







Pacific Slope Flycatcher Empidonax difficilis in Lancaster County Franklin C. Haas

On December 16, 1990, while on the Southern Lancaster County Christmas Count, Harold Morrin and Joe Meloney found an *Empidonax* flycatcher which they initially identified as a Yellow-bellied Flycatcher. This was reported at the after-count gathering that evening. Upon hearing the report, Bob Schutsky, Steve Santner, Ed Pederson and I decided to try to locate the bird the next day and confirm the identification.

The site was located in East Drumore Township about two miles south of the intersection of Routes 272 and 372. We arrived at the site at approximately 9:00 a.m., and found the bird about 9:45 a.m.

The bird was typical of *Empidonax* flycatchers in size and shape and general coloration (See photos). The three most significant features on the bird were the following:

- 1. The throat, breast and belly were washed in bright yellow. Not as bright as a Common Yellowthroat, but brighter than a winter American Goldfinch. This color is washed out in the photos because of over-exposure. The bird was very easy to spot when facing the observer because of the brightness of the yellow. The brightness and extent of the yellow at this time of year pretty much ruled out all *Empidonax* except Yellow-bellied and the two Westerns.
- 2. The eye-ring was non-existent above the eye and projected behind the eye in what is called tear-drop fashion. This shape is typical of both Western forms and only rarely does a Yellow-bellied have anything but a complete, uniform eye-ring.
- 3. The bird had a noticeably crested appearance and frequently raised its crest as it sat, called and fed. This again is typical of the Western forms, the Yellow-bellied being more roundheaded in appearance.

Realizing at this point that the bird was probably in the Western Flycaycher group (Pacific Slope Flycatcher or Cordilleran Flycatcher), we decided to play a tape recording of the Western Flycatcher call and see how it responded. We played the tape, and the bird started calling. At this time I started recording the bird's song on tape for documentation.

The call made by the bird was very close to the call note given on the tape that we were playing, which was the Western Flycatcher (before the split) on the Field Guide to Western Bird Songs, by Dr. Peter Kellog, 1975, Cassett 2, Side A. It was a loud "ZEEEP," slightly rising, but not distinctly two-noted.

When later compared with the calls given on the Guide to Bird Sounds, National Geographic Society, 1985, Cassette 2, Side A,

(which gives the "Pacific Coast" and "Rocky Mountains" forms) the calls matched exactly those given by the "Pacific Coast" form.

When compared with the Yellow-bellied Flycatcher call from the same tape, the call was noticeable different in pitch, quality and slur.

I therefore concluded that the bird was a Pacific Slope Flycatcher.

The bird was seen and heard by many observers during the following days and was last seen on Friday, December 21, 1990.

2469 Hammertown Road Narvon, PA 17555 Also, see written description PB V4W4 538-01-1990 Page 142

TRANSCRIPT OF PACIFIC SLOPE FLYCATCHER RECORDING DECEMBER 17, 1990, LANCASTER COUNTY, PA

This tape is a recording of an Empidonax flycatcher believed to be a Pacific Slope Flycatcher, *Empidonax difficilis*, which was found on December 16, 1990 in East Drumore Township, Lancaster County, Pennsylvania.

The bird was photographed and tape-recorded on December 17, 1990. This recording was made by me, Franklin Haas, using a Long-eared Mini microphone and a Realistic portable tape recorder.

The recording you are about to hear bears some explanation. While this recording was being made, we were occasionally playing another tape of a Western Flycatcher on another recorder to compare the calls and elicit a response.

Therefore, at several points on this tape you will hear the other tape being played. The other tape is the recording of Western Flycatcher on the Field Guide to Western Bird Songs by Dr. Peter Kellog, copyright 1975, Cassette number 2, side A. I will play the Kellog tape first so that you can recognize it when it appears on the subsequent recording.

It is important to note the sequence and intensity of calls on the Kellog tape. After the page number and name of bird, there are 6 to 7 two-note weak calls followed by a louder ZEEP! call and trill. This creates an eight second delay between the word "Flycatcher" and the loud ZEEP call. Listen...

