ARRL 10 Meter Contest

2011 "Pre-Contest"

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The 2011 edition of the ARRL 10 Meter Contest will soon be upon us. Among the contests in the ARRL stable this one is heavily influenced by the solar cycle. With the continuing upturn in solar conditions it is fun conjecturing what we can all expect this year: how active might the contest be, what scoring might be possible, what it will take to get into the coveted Top 10 Box, and what your chances of setting a new record for your QTH might be. In developing this article I have drawn heavily from the excellent work Ken, WM5R did over the years in maintaining the 10 Meter Contest records. Additionally, the ARRL Scores Database is a treasure trove of data. Thanks go out to both Ken and the ARRL team in providing this data.

A quick look back at 2010

The 2010 edition of the ARRL 10 Meter contest provided all of us with some tantalizing hints of what improved conditions will be like. The July 2011 *QST* article authored by Ken, WM5R covered the contest quite well along with the additional Expanded Results available on the ARRL web site. Building on this I dug a bit more into the operating conditions.

In 2010 solar flux averaged about 88 during the contest weekend, up from the rock bottom 75 or so in 2009. One impact of the improved propagation meant that more operators got on the air. It is always more fun to operate when the band is open than when it is not! This was evidenced by the 20% increase in logs submitted in 2010 over 2009. Additionally with the better band conditions the average QSOs in a submitted log increased 43% from 107 in 2009 to 153 in 2010. Combining these two factors means that likely 70% more QSO's were made by all the operators in the 2010 edition than in 2009.

Scores responded as well. Top scores in W/VE/XE were up almost 150% in 2010 over 2009 and top DX scores increased almost 200%. These score increases were driven by both higher QSO totals and higher number of mults. Compared to 2009, top W/VE/XE stations increased their QSO and mult totals each by 50-60% while DX stations more than doubled their QSOs with a 40% increase in mults.

Certainly the addition of the 32 Mexican states as multipliers in the 2010 contest had an influence on the contest in many ways. First, XE stations responded by getting on the air in unprecedented numbers. In 2009 only 6 XE stations submitted logs. In 2010 this number swelled to 48 stations and the work done by XE1KK demonstrated that at least 100 XE stations were on the air from 26 states providing about 45 potential mode multipliers! Second, XE stations appeared to be much more active with the average reported number of QSO's per station almost quadrupling over 2009! Finally, the additional available multipliers helped increase scores for everyone in 2010 more than would have under the 2009 rules. For top stations worldwide likely half their multiplier increase in 2010 over 2009 came from these new XE multipliers.

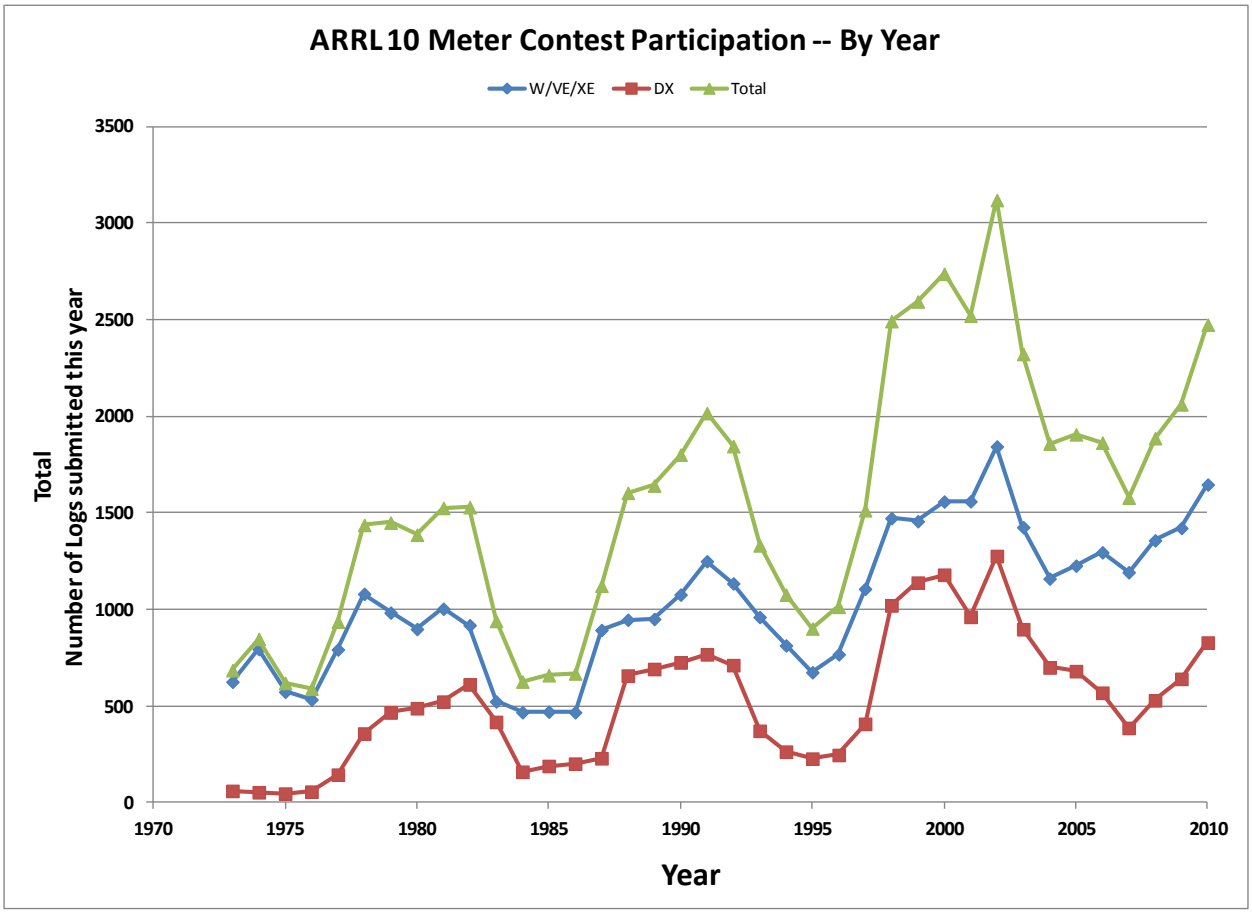
Looking back -- solar conditions in 2010 improved just enough to start turning on the 10 Meter band to what it can be potentially. The addition of XE states as multipliers also added much excitement that will

