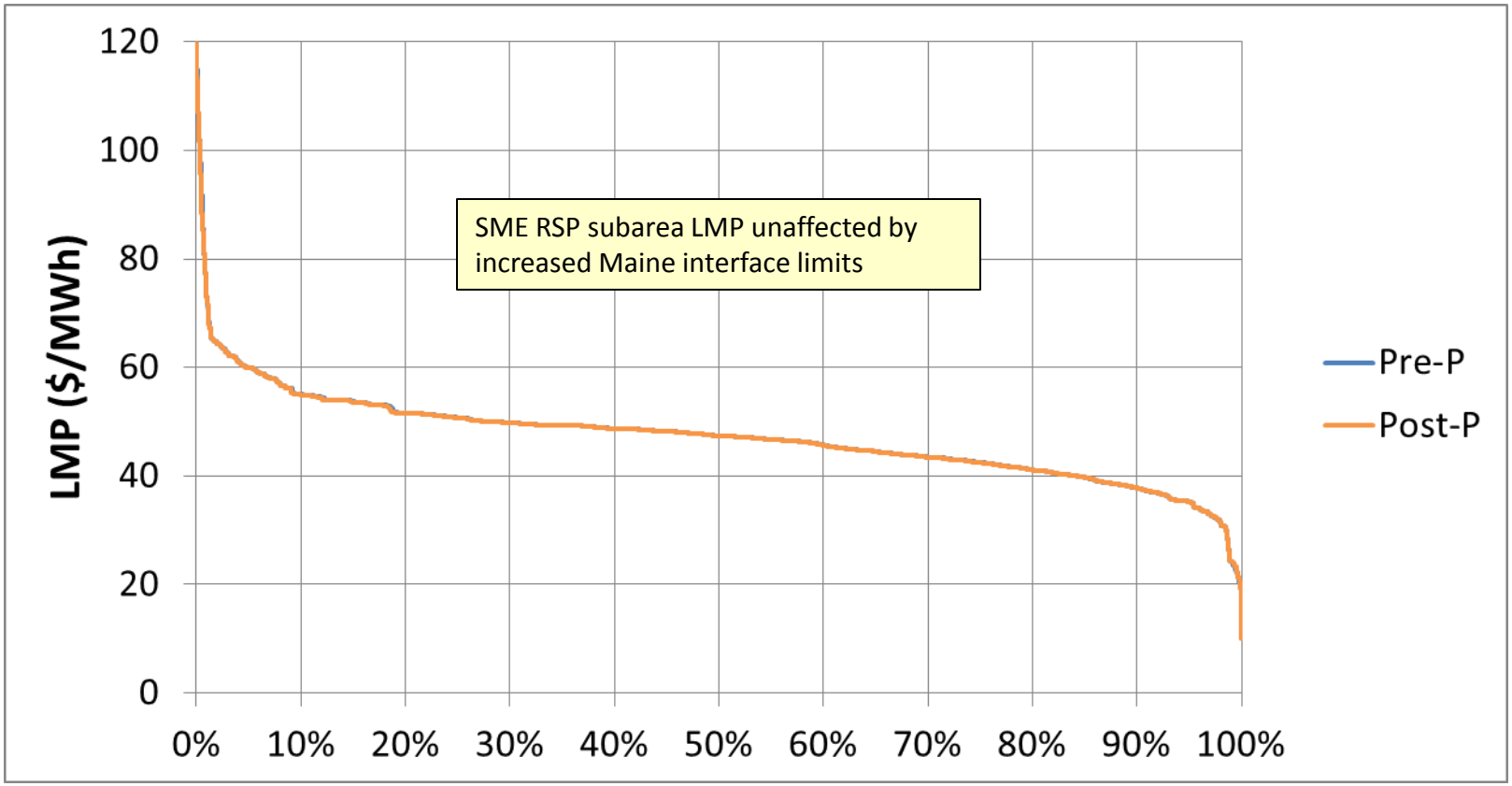
LMP: SME – Less Wind

Duration Curve



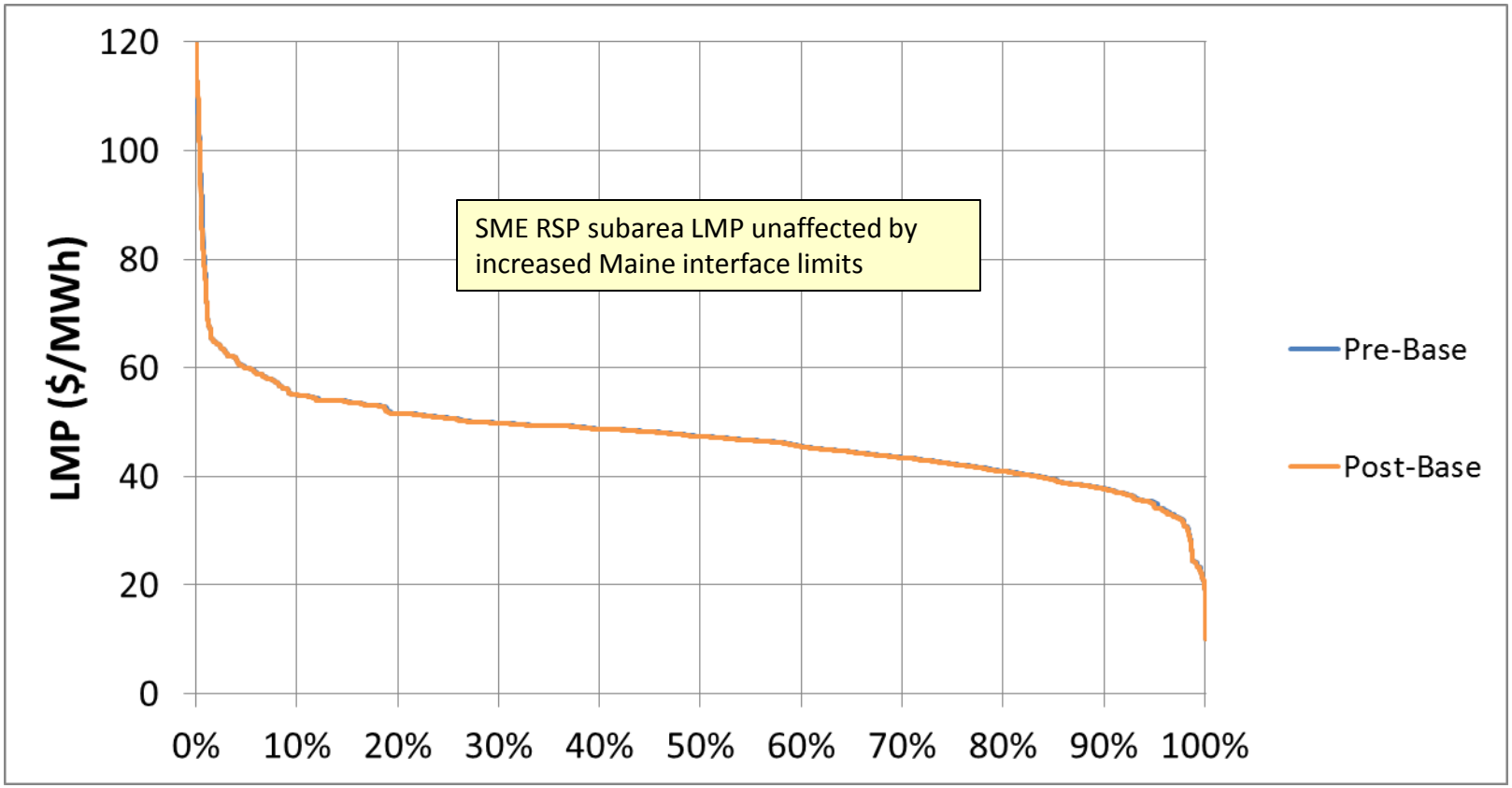
LMP: SME – Proposed Wind

Duration Curve



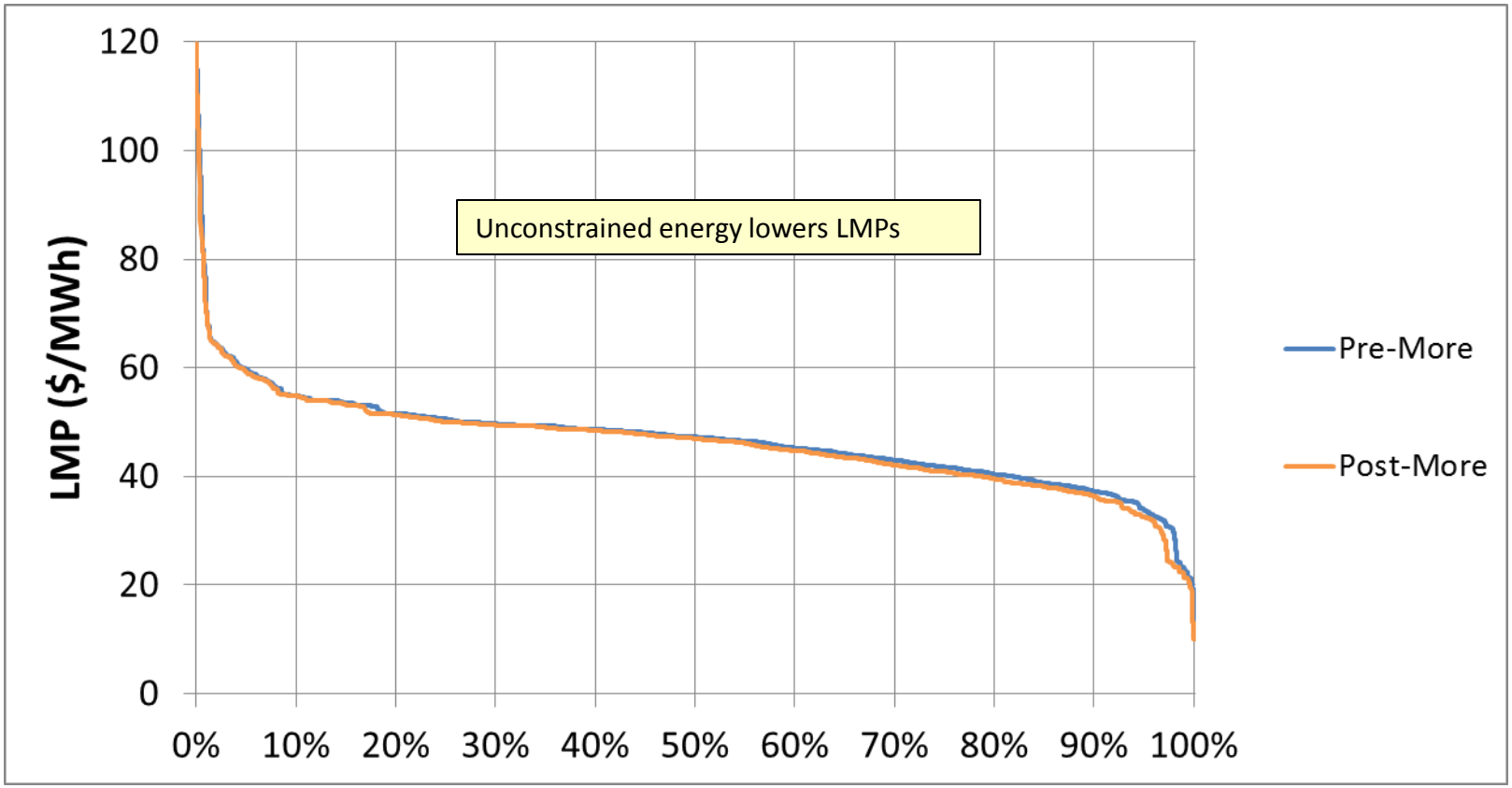
LMP: SME – Basecase Wind

Duration Curve



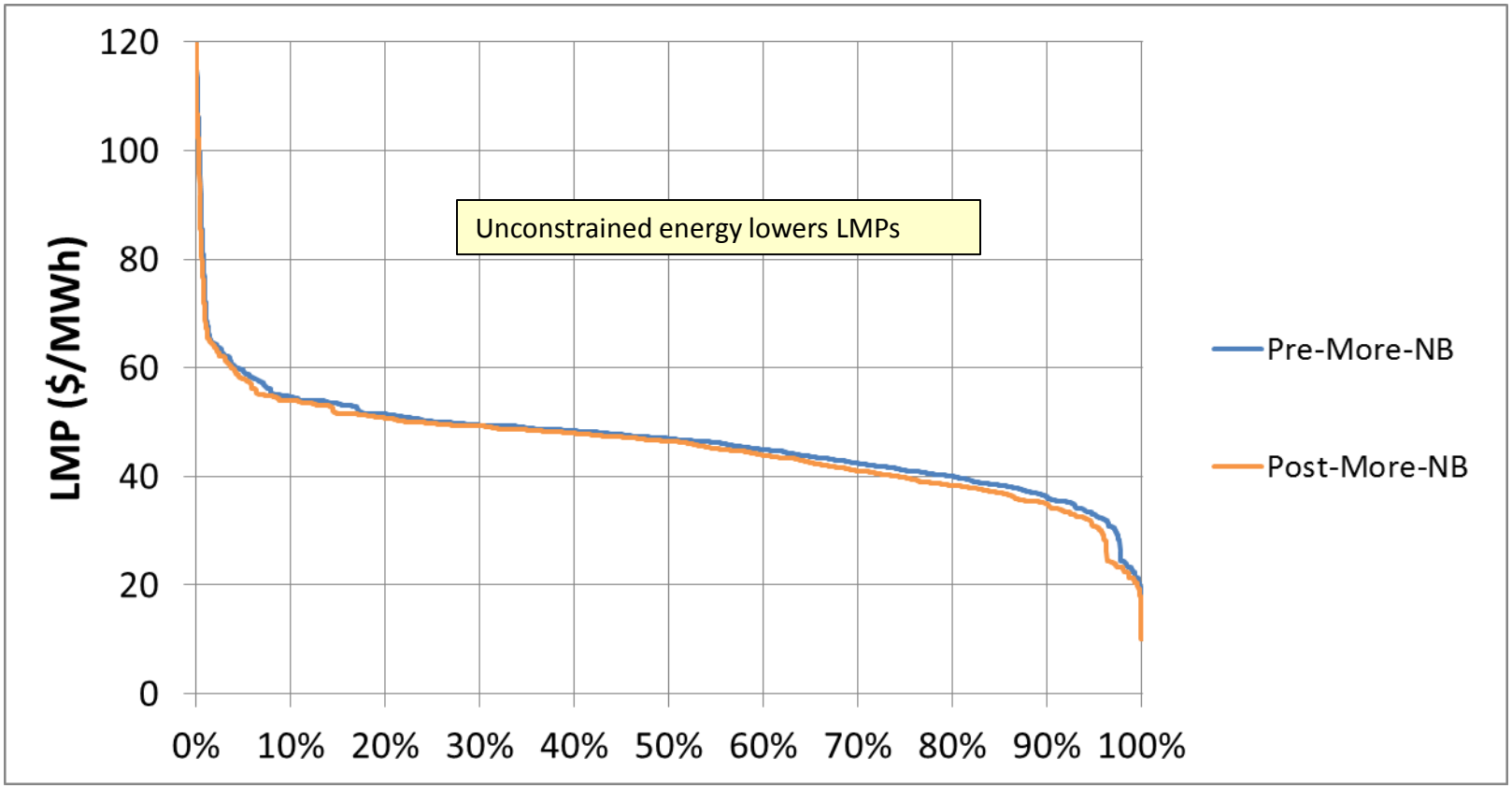
LMP: SME – More Wind

Duration Curve



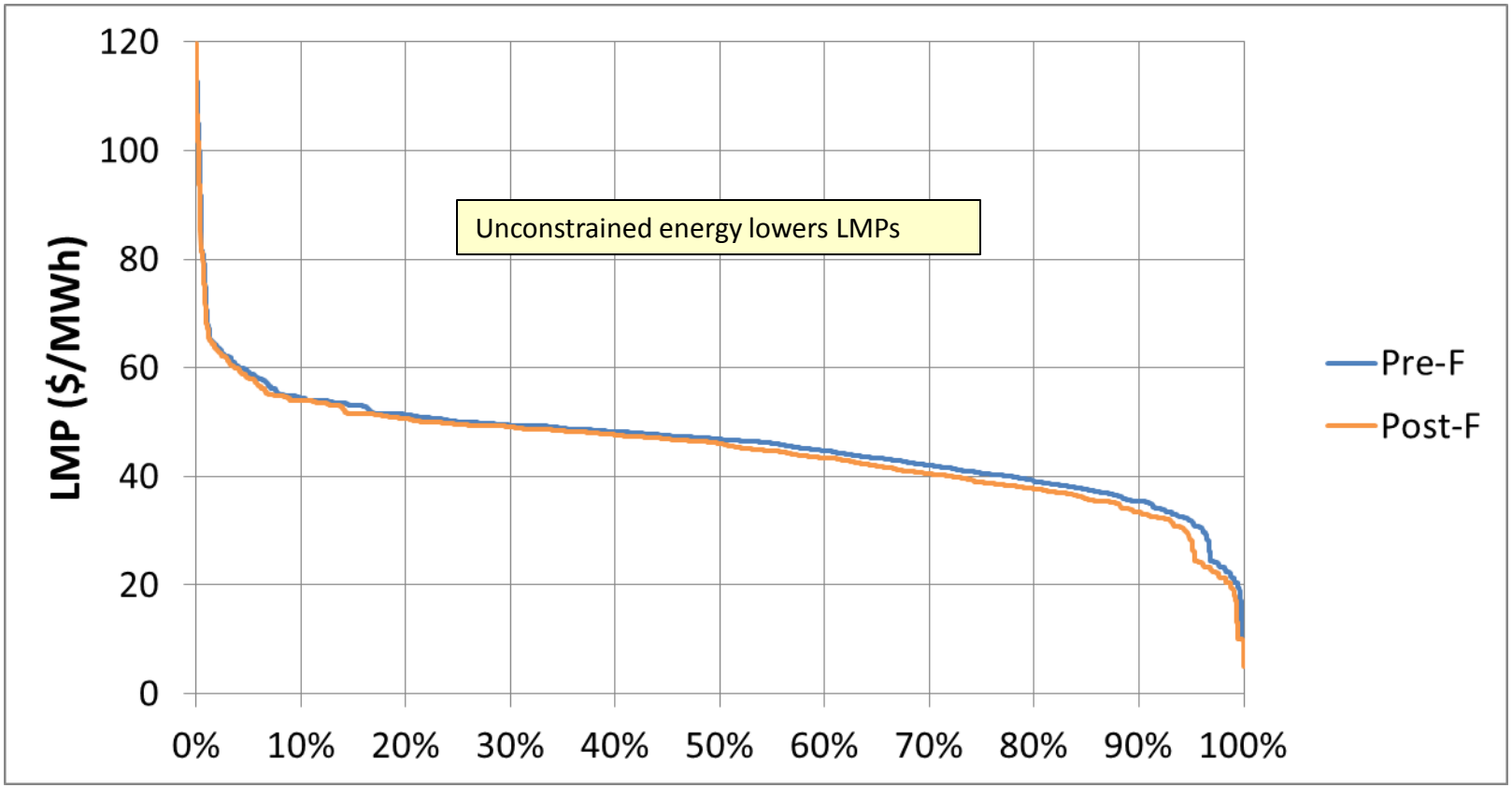
LMP: SME – More Wind with NB at 1000 MW

Duration Curve



LMP: SME – Future Wind

Duration Curve



APPENDIX VII

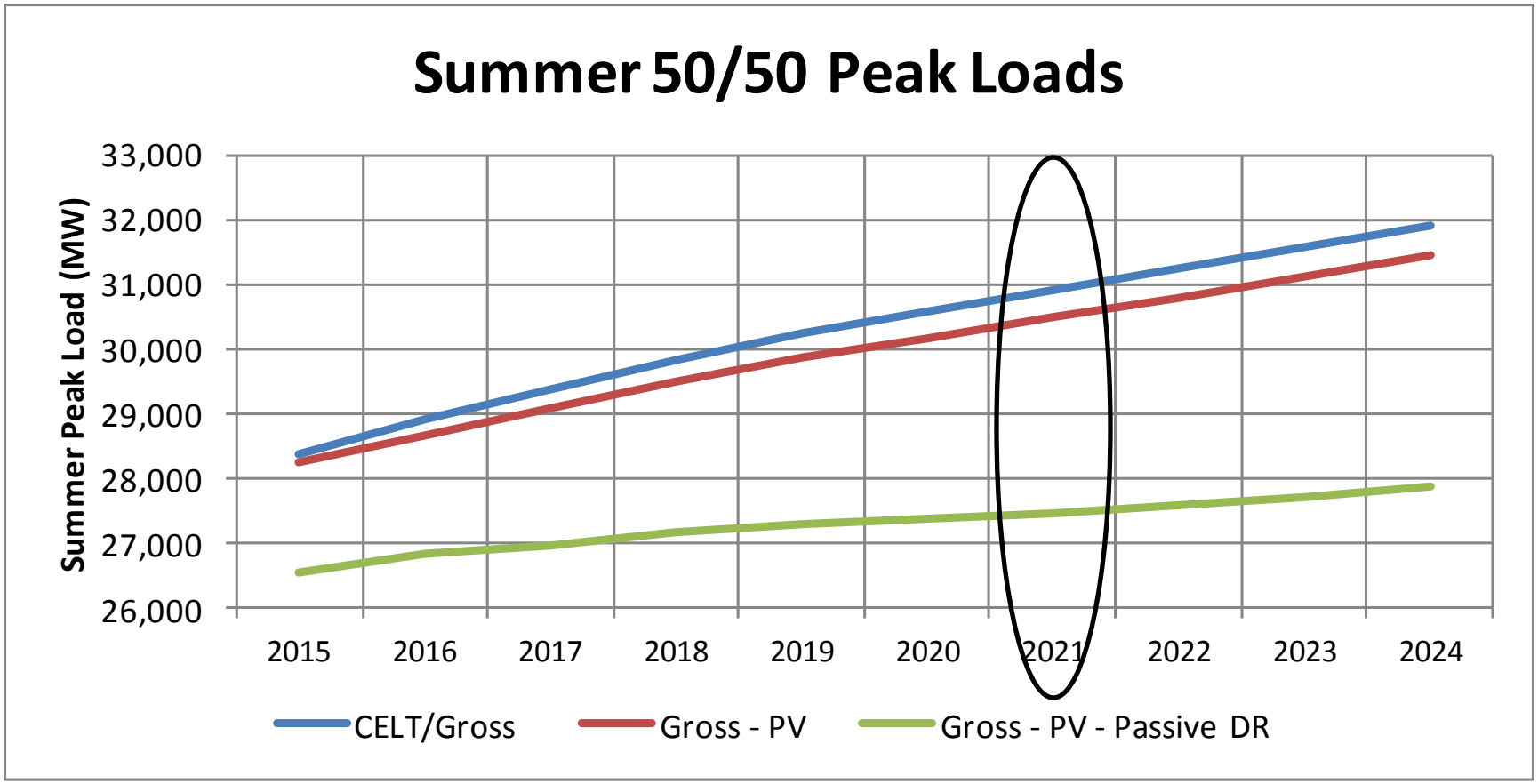
Modeling Assumptions

Base Economic Evaluation Model

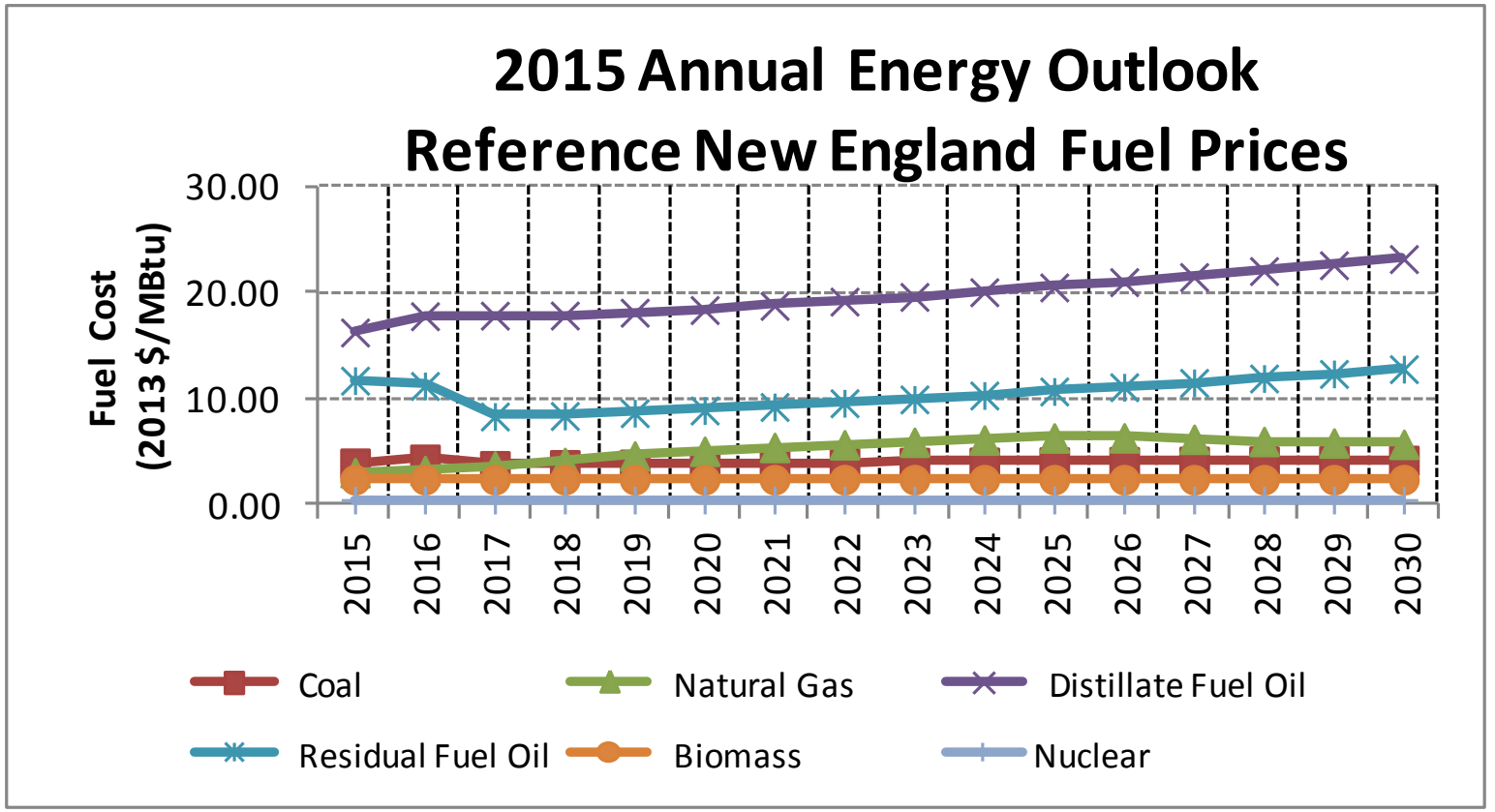
- System conditions consistent with FCA 9 (2018 / 2019) timeframe
  - Resources
  - Transmission capability
  - Demand
- Other economic assumptions
  - Fuel costs
  - Generator availability

Load: New England Peak Load Forecast

Effect of Behind-the-Meter PV and Passive DR



Fuel Price Forecast: EIA's 2015 AEO Base



Resource Assumptions

Overview

- Resources include
  - Cleared in Forward Capacity Auction #9
  - 2015 CELT resources