Play Kellog tape....

On the subsequent tape, you will frequently hear the following sequence. The name of the bird, then just ONE weak call followed immediately by a loud ZEEP response from the live bird. Note, that the loud ZEEP call comes after only ONE weak call, almnost immediately, rather than after 6 or 7 as on the Kellog tape.

Also, you will hear the operator say on several occasions "I will set it for just one call". This indicates that he played just one call on the Kellog tape and then shut it off. Therefore, subsequent calls in that series are from the live bird, not the Kellog tape.

The tape recorder that was playing the Kellog tape was located to the side and slightly behind the directional microphone being used to record the live bird. Therefore, the weak calls on the Kellog tape are sometimes practically inaudible before the loud response call from the live bird.

Again, remember, after the page number and name of the bird, the calls on the Kellog tape are weak, two-note calls, not the loud ZEEP call.

I will play the Kellog tape one more time.

Play Kellog tape.

While listening to the next portion of this tape, it would be helpful to follow along with the accompanying transcript that I have prepared. And now the live recording... unedited.

Transcript of actual recording

NOTE:

<u>Underlined</u> sections are from the Kellog tape. Lines in "quotation marks" are spoken words. Lines in *UPPERCASE ITALICS* are the live bird.

Page 155, Western Flycatcher One weak call

LOUD ZEEP! CALL

"He called!"

"Uh huh"

"He just did it."

Page 155, Western Flycatcher

One weak call

"He's coming out here"

LOUD ZEEP! CALL

"Right there"

FOUR WEAK CALLS

Page 155, Western Flycatcher one weak call

TWO LOUD ZEEPS!

TWO WEAK NOTES

Page 155, Western Flycatcher

several weak calls (Some are the Kellog tape, some are the live bird)

"Super"

Page 155
"I'll shut it off after one call"
Western Flycatcher

CONTINUOUS CALLING DURING THESE COMMENTS

"Shut it off after one call"

LOUD CALL

"Should be getting this"

"Should I get closer?"

"No, don't move up"

"One call"

page 155, Western Flycatcher one weak call

LOUD ZEEP CALL

"Ahh perfect"

"That's it"

SEVERAL CALLS

"One call and shut off"

LOUD CALL

"Ahh"

several comments with CONSTANT CALLING IN BACKGROUND

"Are you sure that'll pick it up?"

"Yes."

"I could try to move up."

etc.

"He's behind the dead stuff"

loud zeep and trill

ZEEP!

"There... I should get that one"

CONSTANT CALLING IN BACKGROUND

mockingbird call

"mockingbird.."

loud call page 155, Western Flycatcher several calls page 155, Western Flycatcher

"Okay, alright. Good enough"

ADDITIONAL COMPARISONS

The following recordings are for comparing the Lancaster bird's call with other tape recordings of Pacific Slope Flycatcher and with similar sounding species.

The first set of calls will alternate between Western Flycatcher as heard on the Field Guide to Western Bird Songs by Dr. Peter Kellog, copyright 1975, Cassette number 2, side A and the Lancaster County bird (isolated from the preceding tape). The calls will alternate, one at a time, for three repetitions.

calls

The second set of calls will alternate between Pacific Coast Flycatcher as heard on the Guide to Bird Sounds, National Geographic Society, 1985, Cassette 2 side A, and the Lancaster County bird (again isolated from the preceding tape).

Again, the calls will alternate, one at a time, for three repetitions.

calls

The third set of calls will alternate between Yellow-bellied Flycatcher as heard on the Guide to Bird Sounds, National Geographic Society, 1985, Cassette 2 side A, and the Lancaster County bird (again isolated from the preceding tape).

Again, the calls will alternate, one at a time, for three repetitions. After these calls, that will conclude this tape.

calls

end of tape...

Sonagram Analysis of Lancaster County Pacific-slope Flycatcher By: Donald H. Jones

Matt Sharp, a former member of the Pennsylvania Bird Records Committee, asked if I would examine the audio-tapes of an extra-limital Empidonax Flycatcher found in Lancaster County, Pennsylvania and audio recorded on December 17, 1990.