continue into the future. But, compared to the thrills of 2001 and 2002 we still have a long ways to go. Returning to "Those Good Old Days" would see scores more than triple over 2010 with QSO's more than doubling and multipliers increasing another 50-60%. The real excitement is yet to come! Imagine 2,000 or more QSO's and 150 multipliers per mode! That is what we have to look forward to.

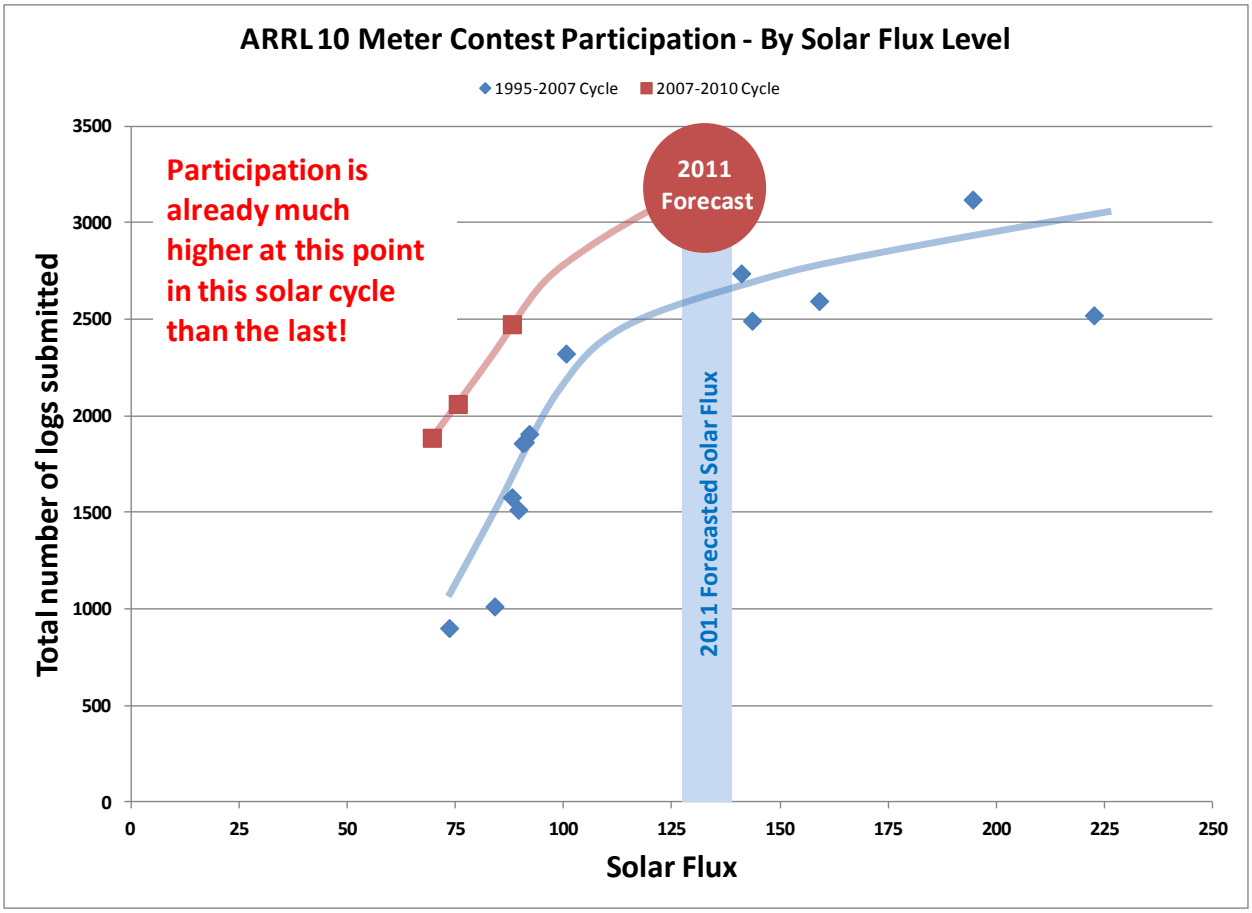
2011 Conditions -- Projected Participation and Scoring

So, what fun might await us in 2011? At the time this article is being written NOAA's Space Weather Prediction Center is forecasting a solar flux level around 130 for December 2011. We know that the 14 point increase in flux from 75 in 2009 to 88 in 2010 saw major improvements in operating conditions. What might another 40 or so points of flux do? By looking at past contest results relative to the solar flux during the contest it is possible to create graphs that suggests what to expect.