  - Other energy only resources
  - Wind in each study are specified by the economic study request
    - Wind resource production modeled based on 2012 NREL data
- Demand resources
  - Energy efficiency (EE) and photovoltaic (PV) – including forecasts
  - Active demand resources (DR)
  - Hourly profile based on 2006 weather (consistent with wind and PV data)

Resource Assumptions

Overview (Cont.)

- Dispatch threshold price
  1) Wind ($0/MWh)
  2) Hydro ($5/MWh)
  3) Imports ($10/MWh)

  *Note: Production cost is zero for these resources. An LMP below the threshold price will result in a resource self curtailing.
- Resources modeled as hourly profiles
  - EE, DR, RTEG
  - PV, wind,
  - Hydro
  - Imports
- Wind profiles based on 2012 NREL data
  - Capacity factors range is from 31% to 41%

Resource Assumptions

Thermal Units

- Points of interconnection for resources based on ISO-NE TPL case*
- Existing thermal units
  - Simulation study production cost parameters: Heat rate curve, Start-up cost, No-load cost and etc.
  - Primary and secondary fuel definition are based on 2015 CELT
- Operational limits
  - Minimum up time, Minimum down time and Start up time
  - Ramp rate limits
- Energy limits: assume no energy limits
- Future thermal units
  - Production cost parameters based on: unit type, technology and rating

*Source: NERC TPL Study 2021 Summer Peak Case (https://smd.iso-ne.com/operations-services/ceii/pac/2015/08/final_nerc_tpl_study_2021_summer_peak_case.zip)

Resource Assumptions

Thermal Units (Cont.)

- Combined cycle units
  - Individual machines from a combined cycle plant are modeled as a single generator at one of the machine's buses
- Outages
  - Thermal units derated to reflect the forced outages using Equivalent Forced Outage Rate (EFOR)
  - Planned maintenance schedule will be developed and held constant across cases

Resource Assumptions

Hydro Units

- Hydro units modeled using
  - Hourly energy generation profiles
  - Peak shaving bias
  - Used in previous economic studies
- Hydro units are assumed to have no maintenance outage

Resource Assumptions

Pumped Storage Units

- Modeled in peak shaving mode