Two tapes were received from Nick Pulcinella titled respectively (1) Pacific-slope Flycatcher, 12-17-90, Lancaster County, Pennsylvania, recorded by Franklin Haas ORIGINAL TAPE and (2) Pacific-slope Flycatcher, Lancaster County, Pennsylvania, 12-17-90. The second tape is an analysis done by Franklin Haas of the call of the extra-limital bird in Lancaster County compared with available (at the time) recordings of "Western Flycatcher" (from A Field Guide to Western Bird Songs, Peter Kellogg, 1975, Cassette 2 Side A), Pacific-slope Flycatcher (from A Guide to Bird Sounds, National Geographic Society 1985 Cassette 2 Side A) and Yellow-bellied Flycatcher (A Guide to Bird Sounds, National Geographic Society 1985 Cassette 2 Side A).

Definitions: Several parameters were measured for a variety of calls from known birds (commercial recordings and others), the Lancaster County bird, and a vagrant "Western Flycatcher" from North Carolina. The parameters measured in kilohertz (kHz) are

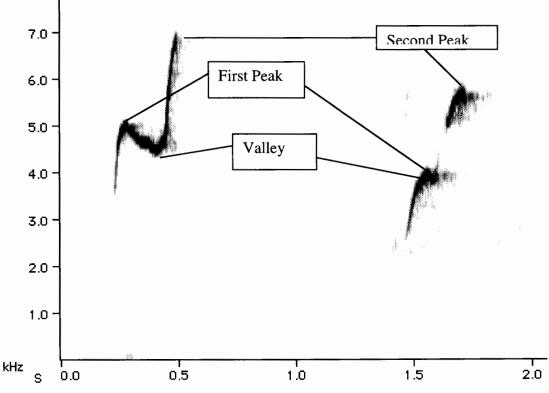


Figure 1: Sonagram (400mS/inch, 2.0kHz/inch) of the typical position note of Pacific-slope Flycatcher (left) and distinctive male position note of Cordilleran Flycatcher (right). Left call from "pacslfly-Stokes West-call", 1st call; right call from "cordfly (tee-seet) dhi".

defined as in Figure 1. The duration is simply the measured time in milliseconds (mS) between the beginning and end of the call. In the case of a non-continuous call, such as the tee-seet call of Cordilleran Flycatcher, it is the elapsed time between the beginning of the first note and end of the second note. In the summary table "duration" takes on a different meaning-the time in milliseconds from the first peak to the valley. Also "trough depth" is defined as the difference in kilohertz between the first peak and valley. The first "condition" column in the tables either says "continuous" (if thesonagram trace has no breaks) or "break" (if the sonagram trace has a clear break, as in the tee-seet call of Cordilleran Flycatcher, and thus is composed of two distinct notes). The second condition" column in the tables characterizes the second peak (i.e. whether there is a clear "peak", "no peak", or questionable ("no peak?")