First, what might participation be like in 2011? The ARRL 10 Meter contest is becoming ever more popular with the total number of logs being submitted climbing over the years as seen in the chart below.



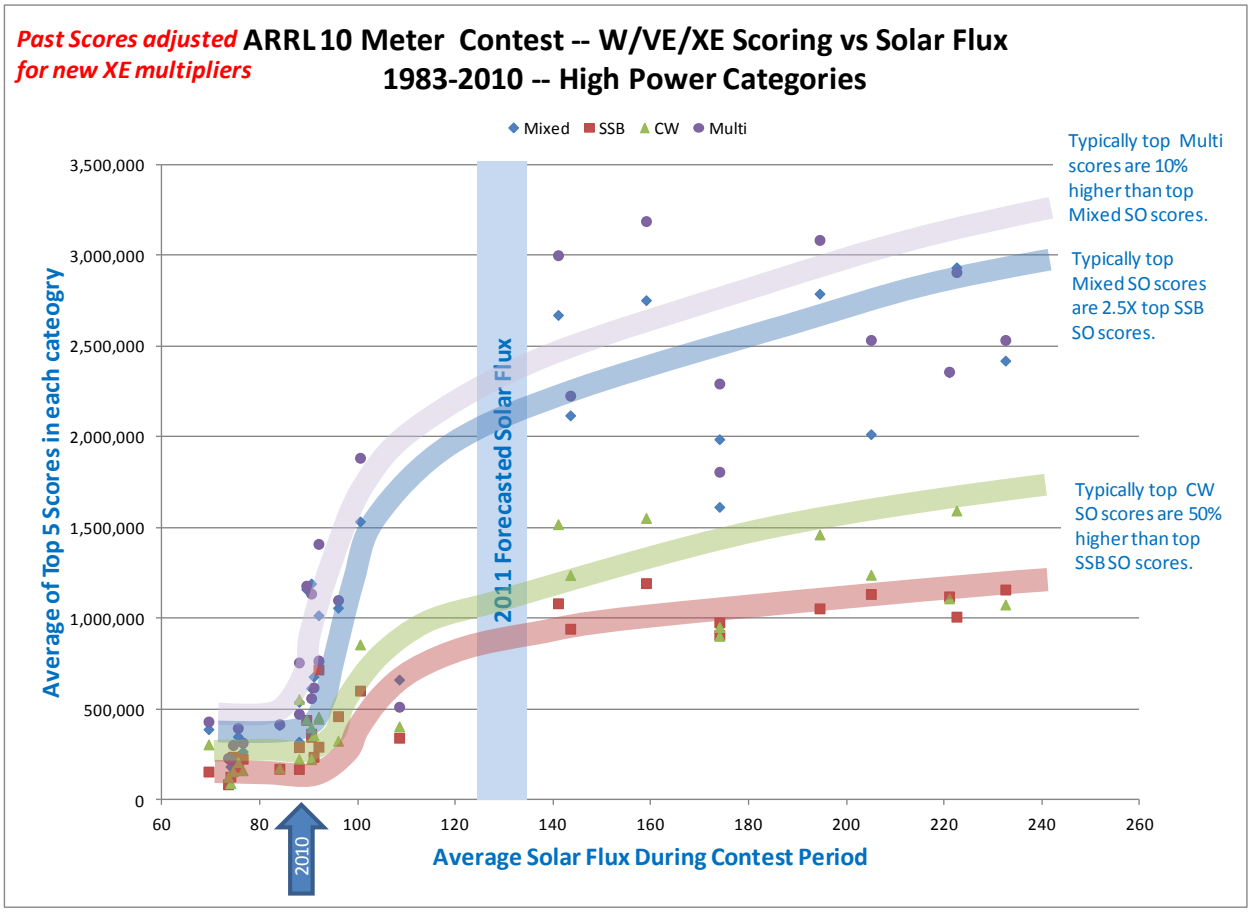
10 Meter Contest participation is also heavily influenced by propagation. The better the propagation the more participants! You can see on the first chart that the numbers of logs submitted correlates pretty well with the solar cycle. This can be seen even more clearly looking at the next chart which plots logs submitted vs. the flux for the current and last solar cycle.



You can see that for where we are in this solar cycle we already have much greater participation than at this point in the last cycle. With the forecasted flux for the 2011 contest in the 130 range we could easily see an all time records number of logs submitted. **So, conditions will be great, come on out, operate a while, send in your log, and make this forecast come true!**

Second, relative to scoring, I looked at just the High Power categories as these demonstrate what is potentially possible on the band. It is also a lot of work to generate these charts and I only have so much time available.