  - Pumping during off-peak hours
  - Generating during on-peak hours
- Pumped storage physical parameters
  - Minimum pond size
  - Maximum pond size
  - Plant capacity factor
  - Based on assumptions used in previous studies

Resource Assumptions

Photovoltaic

- 2015 PV Forecast used for simulation year 2021
- Represented by a time stamped, chronological hourly solar PV profile
- National Renewable Energy Laboratory (NREL) has developed a simulated solar PV dataset based on 2006 weather
  - New England specific
  - Profiles by RSP area available
- Consistent with methodology used for wind profile

Resource Assumptions

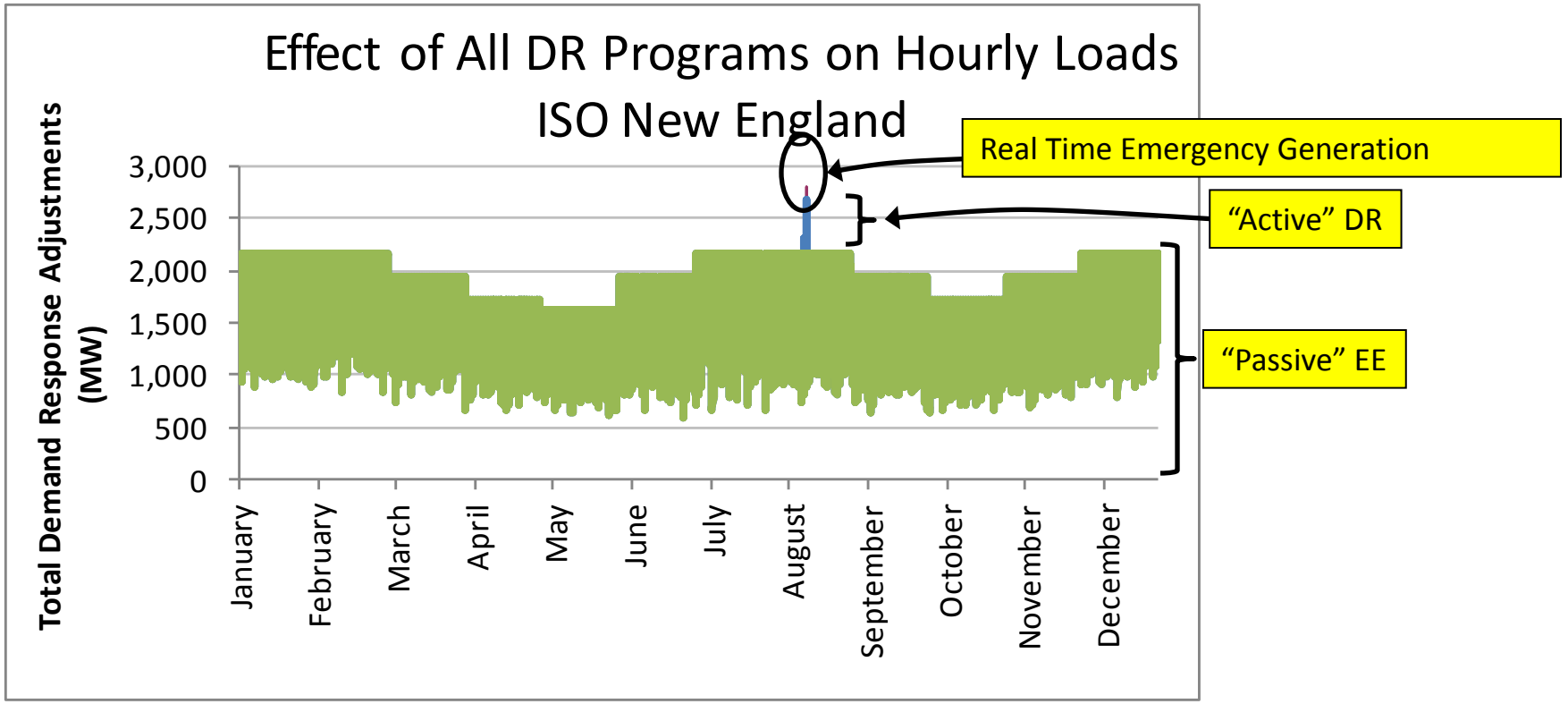
Demand Resources

- Active DR, EE and RTEG are modeled explicitly
  - Hourly profile for each category of demand side resource
  - FCA amounts used through capacity commitment periods
- Forecasts
  - The latest EE forecast through the year 2024 is reflected
  - Active DR and RTEG are held constant for years beyond capacity commitment period (same as other FCM resources)

Resource Assumptions

Demand Resources (Cont.)