Data: Table 1 shows sonagram measurements comparing the Lancaster County bird to

						Frequency,	kHz	
File Name	Species	Repitition	Duration, mS	First Peak	Valley	Condition	Second Peak	Condition
FH comp w/WEFLY	Cordilleran	Α	217	5.28	4.70	break	5.97	peak
FH comp w/WEFLY	Lancaster Bird	Α	236	5.09	4.67	continuous	6.83	no peak
FH comp w/WEFLY	Cordilleran	В	208	5.28	4.70	break	5.97	peak
FH comp w/WEFLY	Lancaster Bird	В	230	5.11	4.70	continuous	6.80	no peak
FH comp w/WEFLY	Cordilleran	С	211	5.28	4.73	break	5.94	peak
FH comp w/WEFLY	Lancaster Bird	С	223	5.14	4.73	continuous	6.77	no peak
FH comp w /pacsifiy	Pacific-slope	Α	271	5.56	4.94	continuous	7.69	no peak
FH comp w /pacsifly	Lancaster Bird	Α	222	5.14	4.67	continuous	6.83	no peak
FH comp w /pacslfly	Pacific-slope	В	264	5.47	4.94	continuous	7.67	no peak
FH comp w /pacslfly	Lancaster Bird	В	229	5.11	4.72	continuous	6.83	no peak
FH comp w /pacslfly	Pacific-slope	С	250	5.53	4.97	continuous	7.61	no peak
FH comp w /pacslfly	Lancaster Bird	С	230	5.08	4.69	continuous	6.83	no peak
FH comp/w yelbelfly	Yellow-bellied	Α	313	4.22	3.61	continuous	4.69	peak
FH comp/w yelbelfly	Lancaster Bird	Α	229	5.08	4.69	continuous	6.81	no peak
FH comp/w yelbelfly	Yellow-bellied	В	306	4.19	3.64	continuous	4.69	peak
FH comp/w yelbelfly	Lancaster Bird	В	229	5.06	4.69	continuous	6.78	no peak
FH comp/w yelbelfly	Yellow-bellied	С	306	4.14	3.61	continuous	4.72	peak
FH comp/w yelbelfly	Lancaster Bird	С	229	5.06	4.69	continuous	6.72	no peak
WEELV from A Field O	uida ta Maata !): ral	Sanaa '	Dotor 1	ollog 1	OZE Casast	10 0 Cid	
WEFLY from A Field G pacsifly from A Guide								

"Western Flycatcher", Pacific-slope Flycatcher, and Yellow-bellied Flycatcher. The sonagrams were created directly from the analysis tape by Franklin Haas. Note that in Tables 1-4 all measurements were made on sonagrams using the same scaling factors to eliminate errors from data measured at different scaling factors. The Figures shown however might be at a different scale since they were sized to different widths. Nonetheless all sonagrams in the same Figure are to the same scale.

Table 2 provides measurements from sonagrams of calls derived from the commercially available recordings of Pacific-slope and Cordilleran Flycatchers.

Table 2: K	nown Ca	lls (Sc	aling	500	mS/ir	nch, 2	kHz/i	inch)
File Name	Species	Call	Duration, mS	First Peak	Valley	Condition	Second	Condition
pacslfly-Stokes	Pacific-slope	1st call	271	5.00	4.73	continuous	6.89	no peak
West-call	Flycatcher Pacific-slope Flycatcher	2nd call	257	4.53	4.00	continuous		no peak
cordfly-Stokes West-calls	Cordilleran Flycatcher	1st call	215	4.78	4.64	continuous	5.97	no peak
	Cordilleran Flycatcher	2nd call	209	4.72	4.58	continuous	6.11	no peak
	Cordilleran Flycatcher	3rd call	223	4.53	4.42	continuous	6.08	no peak
	Cordilleran Flycatcher	4th call	216	4.72	4.64	continuous	6.03	no peak
cordfly(GAUSIG)	Cordilleran Flycatcher	1st call	237	4.63	4.44	break	5.98	
	Cordilleran Flycatcher	2nd call	237	4.61	4.12	break	5.96	
cordfly (FGWBS)	Cordilleran Flycatcher		222	5.39	4.69	break	6.06	
pacslfly(FGWBS)	Pacific-slope Flycatcher	Only sor	ng eleme	nts of Pa	acific-slo	pe Flycatche	r are gi	ven; no calls

Table 3 gives measurements made on calls of known (based on range and time of recording) Cordilleran Flycatcher recorded by myself in Colorado and Arizona.

Table 3: DHJ Recordings of Cordilleran Flycatcher (Scaling 500mS/inch, 2kHz/inch)									
File	Species	Call	Duration, mS	First Peak	Valley	Condition	Second	Condition	
cordfly (tee-seet) dhj	Cordilleran	1st call	229	3.92	3.81	break	5.50		
	Cordilleran	2nd call	201	4.00	3.92	break	5.56		
	Cordilleran	3rd call	250	3.97	3.81	break	5.72		
COFL (C) dhj	Cordilleran	1st call	215	4.50	-	continuous	6.33		
	Cordilleran	2nd call	208	4.39	-	continuous	6.39		
	Cordilleran	3rd call	215	4.36	-	continuous	6.33		
	Cordilleran	4th call	201	4.36	-	continuous	6.36		
	Cordilleran	5th call	216	4.47	-	continuous	6.36		
cordfly (tee-seet) COFL (C) dhj recor					-			/21/91	
"-" means basically	y no Valley it	is more of	an infl	ection p	ooint				