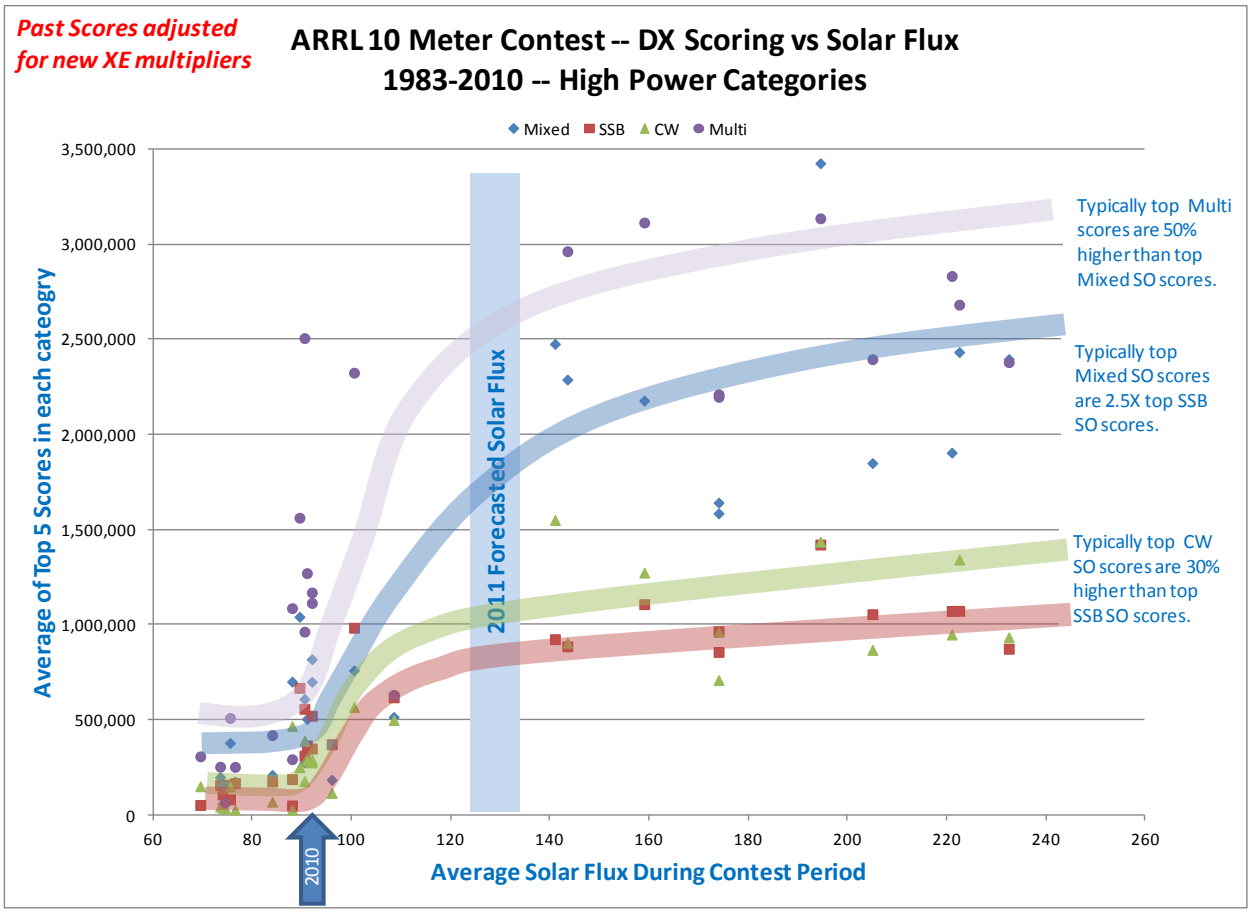
First, let's look at scoring in the W/VE/XE super-region. Each of the markers on chart below represent the average of the Top 5 scores in the four operating classes for a single contest plotted against the solar flux levels for that contest. (For scores prior to 2009 I adjusted them for the likely impact of the additional XE multipliers.) The broad lines represent what seems to be a range of scoring vs. solar flux.



What you can see is that as flux levels increase past 90 or so scores really start to increase as the 10 Meter band starts to "Turn on". Scores increase rapidly at first and then start to flatten out at the very high flux levels. The reason this happens is that at some point, regardless of how good the band is, there just are not any more stations or multipliers to work. The key though is that fun really starts at flux levels around 90. In 2010 we were given a bit of a taste of this fun. 2011 should be a real feast! We certainly got a good taste in the amazing 10 meter conditions in early October.

So, for W/VE/XE stations what might the 2011 edition of the contest bring? **Top stations should see scores double or triple over 2010!**

