Dry Warm/Autumns and Winter Snow/Ski Days

The Farmer's Almanac has predicted a winter of Clime and Punishment and NOAA has predicted it would be colder and wetter than normal here with the lingering La Nina. So far that hasn't happened as we're stuck in a dry circulation pattern and we'll probably have a brown Christmas and quite likely stay brown until the New Year according to some meteorologists.

My shoveling muscles have atrophied from last winter when we had the fourth snowiest winter on record (86.6 inches). We should have 3.4 inches on the ground right now on average (Dec. 16). Last year we had the maximum snow depth recorded for December 16 at 16 inches. Five of the last six years have been above average for ski days (2 inches of natural snow on the ground which may not be quite enough based on our experiences this year) with the sixth, 2006-07, right about average at 68 days despite starting on January 1, 2007 (there is still hope). The winter of 2004-05 was the last lousy winter with about 30 ski days. We've grown accustomed to good ski seasons for awhile now.

Everyone knows we just had the driest autumn (September-November) on record in the Twin Cities. Did you know it was also the fifth warmest? I was curious what kind of winter snows have historically followed a dry and warm autumn. I sorted the autumn data from the Twin Cities climate website for temperature and precipitation, ranked them and then added them together and resorted them to see what the combined rank might yield. Guess what?…autumn 2011 is number one…and not in a good way. The first table below shows the top ten combined, ranked warmest/driest autumns with the following winter total snow , ski days and ski season start dates.

The average total snow from the below table is just under 35 inches or about 1 foot below normal. The average ski day season is about 7 weeks which compares to a normal of about 10 weeks. Note that this fall was closely followed in the rankings by the fall of 1953. The winter of 1953-54 basically didn't have a ski season with a maximum of 5 consecutive days with 2 inches or more of snow on the ground and that was in mid-March 1954. I'm not suggesting that we will have that as we are in a wetter climate now.

	Sep-Nov					
	Temp +			Ski Days	Tot Snow	
	Precip			10 Year	10 Year	Start
Year	Rank	ski-days	Tot snow	Avg	Avg	Date
2011-12	6					
1953-54	7	11	25.7			??
1948-49	27	69	38.3			12/8, 1/17
1912-13	33	40	47.4			12/17, 2/1
1944-45	33	62	33.9			5-Feb
1923-24	34	43	32.4			31-Dec
1958-59	39	10	19.1			??
1897-98	42		31.3			
1963-64	44	59	28.9			9-Dec
1990-91	46	73	43.6			15-Dec
1914-15	47	57	47.9			22-Dec
1999-2000	50	55	36.2	48	34.8	12/19, 1/6

For comparison, the second table below has the ten ranked combined coldest/wettest autumns on record with the following total snow and ski days. The total average snow is about 54 inches and the average ski days are about 87 or just a little more than 2 weeks longer than the normal 10 weeks.

	Sep-Nov					
	Temp +			Ski Days	Tot Snow	
	Precip			10 Year	10 Year	Start
Year	Rank	ski-days	Tot snow	Avg	Avg	Date
1965-66	195	46	36.1			2-Jan
1992-93	200	87	47.4			19-Dec
1996-97	201	123	72.1			20-Nov
1986-87	208	15	17.4			??
1926-27	213	67	30.1			4-Dec
1903-04	218	95	46.1			3-Dec
1951-52	218	106	79			18-Dec
1985-86	219	121	69.5			22-Nov
1896-97	229		53.4			
1991-92	239	123	84.1			11/1, 11/23
1911-12	241	83	42.7	87	54.2	11/16, 12/21

There is not a real strong correlation between total snow and ski days or the combined fall ranking and ski days as it's just too chaotic.

There is a fairly good correlation between the ski season start and the number of ski days in the season. Today, December 16, is where the 70 day or ten week ski day season falls in the relationship. For each day going forward from now without 2 inches of snow on the ground we lose almost exactly one ski day from that 10 weeks based on the relationship.

It's a good thing we have some snow-making areas now which they didn't have back in 1953-54.