In xxxx 2000 a vagrant "Western Flycatcher" was discovered and its call recorded in North Carolina. Table 4 gives measurements on the recordings of this bird available on the internet. Note that the first call on psflmpn1 is of a known Pacific-slope Flycatcher

Table 4: North Carolina Bird 2000 (Scaling 500mS/inch, 2kHz/inch)								
					F	requency,	kHz	
File Name	Species	Pair	Duration, mS	First Peak	Valley	Condition	Second	Condition
psflmpn1.aif		1st call- AGTBS-NGS	188	5.08	4.67	continuous	5.51	no peak
psflmpn1.aif		2nd call	233	4.53	4.44	continuous	6.67	no peak ?
psflmpn2.aif			232	4.42	4.44	continuous	6.69	no peak ?
psflmpn3.aif			212	4.47	4.44	continuous	6.72	no peak ?

from A Guide to Bird Songs-National Geographic Society.

Discussion: In 1989 the American Ornithologists Union split the races of Western Flycatcher into Cordilleran Flycatcher, *Empidonax occidentalis*, [races *hellmayri* (sw. Canada to n. Mexico) and *occidentalis* (highlands of Mexico)] and Pacific-slope

Flycatcher, *Empidonax difficilis* [races difficilis (se. Alaska to n. Baja), insulicola (Channel Islands off s. California), and cineritius (Cape District of Baja California)]. The species are very similar in appearance and vocalizations making identification of "out-of-range" birds impossible to exceedingly difficult.

In December 1990 a "Western Flycatcher" appeared in Lancaster County, Pennsylvania. On December 17, the bird was recorded by Franklin Haas, et. al. (in response to playback) and the tape subsequently analyzed by Franklin Haas. Table 1 provides measurements from the sonagrams of this bird compared to available commercial recordings of the calls of "Western Flycatcher", Pacific-slope Flycatcher, and Yellow-bellied Flycatcher. The effort to get the bird to call, the recording of the call itself, and the subsequent analysis were excellent.

Sibley describes the calls of the species as follows:

Pacific-slope Flycatcher: Male position note: a very high, thin whistle; Mainland gives a slurred **tseeweep**. Channel Island a simple, rising **tsweep**

Cordilleran Flycatcher: Male position note variable; a two-part tee-seet distinctive, but other birds give a rising tsweep like Channel Island Pacific-slope Flycatcher or slurred tseeweep like Mainland Pacific-slope Flycatcher.

In the Birds of North America, Louis Bevier amplifies the description of the calls and indicates that the typical position note call: "differs sharply between species [Pacific-slope and Cordilleran] over most of range. **Pacific-slope** typically gives a single slurred note that briefly rises then falls (occasionally flat or slightly rising) before ending with strongly emphasized component that rises steeply in pitch: **su-weep!**, **peweat!** or **pseeyeap!**; this call appears as a sinusoidal or ladle-shaped note on a spectrogram. Some Pacific-slopes may lack beginning component and emphasize only steeply rising portion, this being typical of birds breeding on the Channel Is. off s. California.

"In contrast, **Cordilleran** gives a distinctly 2 syllable male position note with second note higher, **wi-SEET!** or **pit-SEET!**. Rare individuals from interior Northwest may give position notes of both species (so-called bilingual individuals). Because male position notes of some Cordillerans from this region may overlap Pacific-slope, identification by call of migrants and vagrants outside known breeding range is problematic (Pacific-slope call may be given by either species, whereas 2-parted call only given by Cordilleran)."