- Hourly profiles are used to explicitly reflect energy efficiency (EE), active demand resources (DR) and real-time emergency generation (RTEG)



Operating Reserve Modeling

- Operating reserve requirement is determined in real time
  - Based on the first and second largest system contingencies
  - Resource profiles (hydro / wind / interchange etc) excluded
- Current operating reserve requirements
  - 125% of the first contingency in ten minutes split between
    - Ten-Minute Spinning Reserve (TMSR) = 50%
    - Ten-Minute Non-Spinning Reserve (TMNSR) = 50%
  - Thirty-Minute Operation Reserve (TMOR) not modeled
    - Assumed to be adequate
    - Provided by hydro, pumped storage and quick-start resources
    - Reasonable assumption except, possibly, at times of peak loads

Network Modeling

- Modeling of transmission network
  - ISO-NE TPL case*
  - Detailed modeling in ISO-NE region only
  - Representation for neighboring systems
    - Detailed network modeling not required for NY, NB and HQ
    - Base flows based on historical line flows

*Source: NERC TPL Study 2021 Summer Peak Case (https://smd.iso-ne.com/operations-services/ceii/pac/2015/08/final_nerc_tpl_study_2021_summer_peak_case.zip)

Network Modeling (cont)

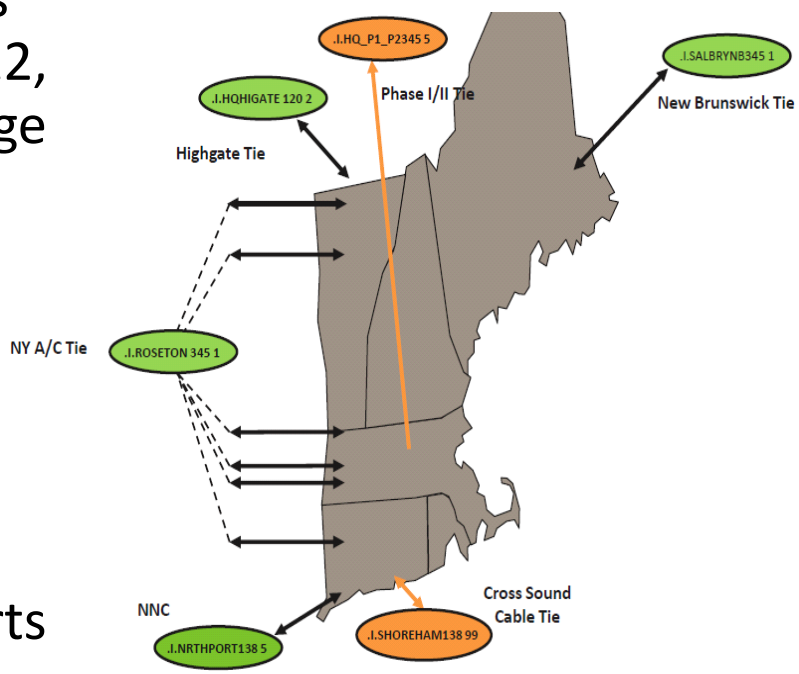
- Modeling of internal interface limits
  - The latest ISO-NE estimated internal interface limit values reflected
- Modeling of transmission line
  - All 230 kV and 345kV circuits ISO-NE region are monitored for thermal overloads
    - Nearly 300 branches monitored for thermal overloads
    - Includes transformers that step up to 230 kV and above
  - Generator step-up (GSU) transformers are excluded
    - Ensure a generating plant output is not limited by GSU modeling
- Monitoring of transmission line
  - 115 kV and above lines in areas of concern as appropriate
    - Maine for
      - Strategic Transmission Analysis – Wind Integration study
      - Keene Road study
    - SEMA / RI for off-shore wind study

Imports and Exports Modeling

- Hourly imports and exports over the following external interconnections are modeled based on average 2012, 2013 and 2014 historical interchange values*
  - New York AC
  - NNC
  - Cross Sound Cable
  - Highgate
  - HQ Phase II
- New Brunswick modeled as historical monthly maximum imports from 2013 and 2014

*The same approach used in previous economic studies for representing import/export assumptions

