```
options pageno=1 nodate; run;

ods pdf file='\Birds nest summaries LDA QDA k-NN.rtf';
ods graphics on;

title1 "Summary Statistics and Plots for RAW Nest Data" ;
proc sort data=Nest;
   by Nest;
run;

proc univariate normal plots data=Nest;
   var N: P: ;
   by Nest;
run;

data Nest2;
   set nest;
   lNumTreelt1in = log(1+NumTreelt1in);
   lNumTree1to3in = log(1+NumTree1to3in);
   lNumTree3to6in = log(1+NumTree3to6in);
   lNumTree6to9in = log(1+NumTree6to9in);
   lNumTree9to15in = log(1+NumTree9to15in);
   lNumTreegt15in = log(1+NumTreegt15in);
   lNumSnags = log(1+NumSnags);
   lNumDownSnags = log(1+NumDownSnags);
   lNumConifer = log(1+NumConifer);
   lPctShrubCover = log(1+PctShrubCover);
run;

title1 "Summary Statistics and Plots for TRANSFORMED Nest Data" ;
proc univariate normal plots data=Nest2;
   var l: ;
   by Nest;
run;

title1 "LDA Using TRANSFORMED Predictor Variables" ;
proc discrim pool=yes crossvalidate data=Nest2;
   class Nest;
   var l: StandType;
run;

title1 "QDA Using TRANSFORMED Predictor Variables" ;
proc discrim pool=no crossvalidate data=Nest2;
   class Nest;
   var l: StandType;
run;
/*
title1 "k-NN Using TRANSFORMED Predictor Variables.  k=7" ;
proc discrim k=7 crossvalidate data=Nest2;
   class Nest;
   var l: StandType;
```

```
run;

title1 "k-NN Using TRANSFORMED Predictor Variables.  k=6" ;
proc discrim k=6 crossvalidate data=Nest2;
   class Nest;
   var l: StandType;
run;

title1 "k-NN Using TRANSFORMED Predictor Variables.  k=5" ;
proc discrim k=5 crossvalidate data=Nest2;
   class Nest;
   var l: StandType;
run;

title1 "k-NN Using TRANSFORMED Predictor Variables.  k=4" ;
proc discrim k=4 crossvalidate data=Nest2;
   class Nest;
   var l: StandType;
run;

title1 "k-NN Using TRANSFORMED Predictor Variables.  k=3" ;
proc discrim k=3 crossvalidate data=Nest2;
   class Nest;
   var l: StandType;
run;
*/
data flicker chickadee sapsucker;
   set nest2;
   if Species = 'Flicker' then output flicker;
   else if Species = 'Chickadee' then output chickadee;
   else if Species = 'Sapsucker' then output sapsucker;
   else if Species = 'Non-nest' then output flicker chickadee sapsucker;
run;

title1 "LDA for MOUNTAIN CHICKADEE Using TRANSFORMED Predictor Variables" ;
proc discrim pool=yes crossvalidate data=chickadee;
   class Nest;
   var l: StandType;
run;

title1 "QDA for MOUNTAIN CHICKADEE Using TRANSFORMED Predictor Variables" ;
proc discrim pool=no crossvalidate data=chickadee;
   class Nest;
   var l: StandType;
run;
/*
title1 "k-NN for MOUNTAIN CHICKADEE Using TRANSFORMED Predictor Variables.  k=7" ;
proc discrim k=7 crossvalidate data=chickadee;
   class Nest;
   var l: StandType;
run;
```

```
title1 "k-NN for MOUNTAIN CHICKADEE Using TRANSFORMED Predictor Variables.  k=6" ;
proc discrim k=6 crossvalidate data=chickadee;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for MOUNTAIN CHICKADEE Using TRANSFORMED Predictor Variables.  k=5" ;
proc discrim k=5 crossvalidate data=chickadee;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for MOUNTAIN CHICKADEE Using TRANSFORMED Predictor Variables.  k=4" ;
proc discrim k=4 crossvalidate data=chickadee;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for MOUNTAIN CHICKADEE Using TRANSFORMED Predictor Variables.  k=3" ;
proc discrim k=3 crossvalidate data=chickadee;
   class Nest;
   var l: StandType;
run;
*/
title1 "LDA for NORTHERN FLICKER Using TRANSFORMED Predictor Variables" ;
proc discrim pool=yes crossvalidate data=flicker;
   class Nest;
   var l: StandType;
run;

title1 "QDA for NORTHERN FLICKER Using TRANSFORMED Predictor Variables" ;
proc discrim pool=no crossvalidate data=flicker;
   class Nest;
   var l: StandType;
run;
/*
title1 "k-NN for NORTHERN FLICKER Using TRANSFORMED Predictor Variables.  k=7" ;
proc discrim k=7 crossvalidate data=flicker;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for NORTHERN FLICKER Using TRANSFORMED Predictor Variables.  k=6" ;
proc discrim k=6 crossvalidate data=flicker;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for NORTHERN FLICKER Using TRANSFORMED Predictor Variables.  k=5" ;
proc discrim k=5 crossvalidate data=flicker;
   class Nest;
   var l: StandType;
```

```
run;

title1 "k-NN for NORTHERN FLICKER Using TRANSFORMED Predictor Variables.  k=4" ;
proc discrim k=4 crossvalidate data=flicker;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for NORTHERN FLICKER Using TRANSFORMED Predictor Variables.  k=3" ;
proc discrim k=3 crossvalidate data=flicker;
   class Nest;
   var l: StandType;
run;
*/
title1 "LDA for RED-NAPED SAPSUCKER Using TRANSFORMED Predictor Variables" ;
proc discrim pool=yes crossvalidate data=sapsucker;
   class Nest;
   var l: StandType;
run;

title1 "QDA for RED-NAPED SAPSUCKER Using TRANSFORMED Predictor Variables" ;
proc discrim pool=no crossvalidate data=sapsucker;
   class Nest;
   var l: StandType;
run;
/*
title1 "k-NN for RED-NAPED SAPSUCKER Using TRANSFORMED Predictor Variables.  k=7" ;
proc discrim k=7 crossvalidate data=sapsucker;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for RED-NAPED SAPSUCKER Using TRANSFORMED Predictor Variables.  k=6" ;
proc discrim k=6 crossvalidate data=sapsucker;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for RED-NAPED SAPSUCKER Using TRANSFORMED Predictor Variables.  k=5" ;
proc discrim k=5 crossvalidate data=sapsucker;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for RED-NAPED SAPSUCKER Using TRANSFORMED Predictor Variables.  k=4" ;
proc discrim k=4 crossvalidate data=sapsucker;
   class Nest;
   var l: StandType;
run;

title1 "k-NN for RED-NAPED SAPSUCKER Using TRANSFORMED Predictor Variables.  k=3" ;
proc discrim k=3 crossvalidate data=sapsucker;
```

```
   class Nest;
   var l: StandType;
run;
*/
ods graphics off;
ods pdf close;
```