The first commercial call the Lancaster is compared against is the distinctive two-syllable position note of Cordilleran Flycatcher. Notice the "break" in this call making it two-noted while all the others in the Table are continuous. This distinctive two-syllable position note of Cordilleran Flycatcher was also analyzed in Table 2 [cordfly(GAUSIG) and cordfly (FGWBS)] and in Table 3 [cordfly (tee-seet) dhj]. This call is the right figure in Figure 1. The Lancaster recording IS NOT the distinctive two-syllable position note of Cordilleran Flycatcher.

Of the remaining calls is Table 1, the Lancaster bird most resembles the known Pacific-

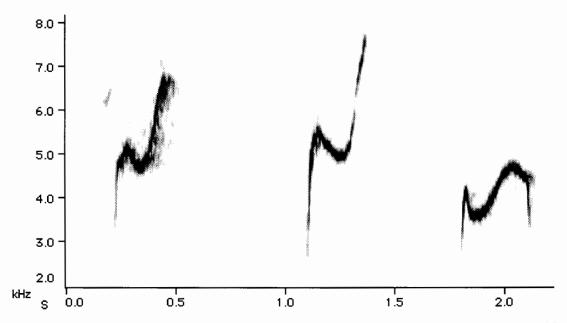


Figure 2: From left to right Lancaster bird, Pacific-slope Flycatcher (AGTBS-NGS 1985). Yellow-bellied Flycatcher (AGTBS-NGS 1985). Scale 400mS/inch/2kHz/inch. slope Flycatcher call. Notice (Table 1 and Figure 2) that the call of Yellow-bellied

Flycatcher is much longer in duration and much lower in frequency than that of the Pacific-slope Flycatcher. On the basis of the data discussed one might identify the Lancaster bird as Pacific-slope Flycatcher. However subsequent to the split there has been much discussion regarding identifying vagrant "Western Flycatcher" as to species

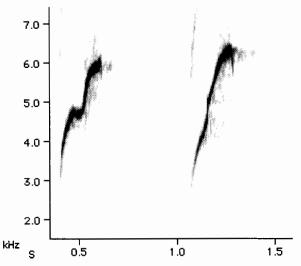


Figure 3: Continuous single-noted calls of Cordilleran Flycatcher. Left from Stokes West tape, recorded in Utah; right figure from a bird recorded in the Chiricahua Mountains of se. Arizona. Scale 400mS/inch/2kHz/inch.

based on calls other than the distinctive two-syllabled call of Cordilleran Flycatcher.

discussion The arises from observations that Cordilleran Flycatcher also gives continuous single-noted calls somewhat similar to those of Pacific-slope Flycatcher. Data on two such calls are included in this report-Table 2 (cordfly-Stokes West-calls) and Table 3 [COFL (C) dhil. Figure 3 shows the sonagrams of these calls. Notice in Figure 3 on the Utah call that the duration of the call from the first peak to the valley is shorter than that of known Pacificslope and the trough is shallower; in fact on the Arizona bird the first peak is non-existant and only inflection point occurs within this range of frequency. These observations prompted the preparation of Table 5 comparing several calls to assess whether duration of calls from the first peak to the valley or trough depth might be a parameter distinguishing continuous single-noted calls of Cordilleran and Pacific-slope Flycatcher. However before proceeding to these comparisons you should note that Table 4 provides data on a vagrant "Western Flycatcher" discovered and tape- recorded in North Carolina in January 2000. It was also thought this bird was Pacific-slope Flycatcher although the state records committee eventually only accepted "Western Flycatcher".

Table 5 compares data on the duration from first peak to valley and the trough depth of the following call samples: Lancaster bird; Pacific-slope Flycatcher from the A Guide to Birds Songs (National Geographic Society); single-noted Cordilleran Flycatcher from the Stokes West tapes; Pacific-slope Flycatcher from the Stokes West tapes; the North Carolina bird; and single-noted Cordilleran Flycatcher from se. Arizona. Figure 4 is the