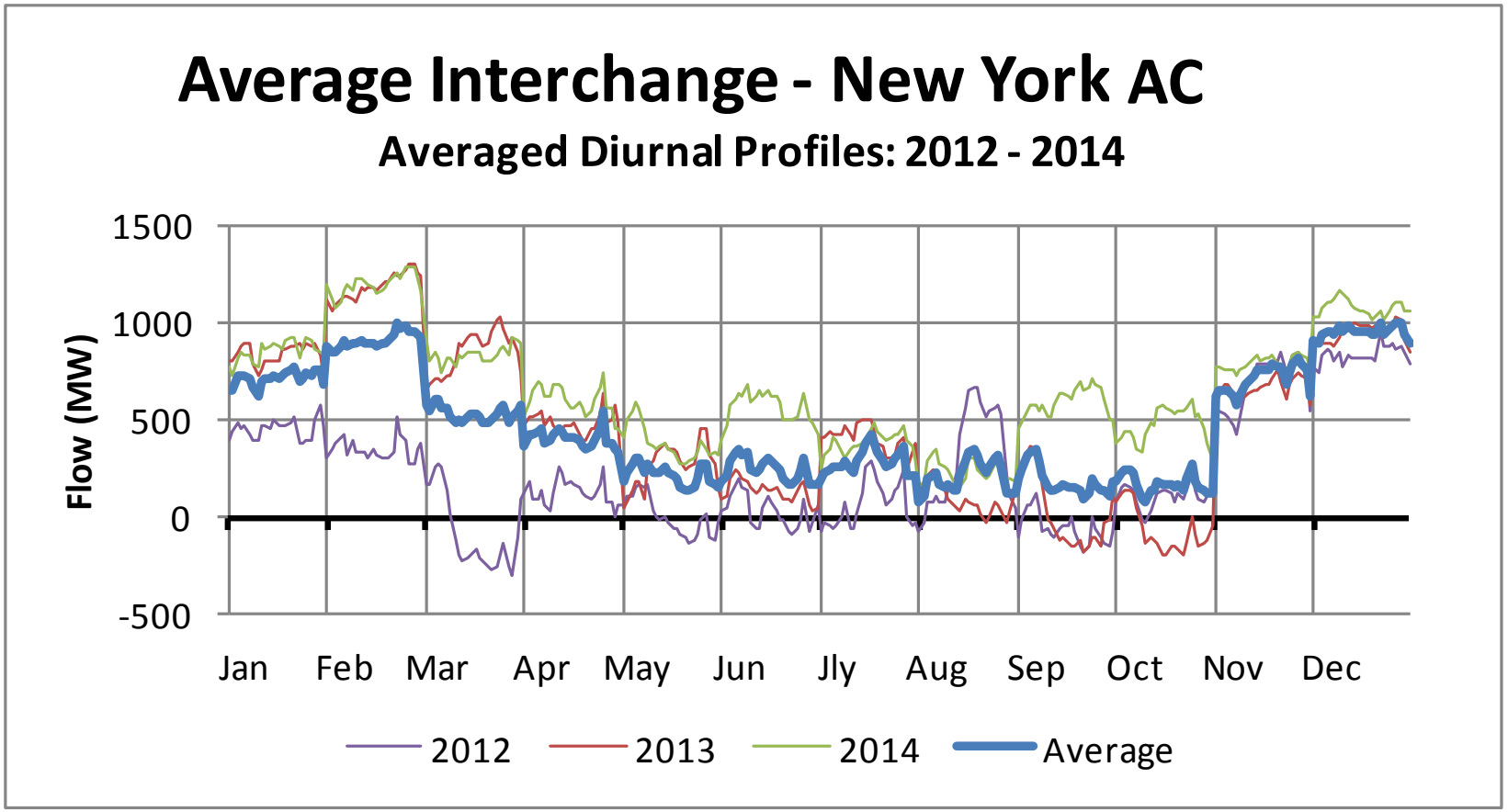
ISO -NE External Interface



Modeling of Imports/Exports

Imports and Exports Modeling

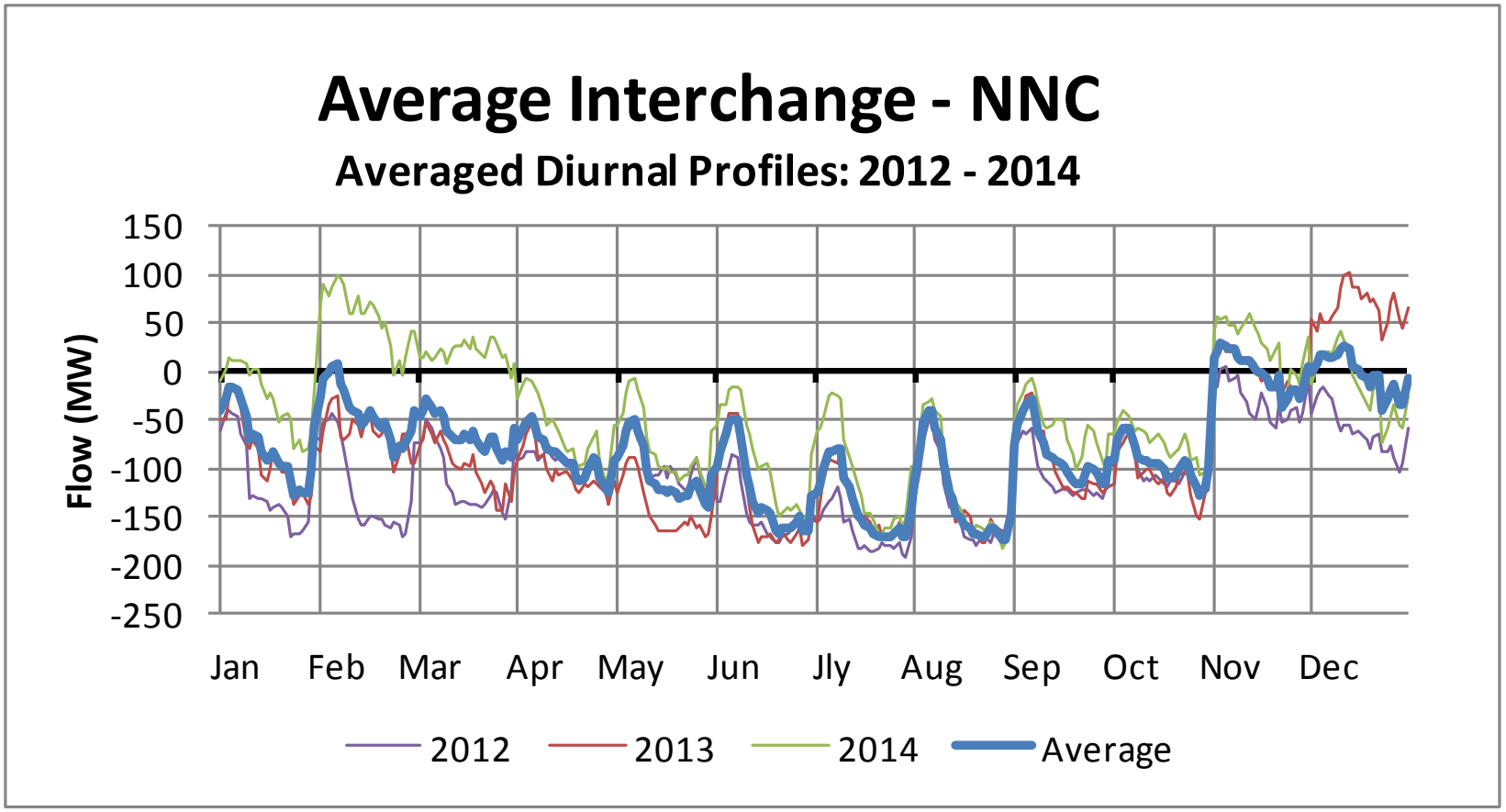
New England to New York - AC Interface



Note: positive values represent imports; negative values represent exports.

Imports and Exports Modeling

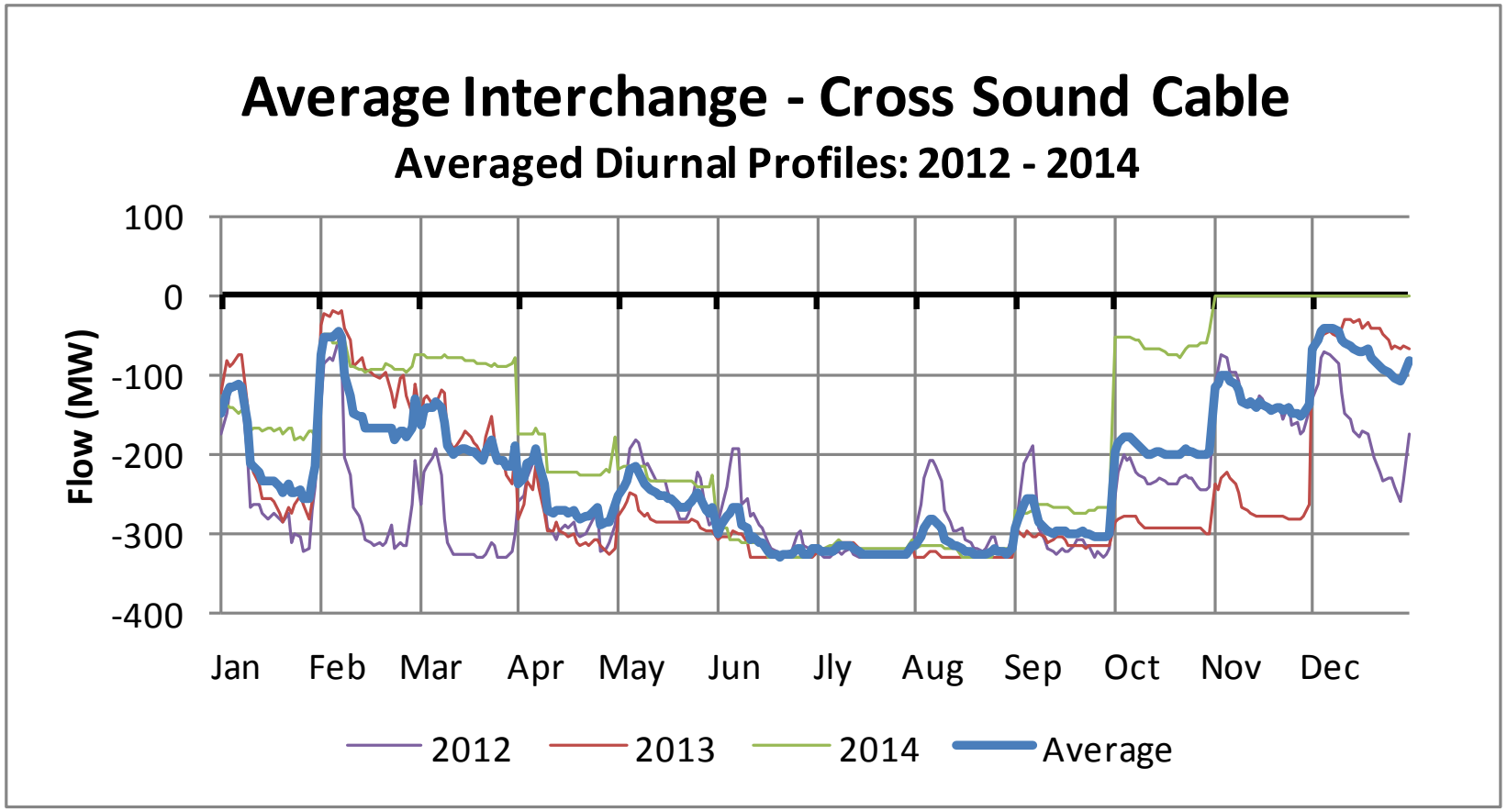
New England to New York - NNC Interface



Note: positive values represent imports; negative values represent exports.