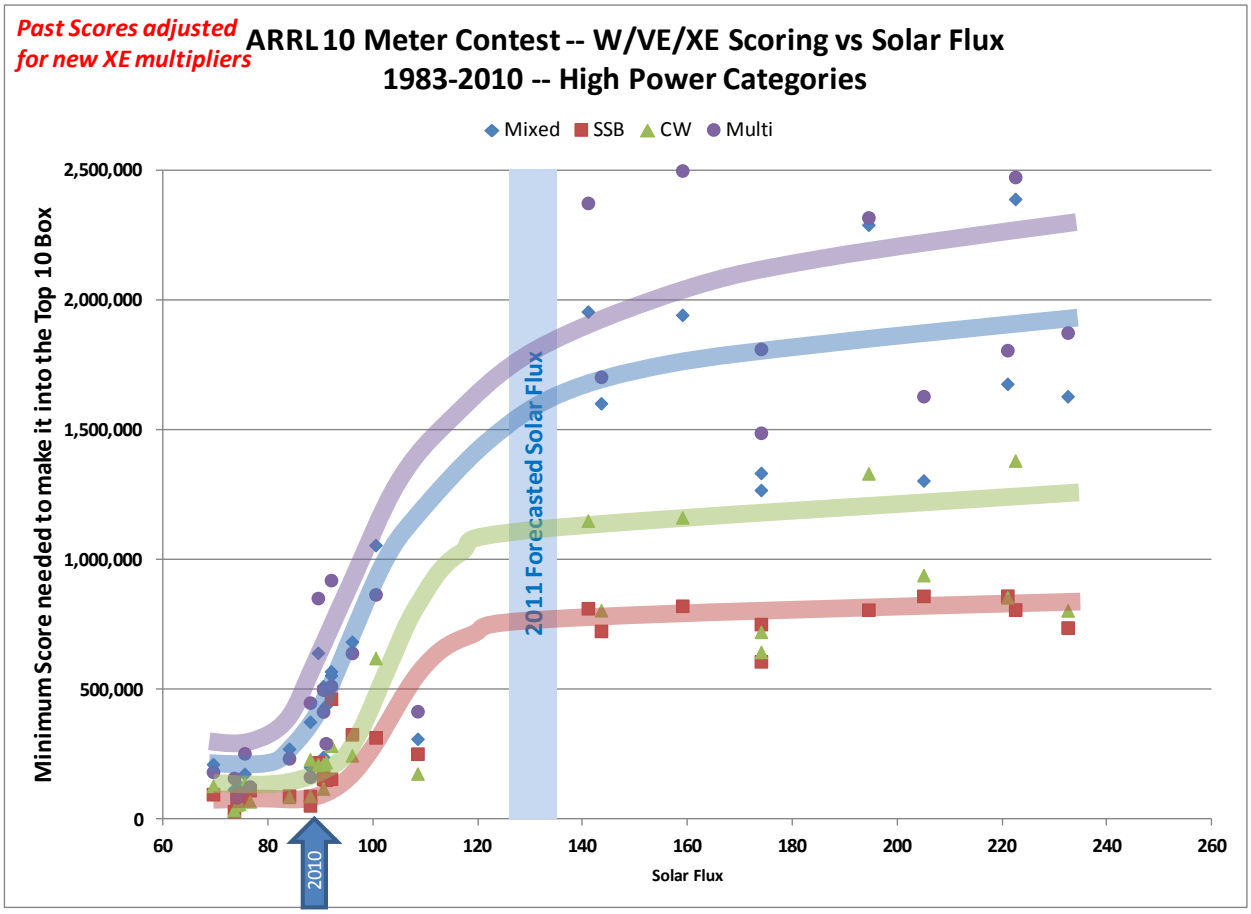
For DX stations the historical view and 2011 outlook is much the same. Operators in the 2011 editions should experience outstanding conditions and top scores could easily double or triple over 2010!



So you want to get into a Top 10 Box

I realize for many of you contests are mostly for fun and enjoyment. Then, for some of you more goal-oriented competitive types you strive to set a new record or get into a Top 10 Box as measure of your success. So, looking ahead to the 2011 running, what might it take to get into the Top 10 Box or set a new record?

Using the same perspective as before let's see what minimum score it took to get into the Top 10 Box for the W/VE/XE super region in the period from 1983 thru 2010 based on the solar flux during the contest. *(You may wonder why I am only going back to 1983 when the contest started in 1973 and records do exist all the way back to then. Well, it has to do with rule changes over the years. In 1983 the current scoring format of 4 points for CW QSOs and 2 points for SSB QSOs was put in place. Before that all QSO's were worth 2 points. So, for the Mixed and MS classes since I don't have detail on CW vs SSB QSO's I can't adjust past scores for this scoring change. However, using 1983 to 2010 still encompasses 27 years and two full solar cycles - it is a pretty good data set.)*



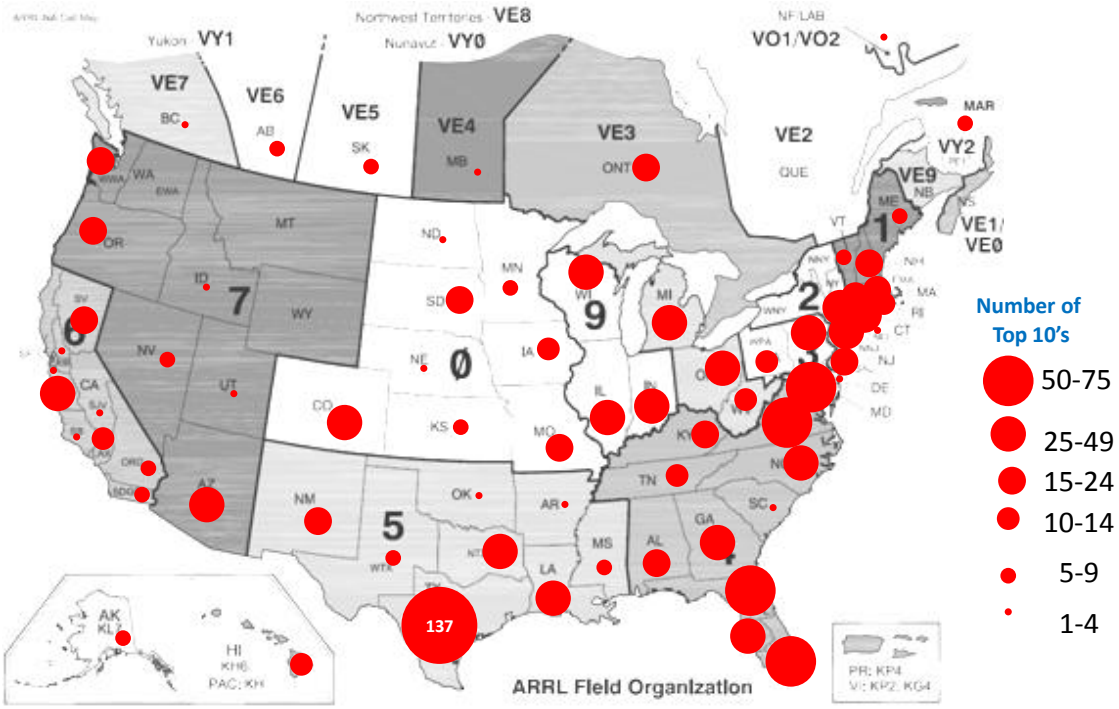
Based on this historical view my forecasts for the minimum High Power scores needed to be in the Top 10 W/VE/XE are:

- Mixed Single Op: 1,600,000
- SSB Only: 800,000
- CW Only: 1,200,000
- Multi-Single: 1,800,000

If you are going after a Top 10 Box finish -- Pick your operating class, write this target down, and don't give up until you are well above this score.

It also helps to be in the right place if you want to go after a Top 10 finish. Looking back at all the W/VE high power Top 10's from 1973-2010 you can see that it does help to be in the right QTH with South Texas being the single best spot. However, Florida is not bad either nor is the Atlantic coast from North Carolina up to Massachusetts.

Number of times ARRL/RAC Sections were in Top 10 Scores in ARRL 10 Meter Contest
High Power Classes Only – 1973-2010



For those of you looking for a challenge, the following sections have never had a Top 10 in any High Power class. Will you be the first?

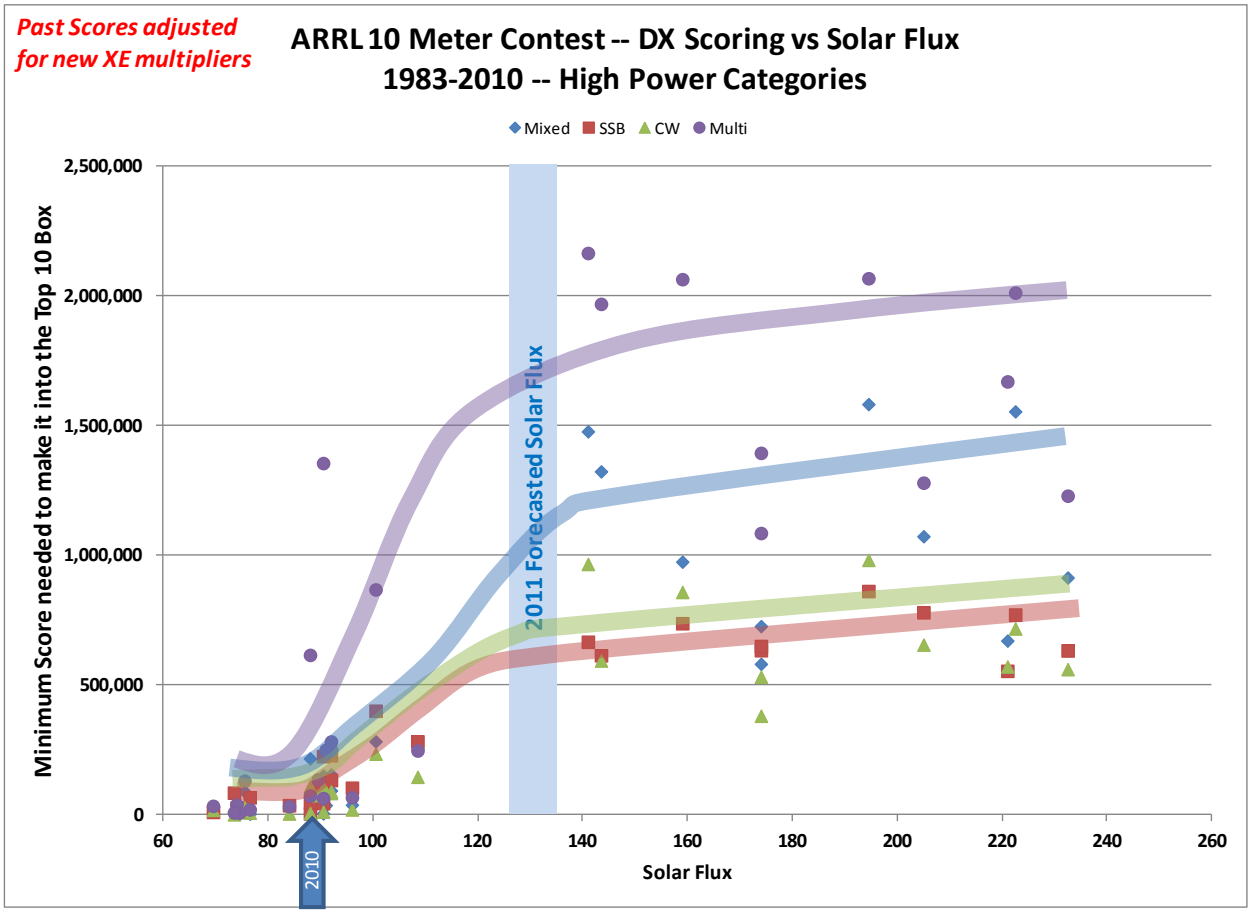
- EWA -- Eastern Washington - (at least since it was created in 1989.)
- MT -- Montana
- WY -- Wyoming
- VY1 -- Yukon
- VE8 -- Northwest Territories
- VYØ -- Nunavut
- VE2 -- Quebec
- VE1/VE9 -- New Brunswick
- VE1/VEØ - Nova Scotia
- WNY -- Western New York
- NNY -- Northern New York
- DC -- District of Columbia

Digging into things a bit deeper the last time these sections had a Top 10 was more than 10 years ago. Will you be the one to bring previous glory back to your section?