Table 5: Compariso	n Table (Scaling 400mS/inch,	2kHz/inch)		
Bird	Duration (first peak to valley),mS	Trough Depth, kHz		
Lancaster Bird	61	0.42		
pacslfly-AGTBS(NGS)	106	0.56		
cordfly-Stokes West-calls	33	0.11		
pacsifly-Stokes West-call	139	0.50		
North Carolina Bird	27-34	0.02		
COFL (C) dhj	<5	0.00		

sonagram of the comparisons (the order 'top to bottom' in the Table is 'left to right' in the sonagram). It would be instructive to examine a much larger sample size of Pacific-

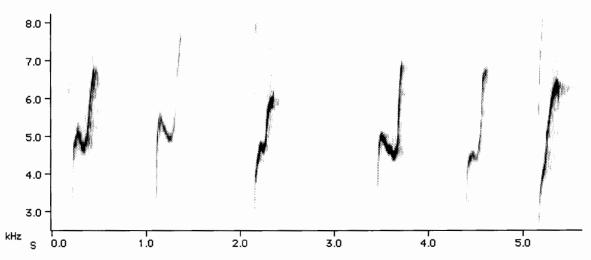


Figure 4: Comparison of single-noted continuous calls of l-r: Lancaster bird; pacslfly-AGTBS(NGS); cordfly-Stokes West-calls; pacslfly-Stokes West-call; North Carolina Bird; COFL (C) dhj. All at the same scale.

slope and Cordilleran single-noted continuous calls to see if these parameters or others might be useful in separating the species. The trough depth may not be useful as Bevier states "Pacific-slope typically gives a single slurred note that briefly rises then falls (occasionally flat or slightly rising) before ending with strongly emphasized component that rises steeply in pitch". Duration from first peak to valley may be a more promising parameter.

Conclusion: Although limited, specimen and/or banding records exist for both Pacificslope and Cordilleran Flycatcher in the east (LA and NY) so either species could occur. Because of the great similarity of the sonagrams (see Figure 4) of the calls of the Lancaster bird and the two known Pacific-slope Flycatchers, it is extremely tempting to call the Lancaster bird a Pacific-slope Flycatcher. But then, what do you call the North Carolina bird also thought to be a Pacific-slope (although accepted as only "Western") but in the sonagrams in Figure 4 "looks" more like Cordilleran to me? The truth is (in my opinion) that the sample size of known birds is much too small to have any degree of confidence in either assignment as to species. Nonetheless it would be most interesting to examine the sonagrams of a much larger sample of known Pacific-slope and Cordilleran Flycatchers from throughout their ranges. At that point after having some appreciation for the variability of continuous single-noted calls of the two species a much more meaningful statement could be made about the possibility of the vagrants being either Pacific-slope or Cordilleran. Perhaps such a collection exists (at Cornell or other repository) or could be assembled and analyzed. Perhaps such a study exists; I have not thoroughly searched the literature.

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- (6) LeGrand, Harry E. Jr. & ippen, Jeffrey S., First Record of the Westerrn Flycatcher Complex in North Carolina, The Chat Volume 67 Number 3 Summer (2003).
- (7) National Geographic Society and the Cornell Laboratory of Ornithology. 1985. Guide to bird songs (CD).
- (8) This internet reference has the files and sonagram of the North Carolina vagrant:

http://www.carolinanature.com/birds/psfl.html

(9) This internet reference gives sonagrams and comments on both song elements and calls of Western Flycatcher complex:

http://owlnut.rr.ualberta.ca/~barb/sounds/WEFLVocalizations.html

(10) There is much discussion of the calls of these species at:

http://listserv.arizona.edu

Record No.:538-01-1990

Pennsylvania Ornithological Records Committee

Voting Tabulation - Round # of

Species:

Pacific Slope Flycatcher

Date of Sighting:

December 16 - 26, 1990

Observer(s):

Franklin C. Haas

Date of Submission:

1990

Submitted by:

Franklin C. Haas

Member	Class I	Class II	Class III	Class IV	Class V		
					A	В	С
E. Kwater	X						
B. Haas	\times						
F. Haas	\times						
R. Leberman		\times					
G. McWilliams	/						
S. Santner	X						
P. Schwalbe	X						
TOTALS	李6						
DECISION	X						

Comments:

Signature (Secretary):

Bm Loas

Date:

11-6-91