Imports and Exports Modeling

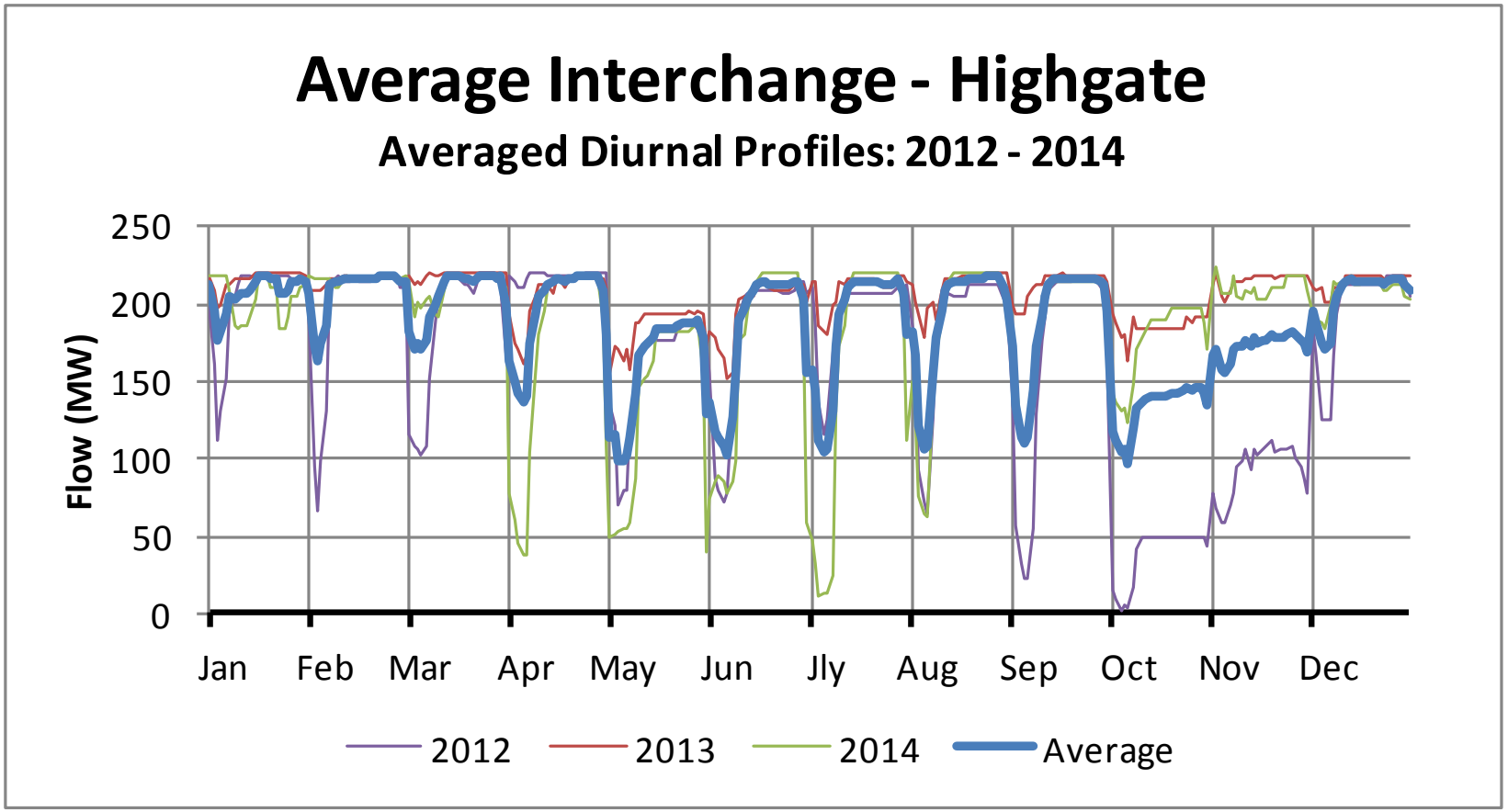
New England to New York – Cross Sound Cable



Note: positive values represent imports; negative values represent exports.

Imports and Exports Modeling

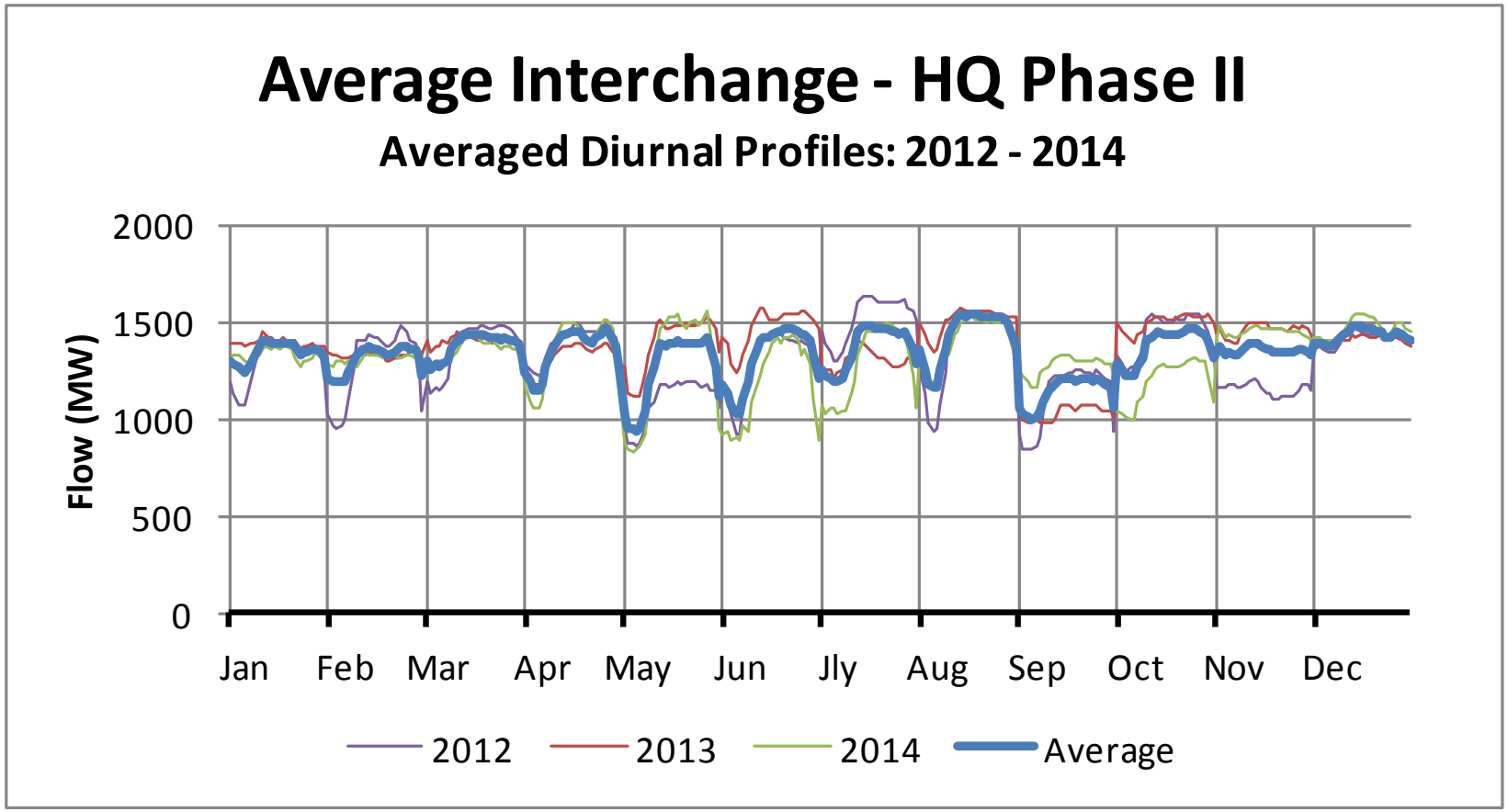
Quebec to New England: Highgate



Note: positive values represent imports; negative values represent exports.