- AK -- Alaska
- SF -- San Francisco

- SB -- Santa Barbara
- LAX -- Los Angeles
- SDG -- San Diego
- ID -- Idaho
- UT -- Utah
- ND -- North Dakota
- NE -- Nebraska
- VE4 -- Manitoba
- MS -- Mississippi
- SC -- South Carolina
- DE -- Delaware
- RI -- Rhode Island
- VO1 -- Newfoundland
- VO2 -- Labrador

For DX stations the historical Top 10 Box picture looks like this:



Based on this historical view my forecasts for the minimum High Power scores needed to be in the Top 10 DX are:

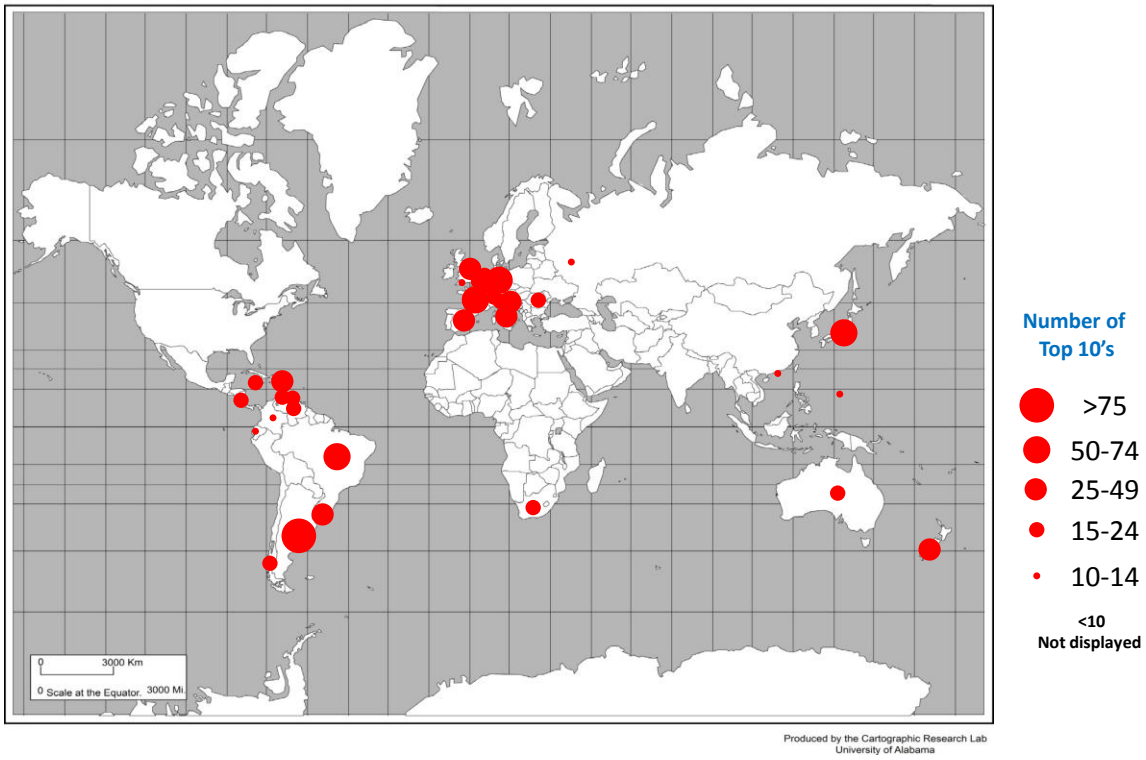
- Mixed Single Op: 1,150,000
- SSB Only: 600,000

- CW Only: 750,000
- Multi-Single: 1,700,000

Again -- If you are going after a Top 10 Box finish -- Pick your operating class, write this target down, and don't give up until you are well above this score.

Likewise if you are going after a DX Top 10 box finish it helps to be in the right place. Looking back at all the DX high power Top 10's from 1973-2010 you can see that it does help to be in the right QTH with Argentina being the single best spot. However, Japan, Brazil, France, and Germany are not bad either. Basically all of South America, Europe, and the Caribbean can host Top 10 Operations.

Number of times DX Countries were in Top 10 Scores in ARRL 10 Meter Contest
High Power Classes Only – 1973-2010



Looking at this a bit deeper, since 1973 almost 150 DXCC entities have hosted a High Power Top 10 Box operation. A few notable entities with their last Top 10's many years ago include:

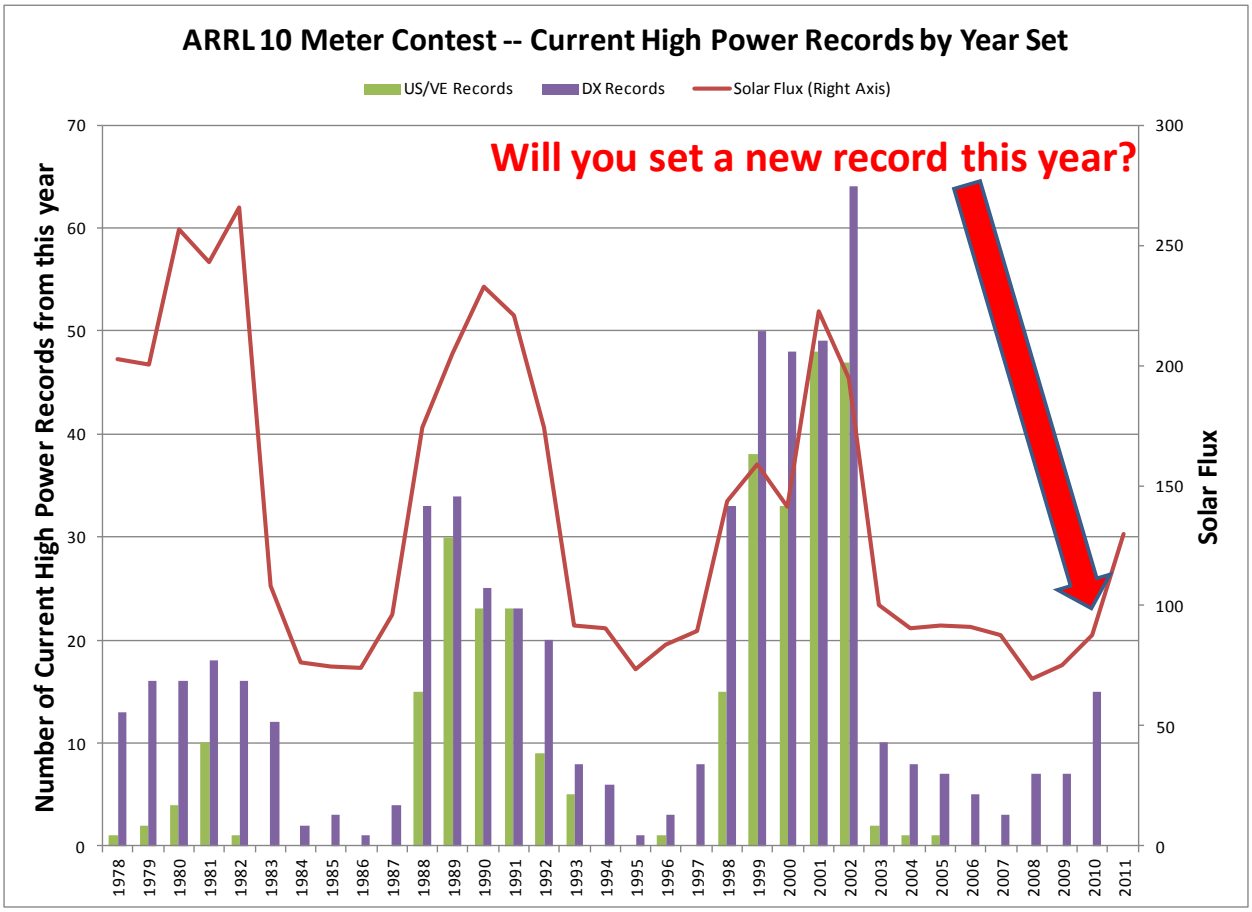
- ZL8 -- 1985
- TZ -- 1999
- TU -- 1983
- TL -- 1998
- A2 -- 1993
- 5X -- 1996
- 5T -- 1988

Interesting how many of those were from Africa!

So, even if you are not in one of the historical 10 meter hot spots like Argentina, if you are the only one on the air in your country you can attract a lot of attention and run up a big score. **Who will leverage their unique position to push into the Top 10 this year?**

What if you want to set a new all-time record?

The last time a new all-time High Power record for W/VE was set was in 2005 and then it was only one. 2004 also only had one set and 2003 had two. DX operators have been a bit more successful during this period, but still, it has been really hard to set an all time High Power record the last few years. Simply put, it's been a while since 10 meter propagation supported extensive record setting. But, what if you want to set a new all time record for your QTH and operating class? As 10 meter propagation returns this cycle many past **records will be broken because of the new XE Multipliers**. Sure we are not at flux levels like at the peak of the last cycle, but the studies of past contest results shows record scores can be reached as flux levels reach the 130 range -- the level predicted for this year.



Additionally, the creation of a new Low Power Multi-single category, which also covers Single-Op Assisted operations, means all those records are up for grabs -- be the first and best in your neighborhood to make an entry and the record is all yours! (For those of you in XE land the vast majority

of records have no entry yet as they were just opened up last year. This is another great opportunity to set an all time record.)

For you record seekers the best thing to do is go look at the all time record file maintained by Ken, WM5R. It can be found on the ARRL website in the Contest Records. Take a look at the existing records for your QTH or a QTH you might want to travel to. Plan your operation to break the record and have your call show up in the record file next year.

Summary

The 2011 running of the ARRL 10 Meter contest is shaping up to be the best in a long time -- likely since 2003 or 2002! Propagation is forecast to be much improved over 2010 and participation could climb to records levels. Top scores in the High Power Classes could double or triple over last year. If you want to target a Top 10 High Power finish these are my predictions of the scores it will take:

High Power	W/VE/XE	DX
Mixed	1,600,000	1,150,000
SSB Only	800,000	600,000
CW Only	1,200,000	750,000
Multi-op (SO Assisted)	1,800,000	1,700,000

If you are looking to set a new all time record remember that the new XE multipliers will create a great opportunity to break that old record and the new Low Power Multi-Single category has no records at all. Forecasted flux levels should be just enough that new High Power records should be in reach.

If you like to contest either for fun or competition the 2011 ARRL 10 Meter Contest is going to be great.