Imports and Exports Modeling

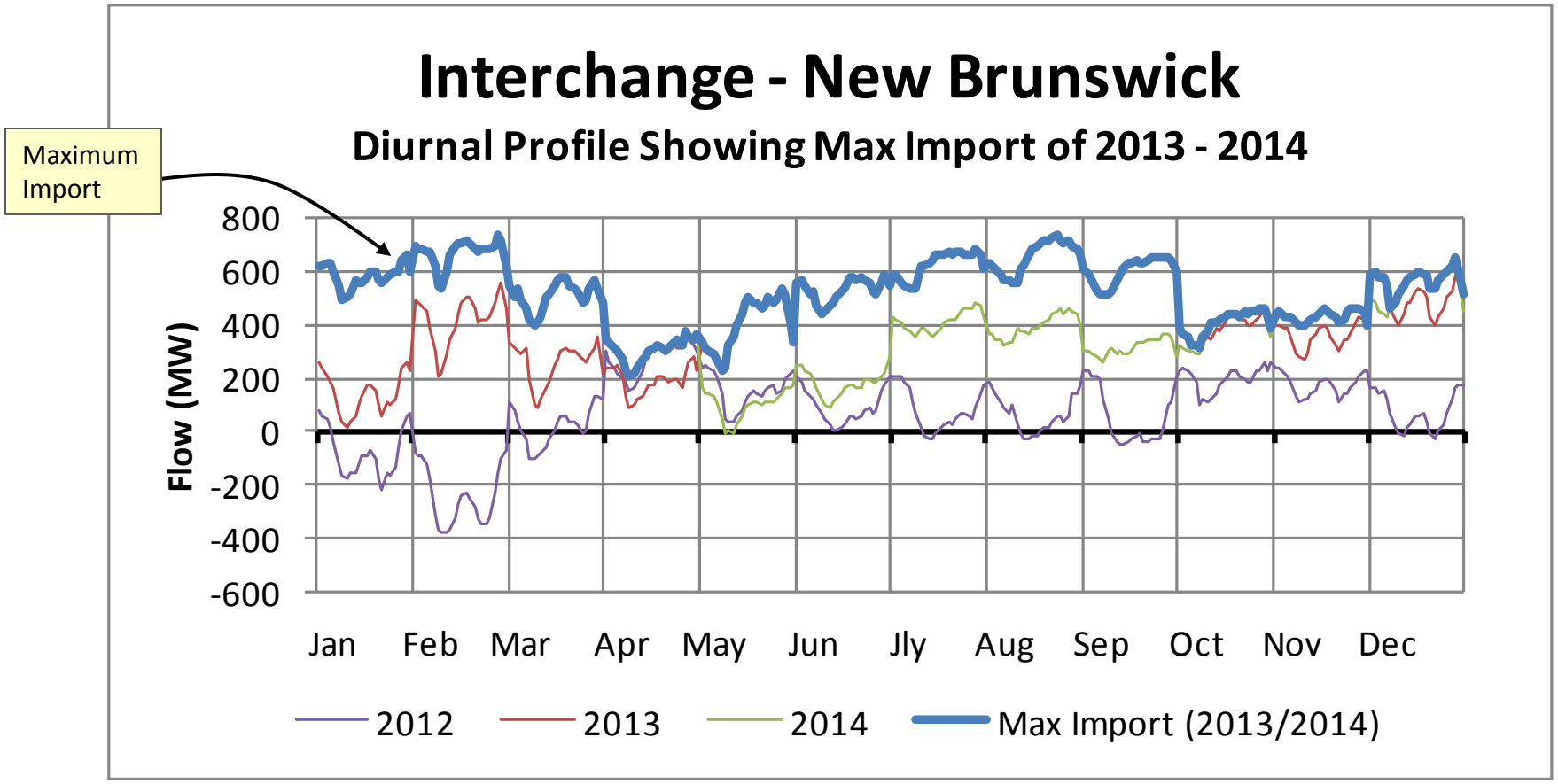
Quebec to New England: HQ Phase II



Note: positive values represent imports; negative values represent exports.

Imports and Exports Modeling

New Brunswick to New England



Note: positive values represent imports; negative values represent exports.

Questions

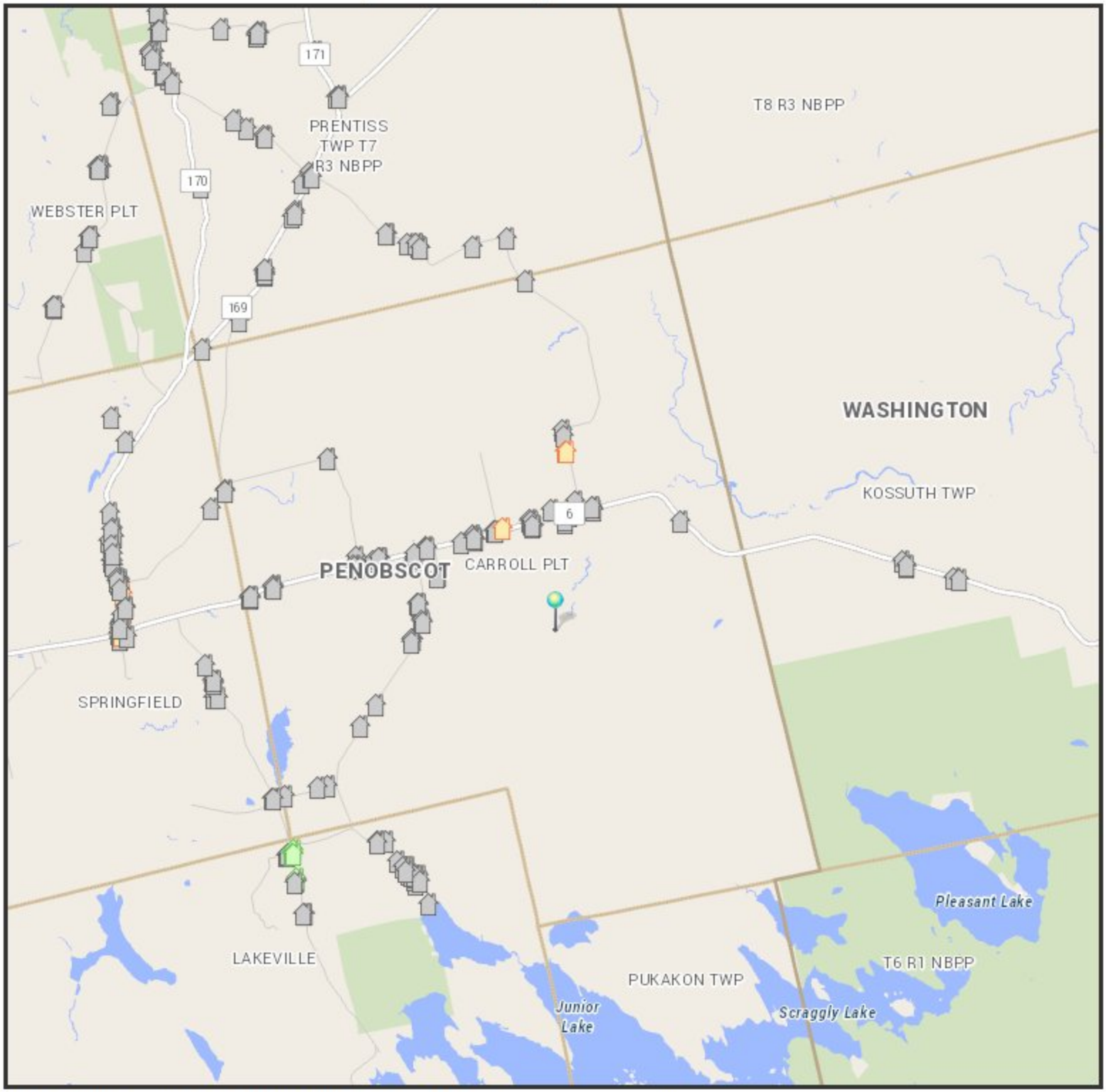
Land Use Planning Commission

Petition to Remove Carroll from the
Expedited Permitting Area for Wind Energy Development;
Substantive Review

Attachment 4

CARMA Database Map

MHPC, CARMA, CARROLL PLT.



2 Miles

1 inch = 2.41 miles

Date: 9/21/2016
Time: 1:24:04 PM

LEGEND

Historic Properties 2

- Not Eligible
- Not Determined
- Unknown
- Eligible
- Listed
- Historic District